

10.1 UPDATE ON EXPANDING 40KM/H SPEED ZONES WITHIN CITY OF VINCENT

- Attachments:**
1. **Proposed 40kph Area Wide Speed Zone Trial – South Vincent Progress Report No 1 (2016)**
 2. **Proposed 40kph Area Wide Speed Zone Trial – South Vincent Progress Report No 2 (2016)**
 3. **Proposed 40Km/h Area Wide Speed Zone Trial - Results of Consultation (2018)**
 4. **Road Safety Commission Report (GHD)**
 5. **Evaluation Survey September 2022**
 6. **Safe Speed Trial Evaluation Report**
 7. **3741-CP-D - Speed Plan**

RECOMMENDATION:**That Council:**

1. **NOTES** the Safe Speed Trial Evaluation Report (Attachment 6); and
2. **APPROVES** progression of formal applications to Main Roads Western Australia (MRWA) for the approval of permanent 40km/h speed zones within areas bounded by Newcastle, Vincent and Charles Streets and the Swan River; and
3. **APPROVES** progression of formal applications to MRWA to trial 40km/h speeds over a period of 18-months on all Local Roads which are currently posted 50km/h.

PURPOSE OF REPORT:

To seek Council **approval** for Administration to apply through MRWA for –

- Permanent 40km/h speed zones within areas bounded by Newcastle, Vincent and Charles Streets and the Swan River.
- Trial 40km/h speeds over a period of 18-months on all Local Roads which are currently posted 50km/h.

BACKGROUND:

In 2018 the City of Vincent proposed a 40km/h speed zone trial within Vincent's southern suburban residential areas to study the impact of slower speed limits. The objective was that the trial would make neighbourhood streets safer and provide a better street environment for all road users and residents living close by.

A pocket of West Perth has had a 40km/h speed limit in residential areas since the 1990s. The trial area extended the 40km/h zone from Charles Street in the West through to the Swan River in the East between Newcastle and Vincent Streets. The Road Safety Commission (RSC) supported the City of Vincent in its proposed trial of 40km/h urban speed limits with other stakeholders such as Main Roads Western Australia (MRWA) and Western Australia Local Government Association (WALGA) participating within the evaluation working group.

DETAILS:

Below is a timeline of events relating to the speed zone reduction on Local Roads –

1990s - 40km/h speed limit within residential area (Local Roads) of West Perth.

2016 - Support for speed zone reduction trial (extending the West Perth 40km/h area) with MRWA and the RSC.

2018 - Community consultation begins for trial.

2019 - 40km/h speed zone trial begins.

2020 - Third round of trial data collected and research finalised (GHD Report).

2021 - Fifth round of trial data collected.

2022 - North Perth submissions to MRWA complete for permanent 40km/h speed reduction.

2022 - Safe speed trial evaluation report completed.

The safe speed trial evaluation report was completed by PJA consultants, in conjunction with the RSC, MRWA, City of Vincent and WALGA. A steering group was created to discuss the report and consensus summarised below –

1. Introduce the 40km/h speed zone trial as a permanent speed zone.
 - Undertake a high-level Movement and Place mapping exercise of the existing access and some distributor street network (including existing speed data) and identify which streets may require additional local area traffic management (LATM) treatment to reinforce the speed limit.
2. Extend the 40km/h speed zone to the rest of City of Vincent local and distributor streets.
 - Undertake a high-level Movement and Place mapping exercise of the remaining access and some distributor street network (including existing speed data) and identify which streets may require additional LATM treatment to reinforce the speed limit.

In response to the above outcomes of the working group's evaluation, Administration is proposing the following program and scope for each area –

- **Area 1:** from Newcastle Street to Vincent Street, between Charles Street and the river – implementation in 2022/2023.
- **Area 2:** within the area bounded by Raglan Road, Hyde Park, Vincent and Fitzgerald Streets, North Perth/Mount Lawley - implementation in 2022/2023.
- **Area 3:** in North Perth area bounded by Charles Street (West), Angove Street (North), Fitzgerald Street (East) and Vincent Street (South) - implementation in 2022/2023.
- **Area 4:** All remaining Local Access and most Distributor Roads within the City of Vincent to receive new 40km/h speed zone - implementation in 2024/2025.

Administration can confirm the current program and scope for each area as below;

Area 1: *Bounded by Newcastle Street to Vincent Street, between Charles Street and the river.*

- **2022/2023** - Application to MRWA for the existing trial area to become permanent.
- **2023/2024** - Subject to MRWA approval, through the budget process, allow funding for permanent implementation and complete project.

Area 2: *Bounded by Raglan Road, Hyde Park, Vincent and Fitzgerald Streets, North Perth/Mount Lawley.*

- **2022/2023** - Application to MRWA, design drawings and permanent signs and lines works completed.

Area 3: *Bounded by Charles Street (West), Angove Street (North), Fitzgerald Street (East) and Vincent Street (South).*

- **2022/2023** - Application to MRWA, design drawings and permanent signs and lines works completed.

Area 4: *All remaining Local Access roads to receive new 40km/h speed zone.*

- **2022/2023** - Application to MRWA for an 18-month trial area.
- **2023/2024** - Subject to MRWA approval, through the budget process, allow funding for implementation of the trial area and complete project.

MRWA raises concerns on the high operational and maintenance cost for areas which have differential speed limits. MRWA preference is for an overall 40km/h default limit to be implemented throughout Western Australia's Local Roads to reduce costs. Other concerns from MRWA came from driver behaviour and how traffic calming devices are expected to be implemented before speeds are approved to be reduced.

MRWA will have final authority to grant or reject applications to reduce speeds on Local Roads.

CONSULTATION/ADVERTISING:

Consultation on speed zoning has progressed since 2018. The safe speed trial area concluded with the evaluation report recommending that there is community support to have slower speeds throughout the City of Vincent.

The September 2022 community consultation period for the “Final Evaluation Survey” resulted in 57% support for reducing the speed to 40km/h within residential streets, as it provides greater confidence to walk or ride in the streets.

Consultation on the learnings from the Area 4 trial will be undertaken after 12 months data has been collected, analysed and prepared so it is comparable to that from other trials.

LEGAL/POLICY:

Road Traffic Act 1974

RISK MANAGEMENT IMPLICATIONS

Low: It is low risk for Council to continue and advocate for slower speeds throughout the City of Vincent.

STRATEGIC IMPLICATIONS:

This is in keeping with the City’s *Strategic Community Plan 2018-2028*:

Enhanced Environment

We have minimised our impact on the environment.

Accessible City *Our pedestrian and cyclist networks are well designed, connected, accessible and encourage increased use.*

Prioritise pedestrians through safe streets, slower speed zones and shared spaces.

Accessible City Strategy

4.1.1 Work with the State Government and Inner-City Group of Councils to implement a 40km/h zone in all residential areas of the City of Vincent by 2023.

Opportunities – 30km/hr residential speed limits allow for an integration of mixed traffic cycling and significantly improved road safety outcomes.

Thriving Places

Our town centres and gathering spaces are safe, easy to use and attractive places where pedestrians have priority.

Innovative and Accountable

Our community is aware of what we are doing and how we are meeting our goals.

SUSTAINABILITY IMPLICATIONS:

This is in keeping with the following key sustainability outcomes of the *City’s Sustainable Environment Strategy 2019-2024*.

*Sustainable Transport***PUBLIC HEALTH IMPLICATIONS:**

This is in keeping with the following priority health outcomes of the *City’s Public Health Plan 2020-2025*:

Reduced injuries and a safer community

FINANCIAL/BUDGET IMPLICATIONS:

- **Area 1** - Permanent 40km/h speed zones within areas bounded by Newcastle, Vincent and Charles Streets and the Swan River – Estimated cost of up to **\$75K**.
- **Area 4** - Trial all remaining Local Roads within the City of Vincent which are currently defaulted at 50km/h to be reduced to 40km/h over an 18 month period – Estimated cost up to **\$330K**
- Trial all remaining Local Roads within the City of Vincent which are currently defaulted at 50km/h to be reduced to 40km/h over an 18 month period – Estimated cost up to **\$330K**

Breakdown on scope of above costs include –

- Speed reduction application to MRWA.
- Design and drafting of the MRWA Signs and Lines design drawings.
- MRWA Installation costs for Signs and Lines.

Costs will need to be agreed and negotiated with MRWA, as regulatory signs and lines are installed through MRWA only, to be funded by the City of Vincent.

External funding opportunities will be explored by administration and allocation of project budget is forecasted within the Long Term Financial Plan (LTFP).

COMMENTS:

Since 2016, support has strengthened for slower speeds within Local Roads throughout the City of Vincent. Capital projects which have assisted specifically with speed reduction are –

- Safe Active Street (Department of Transport lead) – reduced speeds permanently on Local Roads to 30km/h.
- Low-Cost Urban Road Safety Program (Main Roads Western Australia lead) – reduced speeds on Local Roads below 50km/h.
- Local Area Traffic Management (LATM) (City of Vincent lead) – reduced speeds on Local Roads below 50km/h.

It is expected that Local Roads which have received some form of Traffic Calming modification will likely be approved by MRWA to become permanent 40km/h zones. Local Roads which have not yet received Traffic Calming treatments are less likely to be approved permanent 40km/h zones by MRWA.

9.2.2 Proposed 40kph Area Wide Speed Zone Trial – South Vincent Progress Report No 1

Ward:	South	Date:	12 May 2016
Precinct:	Precinct 11 – Mount Lawley Centre, Precinct 12 – Hyde Park, Precinct 13 – Beaufort Precinct 14 – Forrest, Precinct 15 – Banks, Precinct – MRA, Precinct 16 – EPRA, Precinct – EPRA 15	File Ref:	SC466
Attachments:	1 – Proposed Trial Area		
Tabled Items:	Nil		
Reporting Officer:	R Lotznicker, Director Technical Services		
Responsible Officer:	R Lotznicker, Director Technical Services		

RECOMMENDATION:

That Council:

1. **ADVISES Main Roads WA and the Commissioner of Road Safety that it supports, in principle, undertaking a 40kph Area Wide Speed Zone Trial in the area bounded by Charles Street, Vincent Street, Beaufort Street, Walcott Street, Guildford Road, Stanley Street and Mitchell Street, as shown in Attachment 1, subject to the State Government, through Main Roads WA, the Office of Road Safety, or other relevant State Agency or Agencies;**
 - 1.1 **partnering with the City of Vincent to undertake community consultation with residents and ratepayers in the affected, area, in accordance with the City’s Consultation Policy, for a minimum period of four weeks;**
 - 1.2 **advertises the proposal to conduct a trial, including the lowering of the existing school zones from 40kph to 30kph within the trial area;**
 - 1.3 **bearing, or substantially contributing to the funding of all works associated with the consultation, design and, if approved, implementation of the trial;**
 - 1.4 **providing a report, to Council, at the conclusion of the consultation period outlining the comments received and recommendations thereon; and**
 - 1.5 **should the trial proceed, undertaking a formal independent assessment/review of its effectiveness; and**
2. **NOTES that a further report will be presented, to Council on this matter, once a formal response to recommendation 1, has been received.**

COUNCIL DECISION ITEM 9.2.2

Moved Cr Cole, Seconded Cr Buckels

That the recommendation be adopted.

Debate ensued.

MOTION PUT AND CARRIED UNANIMOUSLY (9-0)

9.2.2 Proposed 40kph Area Wide Speed Zone Trial – South Vincent Progress Report No 1

Ward:	South	Date:	12 May 2016
Precinct:	Precinct 11 – Mount Lawley Centre, Precinct 12 – Hyde Park, Precinct 13 – Beaufort Precinct 14 – Forrest, Precinct 15 – Banks, Precinct – MRA, Precinct 16 – EPRA, Precinct – EPRA 15	File Ref:	SC466
Attachments:	1 – Proposed Trial Area		
Tabled Items:	Nil		
Reporting Officer:	R Lotznicker, Director Technical Services		
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RECOMMENDATION:

That Council:

1. **ADVISES** Main Roads WA and the Commissioner of Road Safety that it supports, in principle, undertaking a 40kph Area Wide Speed Zone Trial in the area bounded by Charles Street, Vincent Street, Beaufort Street, Walcott Street, Guildford Road, Stanley Street and Mitchell Street, as shown in Attachment 1, subject to the State Government, through Main Roads WA, the Office of Road Safety, or other relevant State Agency or Agencies;
 - 1.1 partnering with the City of Vincent to undertake community consultation with residents and ratepayers in the affected, area, in accordance with the City’s Consultation Policy, for a minimum period of four weeks;
 - 1.2 advertises the proposal to conduct a trial, including the lowering of the existing school zones from 40kph to 30kph within the trial area;
 - 1.3 bearing, or substantially contributing to the funding of all works associated with the consultation, design and, if approved, implementation of the trial; and
 - 1.4 providing a report, to Council, at the conclusion of the consultation period outlining the comments received and recommendations thereon; and
 - 1.5 should the trial proceed, undertaking a formal independent assessment/review of its effectiveness; and
2. **NOTES** that a further report will be presented, to Council on this matter, once a formal response to recommendation 1, has been received.

PURPOSE OF REPORT:

To consider a proposal to undertake a ‘40kph area wide speed zone trial’ in the southern part of the City of Vincent.

BACKGROUND:

In March 2000 Council considered a report on lowering the posted speed limit on the state's local roads from 60kph to 50kph where it supported the introduction of the lower speed limit on the proviso that:

- the proposed speed limits would be designated by appropriate regulatory signage and line marking only, to minimise the requirement for the implementation of traffic calming devices, and
- enforcement of the proposed lower speed limits would be the responsibility of the WA Police.

The posted speed limit on over 70% of the State's road network was subsequently reduced from 60kph to 50kph.

The Mayor and Chief Executive Officer met with the Managing Director of Main Roads WA (MRWA) in early 2015 to discuss the possibility of undertaking a 40kph trial in the City of Vincent.

In June 2015 MRWA advised that there was in principle support for the trial from the Minister and that officers from MRWA would be in touch with the City to discuss the implementation of the trial.

Several meetings between Administration and MRWA followed where the proposed trial area was identified and costings undertaken.

DETAILS:

Lowering Speed Limits:

The findings of a recent study by Monash University in relation to the potential impact of lowered speed limits in urban and metropolitan areas, are summarised below:

- *Lowered average travel speeds brought about by a reduction in speed limits in urban and metropolitan areas will bring about considerable reductions in road trauma;*
 - *A relatively minor impact on average travel times (mobility) is likely to occur at the individual level; at the societal level there are likely to be overall benefits depending on how values are assigned to travel times increases;*
 - *Achieving community acceptance and support for speed limit reductions is critical as is the need to encourage better safety awareness by changing attitudes toward speeding and giving greater consideration to the needs of less prioritized road users;*
 - *Vulnerable road users (pedestrians and cyclists) are likely to benefit most from reductions in average travel speeds;*
 - *Lowered speed limits encourage better and safer forms of interaction between different types of road users which in turn should lead to a more attractive and liveable environment;*
 - *Lowered average travel speeds should bring about an increase in energy efficiency with a corresponding reduction in fuel consumption and vehicle running costs, and a reduction in vehicle emissions (Greenhouse gases) and noise;*
 - *Lowering speed limits, where circumstances permit, can prove to be a highly effective way of achieving and sustaining the long-term goals and intermediate targets proposed in traffic safety strategies and action plans.*
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Table 1, from the study, shows the consensus view of the 'risk of death' and 'serious injury' with respect to impact for pedestrians struck by a car (from Scully et al., 2007)

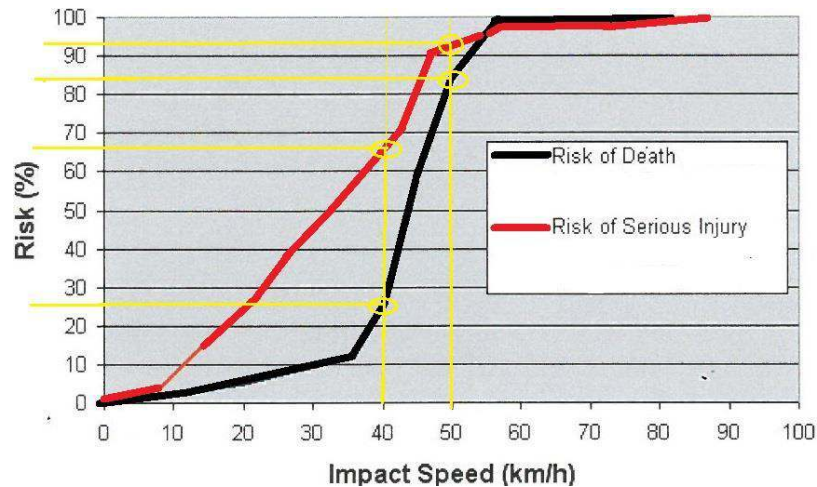


Table 1

As can be seen from the above table at 40kph (compared with 50kph) there is almost 60% lower risk of a fatality and 17% lower risk of serious injury to a pedestrian struck by a car.

Proposed '40kph Area Wide Speed Zone Trial':

The area under consideration for the trial is all the residential streets in the area bounded by Charles, Vincent, Beaufort and Walcott Streets, Guildford Road, Stanley and Mitchell Streets as shown in **Attachment 1**.

The proposal would comprise the following:

- The identification of appropriate location for the installation of new 40kph signs and poles in the trial zone;
- Possible upgrading the existing LED signs at the two existing schools within the trial area*; and
- An assessment of the traffic data prior to the trial and a comprehensive review during the trial by an independent road research provider.

Note:* With regards to the school zones, this created an issue having speed differential which may compound and confuse the trial results. In addition MRWA have indicated this is likely to cause significant state-wide logistic, cost and political implications. MRWA have subsequently advised that they do not support the 30kph school zone at this stage and are arranging for a position paper to be prepared by a leading road research consultant to assess the benefits and costs associated with introducing 30kph school zones in WA before proceeding further with this.

CONSULTATION/ADVERTISING:

It is considered that the community in the area bounded by Charles, Vincent, Beaufort and Walcott Streets, Guildford Road, Stanley and Mitchell Streets be consulted prior to progressing further with the proposal.

LEGAL/POLICY:

All streets in the proposed trial area except for Charles Street, Guildford Road and East Parade are under the care, control and management of the City. Stanley and Mitchell Street are boundary roads with the City of Bayswater.

STRATEGIC IMPLICATIONS:

In keeping with the City's *Strategic Plan 2013-2023*, Objective 1 states:

"1.1: *Improve and maintain the natural and built environment and infrastructure*

1.1.5 *Take action to improve transport and parking in the City and mitigate the effects of traffic. (d)Promote alternative methods of transport."*

SUSTAINABILITY IMPLICATIONS:

Lowering of speed limits on roads would result in reduced pollution and improved safety.

RISK MANAGEMENT IMPLICATIONS:

Low. The risk to the community is considered to be low as the proposal is likely to reduce traffic speeds and possibly volumes and provide a safer environment.

FINANCIAL/BUDGET IMPLICATIONS:

The estimated cost to install new signage in the trial area is \$150,000. The estimated cost to upgrade the LED school zone signage is \$80,000 and it is being requested that MRWA fund and undertake the consultation and the supply and installation of the signage.

With regards to review and monitoring during the trial the Road Safety Commission has indicated that they would arrange this, in partnership with MRWA as the trial results would have state wide significance. The cost of this has not been determined.

COMMENTS:

As mentioned in the report a recent study by Monash University concluded that even a small reduction in travel speeds brought about by a reduction in speed limits in urban and metropolitan areas will result in considerable reductions in road trauma.

In addition the study found that while relatively minor impacts on average travel times is likely to occur, at the individual level, at an overall collective level there are likely to be overall benefits depending on how values are assigned to travel times increases.

It is considered that implementing a 40kph trial would have many benefits for the community including a potential reduction in rat running due to the lower speed zoning.

9.2.3 Proposed 40kph Area Wide Speed Zone Trial – South Vincent Progress Report No 2

Ward:	South	Date:	5 August 2016
Precinct:	Precinct 11 – Mount Lawley Centre, Precinct 12 – Hyde Park, Precinct 13 – Beaufort Precinct 14 – Forrest, Precinct 15 – Banks, Precinct – MRA, Precinct 16 – EPRA, Precinct – EPRA 15	File Ref:	SC466
Attachments:	1 – Proposed Trial Area		
Tabled Items:	Nil		
Reporting Officer:	R Lotznicker, Director Technical Services		
Responsible Officer:	R Lotznicker, Director Technical Services		

RECOMMENDATION:

That Council:

1. **NOTES** the:
 - 1.1 Responses received from both Main Roads WA and the Road Safety Commission to Council’s decision of 31 May 2016, as contained in the report; and
 - 1.2 Funds allocated in the 2016/17 Budget of \$150,000, for the installation of 40kph signs/poles, includes a 50% contribution from Main Roads WA which, they have indicated, they will not provide;
2. **AUTHORISES** the Chief Executive Officer to liaise with both Main Roads WA and the Road Safety Commission in preparing a consultation pack to be sent to residents / businesses in the area bounded by Charles, Vincent, Beaufort and Walcott Streets, Guildford Road, Stanley and Mitchell Streets, by no later than 30 November 2016, seeking their views on undertaking a 40kph Area Wide Speed Zone Trial in streets as shown in Attachment 1; and
3. **RECEIVES** a further report at the conclusion of the advertising period.

Moved Cr Gontaszewski, Seconded Cr Buckels

That the recommendation be adopted.

Debate ensued.

PROPOSED AMENDMENT

Moved Cr Gontaszewski, Seconded Cr Cole

That Recommendation 2 be amended as follows:

2. **AUTHORISES** the Chief Executive Officer to liaise with both Main Roads WA, and the Road Safety Commission and other relevant agencies/organisations to:
 - 2.1 Prepare in ~~preparing~~ a consultation pack to be sent to residents / businesses in the area bounded by Charles, Vincent, Beaufort and

Walcott Streets, Guildford Road, Stanley and Mitchell Streets, by no later than 30 November 2016, seeking their views on undertaking a 40kph Area Wide Speed Zone Trial in streets as shown in Attachment 1; and

2.2 **Clearly define each agency/organisation's roles, responsibilities, costs, outcomes and deliverables in undertaking a proposed 40kph Area Wide Speed Zone Trial; and**

Debate ensued.

AMENDMENT PUT AND CARRIED UNANIMOUSLY (9-0)

Debate ensued.

MOTION AS AMENDED PUT AND CARRIED UNANIMOUSLY (9-0)

COUNCIL DECISION ITEM 9.2.3

That Council:

1. NOTES the:
 - 1.1 Responses received from both Main Roads WA and the Road Safety Commission to Council's decision of 31 May 2016, as contained in the report; and
 - 1.2 Funds allocated in the 2016/17 Budget of \$150,000, for the installation of 40kph signs/poles, includes a 50% contribution from Main Roads WA which, they have indicated, they will not provide;
 2. AUTHORISES the Chief Executive Officer to liaise with Main Roads WA, the Road Safety Commission and other relevant agencies/organisations to:
 - 2.1 Prepare a consultation pack to be sent to residents / businesses in the area bounded by Charles, Vincent, Beaufort and Walcott Streets, Guildford Road, Stanley and Mitchell Streets, by no later than 30 November 2016, seeking their views on undertaking a 40kph Area Wide Speed Zone Trial in streets as shown in Attachment 1; and
 - 2.2 Clearly define each agency/organisation's roles, responsibilities, costs, outcomes and deliverables in undertaking a proposed 40kph Area Wide Speed Zone Trial; and
 3. RECEIVES a further report at the conclusion of the advertising period.
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9.2.3 Proposed 40kph Area Wide Speed Zone Trial – South Vincent Progress Report No 2

Ward:	South	Date:	5 August 2016
Precinct:	Precinct 11 – Mount Lawley Centre, Precinct 12 – Hyde Park, Precinct 13 – Beaufort Precinct 14 – Forrest, Precinct 15 – Banks, Precinct – MRA, Precinct 16 – EPRA, Precinct – EPRA 15	File Ref:	SC466
Attachments:	1 – Proposed Trial Area		
Tabled Items:	Nil		
Reporting Officer:	R Lotznicker, Director Technical Services		
Responsible Officer:	R Lotznicker, Director Technical Services		

RECOMMENDATION:

That Council:

1. NOTES the:

- 1.1 Responses received from both Main Roads WA and the Road Safety Commission to Council’s decision of 31 May 2016, as contained in the report; and
- 1.2 Funds allocated in the 2016/17 Budget of \$150,000, for the installation of 40kph signs/poles, includes a 50% contribution from Main Roads WA which, they have indicated, they will not provide;

2. AUTHORISES the Chief Executive Officer to liaise with both Main Roads WA and the Road Safety Commission in preparing a consultation pack to be sent to residents / businesses in the area bounded by Charles, Vincent, Beaufort and Walcott Streets, Guildford Road, Stanley and Mitchell Streets, by no later than 30 November 2016, seeking their views on undertaking a 40kph Area Wide Speed Zone Trial in streets as shown in Attachment 1; and

3. RECEIVES a further report at the conclusion of the advertising period.

PURPOSE OF REPORT:

To further consider a proposal to undertake a ‘40kph area wide speed zone trial’ in the southern part of the City of Vincent.

BACKGROUND:

Ordinary Meeting of Council 31 May 2016:

Council considered a report on a proposed 40kph area wide speed zone trial in all of the residential streets in the area bounded by Charles, Vincent, Beaufort and Walcott Streets, Guildford Road, Stanley and Mitchell Streets where the following would be undertaken:

- The identification of appropriate location for the installation of new 40kph signs and poles in the trial zone
- The ‘possible’ upgrading the of existing LED signs at the two existing schools within the trial area

- An assessment of the traffic data prior to the trial and a comprehensive review during the trial by an independent road research provider.

Following consideration of the report Council made the following decision:

“That Council:

1. *ADVISES Main Roads WA and the Commissioner of Road Safety that it supports, in principle, undertaking a 40kph Area Wide Speed Zone Trial in the area bounded by Charles Street, Vincent Street, Beaufort Street, Walcott Street, Guildford Road, Stanley Street and Mitchell Street, as shown in Attachment 1, subject to the State Government, through Main Roads WA, the Office of Road Safety, or other relevant State Agency or Agencies;*
 - 1.1 *partnering with the City of Vincent to undertake community consultation with residents and ratepayers in the affected, area, in accordance with the City's Consultation Policy, for a minimum period of four weeks;*
 - 1.2 *advertising the proposal to conduct a trial, including the lowering of the existing school zones from 40kph to 30kph within the trial area;*
 - 1.3 *bearing, or substantially contributing to the funding of all works associated with the consultation, design and, if approved, implementation of the trial;*
 - 1.4 *providing a report, to Council, at the conclusion of the consultation period outlining the comments received and recommendations thereon; and*
 - 1.5 *should the trial proceed, undertaking a formal independent assessment/review of its effectiveness; and*
2. *NOTES that a further report will be presented, to Council on this matter, once a formal response to recommendation 1, has been received.”*

DETAILS:

In accordance with Council's decision Administration wrote to both Main Roads WA and the Road Safety Commission on 14 June 2016.

MRWA Response – 6 July 2016:

“It is noted that Council now seeks State Government assistance in managing all aspects of the trial including funding the objectives. This is considered contradictory to Main Roads previous advice in June 2015 that Council would be responsible for all aspects of the trial including funding, for which I understand your officers had agreed to and were in the process of requesting.

Nevertheless, Council's proposals for 40 km/h residential areas and possible introduction of 30 km/h School Zones significantly impacts on State Government policy and legislation around the Built up Area 50 km/h speed limit and School Zones in general at a State-wide level.

Consequently, Main Roads has written to the newly (July 2015) formed Road Safety Commission to consider leading a review of such speed zoning changes with a focus on legislative changes to bring about reducing road trauma. This is considered a more appropriate approach in enabling an informed, quantifiable and structured way forward in setting lower speed limits to achieve the desired outcomes.

To assist the Commission's deliberations, Main Roads has engaged ARRB to undertake an investigation of speed zones nationally to capture current issues and directions.

Considering the above, Main Roads cannot accept Council's current resolution however previous agreements continue to have Main Roads support.

I will advise the City of Vincent the outcome of discussions held with the Road Safety Commission in due course”

Road Safety Commission Response – 3 August 2016:

“After careful consideration I can advise that the Road Safety Commission supports the proposed trial by the City of Vincent. I would however note the following in relation to recommendation 1:

- *The Road Safety Commission (RSC) accepts recommendation 1.2 contingent on consultation regarding the form and content of any proposed advertising.*
- *In relation to recommendation 1.4 the draft report be provided to the RSC for review prior to finalisation.*
- *In relation to recommendation 1.3 and 1.5, the RSC requests that should the trial proceed, a working group be formed to develop any potential implementation plan and assessment methodology, chaired by the City of Vincent and featuring representation from the relevant State Government agencies. “*

Discussion:

MRWA consider that Council will be responsible for all aspects of the trial, including funding, and if so previous agreements continue to have their support. Also they have engaged the Australian Road Research Board (ARRB) to undertake an investigation of speed zones nationally to capture current issues and directions.

Following receipt of the RSC letter, further clarification was sought regarding who would be responsible for the advertising, what funding will be provided, who would be preparing a draft report following the advertising and who would be undertaking a formal independent assessment/review of the trial's effectiveness, should the trial proceed.

From the responses received, should Council wish to continue with the trial the following would be required:

Task	Responsibility	Funding	Comments
Advertising the proposal to conduct a trial, including the lowering of the existing school zones from 40kph to 30kph within the trial area;	City of Vincent	City of Vincent / RSC	The City would undertake the advertising, with assistance in terms of funding and communications advice from the RSC if required.
Bearing, or substantially contributing to the funding of all works associated with the consultation, design and, if approved, implementation of the trial;	City of Vincent	City of Vincent / RSC	The Road Safety Commission is willing to provide funding in this regard, contingent on Ministerial approval (if required).
Providing a report, to Council, at the conclusion of the consultation period outlining the comments received and recommendations thereon	City of Vincent	City of Vincent / RSC	RSC is willing to commit funds to enable this trial to take place, but would ultimately see the City of Vincent owning the process.
Assessment of traffic prior to trial	City of Vincent	City of Vincent / RSC / MRWA	All streets in the trial area would need to be

			assessed prior to the trial commencing
Trial Implementation	MRWA	City of Vincent	Signs and poles will be installed by MRWA.
Formal independent assessment/review of the effectiveness of the trial	RSC	RSC / City of Vincent / MRWA	RSC have suggested that a working group, chaired by the City, be formed, to develop an implementation plan and assessment methodology with representation from the relevant State Government agencies. They will assist in funding a formal evaluation of the trial, however the preference would be a collaborative process involving all relevant stakeholders.

CONSULTATION/ADVERTISING:

In accordance with Policy No. 4.1.5 'Community Consultation', the community in the area bounded by Charles, Vincent, Beaufort and Walcott Streets, Guildford Road, Stanley and Mitchell Streets be consulted prior to progressing further with the proposal.

LEGAL/POLICY:

All streets in the proposed trial area except for Charles Street, Guildford Road and East Parade are under the care, control and management of the City. Stanley and Mitchell Street are boundary roads with the City of Bayswater.

STRATEGIC IMPLICATIONS:

In accordance with the City's *Strategic Plan 2013-2023*, Objective 1 states:

"Natural and Built Environment

"1.1: Improve and maintain the natural and built environment and infrastructure

1.1.5 Take action to improve transport and parking in the City and mitigate the effects of traffic. (d)Promote alternative methods of transport."

SUSTAINABILITY IMPLICATIONS:

Lowering of speed limits on roads would result in reduced pollution and improved safety.

RISK MANAGEMENT IMPLICATIONS:

Low. The risk to the community is considered to be low as the proposal is likely to reduce traffic speeds and possibly volumes and provide a safer environment.

FINANCIAL/BUDGET IMPLICATIONS:

Council has allocated \$150,000, in the 2016/17 budget, which includes a 50% contribution from both MRWA and the Road Safety Commission.

As it is unlikely that the 50% contribution will be received, Council may need to allocate additional funds, either in the midyear budget review or in 2017/18 (depending on project timing) should they still wish to proceed with the project.

The estimated cost to install new signage in the trial area is \$150,000. With regards to the school zones, this will need to be further determined however the estimated cost to upgrade the LED school zone signage is in the order of \$80,000,

With regards to advertising prior to the trial, and review and monitoring during the trial the Road Safety Commission has indicated that they would part fund the advertising and fund a formal independent assessment/review of the effectiveness of the trial as the trial results would have state wide significance.

COMMENTS:

As previously reported to Council a recent study by Monash University concluded that even a small reduction in travel speeds brought about by a reduction in speed limits in urban and metropolitan areas will result in considerable reductions in road trauma.

In addition the study found that while relatively minor impacts on average travel times is likely to occur, at the individual level, at an overall collective level there are likely to be overall benefits depending on how values are assigned to travel times increases.

It is considered that implementing a 40kph trial would have many benefits for the community including a potential reduction in rat running due to the lower speed zoning.

10 ENGINEERING

10.1 PROPOSED 40KM/H AREA WIDE SPEED ZONE TRIAL - RESULTS OF CONSULTATION

TRIM Ref: D18/113815

Author: Francois Sauzier, Active Transport Officer

Authoriser: Andrew Murphy, Director Engineering

Attachments:

1. Results Summary 
2. Consultation Leaflet with Area Map 
3. Survey 1 
4. Survey 2 
5. Summary of Submissions 

RECOMMENDATION:

That Council:

1. NOTES the results of the Community Consultation as summarised in Attachment 1;
2. AUTHORISES the Director Engineering to progress the implementation of a 40km/h Speed Zone Trial in the southern half of the City of Vincent as shown in Attachment 2; and
3. ADVISES the respondents of the outcome.

Moved: Cr Loden, Seconded: Cr Hallett

That the recommendation be adopted.

PROPOSED AMENDMENT

Moved: Cr Gontaszewski, Seconded: Cr Topelberg

That the recommendation be amended as follows:

“That Council:

- ~~1. NOTES the results of the Community Consultation as summarised in Attachment 1;~~
1. NOTES:
 - 1.1 the results of the Community Consultation, demonstrating the majority of respondents within the City of Vincent and within the trial area support the 40km/h trial proceeding, as summarised in Attachment 1; and
 - 1.2 that the trial has the support of the Office of Road Safety who has offered to engage and fund the Monash University Accident Research Centre to undertake an accredited research project of the trial to ensure that findings are evidence-based and applicable to the broader Perth metropolitan area;
2. AUTHORISES the Director Engineering to progress the implementation of a 40km/h Speed Zone Trial in the southern part of the City of Vincent as shown in Attachment 2;
3. NOTES that a Reference Group, consisting of the City of Vincent, the Office of Road Safety and other key stakeholders involved in road safety in Western Australia will be established to provide oversight and support to the trial; and

4. **ADVISES the respondents of the outcome and commences liaison with the Office of Road Safety over implementation of the trial.**

AMENDMENT CARRIED UNANIMOUSLY (8-0)

For: Mayor Cole, Cr Gontaszewski, Cr Fotakis, Cr Hallett, Cr Harley, Cr Loden, Cr Murphy and Cr Topelberg

Against: Nil

(Cr Castle was an apology for the Meeting.)

COUNCIL DECISION ITEM 10.1

Moved: Cr Loden, Seconded: Cr Hallett

That Council:

1. NOTES:

- 1.1 the results of the Community Consultation, demonstrating the majority of respondents within the City of Vincent and within the trial area support the 40km/h trial proceeding, as summarised in Attachment 1; and
 - 1.2 that the trial has the support of the Office of Road Safety who has offered to engage and fund the Monash University Accident Research Centre to undertake an accredited research project of the trial to ensure that findings are evidence-based and applicable to the broader Perth metropolitan area;
2. **AUTHORISES** the Director Engineering to progress the implementation of a 40km/h Speed Zone Trial in the southern part of the City of Vincent as shown in Attachment 2;
3. **NOTES** that a Reference Group, consisting of the City of Vincent, the Office of Road Safety and other key stakeholders involved in road safety in Western Australia will be established to provide oversight and support to the trial; and
4. **ADVISES** the respondents of the outcome and commences liaison with the Office of Road Safety over implementation of the trial.

CARRIED UNANIMOUSLY (8-0)






For: Mayor Cole, Cr Gontaszewski, Cr Fotakis, Cr Hallett, Cr Harley, Cr Loden, Cr Murphy and Cr Topelberg

Against: Nil

(Cr Castle was an apology for the Meeting.)

10 ENGINEERING**10.1 PROPOSED 40KM/H AREA WIDE SPEED ZONE TRIAL - RESULTS OF CONSULTATION****TRIM Ref:** D18/113815**Author:** Francois Sauzier, Active Transport Officer**Authoriser:** Andrew Murphy, Director Engineering

Attachments:

1. **Results Summary** [↓](#) 
2. **Consultation Leaflet with Area Map** [↓](#) 
3. **Survey 1** [↓](#) 
4. **Survey 2** [↓](#) 
5. **Summary of Submissions** [↓](#) 

RECOMMENDATION:

That Council:

1. **NOTES** the results of the Community Consultation as summarised in Attachment 1;
2. **AUTHORISES** the Director Engineering to progress the implementation of a 40km/h Speed Zone Trial in the southern half of the City of Vincent as shown in Attachment 2; and
3. **ADVISES** the respondents of the outcome.

PURPOSE OF REPORT:

To consider the results of the community consultation, specifically targeting residents of the City, to determine the Vincent community's appetite for the implementation of a 40km/h Speed Zone Trial in the southern portion of the City for the residential streets in the area bounded by Charles, Vincent, Beaufort, and Walcott Streets, Guildford Road, Stanley and Mitchell Streets, Graham Farmer Freeway and Newcastle Street.

BACKGROUND:**Ordinary Meeting of Council 31 May 2016**

Council considered a report on a proposed 40km/h area wide speed zone trial in all of the residential streets in the area bounded by Charles, Vincent, Beaufort, and Walcott Streets, Guildford Road, Stanley and Mitchell Streets, Graham Farmer Freeway and Newcastle Street.

Following consideration of the report Council made the following decision:

"That Council:

1. *ADVISES Main Roads WA and the Commissioner of Road Safety that it supports, in principle, undertaking a 40km/h Area Wide Speed Zone Trial in the area bounded by Charles Street, Vincent Street, Beaufort Street, Walcott Street, Guildford Road, Stanley Street and Mitchell Street, as shown in Attachment 1, subject to the State Government, through Main Roads WA, the Office of Road Safety, or other relevant State Agency or Agencies;*
 - 1.1 *partnering with the City of Vincent to undertake community consultation with residents and ratepayers in the affected, area, in accordance with the City's Consultation Policy, for a minimum period of four weeks;*
 - 1.2 *advertising the proposal to conduct a trial, including the lowering of the existing school zones from 40km/h to 30kph within the trial area;*
 - 1.3 *bearing, or substantially contributing to the funding of all works associated with the consultation, design and, if approved, implementation of the trial;*

- 1.4 *providing a report, to Council, at the conclusion of the consultation period outlining the comments received and recommendations thereon; and*
- 1.5 *should the trial proceed, undertaking a formal independent assessment/review of its effectiveness; and*
2. *NOTES that a further report will be presented, to Council on this matter, once a formal response to recommendation 1, has been received."*

Ordinary Meeting of Council 23 August 2016

Council considered Progress Report No. 2 and made the following decision:

"That Council:

1. *NOTES the:*
 - 1.1 *Responses received from both Main Roads WA and the Road Safety Commission to Council's decision of 31 May 2016, as contained in the report; and*
 - 1.2 *Funds allocated in the 2016/17 Budget of \$150,000, for the installation of 40km/h km/h signs/poles, includes a 50% contribution from Main Roads WA which, they have indicated, they will not provide;*
2. *AUTHORISES the Chief Executive Officer to liaise with Main Roads WA, the Road Safety Commission and other relevant agencies/organisations to:*
 - 2.1 *Prepare a consultation pack to be sent to residents / businesses in the area bounded by Charles, Vincent, Beaufort and Walcott Streets, Guildford Road, Stanley and Mitchell Streets, by no later than 30 November 2016, seeking their views on undertaking a 40km/h km/h Area Wide Speed Zone Trial in streets as shown in Attachment 1; and*
 - 2.2 *Clearly define each agency/organisation's roles, responsibilities, costs, outcomes and deliverables in undertaking a proposed 40km/h km/h Area Wide Speed Zone Trial; and*
3. *RECEIVES a further report at the conclusion of the advertising period."*

DETAILS:

The City's Administration prepared a consultation engagement plan, which prioritised the use of the City's engagement portal (EHQ), as recently used in the successful *IMAGINE* Vincent campaign.

Consultation Package

A consultation leaflet was prepared which provided some background information on the proposed 40km/h Speed Zone Trial, including a map of the proposed trial zone, and directing all respondents to an online survey. Hard copies for the survey were also made available over the counter of the City's Administration and Civic Centre while the Customer Service staff were also able to take survey responses over the phone if required.

The consultation leaflet can be viewed in **Attachment 2**.

14,000 consultation leaflets were printed with 8000 hand delivered to households in the affected areas; a further 4,500 were mailed to absentee property owners and businesses with the balance available from the City's facilities including Beatty Park Leisure Centre, City of Vincent Administration and Civic Centre and the Library and Local History Centre.

Survey

An initial survey was prepared and launched (Survey 1 **Attachment 3**) on 2 August 2018, with 74 responses received.

An additional number of questions and options were subsequently added (Survey 2 **Attachment 4**) on 8 August 2018, to which 318 responses were received. To ensure that those who had responded to the initial survey were keep fully informed all respondents (to Survey 1) were emailed advising of the additional questions so as to provide them with the opportunity to respond to Survey 2. Nine of the original respondents then added additional information.

The survey formally closed at 5pm on Wednesday 5 September 2018 and all survey responses from Survey 1 and 2 collated.

Survey Results

All responses have now been collated with a total of 392 responses being received. 385 (98.2%) of all respondents claim to either live, work or own property in Vincent.

All Areas

When asked if they support a reduction in speed limit on residential neighbourhood streets, within the trial area, to 40km/h, 225 respondents (57.4%) said YES and 167 respondents (42.6%) NO.

When asked what would be the preferred speed limit on residential neighbourhood streets across Vincent, 148 respondents (45.3%) advised they would prefer 40km/h; 126 (38.5%) saw no need to change (retain the default 50km/h limit) and 53 (16.2%) nominated 30km/h as their preferred speed limit.

Within the Trial Area

298 (76%) of all respondents live or own property within the proposed trial area. Of these respondents, 169 (57%) supported the trial and 129 (43%) did not.

For those who support the trial, respondents were asked to nominate from a list of concerns. In order of concern:

Number	Concerns
213	safer streets for all road users
154	enhance the neighbourhood feel of our suburbs
132	deter people taking short cuts through residential streets
127	reduction in likelihood of trauma in a road accident
101	more likely for children to walk or ride to school
98	environmental benefits of less noise and fuel consumption
82	more likely to walk or ride than take the car
14	other

For those who do not support the trial, respondents were asked to nominate from a list of concerns. In order of concern:

Number	Concerns
145	speed limit on local roads is appropriate
64	impact on traffic flow
51	drivers should adhere to current speed limit
51	other
23	concerns over lack of enforcement
14	would prefer speed humps or traffic calming be installed

Respondents were asked to rank from 1-5 the following measures to improve safety and amenity of residential streets:

Number	Item	Rank / Score out of 5
1	Speed humps or other traffic calming measures	3.39
2	Greater police enforcement	3.30
3	Increase and improve signposting of speed limits	3.21
4	Lower speed limit of residential streets	2.61
5	Better cycling and pedestrian infrastructure	2.37

Summary of Submissions

A summary of submissions made by respondents is attached (**Attachment 5**).

Of those who support the trial, the comments included:

- Extend to other areas of Vincent;
- Reduce the carriageway widths of some streets and include cycle lanes if possible;
- There are many narrow streets in Vincent where people do speed;
- Car noise is reduced when traffic speed is slower.

Of those who do not support the trial, the comments included:

- A waste of rate payers money;
- Won't address the issue;
- More Police enforcement is necessary;
- Real issue is inattentiveness of all users.

Respondents were also asked if there were other traffic issues. Comments included:

- There are no issues;
- Provide more safe crossing points on main roads;
- Slowing traffic on main arteries (i.e. Bulwer Street) will cause frustration and road rage;
- Increase ranger patrols and fine people parking on pavements;
- Traffic calming seems ad-hoc;
- Focus more on maintenance.

The Next Phase – Establishment of a Reference Group

If the Council decision is that the trial should proceed, a key recommendation from the Road Safety Commission is the establishment of a Reference Group, consisting of representatives of the following key stakeholders involved in Road Safety in Western Australia:

- Road Safety Commission;
- Main Roads Western Australia;
- Department of Fire and Emergency Services;
- Western Australian Local Government Association;
- Department of Transport;
- Western Australian Police Service; and
- Royal Automobile Club WA

Monash University Accident Research Centre (MUARC)

In addition to the above it is the Road Safety Commission's intention to engage MUARC to undertake an accredited research project of the trial to ensure that the reporting of the results is of a standard so that any data and recommendations can be applied with confidence across urban areas, albeit within the Perth Metropolitan area or regional centres.

CONSULTATION/ADVERTISING:

A comprehensive marketing plan was produced including the design and distribution of a leaflet, directing respondents to the City's online engagement portal (EHQ) to complete the survey. 8,000 leaflets were hand delivered to directly affected households and businesses in the trial area and 4,500 were posted to absentee property owners, advising of the survey. Although respondents were encouraged to complete the online survey, surveys could also be filled out over the phone or the counter at the Vincent Administration and Civic Centre

The survey period was marketed via the placement of display advertisements in the local papers; 4 vinyl banners placed and rotated around the City over 4 weeks; and the use of the City's digital marketing channels to promote the survey.

The Urban Mobility Advisory Group (UMAG) has been kept informed and consulted upon the trial and this project will be a standing item on the UMAG agenda.

LEGAL/POLICY:

Nil.

RISK MANAGEMENT IMPLICATIONS:

Low: The risk to the community is considered low as the proposal should lead to reduced traffic speeds and provide a safer environment.

STRATEGIC IMPLICATIONS:

In accordance with the City's *Strategic Plan 2013-2023*, Objective 1 states:

"Natural and Built Environment

1.1: Improve and maintain the natural and built environment and infrastructure

*1.1.5 Take action to improve transport and parking in the City and mitigate the effects of traffic.
(d) Promote alternative methods of transport."*

SUSTAINABILITY IMPLICATIONS:

Lowering of speed limits on roads would result in reduced pollution and improved safety for all users.

FINANCIAL/BUDGET IMPLICATIONS:

The Council has allocated \$150,000 in the 2018/19 budget.

Main Roads WA are preparing a revised estimate based upon minimising the regulatory signage and line-marking required while ensuring that it complies and is enforceable. Earlier estimates to install new signage and line marking within the trial area was \$150,000.

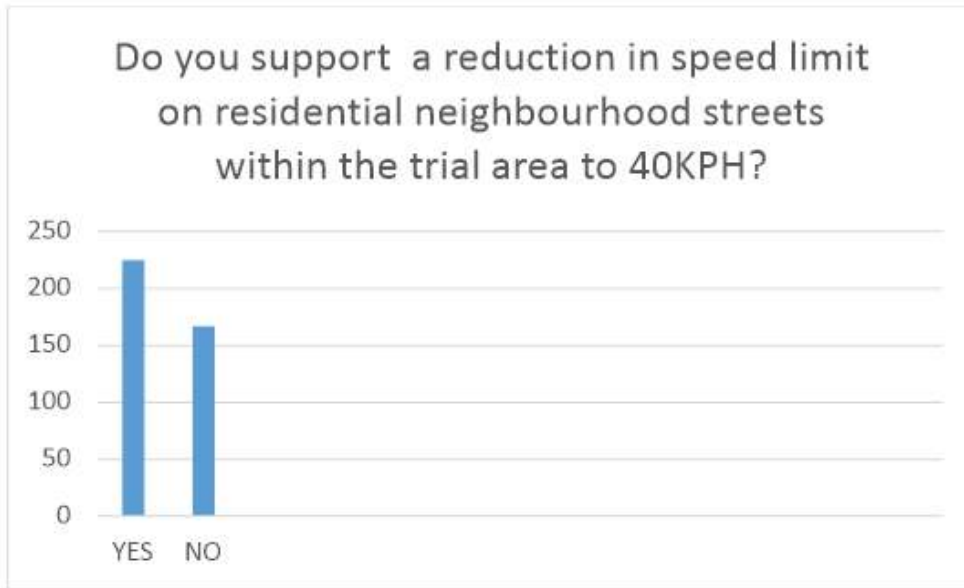
COMMENTS:

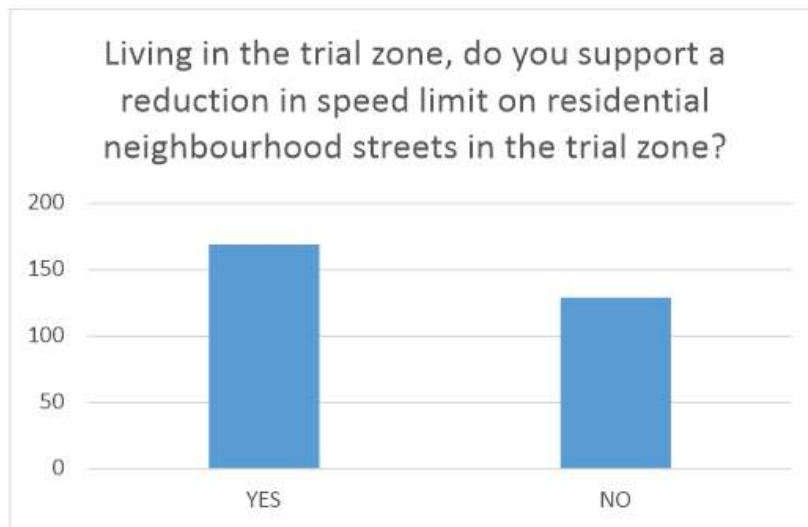
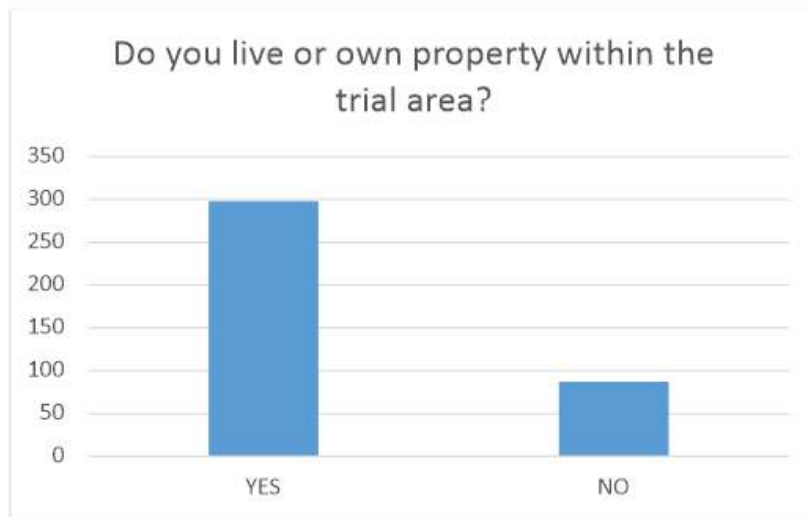
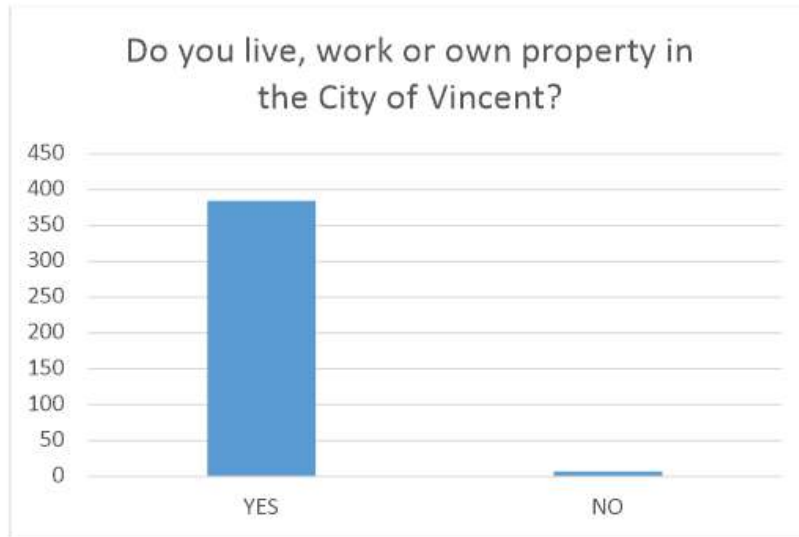
The City has undertaken extensive consultation with the Vincent community to gauge the level of support for the trial of a 40km/h speed zone on local streets, in the south portion of the City in the area bounded by Charles, Vincent, Beaufort, and Walcott Streets, Guildford Road, Stanley and Mitchell Streets, Graham Farmer Freeway and Newcastle Street.

A total of 392 responses were received. 298 (76%) of all respondents live or own property within the proposed trial area. Of these respondents, 169 (57%) supported the trial and 129 (43%) did not.

Therefore, in light of the above results it is recommended that Council support the 40km/h Speed Zone Trial and approve the establishment of a Reference Group as the next step in the journey.

40 KPH SPEED ZONE TRIAL – Collated Results of Survey (4/8 – 5/9/18)







In the City of Vincent, we're all about making our inner city neighbourhoods feel welcoming. Streets where people can walk and ride safely, where kids can play and neighbours can spend more time outdoors getting to know each other and add to our sense of community.

Residents regularly tell me that they are concerned about the speed of traffic on their streets and the impact on their daily lives. More and more, I am hearing that 50 is too fast on our residential roads, that rat running is a major concern and that car and truck traffic is increasing. Existing research shows that lowered speed limits make streets safer for all road users - drivers, pedestrians and cyclists - but slower speeds also contribute to more active and connected communities.

Research has also found that reduced speed limits are better for the environment with less fuel consumption and noise. At the same time, slower speeds only have a minor impact on average journey times.

The proposed trial is for 24 months and presents a great opportunity to further research lower residential speed zones and test the benefits right here in Vincent.

The trial 40km/h zone would apply to all residential streets from Charles Street in the west through to the Swan River in the east between Newcastle and Vincent Streets, with the key corridor roads remaining unchanged. The focus is on enhancing neighbourhood life, whilst not hindering traffic flow on major roads.

With your support, we hope to start the trial early in 2019. Please tell us what you think!

Emma Cole
Mayor



40KM/H SPEED ZONE TRIAL

have your say

CITY OF VINCENT

WHAT HAPPENS NEXT?

After the survey closes on 5 September we will review the responses received and the results put to Council to decide whether to proceed with the trial.

If the trial proceeds then we will implement the speed zone changes early next year with the installation of 40km/h signage in the affected areas.

For more information visit imagine.vincent.wa.gov.au

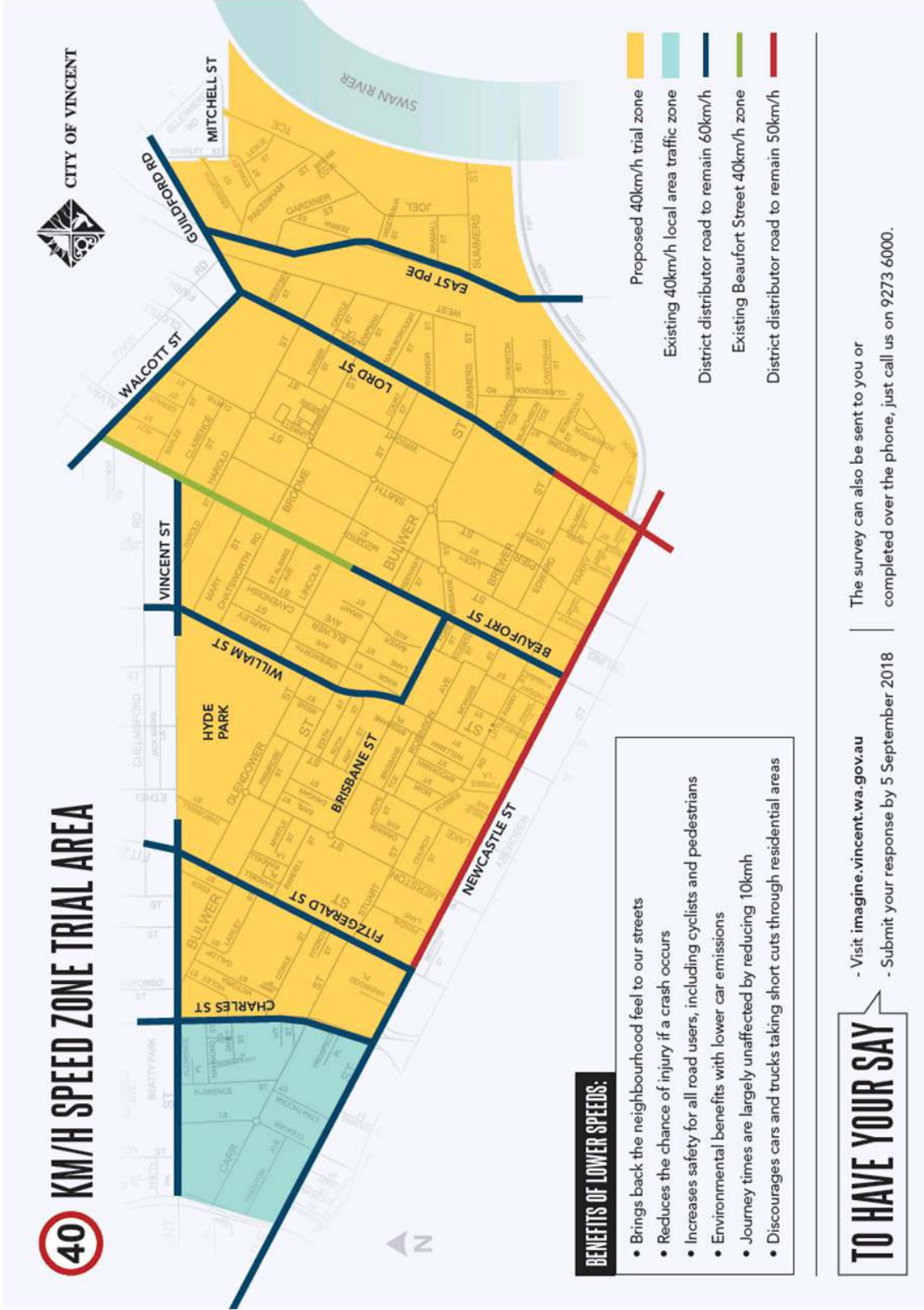
This document is available in other formats and languages upon request

Administration & Civic Centre

Email: mail@vincent.wa.gov.au
 Phone: 9273 6000
 Address: 244 Vincent Street, Leederville,
 Western Australia, 6007

VINCENT.WA.GOV.AU

◆ @CityofVincent ◆ @CityofVincent ◆ @CityofVincent ◆ @CityofVincent



40 KM/H SPEED ZONE TRIAL AREA



BENEFITS OF LOWER SPEEDS:

- Brings back the neighbourhood feel to our streets
- Reduces the chance of injury if a crash occurs
- Increases safety for all road users, including cyclists and pedestrians
- Environmental benefits with lower car emissions
- Journey times are largely unaffected by reducing 10kmh
- Discourages cars and trucks taking short cuts through residential areas

- Proposed 40km/h trial zone
- Existing 40km/h local area traffic zone
- District distributor road to remain 60km/h
- Existing Beaufort Street 40km/h zone
- District distributor road to remain 50km/h

TO HAVE YOUR SAY

- Visit imagine.vincent.wa.gov.au
 - Submit your response by 5 September 2018

The survey can also be sent to you or
 completed over the phone, just call us on 9273 6000.

40km/hour Speed Zone Trial

The City of Vincent

40km/h speed zone trial

Tell us if you support the proposed speed zone trial by answering a few simple questions prior to 5pm, 5 September 2018.

Do you support the 40km/h speed zone trial on local roads to measure the effect of slower speeds in urban areas? (Choose any one option) (Required)

- Yes
 No

Answer this question only if you have chosen Yes for Do you support the 40km/h speed zone trial on local roads to measure the effect of slower speeds in urban areas?

What were your reasons for supporting the trial? (Choose all that apply)

- Safer streets for all road users including pedestrians and cyclists
 Bring back a neighbourhood feel to our suburbs
 Environmental benefits
 Reduce likelihood of trauma in a road accident
 Deter people taking short cuts through neighbourhood streets

Answer this question only if you have chosen No for Do you support the 40km/h speed zone trial on local roads to measure the effect of slower speeds in urban areas?

What were your reasons for not supporting the trial? (Choose all that apply)

- I think speed limits are fine
 I'm concerned about travel times, despite the research showing they are largely unaffected
 Other reasons

What is your street address?

What is your postcode? (Required)

Do you live in the trial area or own property there? (Choose any one option)

- Yes, I live at the property listed above
 Yes, I own property in the trial area
 No

40km/hour Speed Zone Trial

The City of Vincent

Answer this question only if you have chosen Yes, I own property in the trial area for Do you live in the trial area or own property there?

What is the street address?

Would you consider a 30 kmh limit? (Choose any one option)

- Yes
- No
- Not sure

Rather than a trial, should the urban speed limit across Perth be reduced to 40 kph now in urban (local streets, not main distributors) streets? (Choose any one option)

- Yes
- No
- Not sure

Are you likely to use your car less, and walk or ride more, for local trips during the trial? (Choose any one option)

- Yes
- No
- Not sure

Do you have any further comments to make?

40km/hour Speed Zone Trial

The City of Vincent

40km/hour Speed Zone Trial

Please share your thoughts about the proposed speed zone trial by answering these few simple questions before 5:00pm Wednesday 5 September 2018.

1) Do you live, work or own property in Vincent? (Choose all that apply) (Required)

- Live
 Work
 Own property

2) Please let us know your Suburb (Required)

3) Please let us know your street

4) Are you within the trial area (bounded by Charles/Vincent/Newcastle Streets and the Swan River)? (Choose any one option) (Required)

- Yes
 No

5) Do you believe any of the following traffic issues need to be addressed in the City of Vincent? (Choose all that apply) (Required)

- Rat running (short cuts through residential streets)
 Speeding on residential streets
 Traffic congestion and volume on residential streets
 Increasing safety for all road users (including pedestrian and cyclists)
 Drivers not following road rules
 Other (please specify)

Answer this question only if you have chosen Other (please specify) for 5) Do you believe any of the following traffic issues need to be addressed in the City of Vincent?

Please provide a short description of the other traffic issues that you believe need to be addressed

6) What would be your preferred speed limit on residential neighbourhood streets across the City of Vincent? (Choose any one option) (Required)

- No change - 50km/h
 40 km/h
 30 km/h

40km/hour Speed Zone Trial

The City of Vincent

7) Do you support a change in the speed limit on residential neighbourhood streets in the trial area to 40kph? (Choose any one option) (Required)

- Yes
- No

Answer this question only if you have chosen Yes for 7) Do you support a change in the speed limit on residential neighbourhood streets in the trial area to 40kph?

What best describes your reasons for supporting the 40km/h trial? (Choose all that apply) (Required)

- Safer streets for all road users
- Reduction in likelihood of trauma in a road accident
- Environmental benefits of less noise and fuel consumption
- Enhance the neighbourhood feel of our suburbs
- Deter people taking short cuts through residential streets
- More likely to walk or ride than take car
- More likely for children to walk or ride to school
- Other (please specify)

Answer this question only if you have chosen Other (please specify) for What best describes your reasons for supporting the 40km/h trial?

For what other reasons do you support the 40km/h trial?

Answer this question only if you have chosen No for 7) Do you support a change in the speed limit on residential neighbourhood streets in the trial area to 40kph?

What best describes your reasons for not supporting the 40km/h trial? (Choose all that apply) (Required)

- The speed limit on local roads is appropriate
- Impact on traffic flow
- Drivers should adhere to current speed limit
- Concerns over lack of enforcement
- Would prefer speed humps or traffic calming be installed
- Other (please specify)

Answer this question only if you have chosen Other (please specify) for What best describes your reasons for not supporting the 40km/h trial?

For what other reasons do you not support the 40km/h trial?

40km/hour Speed Zone Trial

The City of Vincent

8) Please rank from 1 to 5 the following measures to improve safety and amenity of residential streets (with 1 being your highest priority and 5 being your lowest priority) (Rank each option) (Required)

- Lower speed limit of residential streets
- Speed humps or other traffic calming measures
- Better cycling and pedestrian infrastructure
- Increase and improve sign positing of speed limits
- Greater police enforcement.

9) Do you have any other comments?

Summary of Submissions:

The tables below summarise the comments received during the advertising period of the proposal. Many comments are subjective or self-explanatory and therefore Officer Technical comments not warranted in this instance.

Comments Received in Objection:
Waste of rate payers money – I avoid Beaufort St for this reason
Will not address issue – needs to be policed and target problem drivers
Comprehensive whole area traffic management is needed
Already enough speed humps/traffic calming throughout the City
No demonstrated crash, death and serious injury problem.
There is no problem
Rat running is a result of traffic calming on major roads
There is no lack of neighbourhood feel – roads are not built for people to play on.
Real issue is people not paying attention while driving
Driving cars in lower gears actually increases fuel emissions
Excessive numbers of parked cars in our streets already slows traffic
Investigate other measures to reduce speed rather than just signs
Is just a revenue raising agenda
Trial only looks at speed and does not discourage rat running – review of the road hierarchy needed so as there are 60kph connecting roads
Improve the traffic flow through the main arteries of the city instead

Comments Received in Support:
Reduce width of some streets (include a cycle lane if possible)
On heavily parked streets (ie Raglan), make all four way intersections regulated by Stop controls
Extend to other areas not just the south of Vincent
Vincent has many narrow streets with on-street parking where people speed
Just spending on signs would be cheaper than installing infrastructure
Car noise is reduced when cars travel more slowly

Other Traffic Issues

Issue Raised:
There is no issue
Homeless people keep walking out in front of moving cars
Heavy vehicles, parking on footpaths, construction traffic behaviour, non-resident parking, buses on 'timing' stops.
More safe crossing points for families near pre-primary/kindergarten & day-care centres.
Roads in poor condition and congested – mismanaged and poor parking design
Only allow single side parking on narrow roads as sightlines are impacted
Stop cyclists from riding two abreast
Don't narrow lanes on major roads such as Vincent at Hyde Park as it does not allow for cars to overtake cyclists.
Parking too close to intersections and across footpaths
Inattention – mobile phone usage by pedestrians, drivers etc.
Ensure local streets are connected and that there is a provision of safe crossing facilities of major roads.
Assess local traffic flow in whole areas not just street by street.
Allow the left turn on a red light like in the USA.
Need zebra crossing or extra STOP lights on Beaufort St near Vincent and Mary streets
I live in a 40KMH zone but there is no policing
Regular accidents on cnr of Bulwer and Fitzgerald needs to be addressed
More bike paths
Rat racing is a big issue
Speeding on Fitzgerald Street – cars using bus lanes and aggressive drivers
Slowing traffic flow on main arteries such as Bulwer St results in frustration, road rage and rat running.
Parking on the left lane of main distributors such as Fitzgerald St represents an obstacle to traffic circulation at any hour of the day.
Bus lanes disrupt car traffic and reduce the overall carrying capacity of the road
Increase road widths to facilitate separation of cars and bicycles and remove all traffic
Increase Clearways to 7pm on main roads.
Allow only resident parking on small narrow streets.
Increase ranger patrols and fine people parking on pavements
Improve pedestrian safety on crossing Charles Street
Better maintenance of line marking
Parking in residential streets by commuters – leads to congestion and unsafe conditions.
Late night/early morning speeding
Parking restrictions not enforced by rangers
Speed limits are not 'one size fits all' – need different speeds for differing roads
Residential driveways where view of oncoming pedestrians on footpaths are obscured by high walls or fences.

Q 14 Other Comments

<p>Comment raised:</p> <p>Increase area of free bus zone or put on CAT buses and improve cycle paths</p> <p>Address pedestrian signal phasing cycles at the corner of Fitzgerald and Newcastle</p> <p>Reduce speed on Lord Street south of Walcott St and William Street between Vincent and Newcastle to provide for safer pedestrian crossings</p> <p>Focus on maintenance of roads, footpaths, building site fences, bin collection etc</p> <p>More consistency needed – why are sections of Lord St at 60kmh then at 50kmh?</p> <p>Some traffic calming seems ad-hoc – Brisbane St – humps between Lake and William but not Lake & Palmerston.</p> <p>Lobby to increase Police enforcement</p> <p>Improve/increase the number of pedestrian islands and safer crossings</p> <p>Improve pedestrian/cyclist infrastructure across Vincent, but especially in the North Perth town centre areas and at all major intersections.</p> <p>Install speed humps to achieve 40kmh, but ensure does not hinder cycle traffic</p> <p>East west connections should be at 50kmh.</p> <p>Speed humps increases wear on vehicles and often confused with pedestrian crossings</p> <p>Elma Street North Perth is a terrible rat-run route.</p> <p>Cars often speed on Joel Terrace</p> <p>Keep Bulwer at 60kmh as it is an major east west distributor</p> <p>Reduce speed to 30kmh on Amy/Brisbane Tce/Edith between Lake & William streets.</p> <p>Congestion in the area is a consequence of bus lanes on Fitzgerald Street</p> <p>Work with RAC, driving groups and schools to raise the level of driving skills.</p> <p>Council policy (residential development) has led to increased traffic. – narrowing roads, reducing traffic lanes, trees in roads speed bumps – this leads to congestion – not safe for any one.</p> <p>Please extend it to Walcott Street</p>
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Road Safety Commission

40km/h Review City of Vincent

12 Month Trial Evaluation

June 2020

Executive Summary

Background

In April 2019, the City of Vincent, Road Safety Commission, WA Police, and Main Roads WA commenced a trial of a 40 kilometres per hour (km/h) local speed limit area in the southern section of the City of Vincent. Various quantitative and qualitative data was collected by the City of Vincent before and during the trial to support a formal evaluation.

GHD has been engaged by the Road Safety Commission to provide advice and monitoring of the data collection and research design, to undertake data analysis, and to evaluate the outcomes of the trial. This evaluation aims to consider a broad set of the outcomes of the trial, including both direct traffic and transport observations, and community perception of the potential local amenity and wellbeing outcomes associated with reduced posted local traffic speeds.

This evaluation seeks to assess the outcomes of the trial based on the **triangulation** of several sources of data, rather than any one data set or single result. Conclusions are drawn where multiple sources of data indicate a similar overall result (refer section 2).

This report summarises the results of the first twelve months of the trial. GHD also delivered a separate six-month report in February 2020, which contains broadly similar findings. Seasonal effects appear to have impacted on the six-month report.

This twelve-month report is subject to, and must be read in conjunction with, the limitations set out in Section 1 and the assumptions and qualifications contained throughout the report.

COVID-19 Pandemic

The twelve-month evaluation milestone data has been impacted by the COVID-19 Pandemic.

The specific impacts of COVID-19 on the evaluation is specifically addressed in section 2.4, and throughout the data analysis. Overall, most data was collected before the pandemic caused major changes in travel behaviour. Accordingly, **GHD believes that these trial results are valid and meaningful**, provided that any possible effects are considered in the analysis.

Vehicle Speeds

Based on the full set of evidence evaluated after twelve months of the trial, it appears that **the trial has resulted in some speed reduction effects**. Mean (average) vehicle speeds have reduced by about 1 km/h, or about 2.4%. The 85th percentile speed on trial roads has dropped by just over 1 km/h, or about 2.5%.

The reduction in average vehicle speeds is of a similar magnitude to the reduction seen with the introduction of the default 50 km/h limit in 2001 (section 3.1). The reduction is not as large as overall results generally seen in research internationally.

The number of vehicles observed at twelve months was comparable to the baseline, and no significant change was observed on distributor roads which were not subject to any change in speed limit.

Crash Prevention

After twelve months, crash records provided by Main Roads WA indicate that there **has been some crash reduction effect** on the trial roads.

This reduction coincides with a long-term decline in overall crashes within the City of Vincent. There was also a less substantial crash reduction in overall crashes within the control set of local roads (the northern part of the City of Vincent) not subject to the new limit.

The reduction in total crashes matches (triangulates) with the reductions in observed vehicle travel speeds, and aligns with established road safety theory. Therefore, **it is very likely that the 40 km/h limit would have long-term crash reduction benefits.**

The reduction in Killed and Seriously Injured (KSI) crashes was less in the trial area than in the control area. However, this finding is based on only three crash events (two in the trial area, one in the control roads). Therefore, this result is not statistically meaningful.

Results for crashes of different severity and road user types have been variable. The small size of the trial area means that single crash events can skew this data. Some of the crash data used in this evaluation was yet to be reviewed by Main Roads WA, and is therefore preliminary. Accordingly, future evaluation would be needed to substantiate the nature of the crash reduction more confidently.

Local Street Walking and Cycling

Significant increases in walking and cycling were observed at the four observation sites within the City of Vincent. **A total of 14% more pedestrians and cyclists were observed in the twelve month surveys**, compared to the February 2019 baseline.

The total number of cyclists also increased at twelve months. The percentage of all cyclists who were observed cycling on the road surface (rather than on footpaths) also increased from 67% to 70%, suggesting **there may be a perceived safety benefit for cyclists**. There were some differences between the four sites. The timing of these surveys was largely before the most significant disruption effects of the COVID-19 lockdown.

School representatives and crossing wardens interviewed for this evaluation also spoke of **benefits for children's' safety travelling to school** (section 3.5). However, these interviews indicate that increased awareness-raising measures beyond the immediate school zone could be beneficial.

Resident Perceptions

Residents surveyed expressed mixed overall responses about the trial. Overall, responses at twelve months were varied among the 151 resident surveys completed.

When asked directly about the trial, there was a reasonably even distribution of responses for questions concerning the potential safety and amenity benefits. This finding triangulates with the generally modest improvements in observed vehicle speed and pedestrian/cyclist count data.

Support for the trial appears to be lukewarm (section 3.4.5). While a small majority are unhappy with the lower limit, **there is not substantial or persistent opposition to the 40 km/h trial area among local residents. A majority of respondents surveyed at this twelve month milestone thought a 40 km/h limit could be useful in other areas.**

Indirect survey results indicate that residents are generally less concerned with road safety and local street amenity issues at this twelve-month milestone – further indicating benefits.

Open-ended comments about the trial mainly concerned:

- The perceived inappropriateness of the 40 km/h speed limit along Bulwer Street

- The perceived lack of compliance with the 40 km/h speed limit
- A perceived lack of enforcement
- A lack of awareness about the trial
- Confusion around signage for the trial

Survey respondents indicated that additional street design measures, signage, enforcement, and other awareness measures may improve compliance.

Conclusions

In view of all the above data, considering the triangulation of results, **the 40 km/h trial within the City of Vincent has resulted in some speed reduction and crash benefits. This result is in line with what would be expected based on previous research in this field.**

The evidence also suggests that **local street amenity has somewhat improved**. The increase in the total number of pedestrian and cyclists observed triangulates with the slight improvement in perceived street safety and amenity reported by respondents.

It is not possible to completely exclude the impacts of COVID-19 on these results. However, the triangulation of multiple sources of data (collected mostly before the pandemic) generally supports these findings.

Complementary street design, road user awareness, and enforcement measures to reinforce the 40 km/h speed limit may result in the realisation of a greater level of total benefits. If left in place, it is possible that vehicle speeds within the trial area would continue to mediate below the new limit – particularly if supporting measures are introduced. Future evaluation would be useful in assessing the longer-term effects and potential effectiveness of supporting measures.

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Appendices

Appendix A – References

1. Introduction

The 40 km/h trial took effect on all local roads within the southern part of the City of Vincent (broadly south of Vincent Street) on 29 April 2019. Distributor roads retained their existing posted limits, at either 50 km/h or 60 km/h. The two year trial is proposed to run until April 2021.

The spatial scope of the trial is illustrated in Figure 1-1 below.

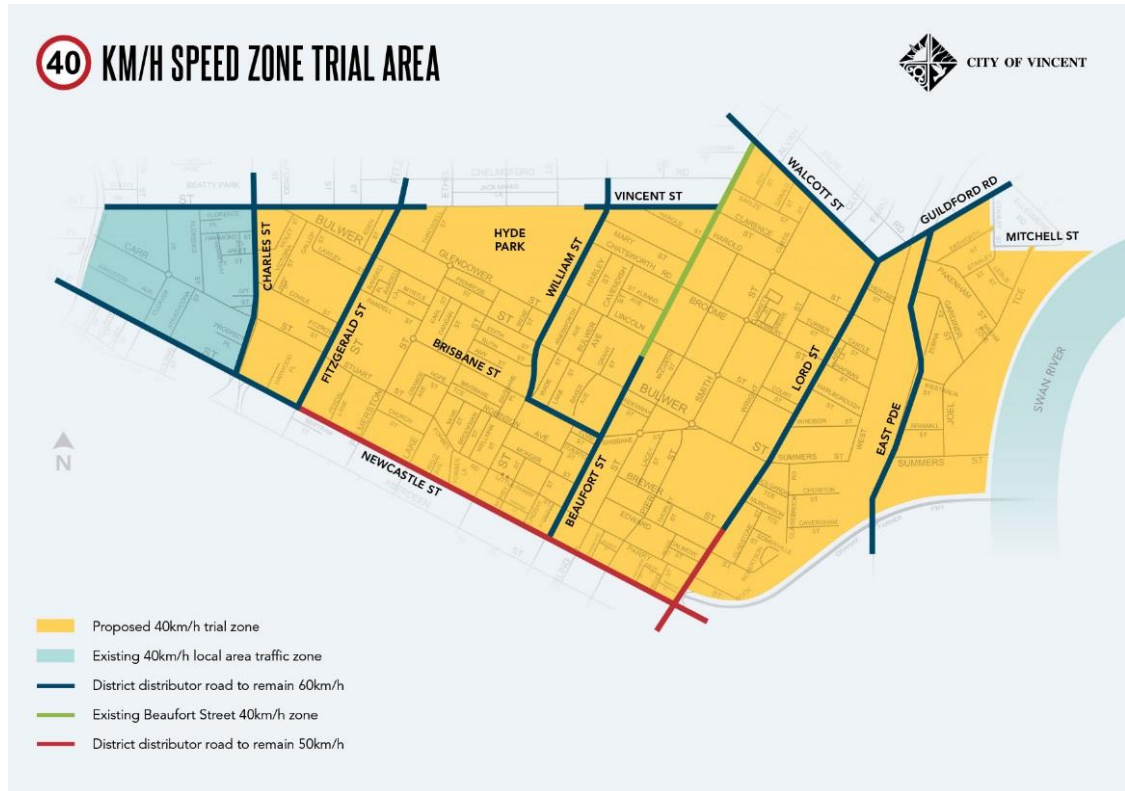


Figure 1-1: City of Vincent 40 km/h trial area

Other 40 km/h speed zone areas already exist within the City of Perth, the City of Fremantle, and some regional towns in Western Australia. The portion of the City of Vincent bounded by Newcastle Street, Loftus Street, Vincent Street, and Charles Street (the “Clever Precinct” – shown in blue at the left of Figure 1-1) also has an existing 40 km/h limit, instituted during the 2000s.

It should be noted that both William Street (between Newcastle Street and Brisbane Street) and Brisbane Street (between William Street and Beaufort Street) were converted to two-way operation on Sunday December 1, 2019.

1.1 Purpose, Scope, and Limitations of this Report

This report summarises the results of the study data provided to GHD for the baseline, six month, and twelve month trial milestones.

This report has been prepared by GHD for the Road Safety Commission and may only be used and relied on by the Road Safety Commission for the purpose agreed between GHD and the Road Safety Commission as set out in this report. The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report. GHD otherwise disclaims responsibility to any person other than the Road Safety Commission arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

This report is based upon data provided to GHD by the City of Vincent, Road Safety Commission, and third party contractors. GHD has prepared this report on the basis of information provided to GHD by the City of Vincent, the Road Safety Commission and others. GHD has not independently verified or checked this information beyond the agreed scope of work.

It should be noted that potential additional benefits arising from the trial (such as reduced traffic noise) for which data was not collected have not been evaluated. Accounting for these benefits could result in some variance in the overall efficacy of the trial.

GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

1.2 Acknowledgements

Data in this report has been collated and provided by the City of Vincent, Main Roads WA, and other agencies involved in the 40 km/h Trial Area Working Group. GHD would like to acknowledge all members of the Working Group for their assistance through the trial evaluation. GHD would like to thank Main Roads WA for providing the traffic trend and pre-release crash data that has been used in this report.

2. Research Approach

This research has been undertaken as a longitudinal (through time) study of the conditions which occurred before and during the trial.

This evaluation has employed a mixed-methods approach, gathering several different sources of information to investigate a broad range of possible effects resulting from the introduction of the trial 40 km/h area speed limit.

A mixed-methods case study research approach is based upon developing understanding through capturing and *triangulating* (matching findings and themes from) many different sources of data (Yin 2011, p. 14; MacCallum, Babb, and Curtis 2019, p. 46). In a mixed-methods research approach, conclusions are drawn based on patterns indicated across several sources of data, rather than from any single dataset. No definitive conclusion should be drawn from any single data point within this report; conclusions should only be drawn based on results which align from the analysis of several sources of data.

Where applicable, control datasets have been used to compare results within the trial area to results for similar locations which did not have a change in speed limit. The use of such controls helps to identify broader trends which may be occurring irrespective of the trial speed limit.

2.1 Research Context

This research has been informed by a review of similar evaluations and empirical assessments undertaken previously in Australia and internationally. Research strongly indicates that urban speed limits are an effective and cost-efficient mechanism to reduce fatalities and injuries occurring due to traffic crashes (Archer et al. 2008; Elvik et al. 2009a).

Evidence from other locations indicates that reductions in vehicle speeds on local roads may also result in reductions of traffic noise, and can promote walking and cycling, which have clear flow-on health, wellbeing, social, and economic benefits (Box and Bayliss 2012; James et al. 2014). The impacts of noise and air pollution resulting from traffic also reach minimal levels at a speed of 40 km/h (Elvik 2009b, p. 37). Reducing local speed limits typically has a negligible effect on journey times, particularly because small variations in trip time associated with travel on local roads at the start and end of journeys are not perceptible or significant when considered in the frame of whole trips (Haworth et al. 2001).

It is important to note that previous research suggests that, when speed limits are lowered, the actual travel speeds tend to decrease, but less than the full reduction in the speed limit. Evidence collected across countries generally indicates that a reduction of posted speed limit of 10 km/h results in travel speeds decreasing by less than 10 km/h – typically about 3-4 km/h (OECD/ECMT 2006, p. 100).

In addition to assessing quantitative transport activity data, qualitative data about resident perceptions is also a critical component of this study.

2.2 Research Design

Quantitative (traffic and road user activity data) and qualitative (attitudinal survey) data has been collected in regularly scheduled phases during the pre-trial (“ex ante”) and trial (“ex post”). The data collection in the pre-trial and trial periods has been consistent, and is explained below.

2.2.1 Quantitative – Crash Data

Crash data has been retrieved from the Main Roads WA crash database. Because the evaluation for the trial periods is occurring before the scheduled usual release of the data, specific extracts have been provided directly by Main Roads WA.

Crash data for a calendar year is reviewed and corrected during March and April of the following year. Therefore, **crash data released to GHD before these correction milestones may contain duplicates and other erroneous records which misrepresent crash risk**. Generally speaking, this dataset – often with uncorrected duplicate records, such as multiple reports made by multiple parties in a single crash – overstate recent crashes, making recent crash incidence appear worse than actual. GHD has not verified or filtered the crash data for these effects.

Crashes for a relatively small area across a short time frame may be impacted by “small number” effects. This means that the occurrence of a single crash (such as a non-frequent high severity crash) during the trial period may have an extreme weighting on the results, even though the underlying level of risk may have been reduced. Accordingly, analysis of crashes has been made by assessing the aggregate results for the baseline and trial periods.

Because actual travel speeds and crash risk is very closely correlated (see Jurewicz and Turner 2011, and Elvik 2009b), the change in overall vehicle speeds should also indicate the relative change in overall crash risk, assuming that no other factors have changed.

2.2.2 Quantitative – Active Transport Video Survey Data

The City of Vincent has commissioned an experienced video surveying provider to undertake counts of pedestrians and cyclists (“active transport” users) at four sites within the trial area (Table 2-1). Three of these sites are located in close proximity to the City’s usual traffic count sites (see section 2.2.3 below), such that the data can be compared for analysis.

Table 2-1: Pedestrian and cyclist count sites

Site	Location	Intersection Type and Context	Nearby Traffic Count Site	Other Notes
Site One	Palmerston Street and Randell Street	Local T-junction with speed cushions on both streets, corner of Robertson Park.	Palmerston Street between Myrtle and Randell Streets (<50 m)	-
Site Two	William Street and Lincoln Street	T-junction terminus of Lincoln Street. Bakery on corner. Hyde Park opposite William Street	William Street between Lincoln Street and Chatsworth Road (<200 m)	William Street at this location (north of Brisbane Street) remains 60 km/h
Site Three	Vincent Street and Throssell Street and Ethel Street	Two closely-spaced T-junctions on Vincent Street. Corner of Hyde Park. Nearby traffic cushions on Vincent Street.	Vincent Street between Ethel Street and Norfolk Street (<200 m)	60 km/h limit resumes approximately 100 m west of Throssell Street.
Site Four	Bulwer Street and Smith Street	Single lane roundabout with nearby T-junction approx. 30 m south on Brisbane Street. Corner of Perth Oval/nib Stadium. Protected bicycling lanes exist along Bulwer Street.	Bulwer Street between Lord and Wright Street (>150 m). Considered too far from this site to be representative.	

Each site has been video surveyed for twelve hours (0700 – 1900) on the Tuesday, Wednesday, Saturday and Sunday of a single week for each data collection round. Therefore, there are 16 days of twelve hour observations for each data collection round, which have been manually observed and tallied. There are approximately 24,000 observed active transport movements in the baseline data set.

These locations were selected by the City of Vincent, Main Roads WA and the Road Safety Commission prior to the appointment of GHD. The selected sample provides a useful snapshot of daytime pedestrian and cyclist activity within the trial area. No control sites were selected for this analysis.

No suitable other control group has been identified for this evaluation. While activity on the Principal Shared Path (PSP) network was considered as a potential control, it was assessed that PSP counts are likely to be too sensitive to other local factors. Unfortunately, there is not a comparable public data source for pedestrian and cyclist activity which is directly comparable to the video surveys commissioned by the City of Vincent.

Observations have been pooled to daily totals and averages for analysis, using Excel formulae to draw total values from the various original workbooks provided by the City.

Any effects of weather have not been controlled for, but reported conditions on each sampled day are reported with the results (section 3.2).

2.2.3 Quantitative – Traffic (Vehicle Count) Data

The City of Vincent routinely captures traffic data at sites listed in Table 2-2, which have been surveyed around the time of the data collection periods.

Table 2-2: Traffic count data sites

Sample	Road	Location (between/near these side streets)
Within 40 km/h trial area	Brisbane St	Dangan-Lake
	Brisbane St	Lane-Lindsay
	Bulwer St	Fitzgerald-Palmerston
	Bulwer St	Lord-Wright
	Carr St	Charles-Fitzgerald
	Harold St	Smith-Wright
	Joel Tce	Bream Cove-Gardiner
	Mary St	Beaufort-William
	Palmerston St	Myrtle-Randell
	Pier St	Brewer-Edward
	Smith St	Broome-Lincoln
	Summers St	Claisebrook-West
	Vincent St	Ethel-Norfolk
William St	Monger-Robinson	
Distributor Roads not subject to trial 40 km/h limit	Fitzgerald St	Cowle-Randell N Bound
	Fitzgerald St	Cowle-Randell S Bound
	Lord St	Court-Marlborough N Bound
	Lord St	Court-Marlborough S Bound
	William St	Chatsworth-Lincoln N Bound
	William St	Chatsworth-Lincoln S Bound

Data was collected for a calendar week at each site, and is reported in the results section. For each data collection period, the City has provided summary statistics and access to the raw count files for analysis. This evaluation is based on aggregate statistics. There were about 551,000 total weekday vehicle movements observed in the baseline dataset.

These counts are based on pneumatic tube traffic counting technologies. These black rubber tube systems *may* detect cyclists travelling on the road, but are not generally designed for counting bicycle movements. We have assumed that all values reflect detection of vehicles.

Due to the week-long sample period, and the different specific weeks recorded at each site, the effects of weather or other atypical circumstances are not considered in our analysis of traffic counts. The effects of these will be negligible when data is analysed as part of the overall sample. The key data points from each site that are evaluated in this report are:

- Average Weekday Traffic (AWT) – the number of vehicles passing the survey point on a weekday
- Average (Mean) Speed – the average speed counting all observed vehicles
- 85th Percentile Speed. This is the speed that is exceeded by 15% of observed vehicles.

2.2.4 Qualitative – Attitudinal/Perception Surveys

A series of attitudinal surveys have been undertaken during the pre-trial period, and at intervals during the trial. These were collected through a targeted online survey hosted by the City of Vincent.

Respondents were recruited through letterbox drops within specific parts of the trial area. These locations were selected due to the specific conditions of each area (for instance, an area near a primary school was selected to identify results of the trial relating to school zones).

The pre-trial survey was conducted in April 2019, and the six-month survey was conducted in mid-November 2019. The November 2019 letter box recruitment strategy was a repeat of the April survey. The November survey also recruited responses by an email sent to participants of the first survey who provided their address for this purpose.

A twelve month survey was conducted during May 2020. This was a repeat of the six month survey, with some additional questions to assess travel behaviour change associated with the ongoing COVID-19 pandemic. The number of properties to which a flyer was delivered was also expanded, as the final evaluation sought to obtain a broad view from across the trial area. Respondents who provided email address details in previous surveys were also invited to complete this final survey.

The questionnaire design for the twelve month evaluation was also modified to reduce the impact of COVID-19 on attitudinal questions. This is explained further in section 3.4.4.

Prior to this evaluation process, the City of Vincent also undertook earlier surveys (in October 2018) to support the establishment of the trial. These results have also been considered through the qualitative analysis, though direct comparison between results is not possible due to differences in sampling and question design.

No control group was selected for this analysis, as only perceptions within the trial area are of interest, and as the baseline survey effectively serves as the benchmark for comparison of trial results.

The survey design for this evaluation is detailed further in GHD Memorandum *6138251-MEM-C_Vincent 40 km Survey Design*.

2.2.5 Qualitative – School Zones

The safety and amenity for children travelling to school is an important public policy issue, especially for encouraging routine walking and cycling. The potential safety and amenity benefits for children's travel to school associated with the trial 40 km/h area was identified as a point of interest for the Road Safety Commission.

Reduced speed areas, such as around schools, have been widely demonstrated to have safety benefits, especially when street design measures and posted speed limits are coordinated (Elvik et al. 2009, p. 455).

The trial 40 km/h area speed limit effectively means that 40 km/h school zones effectively apply across the entire day, and across a broader part of the local street network surrounding schools. In theory, this can extend the protective effects of the 40 km/h to people travelling around the school outside typical school zone times (for example, students involved in after-school activity).

The effects on safety and amenity resulting from a change from conventional school zones (within default 50 km/h local road networks) to a 40 km/h local road area are challenging to directly observe and evaluate. Accordingly, a qualitative research approach to understand perceived effects of the trial among key school community representatives was adopted.

On behalf of the Road Safety Commission, GHD requested phone or email interviews with School Traffic Wardens and representatives of the two primary schools located within the trial area. The interviews follow a short, semi-structured format. The WA Police Force facilitated contact for the interviews with traffic wardens, while GHD contacted school administrations directly.

These interviews were only conducted at the twelve month milestone, and are reported in section 3.5.

2.3 Research Limitations

This research, at the twelve month milestone, is limited by:

- The relatively short time trial period frame, which only encompasses one year of data. There are unique features of this period (including the COVID-19 pandemic, and other more typical seasonal changes, influences, and trends).
- The scale and geographical nature of the network level trial area. The trial area is relatively small when considered against the wider metropolitan area. The trial area street network is much more constrained than typical suburban road networks.
- Potential effects associated with the transition and adjustments in driver familiarity and habits. The twelve month period may reflect effects associated with adjustment which would not exist if the 40 km/h area had been continually operating/permanent.

Accordingly, GHD suggests that this evaluation process is repeated at the 24 month milestone, which is the scheduled data for the trial to conclude. This evaluation could also consider in more detail how findings of the evaluations could inform speed zoning beyond this 24 month mark.

2.4 Effects Associated with the COVID-19 Pandemic

The twelve month evaluation data collection has occurred during the outbreak of SARS-CoV-2 coronavirus, which results in COVID-19 disease. This round of data collection has occurred while the effects of the pandemic have acutely impacted upon the lives of residents of the Perth Metropolitan Area. Government measures to mitigate the spread of the coronavirus through physical distancing have impacted the trial area to a similar degree to urban locations across Australia.

The COVID-19 pandemic has seen extreme reductions in vehicle traffic and public transport patronage in cities globally. Pedestrian and cycling activity has generally increased, as social distancing and increased time spent at home has incentivised active transport as a form of physical exercise and recreation.

The travel behaviour change effects of the pandemic has generally coincided with this twelve month evaluation. The complexity of these effects (such as more people initially driving to avoid public transport before large scale transition to travel avoidance) means that single measures may not fully capture the timing of the pandemic. However, Google Mobility Trends data¹ has been published by Google for an international set of cities, which represents overall activity changes coinciding with the twelve month milestone. GHD has used this data to illustrate the magnitude of possible travel behaviour change, which can be compared to other cities within the international dataset.

Generally, it appears that travel behaviour changes are very defined commencing from the middle of March 2020 (Figure 2-1), with a corresponding increase in home-based activity. The timing of the data collection methods, as presented in Table 2-3, indicates that there may be different impacts on each dataset. Importantly, the traffic count dataset appears to have been mostly collected ahead of the impacts of COVID-19, while the resident perception survey was able to specifically address COVID-19 in the questions asked to the respondents.

Ultimately, while COVID-19 represents an unprecedented disruption in travel patterns and behaviours, the results of the twelve month datasets do still have relevance for the evaluation of the trial.

¹ See <https://www.google.com/covid19/mobility/>

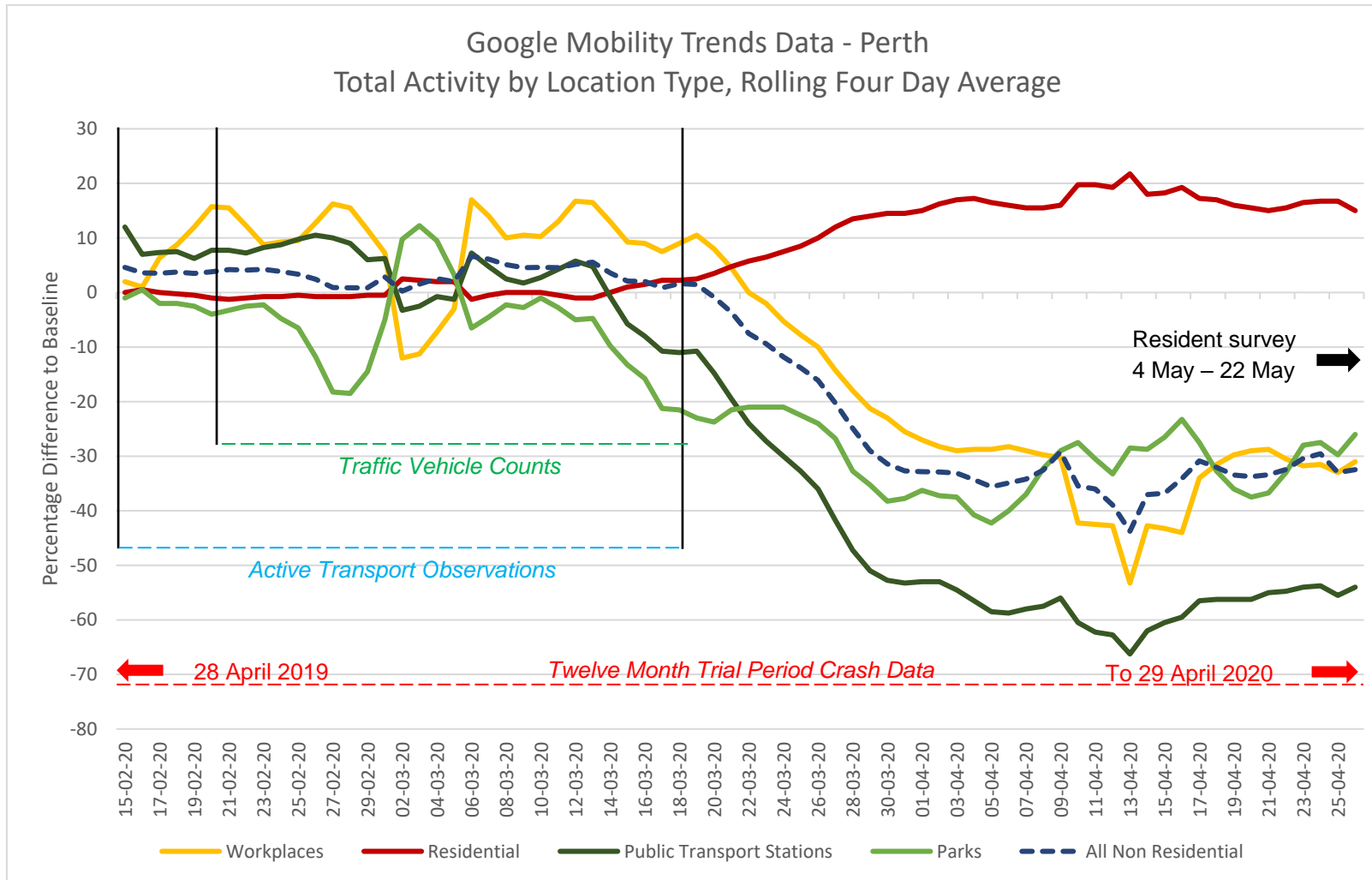


Figure 2-1: Google Mobility Trends Data - Perth Total Activity by Location Type, Rolling Four Day Average

Source: GHD Analysis of Google Data, original source: <https://www.google.com/covid19/mobility/>

Table 2-3: Effects associated with COVID-19 by twelve month evaluation dataset

Dataset	Date Collected	Changes to data Collection Process	Expected Magnitude of Effect
Crash Data (Section 3.1)	Requested 4 May – period is for 28 April 2019 to 29 April 2020.	No change in GHD evaluation process. Reporting and processing of crash statistics by crash involved parties, WA Police and Main Roads may be altered.	Changes in travel behaviour mainly occurred over the last six weeks of this evaluation period (Figure 2-1). However, reduced traffic volumes over these weeks may have complex impacts on crash risk and incidence. It should not be assumed that reduced traffic necessarily results in reduced risk. Crash incident occurrence rates during the pandemic have varied between cities globally.
Active Transport Observations (Section 3.2)	15 February – 18 March	No change in data collection process.	Later March traffic survey counts are more likely to be impacted more than February dates (refer section 3.2.2). However, it generally appears that these counts occurred just before the most substantial changes in travel patterns.
Traffic Vehicle Counts (Section 0)	20 February – 18 March	None – routine counting as conducted by the City of Vincent. Note that subsequent routine counts were cancelled.	Likely to be some impact, especially on counts during March, though these appear to be of small magnitude. The overall traffic volumes observed were comparable to the 2019 baseline.
Resident Perception Survey (Section 3.4)	4 May – 22 May	Revisions to survey working and questions to specifically define questions about travel over the past year <i>generally</i> . Addition of an open-ended question about specific impacts of COVID-19 to capture whatever respondents feel is notable about their travel in this period.	Likely to be some influence on results, even with revisions to questions to try to minimise these effects. Survey results should be evaluated with consideration of these possible impacts.

3. Results

This section presents a summary overview of the results of the trial.

All comparisons are between the data collected at the twelve month evaluation point and the pre-survey baseline, unless specifically stated.

Detailed interpretation and concluding analysis is provided in Section 4 of this report.

3.1 Crash Data

Crash data was provided by Main Roads WA. This data has been evaluated longitudinally, and compared between baseline and trial periods.

3.1.1 Reporting Effects and Limitations

As noted in section 2.2.1, crash data for a calendar year is reviewed and corrected during March and April of the following year. Therefore, **crash data released to GHD before these correction milestones may contain duplicates and other erroneous records which misrepresent crash risk**. Generally speaking, this dataset – often with uncorrected duplicate records, such as multiple reports made by multiple parties in a single crash – overstate recent crashes, making the trial period crash incidence appear **worse** than actual. GHD has not verified or filtered the crash data for these effects.

For the twelve month evaluation, crashes records for the period 1 January to 28 April 2020 are likely to have duplicates. These have not been adjusted by GHD.

Main Roads WA provided two sets of crash data:

1. A set of crash data for 1 January 2014 to 24 November 2019 was received in December 2019, and is reported in the Six Month Evaluation Report. The data for the trial period contained within this dataset has been superseded by the Twelve Month data detailed below. However, the baseline dataset of 27 April 2014 to 28 April 2019 has exclusively been taken from this dataset.
2. A set of crash data for 1 January 2015 to 30 April 2020 was received in May 2020. This data was used to develop 12 month trial period statistics.

It should be noted that some crashes reported for the six month trial period have been normalised in a way that changes the twelve month results. Example changes are noted below:

- Some duplicate crash records (i.e. for the same crash reported by multiple parties) have been removed, altering crash rates.
- The street name for some crashes changed, such that it transfers them from one subset to another. For instance, a crash reported for a minor local road, intersecting with a major road in the first dataset, was reclassified to be reported for the major road in the second issue of the data. Accordingly, the crash went from being included in the control group to an excluded distributor group, altering the control crash rate.

Owing to these differences, GHD recommends that a definitive re-analysis is completed after this one year data is reviewed and finalised by Main Roads WA in April 2021.

To allow for comparison of annualised rates, these crashes have been divided into time periods as per Table 3-1.

Table 3-1: Trial Time Periods

Time Period Subset	Notes
Pre_Baseline_Exclude	From 1-Jan-14 to 27-Apr-14 Before the baseline – discard, not reported
Baseline	From 27-Apr-14 to 28-Apr-19 Five year period – Baseline
Trial_0-6_Month	From 29-Apr-19 to 28-Oct-19 Six month period of the trial (reported in six month report and not in this document)
Trial_Year	From 29-Apr-19 to 29-Apr-20 Twelve month period of the trial, reported in this document.

All baseline crashes were converted to annualised crash rates. The crash rates were not adjusted per vehicle distance travelled, as no specific vehicle distance data is available.

To compare between the trial area and a suitable control group, roads within the City of Vincent were manually divided into categories relating to the trial as per Table 3-2. All crashes were assigned to only one subset.

Table 3-2: Trial Road Categories

Road Type Subset	Definition
Control	Local road outside trial area which retained existing limit (mostly default 50 km/h Built Up Area limit). This group provides a comparison to indicate broad changes which may have occurred irrespective of the trial.
Control Distributor	Distributor road outside trial area which retained existing limit (almost entirely 60 km/h posted arterial roads).
Excluded	Roads not appropriate for any other group, including Freeways, Freeway access ramps, Safe Active Streets, and Right Of Way roads (i.e. laneways and shared spaces). Brisbane Street was included in this group due to conversion to two way during the six month trial period. Crashes for these roads are still reported in “All Roads” categories.
Trial	Roads subject to the new 40 km/h speed limit, including sections of distributors where the limit was applied.
Trial Distributor	Distributor road within the trial area which retained an existing limit greater than 40 km/h (either 50 km/h or 60 km/h). Results for these roads have not been evaluated, but are included in the “All Roads” category.
All Roads	All of the above

Some “All Roads” totals presented in tables in the following section do not equal the sum of subset values, as not all subsets are presented.

Generally, crashes within the City of Vincent appear to have been slightly declining across the most recent five years of available data. This may reflect many factors, including changes in travel patterns and risk factors beyond speed limits and policy-specific road safety measures. For instance, if total vehicle distance travelled in Vincent has reduced, the rate of crashes would most likely decline, even if there had been no change in actual crash risk.

Analysis of seasonal (May to October) data, shown in Figure 3-1, illustrates what appears to be a general reduction in all crashes over the five year dataset.

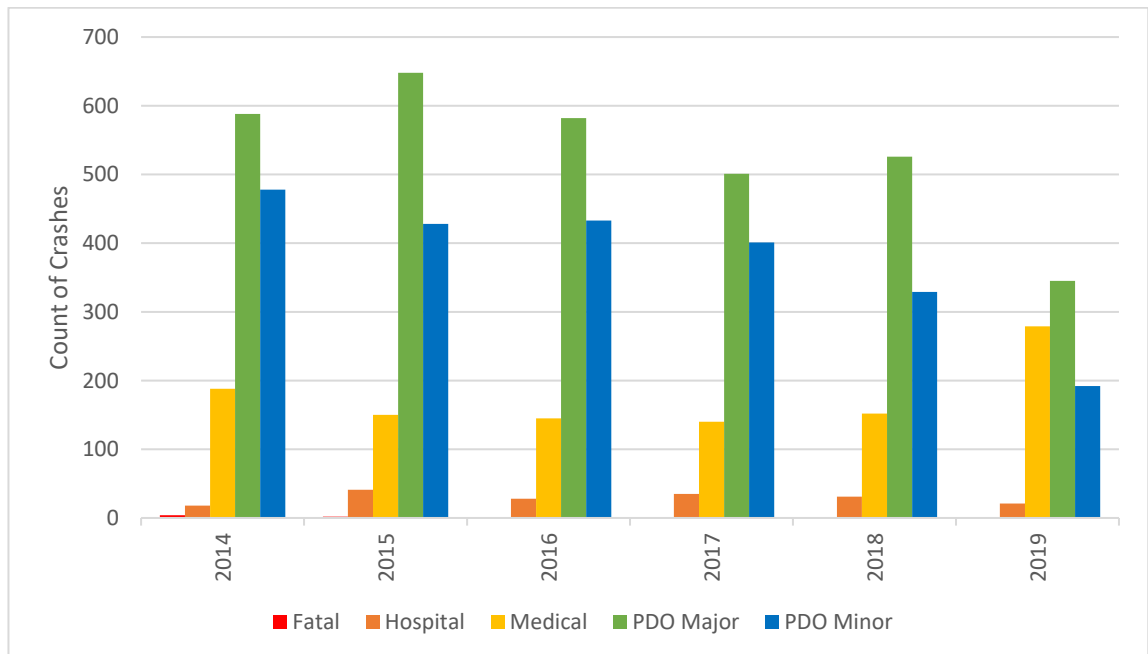


Figure 3-1: Seasonal Crashes in Vincent (Whole Local Government Area), by Severity, 2014 to 2019

The following sections present all data converted to annualised figures. Several limitations of this should be noted:

- As the trial year period is one year, and the baseline period is five years, the results for the trial period are more sensitive to individual crash events.
- The full year of the trial period also means that seasonal effects should be minimal. However, possible effect of the *introduction* of the trial (including changes in driver awareness or uncertainty about the applicable limit) may influence crash rates.

Where possible, results on the roads subject to the new 40 km/h limit have been compared with those on control local roads (roads in the City of Vincent which are subject to the default 50 km/h limit during both the baseline and trial periods.)

3.1.2 All Killed and Seriously Injured Crashes

A driving motivation for the trial is to prevent death and serious (permanent) injury resulting from crashes. Crashes in which any person is killed or seriously injured are referred to as KSI crashes. Based on Main Roads WA crash data, “Killed” crashes are those in which a person dies within 30 days of being involved in a crash. “Seriously Injured” crashes are generally those in which a person sustains injuries requiring hospitalisation. Medical crashes are generally those in which a person seeks treatment for injuries which are minor.

A total of 198 KSI crashes were reported during the baseline period (about 40 per year), and 26 during the first year of the trial period.

It should be noted that, as this data has been issued ahead of the usual review and publication process, crashes recorded for 2020 are subject to possible reclassification. Figures reported for 2019 in the six month evaluation have also been superseded by corrected data provided to GHD for this evaluation.

During the baseline time period, the trial and control roads had a similar annual rate of KSIs for all road users (Table 3-3). This is also true for the trial period, though total numbers are very small.

Table 3-3: Yearly Crash Rate - all KSI Crashes

Road Subset	Baseline	12 Month Trial Period	Change
Control Roads	5.6	1	-82%
Trial Roads	6	2	-67%
Distributor Roads (beyond trial area)	13.2	11	-17%
All Roads	39.6	26	-34%

During the twelve month trial period, the reported KSI crash rate for both trial roads and control roads has declined. However, the data for the trial period reflects only one to two crashes, which means that individual crash events have very significant impact on the calculated trend.

It appears that crashes on distributor roads have reduced less than crashes on local roads, suggesting that local roads (within and outside the trial area) have become safer during the trial period.

3.1.3 Vulnerable Road User KSI Crashes

Vulnerable Road Users (VRU) are those who are using travel modes which are most exposed to harm resulting from crashes. This category includes people walking and using wheelchairs, cyclists, motorcyclists, and people riding mopeds, small scooters, skateboards, etc. Reducing harm to VRUs is a key policy objective to support healthy active transport and recreation.

The annual KSI rate for VRUs was slightly higher for trial roads than control roads during the baseline period (total of 33 crashes), while it was higher for the trial roads during the trial period (two hospital severity crashes for the trial group and one for the control group). However, this difference is a single crash, which is not statistically indicative of a difference in risk.

This finding is inconclusive, but suggests that local roads across the City of Vincent were safer for VRUs during the first year of the 40 km/h trial. The effects of the trial for VRUs are not measurable with only one year of data. When figures for distributor roads beyond the trial area are analysed, a smaller improvement in VRU safety (23% crash reduction) is indicated by the data.

Table 3-4: Yearly Crash Rate - VRU KSI Crashes

Road Subset	Baseline	Twelve Month Trial Period	Change
Control Roads	3.4	1	-71%
Trial Roads	3.2	2	-38%
Distributor Roads (beyond trial area)	5.2	4	-23%
All Roads	14.2	12	-29%

3.1.4 All Medical Crashes

While prevention of KSI crashes is the main focus of road safety policy, medical crashes also represent a problem and cost for the public, and can indicate underlying risks which might result in KSI crashes.

Medical crashes (generally defined as those where a person seeks basic medical attention, such as with a General Practitioner) reported for all road users decreased for both trial and control roads between the baseline and twelve month period (Table 3-5). The trial roads only had one medical KSI reported for the twelve month period.

Table 3-5: Yearly Crash Rate - All Medical Crashes

Road Subset	Annual Baseline	Twelve Month Trial Period	Change
Control Roads	21.8	10	-54%
Trial Roads	12.8	1	-92%
Distributor Roads (beyond trial area)	66.6	59	-11%
All Roads	159.4	139	-25%
% on Trial Roads	37%	9.1%	N/A

3.1.5 All Crashes

Lastly, evaluating all crashes (for all road users and severity levels) provides the largest dataset to assess the potential impacts of the trial.

While Property Damage Only (PDO) crashes indicate road safety risks, it is important to acknowledge that road safety policy and practice now aims to reduce severe crashes, rather than Property Damage Only crashes. Crashes in which property is damaged but no persons are physically harmed are not the central focus of road safety measures. The prevention of harm to people is the primary aim of road safety policy.

The outcomes for all crashes, including KSI, Medical, and PDO crashes is shown in Table 3-6. The change for the trial roads and the control roads has been similar, with a slightly greater improvement among the trial area.

Table 3-6: All Crashes

Road Subset	Annual Baseline	Twelve Month Trial Period	Change
Control Roads	191	102	-47%
Trial Roads	157.4	71	-55%
Distributor Roads (beyond trial area)	449.4	265	-41%
All Roads	1365.4	837	-39%

3.1.6 Summary Finding

When viewed against the vehicle speed data, which indicates a slight reduction in vehicle speeds (see section 0), it appears that the trial limit has had some small protective effect in reducing road traffic crashes, with some possible reduction in severity. However, this has occurred over a period where crashes reported across the rest of the City of Vincent have also generally declined.

Based on this crash data, the evidence presented in the following subsections, and the broader evidence in the wider research literature, GHD concludes that the trial area has reduced crash

risk overall, in line with what would be expected based on the observed change in observed vehicle speed behaviour.

Since the trial area speed limit has not involved any other speed management countermeasures (such as street design changes, changes in enforcement, etc.), it is likely that use of these other countermeasures in conjunction with the 40 km/h speed limit would probably result in a stronger crash reduction effect. It should be noted that WA Police performed very limited enforcement of the 40 km/h speed limit during the twelve month trial period.

It should also be noted that corrections to the crash data for 2020, scheduled to be performed by Main Roads WA in April 2021, will probably alter the crash statistics for this period. If duplicates are removed or crashes reclassified to higher-order roads (refer 3.1.1), it is possible that the results for the trial period may indicate a stronger crash prevention benefit.

These preliminary findings are based on a single twelve month period. Ultimately, due to small number effects at twelve months, analysis over an extended time period is needed to more conclusively demonstrate the magnitude of the crash reduction benefits.

3.2 Active Transport Activity

This section reports on the pedestrian and cyclist observations undertaken for this study, both from the baseline and six month trial period.

3.2.1 Baseline

Baseline active transport activity surveys occurred in late March 2019. Weather conditions observed on these days is representative of typical March conditions, and is therefore not likely to have unduly influenced the survey results (Table 3-7).

Table 3-7: Baseline Active Transport Observation Survey Dates

Survey Day	Date	Weather Reported (BOM) ²		
		Min. °C	Max. °C	Rain
1	Tuesday, 26 th March 2019	14.8	34.0	None
2	Wednesday, 27 th March 2019	16.3	29.6	None
3	Saturday, 30 th March 2019	14.1	30.7	None
4	Sunday, 31 st March 2019	16.7	35.2	None
Trial Started	Monday, 29 th April 2019			

The total number of observed active transport users was 23,879. 19,381 pedestrians were observed – and 3,003 cyclists were counted riding on the road, with 1,495 riding not on the road (Table 3-8).

Saturday was less busy than the other days, mainly due to there being fewer pedestrians counted at sites two (William Street) and three (Vincent Street).

² Bureau of Meteorology, Perth WA Daily Weather Observations.
<http://www.bom.gov.au/climate/dwo/201903/html/IDCJDW6111.201903.shtml>

Table 3-8: Baseline Survey Totals for Each Day (Sum of all sites)

Total of all Sites	Tue	Wed	Sat	Sun	Mean	Total
Total Pedestrians	4,975	5,266	3,764	5,376	4,845	19,381
Total Cyclists (On-Road)	1,043	643	515	802	751	3,003
Total Cyclists (Off-Road)	405	646	191	253	374	1,495
Total Active Transport Road Users	6,423	6,555	4,470	6,431	5,970	23,879
% Cyclists On Road	72%	50%	73%	76%	68%	67%

Of all sites, William Street has the highest daily pedestrian count (1,810 per day), while Bulwer Street had the most cyclists (~ 400 per day, mostly on road). These results are summarised in Table 3-9.

Table 3-9: Baseline Site Totals (Daily averages, all days)

Daily Average Counts by Site	Site One Palmerston Street	Site Two William Street	Site Three Vincent Street	Site Four Bulwer Street	Mean
Total Pedestrians	973	1,810	917	1,146	1,211
Total Cyclists (On-Road)	194	128	115	314	188
Total Cyclists (Off-Road)	104	114	70	86	93
Total Active Transport Road Users	1,271	2,052	1,101	1,546	1,492
% Cyclist On Road	65%	53%	62%	78%	65%

3.2.1 Six Month Results

Please refer to the Six Month Evaluation Report (*6138251-REP-C_Evaluation Report - 6 Month*) for detailed commentary on the results observed at the six month milestone.

3.2.2 Twelve Month Results

The twelve month data collection period occurred twelve months after the baseline data collection period. This was one week before the full twelve months of the trial period had elapsed.

Weather on these survey days is broadly representative of typical late February conditions in Perth, with negligible rain on Saturday 22 February (Table 3-10).

The weather was also broadly similar to the baseline (refer section 3.2.1). Therefore, the weather for these days is not expected to have had a substantial impact upon results.

Table 3-10: Twelve Month Active Transport Observation Survey Dates

Survey Day	Date	Sites Surveyed	Weather Reported (BOM)		
			Min. °C	Max. °C	Rain mm
1	Saturday, 15 th February 2020	One, Four	22.3	25.6	None
2	Sunday, 16 th February 2020	One, Four	18.0	26.3	None
3	Tuesday, 18 th February 2020	One, Two, Four	16.9	33.5	None
4	Wednesday, 19 th February 2020	One, Two, Four	22.1	36.2	None
5	Saturday, 22 nd February 2020	Two	20.1	27.7	1.0
6	Sunday, 23 rd February 2020	Two	19.6	33.5	None
7	Tuesday, 3 rd March 2020	Three	15.0	32.6	None
8	Wednesday, 4 th March 2020	Three	13.7	33.7	None
9	Saturday, 7 th March 2020	Three	20.5	26.8	None
10	Sunday, 8 th March 2020	Three	17.6	30.3	None
Twelve month milestone	Tuesday, 28 th April 2020				

As discussed in section 2.4, the later survey dates coincide with the early effects of the COVID-19 pandemic, particularly for Site Three. However, these surveys were conducted ahead of the largest travel behaviour change effects (occurring from roughly 15 March onward), as shown in the Google Mobility Trends Data in Figure 2-1.

Data for Sites One, Two, and Four may be impacted by initial behaviour changes associated with the COVID-19 pandemic, before widespread social distancing arrangements had been implemented. Therefore, this data may be indicative (but not necessarily definitive) for how the trial may have impacted participation in walking and cycling.

For the purposes of analysis, data taken on the same days of the week on different individual dates (i.e. data collected on both Tuesday dates) have been aggregated.

Vehicle count sites near Sites One and Three have similar traffic volumes observed between baseline and the twelve month data collection, with observed reductions in mean and 85th percentile speeds for vehicles (Table 3-11).

Table 3-11: Measured Traffic Speeds near Active Transport Observation Survey Sites

Site	Nearby Traffic Count Site	Baseline			Six Months			Twelve Months			% Change (Baseline – 12 Month)		
		Average Weekday Traffic	Ave Speed	85% Speed	Average Weekday Traffic	Ave Speed	85% Speed	Average Weekday Traffic	Ave Speed	85% Speed	Average Weekday Traffic	Ave Speed	85% Speed
Site One	Palmerston Street between Myrtle and Randell Streets (<50 m)	2,786	29.1	36.5	2,617	29.6	36.7	2,659	28.7	36.0	-5%	-1%	-1%
Site Two	William Street between Lincoln Street and Chatsworth Road (<200 m)	Not subject to new limit (remains 60 km/h)											
Site Three	Vincent Street between Ethel Street and Norfolk Street (<200 m)	11,597	45.2	52	10,861	44.9	51.5	11,499	41.2	49.7	-1%	-9%	-4%
Site Four	Bulwer Street between Lord and Wright Street (>150 m)	Survey locations considered too far apart to be cross-referenced											

Pink shading indicates vehicle speed increases from baseline or above the applicable legal speed limit, green indicates a reduction.

The total number of observed active transport users was 27,418 (Table 3-12), an increase on both the March 2019 baseline (23,879) and October 2019 Six Month counts (23,181). The increase between the total number of pedestrians and cyclists between the baseline and twelve month surveys was 14.8% (an additional 3,539 observations). A total of 22,678 pedestrians were observed, while 3,340 cyclists were counted riding on the road, with 1,400 riding not on the road (Table 3-12).

Table 3-12: Twelve Month Survey Totals for Each Day (sum of all sites)

Total of all Sites	Tue	Wed	Sat	Sun	Mean	Total
Total Pedestrians	7,874	5,599	4,721	4,484	5,670	22,678
Total Cyclists (On-Road)	685	751	1,038	866	835	3,340
Total Cyclists (Off-Road)	356	272	385	387	350	1,400
Total Active Transport Road Users Observed	8,915	6,622	6,144	5,737	6,855	27,418
% Cyclists On Road	66%	73%	73%	69%	70%	70%

Of all sites, William Street again had the greatest daily pedestrian count (1,939 per day), while Bulwer Street again had the most cyclists (415 per day, mostly on road). These results are summarised in Table 3-13 below.

Table 3-13: Baseline Site Totals (Daily averages, all days)

Daily Average Counts by Site	Site 1 Palmerston Street	Site 2 William Street	Site 3 Vincent Street	Site 4 Bulwer Street	Mean
Total Pedestrians	1,147	1,939	889	1,695	1,417
Total Cyclists (On-Road)	260	138	142	295	209
Total Cyclists (Off-Road)	41	121	69	119	88
Total Active Transport Road Users	1,448	2,198	1,100	2,109	1,714
% Cyclist On Road	86%	53%	67%	71%	70%

When compared with the baseline, we see a significant increase (~15%) in overall active transport at the four sites. There is some reduction in cycling off the road, which is more than offset by increased on-road cycling. 17% more pedestrians were counted overall. Counts by days of the week appear to show an overall general increase, with some quite erratic variations (Table 3-14, overleaf).

Table 3-14: Site Totals Compared to Baseline

Total of all Sites	Tue		Wed		Sat		Sun		Total	
	n	%	n	%	n	%	n	%	n	%
Total Pedestrians	2899	58.3%	333	6.3%	957	25.4%	-892	-16.6%	3297	17.0%
Total Cyclists (On-Road)	-358	-34.3%	108	16.8%	523	101.6%	64	8.0%	337	11.2%
Total Cyclists (Off-Road)	-49	-12.1%	-374	-57.9%	194	101.6%	134	53.0%	-95	-6.4%
Total AT Road Users	2492	38.8%	67	1.0%	1,674	37.4%	-694	-10.8%	3539	14.8%

Pink shading indicates fewer pedestrians/cyclists from baseline; green indicates more.

When observing cyclists, we see overall increase in the proportion of cyclists riding on-road (Table 3-15). This might indicate that a subset of cyclists are more comfortable cycling on the road as a result of the trial speed limit. Overall, 4,498 total cyclists were counted in the baseline survey, and 4,740 at twelve months – an increase of just over 5%. Further work to directly interview cyclists (such as brief intercept surveys at the count site) about their comfort riding on the road within the trial area may be useful in further understanding this finding.

Table 3-15: Change in Proportion of Cyclists Riding On-road (Sum of all days)

Total of all Days	Site One	Site Two	Site Three	Site Four	Total (%)	Total on road (n)
Baseline Percentage on Road	65%	53%	62%	78%	67%	3,003
Twelve Month Percentage on Road	86%	53%	67%	71%	70%	3,340
Change in Percentage on Road	21%	0%	5%	-7%	4%	-
Change in Number on Road	-358	108	523	64		337

3.3 Traffic (Vehicle Counts)

This section presents traffic data detected by counts completed by the City of Vincent (refer 2.2.3).

3.3.1 Baseline

Baseline count results are summarized in Table 3-16.

Table 3-16: Baseline Total Observed Traffic Statistics

Sample Subset	AWT Five day			Ave Speed	85 th % Speed
	Mean	Daily Total	Grand Weekday Total		
New 40 km/h Roads	4408.9	61,725	308,625	39.5	47.6
Excluded Distributor Roads	8076.3	48,458	242,290	51.3	58.1
Totals	-	110,183	550,915	-	-

The first series of traffic surveys undertaken for the baseline were conducted a few months in advance of the commencement of the trial during the months of February and March (Table 3-17). There was some degree of non-compliance of the 50 km/h default speed limit at the 85th percentile, indicated with red shading for streets listed in Table 3-17. For comparison, speed compliance on the distributor roads was consistently good.

Table 3-17: Baseline Traffic Dataset

Road	Location	Survey Date		AWT Five day	Ave Speed	85% Speed	% Heavy Veh.
40 km/h Trial Roads							
Brisbane St	Dangan-Lake	27-Feb-19	06-Mar-19	1410	38.1	46.1	2.6
Brisbane St	Lane-Lindsay	20-Feb-19	27-Feb-19	3208	41.2	50.9	4.9
Bulwer St	Fitzgerald- Palmerston	27-Feb-19	06-Mar-19	11,248	45.9	52.7	2.5
Bulwer St	Lord-Wright	20-Feb-19	27-Feb-19	7411	47.2	54.4	2.6
Carr St	Charles-Fitzgerald	06-Mar-19	13-Mar-19	4407	44.5	51.7	3.0
Harold St	Smith-Wright	20-Feb-19	27-Feb-19	2296	33.4	39.8	2.6
Joel Tce	Bream Cove- Gardiner	06-Mar-19	13-Mar-19	2386	45.0	53.1	3.1
Mary St	Beaufort-William	27-Feb-19	06-Mar-19	1055	31.8	39.4	2.4
Palmerston St	Myrtle-Randell	27-Feb-19	06-Mar-19	2786	29.1	36.5	2.9
Pier St	Brewer-Edward	20-Feb-19	27-Feb-19	2864	38.7	47.9	2.6
Smith St	Broome-Lincoln	20-Feb-19	27-Feb-19	2321	40.6	49.5	1.8
Summers St	Claisebrook-West	06-Mar-19	13-Mar-19	1513	38.4	46.6	4.7
Vincent St	Ethel-Norfolk	06-Mar-19	13-Mar-19	11,597	45.2	52.0	2.5
William St	Monger-Robinson	20-Feb-19	27-Feb-19	7223	34.4	46.1	3.8
Sample Averages				4,409	39.5	47.6	3.0
Daily Totals				61,725			
Excluded Distributor Roads							
Fitzgerald St	Cowle-Randell Northbound	13-Feb-19	20-Feb-19	8477	49.4	56.0	2.5
Fitzgerald St	Cowle-Randell Southbound	13-Feb-19	20-Feb-19	9463	49.4	57.1	5.7
Lord St	Court-Marlborough Northbound	13-Feb-19	20-Feb-19	10,167	52.5	58.9	4.7
Lord St	Court-Marlborough Southbound	13-Feb-19	20-Feb-19	9534	53.0	59.2	5.6
William St	Chatsworth-Lincoln Northbound	13-Feb-19	20-Feb-19	4175	52.0	59.2	3.6
William St	Chatsworth-Lincoln Southbound	13-Feb-19	20-Feb-19	6642	51.4	58.3	3.3
Sample Averages				8076	51.3	58.1	4.2
Daily Totals				48,458			

Pink shading indicates observed speed values being greater than the baseline default 50 km/h limit for roads subject to the trial only.

This data suggests most vehicles travelling on the local roads and vehicles travelling on surrounding distributor roads are generally in compliance with the legal speed limit.

3.3.2 Six Month

A slight decrease in average and 85th percentile speed on the trial streets was observed over the six month trial period (Table 3-18). However, this change is only a slight proportion of the 10 km/h reduction in the legal limit. Speeds on Distributor roads appear to be similar to baseline.

Table 3-18: Six Month Total Traffic Statistics with Comparison to Baseline

Sample Subset	AWT Five day			Change from Baseline	Average Speed			85% Speed		
	Daily Mean	Daily Total	Grand Total		Mean of sites km/h	Change km/h	Change %	Mean of sites km/h	Change km/h	%
New 40 km/h Roads	4298	60,169	300,845	-2.5%	39.35	-0.19	-0.47%	47.26	-0.36	-0.76%
Excluded Distributor Roads	7510	45,059	225,295	-7.0%	51.13	-0.15	-0.29%	58.30	0.18	0.32%
Totals	-	105,228	526,140	-4.5%	-	-	-	-	-	-

Pink shading indicates observed speed values being greater than the baseline, with green shading indicating a downward change.

The first series of traffic surveys undertaken during the trial occurred in advance of the six month milestone passing (Table 3-19). While average and 85th percentile speeds dropped, most average and 85th percentile speeds were in excess of the legal limit within the area. Speed limit compliance on distributor roads remained excellent.

Table 3-19: Six Month Traffic Dataset

Road	Location	Survey Date		AWT Five day	Ave Speed	85% Speed	% Heavy Veh.
40 km/h Trial Streets							
Brisbane St	Dangan-Lake	21-Aug-19	28-Aug-19	1421	38.1	46.1	2.8
Brisbane St	Lane-Lindsay	07-Aug-19	14-Aug-19	3131	40.5	50.4	4.5
Bulwer St	Fitzgerald-Palmerston	14-Aug-19	21-Aug-19	10,256	45.2	51.7	3.0
Bulwer St	Lord-Wright	07-Aug-19	14-Aug-19	8416	46.5	54.0	3.4
Carr St	Charles-Fitzgerald	14-Aug-19	21-Aug-19	4129	46.3	53.6	5.0
Harold St	Smith-Wright	07-Aug-19	14-Aug-19	2209	32.9	39.4	2.8
Joel Tce	Bream Cove-Gardiner	21-Aug-19	28-Aug-19	2143	43.1	50.9	3.0
Mary St	Beaufort-William	21-Aug-19	21-Aug-19	990	33.6	40.3	3.1
Palmerston St	Myrtle-Randell	14-Aug-19	21-Aug-19	2617	29.6	36.7	3.2
Pier St	Brewer-Edward	07-Aug-19	14-Aug-19	2958	38.3	47.7	3.2
Smith St	Broome-Lincoln	07-Aug-19	14-Aug-19	2306	41.0	49.1	2.0
Summers St	Claisebrook-West	21-Aug-19	28-Aug-19	1515	37.4	45.9	4.7
Vincent St	Ethel-Norfolk	14-Aug-19	21-Aug-19	10,861	44.9	51.5	2.5
William St	Monger-Robinson	07-Aug-19	14-Aug-19	7217	33.5	44.3	5.0
Sample Averages				4297.8	39.4	47.3	3.4
Daily Totals				60,169			
Excluded Roads							
Fitzgerald St	Cowle-Randell NB	31-Jul-19	07-Aug-19	7364	48.5	56.5	5.4
Fitzgerald St	Cowle-Randell SB	31-Jul-19	07-Aug-19	8691	48.2	57.2	6.2
Lord St	Court-Marlborough NB	31-Jul-19	07-Aug-19	9854	52.6	59.0	4.5
Lord St	Court-Marlborough SB	31-Jul-19	07-Aug-19	9198	53.5	59.6	5.6
William St	Chatsworth-Lincoln NB	31-Jul-19	07-Aug-19	4031	52.3	59.0	3.5
William St	Chatsworth-Lincoln SB	31-Jul-19	07-Aug-19	5921	51.7	58.5	3.7
Sample Averages				7509.8	51.1	58.3	4.8
Daily Totals				45,059			

Pink shading indicates observed speed values being greater than the trial legal limit of 40 km/h (shown for roads subject to the trial only).

Vehicles travelling on distributor roads appear to be travelling generally to the limit, similar to the results observed in the baseline surveys.

3.3.3 Twelve Month

The results for the Twelve Month evaluation indicates that there has been a further reduction in overall average (mean) and 85th percentile speeds for the 40 km/h trial roads. Importantly, while the six month trial saw less overall traffic (down 4.5% from baseline), the twelve month surveys saw a slight increase in the total volume of traffic compared to the baseline, with an increase of 1.7% overall (Table 3-20).

Table 3-20: Twelve Month Total Traffic Statistics with Comparison to Baseline

Sample Subset	AWT Five day			Change from Baseline	Average Speed			85% Speed		
	Daily Mean	Daily Total	Grand Total		Mean of sites km/h	Change km/h	Change %	Mean of sites km/h	Change km/h	%
New 40 km/h Roads	4579	64,104	320,520	3.9%	38.59	-0.94	-2.38%	46.43	-1.19	-2.50%
Excluded Distributor Roads	8001	48,006	240,030	-0.9%	51.28	0.00	0.00%	58.28	0.17	0.29%
Totals	-	112,110	560,550	1.7%	-	-	-	-	-	-

Pink shading indicates observed speed values being greater than the baseline, with green shading indicating a downward change.

The decrease in average (-0.94 km/h) and 85th percentile (-1.19 km/h) observed speeds on the trial streets was again a small proportion of the 10 km/h reduction in the legal limit. This is generally in line with similar evidence in the international research literature, but is less than the 3-4 km/h decrease that could be expected based on meta-analysis of studies (OECD/ECMT 2006, p. 100). The unexpectedly low change in observed vehicle speeds is probably because the trial has primarily involved signage, with limited use of other engineering and enforcement measures.

The magnitude in speed reduction in the trial area is also comparable to the mean and 85th percentile speed reductions observed in metropolitan Perth during the two years immediately after the 2001 introduction of the 50 km/h default built up area speed limit in Western Australia (Hoareau and Newstead 2004, p. 38). It appears that area-wide speed reductions in Western Australia have yielded actual travel speed reductions in a gradual way, over several years following implementation. This reflects gradual adjustment in driver behaviours.

Speeds on Distributor roads were once again very similar to the baseline. Remarkably, there has been no change in overall observed mean speed at the excluded distributor sites, and a very slight increase in observed 85th percentile speeds, with only slight variation between individual sites. Overall, the resulting reduction in average and 85th percentile speed on trial roads is indicative of a modest potential effect resulting from the trial area limit (Table 3-21).

Table 3-21: Overall trial road speed compliance

	Baseline	Six Month	Twelve Month
Legal Limit (km/h)	Default 50	Area 40	Area 40
Mean Speeds (km/h)	39.54	39.35	38.59
85 th Percentile Speeds (km/h)	47.62	47.26	46.43

Pink shading indicates observed speed values being greater than the trial legal limit of 40 km/h.

Observations at individual count sites, shown in Table 3-22, show reasonable compliance by the average vehicle, though the 85th percentile speeds (the speed that 15% of vehicles exceeded) remained generally well above 40 km/h. This suggests that other measures (such as physical road modification or increased enforcement) may be needed to reduce the incidence of vehicles travelling in excess of 40 km/h. Regulatory signage alone does not appear to combat this moderate (~10 km/h) speeding.

Table 3-22: Twelve Month Traffic Dataset

Road	Location	Survey Date		AWT Five day	Ave Speed	85% Speed	% Heavy Veh.
40 km/h Trial Streets							
Brisbane St	Dangan-Lake	04-Mar-20	11-Apr-20	1596	37.1	45.2	2.5
Brisbane St	Lane-Lindsay	19-Feb-20	26-Feb-20	2941	40.2	49.5	4.8
Bulwer St	Fitzgerald-Palmerston	26-Feb-20	04-Mar-20	11,154	44.7	51.3	2.8
Bulwer St	Lord-Wright	19-Feb-20	26-Feb-20	9603	46.1	53.5	3.2
Carr St	Charles-Fitzgerald	26-Feb-20	04-Mar-20	4071	43.5	50.7	2.5
Harold St	Smith-Wright	19-Feb-20	26-Feb-20	2398	32.9	39.4	1.9
Joel Tce	Bream Cove-Gardiner	04-Mar-20	11-Mar-20	2146	43.2	50.1	2.5
Mary St	Beaufort-William	04-Mar-20	11-Mar-20	971	33.0	40.0	3.3
Palmerston St	Myrtle-Randell	26-Feb-20	04-Mar-20	2659	28.7	36.0	2.9
Pier St	Brewer-Edward	19-Feb-20	26-Feb-20	2982	38.3	47.2	2.9
Smith St	Broome-Lincoln	19-Feb-20	26-Feb-20	2395	40.5	48.6	1.8
Summers St	Claisebrook-West	04-Mar-20	11-Mar-20	1553	38.0	46.1	5.2
Vincent St	Ethel-Norfolk	26-Feb-20	04-Mar-20	11,499	41.2	49.7	3.0
William St	Monger-Robinson	19-Feb-20	26-Feb-20	8136	32.9	42.7	3.3
Sample Averages				4579	38.6	46.4	3.0
Daily Totals				64,104			
Excluded Roads							
Fitzgerald St	Cowle-Randell NB	12-Feb-20	19-Feb-20	8990	49.3	57.2	5.9
Fitzgerald St	Cowle-Randell SB	12-Feb-20	19-Feb-20	7188	49.8	57.4	5.8
Lord St	Court-Marlborough NB	12-Feb-20	19-Feb-20	10,225	52.3	59.0	5.1
Lord St	Court-Marlborough SB	12-Feb-20	19-Feb-20	10,043	53.4	59.6	6.1
William St	Chatsworth-Lincoln NB	12-Feb-20	19-Feb-20	6482	51.4	58.0	3.4
William St	Chatsworth-Lincoln SB	12-Feb-20	19-Feb-20	5078	51.5	58.5	3.3
Sample Averages				8001	51.28	58.3	4.9
Daily Totals				48,006			

Pink shading indicates observed speed values being greater than the trial legal limit of 40 km/h (shown for roads subject to the trial only).

Vehicles travelling on distributor roads appear to be travelling generally to the speed limit, similar to the results observed in the baseline and six month surveys.

The results for each site indicate that 85th percentile speed compliance has generally decreased slightly at all sites. No site has seen a dramatic change in 85th percentile speeds (Table 3-23). Again, this suggests that street design changes and enforcement may be a stronger mechanism for speed compliance.

Table 3-23: Longitudinal Comparison of 85th Percentile Speeds

Road	Location	85 th Percentile Speed		
		Baseline	Six Month	Twelve Month
Speed Limit		Default 50	Area 40	Area 40
Brisbane St	Dangan-Lake	46.1	46.1	45.2
Brisbane St	Lane-Lindsay	50.9	50.4	49.5
Bulwer St	Fitzgerald-Palmerston	52.7	51.7	51.3
Bulwer St	Lord-Wright	54.4	54.0	53.5
Carr St	Charles-Fitzgerald	51.7	53.6	50.7
Harold St	Smith-Wright	39.8	39.4	39.4
Joel Tce	Bream Cove-Gardiner	53.1	50.9	50.1
Mary St	Beaufort-William	39.4	40.3	40.0
Palmerston St	Myrtle-Randell	36.5	36.7	36.0
Pier St	Brewer-Edward	47.9	47.7	47.2
Smith St	Broome-Lincoln	49.5	49.1	48.6
Summers St	Claisebrook-West	46.6	45.9	46.1
Vincent St	Ethel-Norfolk	52.0	51.5	49.7
William St	Monger-Robinson	46.1	44.3	42.7
Sample Averages		47.6	47.3	46.4
Excluded Roads				
Fitzgerald St	Cowle-Randell NB	56.0	56.5	57.2
Fitzgerald St	Cowle-Randell SB	57.1	57.2	57.4
Lord St	Court-Marlborough NB	58.9	59.0	59.0
Lord St	Court-Marlborough SB	59.2	59.6	59.6
William St	Chatsworth-Lincoln NB	59.2	59.0	58.0
William St	Chatsworth-Lincoln SB	58.3	58.5	58.5
Sample Average	Sample Average	58.1	58.3	58.3

Pink shading indicates observed speed values being greater than the applicable legal limit (shown for roads subject to the trial only).

3.4 Qualitative Resident Perceptions Survey

The April 2019 baseline survey received 63 responses, while the November 2019 survey received 73 responses. The twelve month evaluation survey received 151 responses. This reflects the increased letter box distribution, and respondents re-recruited by email from the earlier surveys.

The survey also included demographic information to test similarity of the sample to the broader community. The demographic profile for the twelve month results appears to be a reasonable representation of the residential population within the trial area.

Like all voluntary surveys, there is potential that the results reflect selection bias – that is, people who have stronger or particular views might be more likely to respond to the survey, resulting in a snapshot that does not entirely reflect the whole community. In this evaluation, this is not considered to be a significant problem, especially because the views of people who are especially motivated are of interest to the trial evaluation.

3.4.1 Baseline Attitudes

At the baseline survey, respondents generally indicated agreement with the potential benefits of the trial (Figure 3-2). Interestingly, and consistent with past surveys, respondents indicated that speeding above the new limit was morally unacceptable.

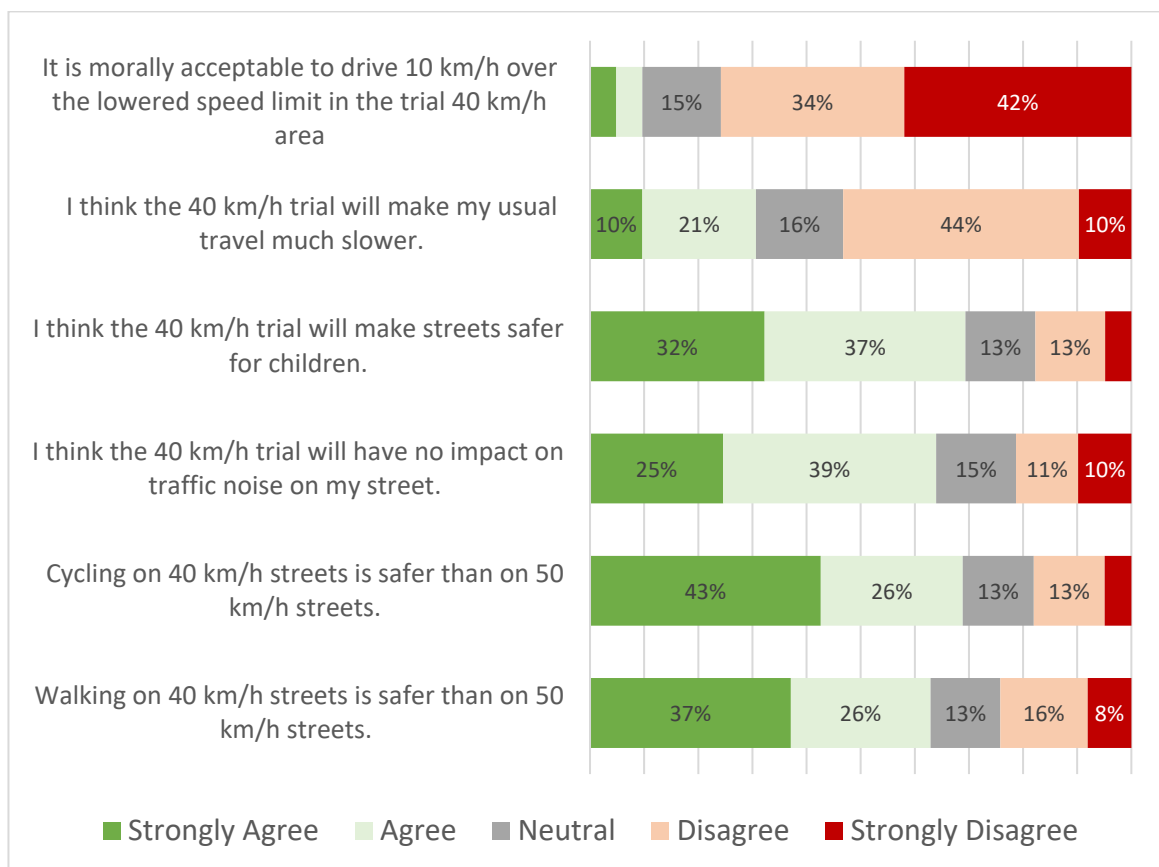


Figure 3-2: Pre-trial Speed Limit Attitudes

3.4.2 Baseline Travel Behaviours

Respondents reported frequently driving on their local street, with generally high participation in recreational and utility local walking. Cycling participation was quite limited, with more than 60% of respondents not usually cycling for recreation or local neighbourhood utility transport.

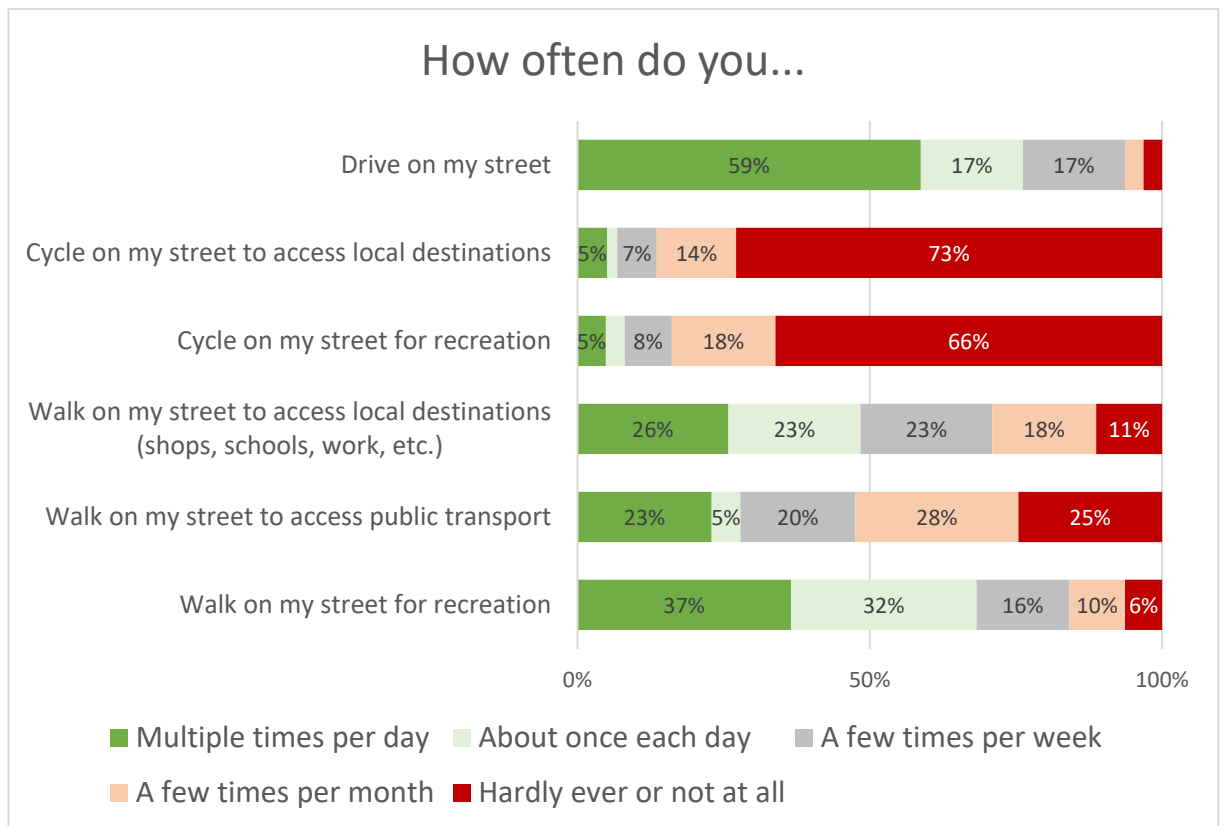


Figure 3-3: Pre-trial Reported Local Travel Behaviours

3.4.3 Six Month Milestone Attitudes

Please refer to the Six Month Evaluation Report (*6138251-REP-C_Evaluation Report - 6 Month*) for detailed commentary on the results observed at the six month milestone. Some six month reports are also profiled for comparison in the next section.

It should be noted that seasonal effects are likely to weigh upon travel behaviour reported in this dataset.

3.4.4 Twelve Month Milestone – Travel Behaviours

Effects of COVID-19

As the resident survey was conducted over a period of significant disruption (refer section 2.4), it was anticipated that the new routine habits adopted during physical distancing measures would skew questions relating to travel behaviour and potentially attitudes relating to the trial.

Since this evaluation is based on a before and after comparison study, the difference between the results for the same question in the baseline and trial datasets forms critical evidence, especially for quantitatively-measured attitudinal questions.

Accordingly, GHD and the City of Vincent sought to maintain, as far as practicable, the similarity of attitudinal questions. The questionnaire design was altered as follows:

- The survey recruitment materials and questionnaire introductory text was edited to include “We understand that the current COVID-19 pandemic is changing activity and travel patterns, and we are taking this into account in our evaluation of the trial. Your feedback is an important part of our evaluation and we would love to hear how you have experienced the trial over the past 12 months.”
- The travel behaviour questions was re-phrased to: “How often would you usually do the following, not considering the current COVID-19 pandemic?” The revision to this question should make the results between this dataset and the baseline dataset more comparable, though some residual reported effects (e.g. recency bias) associated with disrupted activity patterns may still exist in the dataset.
- A new open ended question was added: “Has the COVID-19 pandemic changed your usual walking, cycling or driving patterns? If so, how?” This is reported below.

Change in Specific Transport Patterns due to COVID-19 Self-Reported by Respondents

When asked to describe how COVID-19 had altered usual walking, cycling or driving patterns, respondents described a range of changes to their travel behaviour. The open-ended comments received for this question were reviewed and assigned into groups, if respondents mentioned a specific thematic response to their travel behaviour. These below figures are the percentage of respondents who *mentioned* a type change, which does not necessarily represent the number of people who have actually changed their travel patterns in this way.

41 respondents (27%) reported no changed to their usual travel behaviour. 18 respondents (12%) specifically reported working from home³. 35 respondents (23%) mentioned driving less, while 15 (10%) reported less use of public transport. For active transport (walking and cycling), 39 respondents (26%) mentioned some overall increase in walking or cycling, while 20 respondents (13%) reported less participation in walking or cycling. 31 respondents (20%) offered no specific comment, while 16 respondents (11%) made comments which could not be assigned to any of the above themes.

³ The working from home rate for Greater Perth reported for the 2016 census was 3.4%, though this includes certain agricultural workers, mobile tradespeople, and some other occupations. See page 3 of the Babb et al. (2017) [Unlocking the Potential for Working Closer to Home](#) report.

Change in Usual Transport Patterns (aside from the COVID-19 Pandemic) Reported by Respondents

Routine use of local streets for different modes of transport was evaluated with equivalent questions to the baseline, phrased to exclude (or at least minimise) the results of COVID-19 on the responses.

Results for this question at twelve months are presented below in Figure 3-4. The same results from the baseline are included as Figure 3-3 in section 3.4.2.

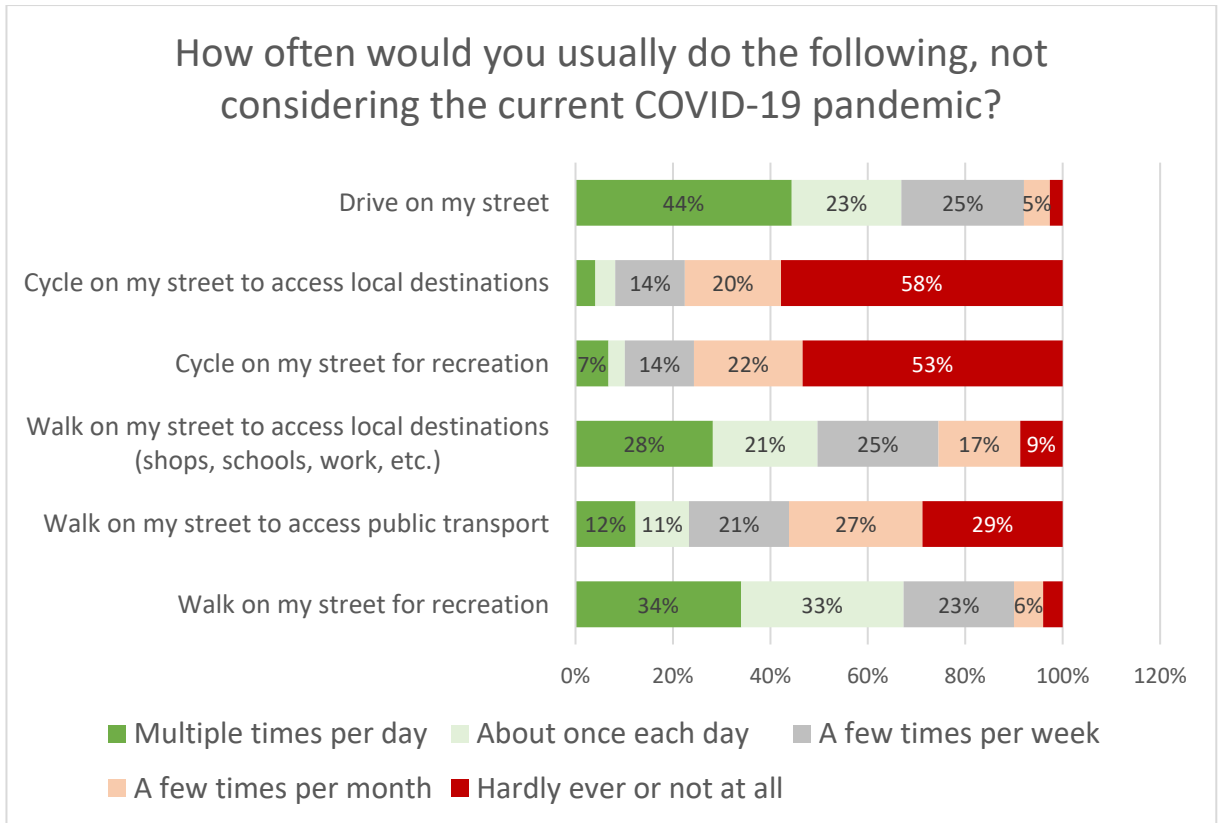


Figure 3-4: Twelve Month Reported Local Travel Behaviours

When the percentage of respondents falling into each category are compared (see Table 3-24), it appears that changes in local travel have been mixed, with a greater share of respondents reporting very frequent or very infrequent travel by different modes. There is also a substantial reduction in reported walking to access public transport.

These general findings align with the responses in the open-ended travel behaviour question reported on the previous page, and suggests that some people have engaged in much more walking and cycling (for instance, due to more time at home), while others have reported less walking and cycling (such as for people who may have previously walked or cycled to work).

Whether this is due to the trial conditions or COVID-19 remains to be seen. Although these results should ideally not reflect the effects of COVID-19 pandemic, it is not possible to conclusively determine that they have not been at least partially impacted.

Table 3-24: Changes in Reported Local Travel Behaviours

Statement	Change in Response Percentages (Baseline to 12 Month)					Inference based on change in response
	Multiple times per day	About once each day	A few times per week	A few times per month	Hardly ever or not at all	
Walk on my street for recreation	2%	2%	6%	-8%	-2%	Walking patterns appear disrupted. No clear trend. Less routine use of public transport.
Walk on my street to access public transport	-7%	1%	1%	-10%	15%	
Walk on my street to access local destinations (shops, schools, work, etc.)	8%	1%	1%	-5%	-4%	Responses seem slightly more weighted toward more extreme categories.
Cycle on my street for recreation	-2%	0%	2%	-2%	3%	No clear trend
Cycle on my street to access local destinations	6%	1%	-2%	-1%	-4%	
Drive on my street	-9%	1%	8%	1%	0%	Slightly less frequent driving trips.

Pink shading indicates that a lower percentage of respondents provided this response in the twelve month survey, compared with baseline. Green indicates an increase.

3.4.5 Twelve Month Milestone – Attitudinal Questions

At this twelve month milestone, perceptions towards the trial appear to be mixed, with many questions receiving fairly even splits of responses into each attitude category.

Attributional responses have been measured through direct questions about the trial, through general perception questions, and in open-ended questions.

Attitudinal Responses – Direct Questions

Directly-stated perceptions about the trial, shown overleaf as Figure 3-5, assess respondents' immediate response to the trial itself. These questions are most direct, and are most likely to responses weighted by overall opinions of the trial area speed limit.

The even spread of many of the results appears to indicate that both perceived benefits and perceived disbenefits of the trial have been fairly minor. For instance, less than 30% of respondents agreed that the trial “has made it more difficult to get around”. Questions about the overall effects of the trial on pedestrian/cyclists safety, and local amenity impacts, received very evenly split responses.

Some results seem to indicate a weak or ambivalent overall attitude towards the trial. For example, 58% of respondents agreed or strongly agreed that a 40 km/h area limit might be useful in other areas, though 71% of the same cohort of respondents disagreed that the trail had been “worth doing” (Figure 3-5).

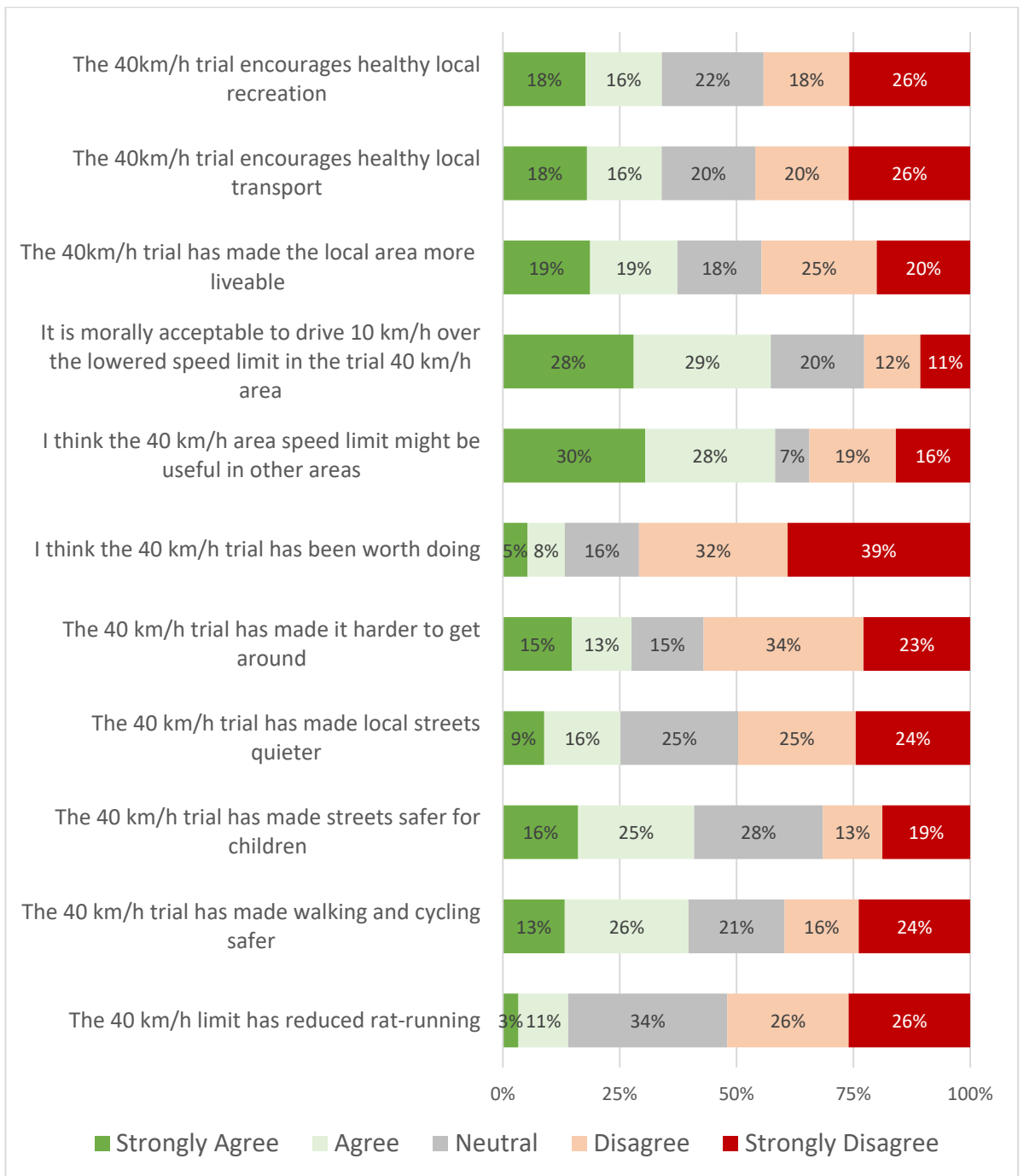


Figure 3-5: Twelve Month Attitudinal Survey Results about the Trial

Attitudinal Responses – Indirect Questions

While response to direct responses varied, measuring the difference for questions regarding general attitudinal questions about local transport and amenity before and after the trial implementation provides further evidence of trial outcomes.

Comparing how results for the same question changed between the baseline and twelve month surveys provides an indication of whether there is an implied change in perceptions. These results, presented in Table 3-25, indicate a general tendency for respondents to be less concerned about local transport issues than in the baseline survey. This result is similar to the result observed at six months, and may indicate that some intended benefits of the trial may be materialising.

Table 3-25: Change in Response Percentages for Local Transport Perceptions

Statement	Change in Response Percentages (Baseline to Twelve Month)					Inference based on change in response
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
It is generally safe for me to walk around my local area	1%	13%	-10%	-4%	0%	Overall improvement in perceived pedestrian safety (for adult respondents)
It is generally safe for children to walk around my local area	11%	7%	-4%	-12%	-2%	Overall improvement in perceived safety for children/vulnerable pedestrian groups
“Rat-running” (traffic taking short cuts on local streets) in my local area is a problem	-1%	-5%	-5%	13%	-2%	Slight reduction in concerns about rat-running.
Traffic noise in my local area is a problem	-5%	-4%	-2%	7%	3%	Reduced concern about traffic noise.
Vehicles speeding on local streets is a problem	-13%	3%	3%	8%	-1%	Reduced strong concern about vehicles speeding on local streets.
Cycling within the City of Vincent is generally safe	-4%	11%	-6%	0%	-1%	Potential slight improvement in perceived risks for cyclists.
I would cycle more if it was safer	-5%	0%	-3%	2%	5%	Slight decrease in number of people for whom safety concerns may impede cycling.
I would walk more if it was easier to cross roads	0%	-18%	-8%	14%	11%	Decrease in respondents for whom crossing roads is a barrier to walking
I would like to drive less	3%	-19%	11%	2%	3%	No substantial implication.

Pink shading indicates that a lower percentage of respondents provided this response in the twelve month survey, compared with baseline. Green indicates an increase.

When asked about the relative safety of walking and cycling on 40 km/h streets (compared to 50 km/h streets), more than half of all respondents agreed that safety had improved (Figure 3-6).

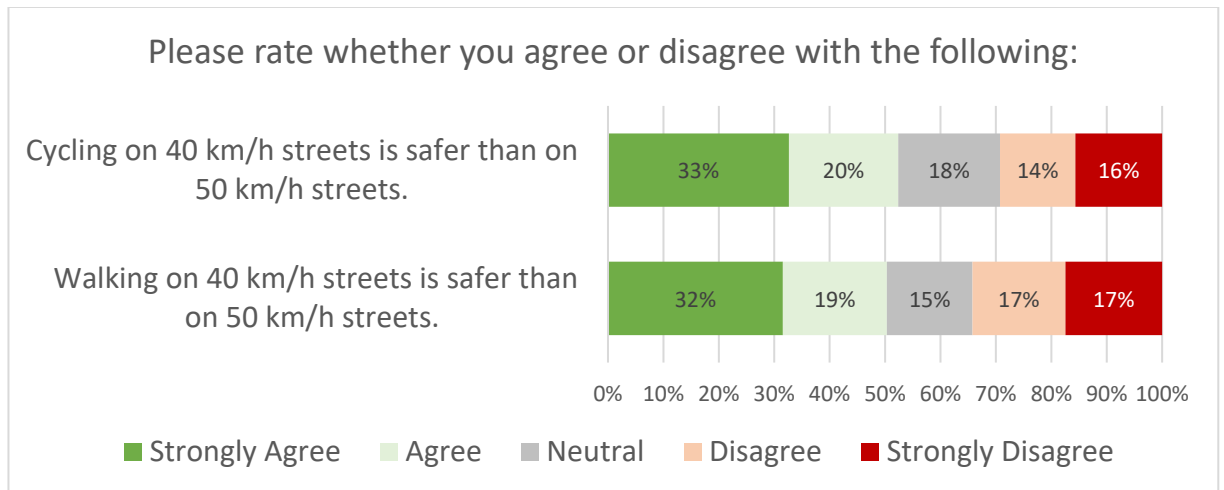


Figure 3-6: Twelve Month Perceptions about Pedestrian and Cyclist Safety

When compared with baseline results, a greater share of respondents agree that the lower speed limit improves pedestrian and cyclist safety at this twelve month mark (Table 3-26). This triangulates with observed increases in active transport activity (refer section 3.2.2), further substantiating the safety benefits of the lower speed limit.

Table 3-26: Change in Response Percentages for Pedestrian and Cyclists Safety

Statement	Change in Response Percentages (Baseline to 12 Month)				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Walking on 40 km/h streets is safer than on 50 km/h streets.	9%	-4%	-4%	0%	-1%
Cycling on 40 km/h streets is safer than on 50 km/h streets.	26%	7%	-8%	-9%	-16%

Pink shading indicates that a lower percentage of respondents provided this response in the twelve month survey, compared with baseline. Green indicates an increase.

Attitudinal Responses – Moral Acceptability of Exceeding the Speed Limit

Perceptions of safe and acceptable speeds vary among populations (Box and Bayliss 2012). A question relating to the “moral acceptability” of speeding (i.e. driving at the previously existing limit) was included in the survey. This question was used previously in an evaluation of the introduction of the lower 50 km/h default built up area speed limit in December 2001 (developed by Battini and Evans, cited in Hoareau and Newstead 2004, p. 42).

One concerning finding of this trial evaluation is that respondents appear more accepting of speeding (to the previous 50 km/h limit) than they were at baseline. This trend appears to continue from the six month results (Figure 3-7, overleaf).

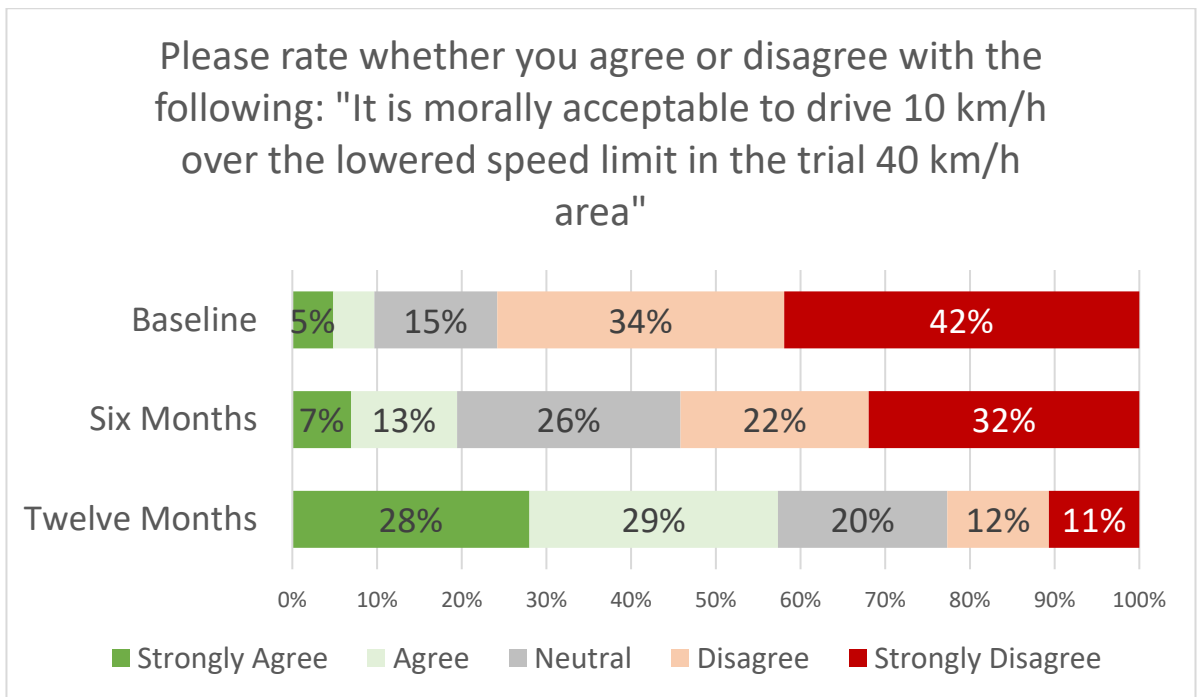


Figure 3-7: Morality of Exceeding Trial Area Limit – Result between Surveys

The baseline 40 km/h trial area morality question result (total 76% of respondents morally opposed to speeding) mirrors the initial result found in the 2001 surveys (Table 3-27). However, while moral opposition to speeding within the default 50 km/h limit increased after the introduction of the new limit (to 80% of respondents), the same does not appear to have occurred in this area trial (Figure 3-7). This may reflect limited awareness of the new limit, or effects associated with limited overt enforcement.

Table 3-27: Morality of Exceeding the lower 50 km/h Built-Up Area Limit

	Dec 2001-May 2002	Jun 2002-Nov 2002	Dec 2002-May 2003	Jun 2003-Nov 2003
Agree	22%	21%	18%	18%
Disagree	76%	76%	80%	80%
No opinion	3%	2%	1%	2%

Source: Batini and Evans, presented in Hoareau and Newstead 2004, p. 42.

Open Ended-Responses – General Support or Opposition

The twelve month evaluation survey contained the following 'free-text' questions: "Do you have any other general comments about traffic and transport in Vincent?" and "Do you have any other comments about the 40 km/h speed limit trial?"

About a third of respondents (55 out of a total of 151 respondents) expressed a written comment about the trial. Of these, 24 were opposed, while 23 provided comments in favour of the trial limit. Qualified support was provided by eight respondents.

In most cases, these opinions were either very positive or very negative as shown by the representative responses below.

Supportive comments included:

"I think it has been a great initiative."

"The new 40 zones are great, it has slowed drivers down especially on Beaufort Street and near the schools I have noticed. With more families living inner city living it's a very good idea to have the 40 klm speed limit."

"I love this new speed limit!"

"I would like to see this trial extended across other densely populated residential areas and enforced more noticeably and regularly."

"The trial is clearly a good idea, and hopefully the 40km/h speed limit will be permanent. Well done to the Council on the initiative."

Non-supportive comments generally indicated scepticism for the purpose of the trial:

"It's unnecessary and would do little to deter speeders"

"The trial, in my view was/is of little value."

"Very strongly disagree with 40 km speed"

"I don't understand why 50 km/h is suitable for all other built up areas/suburbs but we should be punished with 40 km/h."

"It is nonsense and it achieves absolutely nothing."

Responses expressing qualified support generally raised specific conditions for how they felt the 40 km/h may be more appropriate:

"I would agree more with questions above in relation to the 40 kmh limit if it was enforced."

"I accept some streets should be 40"

"I believe 40 km is good on smaller, local streets"

"I agree with the 40 kph speed limit. However, I would make Bulwer St 50 kph,"

Two of the respondents noted that they had changed their mind since implementation of the trial:

"Initially I thought the idea was ridiculous however I am now in favour for all of the reasons above but ask that it is implemented properly"

"Although I was not initially a supporter of the 40 km speed limit, I've revised that thought and am supportive as I believe that it can only help to increase safety for everyone living in the area"

Open Ended-Responses – Thematic Findings from Comments

Further analysis of the responses revealed a number of themes relating to aspects of the trial.

Bulwer Street - Twenty-one of the respondents indicated that they felt that the 40 km/h speed limit on Bulwer Street was too low. The finding for this specific road may be over-represented because of the geographic sampling strategy.

“Bulwer Street does not need 40 km hour limit”

“Bulwer St used to be 60 and is very much a main road, since it's dropped to 40, the time 20 km difference seems completely unnecessary and extreme”

“40 km/hr on Bulwer St, a main thoroughfare is ridiculous”

“I think the 40km speed limit is too slow on Bulwer Street”

Compliance and Awareness - Fifteen of the respondents felt that compliance with the 40 km/h speed limit had been limited or non-existent.

“It seems to be ignored at times, which I think may be due to lack of awareness of the new limit amongst those who are not local residents”.

“40 km/hr on Joel Terrace totally ineffective”

“I don't believe the majority of motorists take any notice of 40 km limits”

Nine of the respondents felt that the trial had no impact on traffic speeds.

“I do not think it has been effective, as in my experience most drivers remain at 50 km/h or more”

“In my particular case, I have seen little change from the 40 km/h speed limit trial”

“The normal traffic around my area has not changed in trial period”

This is unsurprising, in view of the modest overall average vehicle speed reductions (section 3.3.3).

Enforcement - Sixteen of the respondents believed that the trial would have benefited from greater enforcement.

“The lack of any enforcement of speed limits is a serious drawback”

“Little or no enforcement of speed limits”

“I would like to see this trial extended across other densely populated residential areas and enforced more noticeably and regularly”

Signage - Eleven of the respondents indicated that the signage for the trial could be improved.

“There are far too many street signs (40 kmh Limit, End of 40 kmh Limit) along Bulwer St that add confusion”

“It's not signposted enough/clear”

“The speed signs are so unclear as it will say end of 40 km/h but it hasn't ended”

“Far better signage required for 40 kmh zones - some were hidden behind trees and not as clear as normal speed limit signage”

Improvements - A small number of the respondents suggested improvements, such as traffic calming and electronic speed limit signs should be implemented.

"Speed limit should be enforced, especially by physical means i.e. speed humps, etc."

"I feel it would be much better and more acceptable generally if there was a solar powered adjustable speed limit"

"There need to be flashing 40 signs as there are on Beaufort Street in order to remind drivers who don't live in the area"

"Need better speed humps on Harold St"

Rat running - Fourteen of the respondents were concerned about rat running, either through the trial or as a result of the trial (the quantitative results indicate that concern about rat-running has reduced over the trial period, refer to Table 3-25 in section 3.4.5).

"Rat run traffic still speed and ignore the limit"

"I have regularly had annoyed rat runners overtake and speed away down my street"

"Lots of rat running on Barlee Street since the no right turn on Beaufort/Walcott intersection causes much more unsafe traffic than the 40 km speed limit"

"Specific action to address rat running would be more beneficial"

3.5 School safety

There are two primary schools, and two school crossings controlled by WA Police Traffic Wardens (crossing guards), within the trial area.

Prior to the trial, each school had a conventional 40 km/h School Zone on fronting local roads. Existing school zone signage located at the entry to the local road area (i.e. on the entry from district distributor roads) was simply replaced to area 40 km/h signage for the trial period. Variable speed limit signage has been in place on nearby district distributor roads well before the commencement of the 40 km/h area trial.

To evaluate the potential effects of the 40 km/h trial on school access and safety, GHD requested phone or email interviews with school traffic wardens and representatives of the two primary schools located within the trial area. The interviews followed a short, semi-structured format. Both traffic wardens participated in a phone interview, while written comments were received from one school.

Traffic Wardens (“Crossing Guards”)

Both traffic wardens had more than four years of experience at their location. Neither warden reported a significant difference in driver behaviour at their location during the first twelve month of the trial, which is broadly consistent with the traffic count data (refer section 2.2.3).

Both wardens commented that, since their crossings are located on distributor roads (which retained their speed limits and 40 km/h school zone timings), the trial itself had not substantially altered driver behavior. Aside from the recent effects of the COVID-19 pandemic, the wardens reported no substantial change in traffic during the trial year, or occurring around the start of the trial.

Each of the wardens noted instances of poor driver behaviour, mainly around instances of highly reckless speeding, and inattentive driving behaviours. One warden noted:

“People tend to forget the [school zone 40 km/h] limit – it is not obvious... Even when the [40 km/h LED speed] signs on people do not comply with the limit...”

One warden emphasised the effectiveness of on-road 40 patches⁴, and suggest they could be painted on more local roads, perhaps on area wide basis, as an additional reminder to drivers. The warden also commented that repeater signage along their relatively long school frontage may also improve driver compliance and safety.

The traffic wardens each commented that overt and covert police enforcement can result in detection of a substantial number of vehicle travelling at excessive speeds. One warden recalled a police operation near to their crossing, prior to the trial:

“One enforcement round there was one unmarked police car – the police issued something like 29 infringements in just in a short period of time – perhaps 45-60 minutes”

Both wardens commented that they had not noticed targeted enforcement over the past year.

The final question put to the traffic wardens concerned their preference between a conventional school zone, and the 40 km/h trial area covering a wider area of local roads around the school.

“My preference is for 40 km [speed limit] across day – so when school happens, people are more used to it... there’s no reason why there shouldn’t be a permanent 40 km/h limit.”

⁴ Refer [Main Roads WA Standard Drawing 20063-0522-1](#)

The other warden provided a similar response, but noted the importance of enforcement:

I think [a 40 km/h area limit provides] enhanced safety for children and parents walking to school - pupils getting off buses etc. - they would benefit. There's not too much [of a benefit] for my crossing, because it already has a 40 km/h limit... I think local roads being 40 km/h is a good idea – but we don't have the police presence to enforce 27/4"

Schools

There are two primary schools in the trial area. A response was sought from a representative of each.

One response was received from a school principal, who estimated that up to 50-60% of the school's students may walk or cycle on a school day with fine weather. The principle had noticed any specific difference in traffic behaviour (aside from pandemic-related effects) over the trial year.

The principal noted that, while there would be limited impacts for roads around the school that were already 40 km/h during school zones, there are some benefits beyond the immediate school side streets:

"I like the fact that motorists are travelling slower around our students."

No response was received from the other school.

4. Evaluation and Conclusions

The 40 km/h area speed limit within the City of Vincent has been assessed incorporating all the above results. This evaluation and conclusion has been made based on these twelve month results, and considering the preliminary results reviewed after the first six months of the trial.

4.1 Overall Findings

Based on the full set of evidence evaluated after twelve months of the trial, it appears that the trial has resulted in some speed and crash reduction effects. There also appears to be an associated minor local amenity and perceived safety benefit, especially for pedestrians and cyclists.

These findings are made based on a reasonable set of one year of data. While the precise magnitude of these benefits is challenging to ascertain with only one year of data, these evaluation results are evidence of a modest overall benefit.

The triangulation (matching) of evidence across the data collection methods used in this evaluation is the basis for this finding. While further data would be valuable (especially to evaluate specific KSI crash reduction effects, and to further reduce the potential impacts of COVID-19 on the results), the triangulation between results at this evaluation point provides a reasonable degree of certainty around the results.

While the effects of the COVID-19 pandemic (section 2.4), and the preliminary nature of the crash data (section 3.1.1) may have some impact on specific results, findings based on triangulation are much less susceptible to variation than single measured results. When the evidence is considered in totality, these potential effects do not appear to substantially alter the overall evaluation results.

The similarity of these results against the default 50 km/h built up area research (Hoareau and Newstead 2004) and international research more broadly (Box and Bayliss 2012; OECD/ECMT 2006, p. 100) also further support these evaluation findings.

From these results, we infer that there is potential for further improvement if additional speed management measures are implemented. The *Local Area Speed Management Blueprint* developed by the Road Safety Commission outlines a range of potential speed management measures.

4.2 Vehicle Speeds, Crashes, and Road Safety Implications

Vehicle crash risks are closely associated with vehicle speeds. A decrease in vehicle speeds is commonly associated with a more substantial reduction in the occurrence of crash rates (Elvik 2009b). Both a reduction in observed (mean and 85th percentile) and total crashes has been observed in the trial area.

Mean (average) vehicle speeds have reduced by about 1 km/h, or about 2.4%. The 85th percentile speed on trial roads has dropped by just over 1 km/h, or about 2.5%. The reduction in vehicle speed has been of a similar magnitude to the reduction seen with the introduction of the default 50 km/h limit in 2001. The reduction is not as large as overall results generally seen in research internationally, which suggests that complementary measures may further improve the results of area speed limit treatments. This is also supported by the available research evidence (see Elvik 2009a).

After twelve months, crash records provided by Main Roads WA indicate that there has been some crash reduction effect on the trial roads. This reduction has also occurred during a long-term decline in overall crashes within the City of Vincent. There was also a less substantial

crash reduction in overall crashes within the control set of local roads (the northern part of the City of Vincent) not subject to the new limit.

The reduction in KSI crashes was statistically less in the trial area than in the control area, but these findings are based on only three crash events (two in the trial area, one in the control roads) - which are therefore not statistically meaningful.

Results for crashes of different severity and road user types have been variable. The small size of the trial area means that single crash events can skew this data. Some crash data used in this evaluation was yet to be reviewed by Main Roads WA, and is therefore preliminary. Accordingly, future evaluation would be needed to substantiate the nature of the crash reduction more confidently. We suggest that long term evaluation (perhaps at two and five year milestones) would be highly informative, especially if the 40 km/h area limit was retained.

4.3 Findings for Travel Behaviours and Active Transport

Unfortunately, due to the timing of the resident survey during the COVID-19 pandemic, specific findings about the effect of the trial on reported travel behaviour cannot conclusively be drawn from the 151 survey responses (section 3.4.4). As would be expected, the resident survey findings do confirm highly variable results in changes in usual travel behaviour resulting from the pandemic.

However, video survey observations do indicate some increase in participation in walking and cycling (section 3.2.2). Significant increases in walking and cycling were observed at the four observation sites within the City of Vincent. A total of 14% more pedestrians and cyclists were observed in the twelve month surveys, compared to the February 2019 baseline. Vehicular traffic volumes observed just before the pandemic were relatively stable (1.7% increase from baseline, section 3.3.3).

The total number of cyclists also increased at twelve months. The percentage of all cyclists who were observed cycling on the road surface (rather than on footpaths) also increased from 67% to 70%, suggesting there may be a perceived safety benefit for cyclists. The total number of cyclists riding on the road grew by approximately 5% (242 total cyclists) from the early 2019 baseline. There were some differences between the four sites. The timing of these surveys was largely before the most significant disrupted effects of the COVID-19 lockdown.

School representatives and crossing wardens interviewed for this evaluation also spoke of benefits for children's safety travelling to school (section 3.5). However, these interviews indicate that additional awareness measures beyond the immediate school zone could be valuable.

4.4 Resident Perceptions

Residents surveyed expressed mixed overall responses about the trial. Overall, responses at twelve months were widely spread among the 151 resident surveys completed.

When asked directly about the trial, there was a relatively even distribution of responses for questions concerning the potential safety and amenity benefits. This finding triangulates with the generally modest improvements in observed vehicle speed and pedestrian/cyclist count data.

Support for the trial appears to be lukewarm (section 3.4.5). While a small majority are unhappy with the lower limit, there is not substantial or persistent opposition to the 40 km/h trial area among local residents. A majority of respondents surveyed at this twelve month milestone thought a 40 km/h limit could be useful in other areas.

Indirect survey results indicate that residents are generally less concerned with road safety and local street amenity issues at this twelve month milestone – further indicating benefits.

A finding of reduced concern about the moral implications of low-level speeding within the trial area among residents surveyed is of concern. This may suggest the need for enforcement, or at least further integration of measures to reinforce the suitability of a 40 km/h limit.

Open-ended comments about the trial mainly concerned:

- The perceived inappropriateness of the 40 km/h speed limit along Bulwer Street
- The perceived lack of compliance with the 40 km/h speed limit
- A perceived lack of enforcement
- A lack of awareness about the trial
- Confusion around signage for the trial

Survey respondents indicated that additional street design measures, signage, enforcement, and other awareness measures may improve compliance. Open ended-survey comments broadly triangulated with other findings.

4.5 Conclusions

In view of all the above data, and the triangulated results, the 40 km/h trial within the City of Vincent has resulted in some speed reduction and crash benefits. The result is in line with what would be expected based on previous research.

The evidence also suggests that local street amenity has somewhat improved. The increase in the total number of pedestrian and cyclists observed triangulates with the slight improvement in perceived street safety and amenity reported by respondents. There is good triangulation of findings between results from different methods, which supports confidence in these conclusions.

Complementary street design, road user awareness, and enforcement measures to reinforce the 40 km/h speed limit may result in the realisation of a greater level of total benefits. If left in place, it is possible that vehicle speeds within the trial area would continue to mediate below the new limit – particularly if supporting measures are introduced. Future evaluation would be useful in assessing the effectiveness of supporting measures.

Appendices

Appendix A – References

- Archer, J, Fotheringham, N, Symmons, M, and Corben, B. 2008. *The Impact of Lowered Speed Limits in Urban/Metropolitan Areas*. Melbourne: Monash University Accident Research Centre. <https://trid.trb.org/view/860669>
- Babb C., Curtis C., McLeod S. and Robertson D. 2017. *Unlocking the Potential for Working Closer to Home*. Perth: Bankwest Curtin Economics Centre. <https://bcec.edu.au/publications/unlocking-potential-working-closer-home/>
- Box, Elizabeth, and David Bayliss. 2012. *Speed Limits: A review of the evidence*. RAC Foundation UK. Available at: http://www.racfoundation.org/assets/rac_foundation/content/downloadables/speed_limits-box_bayliss-aug2012.pdf
- Elvik, R. 2009a. *The Handbook of Road Safety Measures*. Oxford: Elsevier.
- Elvik, R. 2009b. *The Power Model of the relationship between speed and road safety*. TOI Report 1034/2009. <https://www.toi.no/getfile.php?mmfileid=13206>
- Haworth, N, Ungers, B., Vulcan, P., and Corben, B. 2001. *Evaluation of a 50 km/h Default Urban Speed Limit for Australia*. Melbourne: National Road Transport Commission. https://www.monash.edu/_data/assets/pdf_file/0010/217837/nrtcsped.pdf
- Hoareau, E., and S. V. Newsead (cited also as MUARC). 2004. *An evaluation of the default 50 km/h speed limits in Western Australia*. Monash University Accident Research Centre - Report #230. <https://www.monash.edu/muarc/archive/our-publications/year/rpts04/muarc230>
- James, P.; Ito, K.; Banay, R.F.; Buonocore, J.J.; Wood, B.; Arcaya, M.C. 2014. "A Health Impact Assessment of a Proposed Bill to Decrease Speed Limits on Local Roads in Massachusetts (U.S.A.)." *International Journal of Environmental Research and Public Health*. <https://www.mdpi.com/1660-4601/11/10/10269>
- Jurewicz, C., A. Sobhani, J. Wolley, J. Dutschke, and B. Corben. 2016. "Exploration of Vehicle Impact Speed – Injury Severity Relationships for Application in Safer Road Design." *Transportation Research Procedia*. <https://doi.org/10.1016/j.trpro.2016.05.396>
- MacCallum, D., Babb, C., and C. Curtis. 2019. *Doing Research in Urban and Regional Planning: Lessons in Practical Methods*. Abingdon: Routledge.
- OECD/ECMT – Organisation for Economic Co-Operation and Development/European Conference of Ministers for Transport. 2006. *Speed Management*. OECD Publishing. Available at: <https://www.itf-oecd.org/sites/default/files/docs/06speed.pdf>
- Passchier-Vermeer, W. and Passchier, W. F. 2000. "Noise exposure and public health." *Environmental Health Perspectives*. <https://www.ncbi.nlm.nih.gov/pubmed/10698728>
- Stansfeld S., B. Berglund, C. Clark, I. Lopez-Barrio, P. Fischer, E. Öhrström, M.M. Haines, J. Head, S. Hygge, I. van Kamp, and B.F. Berry, 2005. "Aircraft and road traffic noise and children's cognition and health: a cross-national study," *The Lancet* [https://doi.org/10.1016/S0140-6736\(05\)66660-3](https://doi.org/10.1016/S0140-6736(05)66660-3)
- Yin, R. 2011. *Applications of Case Study Research*. Thousand Oaks: SAGE.

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81/https://projects.ghd.com/oc/WesternAustralia2/40kmhreviewcityofvin/Delivery/Documents/6138251-REP-0_Evaluation Report - Twelve Months.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Six Month Evaluation Report						
A (template only)	S McLeod	R Gorell	On file	A Wilmot	On file	17/05/2019
B (working six month evaluation)	S McLeod D Mulcahy	No formal issue		No formal issue		N/A
C (Draft issue six month evaluation)	S McLeod B Meyer D Mulcahy	S McDermott	S McDermott	A Wilmot	On file	21/02/2020
Twelve Month Evaluation Report						
A (Draft issue twelve month evaluation)	S McLeod R Gorell D Mulcahy	S Barlow		A Wilmot	On file	29/05/2020
0 (Final Twelve Month Evaluation)	S McLeod	S Barlow		A Wilmot	On file	09/06/2020

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CITY OF VINCENT

Final evaluation survey

SURVEY RESPONSE REPORT

24 May 2017 - 06 November 2022

PROJECT NAME:

40km/h Trial Survey

REGISTRATION QUESTIONS

Q1 Street:

Screen Name Redacted Bulwer Street
5/26/2017 04:23 PM

Screen Name Redacted 33 Britannia Road
5/27/2017 07:50 AM

Screen Name Redacted Vincent Street
5/28/2017 08:46 PM

Screen Name Redacted Albert Street
5/29/2017 10:54 PM

Screen Name Redacted 3/40 York Street
5/30/2017 11:06 AM

Screen Name Redacted Lincoln Street
6/02/2017 10:42 AM

Screen Name Redacted Glendower Street
7/19/2017 12:33 PM

Screen Name Redacted Alma
7/20/2017 03:26 PM

Screen Name Redacted Alma road
8/30/2017 07:59 PM

Screen Name Redacted Flinders Street
5/20/2018 08:07 PM

Screen Name Redacted 49 Mary St
8/07/2018 08:36 PM

Screen Name Redacted Carr Street
8/08/2018 09:29 AM

Screen Name Redacted Brisbane
8/08/2018 09:36 AM

Screen Name Redacted 8/08/2018 10:13 AM	Mary Street
Screen Name Redacted 8/08/2018 10:21 AM	10 Dangan St Perth
Screen Name Redacted 8/09/2018 10:20 AM	25 Edith St
Screen Name Redacted 8/09/2018 12:51 PM	1A Salisbury Street
Screen Name Redacted 8/09/2018 02:57 PM	Wasley
Screen Name Redacted 8/09/2018 03:33 PM	Hammond
Screen Name Redacted 8/09/2018 06:59 PM	166 Lincoln Street
Screen Name Redacted 8/09/2018 08:07 PM	Chatsworth
Screen Name Redacted 8/10/2018 06:34 AM	Stuart Street
Screen Name Redacted 8/11/2018 12:07 AM	Stirling St
Screen Name Redacted 8/12/2018 11:43 PM	Edith Street
Screen Name Redacted 8/14/2018 09:37 AM	Brisbane Street
Screen Name Redacted 8/14/2018 10:01 AM	Carr Street
Screen Name Redacted	Fitzgerald Street

8/14/2018 07:53 PM

Screen Name Redacted Lake St

8/16/2018 01:23 PM

Screen Name Redacted Zebina Street

8/18/2018 01:14 PM

Screen Name Redacted 129 Joel Terrace

8/20/2018 04:13 PM

Screen Name Redacted 368 Stirling Street

8/21/2018 11:33 AM

Screen Name Redacted McCarthy

8/22/2018 03:35 PM

Screen Name Redacted U 1 12 Turner St

8/23/2018 08:28 AM

Screen Name Redacted 18/34 Smith Street

8/28/2018 10:40 PM

Screen Name Redacted 29 Vincent Street

8/29/2018 12:17 PM

Screen Name Redacted 12, Orange Avenue

8/30/2018 09:29 PM

Screen Name Redacted Newcastle Street

9/02/2018 09:56 AM

Screen Name Redacted West parade

9/02/2018 05:06 PM

Screen Name Redacted Brookman

9/03/2018 07:04 PM

Screen Name Redacted Edinboro

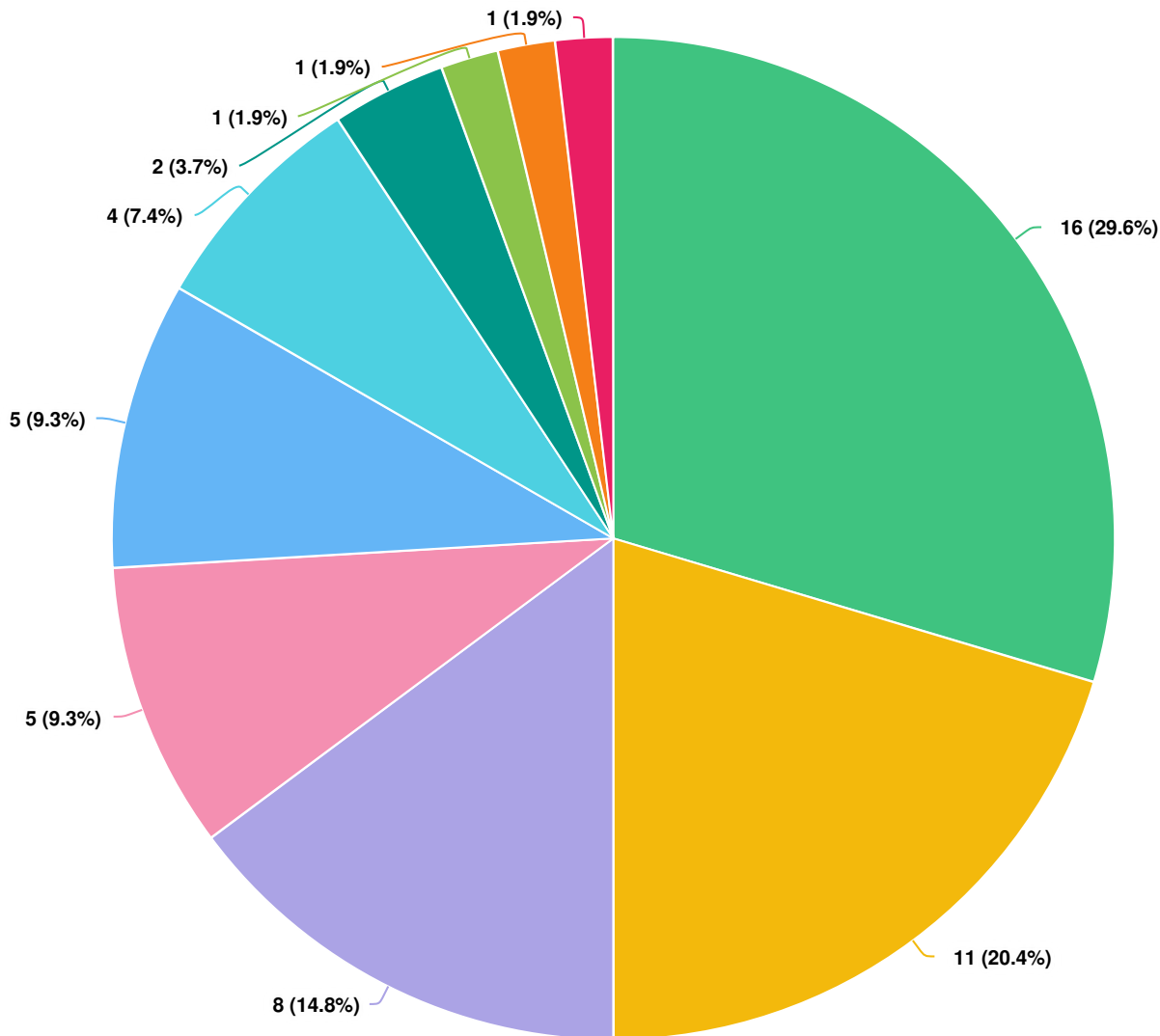
9/03/2018 08:09 PM

Screen Name Redacted 9/03/2018 08:50 PM	Alma Road
Screen Name Redacted 9/04/2018 02:54 PM	Dunedin St
Screen Name Redacted 9/04/2018 05:25 PM	1/34 Cowle Street
Screen Name Redacted 9/04/2018 05:48 PM	Palmerston
Screen Name Redacted 9/04/2018 06:03 PM	Wasley St
Screen Name Redacted 9/04/2018 08:04 PM	Vincent St
Screen Name Redacted 9/11/2018 01:05 PM	Edith
Screen Name Redacted 9/18/2018 03:31 PM	Joel terrace
Screen Name Redacted 7/11/2019 09:28 AM	213 Roberts Street
Screen Name Redacted 2/09/2021 12:28 PM	west parade
Screen Name Redacted 3/13/2021 12:01 PM	William St
Screen Name Redacted 6/20/2021 01:19 PM	Grosvenor Rd
Screen Name Redacted 4/13/2022 01:27 PM	22 Church Street, Perth, Perth, Perth
Screen Name Redacted 9/16/2022 08:21 AM	105 Alma Rd

Mandatory Question (54 response(s))

Question type: Single Line Question

Q2 Suburb:



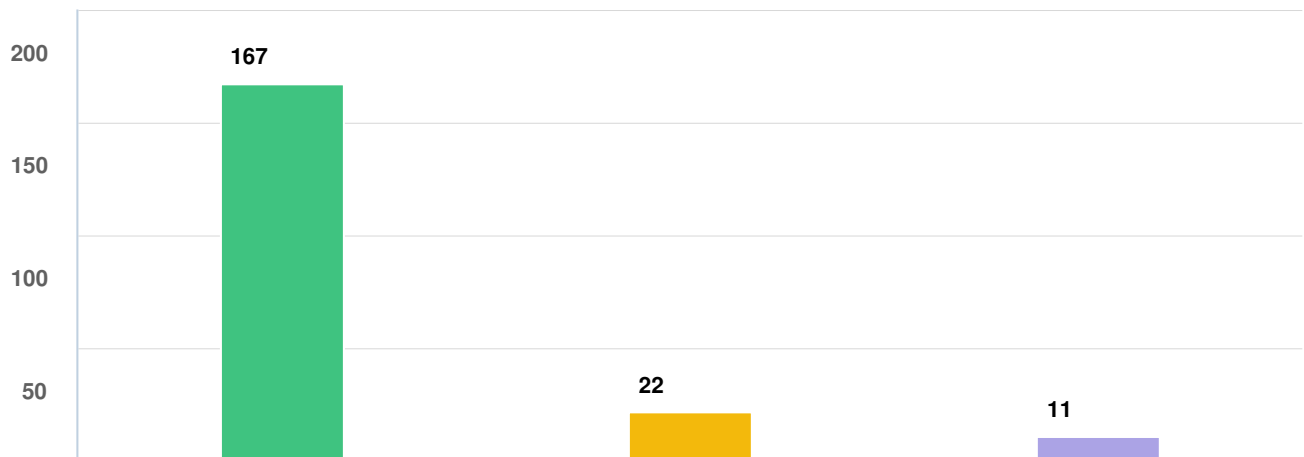
Question options

- PERTH, WA ● MOUNT LAWLEY, WA ● HIGHGATE, WA ● WEST PERTH, WA ● NORTH PERTH, WA
- MOUNT HAWTHORN, WA ● LEEDERVILLE, WA ● NORTHBRIDGE, WA ● EAST PERTH, WA
- PERTH GPO, WA

Mandatory Question (54 response(s))
 Question type: Region Question

SURVEY QUESTIONS

Q1 Please select as many of the following that apply to you.



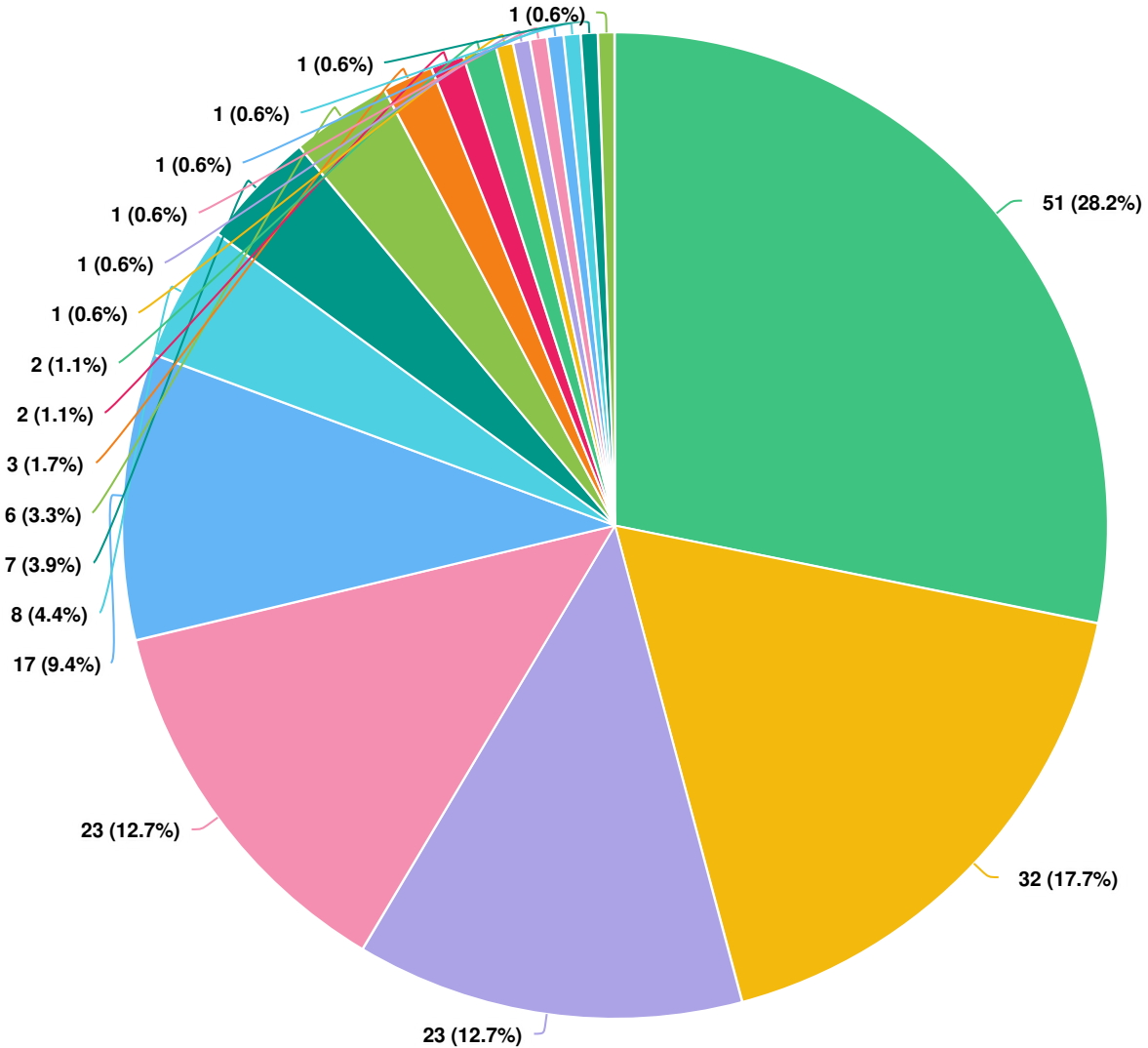
Question options

- I live in the City of Vincent
- I work in the City of Vincent
- I live outside but regularly travel to the City of Vincent

Mandatory Question (181 response(s))

Question type: Checkbox Question

Q2 What suburb do you live in?

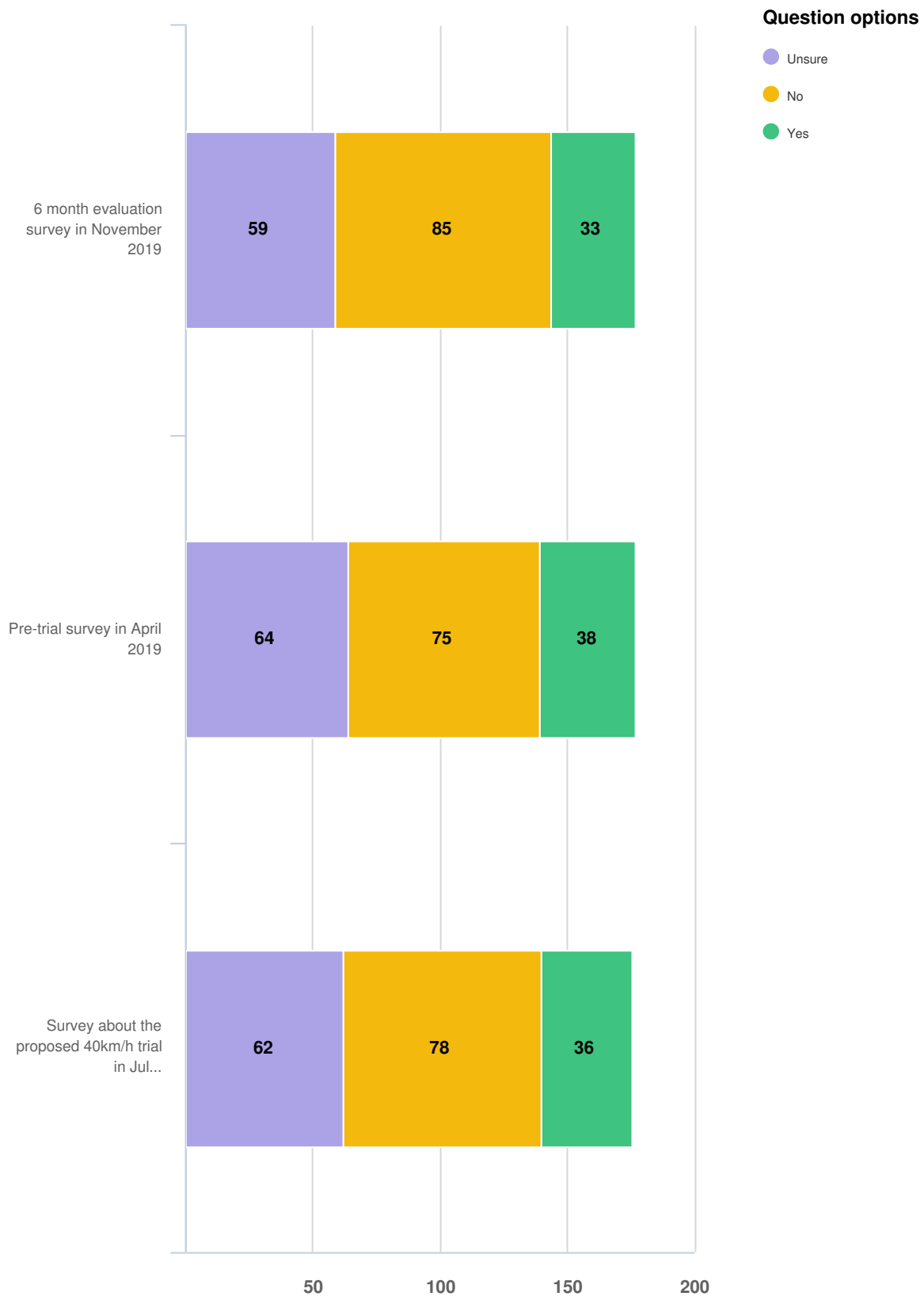


Question options

- PERTH, WA ● MOUNT LAWLEY, WA ● NORTH PERTH, WA ● HIGHGATE, WA ● WEST PERTH, WA
- MOUNT HAWTHORN, WA ● LEEDERVILLE, WA ● NORTHBRIDGE, WA ● PERTH BC, WA
- PERTH GPO, WA ● JOONDANNA, WA ● GUILDFORD, WA ● WEST LEEDERVILLE, WA ● MELVILLE, WA
- VICTORIA PARK, WA ● SUBIACO, WA ● EAST PERTH, WA ● WEMBLEY, WA

Mandatory Question (181 response(s))
 Question type: Region Question

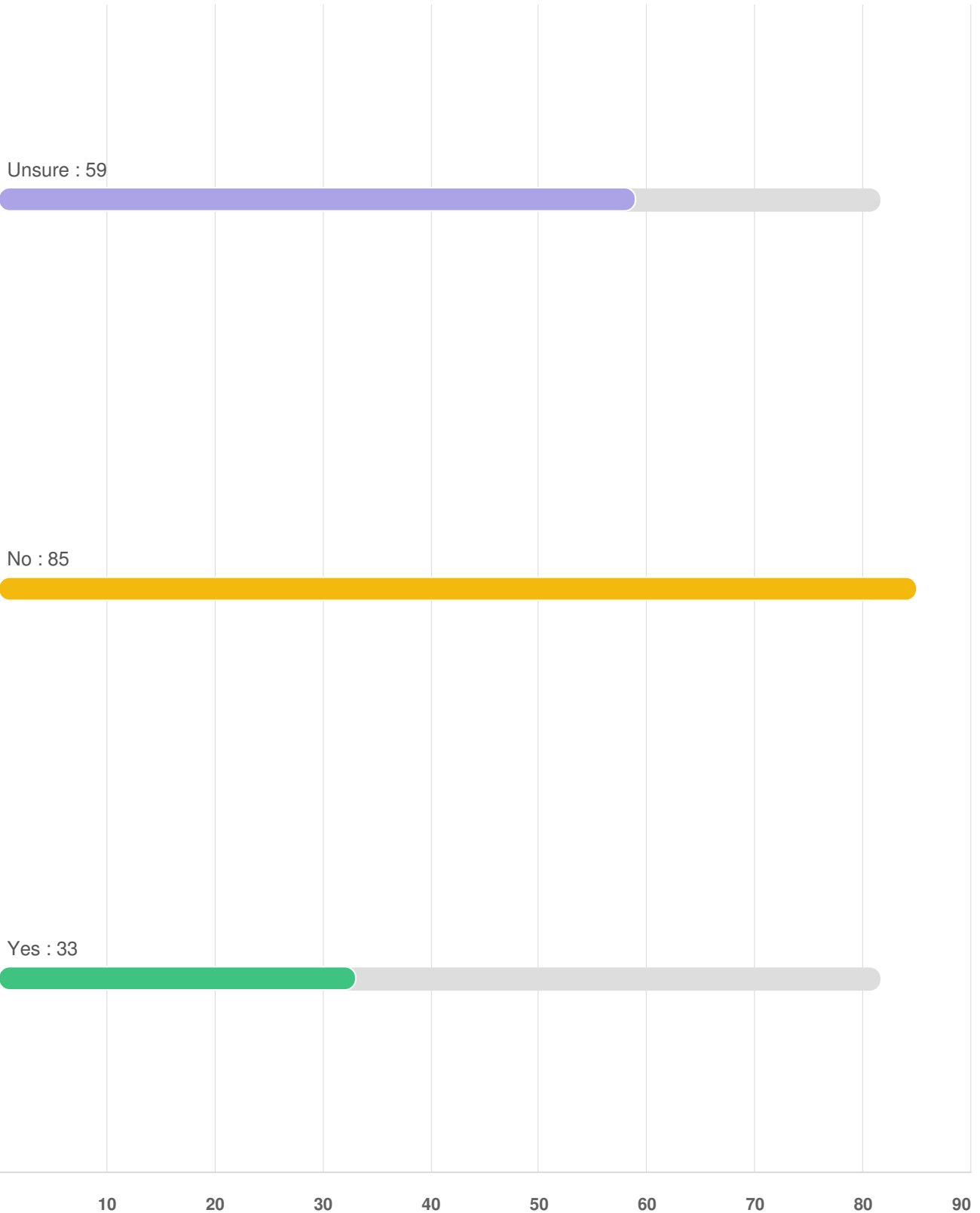
Q3 We previously conducted three surveys about the 40km/h trial. Do you remember completing any of these?



Optional question (180 response(s), 1 skipped)
 Question type: Likert Question

Q3 | We previously conducted three surveys about the 40km/h trial. Do you remember completing any of these?

6 month evaluation survey in November 2019



Pre-trial survey in April 2019

Unsure : 64



No : 75



Yes : 38



10 20 30 40 50 60 70 80

Survey about the proposed 40km/h trial in July 2018

Unsure : 62



No : 78

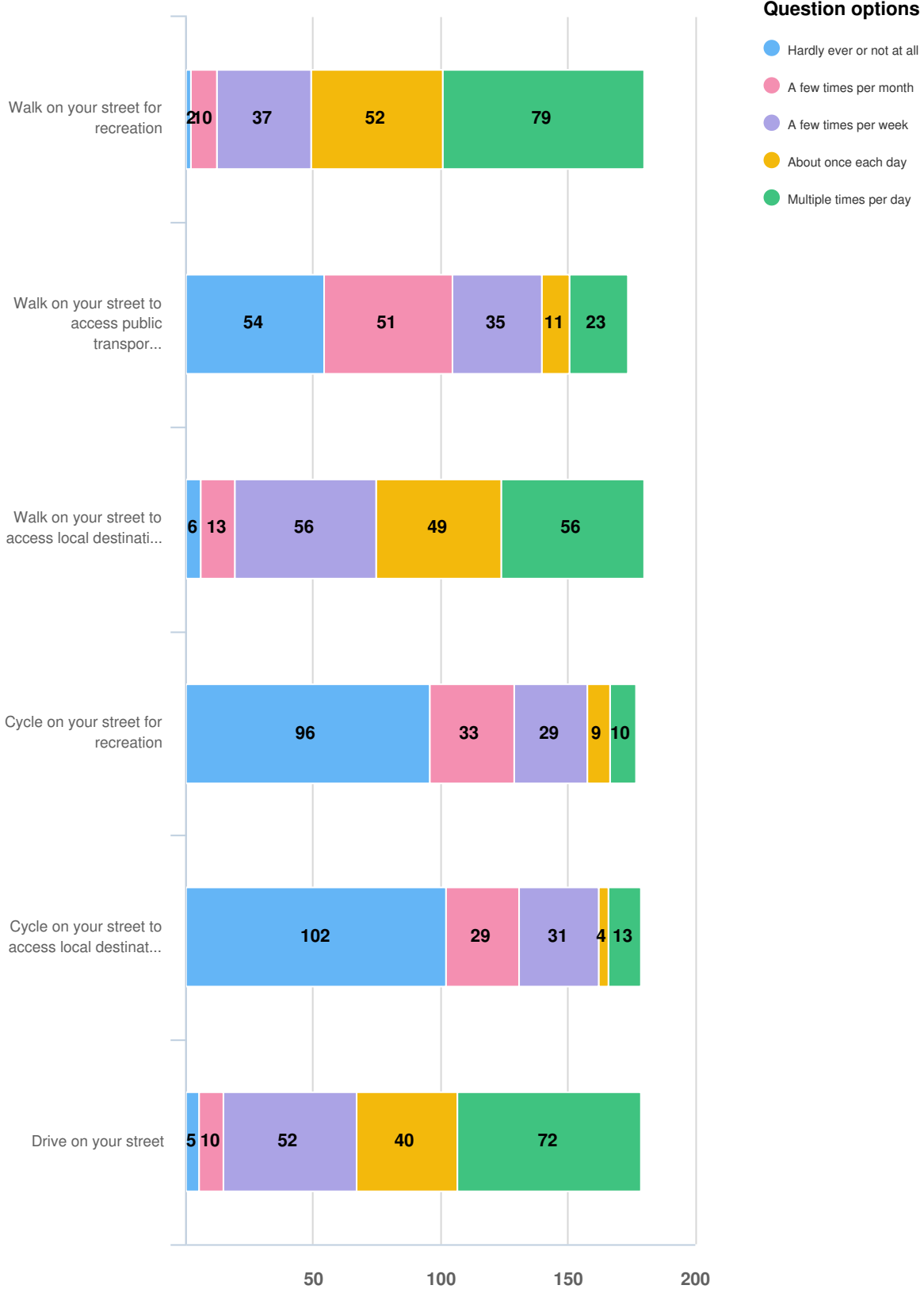


Yes : 36



10 20 30 40 50 60 70 80 90

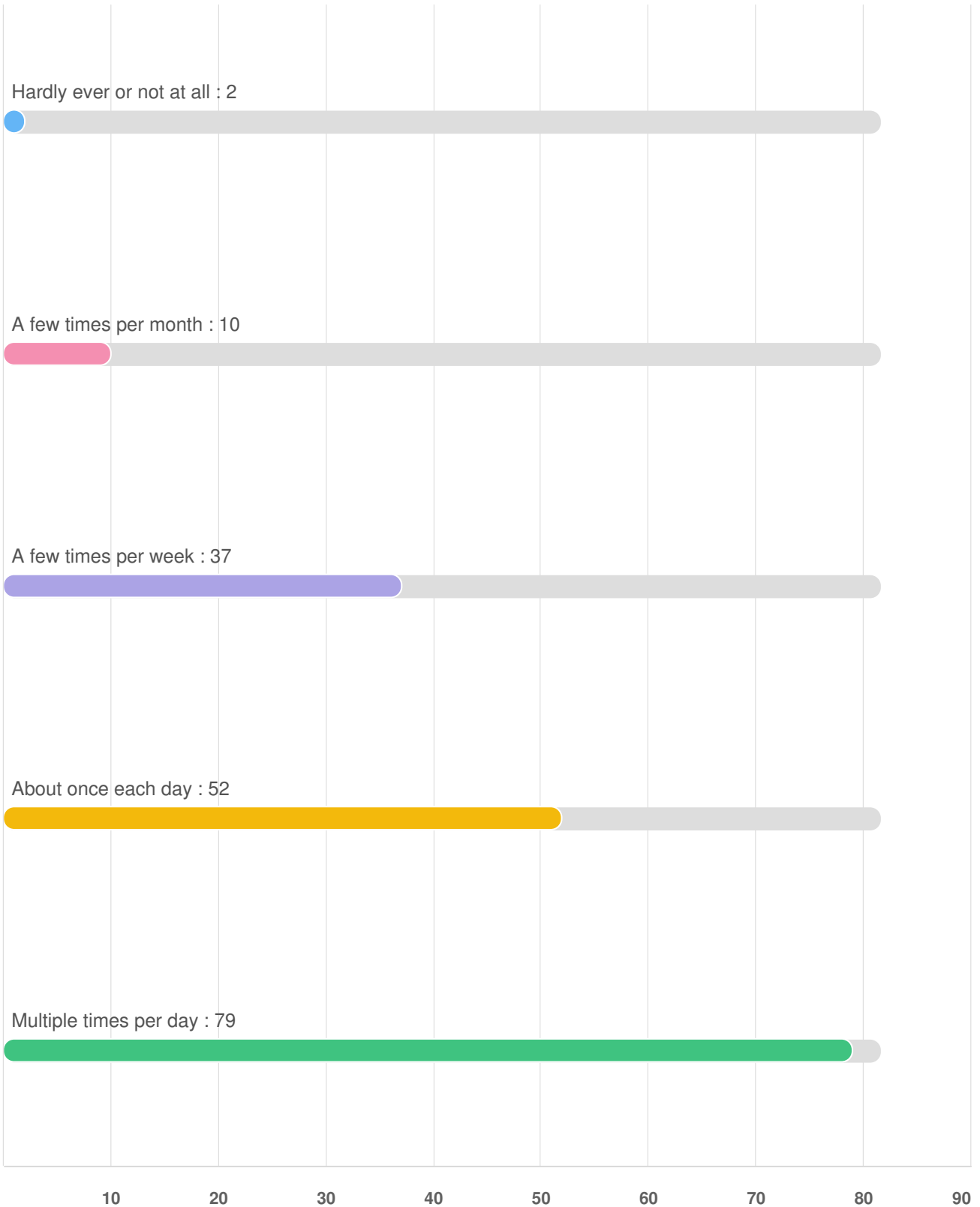
Q4 How often would you usually do the following, not considering the current COVID-19 pandemic?



Optional question (180 response(s), 1 skipped)
Question type: Likert Question

Q4 | How often would you usually do the following, not considering the current COVID-19 pandemic?

Walk on your street for recreation



Walk on your street to access public transport

Hardly ever or not at all : 54



A few times per month : 51



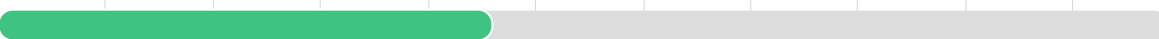
A few times per week : 35



About once each day : 11



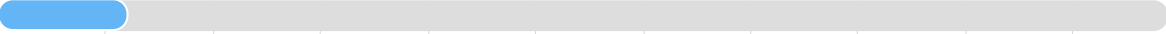
Multiple times per day : 23



5 10 15 20 25 30 35 40 45 50 55 60

Walk on your street to access local destinations (shops, schools work etc.)

Hardly ever or not at all : 6



A few times per month : 13



A few times per week : 56



About once each day : 49



Multiple times per day : 56



5 10 15 20 25 30 35 40 45 50 55 60

Cycle on your street for recreation

Hardly ever or not at all : 96



A few times per month : 33



A few times per week : 29



About once each day : 9



Multiple times per day : 10



10 20 30 40 50 60 70 80 90 100 110

Cycle on your street to access local destinations

Hardly ever or not at all : 102



A few times per month : 29



A few times per week : 31



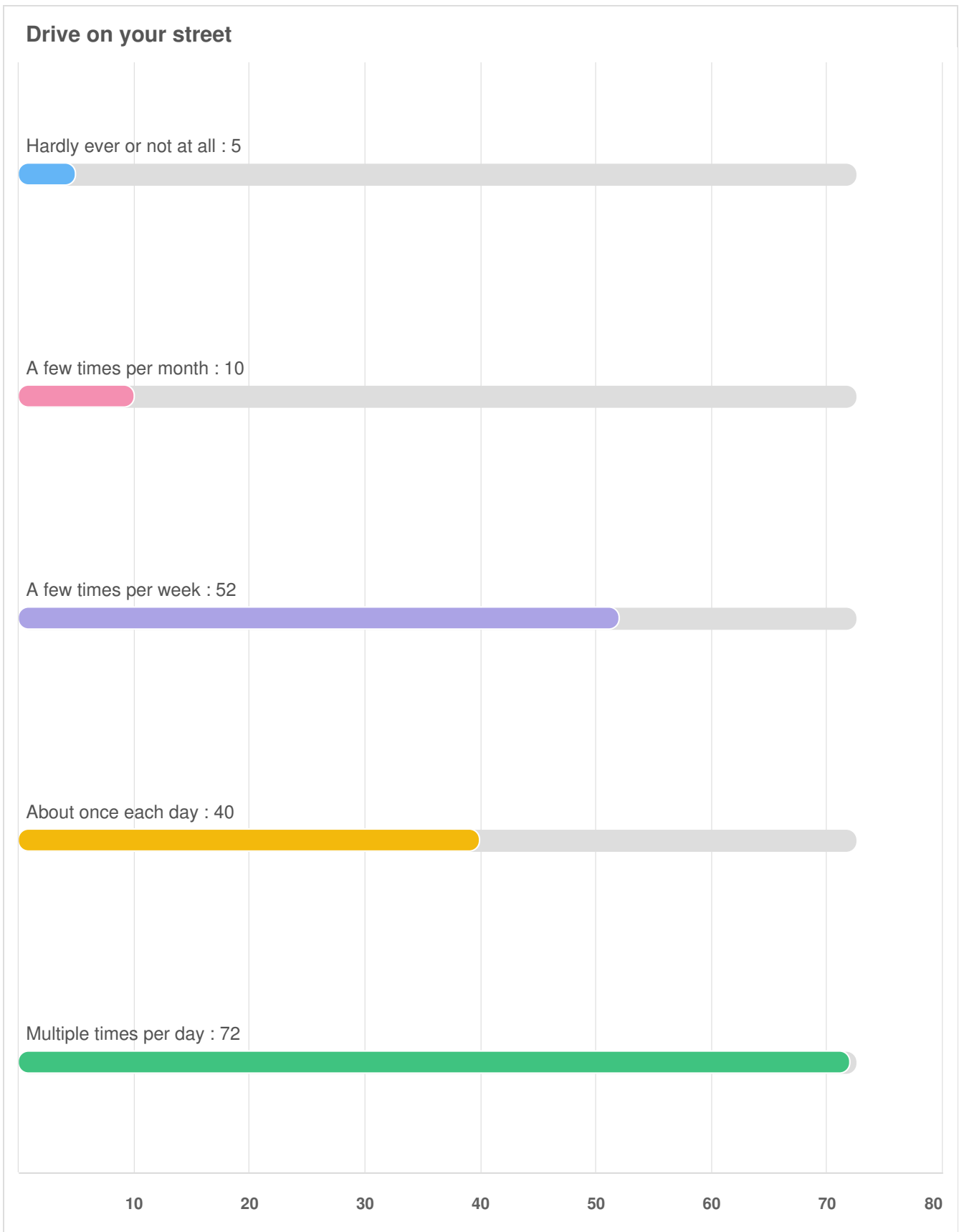
About once each day : 4



Multiple times per day : 13



10 20 30 40 50 60 70 80 90 100 110



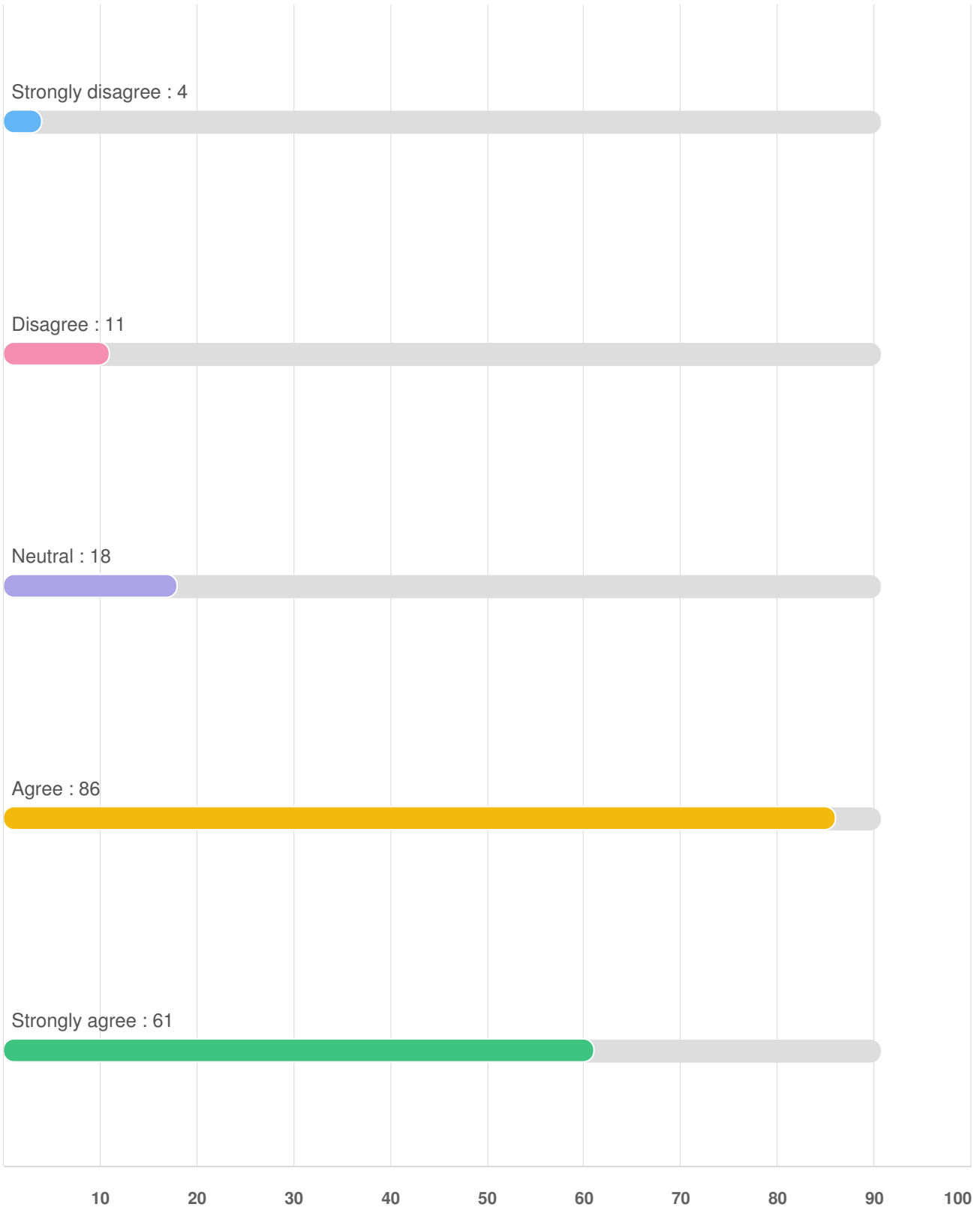
Q5 Please rate how strongly you agree or disagree with the following statements about transport in the City of Vincent



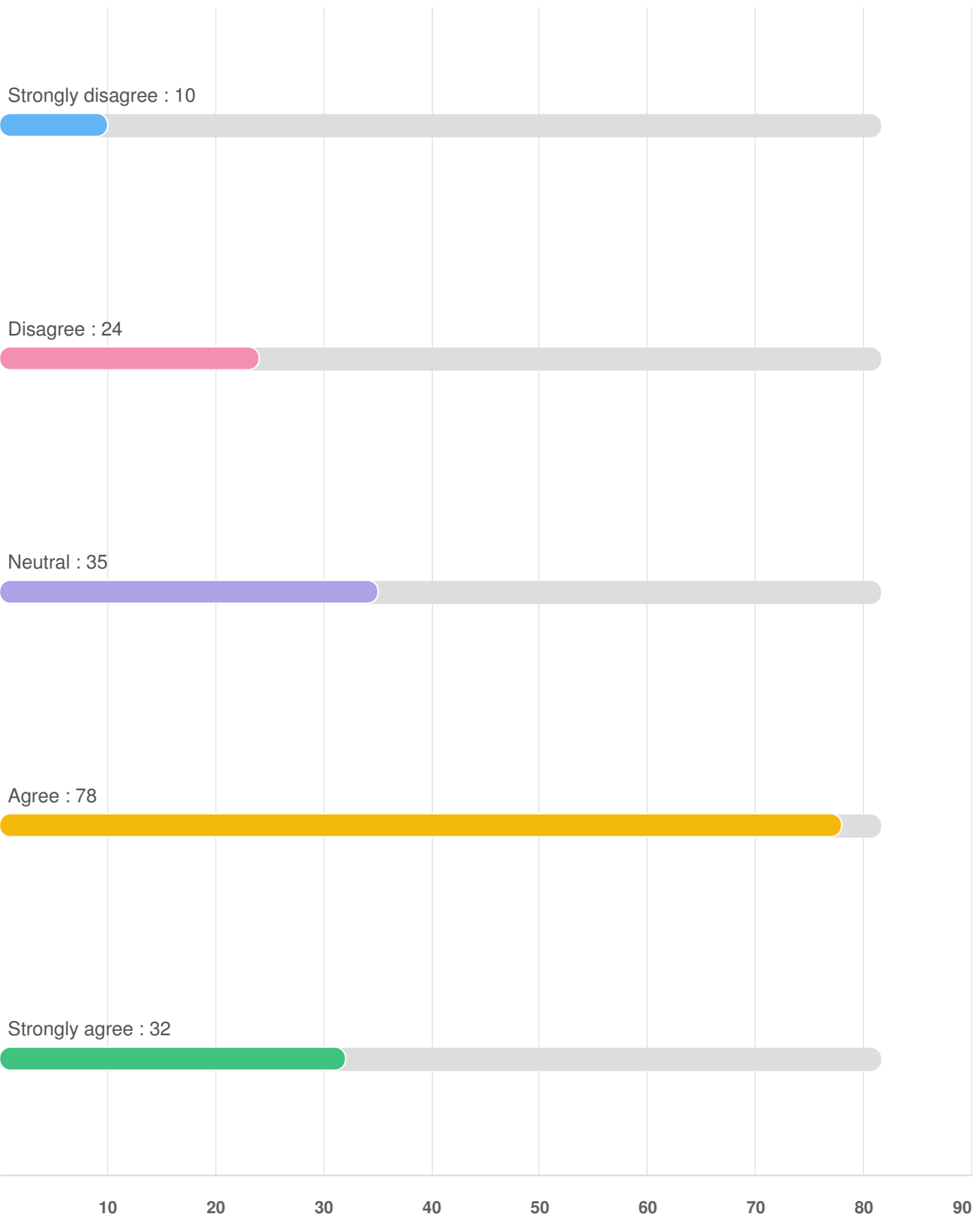
Optional question (181 response(s), 0 skipped)
 Question type: Likert Question

Q5 | Please rate how strongly you agree or disagree with the following statements about transport in the City of Vincent

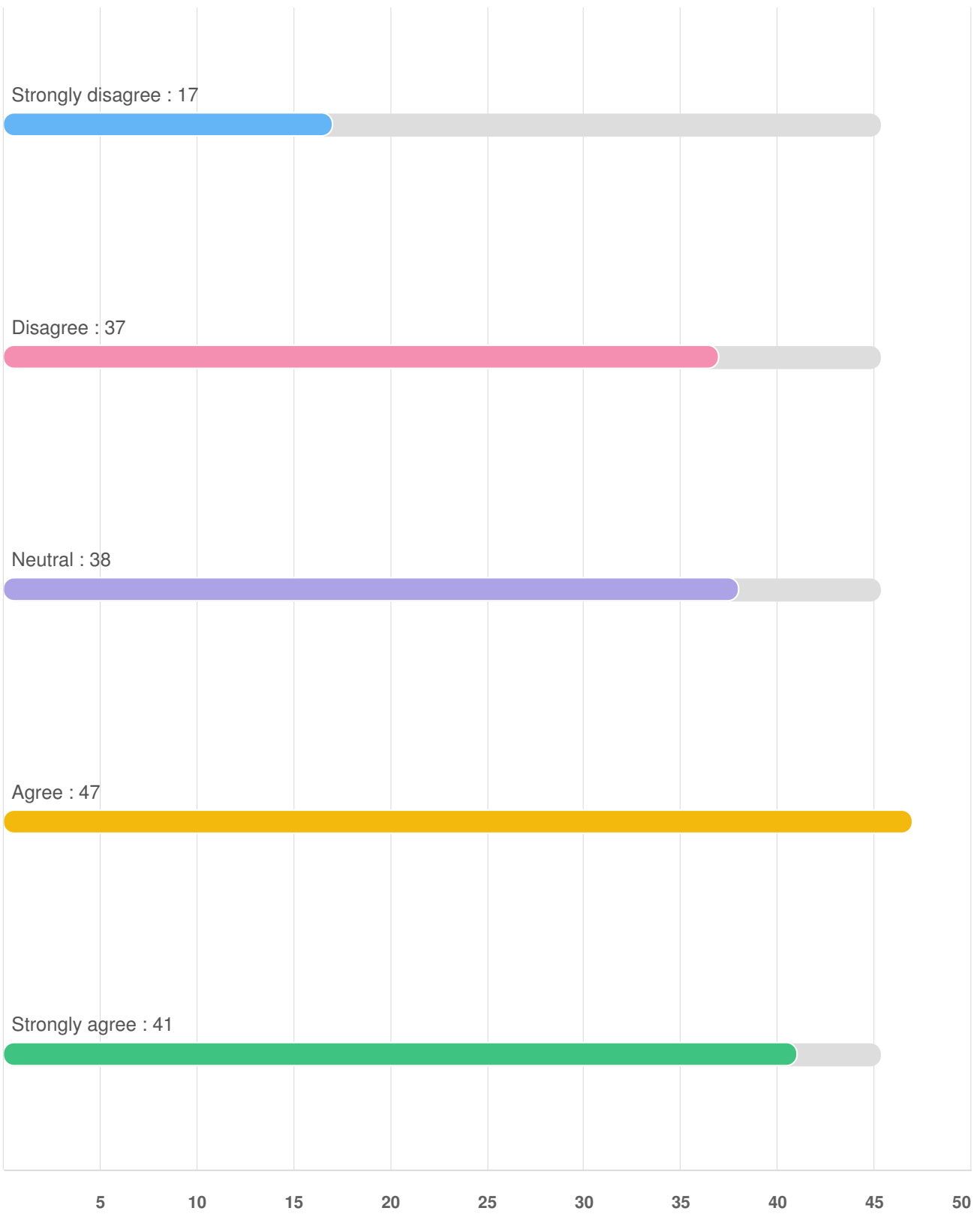
It is generally safe for me to walk around my local area



It is generally safe for children to walk around my local area



'Rat-running' (traffic taking short cuts on local streets) in my local area is a problem



Traffic noise in my local area is a problem

Strongly disagree : 16



Disagree : 46



Neutral : 57



Agree : 38

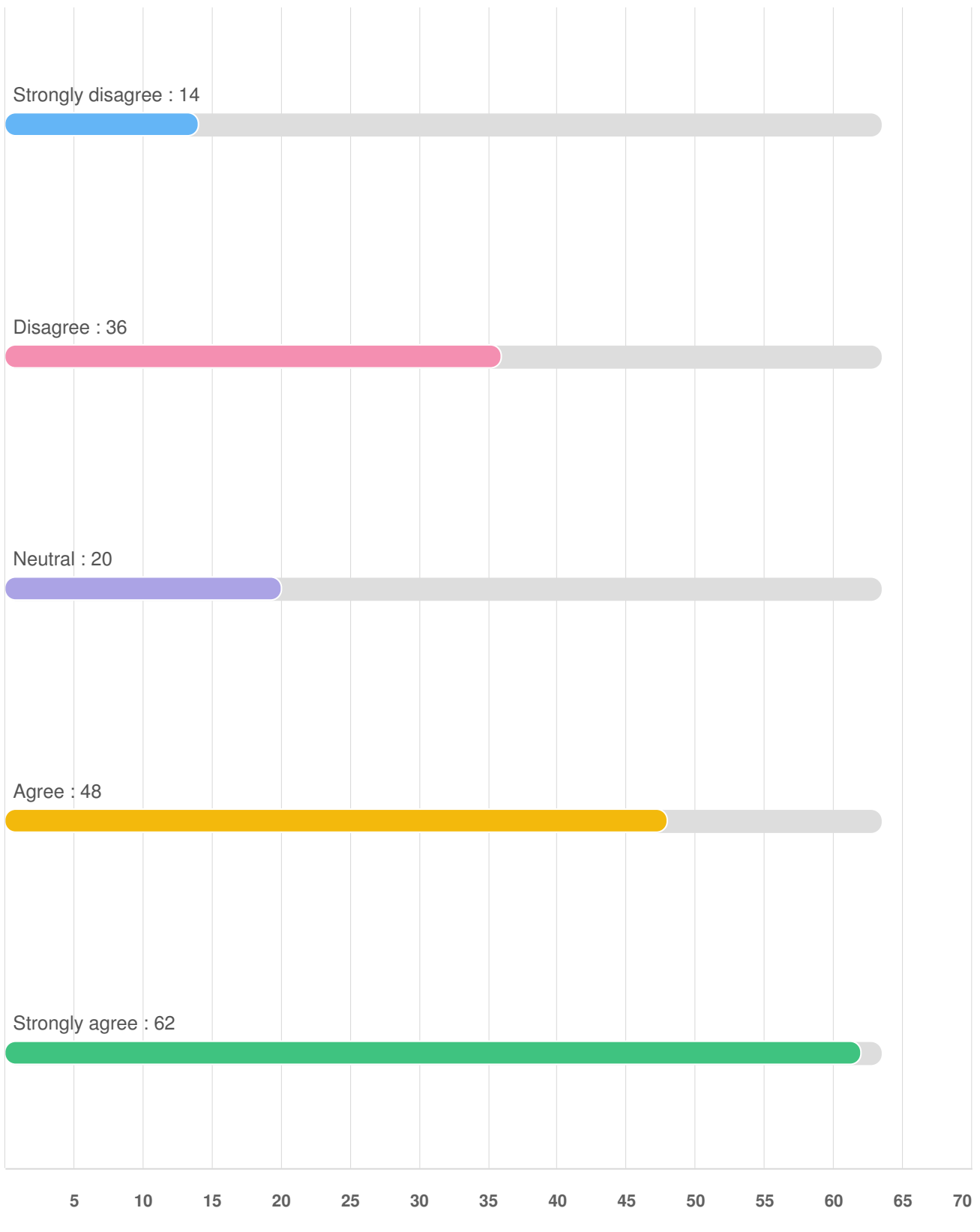


Strongly agree : 23

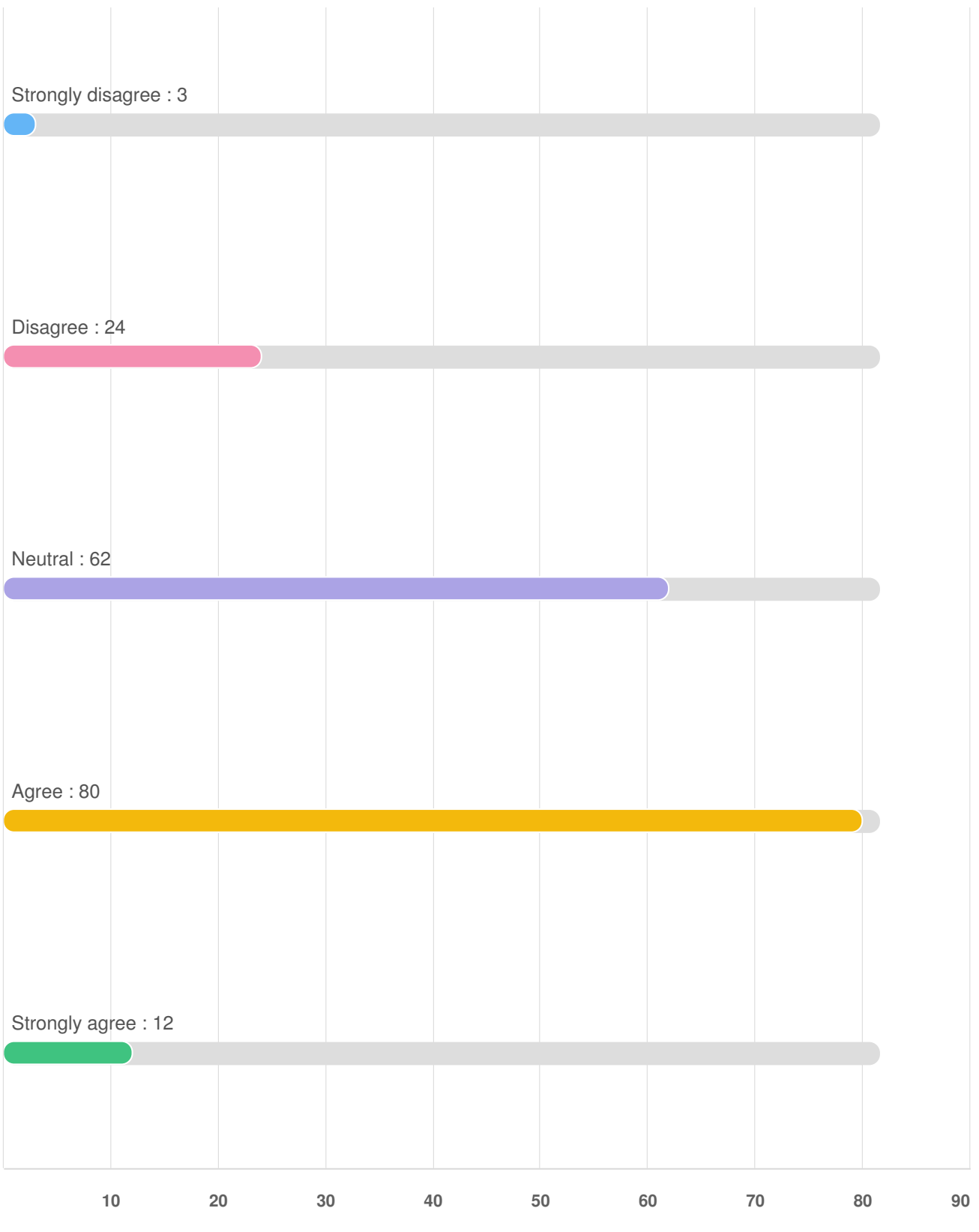


5 10 15 20 25 30 35 40 45 50 55 60

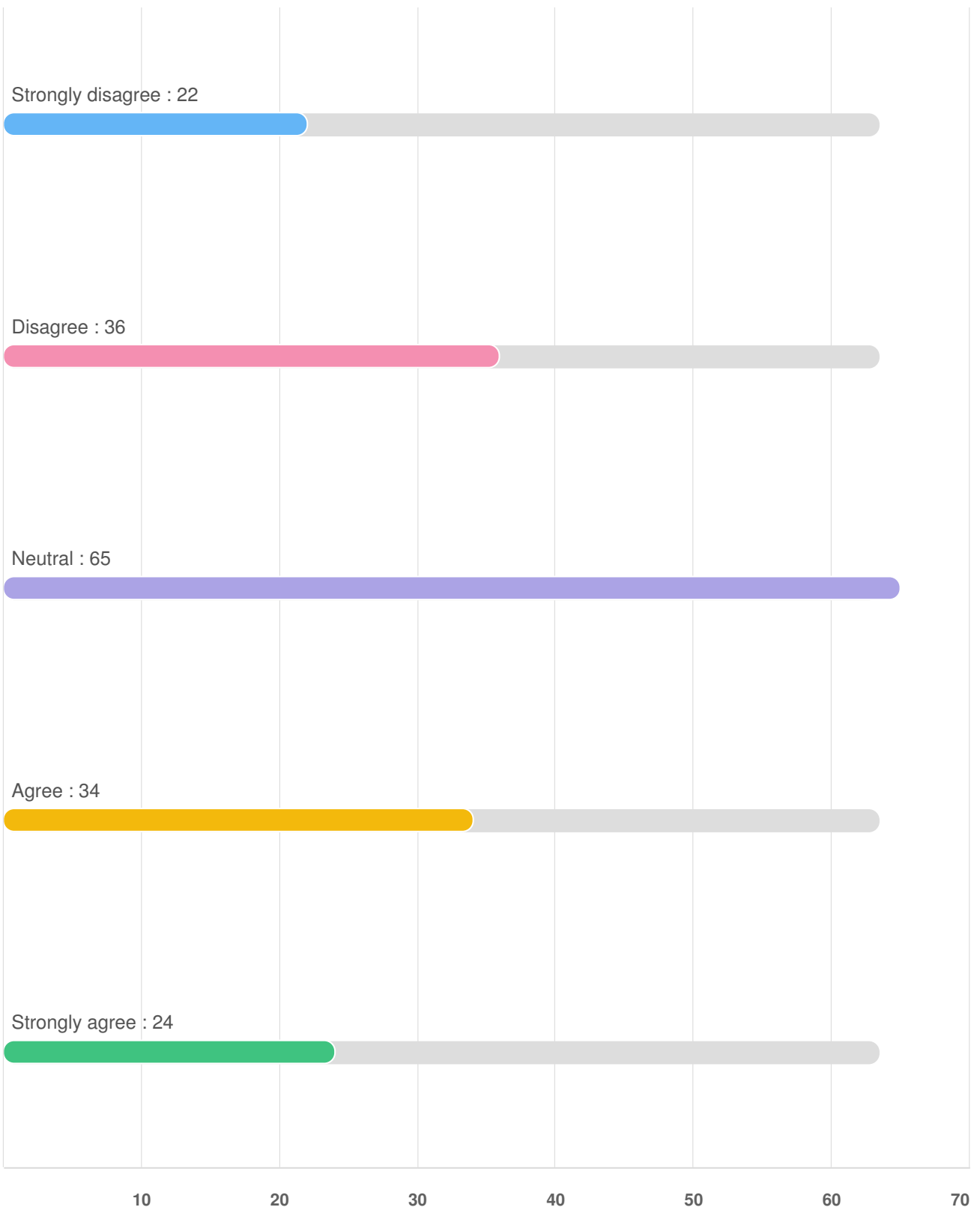
Vehicles speeding on local streets is a problem



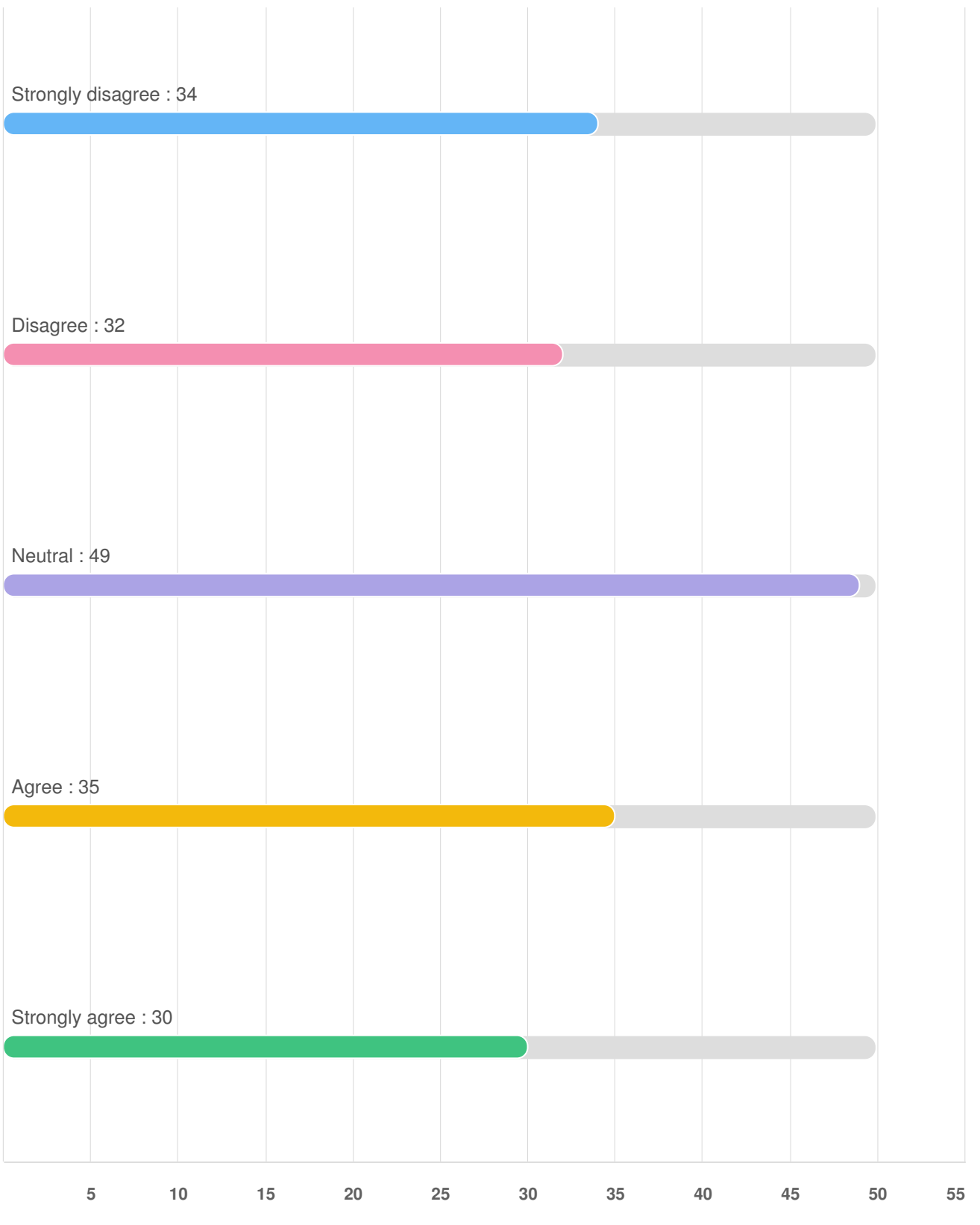
Cycling within the City of Vincent is generally safe



I would cycle more if it was safer



I would walk more if it was easier to cross roads



I would like to drive less

Strongly disagree : 15



Disagree : 22



Neutral : 58



Agree : 38

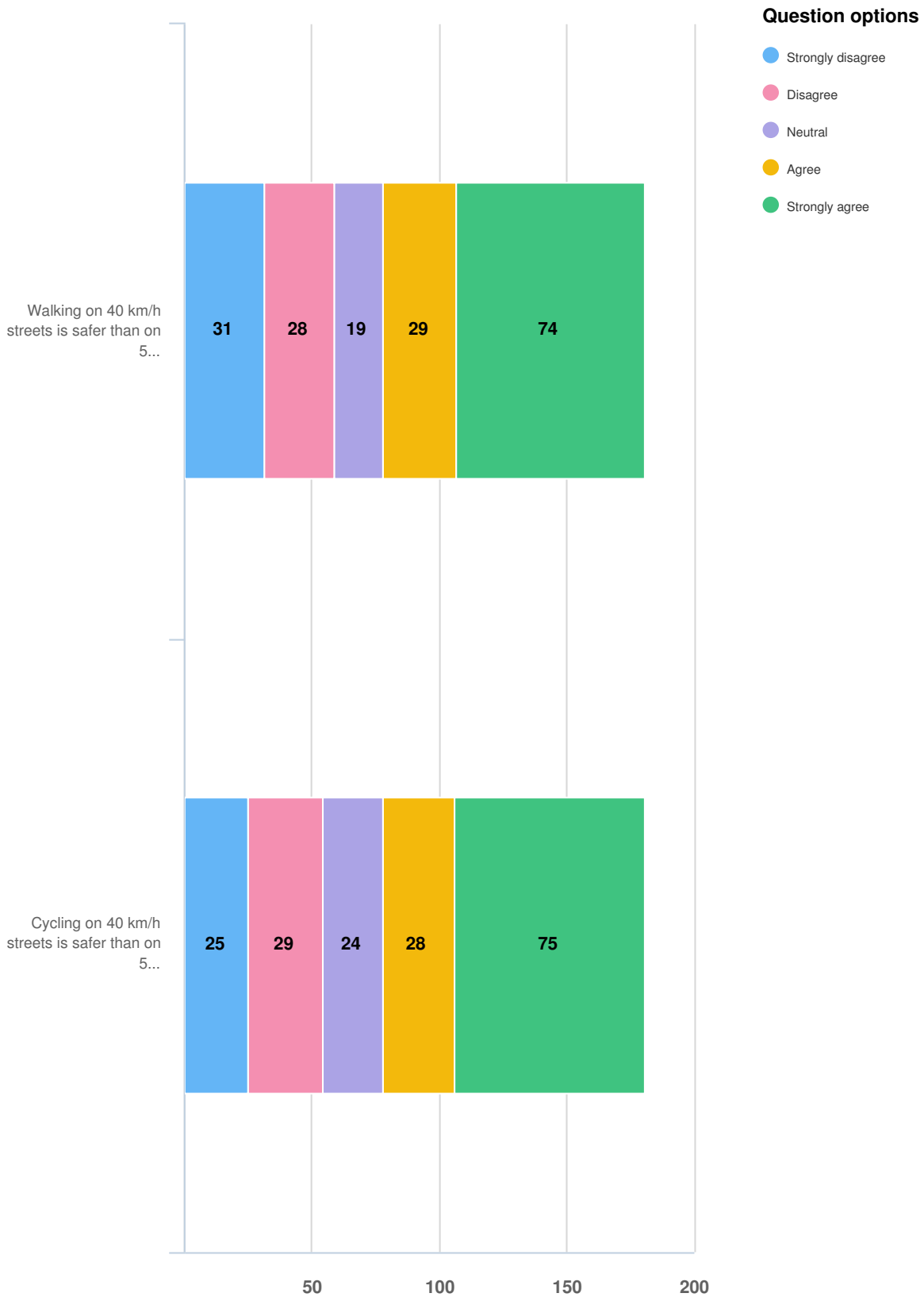


Strongly agree : 46



5 10 15 20 25 30 35 40 45 50 55 60 65

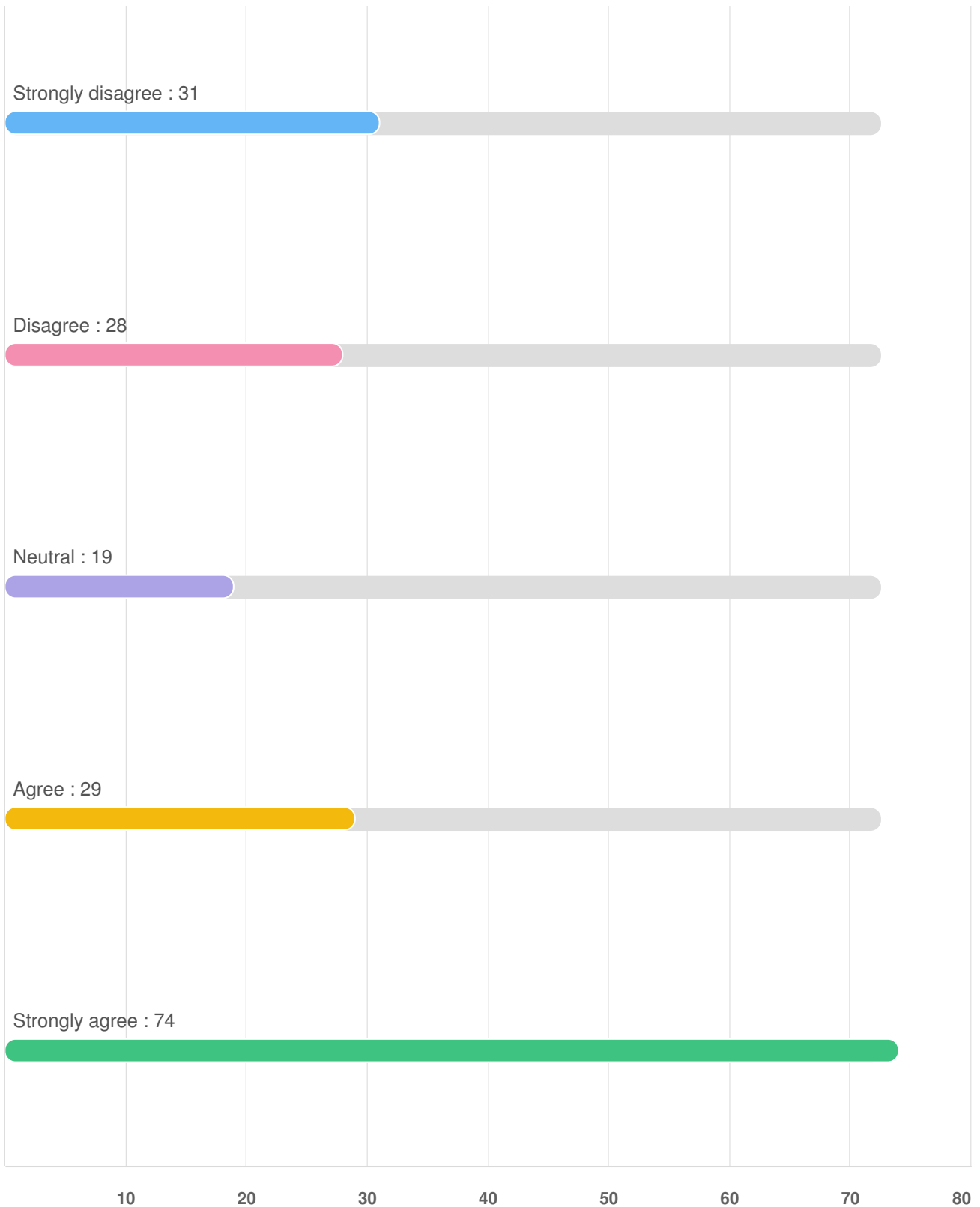
Q6 Please rate how strongly you agree or disagree with the following statements about speed limits in suburban areas

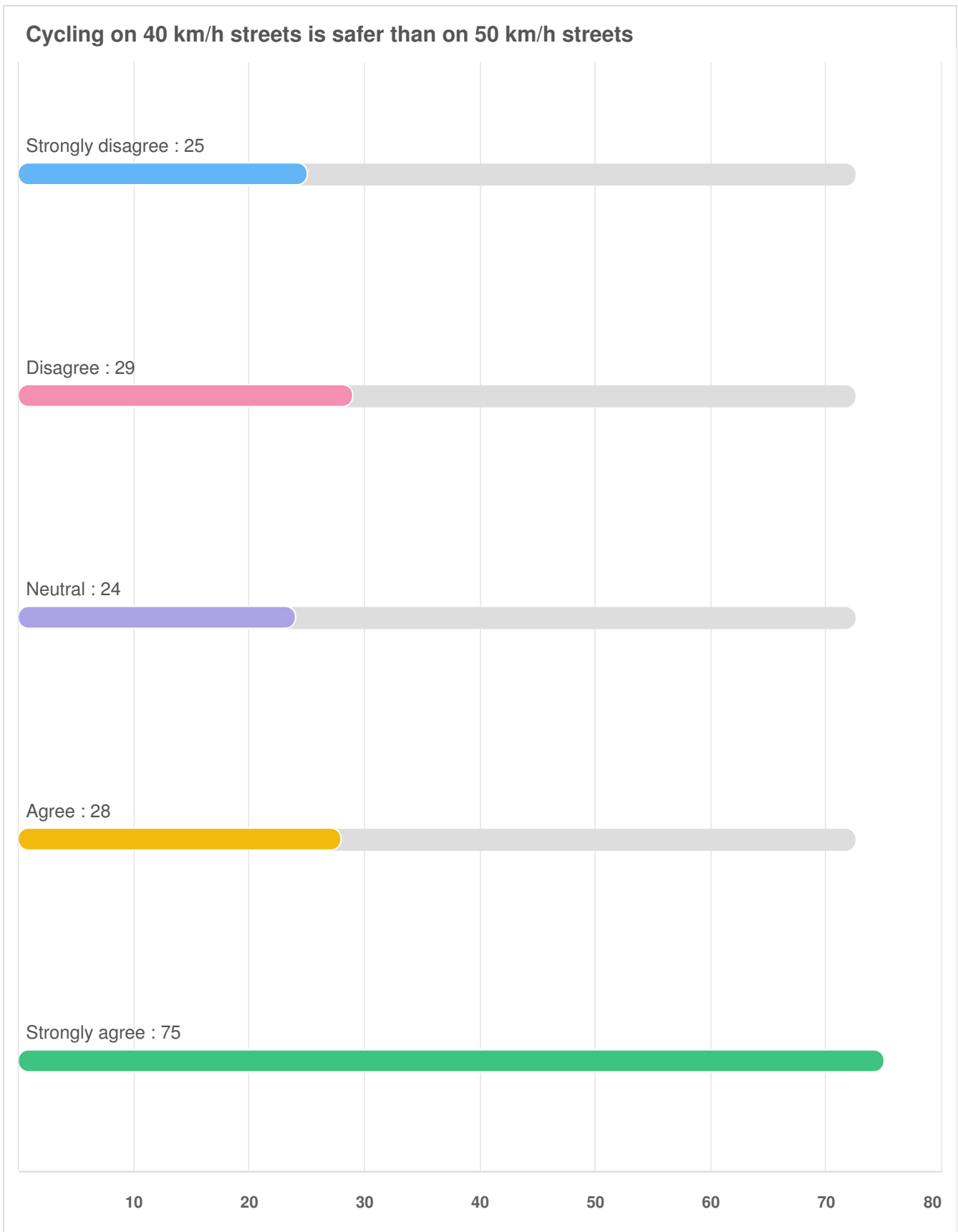


Optional question (181 response(s), 0 skipped)
 Question type: Likert Question

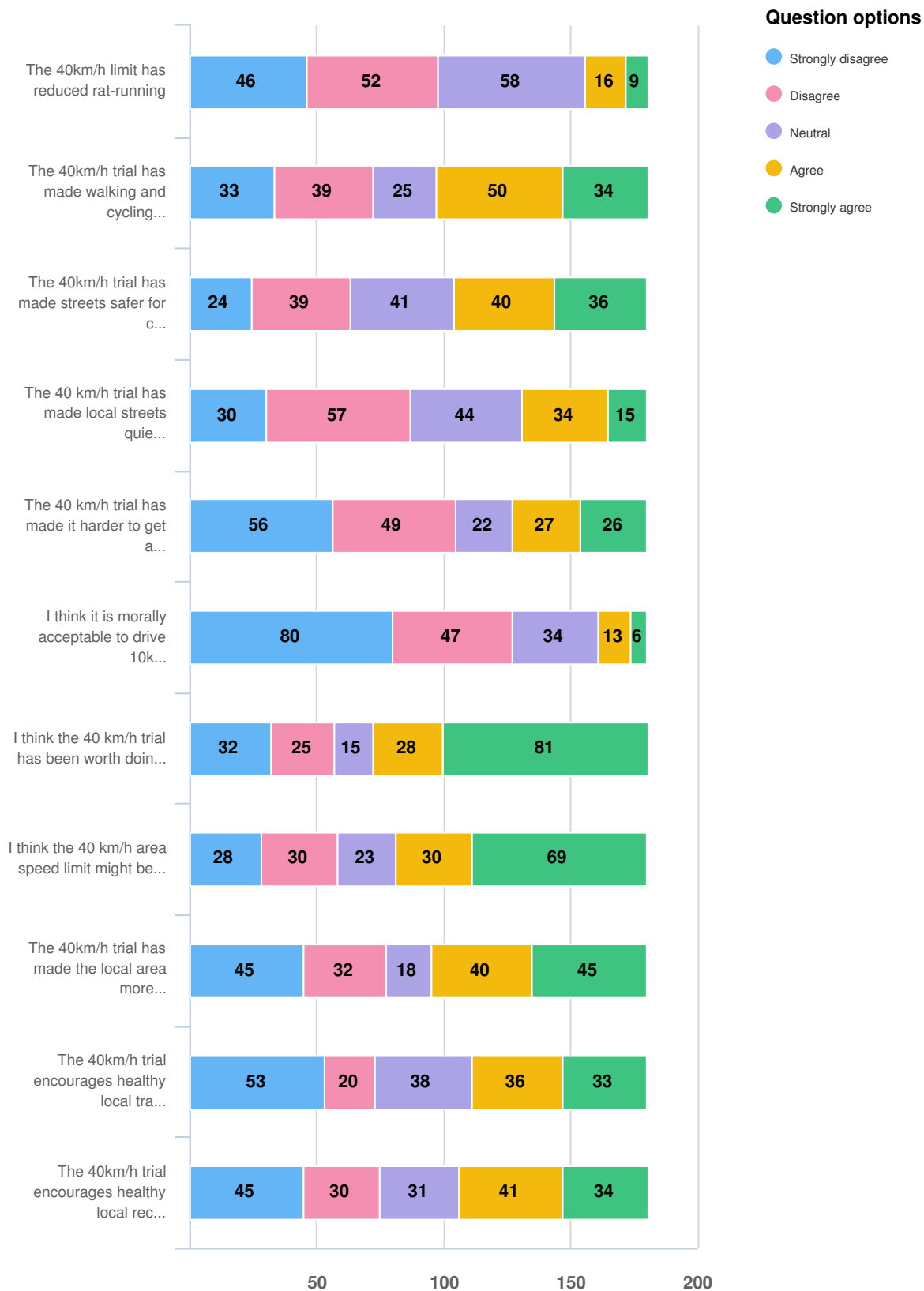
Q6 | Please rate how strongly you agree or disagree with the following statements about speed limits in suburban areas

Walking on 40 km/h streets is safer than on 50 km/h streets





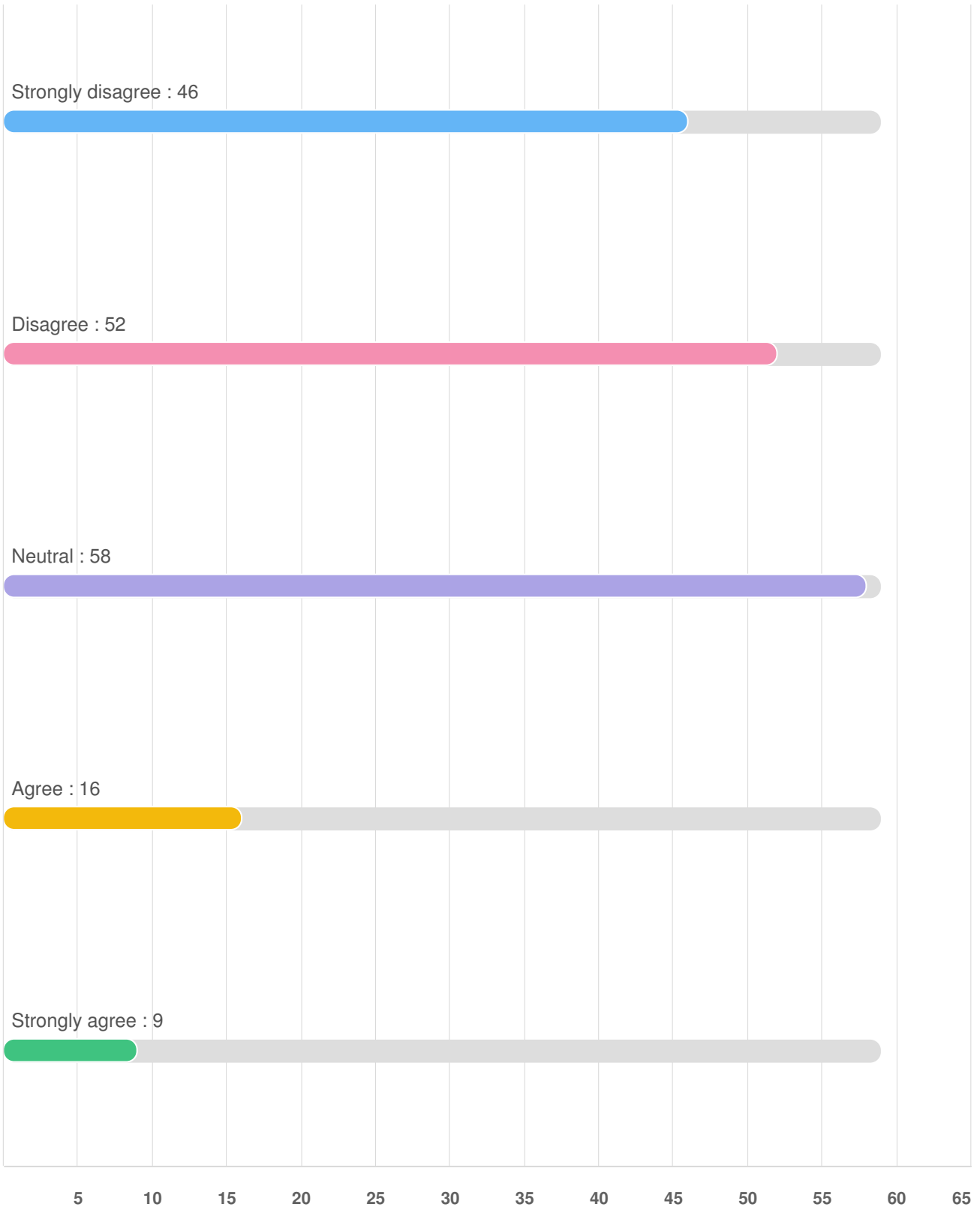
Q7 Please rate how strongly you agree or disagree with the following statements about the 40km/h trial so far



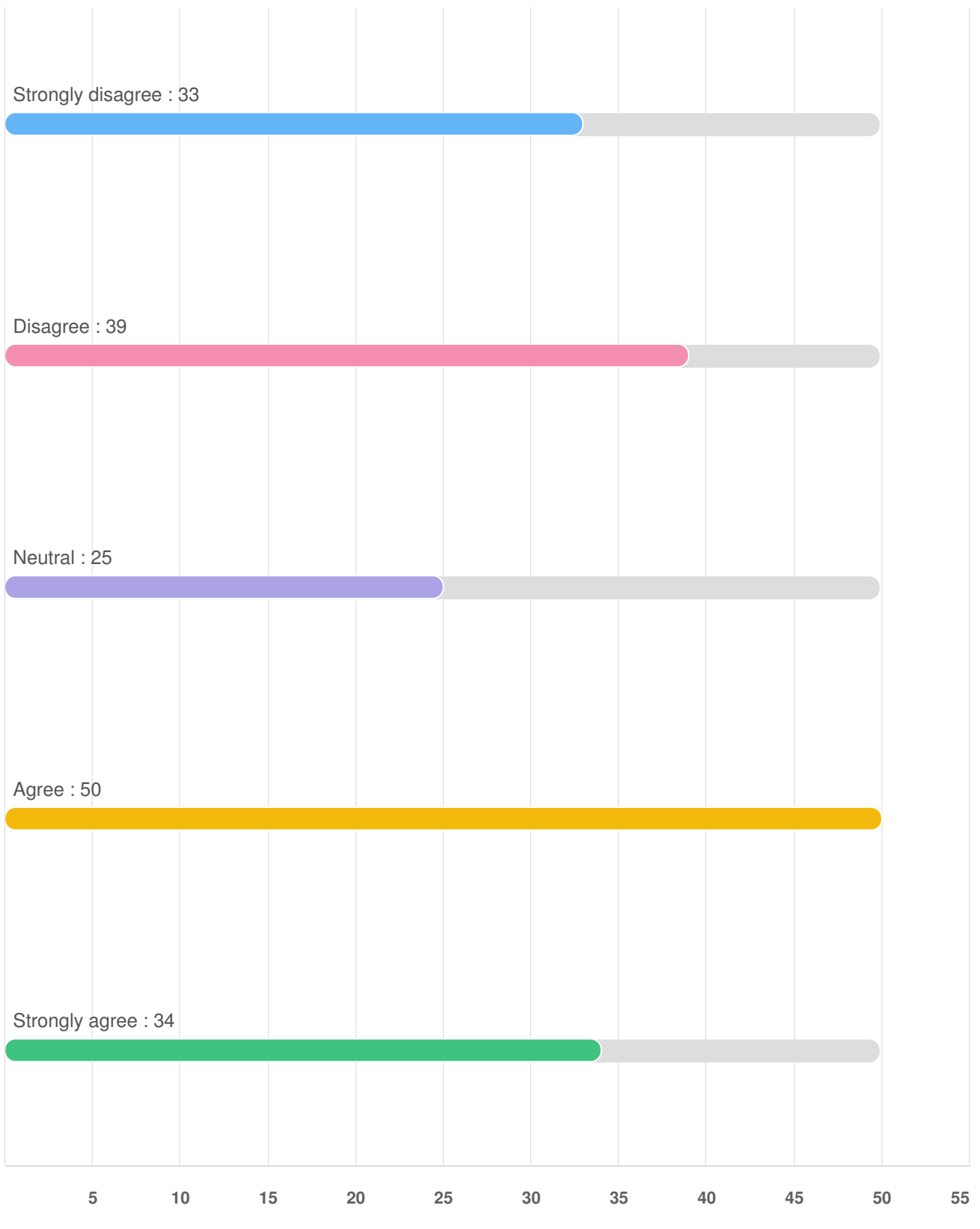
Optional question (181 response(s), 0 skipped)
 Question type: Likert Question

Q7 | Please rate how strongly you agree or disagree with the following statements about the 40km/h trial so far

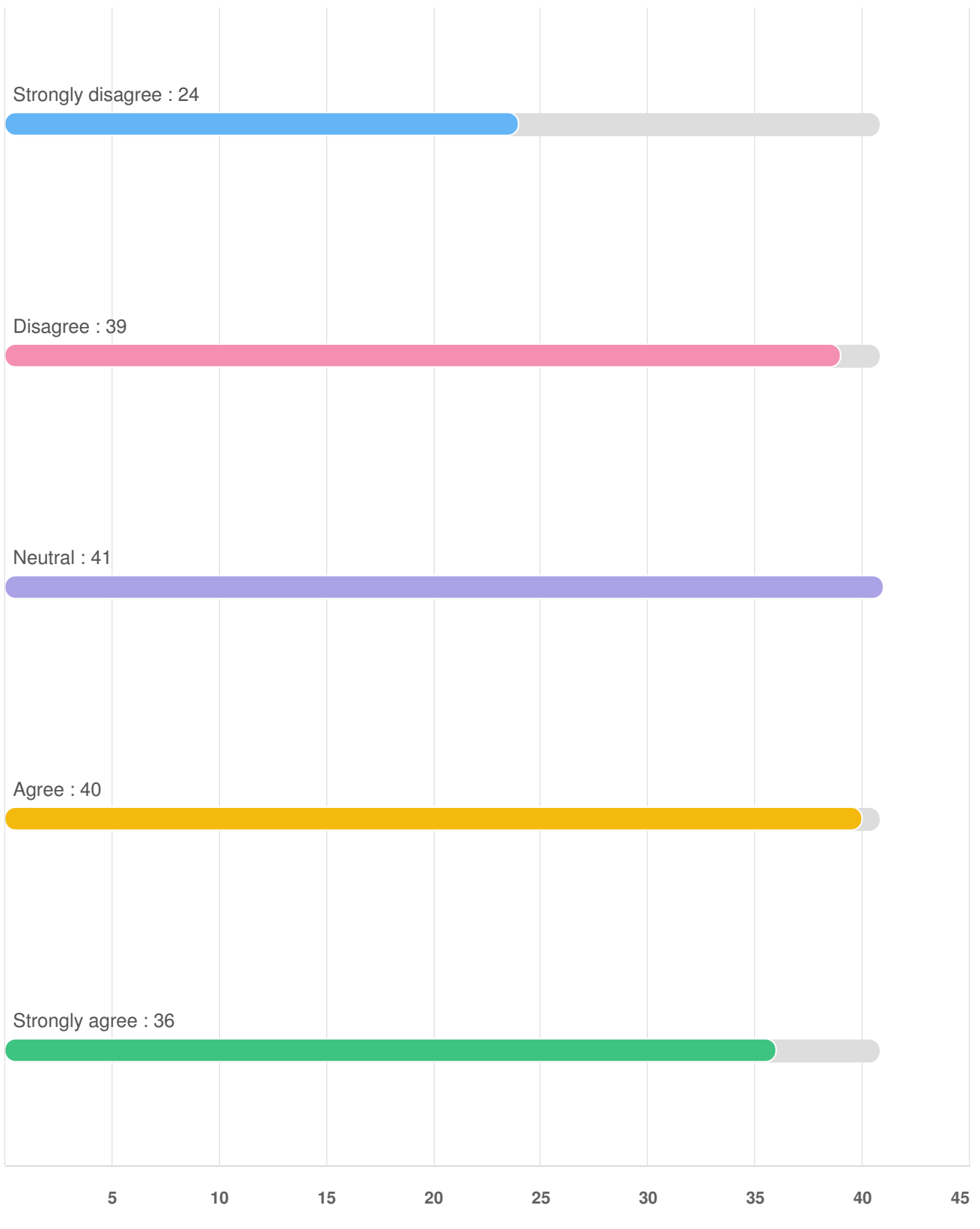
The 40km/h limit has reduced rat-running



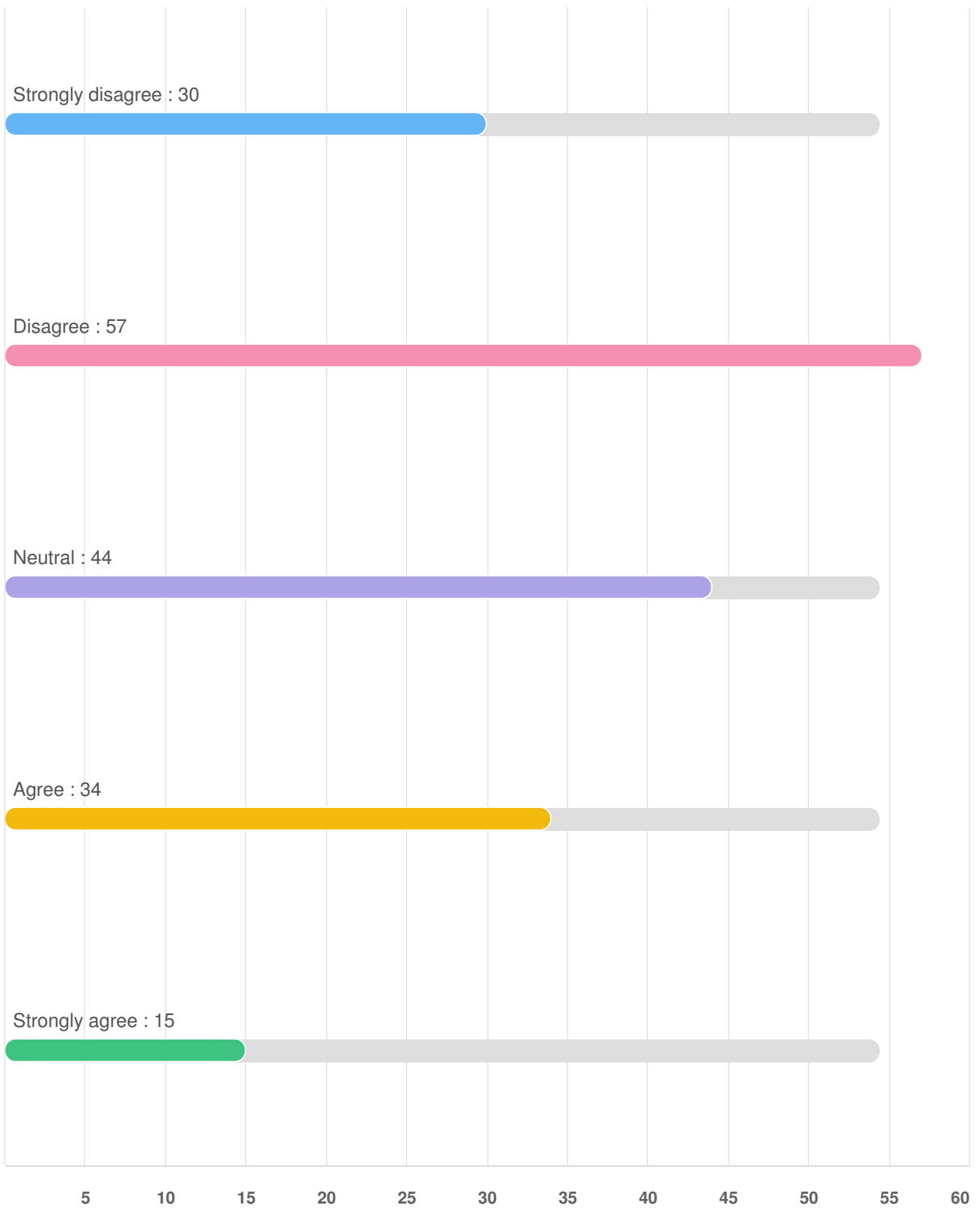
The 40km/h trial has made walking and cycling safer



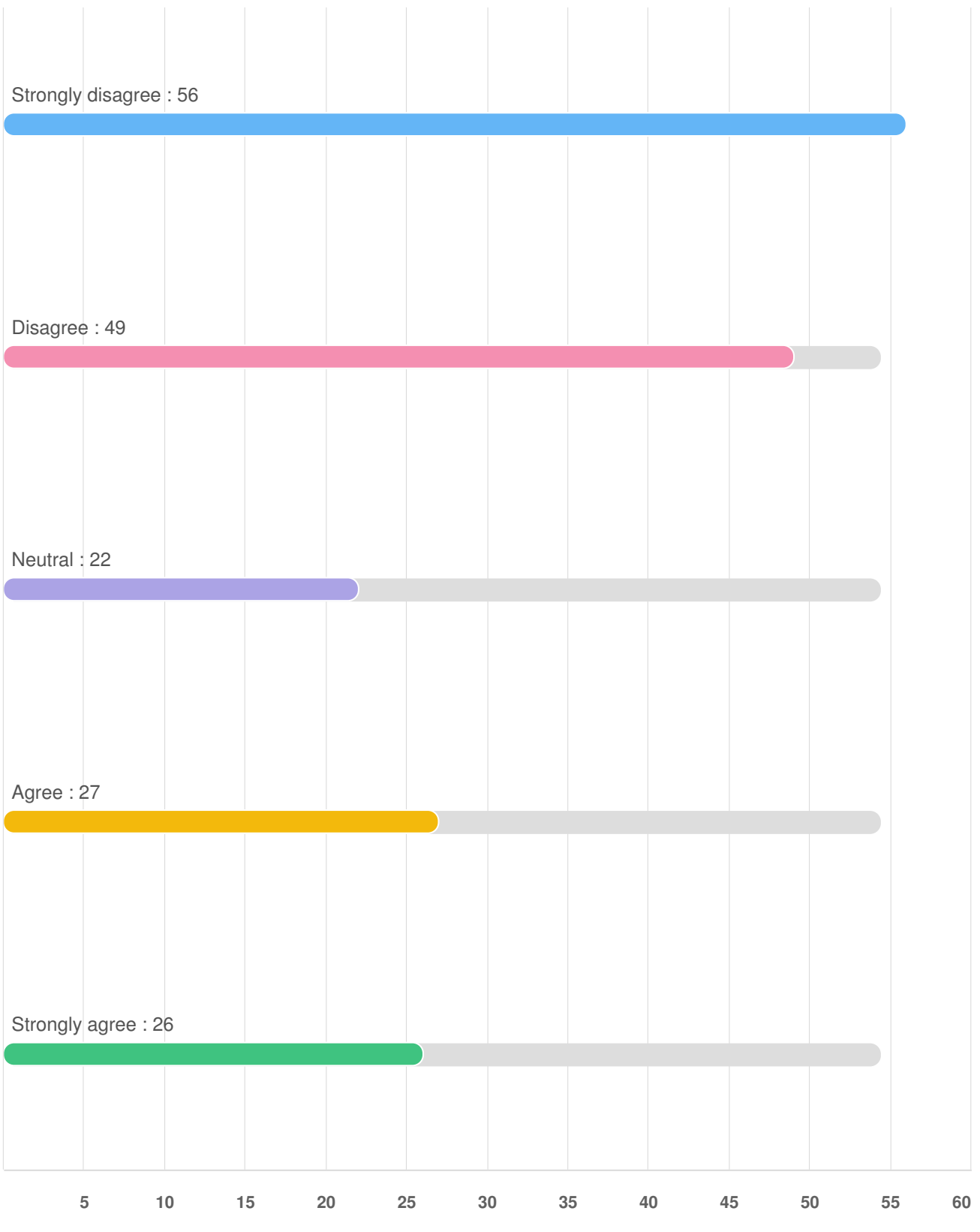
The 40km/h trial has made streets safer for children



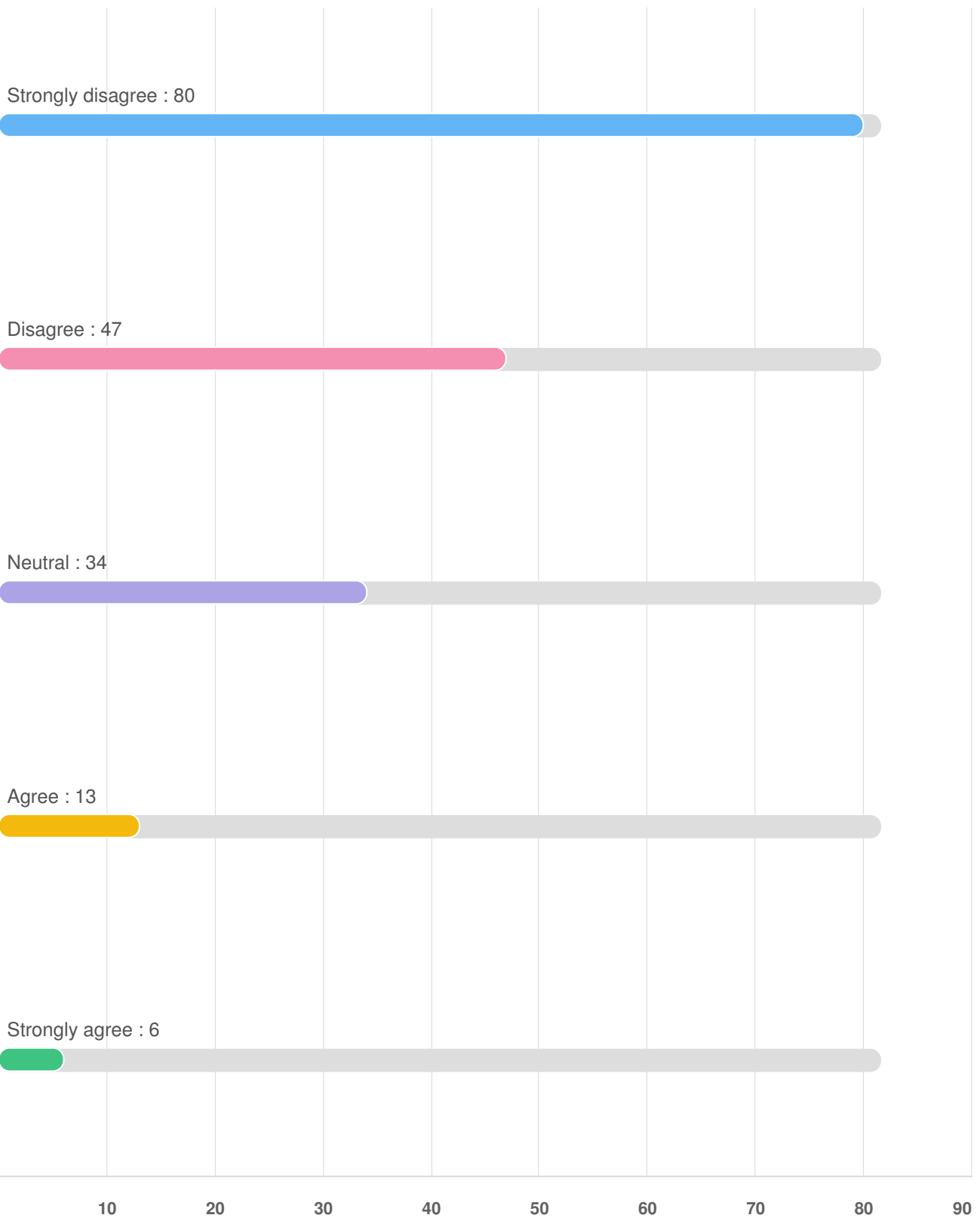
The 40 km/h trial has made local streets quieter



The 40 km/h trial has made it harder to get around



I think it is morally acceptable to drive 10km/h over the lowered speed limit in the trial 40km/h area



I think the 40 km/h trial has been worth doing

Strongly disagree : 32



Disagree : 25



Neutral : 15



Agree : 28

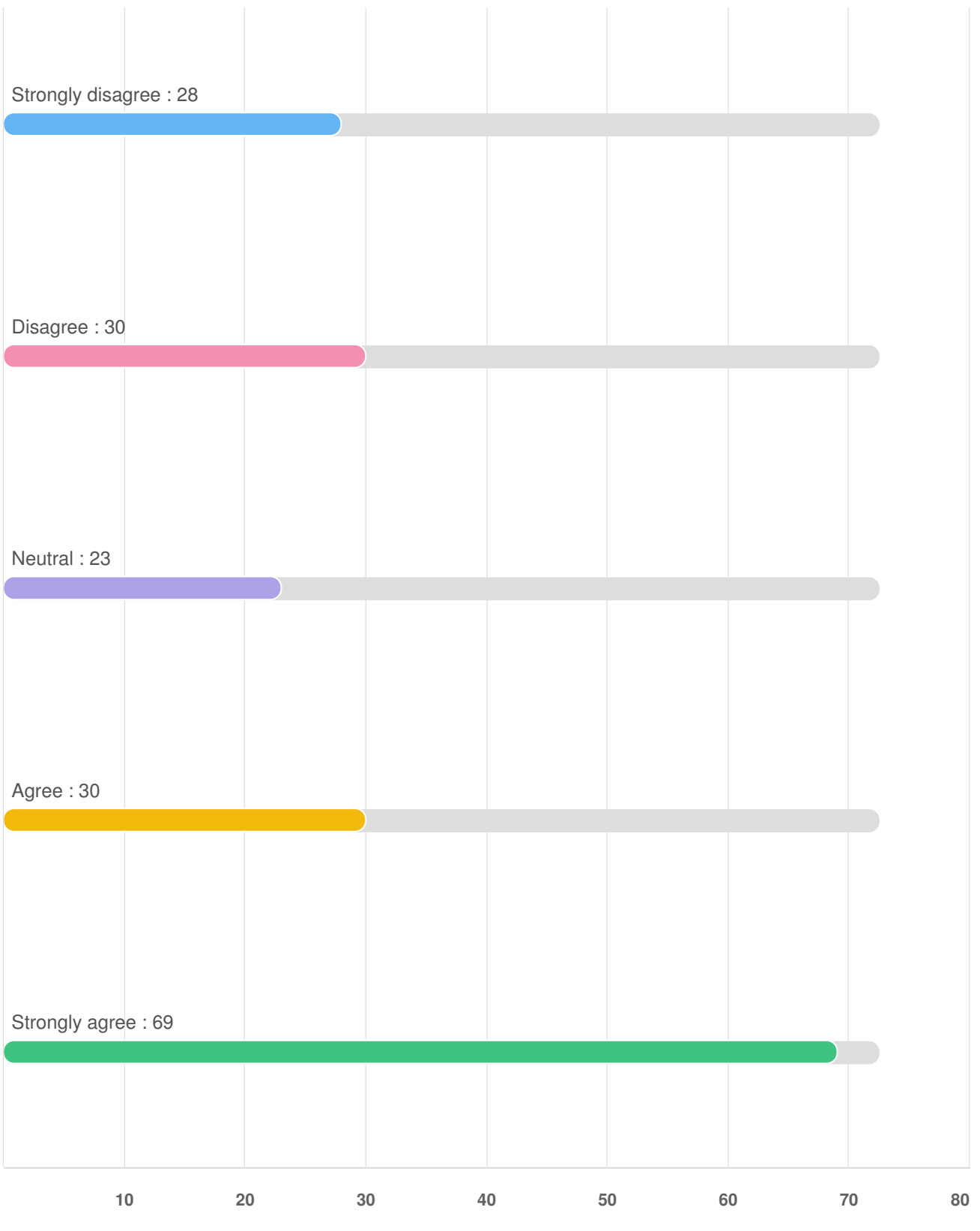


Strongly agree : 81

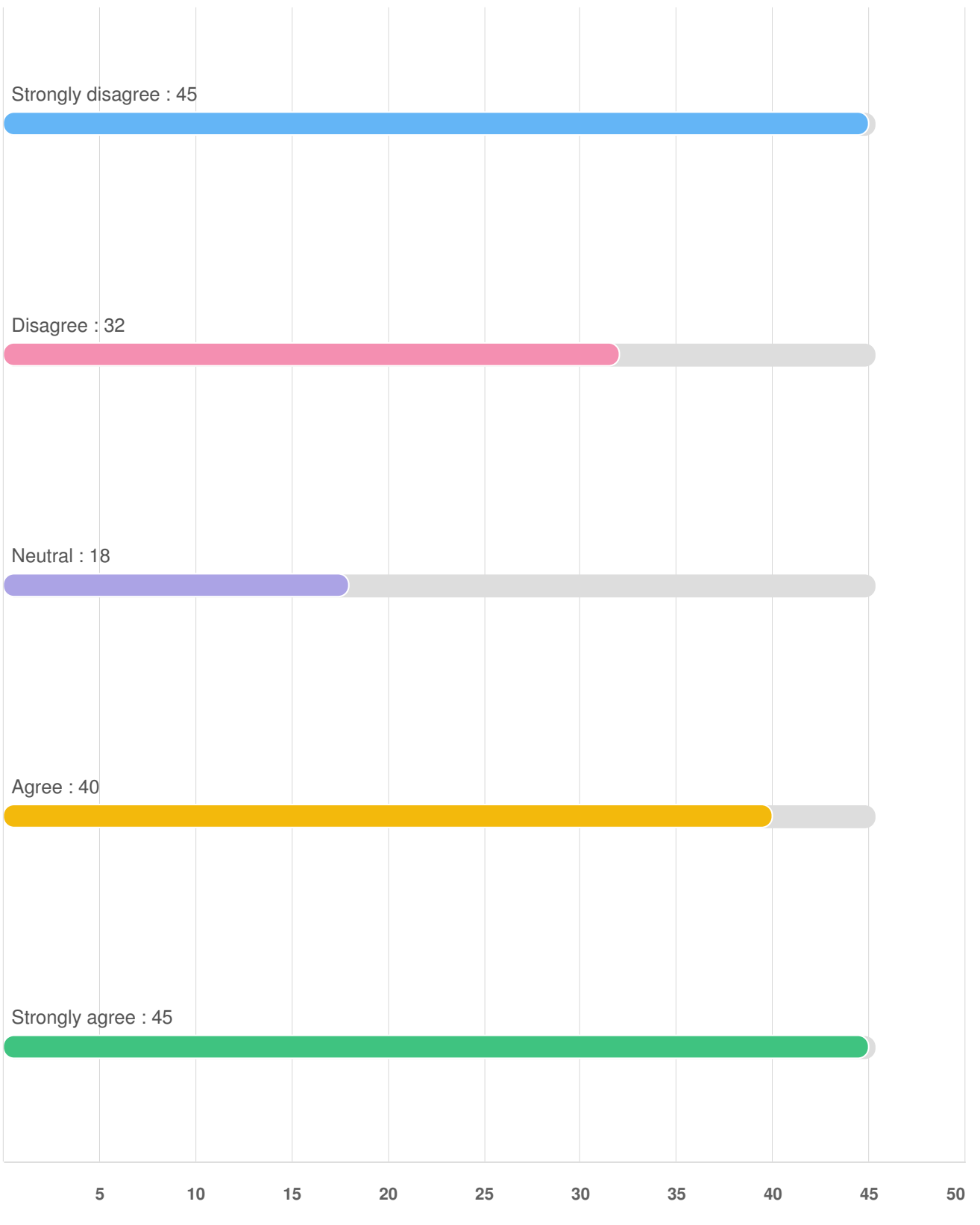


10 20 30 40 50 60 70 80 90

I think the 40 km/h area speed limit might be useful in other areas

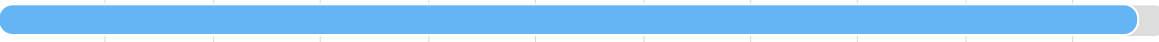


The 40km/h trial has made the local area more liveable



The 40km/h trial encourages healthy local transport

Strongly disagree : 53



Disagree : 20



Neutral : 38



Agree : 36

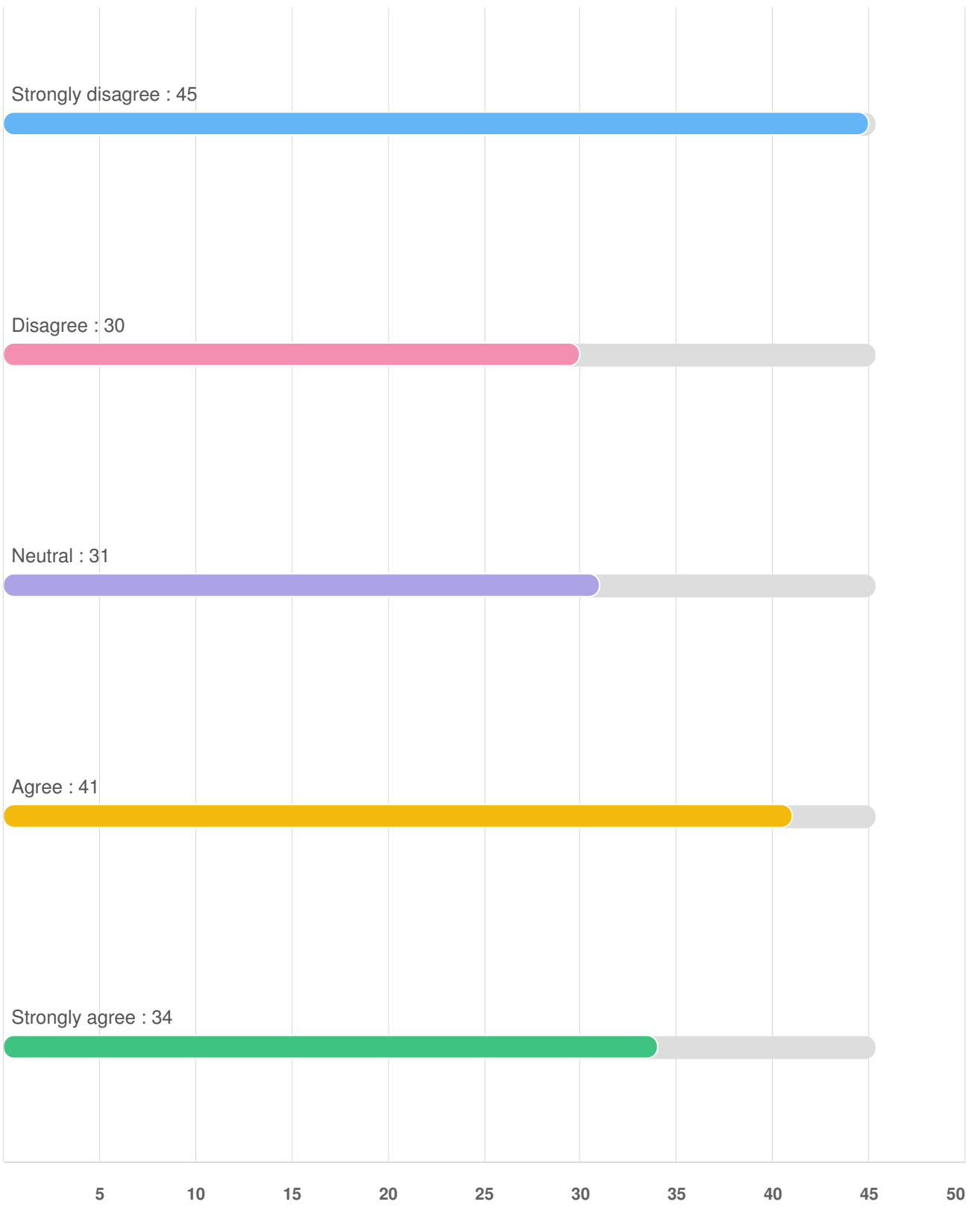


Strongly agree : 33

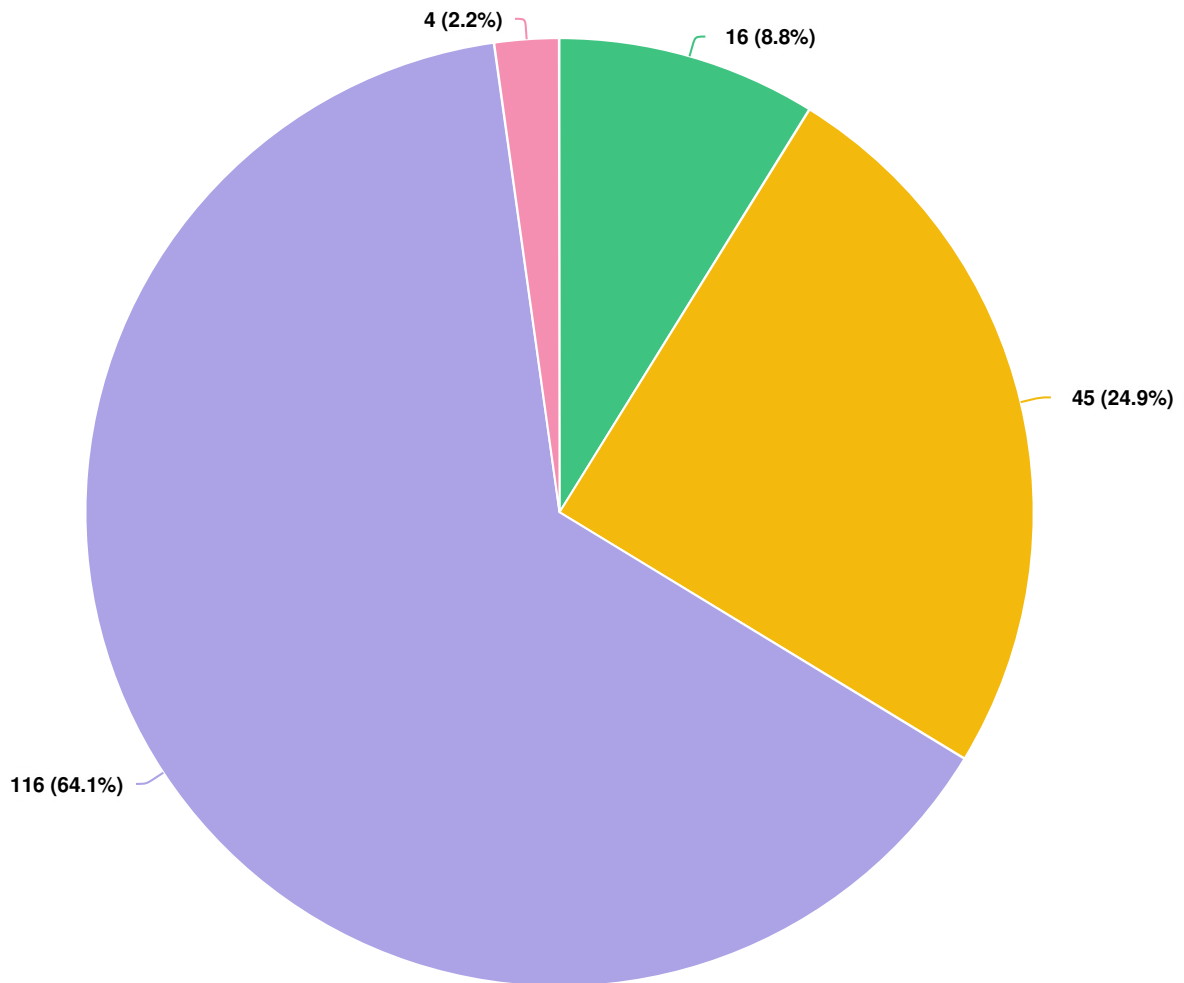


5 10 15 20 25 30 35 40 45 50 55 60

The 40km/h trial encourages healthy local recreation



Q8 Has the reduced speed zoning given you more confidence to let children walk or ride to school?

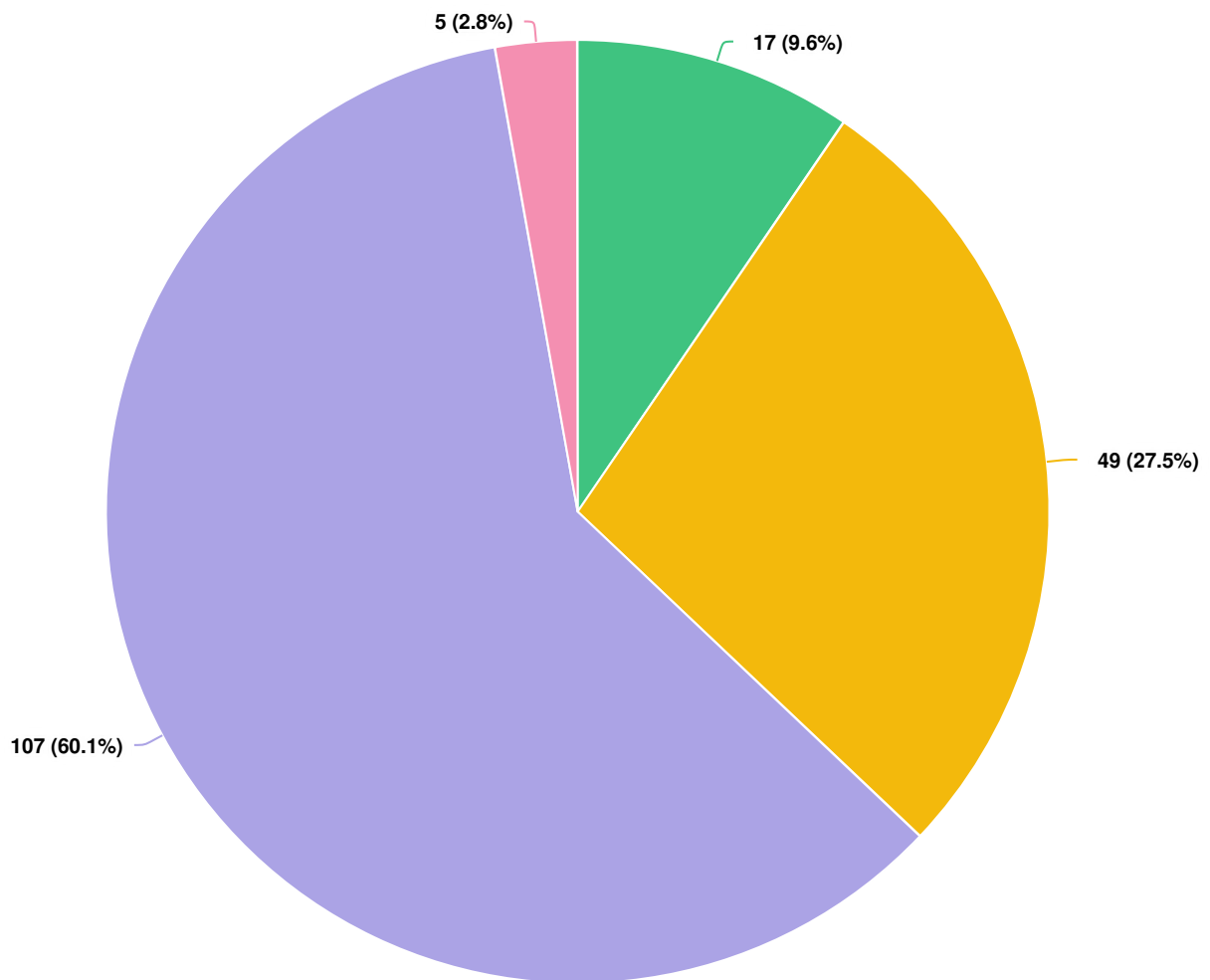


Question options

- Other (please specify)
- Not applicable to me
- No
- Yes

Optional question (181 response(s), 0 skipped)
Question type: Radio Button Question

Q9 Has the reduced speed zoning given you more confidence to let children access Public Open Space?

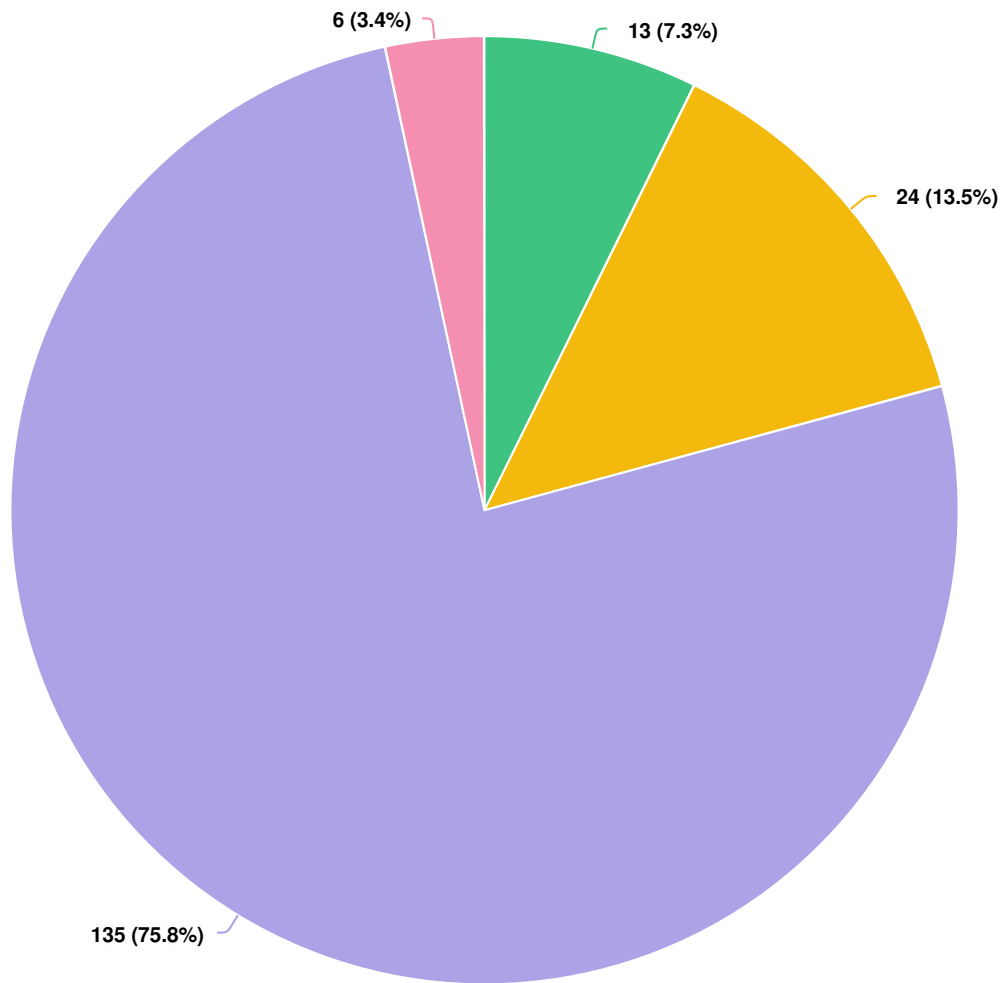


Question options

- Other (please specify)
- Not applicable to me
- No
- Yes

Optional question (178 response(s), 3 skipped)
Question type: Radio Button Question

Q10 | If you are over 60, does the reduced speed zoning provide you more confidence to walk or use any mobility aids within the street?

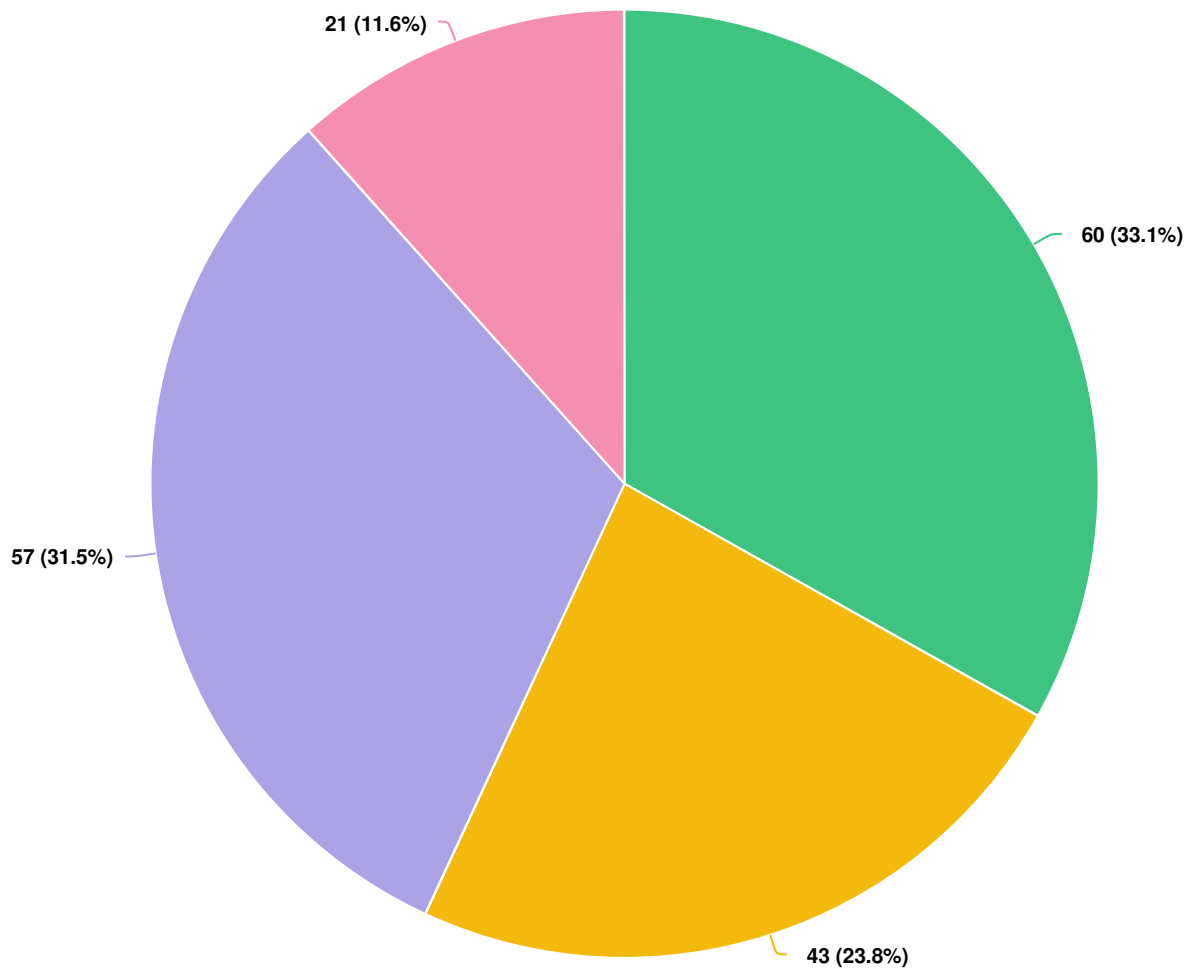


Question options

- Other (please specify)
- Not applicable to me
- No
- Yes

Optional question (178 response(s), 3 skipped)
Question type: Radio Button Question

Q11 Do you think a reduction to 40km/h is safe enough, or would reducing the speed further within residential streets provide greater confidence to walk or ride in the streets?

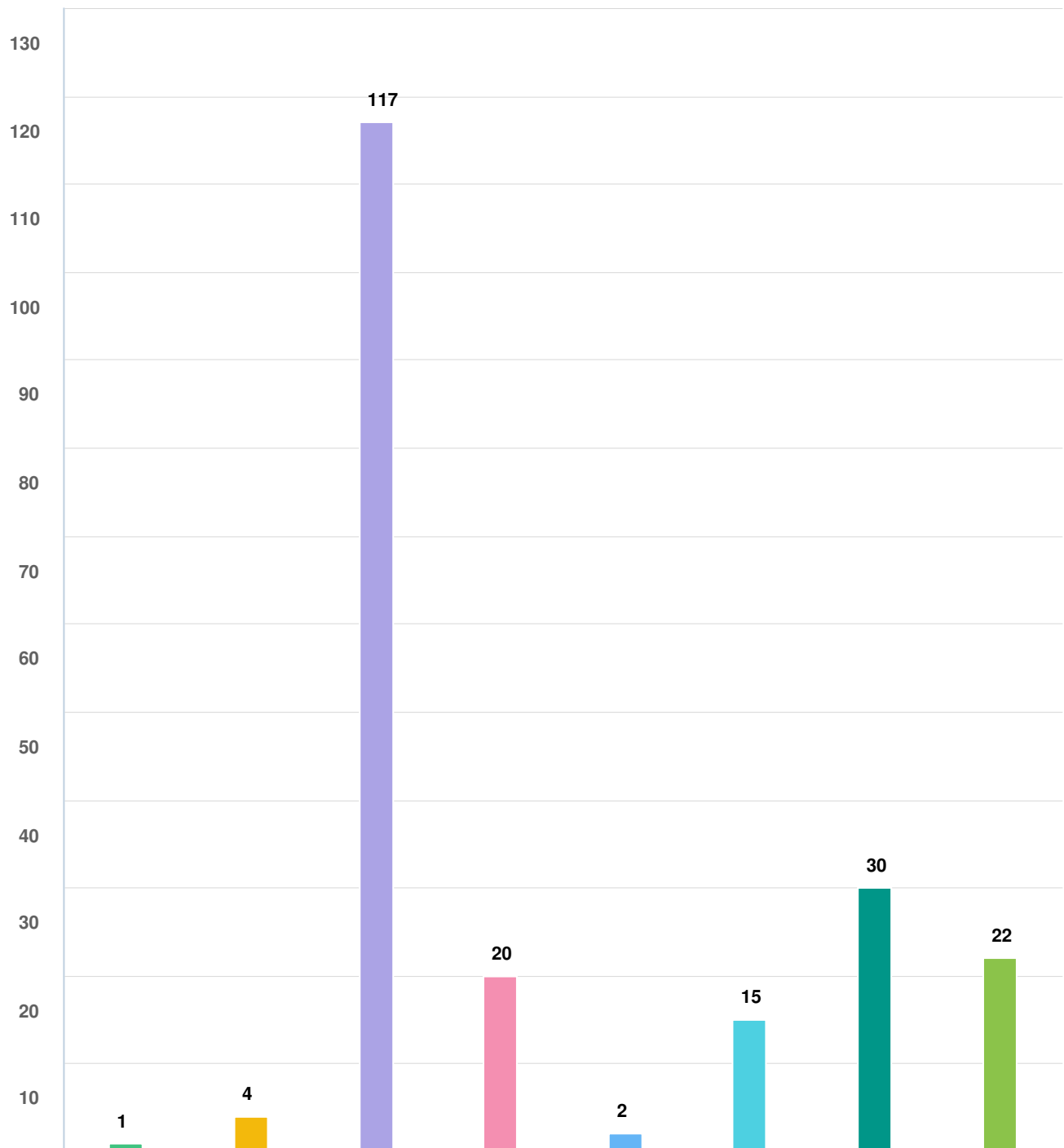


Question options

- Other (please specify)
- I don't want the speed reduced at all
- No, I would like further reductions in speed
- Yes, it's enough

Optional question (181 response(s), 0 skipped)
Question type: Radio Button Question

Q12 Please select any of the following that apply to you

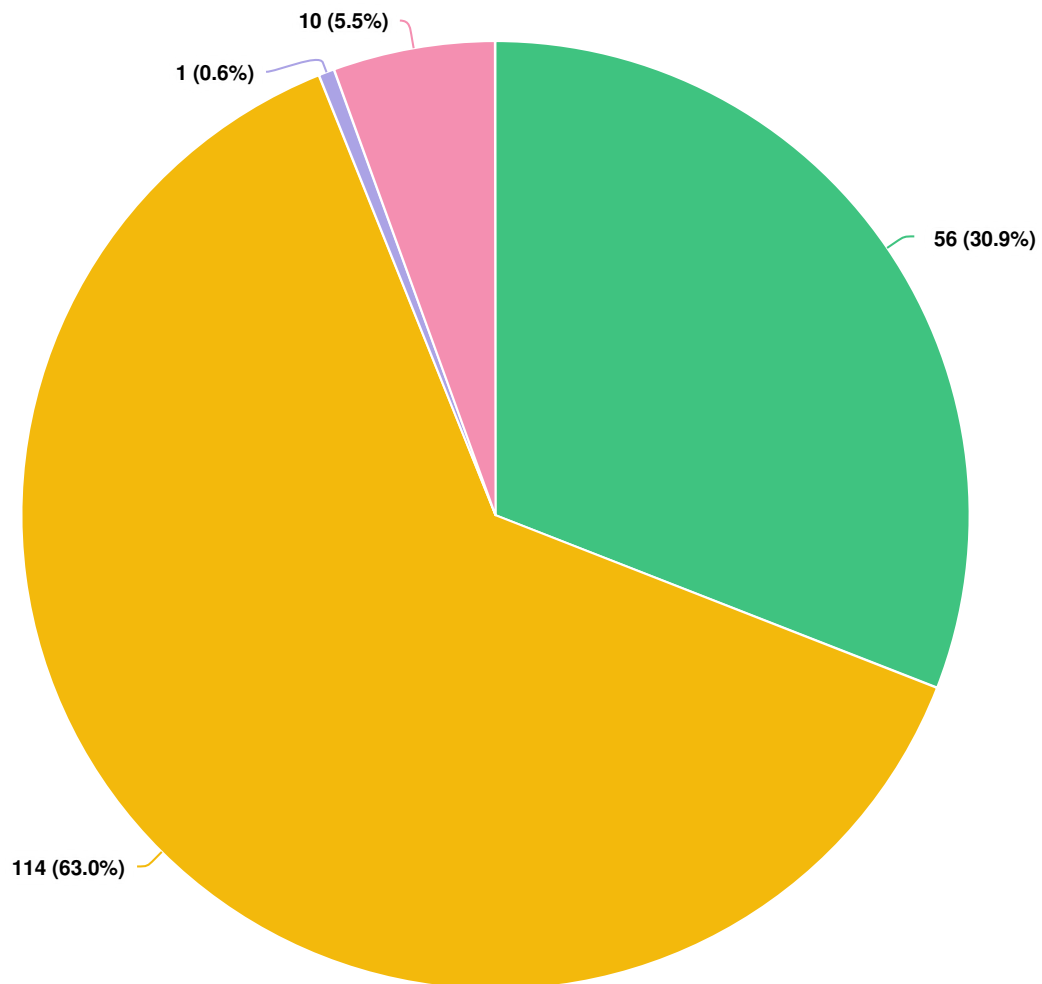


Question options

- I am a parent or caregiver
- I am retired
- I am a business owner
- I am looking for work
- I work part time
- I work full time (35 hours or more per week)
- I am a part time student
- I am a full time student

Optional question (179 response(s), 2 skipped)
 Question type: *Checkbox Question*

Q13 What is your gender?

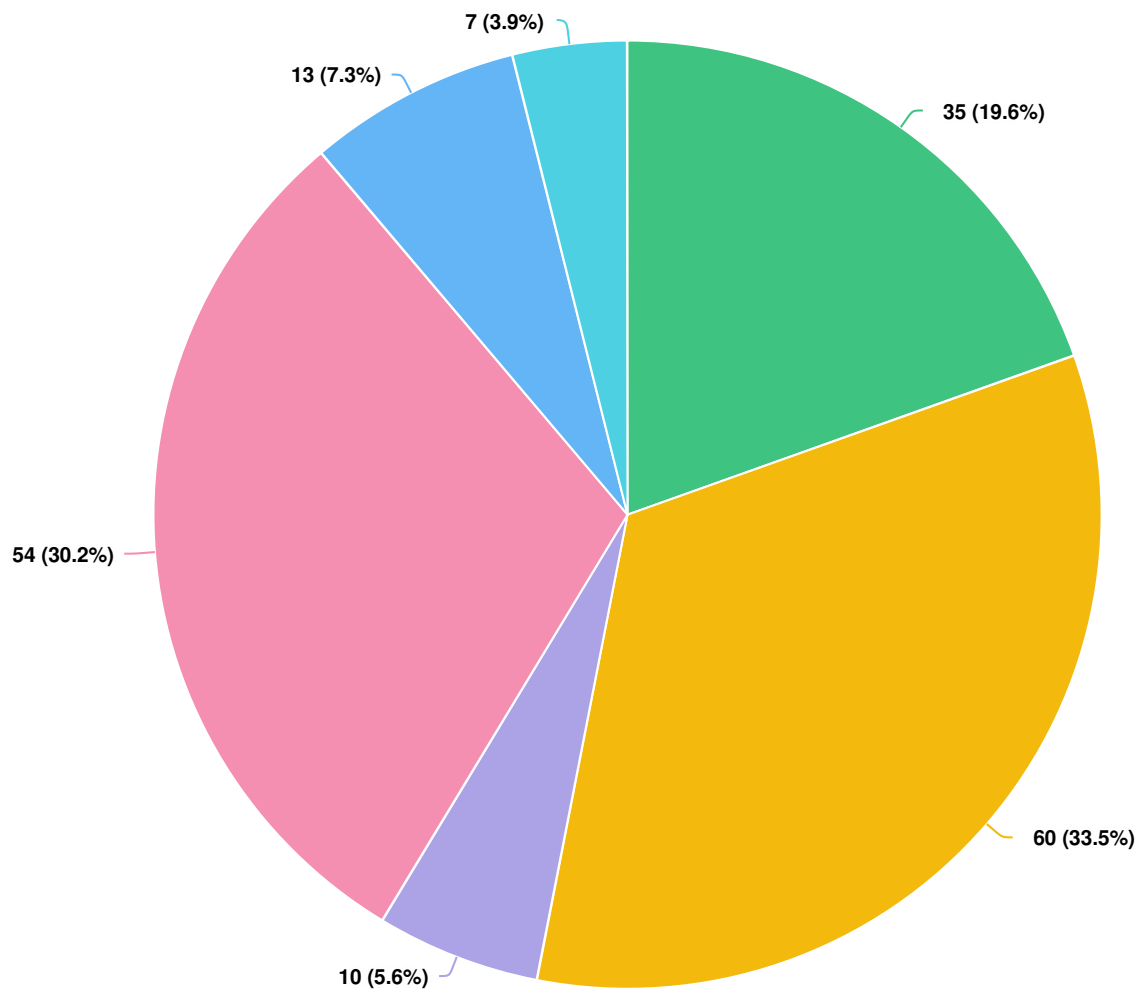


Question options

- Prefer not to say
- Other
- Male
- Female

Mandatory Question (181 response(s))
Question type: Dropdown Question

Q14 Which of the following best describes your household?

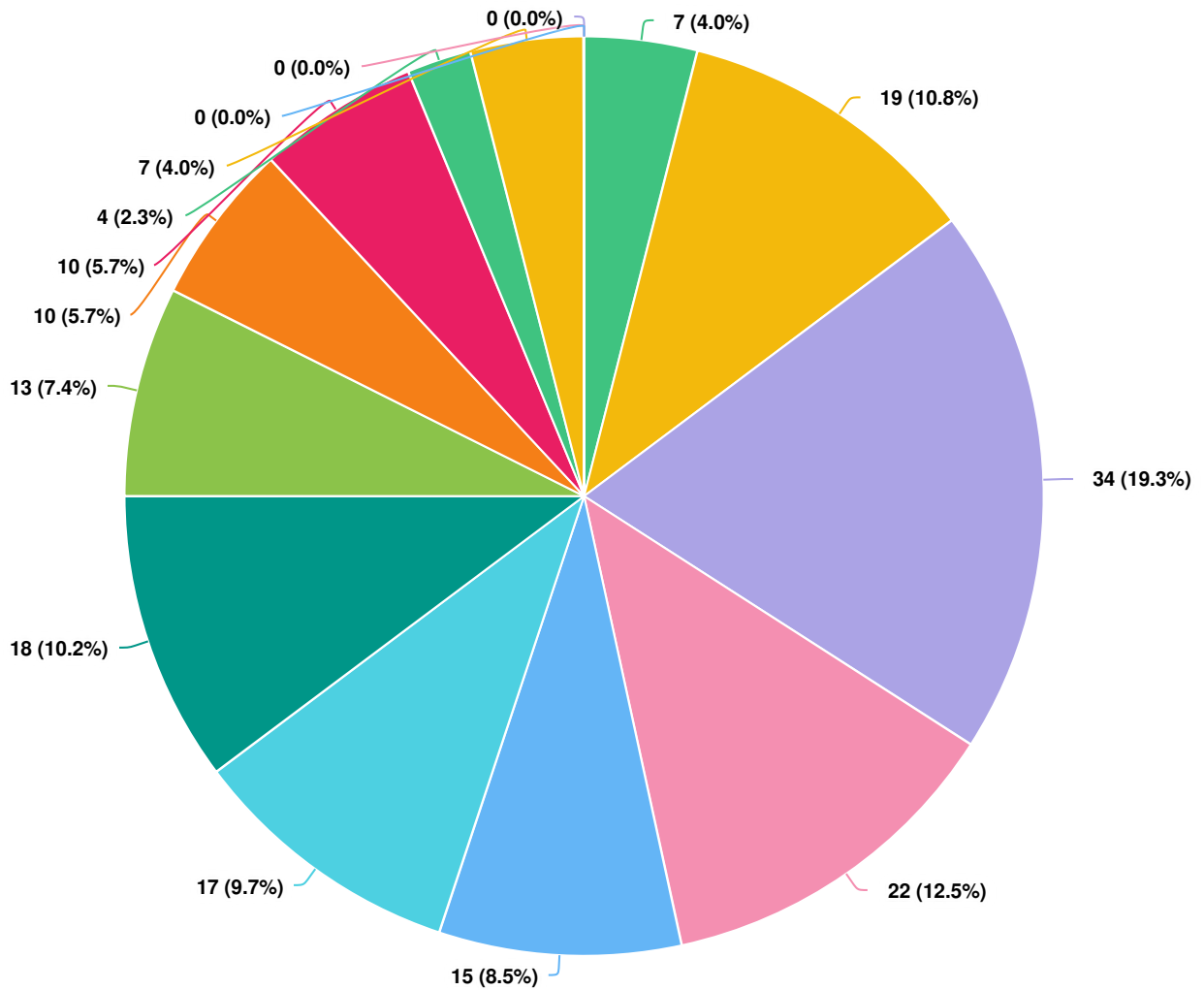


Question options

- Other
- Family with adult children
- Family with young (up to 18 years) children
- Shared house
- Couple with no children
- Single person household

*Optional question (179 response(s), 2 skipped)
Question type: Radio Button Question*

Q15 What is your age bracket?

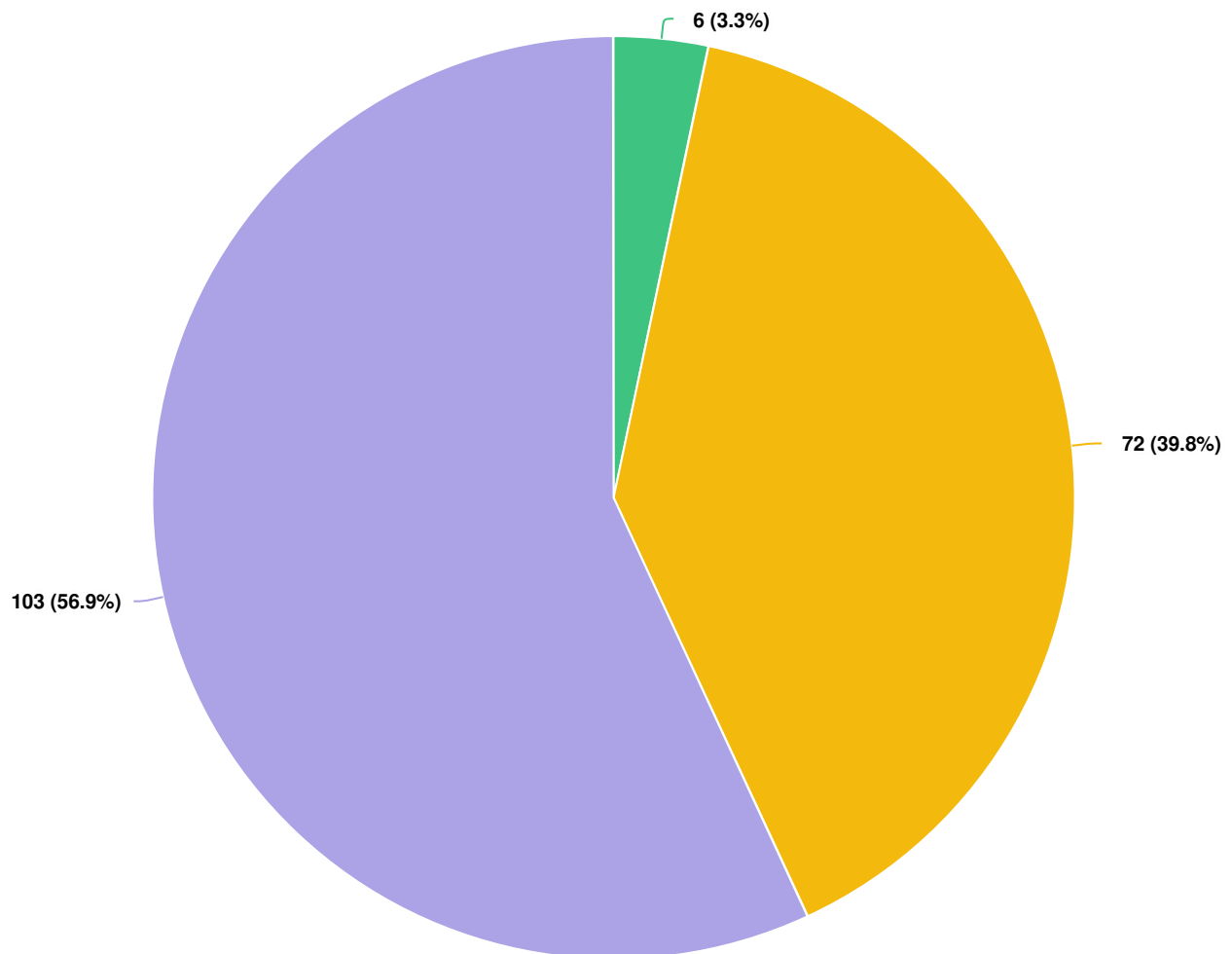


Question options

- 80 or over
- 20-24
- 19 or under
- Prefer not to say
- 75-79
- 70-74
- 65-69
- 60-64
- 55-59
- 50-54
- 45-49
- 40-44
- 35-39
- 30-34
- 25-29

Optional question (176 response(s), 5 skipped)
Question type: Dropdown Question

Q16 How were you directed to this survey?



Question options

- Other (please specify)
- By email
- By flyer in the mail

Mandatory Question (181 response(s))
Question type: Radio Button Question



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Safe Speed Trial Evaluation

October 2022

Project Code: 06626





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I Introduction

In March 2019, the City of Vincent began a trial to introduce a safer speed environment for large residential area. The trial introduced an area wide 40km/h speed zone on all local roads within the southern part of the City of Vincent (south of Vincent Street). Distributer roads retained their existing posted limits at 50km/h and 60km/h.



Figure 1-1: City of Vincent 40km/h trial area

I.1 Purpose of the trial

The trial's aim is to study the impact of slower speed limits in residential areas. Best practice research has shown that lowered speed limits make streets safer for all road users, contribute to more connected communities, reduce greenhouse gas emissions and only have a minor impact on average journey times for motor vehicles. The city is putting that research to the test to see if lowered speeds can have similar benefits for the community in Vincent.

In July 2018, the city asked the Vincent community what their existing concerns were in the lead up to a 40km/h speed zone trial. The survey revealed two main concerns, which were:

- making streets safer for all road users; and
- enhancing the neighbourhood feel of the streets.

1.1.1 Twelve Month Trial summary

A trial evaluation report has been undertaken to assess the effectiveness of the trial following the first twelve months of its implementation. Key findings from the report noted, as a result of the reduced speeds:

- Some speed reduction effects. Mean (average) vehicles speeds have reduced by about 1km/h, about 2.4%.



- The 85th percentile speed on trial roads dropped by just over 1km/h or about 2.5%.
 - The reduction in average vehicle speeds is of a similar magnitude to the reduction seen with the introduction of the default 50 km/h limit in 2001.
 - The number of vehicles observed at twelve months was comparable to the baseline, and no significant change was observed on distributor roads which were not subject to any change in speed limit.
 - After twelve months, crash records indicated that there was some crash reduction effect on the trial roads. This reduction coincided with a long-term decline in overall crashes within the City of Vincent. There was also a less substantial crash reduction in overall crashes within the control set of local roads (the northern part of the City of Vincent) not subject to the new limit.
 - The reduction in total crashes matches (triangulates) with the reductions in observed vehicle travel speeds and aligns with established road safety theory. Therefore, it is very likely that the 40 km/h limit would have long-term crash reduction benefits.
- Significant increases in walking and cycling were observed at the four observation sites within the City of Vincent. A total of 14% more pedestrians and cyclists were observed in the twelve-month surveys, compared to the February 2019 baseline.
 - The total number of cyclists also increased at twelve months. The percentage of all cyclists who were observed cycling on the road surface (rather than on footpaths) also increased from 67% to 70%, suggesting there may be a perceived safety benefit for cyclists. There were some differences between the four sites¹.
 - School representatives and crossing wardens interviewed for this evaluation also spoke of benefits for children's safety travelling to school. The reports noted support for the trial appears to be lukewarm. While a small majority are unhappy with the lower limit, there is not substantial or persistent opposition to the 40 km/h trial area among local residents. A majority of respondents surveyed at this twelve-month milestone thought a 40 km/h limit could be useful in other areas.

¹ The timing of these surveys was largely before the most significant disruption effects of the COVID-19 lockdown.



- Indirect survey results indicate that residents are generally less concerned with road safety and local street amenity issues at this twelve-month milestone – further indicating benefits.

1.1.2 Twelve Month Trial conclusion

In view of all the above data contained in the trail evaluation report, considering the triangulation of results, the 40 km/h trial within the City of Vincent has resulted in some speed reduction and crash benefits. This result is in line with what would be expected based on previous research in this field.

The evidence also suggests that local street amenity has somewhat improved. The increase in the total number of pedestrian and cyclists observed triangulates with the slight improvement in perceived street safety and amenity reported by respondents.

Complementary street design, road user awareness, and enforcement measures to reinforce the 40 km/h speed limit may result in the realisation of a greater level of total benefits. If left in place, it is possible that vehicle speeds within the trial area would continue to mediate below the new limit – particularly if supporting measures to physically reduce speeds are introduced. Future evaluation would be

useful in assessing the longer-term effects and potential effectiveness of supporting measures.

1.1.3 Traffic volume and speed data 2022

A review of traffic volume and speed data pre the 40km/h trial (2018) and three years post the trial commencement (2022) notes there has been a reduction in both the traffic volumes and 85th percentile traffic speeds, with some streets already experience travel speeds in the order of 40km/h by nature of their design. This is presented within Appendix A.



2 Speed Management

Speed management is at the core of a forgiving road transport system. Impact speed is a primary determinant of injury outcome, and the travel speed influences a vehicle controllability and crash likelihood.

In a 60km/h speed limit zone, the risk of involvement in a casualty crash doubles with each 5km/h increase in travelling speed above 60km/h. Reducing urban travel speeds by 5km/h is likely to reduce urban casualty crashes by approximately 26% and lead to major reductions in pedestrian and cycle injury².

Road users can be poor at assessing risk on the road especially in relation to speed so infrastructure elements to support road user behaviours are required. Speed management has the potential to deliver the highest injury reductions at the lowest cost when compared to other safety interventions; however, this can only be regarded as a primary treatment if reductions are achieved down to survivable levels².

Road function and speed management are inextricably linked; the best features of self-explaining road designs are

likely to maximise the ability to achieve harm minimisation outcomes. It is noted that the effect of reducing speed limits on travel times is commonly over-estimated².

2.1 Local Area Speed Management

Research carried out on behalf of the Road Safety Commission (2019) demonstrates that local speed management schemes are an effective and cost-efficient mechanism to prevent fatalities and injuries occurring due to traffic crashes. Decreases in vehicle speeds on local roads can also improve local amenity, and can promote walking and cycling, which has a clear flow-on to health, wellbeing, social, and economic benefits. Area speed management strategies are often effective at delivering significant benefits for local communities. However, area speed management treatments should be appropriate for road and street environments, in keeping with local and regional planning, and be broadly supported by local communities.

² Source: Austroads Guide to Road Safety Part 3: Safe Speed.



3 Safe Travel Speeds

The appropriate management of speed is an integral part of the Safe System approach to road safety.

A number of studies have shown the relationship between speed, crash likelihood and severity, with increases in speed increasing both the likelihood of a casualty crash occurring and the severity of injury to the crash participants (Jurewicz et al. 2015a). As occupant and vulnerable road user protection improves amongst the vehicle fleet, the relationships are likely to change over time; however, the needs of the most vulnerable (the elderly and children) will need to be understood and considered as the aspirational governing design consideration².

3.1 Science behind safe travel speeds

Kinetic energy is the energy associated with the movement of an object and is determined by a combination of speed and mass such that speed (acceleration or velocity) has a greater impact on the kinetic energy transport than the mass of an object. The scientific formula for kinetic energy is expressed as:

$$E_x = \frac{1}{2} mv^2$$

where:

E_x = Kinetic Energy

m = mass

v = velocity (speed)

The squared relationship with speed means that there is a proportionately higher increase in energy as speed increases. Doubling the speed will result in four times the kinetic energy and tripling the speed will result in nine times the kinetic energy. It is therefore apparent that small changes in speed can have large effects on crash energy².

In reality, the exchange of energy in collisions between vehicles, objects and people is more complicated and there can be many determinants of specific injury such as vehicle orientation in car-to-car crashes. However, managing energy in the road transport system is key to managing injury outcomes. Outside of vehicle design, speed management provides a keyway to manage kinetic energy. With unprotected road users (people walking and riding), safe speeds remain the most practical way for addressing safety.



4 Safe System Speeds

The Wramborg curves (Wramborg 2005) have been adopted internationally to illustrate “survivable” thresholds against impact speeds. A 10% threshold for fatal outcomes was used as the basis for establishing a Safe System performance threshold.

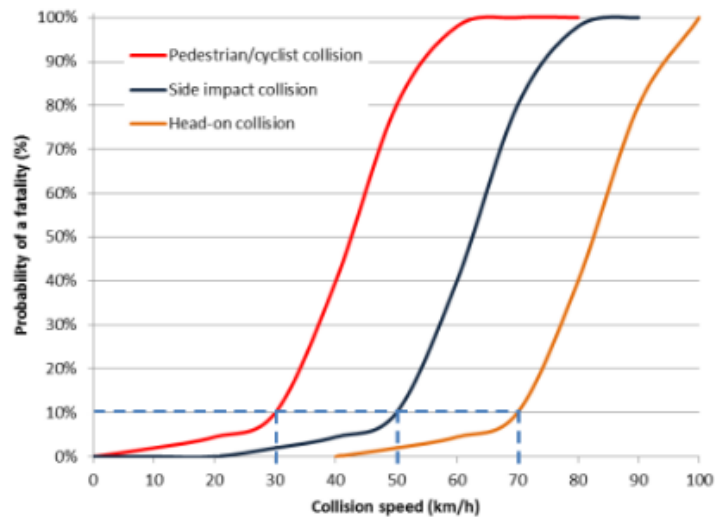


Figure 4-1: Relationships between a motorised vehicle collision speed and probability of a fatality for different configurations (source: Jurewicz et al. (2015a) and based on Wramborg (2005))

The Wramborg Curves and associated research undertaken, highlights that 30km/h should be the adopted speed for a

street where there is potential of a collision between a vulnerable road user and a passenger vehicle.

The curves are limited in that they only provide the probability of fatality and not serious injury and there is little published evidence demonstrating the origins of the curves. Despite this, the Wramborg curves have become the aspirational criteria for Safe System speeds and have achieved practical application in The Netherlands and Sweden².

The *Western Australian – Driving Change Road Safety Strategy (2020-2030)* notes that while speed limit compliance is gradually improving, speeding and inappropriate speeds are still a significant cause of road trauma. Around 12% of crashes resulting in death or serious injuries on metropolitan roads, are caused by excessive or inappropriate speeds to the conditions. Achievement of the target reduction in death and serious injury on our roads requires universal compliance with speed limits and reduced speed limits where appropriate. By working in collaboration with communities and local government areas in metropolitan and regional WA, the government will increase local understanding of safer speeds and increase locally driven and tailored solutions to risks.



5 Approaches to the setting of speed limits

Research³ into practices for the setting of speed limits around the world notes that there are four broad methods for setting of speed limits:

- **engineering approach** - a two-step process where a base speed limit is set according to the 85th percentile speed, the design speed for the road, or other criterion. This base speed limit is adjusted according to traffic and infrastructure conditions such as pedestrian use, median presence, etc. Within the engineering approach there are two approaches: 1) Operating Speed Method and 2) Road Risk Method.
- **expert systems** - speed limits are set by a computer program that uses knowledge and inference procedures that simulate the judgment and behaviour of speed limit experts. Typically, this system contains a knowledge base containing accumulated knowledge and experience (knowledge base), and a set of rules for applying the knowledge to each particular situation (the inference procedure).

- **optimisation** - setting speed limits to minimize the total societal costs of transport. Travel time, vehicle operating costs, road crashes, traffic noise, and air pollution are considered in the determination of optimal speed limits.
- **injury minimisation or safe systems approach** - speed limits are set according to the crash types that are likely to occur, the impact forces that result, and the human body's tolerance to withstand these forces.

Engineering and expert system approaches are widely used in North America.

Injury minimization methods are gaining wide-spread use in countries that are at the forefront of global road safety (i.e., Sweden, Australia etc).

The concept of setting optimal speed limits has been studied by some jurisdictions but is not known to have been adopted by any road authority. However, the optimal speed limits approach seems applicable within the context of providing context sensitive solutions (CSS)—an approach that considers the total context within which a facility will exist.

³ Research undertaken by Tim Judd, PJA in 2019.



The research report notes that speed limits set by either an engineering method or an expert system use similar basic tenets. The engineering method is often limited to a basic study, while the expert system approach employs a more structured set of decision and judgment rules. For both methods, the speed limit is determined by considering the existing speed, roadway, and crash information.

A detailed description of the four approaches is provided within the report - *Federal Highway Administration (FHWA), US Department of Transportation Informational Report on the Methods and Practices for Setting Speed Limits* and provides a summary of each method including advantages and disadvantages for each approach. This is replicated in Table 5-1.

It is noted, that while Australia is noted as an example jurisdiction for Expert System in Table 5-1 it should also be noted within the Engineering (Operating and Road Risk categories).

Approaches to the setting of speed limits across Australia and Internationally (provided in Appendix B), notes that nowhere is Australia adopts the Safe System approach to the setting of speed limits, with Wales (UK) recently adopting a 20mph (30km/h) default speed limit (case study section 8).

Table 5-1: Methods and Practices for Setting Speed Limits – approach to setting speed limits

Approach	Jurisdictions	Basic Premise	Data Required	Advantages	Disadvantages
Engineering (Operating Speed)	United States	The speed limit is based on the 85th percentile speed, and may be slightly adjusted based on road and traffic conditions and crash history.	The existing speed profile as well as data on accesses, pedestrian/bicycle traffic, curbside parking, safety performance, etc.	Using the 85th percentile speed ensures that the speed limit does not place an undue burden on enforcement, and provides residents and businesses with a valid indication of actual travel speeds.	Drivers may not be adequate judges of the externalities of their actions, and may not be able to self-select the most appropriate travel speed. Speed limits are often set lower than the 85th percentile speed.
Engineering (Road Risk)	Canada, New Zealand	The speed limit is based on the function of the road and/or the adjacent land use and then adjusted based on road and traffic conditions and crash history.	Functional classification of the road, setting (urban/rural), surrounding land uses, access, design features of the road.	The speed limit and the function of the road are aligned. The function of the road also dictates many of the design elements of the road, so this method aligns the speed limits with the design of the road.	The road risk methods may result in speed limits that are well below the 85th percentile speeds, resulting in an increased burden on enforcement if remedial measures are not employed (i.e., traffic calming, etc.).
Expert System	United States, Australia	Speed limits are set by a computer program that uses knowledge and inference procedures that simulate the judgment and behavior of speed limit experts.	Data needs depend on the system, but generally expert systems require the same data as used in the engineering approaches.	A systematic and consistent method of examining and weighing factors other than vehicle operating speeds in determining an appropriate speed limit. It is reproducible and provides consistency in setting speed limits within a jurisdiction.	Practitioners may need to rely on output from the expert system without applying a critical review of the results.
Optimal Speed Limits	---	The selected speed limit minimizes the total societal costs of transport when considering travel time, vehicle operating costs, road crashes, traffic noise, air pollution, etc.	Cost models and input data to account for air pollution, crashes, delay, etc.	Provides a balanced approach to setting speed limits that is considerate of many (if not all) of the impacts that speed has on society. Allows for the consideration of pedestrian and cyclist traffic in setting speed limits. May be particularly useful in a context sensitive situation.	Data collection and prediction models may be difficult to develop and are subject to controversy among professionals. Resulting speed limits may not be immediately obvious to the user.
Injury Minimization/ Safe System	Sweden, Netherlands	Speed limits are set according to the crash types that are likely to occur, the impact forces that result, and the tolerance of the human body to withstand these forces.	Crash types and patterns for different road types, and survivability rates for different operating speeds.	There is a sound scientific link between speed limits and serious crash prevention. Places a high priority on road safety.	This method is based solely on a road safety premise and may not be accepted as appropriate in some jurisdictions.



5.1 Speed Limit Setting and the Safe System Principle

One Australian research paper⁴ notes that the Safe System policy dictates that speed limits for the road and traffic system use human biomechanical and human competency as the design parameter to set the values. Taking crash injury severity factors into account research into the physics of crashes has determined when the physical forces will be too great for the human body to tolerate. Despite the formal adoption of the Safe System principles by all Australian Governments in 2004, no Australian State has adopted recommended Safe System speed limits.

The research paper notes that the traditional Engineering Method based on operating speed for setting speed limits is flawed. The paper states, there is a wealth of research showing that humans are ill equipped to judge risks such as road travel risks (Job, Sakashita, Mooren, & Grzebieta, 2013; Wilde, 1994). Moreover, there is a phenomenon called **“evolution of speed”** whereby 85th percentile travel speeds drift up over time (Hauer, 2009). This occurs when speed

limits are set using the 85th percentile method for three possible reasons:

- 1 Typically, half of the drivers tend to drive above the speed limit which gradually pushes the 85th percentile speed up over time.
- 2 Many drivers seek to drive faster than the average speed in effort to self-affirm their image of better than average drivers; and
- 3 As wider lanes become more prevalent the average speed on roads increases.

The research paper concludes that Australian road and traffic planners should consider categorising roads into functional hierarchies and look at ways to make traffic more homogeneous and predictable. The New Zealand approach to implementing self-explaining roads should be examined for applicability in Australia. Perceptual and other engineering treatments, especially at gateways to speed limit changes, should be more fully researched and

⁴ A research paper by the Transport and Road Safety Research branch at the University of New South Wales have undertaken analysis (2014) into NSW practices for speed zoning.



considered by Australian road authorities (including local governments).

Setting speed limits based on the 85th percentile of free travel speeds is irresponsible and dangerous.

The research paper⁴ makes reference to a project to develop a guidance book on speed management for the OECD (OECD, 2006). This Speed Management report discuss the effects of speed, the problem of speed and provides data on the broad relationship between higher vehicle speeds and KSI crashes – known as the ‘Nilsson’s Power Model’ – illustrated in Figure 5-1.

The conclusion of the OECD speed management report notes reduced speeding will immediately reduce the number of fatalities and injuries and is a guaranteed way to make real progress towards the ambitious road safety targets.

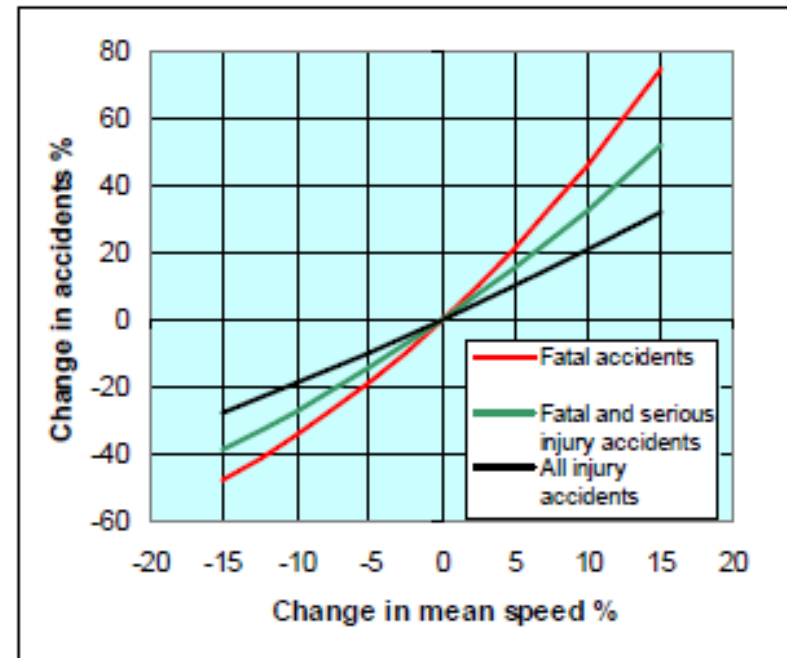


Figure 5-1: OECD 2006 Speed Management Report–Source: Nilsson 2004



6 Public acceptance of reduced speed limits

Austrroads Guide to Road Safety Part 3: Safe Speeds notes that when analysing people's attitudes to speed and speeding, a noteworthy paradoxical phenomenon that is apparent from examining community reactions to speed management initiatives is the concept of agreeing with the use of speed control initiatives where one lives, and/or where one's children go to school (i.e., 'in my community to protect me and those important to me'), but at the same time, disagreeing with speed control in other areas (e.g., reduced speed limits on roads used for commuting, even if these roads are where other people's children attend school or where other people live). This phenomenon has been described in a range of ways, including as an example of 'the JIMBY effect – Just In My Back Yard' (Tapp 2015), and as 'YIMBY – Yes In My Back Yard' (Fleiter 2013), where agreement with speed management measures are viewed as acceptable within one's own community, but generally not supported elsewhere.

6.1 What Australia Wants – Heart Foundation

In 2020, the Heart Foundation's *What Australia Wants* survey measured consumer need and aspiration about the

type of neighbourhood and community Australians would like to live in.

(https://irp.cdn-website.com/541aa469/files/uploaded/What_Australia_Wants_Report_.pdf).

The Heart Foundation surveyed 2,895 people for their opinion on what makes a healthy neighbourhood and what features matter most when deciding where to live.

The summary of the survey notes that, where we live, work, play and learn is directly associated with our health and wellbeing, as individuals, families and communities.

Living locally means having the places and things you need regularly near to where you live, and **ideally within walking or cycling distance**. Australians have a hierarchy of needs when it comes to where they live.

The healthy neighbourhood elements that rank the highest include:

- 1 Daily amenities close by (e.g. fresh food, shops, services, transportation);
- 2 A sense of safety; and
- 3 Outdoor and open spaces near to home.



Australians surveyed said that cycling routes, traffic calming measures and sports facilities are suboptimal, with more than a third rating these as fair / poor, or that their area does not have the feature at all.

Most Australians feel that it's important to be able to be active in their local area, primarily because:

- they feel it provides them a sense of belonging and safety,
- they enjoy being outdoors, and
- because it's good for their health and wellbeing.

To be more active in their neighbourhoods, this survey found that Australians want:

- more walking and running trails,
- more sports and recreational facilities, and
- improved safety in streets and public spaces.

Australians were asked about their level of support for several government initiatives, such as redirecting roads funding to walking or cycling infrastructure, or public transport. This generally appeals to Australians, with two-thirds of people in favour of these ideas.

Reducing neighbourhood street speed limits also appeals, with just under two-thirds of Australians supportive of this

idea. This support came primarily from those with children, particularly those who feel it's important to them that their children can walk to and from school safely – illustrated in Figure 6-1.



Sense of place



A sense of community emerges when residents have opportunities to meet and interact in attractive places of interest.

When it comes to having a sense of place, almost nine in 10 Australians feel that having a sense of safety is very / somewhat important to them when deciding where to live. Just over eight in 10 value having natural elements such as trees and plants, while roughly seven in 10 Australians value traffic calming measures and a sense of community.

Subgroups of interest:

- Melbournians are more likely to find a sense of safety very important (60%), as are those aged over 50 (59%)
- People in Sydney are more likely to find traffic calming measures very important (37%)
- People with children are more likely to find traffic calming measures (38%) and a sense of community (36%) very important
- Females are more likely to find all sense of place elements very important.

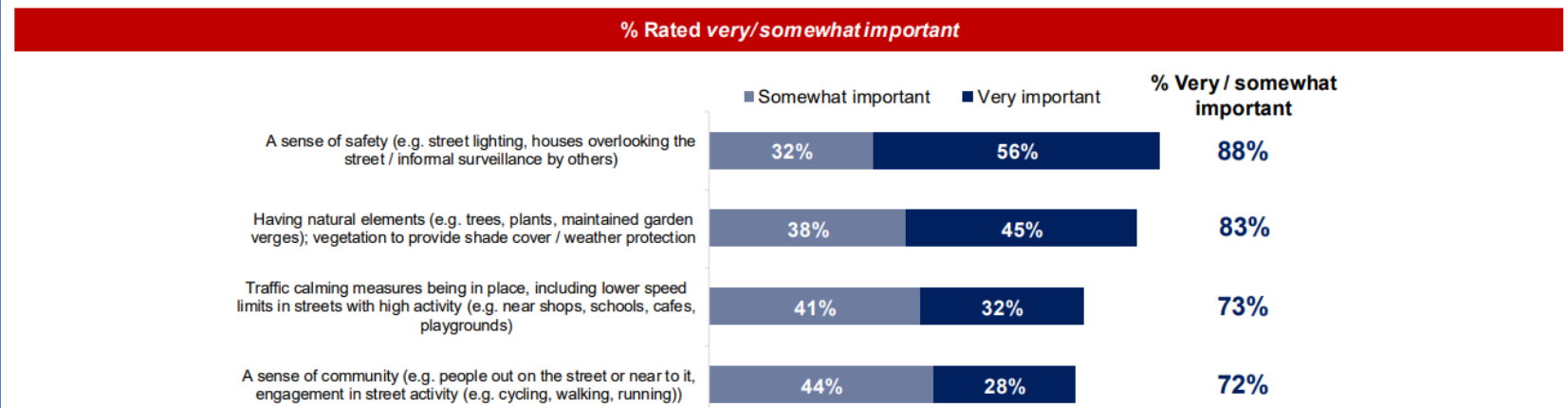


Figure 6-1: What Australia Wants – sense of place



6.2 Examination of City of Vincent residents' acceptance

PJA have worked alongside Stantec to undertake a review of City of Vincent residents survey responses for multiple transport related projects. This review report is provided in Appendix C.

The City of Vincent provided PJA and Stantec with community survey responses for the following topics:

- Background information on traffic and transport in Vincent and 40km/h trial and its feedback
- Florence Street / Carr Street proposed traffic calming feedback
- Forrest Street (Fitzgerald Street to Norfolk Street) proposed traffic calming and parking changes feedback
- Vincent Street, William Street, Fitzgerald Street and Forrest Street proposed mini roundabouts pilot project feedback
- North Perth proposed traffic calming feedback
- Birrell Street, Eucla Street and Federation Street proposed traffic calming and parking restrictions feedback

- Shakespeare Street proposed Safe Active Street (SAS) feedback
- Strathcona Street and Golding Street proposed traffic calming feedback

In summary, a review of all the community survey responses notes the following themes:

- 40km/h encouraged on low volume residential streets where higher volumes of children and elderly are but discouraged on high vehicle volume roads that cause excessive delays on commute times.
- Demand for alternative speed reduction measures to be put in place, instead or in conjunction with, speed reduction signs to physically slow traffic. Speed signs are generally ignored.
- Police reinforcement required to control vehicle speeds within the speed limit. Road marking the speed limit and additional signage is also encouraged to reinforce the speed limit for drivers.
- Many vehicles not following 40km/h speed limit while others are, causing an inconsistency in vehicle speeds making it unsafe for drivers and crossing pedestrians to judge when is "safe" to cross.



- 65% support a 40km/h speed limit within the mini roundabouts pilot area.
- 70% support traffic calming measures being implemented in North Perth.

6.3 40km/h Trial Survey 2022

During September 2022 a resident's survey was carried out to ascertain the views of the 40km/h trial, three years on. In summary the residents' views included:

- Little to no change in observed rat-running being reduced. However, there has been a shift from strongly disagree to neutral over time
- An increase by 22% in agreement and a decrease by 13% in disagreement over time in walking and cycling being safer at 40km/h
- An increase in perception of streets being safer for children at 40km/h by 9%
- An increase by 15% in streets being quieter during the trial
- Shift towards streets becoming easier to get around over time
- An increase by 13% in support of the trial over time
- An increase by 11% over time in support of the trial area extending
- Driving at 40km/h rather than 50km/h becoming more widely accepted over time
- An increase by 21% in perception of improved liveability over time in the trial area
- An increase in willingness to use healthy local transport over time by 14%
- An increase by 15% in encouragement of healthy local recreation over time
- Only 25% of applicable responses feel more confident to let children walk or ride to school with the reduced speed zoning
- Only 24% of applicable responses feel more confident to let children access Public Open Space with the reduced speed zoning
- Only 30% of respondents over 60 years old feel more confident to walk or use mobility aids within the reduced speed zoned street
- 57% support reducing the speed to 40km/h or further within residential streets provide greater confidence to walk or ride in the streets



- The supporting benefits of the trial are widespread through the 921 responses with safer streets for all road users including pedestrians and cyclists (23%), bring back a neighbourhood feel to our suburbs (17%), reduce likelihood of trauma in a road accident (14%), deter people taking short cuts through neighbourhood streets (14%), environmental benefits (11%), more likely for children to walk or ride to school (11%) and being more likely to walk or ride than take car (9%)
- The main reasons for being against the trial only had a response rate of 348 with the main reason relating to the existing speed limits being fine with 42% of the votes
- 32% may be open to a 30km/h speed limit
- 43% may be open to local streets across Perth being reduced to a 40km/h speed limit
- 34% may be more likely to choose walking or riding for local trips over car trips
- The preference of measures for improving safety and amenity of residential streets are better cycling and pedestrian infrastructure (25%), lower speed limit of residential streets (22%), increase and improve sign positing of speed limits (18%), greater police enforcement (22%) and speed humps or other traffic calming measures (23%).

The general themes of feedback and comments relating to the trial include:

- 40km/h speed limit along Bulwer Street is too slow and increases delay. 50km/h is generally more accepted than 40km/h.
- Many vehicles are not following the 40km/h speed limit while others are, causing an inconsistency in vehicle speeds making it unsafe for drivers and crossing pedestrians to judge when is “safe” to cross
- Police reinforcement is required to reinforce compliant vehicle traveling speeds. Road marking the speed limit and additional signage is also encouraged
- 40km/h encouraged on low volume residential roads where higher volumes of children and elderly are but discouraged on high vehicle volume roads that cause excessive delays on commute times
- The inconsistency and changing of speed limits zone confuse drivers, making them feel unsafe
- A demand for alternative speed reduction measures to be put in place instead of or in conjunction with speed reduction signs to physically slow traffic. Speed signs are generally ignored.



7 Strategic alignment

Safe speeds and a safe and more connected walking and cycling environment is a theme that is throughout several strategic documents of the City of Vincent and neighbouring authorities within inner city Perth.

7.1 Inner City Transport and Infrastructure Working Group Advocacy Platform

The Perth inner-city local government areas that form the *Transport and Infrastructure Working Group* report to the Mayors and CEO's of the Town of Victoria Park, City of South Perth, City of Perth, City of Vincent, and the City of Subiaco.

The State's largest concentration of businesses and associated workforces are located within the inner-city group boundaries. More than 31,500 businesses employ a significant proportion of the Perth population, generating substantial goods and services.

This concentration of businesses, workforce, and forecast population is due to increase with over \$57 billion in Gross Regional Product and a combined 250,000 jobs between five local government areas playing a significant role in Perth's economy.

A key priority project within the Advocacy Platform is to advocate for slower speeds within residential inner-city Perth (40km/h speed limit) with a further reduction to 30km/h within key Activity Centre areas where there is a concentration of pedestrian activity.

7.2 Accessible City Strategy – City of Vincent

To guide the city between 2020 and 2030, the *Accessible City Strategy (ACS)* has a vision to 'put people first – getting around is safe, easy and environmentally friendly and enjoyable'.

The objectives are to create a safe transport environment, ensure easy accessibility and connectivity into and around Vincent, promote environmentally friendly transport modes and initiatives and make it enjoyable to get around the local area.

The strategy notes Vincent's streets will be safe places for people of all ages and abilities. People will be protected from the risk of moving vehicles. Innovative design will enhance the quality of the public realm without compromising the amenity of our streets for people walking and resting. People are encouraged to shift their routines to more active modes of transport.



The current 50km/hr speed of local streets creates an unsafe speed variance between active modes of transport and driving. Decreasing vehicle speeds allow mixed-traffic movement networks that become attractive to active transport users. The higher degree vehicle speeds are reduced, the more attractive, safe and accessible they become.

7.2.1 Accessible City Strategy - consultation summary

There was a general level of support for the vision. Minor modifications were recommended through submissions for inclusion in the wording of the vision. The terms 'healthy' and 'consistency' both hold important value as part of the strategy.

Submissions have raised concern over whether there is enough evidence as part of the interim results of the current 40km/h trial to warrant this action. This Safe Speed Evaluation Report provides further evidence-based justification and example case studies to demonstrate the need for safer speeds.

General consultation comments as it pertains to 40km/h included:

- Speed should be reduced to 40km/h on all streets and 30km/h within 5 years.
- 40km/h is a noble ambition but must be policed.
- The 40km/h trial results do not show a high level of change.
- The 40km/h speed reduction should be focused on high activity areas and not everywhere.
- Local streets should be for residents only.
- The current speeds do not impact cycling and walking in the city.
- A reduction in speed should also be considered on the residential portions of major roads.
- This should not be the main action of the strategy as it undermines more high priority actions.
- The action needs to do more than reduce speeds, it should also incorporate infrastructure which supports the reduction in speed.

Assessing the feedback for all the actions items within the ACS notes a strong level of importance placed by the community on:

- implementing the proposed bike network.



- developing a program to support school children to travel to school using sustainable and active travel modes.
- develop the City's residential streets in line with the principles of Safe Active Streets; and
- improving streetscapes to enhance pedestrian experience.

7.3 Perth Greater CBD Transport Plan

The *Perth Greater CBD Transport Plan* is a strategy that outlines a series of initiatives and investments that will help residents, workers and visitors move around our city centre. On a broader scale, the State Government is currently underway with an unprecedented investment in transport infrastructure that will significantly improve access to and from the Perth central business district (CBD) from the broader metropolitan area.

A key area wide priority within the plan is for slower speed environments to provide a better pedestrian and riding environment and bring significant safety benefits. Low or slow traffic environments result in more pedestrian activity creating economic benefits to local businesses.

7.4 Integrated Transport Strategy - Town of Victoria Park

This Strategy seeks to contribute to achieving the Town of Victoria Park's (the Town) vision as a dynamic place for everyone. To ensure alignment of this Strategy and the Town's broader planning framework, the Town has developed a vision for the transport network over the next 10 years which is to provide an integrated, accessible and sustainable transport network which connects people to places and supports the Town as a liveable inner-city community.

A key initiative within the Strategy is to continue to advocate with the *Inner-City Group* for the Transport Portfolio's support for legislative change and policy support for the wider roll out of lower speed limits throughout the Town and neighbouring communities. The Town will support this initiative to reduce speeds in activity centres to 30km/h and residential areas to 40km/h State Road Safety Strategy.

Lower speeds in residential and activity centre areas will result in making streets safer for all road users, contributing to more connected communities, reduced greenhouse gas emissions and will have only minor impacts on average travel times.



7.5 Driving Change Road Safety Strategy for WA 2020 – 2030

The strategy notes that the majority of Western Australians are supportive of safer speeds in high pedestrian and cycling areas and on WA’s most dangerous roads.

The strategy has a priority to work with relevant state government agencies, local governments, and communities to reduce vehicle speeds around schools and other areas where children are at greater risk.

The strategy notes to identify and implement safer speeds in local areas coupled with measures to undertake better enforcement of speeds on our roads.

7.6 Speed Zoning Policy and Application Guidelines, MRWA 2022

The Speed Zoning Policy (the Policy) notes that speed limits must be consistent with the purpose and physical environment of the roadway. Each roadway provides a movement function within the road network. Movement describes the use of the roadway for travel (including traffic, freight, public transport, pedestrian and cycling movements). Generally, the higher the road hierarchy classification, the greater the movement value of the

roadway. Every road is surrounded by various land uses, from residential or commercial activity, to pastoral or remote. The degree to which a roadway forms an integral part of the place it travels through can indicate its Place value. Place values describe the significance of the destination value of the roadway and adjacent land uses. The Policy provides ‘typical target speeds range for road types’ illustrated in Figure 7-1.

The Policy notes indicative target speeds of between 30km/h and 50km/h for town centre, commercial streets and neighbourhood streets.

As noted in Figure 7-2, within a Movement and Place context, local access roads and local distributors have a low movement function and a high or highest Place function when speeds are between 10km/h and 50km/h.



Movement Function	Place Value	Typical Road Application	Key Features	Indicative Target Speed
Access and Local Distributor Roadways				
Access	Highest	Pedestrian mall, extremely narrow urban thoroughfares, Shared Zones	Confined area where movement of pedestrians and cyclists has priority over motor vehicles. Generally the volume of traffic is very low.	10
Access	Highest (within destination)	Shared Spaces/ Pedestrian Priority Areas	Areas where pedestrians and cyclists intermingle with motor vehicles.	20
Access	Highest to High	Recreational Precincts, Safe Active Streets	Confined areas where pedestrians and cyclists intermingle with motor vehicles.	30
Access and Local Distributors	Highest	Town Centre / Commercial streets or areas	Areas with high pedestrian activity or very strong existing place functions including extensive on-street activity. Must have traffic calming infrastructure to reinforce a low speed environment. Pedestrians and vehicles separated.	30-50
Access and Local Distributors	High	Neighbourhood Streets	Narrow streets with significant residential development, on street parking, adjacent neighbourhood parks and playgrounds, etc.	40-50
Access and Local Distributor	Moderate	Industrial precincts	Wider/unmarked carriageways, mix of heavy and light vehicle traffic, limited pedestrian activity.	50-70
Access and Local Distributors	Moderate to Low	Low standard roads in rural/ semi-developed areas	Minor roads in partially built-up areas	60-80
Access and Local Distributors	Low	Rural or remote roads	Low standard/higher risk roads in rural/regional environments	80-100
Access and Local Distributors	Lowest	Rural or remote roads	Rural roads with limited development and roadside hazards	110

Figure 7-1: MRWA Speed Zoning Policy – typical target speeds range for road types

Level of Movement Function	Increasing significance	Level of Place Value				
		Highest	High	Moderate	Low	Lowest
		Indicative Target Speed (in km/h):				
Primary/Regional Distributor*		50-60	50-70	60-80	80-100	100-110
District Distributor A/B		40-50	50-60	60-80	80-100	100-110
Local Distributor		30-50	40-60	60-70	80-100	100-110
Access Roads		10-50	30-50	50-70	80-100	100-110

Figure 7-2: MRWA Speed Zoning Policy – Movement and Place Framework and Target Speed Range



8 Case Studies

8.1 Three Transport Priorities – ASPA, 2022



Asia-Pacific Society for Physical Activity in partnership with WeRide Australia and an alliance of 13 public health, transport, education and climate organisations, have presented Three Transport Priorities which are evidence-

based, tangible transport solutions, prepared for the 2022 Australian Federal Election. They include:



The ask for this advocacy is for federal government to use funding to support states and territories to adopt lower default urban speed limits in residential areas, shopping streets and schools. This is being asked as, speed is the number one cause of motor vehicle crashes. In Australia, 13% of crashes could be avoided by reducing speed limits to 30km/h on non-arterial urban streets, resulting in a national economic benefit. Lower speed environments support walking and cycling, reduce traffic congestion, crashes, air and noise pollution and support physical activity. Local businesses benefit from low-speed walking friendly streets.

<https://aspactivity.org/three-transport-priorities/>



8.2 Healthy Streets - Australia, 2021



The Healthy Streets Framework contains 10 simple indicators that when met, improve the human experience of being on streets and increase the attractiveness of streets for people walking and cycling.

The approach includes qualitative and quantitative tools to assess the quality of streets in relation to meeting basic human needs. Within the Healthy Streets Design Check tool for Australia, it notes that for the hour when vehicles speeds are highest within a street that is being measured, 85th percentile speeds below 30km/h score a maximum three points.

For 85th percentile speeds between 30 and 39km/h there is a good score of two points and for 8th percentile speeds between 40 and 49km/h there is a score of one point. Streets who have an 85th percentile speed of 50km/h or more do not score within Healthy Streets as it is known this is an unsafe speed for people walking or riding.

<https://www.healthystreets.com/>



8.3 Neighbourhood Streets - The Padbury Experiment, 2018



Neighbourhood Streets – The Padbury Experiment

This case study published by the Heart Foundation within its Healthy Active by Design series notes that Neighbourhood streets play a vital role in making places liveable. Rather than seeing them as simply transport corridors for cars, they can be important places for walking, cycling, social interactions and even playful exploration by local children. Current research shows that by reducing speed limits on residential roads from the default metropolitan 50km/h to 30km/h, the safety and pedestrian amenity on local suburban roads can improve.

The case study notes that the main concern raised for 30km/h speeds is the impact on travel time and associated cost. For Padbury, a journey time assessment was

undertaken to assess the travel time difference between journeys using 50km/h and 30km/h roads. This indicates that the generic impact of introducing 30km/h speed limits in urban residential streets is almost negligible in terms of travel time. In this example, there is less than one-minute travel time difference from Padbury to the freeway or train stations when travelling at 30km/h compared to travelling at 50km/h on local residential streets. The Padbury project explored what the community reaction to a reduction in speed may be, considering the main concern often raised by the community as “the impact of travel times”. This project demonstrated that having a network of local suburban neighbourhood streets at 30km/h would have minimal effect on journey times but offer significant improvements in road safety and pedestrian amenity. While historically there has been opposition to the introduction of lower speed limits in local neighbourhood streets, this evidence demonstrates that such opposition is not justified. Lower speed limits in residential streets provide an important new strategy for achieving continued reductions in injury rates from road crashes in Australia.

<https://www.healthyactivebydesign.com.au/case-studies/neighbourhood-streets-the-padbury-experiment>



8.4 Australian College of Road Safety – Safe Street Neighbourhoods: the role of lower speed limits, Vol. 28 No 3, 2017



The research presented within the journal notes neighbourhood streets play a vital role in making places liveable. Rather than seeing them as simply transport corridors for cars, they are important places for walking,

cycling, social interactions and even playful exploration by local children.

The research argues that neighbourhood streets provide a valuable focus for a road safety intervention that is low cost and yet promises considerable benefits for road safety, neighbourhood amenity, public health, and the community at large. While there is likely to be opposition to the introduction of lower speed limits in local neighbourhood streets, this paper provides evidence that such opposition is not justified. Lower speed limits in residential streets provide an important new strategy for achieving continued reductions in injury rates from road crashes in Australia.

The research undertaken looked at travel times for an example suburb within Sydney a noted an insignificant travel time reduced (less than 1m) when travelling at 30km/h instead of 50km/h on local residential streets.

The research concluded that a road hierarchy should be developed where local residential streets have a speed limit of 30km/h and no one lives more than approximately 500m from a higher order 50km/h or above road, having minimal impact on travel times.



8.5 Heart Foundation – Good for Business, 2011

Good for Business

The benefits of making streets more walking and cycling friendly

Discussion paper



This report asserts that a well-designed, quality street environment that promotes walking, cycling and public transport is good for business.

The Heart Foundation (SA) commissioned this discussion paper to bring together the evidence around the financial benefits to retailers and residents in making commercial streets more walking and cycling friendly.

Walking and cycling to local shops is good for business and good for the local economy and is essential to the success of

revitalisation strategies. In addition, there is good evidence to show that improving walking and cycling environments raises private property values by significant amounts.

The report showed that:

- A high proportion of all retail expenditure comes from local residents and workers.
- Space allocated to bicycle parking can produce much higher levels of retail spend than the same devoted to car parking.
- Retail vitality would be best served by traffic restraint, public transport improvements, and a range of measures to improve walking and cycling environment.

Measures identified to achieve this within the report include:


- Reduced Speeds
- Reallocation of road spaces
- Widening of footpaths and providing cycle and public transport provision
- Greening the Street and improving way finding.

<https://resources.heartfoundation.org.au/images/uploads/publications/Good-for-business.pdf>



8.6 CWANZ fact sheet, 2022

BENEFITS OF LOWER SPEED LIMITS IN HIGH ACTIVITY AREAS AND LOCAL ACCESS STREETS



What happens when vehicles travel more slowly in areas with lots of pedestrians and bike riders?

1. FATALITIES AND SERIOUS INJURY REDUCE

Risk of fatality to pedestrian¹

Vehicle Speed (km/h)	Risk of fatality to pedestrian (%)
50	87%
30	30%

Reduction of mean speed by 10%²

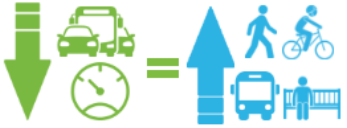
20% reduction in injury crashes & 40% decrease in fatal crashes

SPEED LIMIT 20

Reducing speed limits in parts of England to 32 kph (20 mph)³

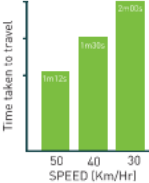
57-70% reduction in deaths and serious injuries for walkers and bike riders

2. STREET ENVIRONMENTS IMPROVE⁴



Lower vehicle speeds are associated with a safer (both perceived and actual), more welcoming environment, creating somewhere that people walk and ride their bike, spend more time, and enjoy the health and economic benefits that the area brings.

3. MINIMAL IMPACT ON TRAVEL TIMES
For 1km travelled



SPEED (Km/Hr)	Time taken to travel (min)
50	1m12s
40	1m30s
30	2m00s

BENEFITS OF LOWER SPEED LIMITS IN HIGH ACTIVITY AREAS AND LOCAL ACCESS STREETS



What has happened in the past?

In 1999 the default urban speed limit was reduced from 60 km/h to 50 km/h in Australia. The reduction in the number of crashes were:

Region	Reduction in all crashes	Reduction in Casualty Crashes	Reduction in injuries to pedestrians
New South Wales ⁵	25%	22%	NA
Regional Queensland ⁷	14 %	8%	NA
South East Queensland ¹⁰	22%	23%	NA
South Australia ¹¹	NA	23%	NA
Victoria ¹²	12%	13%	25-40%
Western Australia ¹³	20%	21%	51%
Average	19%	18%	NA

School zones (40 km/hr) speed limit during school pick up and drop off times in NSW has resulted in:



SCHOOL ZONE
8 - 9:30 AM
2:30 - 4 PM
SCHOOL DAYS
40

All pedestrian casualties reduced by 45%*
Pedestrian casualties for ages 5-16 reduced by 46%*
*[compared to a reduction of 35% outside the school zones].¹⁴

Cycling and Walking Australia and New Zealand (CWANZ) is the Australasian lead reference group for walking and bike riding on transport and recreation networks. Members include senior and executive level leaders from all Australian state and territory transport agencies, New Zealand Transport Agency, local government representatives and leading representative organisations for walking, cycling, health and mobility.
info@cwanz.com.au. A full list of sources is available @ www.cwanz.com.au.
The views and opinions expressed in this fact sheet do not necessarily reflect those of any member of CWANZ. Although reasonable effort has been made to ensure that the contents of this publication are factually correct, CWANZ does not accept responsibility for the accuracy or completeness of the contents.





8.7 Safe Speeds in Edinburgh and Wales



The City of Edinburgh have recently reduced the default speed limit from 30mph (48km/h) to 20mph (32km/h). Research into the reduced speeds noted that road deaths fell by nearly a quarter and serious injuries by a third when Edinburgh cut its speed limit to 20mph.

The new study also found that average speeds had fallen across the city, including in areas not affected by the lower limit. Researchers at the University of Edinburgh found that this had been achieved simply with new signs rather than

with extra traffic-calming measures or police patrols, making the scheme cost-effective.

Overall, recorded speed in the city was reduced by 1.34mph, a drop of 5.7 per cent. The number of cars travelling at more than 25mph on urban roads fell by 14 percentage points to 31 out of every 100. The limits apply on 80 per cent of Edinburgh's streets. They were introduced to cut accidents, encourage more walking and cycling and create more pleasant neighbourhoods.

In July, Wales became the first of the four nations to announce it would lower speed limits in all urban areas to 20mph. It will take effect in September 2023 and will apply to restricted roads and residential streets where streetlights are less than 200 yards (183m) apart. About 2.5 per cent of Welsh roads already have a limit of 20mph, but this will rise to about 35 per cent. Scotland is considering a similar move.

Once implemented, local authorities will need to apply if they want to increase traffic speeds, providing justification for why a speed limit above 20mph should be considered. This being a reverse of the current system we have in Perth.



9 City of Vincent Travel Time

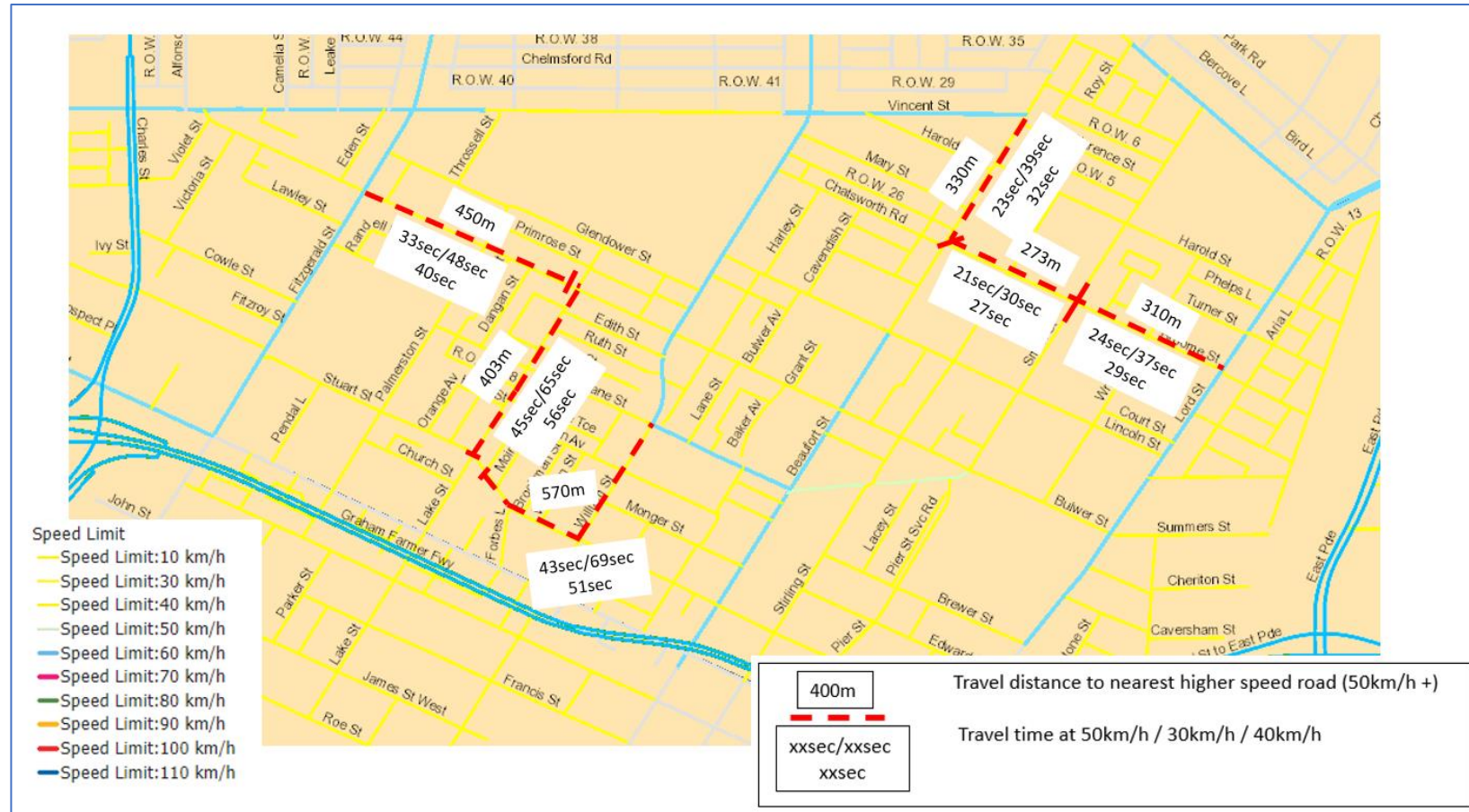


Figure 9-1: Distance to higher speed (50km/h+) street and travel times at 30/50/40km/h



10 Summary, Recommendations and Implementation

Research shows that safer speeds on local roads not only saves lives due to transferring less kinetic energy should a crash occur, but also strongly contributes to local amenity, provides a safer walking and riding environment, and has clear benefits to populations health (physical and mental), social wellbeing and the local economy.

Setting of speed limits within Australia are predominantly based on an engineering approach with existing 85th percentile speeds taken as a key measurement. Research shows this is a flawed approach due to the 'evolution of speed'. Adopting a Safe System approach to setting of speed limits should be the aim for Australia.

However, despite this evidenced based research, a noteworthy paradoxical phenomenon that is apparent from examining community reactions to speed management initiatives is the concept of agreeing with the use of speed control initiatives where one lives, and/or where one's children go to school (i.e., 'in my community to protect me and those important to me'), but at the same time, disagreeing with speed control in other areas (e.g., reduced speed limits on roads used for commuting, even if these

roads are where other people's children attend school or where other people live). Although, the Heart Foundation 2020 survey (What Australia Wants), reducing neighbourhood street speed limits appeals, with just under two-thirds of Australians supportive of this idea. This support came primarily from those with children, particularly those who feel it's important to them that their children can walk to and from school safely.

The twelve-month 40km/h trial evaluation noted that support for the trial appears to be moderate. While a small majority are unhappy with the lower limit, there is not substantial or persistent opposition to the 40km/h trial area among local residents. Indeed, the three year survey indicates a growing acceptance to the safer speeds. A majority of respondents surveyed at 12months and three years thought a 40km/h limit could be useful in other areas. City of Vincent residents in general have a support for improving the safety of the neighbourhood streets, especially for those how choose to walk and ride, but believe reduce speeds need additional physical measures and/or police presence in conjunction with speed signs as in general, speed signs alone is felt to be ignored. Residents were also concerned with the impact on vehicle travel times and 'commuting' travel times reduced speeds have.



Both the Padbury Experiment and the Australian College of Road Safety Journal notes that opposition to the introduction of lower speed limits in local neighbourhood streets due to the impact on travel times is not justified, with minimal travel time reductions when travelling at a safer speed.

Travel time analysis presented in Figure 9-1 within the 40km/h trial area further demonstrates this, with only seconds difference between travelling at the existing default 50km/h and traveling at safer speeds of 30km/h and 40km/h and **virtually everyone will live less than 500m from nearest 50km/h+ speed road.**

Safer speeds is a clear aim for the inner city area of Perth, with key strategic documents having priorities to improve road safety and encourage more people to walk and ride. Speed management for safe speeds is also an objective in key State Government documents such as WA Road Safety Strategy and Main Roads WA Speed Zoning Policy.

Case studies presented within this report provide further applied evidence as to the benefits for safer speeds within residential areas, contributing to Healthier Streets, the local economy and the environment.

The application of safer speeds within the residential areas of Edinburgh has had the desired effects of reducing serious

injuries as a result of road crashes occurring due to reduced vehicle speeds.

Some roads are showing reduced 85th percentile speeds and It is likely that over time, the longer the 40km/h trial remains, that general traffic speeds will decrease within Vincent as community expectation for people to drive safely increases.

It is noted that this is the first time within Western Australia that an area wide 40km/h reduced speed trial within a predominantly residential enforced through speed zoning signage only has been undertaken. The City of Vincent didn't expect that there would be 100% compliance to travel speeds straight away and note that is forms part of creating an Accessible City for all.

Indeed, research from *Common Cause Australia* notes that generally within behaviour change, there will be those that support, those that are against (opponents) and those that need persuading (illustrated in Figure 10-1) – the aim of this report.

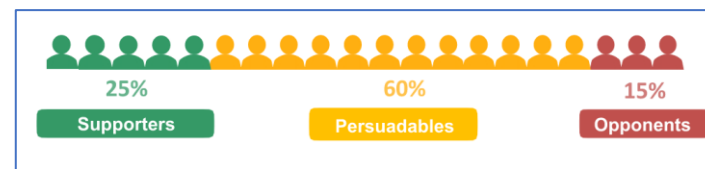


Figure 10-1: Generic Audiences to behaviour change and average percentages



10.1 Recommendations

Table 10-1: Recommendation 1

Implement area wide 30km/h speed zones for all local access and some distributor residential streets throughout City of Vincent	
Opportunities	Risks
<ul style="list-style-type: none"> • Opportunity to show strong leadership with Safe System compliant speeds • Provides improved road safety benefits and 10% likelihood of death or serious injury should a crash occur (Figure 4-1) • Provides a safer walking and riding network • Less bike riding infrastructure is needed as people on bikes can share the road with vehicles 	<ul style="list-style-type: none"> • Main Roads WA not approving area wide 30km/h resulting in returning to default 50km/h speed • Local residents already not sure about (persuadable) or against 40km/h (opponents) will be in opposition • Requirement for additional physical measures to be implemented to restrict vehicle speeds

Table 10-2: Recommendation 2

Implement area wide 40km/h speed zones for all local access and some distributor residential streets and 30km/h in areas of pedestrian activity throughout City of Vincent	
Opportunities	Risks
<ul style="list-style-type: none"> • A degree of community acceptance already • Some streets already experience 40km/h travel speeds • Less 'impact' on vehicle travel times • Potentially more acceptable to Main Road WA • Provides improved road safety benefits and 35% likelihood of death or serious injury should a crash occur (Figure 4-1) • Provides a safer walking and riding network 	<ul style="list-style-type: none"> • Main Roads WA not approving 30km/h for areas of pedestrian activity. • Requirement for additional physical measures to be implemented to restrict vehicle speeds • Unintended consequences resulting in difficulty to reduce areawide speeds to 30km/h in the future to be Safe System compliant



10.1.1 Complimentary Measures

The data presented within the twelve-month trial evaluation report notes that some streets experienced minimal compliance of people sticking to the 40km/h limit. As such, together with the adoption of safer speeds across the City of Vincent local access and some distributor streets, a targeted programme of installation of physical traffic management devices to reduce speeds to the required level should be undertaken for those streets where higher than set speeds are recorded, ensuring a target speed is reached, not just a posted speed. This is considered to be a more appropriate approach and noted as reverse of current practice Main Roads WA require, where physical devices are installed prior to Main Roads assessing the required speed zone.

Additional speed signage and potentially bespoke pavement markings should also be considered to enforce the safe speed limit on the local access and some distributor streets to remind people of the expected travel speed along with education through marketing campaigns

Implementing Safe Speeds throughout City of Vincent local streets presents an opportunity for the City of Vincent to be a leading local authority throughout

Australia putting road safety, public health, local economy, and the environment at the forefront.

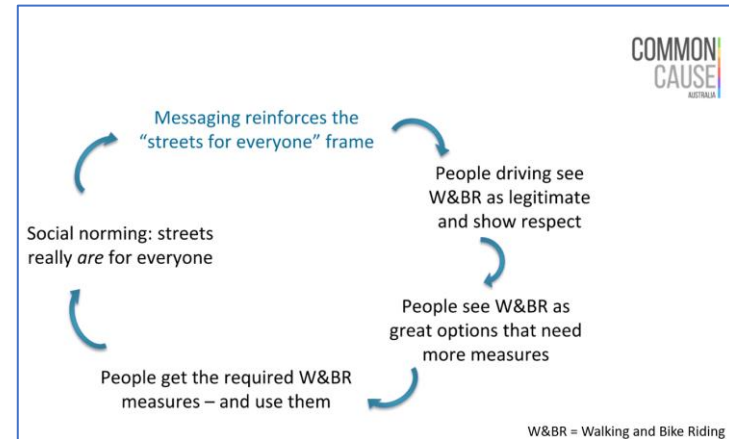


Figure 10-2: Common Cause Australia – messaging and behaviour change

10.1.2 Safer Speed Implementation Implications

The introduction of area wide speed zoning through the City of Vincent will have a significant cost implication as a result of the planning, designing and installation of additional area wide speed zoning signs. It is likely this cost would need to be shared between the City and Main Roads WA.

There will also be a cost implication for the additional LATM speed reducing measures likely to be required to be installed.



In addition, as this is noted as a key priority project within the Inner-City Transport and Infrastructure Working Group (to advocate for slower speeds within residential inner-city Perth (40km/h speed limit) with a further reduction to 30km/h within key Activity Centre areas) the remaining inner-city councils will likely seek to implement 40km/h adding further cost burden to Main Roads WA for speed zoning signing planning, designing and implementation. As such, continued advocacy for a change in the default speed limit on local access streets should be undertaken.

10.2 Proposed Implementation

The following is the proposed implementation for safer speeds throughout the City of Vincent:

- 1 Introduce the 40km/h speed zone trial as a permanent speed zone.
 - Undertake a high-level Movement and Place mapping exercise of the existing access and some distributor street network (including existing speed data) and identify which streets may require additional LATM treatment to reenforce the speed limit.
- 2 Extend the 40km/h speed zone to the rest of City of Vincent local and distributor streets.

- Undertake a high-level Movement and Place mapping exercise of the remaining access and some distributor street network (including existing speed data) and identify which streets may require additional LATM treatment to reenforce the speed limit.

On review of the City of Vincent’s current traffic calming treatments and current proposals for speed reduction in areas within North Perth and Mount Lawley, the role out of the permanent 40km/h speed zone would be most advantageous as follows:

- Area 1: from Newcastle Street to Vincent Street, between Charles Street and the river – implementation in 2022.
- Area 2: within the area bounded by Raglan Road, Hyde Park, Vincent and Fitzgerald Streets, North Perth/Mount Lawley - implementation in 2022.
- Area 3: in North Perth area bounded by Charles Street (West), Angove Street (North), Fitzgerald Street (East) and Vincent Street (South) - implementation in 2022.
- Area 4, All Local Access and most Distributor Roads within the City of Vincent to receive new 40km/h speed zone - implementation in 2024.
- Implement a communication plan to consistently provide messaging to local residents and visitors as to the new speed limits and driver expectations – supporting the behaviour change.



Victoria
walks

***"Safer speeds in
local streets just
makes sense."***

Glen Yates, parent
Kingsville Primary School

#LoveWalking



Appendix A Traffic Volume and Speed Data 2022

Past and Post Traffic Data at 40km/h Zone

Street	Location	Year	AWT	85% speed	Avg Speed	Heavy veh	Change in 85% speed
			Nos	km/h	km/h	%	km/h
East Perth							
JOEL TCE	BREAM COVE-GARDINER	Dec-18	2194	53.6	45.2	3.4	-4.3
		Oct-19	2201	50.4	42.7	2.2	
		Nov-20	2122	50.4	42.3	2.9	
		Jun-21	2186	49.3	41.9	2.7	
SUMMERS ST	CLAISEBROOK-WEST	Dec-18	1394	47.5	39.2	3.6	-1.8
		Oct-19	1538	46.1	37.7	5.4	
		Nov-20	1475	45.9	37.6	5.8	
		Jun-21	1326	45.7	37.2	5.4	
Highgate							
HAROLD ST	SMITH-WRIGHT	Nov-18	2082	40.7	34.3	3	-1.3
		Oct-19	2053	39.6	33.3	2.1	
		Oct-20	2059	39.8	33.6	2.8	
		Jun-21	1962	39.4	32.8	2.6	
SMITH ST	BROOME- LINCOLN	Nov-18	2196	48.6	40.1	1.7	-0.7
		Oct-19	2160	49.3	41.1	1.9	
		Oct-20	2346	48.1	39.4	2.3	
		Jun-21	2006	47.9	39.4	2.1	
Perth							
BULWER ST	LORD-WRIGHT	Nov-18	8264	54.9	47.8	3.5	-1.6
		Oct-19	8280	54.2	47.1	3	
		Oct-20	8726	54.2	46.8	3.9	
		Jun-21	7965	53.3	46.3	3.6	
BRISBANE ST	DANGAN-LAKE	Dec-18	1384	46.5	38.3	2.6	-2.0
		Oct-19	1451	46.1	38	3.1	
		Nov-20	1745	44.8	37.2	2.5	
		Jun-21	1820	44.5	36.9	2.6	
WILLIAM ST	MONGER-ROBINSON	Dec-18	7485	47.2	35.6	4.1	-4.7
		Oct-19	6951	44.3	33.9	4.4	
		Oct-20	8374	42.5	33.1	4.4	
		Jul-21	9273	42.5	32.4	4.2	
West Perth							
BULWER ST	FITZGERALD-PALMERSTON	Dec-18	11528	53.1	46.7	3	-1.8
		Oct-19	10161	52.2	45.8	2.6	
		Nov-20	10815	51.8	45.4	3.6	

		Jun-21	10491	51.3	44.8	3.1	
PALMERSTON ST	MYRTLE- RANDELL	Dec-18	2732	37.3	29.8	3.1	0
		Oct-19	2555	37.1	29.8	3.0	
		Oct-20	2573	37.1	30.0	3.0	
		Jun-21	2502	37.3	30.1	3.5	
VINCENT ST	ETHEL- NORFOLK	Dec-18	11978	52	44.7	2.5	-0.2
		Oct-19	10939	51.8	44.6	3.6	
		Nov-20	11560	51.8	44.9	3.4	
		Jun-21	10612	51.8	45.1	4.1	
CARR ST	CHARLES- FITZGERALD	Feb-18	4934	52.6	45.6	2.9	-1.5
		Nov-19	4194	50.9	43.8	1.9	
		Nov-20	4026	51.3	43.6	2.6	
		Jun-21	3783	51.1	43.6	2.7	



Appendix B Approaches to the setting of speed limits across Australia and International

Research into Methods and Practices for Setting Speed Limits – 2019

The Federal Highway Administration (FHWA), US Department of Transportation have produced an informational report on the *Methods and Practices for Setting Speed Limits* (the report). The report (produced in April 2012) describes four primary practices and methodologies that are used in establishing speed limits (described below). It also reviews the basic legalities of speed limits and presents several case studies for setting speed limits on a variety of roads.

- **engineering approach** - a two-step process where a base speed limit is set according to the 85th percentile speed, the design speed for the road, or other criterion. This base speed limit is adjusted according to traffic and infrastructure conditions such as pedestrian use, median presence, etc. Within the engineering approach there are two approaches; 1) Operating Speed Method and 2) Road Risk Method.
- **expert systems** - speed limits are set by a computer program that uses knowledge and inference procedures that simulate the judgment and behaviour of speed limit experts. Typically, this system contains a knowledge base containing accumulated knowledge and experience (knowledge base), and a set of rules for applying the knowledge to each particular situation (the inference procedure).
- **optimisation** - setting speed limits to minimize the total societal costs of transport. Travel time, vehicle operating costs, road crashes, traffic noise, and air pollution are considered in the determination of optimal speed limits.
- **injury minimisation or safe systems approach** - speed limits are set according to the crash types that are likely to occur, the impact forces that result, and the human body's tolerance to withstand these forces.

A detailed description of the four approaches is provided within the report - *Federal Highway Administration (FHWA), US Department of Transportation Informational Report on the Methods and Practices for Setting Speed Limits* and provides a summary of each method including advantages and disadvantages for each approach. This is replicated in Figure 1.

It is noted, that while Australia is noted as an example jurisdiction for Expert System in Figure 1, it should also be noted within the Engineering (Operating and Road Risk categories).

Approach	Jurisdictions	Basic Premise	Data Required	Advantages	Disadvantages
Engineering (Operating Speed)	United States	The speed limit is based on the 85th percentile speed, and may be slightly adjusted based on road and traffic conditions and crash history.	The existing speed profile as well as data on accesses, pedestrian/bicycle traffic, curbside parking, safety performance, etc.	Using the 85th percentile speed ensures that the speed limit does not place an undue burden on enforcement, and provides residents and businesses with a valid indication of actual travel speeds.	Drivers may not be adequate judges of the externalities of their actions, and may not be able to self-select the most appropriate travel speed. Speed limits are often set lower than the 85th percentile speed.
Engineering (Road Risk)	Canada, New Zealand	The speed limit is based on the function of the road and/or the adjacent land use and then adjusted based on road and traffic conditions and crash history.	Functional classification of the road, setting (urban/rural), surrounding land uses, access, design features of the road.	The speed limit and the function of the road are aligned. The function of the road also dictates many of the design elements of the road, so this method aligns the speed limits with the design of the road.	The road risk methods may result in speed limits that are well below the 85th percentile speeds, resulting in an increased burden on enforcement if remedial measures are not employed (i.e., traffic calming, etc.).
Expert System	United States, Australia	Speed limits are set by a computer program that uses knowledge and inference procedures that simulate the judgment and behavior of speed limit experts.	Data needs depend on the system, but generally expert systems require the same data as used in the engineering approaches.	A systematic and consistent method of examining and weighing factors other than vehicle operating speeds in determining an appropriate speed limit. It is reproducible and provides consistency in setting speed limits within a jurisdiction.	Practitioners may need to rely on output from the expert system without applying a critical review of the results.
Optimal Speed Limits	—	The selected speed limit minimizes the total societal costs of transport when considering travel time, vehicle operating costs, road crashes, traffic noise, air pollution, etc.	Cost models and input data to account for air pollution, crashes, delay, etc.	Provides a balanced approach to setting speed limits that is considerate of many (if not all) of the impacts that speed has on society. Allows for the consideration of pedestrian and cyclist traffic in setting speed limits. May be particularly useful in a context sensitive situation.	Data collection and prediction models may be difficult to develop and are subject to controversy among professionals. Resulting speed limits may not be immediately obvious to the user.
Injury Minimization/ Safe System	Sweden, Netherlands	Speed limits are set according to the crash types that are likely to occur, the impact forces that result, and the tolerance of the human body to withstand these forces.	Crash types and patterns for different road types, and survivability rates for different operating speeds.	There is a sound scientific link between speed limits and serious crash prevention. Places a high priority on road safety.	This method is based solely on a road safety premise and may not be accepted as appropriate in some jurisdictions.

Figure 1 - Federal Highway Administration (FHWA), US Department of Transportation Informational Report on the Methods and Practices for Setting Speed Limits - approaches to setting speed limits

The report provides a summary of results obtained by applying each method to a case study example. Figure 2 shows the recommended speed limits yielded by each speed limit setting method and the actual speed limit enacted by the road authority for both case studies.

	Eldron Boulevard, Florida	State Route 67, California
Actual Speed Limit	40	55
Illinois DOT	40	55
Northwestern	45	55
USLIMITS2	40	55
Optimal Speed	45	50
Safe System Speed	30	50

Figure 2 - Federal Highway Administration (FHWA), US Department of Transportation Informational Report on the Methods and Practices for Setting Speed Limits - recommended speed limits for the Case Studies

The report provides a succinct summary of these results, noting, with the exception of the safe systems approach, the recommended speed limit from each of the methodologies used are within 5 mph of each other. On the one hand, this suggests an inter-method consistency that is reassuring. However, it needs to be remembered that these are only two specific examples, and this consistency may not endure in other cases. In fact, the optimal speed and the safe systems approaches are known to produce results that have a more pronounced difference from the other methods in certain situations. This is perhaps not surprising since the Illinois DOT method, the Northwestern method, and USLIMITS2 all start from the 85th percentile speed.

As expected, the safe speed approach resulted in speed limits that are at the low end of the range. This becomes very apparent in the urban case on Eldron Avenue, where the potential for more frequent right-angle crashes requires a more dramatic decrease in operating speeds to be consistent with the zero tolerance for injury-producing crashes.

What approaches are being used in Australia and Internationally?

Based on the previously discussed approaches to speed limit setting, Table 1 provides an indication of the approaches being used in Australia and the international countries that have been assessed.

Table 1 - approaches to setting speed limits based on desktop research

Australian State	Process for setting speed limits	Speed Limit setting approach
Western Australia	The primary determination of the speed limit for a particular length of road is by road function in accordance with the hierarchy of speed limits listed on MRWA website. Subject to requirements for the minimum length of a speed zone, the limit corresponding to that function and application which best meets the description given under 'key features' shall be adopted unless an adjustment up or down can be justified.	Engineering – road risk and to some degree, operating speed.
Victoria	The Guidelines in Victoria provide clear processes for the setting of speed limits, which always start at the default	A combination of Engineering (operating speed and road risk) and Expert System (Vlimits).

	50km/h or 100km/h (urban or rural setting) and then provide a process to determine if the default limit needs to be changed. The Guidelines also note the use of Vlimits as a tool to assist in determining speed limits.	There may be an element (through community consultation) of the Optimal Speed Limits approach also.
New South Wales	The 10-step process for setting of speed limits appears to be more heavily focused on existing data analysis (crash data, site specific conditions and speed) only once authorisation has been received for a new speed limit are the local community engaged. The data collection and analysis process also seem subjective to a certain degree as there is no obvious guidance as to what parameters of data would determine a change to the existing speed limit.	Mainly Engineering – Operating Speed. However, an element of Engineering – Road Risk is considered.
South Australia	The process to the setting of speed limits appears to be taken from the New South Wales process but does not provide as much detail regarding the fundamental steps to consider and undertake when reviewing speed limit change. It is heavily focused on existing data analysis (crash data, site specific conditions and speed) and only once authorisation has been received for a new speed limit or likely to be received are the local community engaged. The data collection and analysis process also seem subjective to a certain degree as there is now obvious guidance as to what parameters of data would determine a change to the existing speed limit.	Mainly Engineering – Operating Speed.
Queensland	The process to the setting of speed limits appears to be taken from the Australian Standards process and encompasses two processes for assessment – i)	Both Engineering – road risk and operating speed.

	Criteria Based Speed Limit (CBSL) assessment, and ii) the Risk Assessed Speed Limit (RASL) assessment which the engineer assessing must follow. This is then ratified by the 'responsible officer' and approved (or otherwise) by the Speed Management Committee.	
Northern Territory	No information could be found	n/a
International	Process for setting speed limits	
New Zealand	The Speed Management Guide ensures the process begins with a strategic, one-network based approach and then, by applying a series of techniques, drill down to identify where there is the greatest benefit in addressing misalignment between speed limits, current travel speeds and safe and appropriate travel speeds. The overarching aims are to achieve regionally and nationally consistent outcomes and to prioritise effort and available resources to achieve the highest benefit.	A combination of Engineering (operating speed and road risk). There may be an element (through community consultation) of the Optimal Speed Limits approach also.
UK	Circular 01/2013 provides guidance to all local authorities on the setting of speed limits and the process to follow and considerations to be accounted for. The Circular draws an alignment with the Police, to ensure enforcement is considered within the process and provides a tool to assist with speed limit assessment process.	A combination of Engineering (operating speed and road risk) and Expert System (speed limit appraisal tool).
British Columbia, Canada	The ITE Guidelines have been introduced to provide a consistent basis for the application of engineering principles to speed zoning. The summary of the guidelines notes a very engineering focused practiced using gathered data with no mention of community input or consultation.	Both Engineering – road risk and operating speed.

Tennessee, USA	The TDOT Guidance on Setting Speed Limits, provides a consistent basis for the application of engineering principles to speed zoning. The guidelines note the requirement for an engineering study to be undertaken, always starting with the default speed limits and then analysing data for the justification to vary from this. The Guidelines are focused on using gathered data to inform an engineering study, with no mention of community input or consultation.	Both Engineering – road risk and operating speed.
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Appendix C City of Vincent Resident Surveys



CITY OF VINCENT 40KM/H TRIAL EVALUATION
Residents Perception Analysis

14 October 2022

Prepared for:
Road Safety Commission

Prepared by:
Cameron Steel/Tim Judd

Project Number:
300303850

City of Vincent 40km/h Trial Evaluation

Revision	Description	Author	Date	Quality Check	Date	Independent Review	Date
A	Draft	CS/TJ	04/10/22	TJ	04/10/22	AO	06/10/22



City of Vincent 40km/h Trial Evaluation

The conclusions in the Report titled City of Vincent 40km/h Trial are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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1 Background

Stantec and Phil Jones Associates (PJA) have been engaged by the Road Safety Commission to undertake an evaluation of the City of Vincent’s 40km/h trial that took effect on all local roads within the southern part of the City of Vincent (broadly south of Vincent Street) from April 2019. Distributor roads retained their existing posted limits, at either 50 km/h or 60 km/h. The two-year trial was proposed to run until April 2021. However, the trial has now been extended and is ongoing. The spatial scope of the trial is shown in Figure 1-1.

Figure 1-1: City of Vincent 40km/h Trial Study Area



(Source: City of Vincent)

In June 2020 GHD produced a report on the trial assessing changes to traffic behaviour (traffic volumes and travel speed). This report evaluates how local residents have perceived the trial, how peoples’ travel behaviour may have changed and, if additional interventions may be required to achieve a more self-enforcing 40km/h travel area.

2 Data Analysis

The City of Vincent provided Stantec with community survey responses for the following topics:

- Background information on traffic and transport in Vincent and 40km/h trial
- 40km/h trial feedback
- Florence Street / Carr Street proposed traffic calming feedback
- Forrest Street (Fitzgerald Street to Norfolk Street) proposed traffic calming and parking changes feedback
- Vincent Street, William Street, Fitzgerald Street and Forrest Street proposed mini roundabouts pilot project feedback
- North Perth proposed traffic calming feedback
- Birrell Street, Eucla Street and Federation Street proposed traffic calming and parking restrictions feedback
- Shakespeare Street proposed Safe Active Street (SAS) feedback
- Strathcona Street and Golding Street proposed traffic calming feedback.

Additionally, Stantec were provided with the following reports:

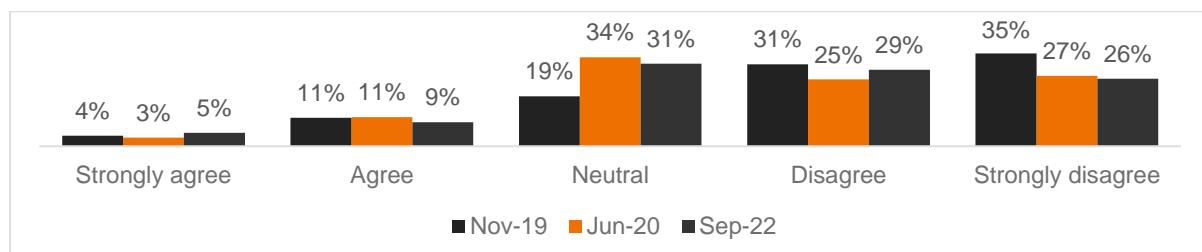
- The City of Vincent Accessible City Strategy
- The City of Vincent Draft Accessible City Strategy Consultation Summary
- GHD 40km/h Review City of Vincent – 12 Month Trial Evaluation.

2.1 Survey Analysis

2.1.1 40KM/H TRIAL AREA WIDE (2019-2022)

The City of Vincent undertook three community surveys between November 2019 and September 2022 to gauge the public's general perceptions of the trial. A comparison of the findings of the surveys over time are shown as column charts and individual survey results are shown as pie charts in the summaries below.

Figure 2-1: The 40km/h limit has reduced rat-running



City of Vincent 40km/h Trial Evaluation
2 Data Analysis

Figure 2-2: The 40km/h trial has made walking and cycling safer

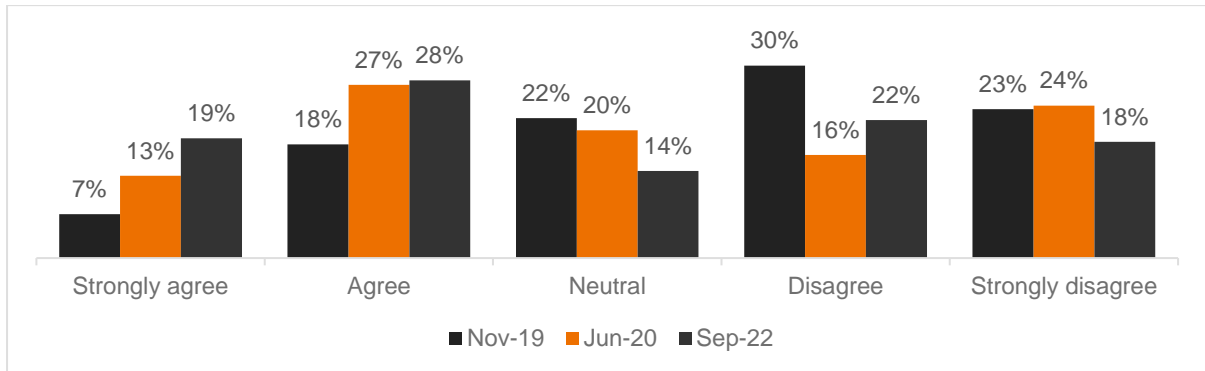


Figure 2-3: The 40km/h trial has made streets safer for children

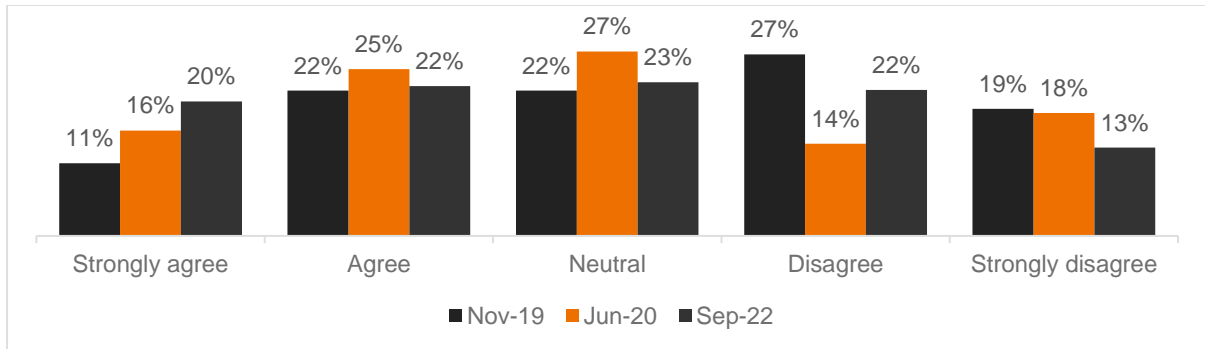


Figure 2-4: The 40 km/h trial has made local streets quieter

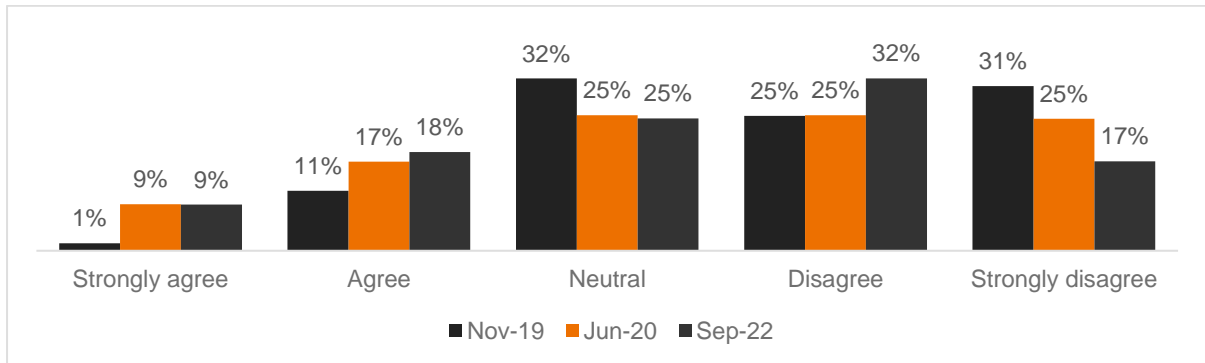
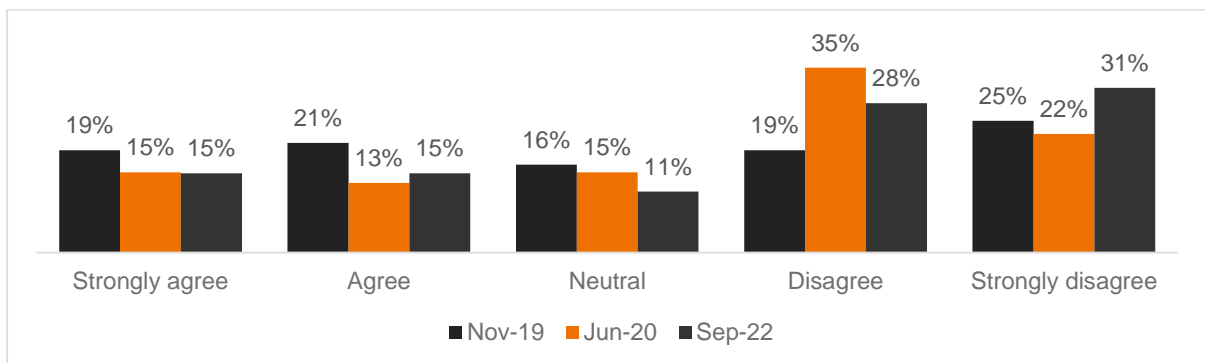


Figure 2-5: The 40 km/h trial has made it harder to get around



City of Vincent 40km/h Trial Evaluation
2 Data Analysis

Figure 2-6: I think the 40 km/h trial has been worth doing

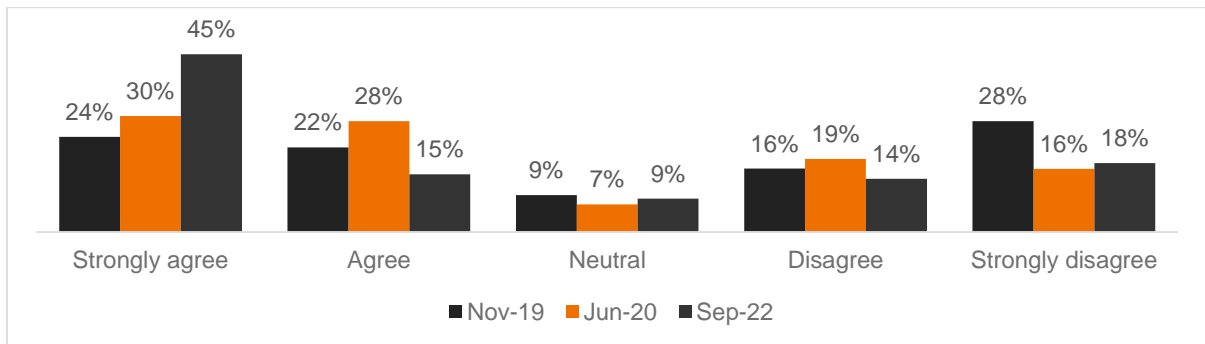


Figure 2-7: I think the 40 km/h area speed limit might be useful in other areas

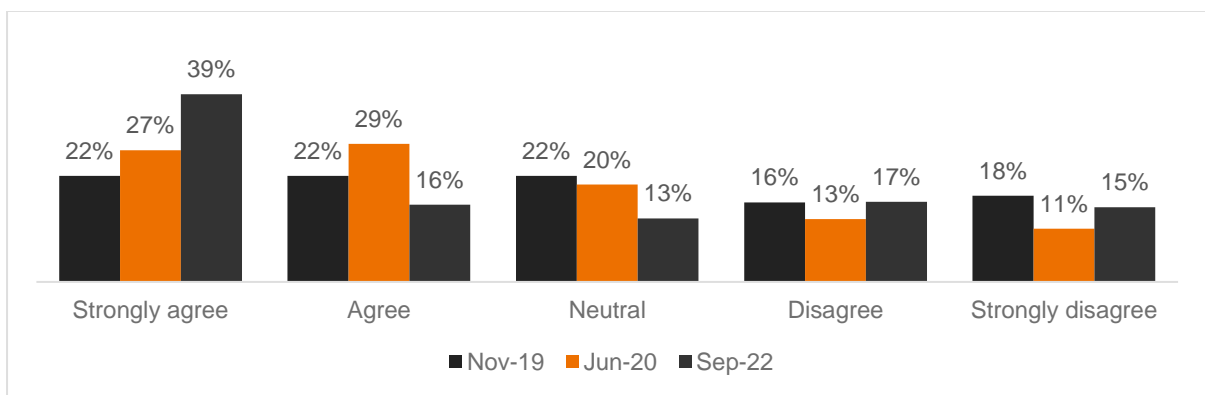


Figure 2-8: I think it is morally acceptable to drive 10km/h over the lowered speed limit in the trial 40km/h area

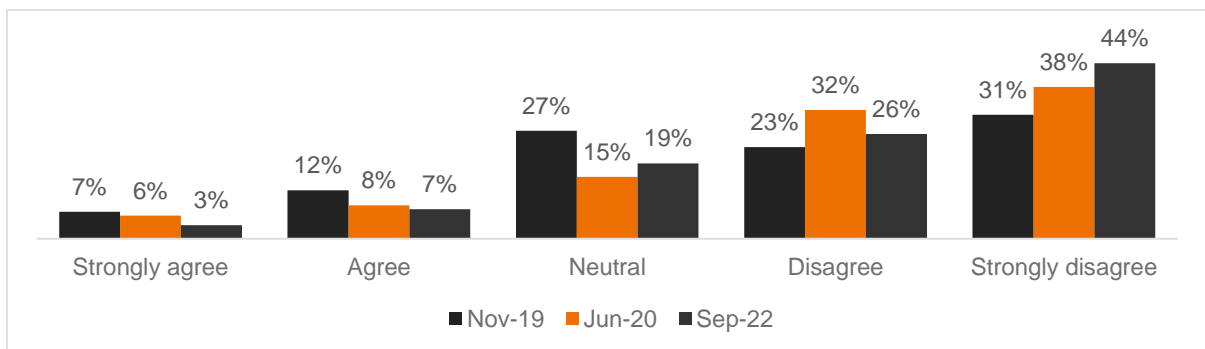


Figure 2-9: The 40km/h trial has made the local area more liveable

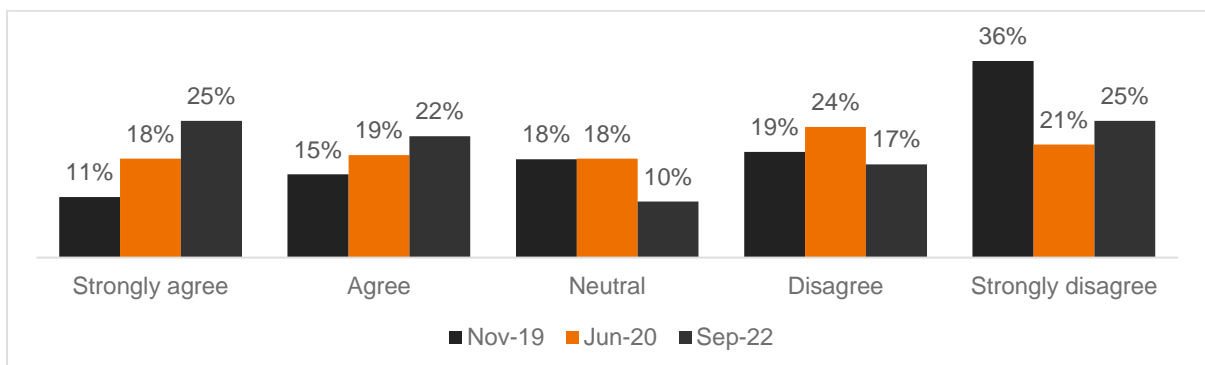


Figure 2-10: The 40km/h trial encourages healthy local transport

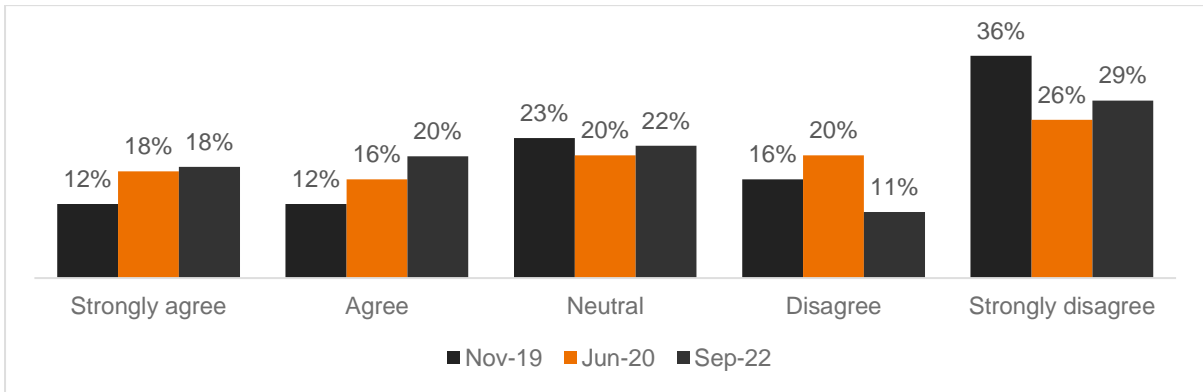


Figure 2-11: The 40km/h trial encourages healthy local recreation

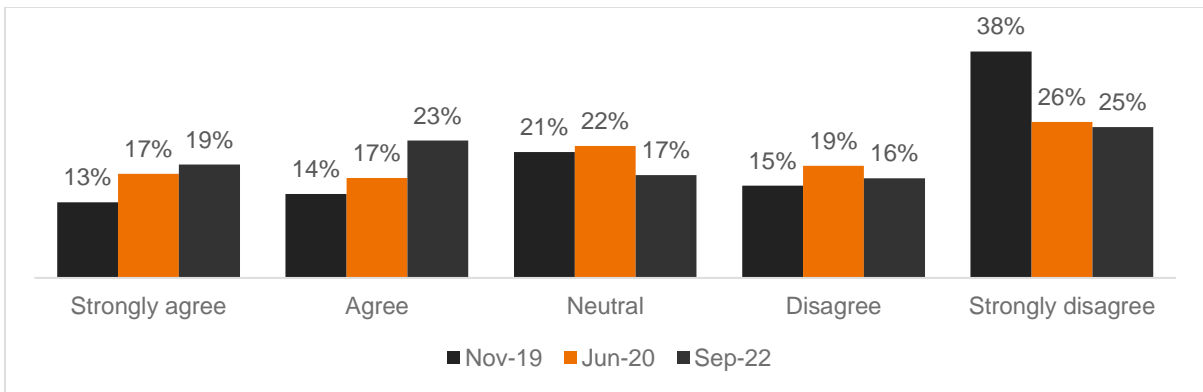


Figure 2-12: Has the reduced speed zoning given you more confidence to let children walk or ride to school? (September 2022 Survey)

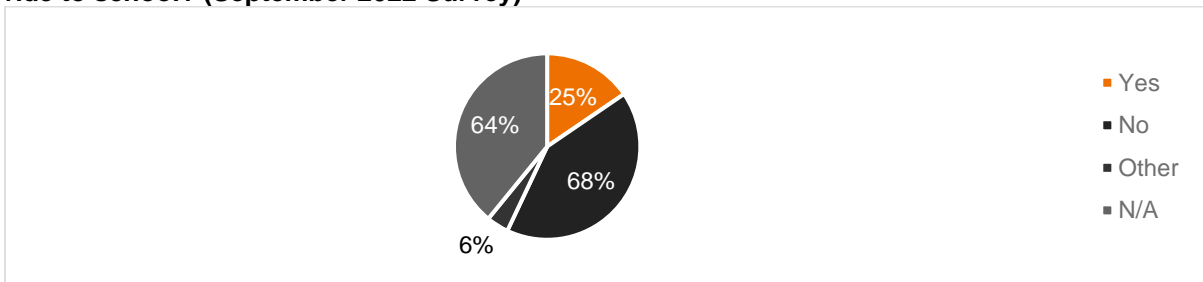


Figure 2-13: Has the reduced speed zoning given you more confidence to let children access Public Open Space? (September 2022 Survey)

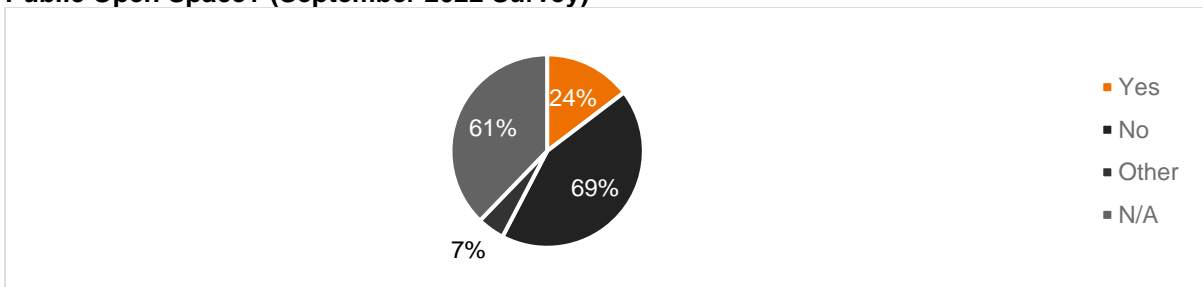


Figure 2-14: If you are over 60, does the reduced speed zoning provide you more confidence to walk or use any mobility aids within the street? (September 2022 Survey)

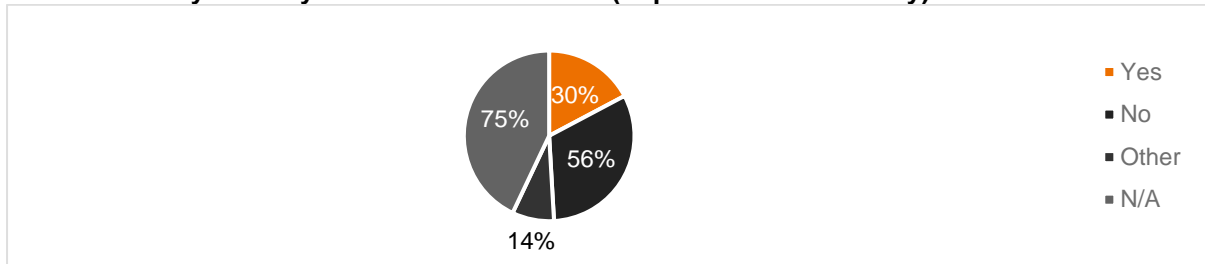


Figure 2-15: Do you think a reduction to 40km/h is safe enough, or would reducing the speed further within residential streets provide greater confidence to walk or ride in the streets? (September 2022 Survey)

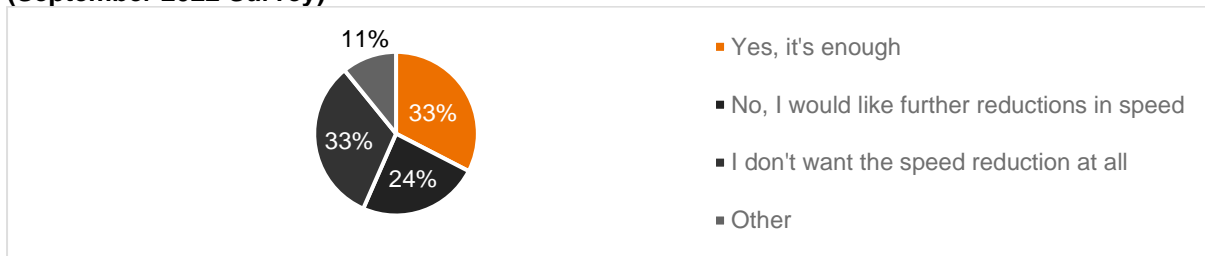


Figure 2-16: Would you consider a 30km/h limit? (August 2018 Survey)

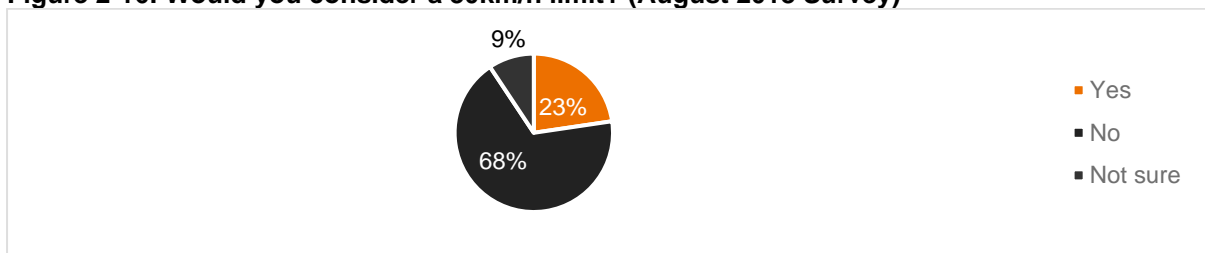


Figure 2-17: Rather than a trial, should the urban speed limit across Perth be reduced to 40km/h now in urban (local streets, not main distributors) streets? (August 2018 Survey)

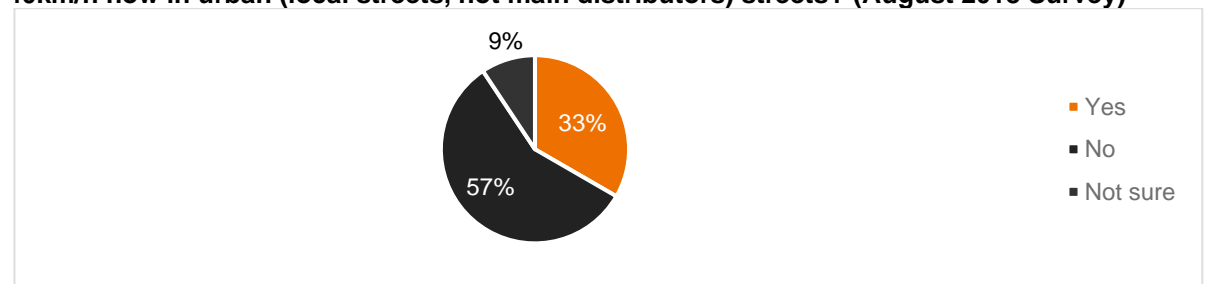


Figure 2-18: Are you likely to use your car less, and walk or ride more, for local trips during the trial? (August 2018 Survey)

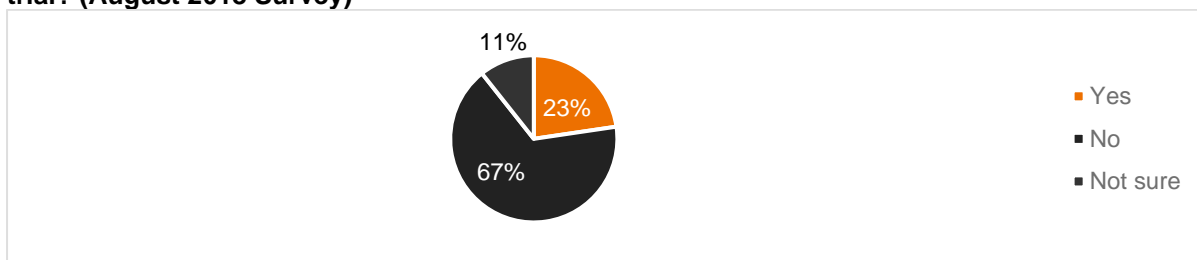


Figure 2-19: What were your reasons for supporting the trial? (August 2018 Survey)

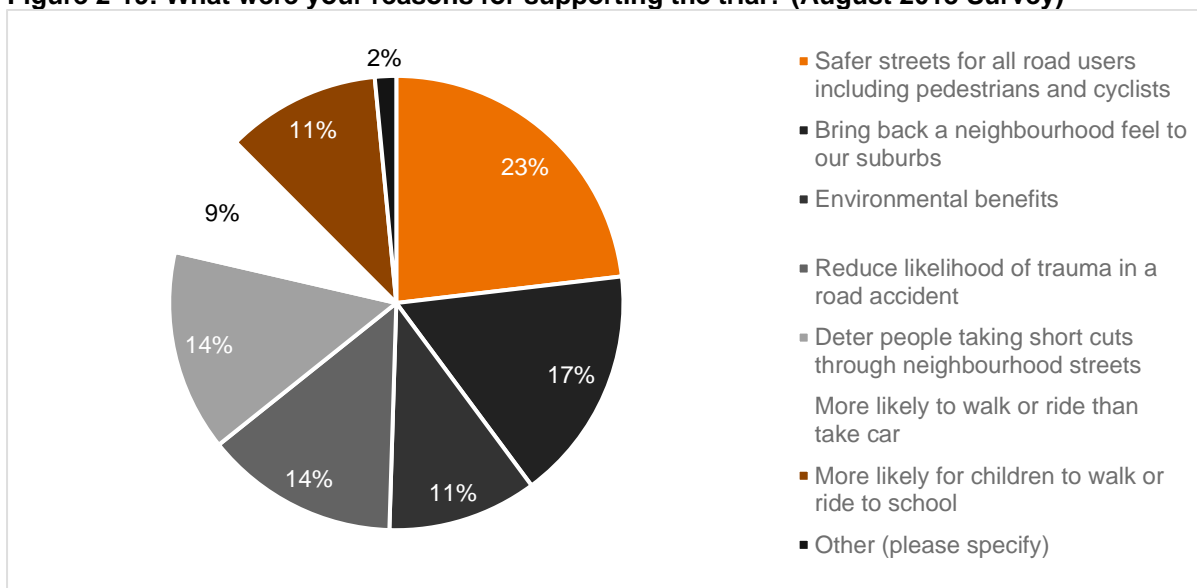


Figure 2-20: What were your reasons for not supporting the trial? (August 2018 Survey)

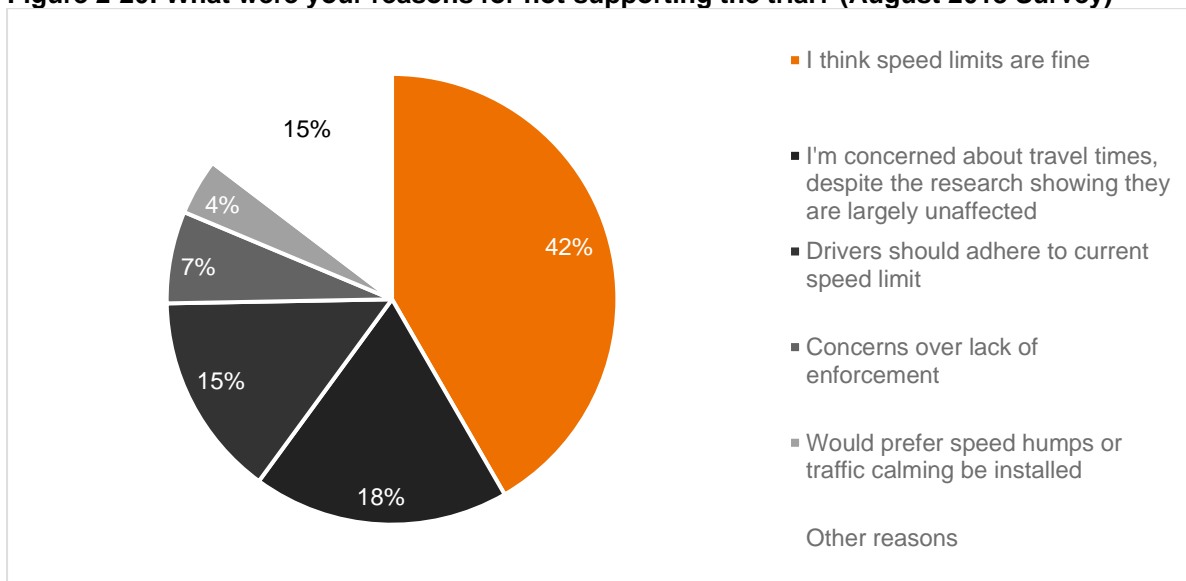
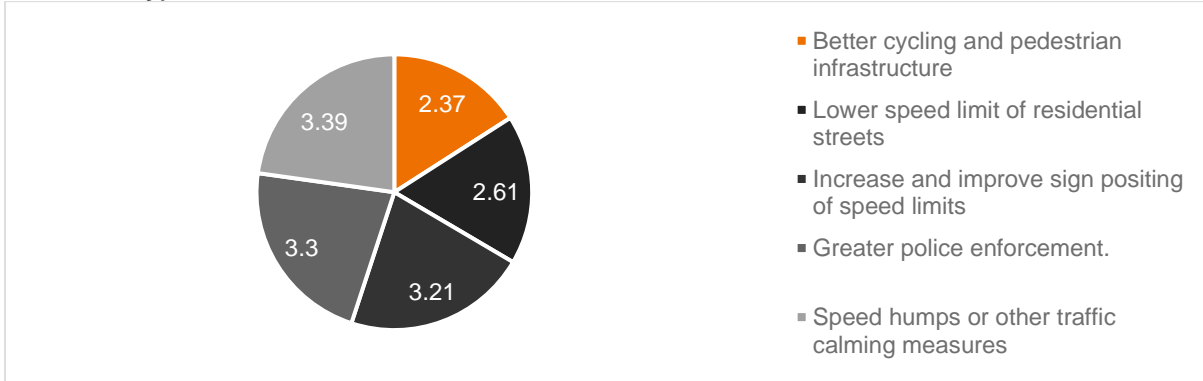


Figure 2-21: Please rank from 1 to 5 the following measures to improve safety and amenity of residential streets (with 1 being your highest priority and 5 being your lowest priority) (August 2018 Survey)



2.1.1.1 Summary

A summary of the key points from the analysis of the previous figures include:

- Little to no change in observed rat-running being reduced. However, there has been a shift from strongly disagree to neutral over time
- An increase by 22% in agreement and a decrease by 13% in disagreement over time in walking and cycling being safer at 40km/h
- An increase in perception of streets being safer for children at 40km/h by 9%
- An increase by 15% in streets being quieter during the trial
- Shift towards streets becoming easier to get around over time
- An increase by 13% in support of the trial over time
- An increase by 11% over time in support of the trial area extending
- Driving at 40km/h rather than 50km/h becoming more widely accepted over time
- An increase by 21% in perception of improved liveability over time in the trial area
- An increase in willingness to use healthy local transport over time by 14%
- An increase by 15% in encouragement of healthy local recreation over time
- Only 25% of applicable responses feel more confident to let children walk or ride to school with the reduced speed zoning
- Only 24% of applicable responses feel more confident to let children access Public Open Space with the reduced speed zoning
- Only 30% of respondents over 60 years old feel more confident to walk or use mobility aids within the reduced speed zoned street
- 57% support reducing the speed to 40km/h or further within residential streets provide greater confidence to walk or ride in the streets
- The supporting benefits of the trial are widespread through the 921 responses with safer streets for all road users including pedestrians and cyclists (23%), bring back a neighbourhood feel to our suburbs (17%), reduce likelihood of trauma in a road accident (14%), deter people taking short cuts through neighbourhood streets (14%), environmental benefits (11%), more likely for children to walk or ride to school (11%) and being more likely to walk or ride than take car (9%)
- The main reasons for being against the trial only had a response rate of 348 with the main reason relating to the existing speed limits being fine with 42% of the votes
- 32% may be open to a 30km/h speed limit



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- 43% may be open to local streets across Perth being reduced to a 40km/h speed limit
- 34% may be more likely to choose walking or riding for local trips over car trips
- The preference of measures for improving safety and amenity of residential streets are better cycling and pedestrian infrastructure (25%), lower speed limit of residential streets (22%), increase and improve sign positing of speed limits (18%), greater police enforcement (22%) and speed humps or other traffic calming measures (23%).

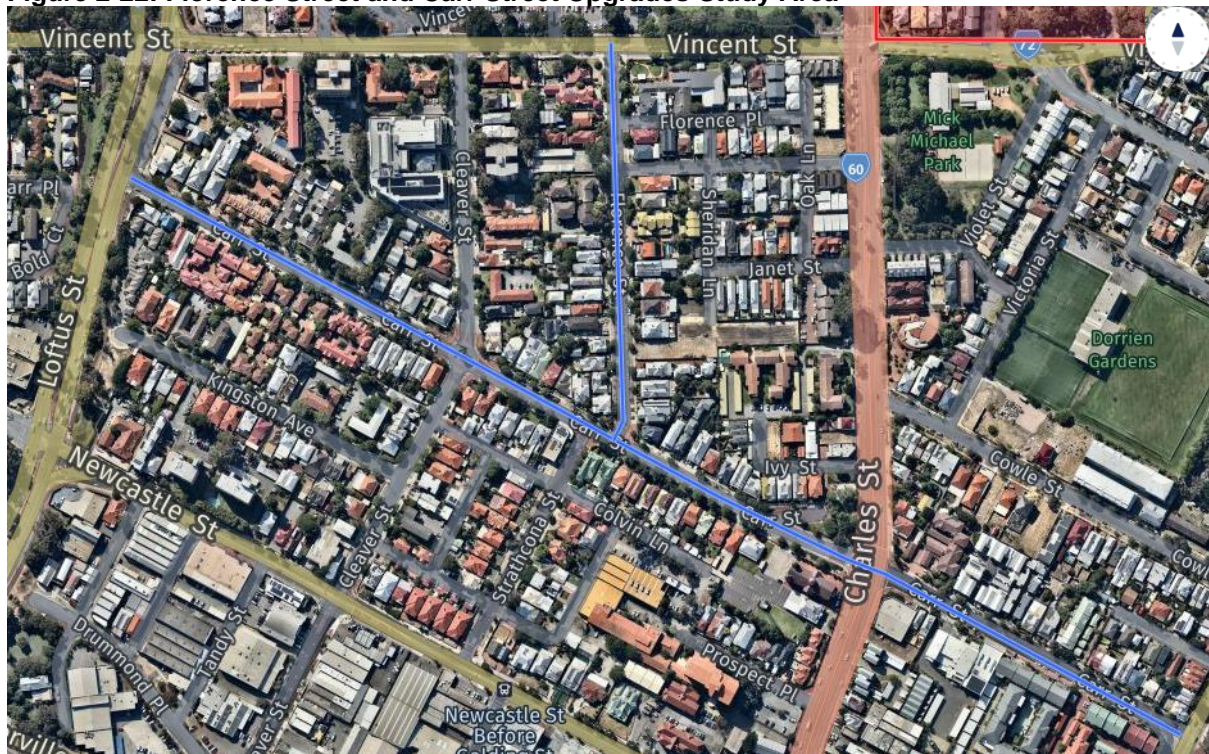
The general themes of feedback and comments relating to the trial and traffic issues within the City of Vincent include:

- Rat-running along Joel Terrace is a major issue that has not been resolved with the trial. Additionally, there is a demand for signage to reinforce compliance with the speed limit.
- 40km/h speed limit along Bulwer Street is too slow and increases delay. 50km/h is generally more accepted than 40km/h.
- Many vehicles are not following the 40km/h speed limit while others are, causing an inconsistency in vehicle speeds making it unsafe for drivers and crossing pedestrians to judge when is "safe" to cross
- Difficulty crossing at Vincent Street and East Parade
- Police reinforcement is required to reinforce compliant vehicle traveling speeds. Road marking the speed limit and additional signage is also encouraged to reinforce the speed limit for drivers
- Summers Street to be speed zoned as a school zone for the childcare centre
- 40km/h encouraged on low volume residential roads where higher volumes of children and elderly are but discouraged on high vehicle volume roads that cause excessive delays on commute times
- The inconsistency and changing of speed limits zone confuse drivers, making them feel unsafe
- Cycle infrastructure in place is adequate, need for reduced vehicle speeds is not required
- A demand for alternative speed reduction measures to be put in place instead of or in conjunction with speed reduction signs to physically slow traffic. Speed signs are generally ignored.
- Cycling safety has not improved due to variances in traffic speeds and delays causing road rage



2.1.2 FLORENCE STREET AND CARR STREET UPGRADES (2019-2022)

Figure 2-22: Florence Street and Carr Street Upgrades Study Area



(Source: Nearmap)

The general themes of comments from the Florence Street and Carr Street upgrades survey include:

- The idea of bike lanes is generally supported but the associated issues on Florence Street/Carr Street generally outweigh the proposal with the removal of on-street parking along Florence Street and Carr Street being a major issue for residents with no on-site parking
- High number of vehicle U-turns on Carr Street.

2.1.3 FORREST STREET TRAFFIC CALMING AND PARKING RESTRICTIONS (2021-2022)

The City of Vincent proposed to implement three speed humps between the entrance of the Wasley Street carpark and Norfolk Street and alternating the on-road parking so that the vehicles do not have a 'clear' passage of travel along the northern (east bound) side of the road and are required to slow down to give-way to approaching traffic. Additionally, a change in parking restrictions is proposed from 3P to 1P. The proposed changes on Forrest Street take place between Fitzgerald Street and Norfolk Street as shown in Figure 2-23.

Figure 2-23: Forrest Street Traffic Calming and Parking Restrictions Study Area



(Source: Nearmap)

Figure 2-24: Do you support proposed speed humps?

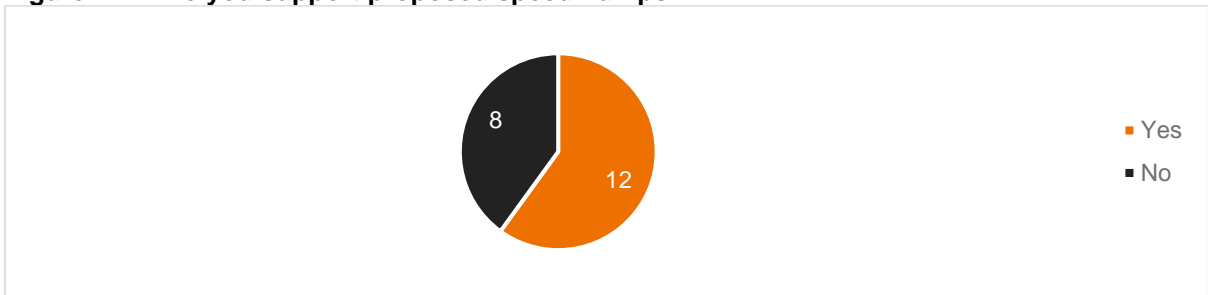


Figure 2-25: Do you support staggered parking?

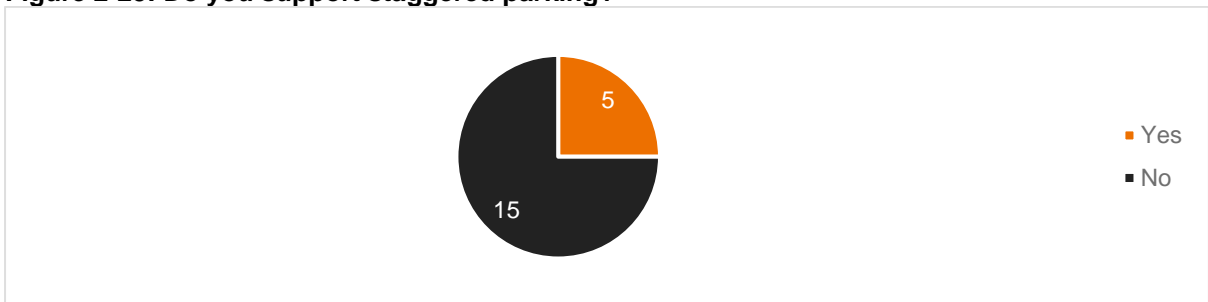
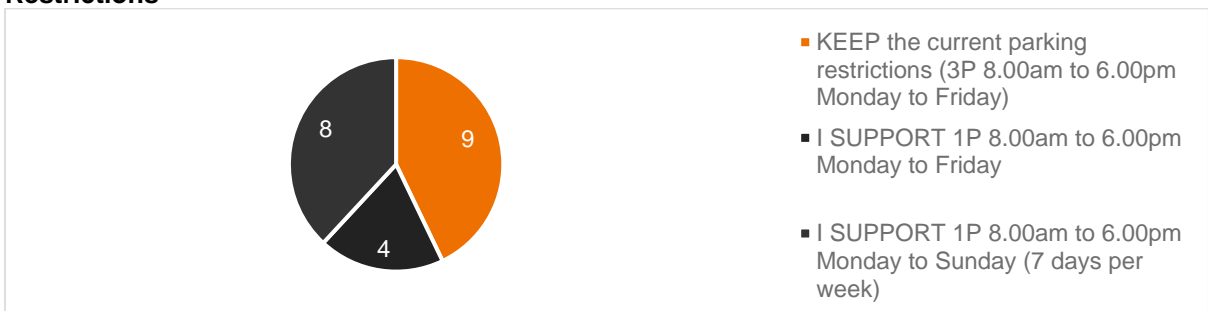


Figure 2-26: Please tick the box that applies to you in relation to your thoughts about Parking Restrictions



2.1.3.1 Summary

A summary of the key points in the survey include:

- 60% of residents support speed bumps being installed on Forrest Street
- 75% of residents are against staggered parking on Forrest Street, primarily due to the loss of residential parking unavailable on-site
- 43% support keeping 3-hour parking restrictions on weekdays (8am – 6pm) and 38% support a change to a 1-hour parking restriction 7-days of the week (8am – 6pm)

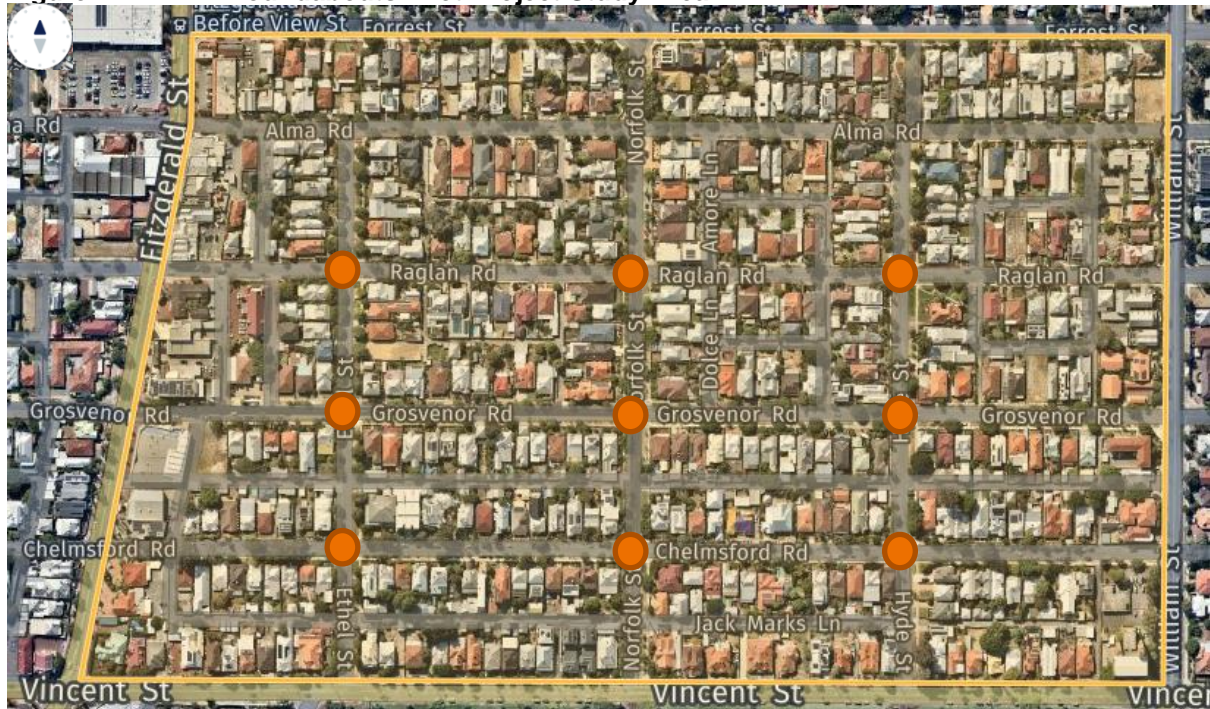
The themes of feedback and comments on the proposals for Forrest Street include:

- Installation of staggered parking bays on Forrest Street generally not supported due to the road width and confusion as parking on one side currently also restricts traffic volumes and speeds. The proposed parking restrictions are also an issue for residents and their visitors.

2.1.4 MINI ROUNDABOUTS PILOT PROJECT (2021-2022)

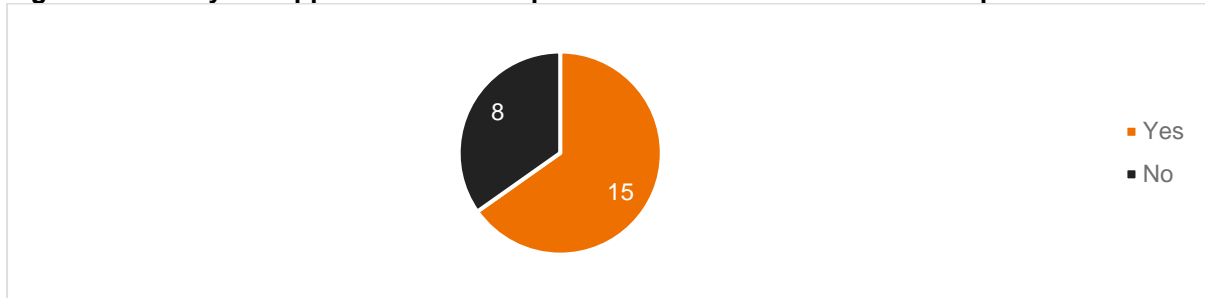
The mini roundabouts pilot project area consists of reducing the speed limit in the area bound by Vincent Street, Fitzgerald Street, Forrest Street and William Street to 40km/h. Additionally, installing mini roundabouts at nine intersections in the area bounded by Ethel Street, Raglan Road, Hyde Street and Chelmsford Road as shown in Figure 2-27.

Figure 2-27: Mini Roundabouts Pilot Project Study Area



(Source: Nearmap)

Figure 2-28: Do you support the 40km/h speed zone in the mini roundabouts pilot area?



2.1.4.1 Summary

A summary of the key points in the survey include:

- 65% support a 40km/h speed limit within the mini roundabouts pilot area

The themes of feedback and comments on the mini roundabout pilot project include:

- Demand for pedestrian/cyclist priority over vehicles in the mini roundabout trial
- Residents would feel more unsafe crossing at mini roundabouts than the existing layouts.

2.1.5 NORTH PERTH TRAFFIC CALMING (2020-2022)

The North Perth traffic calming study area is bound by Charles Street, View Street, Fitzgerald Street and Vincent Street as shown in Figure 2-29. The traffic calming measures proposed by the City of Vincent involve the installation of mid-block single lane slow points in the following streets:

- Alma Road - between Camelia Street and Persimmon Street
- Camelia Street - between Vincent Street and Claverton Street
- Claverton Street - between Camelia Street and Alfonso Street
- Alfonso Street - between Calverton Street and Vincent Street
- Leake Street - between Grosvenor Road and Chelmsford Road.

Further to these proposals a possible second stage of traffic calming measures in North Perth would involve raised plateaus at critical intersections in the precinct. Additionally, the City closed a section of median strip on Fitzgerald Street to prevent right-turn access in and out of View Street. The intersection change was implemented as a 12-month trial, aimed at reducing vehicle traffic through North Perth Common.

Figure 2-29: North Perth Traffic Calming Study Area



(Source: Nearmap)

Figure 2-30: Do you think the City should add traffic calming measures in the North Perth area bounded by Charles, View, Fitzgerald and Vincent Streets?

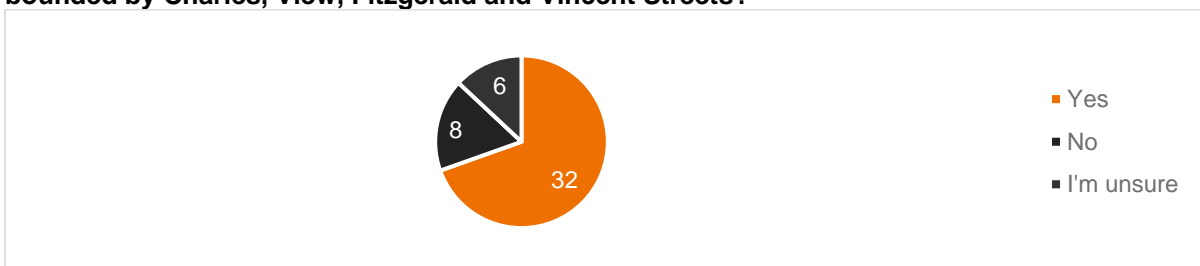


Figure 2-31: Do you support the installation of slow points on Alma Road, between Camelia and Persimmon Streets?

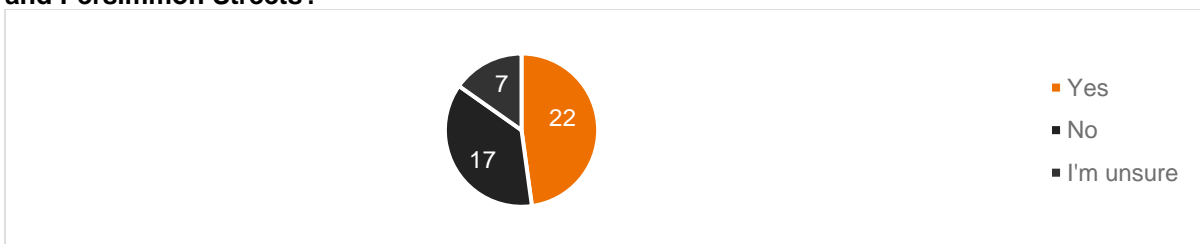


Figure 2-32: Do you support the installation of slow points on Camelia Street, between Vincent and Claverton Streets?

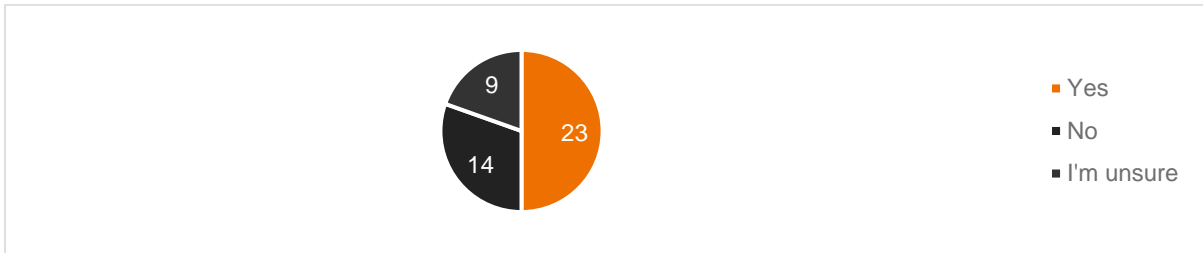


Figure 2-33: Do you support the installation of slow points on Claverton Street, between Camelia and Alfonso Streets?

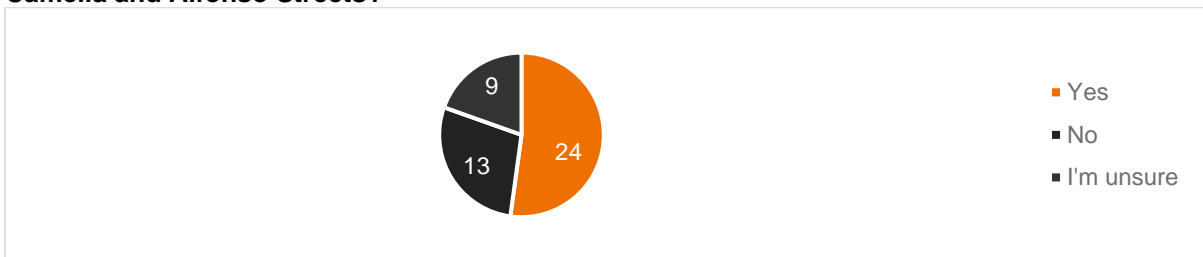


Figure 2-34: Do you support the installation of slow points on Alfonso Street, between Claverton and Vincent Streets?

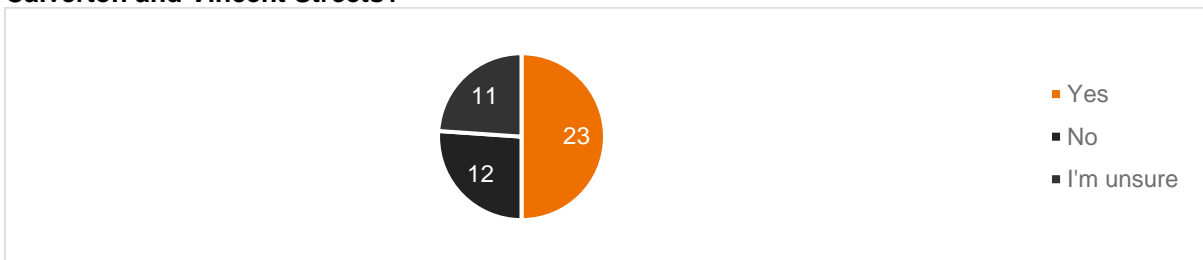


Figure 2-35: Do you support the installation of slow points on Leake Street, between Grosvenor and Chelmsford Roads?

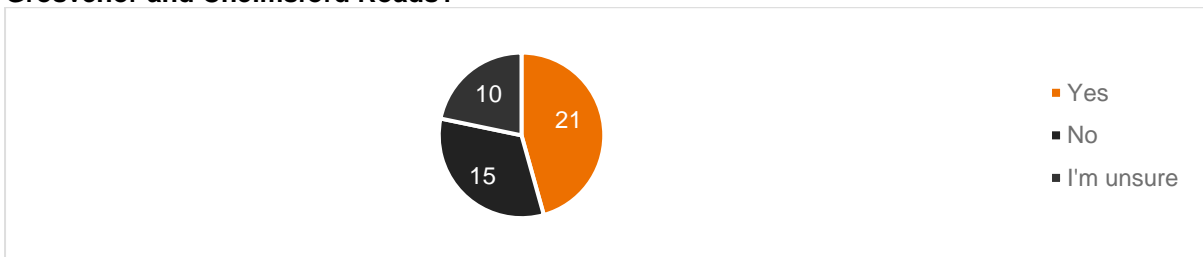


Figure 2-36: If the City is to proceed with installing slow points in these streets, which design do you prefer?



Figure 2-37: Do you support the addition of raised plateaus at critical intersections in North Perth as future traffic calming measure?

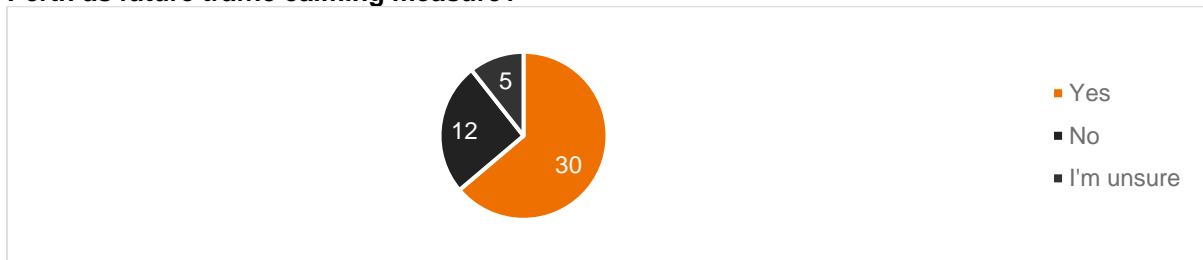


Figure 2-38: How has the Fitzgerald/View Street intersection change affected your local transportation?

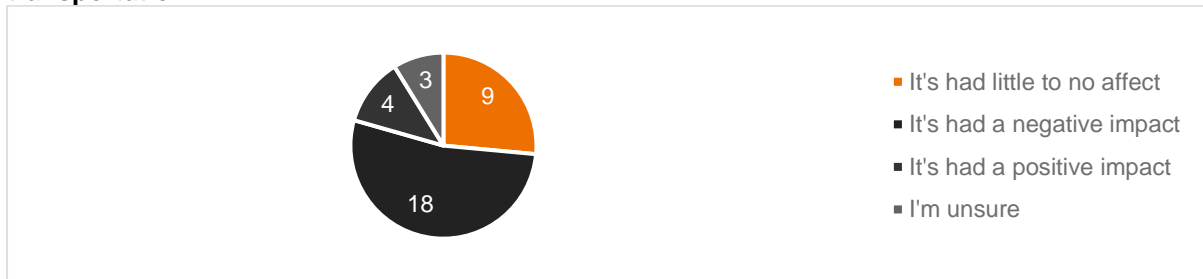


Figure 2-39: Has the closure of the Fitzgerald Street median had a noticeable effect on the traffic along your street?

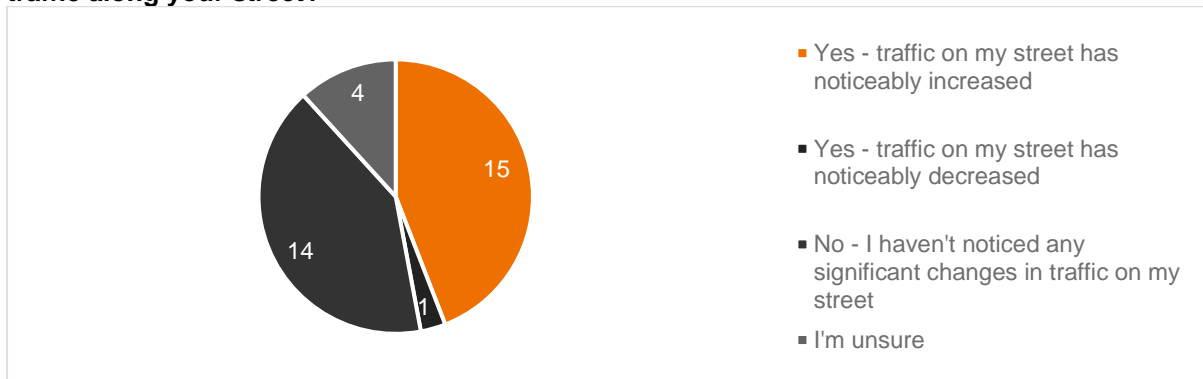
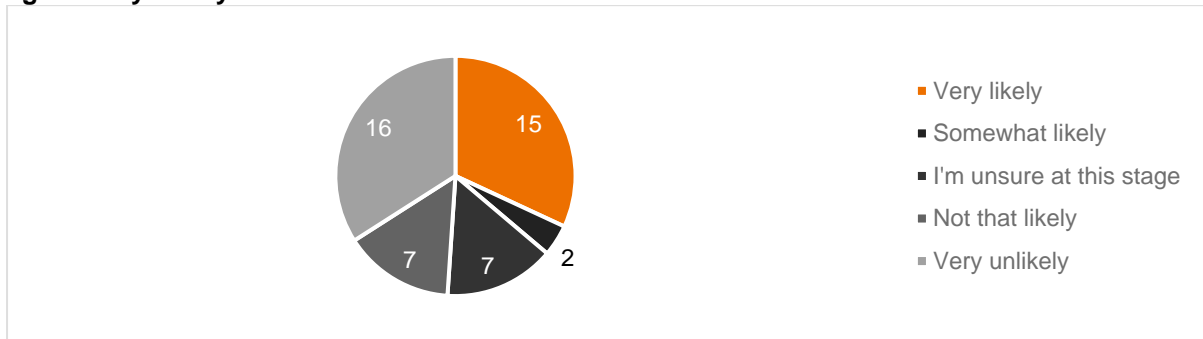


Figure 2-40: Having experienced the Fitzgerald/View Street intersection change for the last two months, how likely are you to support making the change permanent when the City consults again early next year?



2.1.5.1 Summary

A summary of the key points in the survey include:

- 70% support traffic calming measures being implemented in North Perth
- 48% support traffic calming on Alma Road
- 50% support traffic calming on Camelia Street
- 52% support traffic calming on Claverton Street
- 50% support traffic calming on Alfonso Street
- 46% support traffic calming on Leake Street
- Mid-block, single lane slow points and blister slow points were equally supported
- 64% support raised plateaus being implemented at critical intersections
- 53% have had a negative local transportation impact by the Fitzgerald Street/View Street intersection change with a further 26% have little to no effect
- 44% have noticed an increase in traffic on their street from the Fitzgerald Street median closure and 41% have noticed no significant changes in traffic
- 36% are likely to very likely and 49% are unlikely to very unlikely to support making the change permanent, with the balance of respondents being unsure about the level of their support.

The general themes of feedback and comments received from the survey include:

- The loss of on-street parking would be an issue for residents, particularly on Alma Road
- The Fitzgerald Street median closure has increased traffic on residential roads, primarily Alma Road, Angove Road, Raglan Road, Glebe Street, Grosvenor Road and Chelmsford Road



- Heavy vehicles are using residential roads to access Coles/North Perth Plaza
- Residents are being restricted when exiting or entering their street and suffer from delays due to the Fitzgerald Street closure
- Closure of the right-turn movement into View Street, it has made accessing amenities more difficult by car,

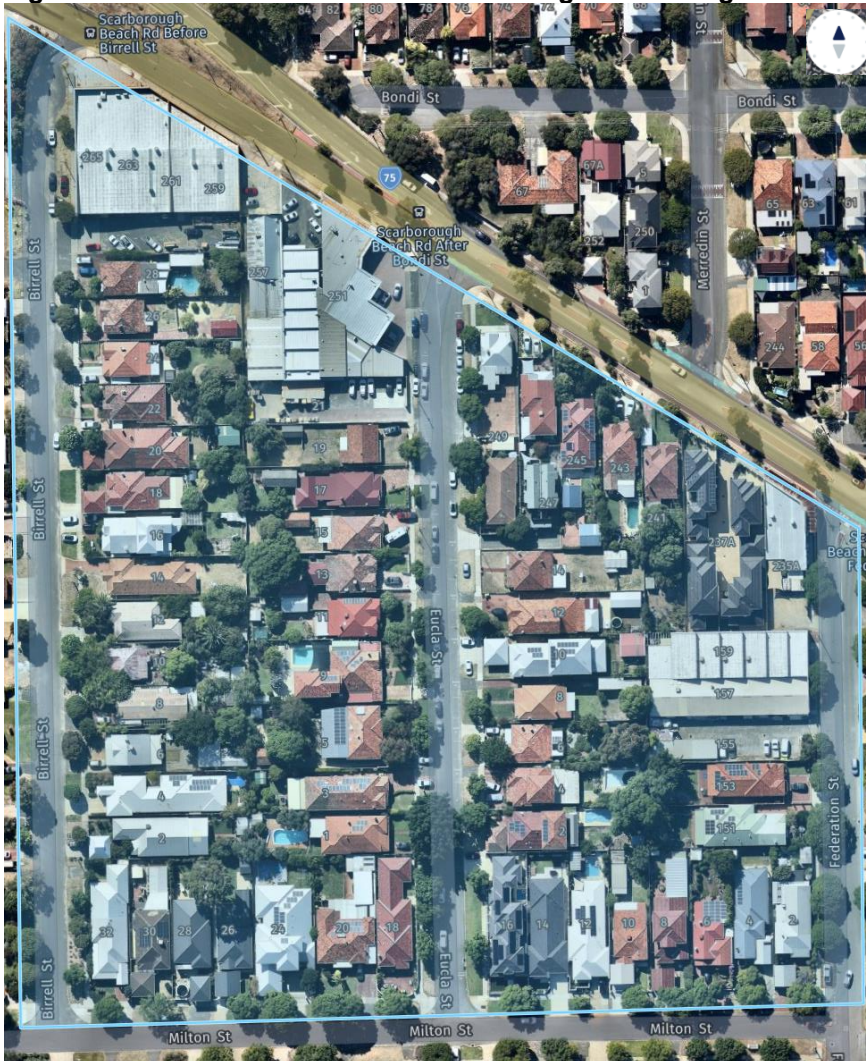
2.1.6 MOUNT HAWTHORN TRAFFIC CALMING AND PARKING RESTRICTIONS

The traffic calming and parking restrictions are proposed on Birrell Street, Eucla Street and Federation Street from Scarborough Beach Road to Milton Street as shown in Figure 2-41. The proposal involves the installation of traffic calming/entry statements in Eucla Street and Federation Street at the Scarborough Beach Road intersections. Additionally, a 3P parking restriction from 8am to 6pm, Monday to Friday in Birrell Street, Eucla Street and Federation Street on both sides, between Scarborough Beach Road and Milton Street is proposed. The section of Federation Street which has a 1P restriction would remain but would be changed to 8am to 6pm, Monday to Friday. The existing 2P in Eucla Street would also change to 3P so that it is the same restriction along the length of the street.



City of Vincent 40km/h Trial Evaluation 2 Data Analysis

Figure 2-41: Mount Hawthorn Traffic Calming and Parking Restrictions Study Area



(Source: Nearmap)

Figure 2-42: In relation to the proposed traffic calming / entry statements, please choose the statement that reflects your view:

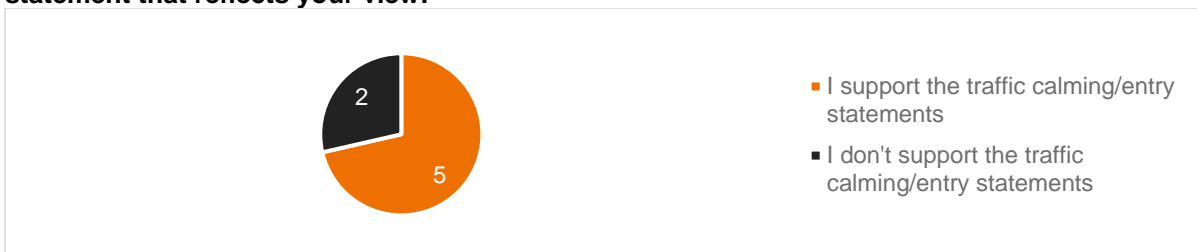
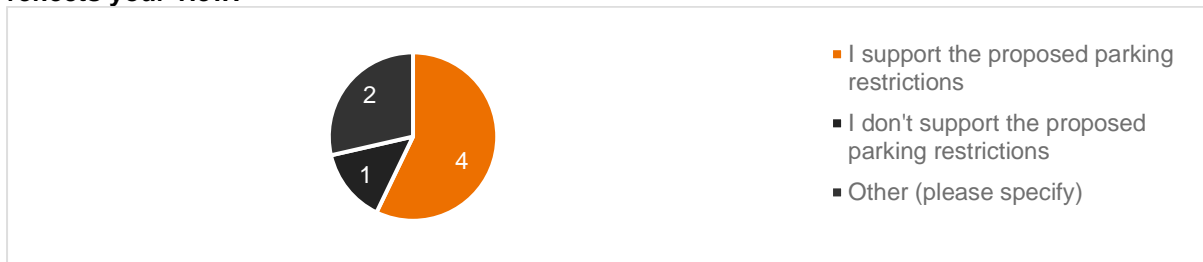


Figure 2-43: In relation to the proposed parking restrictions, please choose the statement that reflects your view:



2.1.6.1 Summary

A summary of the key points in the survey include:

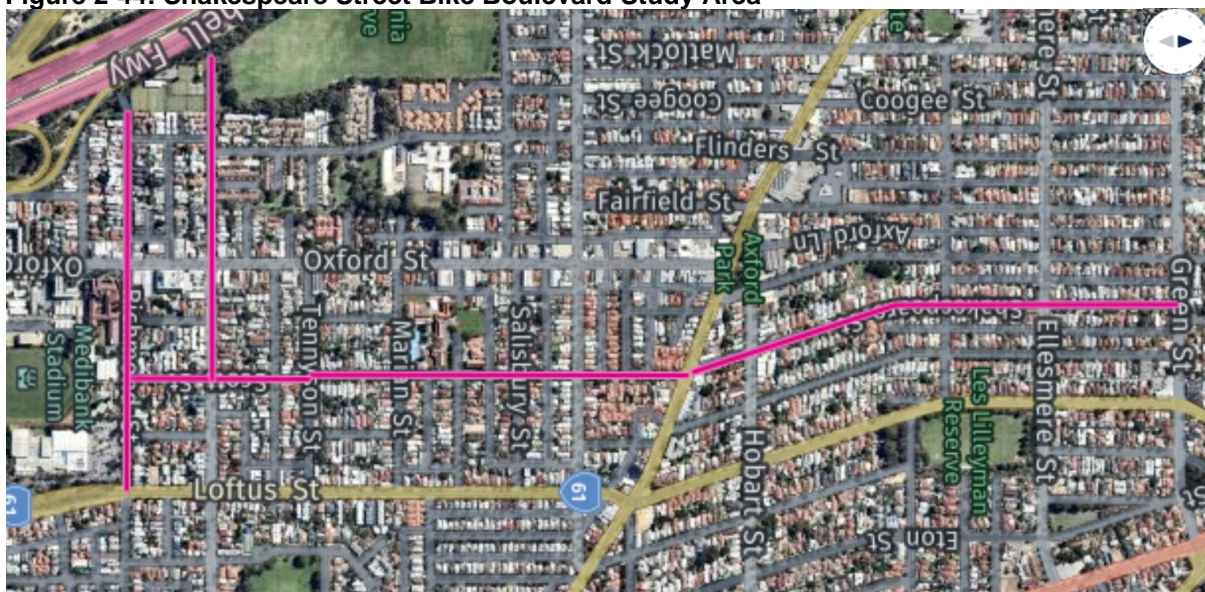
- 71% support the proposed traffic calming/entry statements on Birrell Street. Eucla Street and Federation Street
- 57% support the proposed parking restrictions on Birrell Street. Eucla Street and Federation Street.

The general theme of feedback and comments received from the survey is that the staff from CDM are the biggest users of the on-street parking on Eucla Street

2.1.7 SHAKESPEARE STREET BIKE BOULEVARD

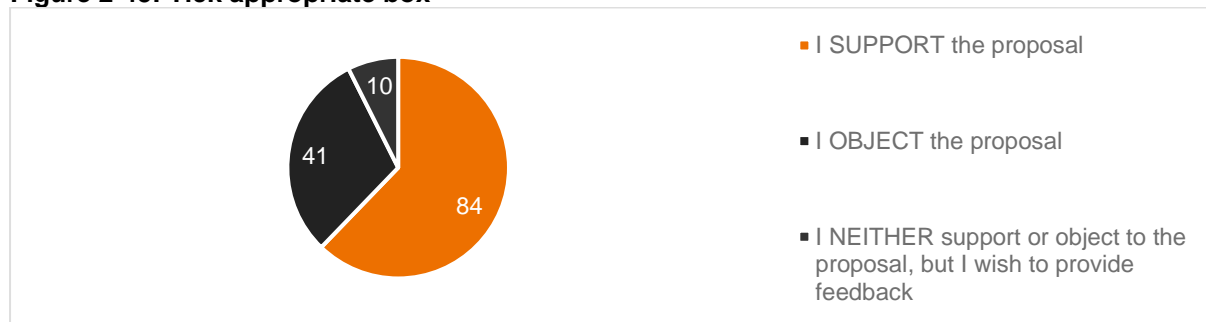
The City proposed to convert Shakespeare Street from Scarborough Beach Road to Tennyson Street into a bike boulevard or a Safe Active Street (SAS).

Figure 2-44: Shakespeare Street Bike Boulevard Study Area



(Source: Nearmap)

Figure 2-45: Tick appropriate box



The survey shows that 62% of respondents support Shakespeare Street as a bike boulevard.

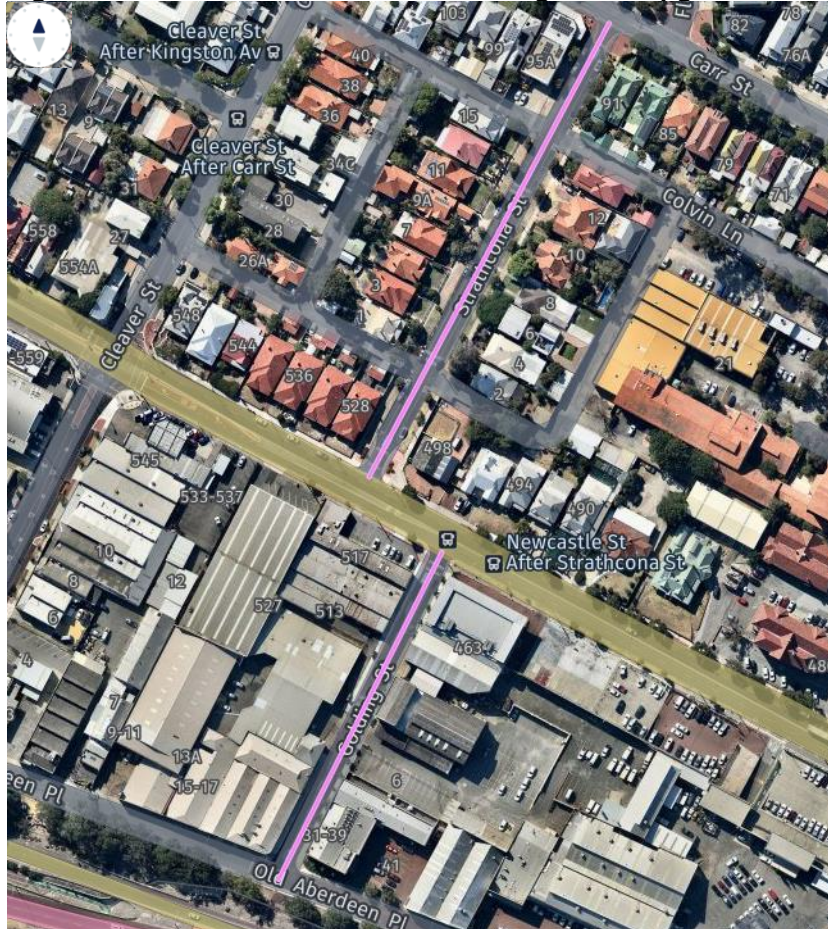
The general themes of feedback and comments received from the survey include:

- The loss of on-street parking is a major concern for residents that utilise the street due to a lack of on-site parking being available with concerns of having to park further from their residence potentially increasing theft/vandalism
- A bike boulevard on Shakespeare Street and Scott Street would be unnecessary due to the existing cycle route on Oxford Street
- Increased tree planting and greenery is widely accepted where trees do not restrict property access or reduce effective widths of paths by fallen leaves
- Improved safety for cyclists and children from a cyclist's perspective but reduced safety from a driver's perspective due to reduced lane widths and pedestrian/cyclists conflicts with cars
- There is little bicycle traffic observed meaning the perceived priority is low
- Noise concerns of raised plateaus/speed bumps for residents
- the creation of more cul-de-sac streets is desirable
- Major concern about re-distribution of traffic increasing congestion on roads which are already congested.

2.1.8 STRATHCONA STREET AND GOLDING STREET UPGRADES

The proposed upgrades to Strathcona Street and Golding Street consist of converting both streets into Safe Active Streets between Carr Street to Newcastle Street and then to Old Aberdeen Street as shown in Figure 2-46.

Figure 2-46: Strathcona Street and Golding Street Upgrades Study Area



(Source: Nearmap)

The general themes of feedback and comments received from the survey include:

- The proposal is generally accepted
- Crossing Carr Street and Newcastle Street as a means of connecting Strathcona Street to Florence Street and Golding Street is a safety issue.

2.2 Report Analysis

2.2.1 THE CITY OF VINCENT ACCESSIBLE CITY STRATEGY

To guide the City between 2020 and 2030, the Accessible City Strategy (ACS) has a vision to "put people first – getting around is safe, easy and environmentally friendly and enjoyable".

The objectives are to create a safe transport environment, ensure easy accessibility and connectivity into and around Vincent, promote environmentally friendly transport modes and initiatives and make it enjoyable to get around the local area.

2.2.1.1 Safe

- Create active and sustainable transport networks that are safe and understandable.
- Ensure pedestrian and cycling routes (including schools) are of a high-quality and safe for all users.

Vincent's streets will be safe places for people of all ages and abilities. People will be protected from the risk of moving vehicles. Innovative design will enhance the quality of the public realm without compromising the amenity of our streets for people walking and resting. People are encouraged to shift their routines to more active modes of transport.

2.2.1.2 Accessible and Connected

- Advocate for connected and reliable public transit.
- Reallocate road and verge space, including on-street parking, throughout the City to prioritise vulnerable users according to user hierarchy and road hierarchy.
- Be a leader in adaptability and technology

Vincent's transport network will provide equal opportunity for all users to access work, entertainment and necessities via active and sustainable transport modes.

2.2.1.3 Environmentally Friendly

- Reduce carbon emissions caused by the transport network.
- Prioritise and encourage the use of active and sustainable transport modes.
- Manage car parking (including supply and pricing) to improve efficiency and support mode shift.
- Use residential density to support transit.
- Obtain relevant data to inform decisions and monitor progress.

Vincent sees a response to climate change through encouraging mode shift as necessary. Vincent has several policies related to sustainability and the environment, including the Sustainable Environment Strategy and the Greening Plan. Consultation identified resident's dedication to maintain a sustainable environment, praising the City's street-tree planting and seeking opportunities to reduce their private vehicle use.

2.2.1.4 Enjoyable

- Increase pedestrian amenity on residential streets.
- Increase pedestrian amenity in town centres.



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Vincent's transport network will extend beyond the function of movement and be enhanced to encourage people to stay and enjoy the areas that they are in. Vincent's transport network will function equally as both a way to reach a destination and a place which is to be enjoyed.

2.2.1.5 The ACS

The ACS notes that the City of Vincent has an opportunity to create and influence a high-quality transport network that supports the economy, environment, and social activities in Vincent.

The transport network includes:

- The pedestrian environment that forms the basis for transport and land-use connections, which must be considered in the context of the road environment and adjacent land uses; and
- Other modes of transport that provide crucial links and efficient access between and within different areas. This includes current modes and possible modes in the future.

The ACS notes that the Vincent community has already identified a preference for prioritising pedestrians and better connections with cycling and public transport facilities. A future transport hierarchy of use must therefore preference mobility for people, not cars, through greatly improved pedestrian, cycle, and public transport infrastructure.

2.2.1.6 Safe Speeds

The ACS notes that the current 50km/hr speed of local streets creates an unsafe speed variance between active modes of transport and driving. Decreasing vehicle speeds allow mixed-traffic movement networks that become attractive to active transport users. The higher degree vehicle speeds are reduced, the more attractive, safe and accessible they become.

International research strongly supports lowering speed limits within built up areas to increase driver, pedestrian and cyclist safety and amenity. Reduced speed limits make roads safer for all road users, but they also contribute to more active and liveable neighbourhoods. Some of the benefits of slower speeds are:

- Low speeds encourage better interaction between drivers, pedestrians and cyclists;
- They help create more attractive and connected communities;
- They make neighbourhoods safer;
- The risk of trauma in an accident reduces at slower speeds;
- There is less noise pollution; and
- Slower speeds do not cut travel time significantly.



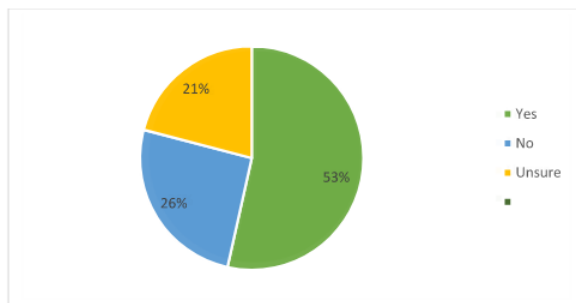
2.2.2 THE CITY OF VINCENT DRAFT ACCESSIBLE CITY STRATEGY CONSULTATION SUMMARY

This document summarises the submissions which have been received in response to consultation undertaken for the draft Accessible City Strategy.

2.2.2.1 Submissions specific to the Vision

Vision and Objectives

Overall, do you support the draft Accessible City Strategy?



Vision: The City of Vincent puts people first. Getting around is safe, easy, environmentally friendly and enjoyable.

There was a general level of support for the vision. Minor modifications were recommended through submissions for inclusion in the wording of the vision. The terms 'healthy' and 'consistency' both hold important value as part of the strategy. One of the outcomes of improved pedestrian amenity should be increased health both physical and mental.

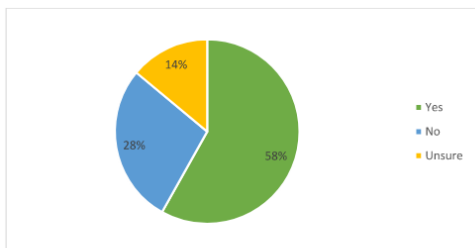
Concern was raised in submissions over how the vision would create mode shift. Mode shift is intended to be achieved through the implementation of the draft strategy as a whole which is guided by this vision. The transport network is reliant on achieving a balance

between pedestrian demands and the requirements of other modes. The draft strategy explores the current provision for transport and compares this infrastructure to the current and future needs of the community, across all transport modes to support the long-term success and viability of Vincent.

2.2.2.2 Submissions specific to the reduction in speed limits to 40km/h

40km/h Action

Do you support the reduction in speed limits on residential streets to 40km/h by 2023?



Do you have any thoughts or comments about this action?

Submission have raised concern over whether there is enough evidence as part of the interim results of the current 40km/h trial to warrant this action. It has been explicitly outlined in the explanation of the action that implementation will take into consideration the results of the trial.

General Commentary:

- Speed should be reduced to 40km/h on all streets and 30km/h within 5 years.
- 40km/h is a noble ambition but must be policed.
- The 40km/h trial results do not show a high level of change.
- The 40km/h speed reduction should be focused on high activity areas and not everywhere.



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- The interim 40km/h report does not have clear results or provide evidence of effectiveness.
- Local streets should be for residents only.
- The current speeds do not impact cycling and walking in the City.
- Current street geometry doesn't allow you to travel above 40km/h in most instances.
- A reduction in speed should also be considered on the residential portions of major roads.
- Speeds should not be reduced at the cost of practicality.
- This should not be the main action of the strategy as it undermines more high priority actions.
- The action needs to do more than reduce speeds, it should also incorporate infrastructure which supports the reduction in speed.

For:

- The reduction in speed should be introduced sooner than 2023.

Against:

- The reduction in speed won't make the City more liveable, the volume of cars needs to be reduced.
- 40km/h will make travel make travel frustrating and not enjoyable for all.
- Reduced speeds will increase the environmental impact of cars – increased emissions, wear and tear on vehicles, increased noise pollution and general stress on the community.
- Education is more important.
- This action does not encourage mode shift.
- There is the opportunity to address this issue through slow points as opposed to reduced speeds.
- There is no evidence to say it isn't already safe.
- Accessibility in Vincent has been reduced due to increased bike paths, trees, single lanes, 30km/h areas and road closures.

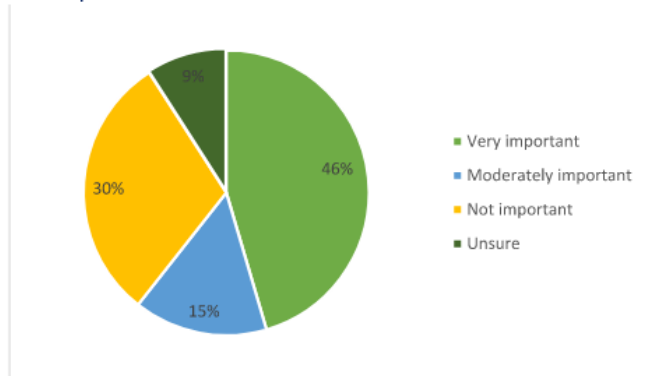


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Action 4.1.1: Work with the State Government and Inner-City Group of councils to implement a 40km/h zone in all residential areas of the City by 2023.

How important is action 4.1.1?



Summary of comments - General commentary:

- 30km/h should be the ultimate goal.
- The provision of increased pedestrian and cycle networks and enhanced public transport are better ways to achieve mode shift.

Feedback related to the strategy:

- Further evidence is required.
- The action should not be implemented until the current trial is concluded.

- The reduced speed limit needs to be supported by hard infrastructure to be effective.

Feedback related to the development and implementation of the action:

- The reduced speed limit needs to be enforced.

Priority areas:

- Residential portions of main roads should be considered.

City response to Action 4.1.1:

Submissions have indicated that further evidence of the reasoning behind the 40km/h action is required. The intent of the action as outlined in the draft strategy is as follows; The current 50km/hr speed of local streets creates an unsafe speed variance between active modes of transport and driving. Decreasing vehicle speeds allow mixed-traffic movement networks that become attractive to active transport users. The higher degree to which vehicle speeds are reduced, the more attractive, safe and accessible they become.

International research strongly supports lowering speed limits within built up areas to increase driver, pedestrian and cyclist safety and amenity. Reduced speed limits make roads safer for all road users, but they also contribute to more active and liveable neighbourhoods. Some of the benefits of slower speeds are:

- Low speeds encourage better interaction between drivers, pedestrians and cyclists;
- They help create more attractive and connected communities;
- They make neighbourhoods safer;
- The risk of trauma in an accident reduces at slower speeds;
- There is less noise pollution; and



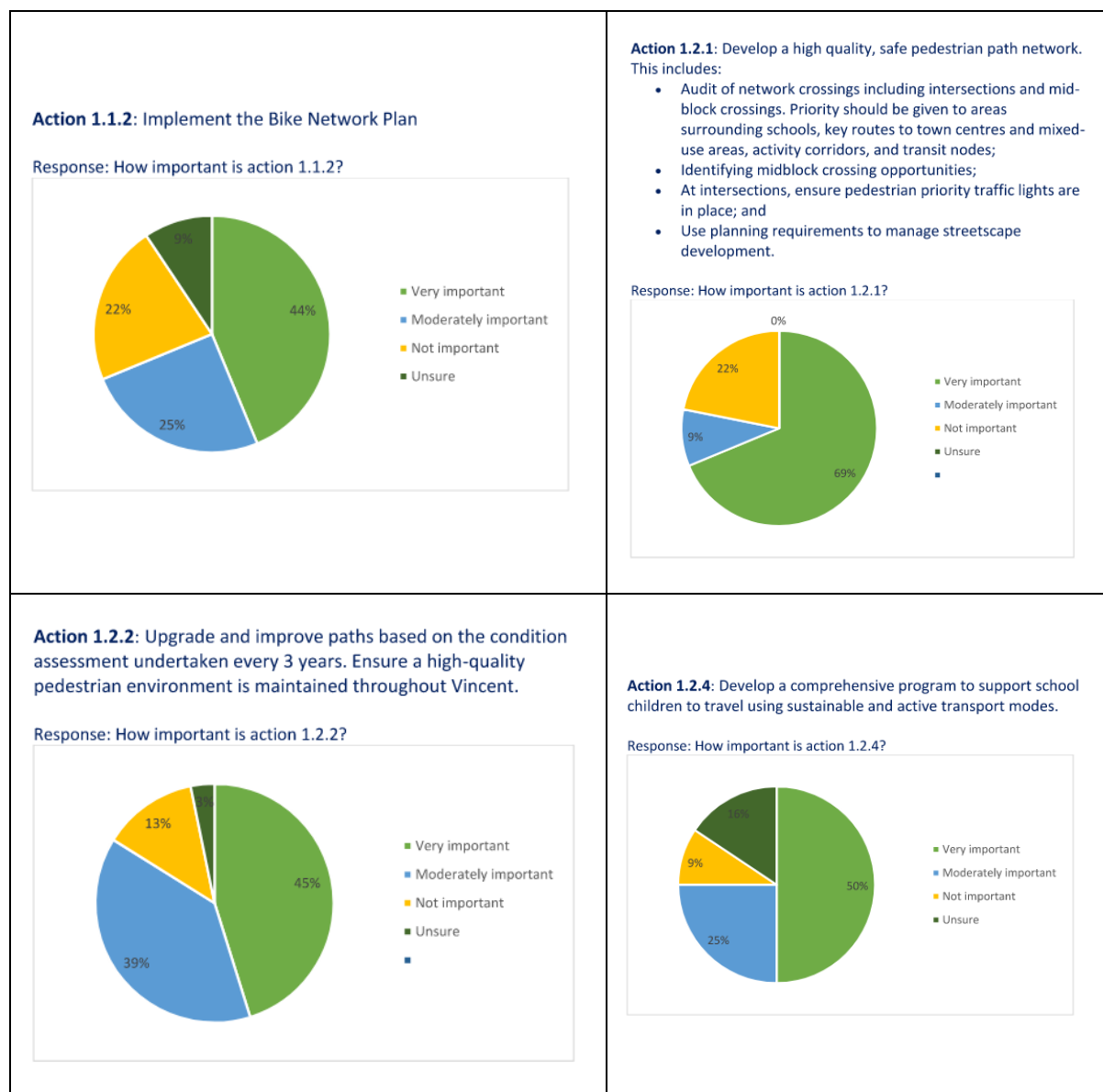
City of Vincent 40km/h Trial Evaluation 2 Data Analysis

- Slower speeds do not cut travel time significantly.

The intent of the 40km/h is to be a 'steppingstone' to 30km/h on residential streets in line with action 4.1.2. Submissions have raised concerns over whether there is enough evidence as part of the interim results of the current 40km/h trial to warrant this action. It has been explicitly outlined in the explanation of the action that implementation will take into consideration the results of the trial.

2.2.2.3 Submissions specific Actions Items from the ACS relevant to reduced speeds

Assessing the feedback for all the Action Items from the ACS, some key feedback includes:

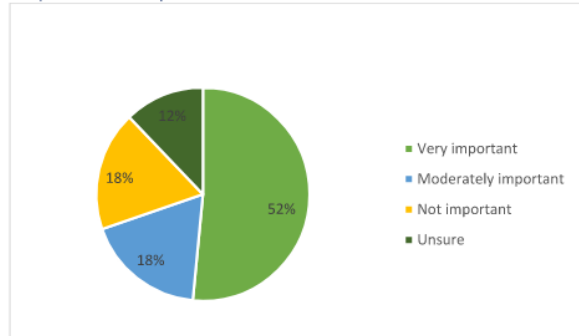


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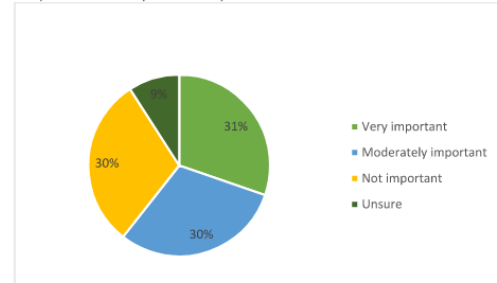
Action 2.1.2: Using the link and place framework, incorporate an appropriate level of pedestrian amenity along bus priority routes

Response: How important is action 2.1.2?



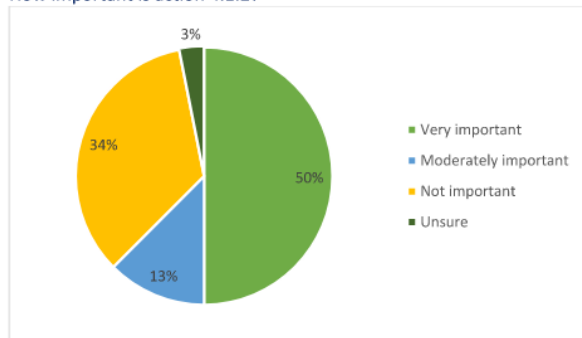
Action 2.2.1: Develop a set of link and place guidelines to guide future street improvements.

Response: How important do you think Action 2.2.1 is?



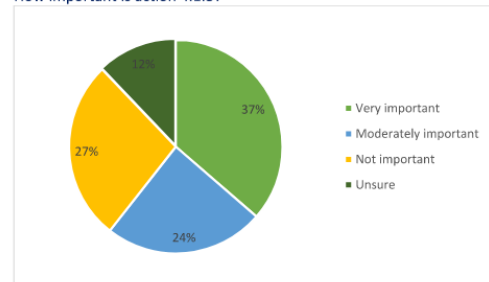
Action 4.1.2: Develop the City's residential streets in line with the principles of Safe Active Streets with slow design speeds to promote safety and amenity. The aspirational long term vision is that residential streets will have Safe Active geometry, relevant to their location, context and function.

How important is action 4.1.2?



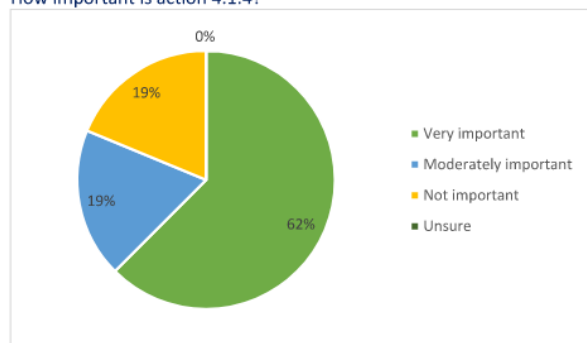
Action 4.1.3: Continue to support Play Streets within the City.

How important is action 4.1.3?



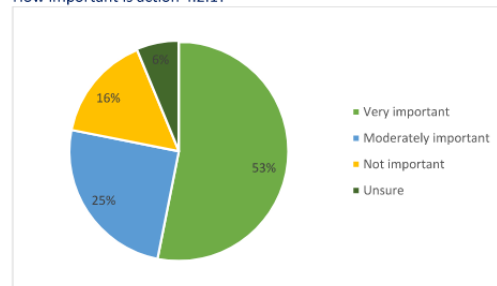
Action 4.1.4: Improve streetscapes to enhance pedestrian experience as per the link and place design guidelines, including the provision of additional street trees, native verges, lighting, street furniture, etc.

How important is action 4.1.4?



Action 4.2.1: Place plans should identify methods to improve pedestrian and cycling safety in the public realm.

How important is action 4.2.1?



2.2.3 GHD 40KM/H REVIEW CITY OF VINCENT – 12 MONTH TRIAL EVALUATION

In April 2019, the City of Vincent, Road Safety Commission, WA Police, and Main Roads WA commenced a trial of a 40 kilometres per hour (km/h) local speed limit area in the southern section of the City of Vincent. Various quantitative and qualitative data was collected by the City of Vincent before and during the trial to support a formal evaluation.

GHD, engaged by the Road Safety Commission have undertaken monitoring of the data collection and research design, to undertake data analysis, and to evaluate the outcomes of the trial. This evaluation aims to consider a broad set of the outcomes of the trial, including both direct traffic and transport observations, and community perception of the potential local amenity and wellbeing outcomes associated with reduced posted local traffic speeds.

This evaluation seeks to assess the outcomes of the trial based on the triangulation of several sources of data, rather than any one data set or single result. Conclusions are drawn where multiple sources of data indicate a similar overall result.

This report summarises the results of the first twelve months of the trial. GHD also delivered a separate six-month report in February 2020, which contains broadly similar findings. Seasonal effects appear to have impacted on the six-month report. The report sets out assumptions and qualifications during the research.

The twelve-month evaluation milestone data has been impacted by the COVID-19 Pandemic. The specific impacts of COVID-19 on the evaluation is specifically noted in the report, and throughout the data analysis. Overall, most data was collected before the pandemic caused major changes in travel behaviour. Accordingly, GHD believes that these trial results are valid and meaningful, provided that any possible effects are considered in the analysis.

The following study findings are taken from the study's executive summary.

2.2.3.1 Impact on Vehicle Speeds

Based on the full set of evidence evaluated after twelve months of the trial, it appears that the trial has resulted in some speed reduction effects. Mean (average) vehicle speeds have reduced by about 1 km/h, or about 2.4%. The 85th percentile speed on trial roads has dropped by just over 1 km/h, or about 2.5%.

The reduction in average vehicle speeds is of a similar magnitude to the reduction seen with the introduction of the default 50 km/h limit in 2001 (section 3.1). The reduction is not as large as overall results generally seen in research internationally. The number of vehicles observed at twelve months was comparable to the baseline, and no significant change was observed on distributor roads which were not subject to any change in speed limit.

2.2.3.2 Crash prevention

After twelve months, crash records provided by Main Roads WA indicate that there has been some crash reduction effect on the trial roads. This reduction coincides with a long-term decline in overall crashes within the City of Vincent. There was also a less substantial crash reduction in overall



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crashes within the control set of local roads (the northern part of the City of Vincent) not subject to the new limit.

The reduction in total crashes matches (triangulates) with the reductions in observed vehicle travel speeds and aligns with established road safety theory. Therefore, it is very likely that the 40 km/h limit would have long-term crash reduction benefits.

The reduction in Killed and Seriously Injured (KSI) crashes was less in the trial area than in the control area. However, this finding is based on only three crash events (two in the trial area, one in the control roads). Therefore, this result is not statistically meaningful.

Accordingly, future evaluation would be needed to substantiate the nature of the crash reduction more confidently.

2.2.3.3 Local Street Walking and Riding

Significant increases in walking and cycling were observed at the four observation sites within the City of Vincent. A total of 14% more pedestrians and cyclists were observed in the twelve-month surveys, compared to the February 2019 baseline.

The total number of cyclists also increased at twelve months. The percentage of all cyclists who were observed cycling on the road surface (rather than on footpaths) also increased from 67% to 70%, suggesting there may be a perceived safety benefit for cyclists. There were some differences between the four sites. The timing of these surveys was largely before the most significant disruption effects of the COVID-19 lockdown.

School representatives and crossing wardens interviewed for this evaluation also spoke of benefits for children's' safety travelling to school. However, these interviews indicate that increased awareness-raising measures beyond the immediate school zone could be beneficial.

2.2.3.4 Resident Perceptions

Residents surveyed expressed mixed overall responses about the trial. Overall, responses at twelve months were varied among the 151 resident surveys completed. When asked directly about the trial, there was a reasonably even distribution of responses for questions concerning the potential safety and amenity benefits. This finding triangulates with the generally modest improvements in observed vehicle speed and pedestrian/cyclist count data.

Support for the trial appears to be lukewarm. While a small majority are unhappy with the lower limit, there is not substantial or persistent opposition to the 40 km/h trial area among local residents. A majority of respondents surveyed at this twelve-month milestone thought a 40 km/h limit could be useful in other areas.

Indirect survey results indicate that residents are generally less concerned with road safety and local street amenity issues at this twelve-month milestone – further indicating benefits. Open-ended comments about the trial mainly concerned:

- The perceived inappropriateness of the 40 km/h speed limit along Bulwer Street
- The perceived lack of compliance with the 40 km/h speed limit



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- A perceived lack of enforcement
- A lack of awareness about the trial
- Confusion around signage for the trial.

Survey respondents indicated that additional street design measures, signage, enforcement, and other awareness measures may improve compliance.

2.2.3.5 Report Conclusion

In view of all the above data, considering the triangulation of results, the 40 km/h trial within the City of Vincent has resulted in some speed reduction and crash benefits. This result is in line with what would be expected based on previous research in this field.

The evidence also suggests that local street amenity has somewhat improved. The increase in the total number of pedestrian and cyclists observed triangulates with the slight improvement in perceived street safety and amenity reported by respondents.

It is not possible to completely exclude the impacts of COVID-19 on these results. However, the triangulation of multiple sources of data (collected mostly before the pandemic) generally supports these findings.

Complementary street design, road user awareness, and enforcement measures to reinforce the 40 km/h speed limit may result in the realisation of a greater level of total benefits. If left in place, it is possible that vehicle speeds within the trial area would continue to mediate below the new limit – particularly if supporting measures are introduced. Future evaluation would be useful in assessing the longer-term effects and potential effectiveness of supporting measures.

2.2.3.6 GHD Report – General Notes

This research has been informed by a review of similar evaluations and empirical assessments undertaken previously in Australia and internationally. Research strongly indicates that urban speed limits are an effective and cost-efficient mechanism to reduce fatalities and injuries occurring due to traffic crashes (Archer et al. 2008; Elvik et al. 2009a).

Evidence from other locations indicates that reductions in vehicle speeds on local roads may also result in reductions of traffic noise, and can promote walking and cycling, which have clear flow-on health, wellbeing, social, and economic benefits (Box and Bayliss 2012; James et al. 2014). The impacts of noise and air pollution resulting from traffic also reach minimal levels at a speed of 40 km/h (Elvik 2009b, p. 37). Reducing local speed limits typically has a negligible effect on journey times, particularly because small variations in trip time associated with travel on local roads at the start and end of journeys are not perceptible or significant when considered in the frame of whole trips (Haworth et al. 2001).

It is important to note that previous research suggests that, when speed limits are lowered, the actual travel speeds tend to decrease, but less than the full reduction in the speed limit. Evidence collected across countries generally indicates that a reduction of posted speed limit of 10 km/h results in travel speeds decreasing by less than 10 km/h – typically about 3-4 km/h (OECD/ECMT 2006, p. 100).



City of Vincent 40km/h Trial Evaluation 2 Data Analysis

Some streets already experience 85th percentile speeds less than 50km/h by their design/use.

Table 3-17: Baseline Traffic Dataset

Road	Location	Survey Date	AWT Five day	Ave Speed	85% Speed	% Heavy Veh.
40 km/h Trial Roads						
Brisbane St	Dangan-Lake	27-Feb-19 06-Mar-19	1410	38.1	46.1	2.6
Brisbane St	Lane-Lindsay	20-Feb-19 27-Feb-19	3208	41.2	50.9	4.9
Bulwer St	Fitzgerald-Palmerston	27-Feb-19 06-Mar-19	11,248	45.9	52.7	2.5
Bulwer St	Lord-Wright	20-Feb-19 27-Feb-19	7411	47.2	54.4	2.6
Carr St	Charles-Fitzgerald	06-Mar-19 13-Mar-19	4407	44.5	51.7	3.0
Harold St	Smith-Wright	20-Feb-19 27-Feb-19	2296	33.4	39.8	2.6
Joel Tce	Bream Cove-Gardiner	06-Mar-19 13-Mar-19	2386	45.0	53.1	3.1
Mary St	Beaufort-William	27-Feb-19 06-Mar-19	1055	31.8	39.4	2.4
Palmerston St	Myrtle-Randell	27-Feb-19 06-Mar-19	2786	29.1	36.5	2.9
Pier St	Brewer-Edward	20-Feb-19 27-Feb-19	2864	38.7	47.9	2.6
Smith St	Broome-Lincoln	20-Feb-19 27-Feb-19	2321	40.6	49.5	1.8
Summers St	Claisebrook-West	06-Mar-19 13-Mar-19	1513	38.4	46.6	4.7
Vincent St	Ethel-Norfolk	06-Mar-19 13-Mar-19	11,597	45.2	52.0	2.5
William St	Monger-Robinson	20-Feb-19 27-Feb-19	7223	34.4	46.1	3.8
Sample Averages			4,409	39.5	47.6	3.0
Daily Totals			61,725			

Table 3-22: Twelve Month Traffic Dataset

Road	Location	Survey Date	AWT Five day	Ave Speed	85% Speed	% Heavy Veh.
40 km/h Trial Streets						
Brisbane St	Dangan-Lake	04-Mar-20 11-Apr-20	1596	37.1	45.2	2.5
Brisbane St	Lane-Lindsay	19-Feb-20 26-Feb-20	2941	40.2	49.5	4.8
Bulwer St	Fitzgerald-Palmerston	26-Feb-20 04-Mar-20	11,154	44.7	51.3	2.8
Bulwer St	Lord-Wright	19-Feb-20 26-Feb-20	9603	46.1	53.5	3.2
Carr St	Charles-Fitzgerald	26-Feb-20 04-Mar-20	4071	43.5	50.7	2.5
Harold St	Smith-Wright	19-Feb-20 26-Feb-20	2398	32.9	39.4	1.9
Joel Tce	Bream Cove-Gardiner	04-Mar-20 11-Mar-20	2146	43.2	50.1	2.5
Mary St	Beaufort-William	04-Mar-20 11-Mar-20	971	33.0	40.0	3.3
Palmerston St	Myrtle-Randell	26-Feb-20 04-Mar-20	2659	28.7	36.0	2.9
Pier St	Brewer-Edward	19-Feb-20 26-Feb-20	2982	38.3	47.2	2.9
Smith St	Broome-Lincoln	19-Feb-20 26-Feb-20	2395	40.5	48.6	1.8
Summers St	Claisebrook-West	04-Mar-20 11-Mar-20	1553	38.0	46.1	5.2
Vincent St	Ethel-Norfolk	26-Feb-20 04-Mar-20	11,499	41.2	49.7	3.0
William St	Monger-Robinson	19-Feb-20 26-Feb-20	8136	32.9	42.7	3.3
Sample Averages			4579	38.6	46.4	3.0
Daily Totals			64,104			



Open Ended-Responses – General Support or Opposition

The twelve month evaluation survey contained the following 'free-text' questions: "Do you have any other general comments about traffic and transport in Vincent?" and "Do you have any other comments about the 40 km/h speed limit trial?"

About a third of respondents (55 out of a total of 151 respondents) expressed a written comment about the trial. Of these, 24 were opposed, while 23 provided comments in favour of the trial limit. Qualified support was provided by eight respondents.

In most cases, these opinions were either very positive or very negative as shown by the representative responses below.

Supportive comments included:

"I think it has been a great initiative."

"The new 40 zones are great, it has slowed drivers down especially on Beaufort Street and near the schools I have noticed. With more families living inner city living it's a very good idea to have the 40 km speed limit."

"I love this new speed limit!"

"I would like to see this trial extended across other densely populated residential areas and enforced more noticeably and regularly."

"The trial is clearly a good idea, and hopefully the 40km/h speed limit will be permanent. Well done to the Council on the initiative."

Non-supportive comments generally indicated scepticism for the purpose of the trial:

"It's unnecessary and would do little to deter speeders"

"The trial, in my view was/is of little value."

"Very strongly disagree with 40 km speed"

"I don't understand why 50 km/h is suitable for all other built up areas/suburbs but we should be punished with 40 km/h."

"It is nonsense and it achieves absolutely nothing."

Responses expressing qualified support generally raised specific conditions for how they felt the 40 km/h may be more appropriate:

"I would agree more with questions above in relation to the 40 kmh limit if it was enforced."

"I accept some streets should be 40"

"I believe 40 km is good on smaller, local streets"

"I agree with the 40 kph speed limit. However, I would make Bulwer St 50 kph,"

Two of the respondents noted that they had changed their mind since implementation of the trial:

"Initially I thought the idea was ridiculous however I am now in favour for all of the reasons above but ask that it is implemented properly"

"Although I was not initially a supporter of the 40 km speed limit, I've revised that thought and am supportive as I believe that it can only help to increase safety for everyone living in the area"

Open Ended-Responses – Thematic Findings from Comments

Further analysis of the responses revealed a number of themes relating to aspects of the trial.

Bulwer Street - Twenty-one of the respondents indicated that they felt that the 40 km/h speed limit on Bulwer Street was too low. The finding for this specific road may be over-represented because of the geographic sampling strategy.

"Bulwer Street does not need 40 km hour limit"

"Bulwer St used to be 60 and is very much a main road, since it's dropped to 40, the time 20 km difference seems completely unnecessary and extreme"

"40 km/hr on Bulwer St, a main thoroughfare is ridiculous"

"I think the 40km speed limit is too slow on Bulwer Street"

Compliance and Awareness - Fifteen of the respondents felt that compliance with the 40 km/h speed limit had been limited or non-existent.

"It seems to be ignored at times, which I think may be due to lack of awareness of the new limit amongst those who are not local residents".

"40 km/hr on Joel Terrace totally ineffective"

"I don't believe the majority of motorists take any notice of 40 km limits"

Nine of the respondents felt that the trial had no impact on traffic speeds.

"I do not think it has been effective, as in my experience most drivers remain at 50 km/h or more"

"In my particular case, I have seen little change from the 40 km/h speed limit trial"

"The normal traffic around my area has not changed in trial period"

This is unsurprising, in view of the modest overall average vehicle speed reductions (section 3.3.3).

Enforcement - Sixteen of the respondents believed that the trial would have benefited from greater enforcement.

"The lack of any enforcement of speed limits is a serious drawback"

"Little or no enforcement of speed limits"

"I would like to see this trial extended across other densely populated residential areas and enforced more noticeably and regularly"

Signage - Eleven of the respondents indicated that the signage for the trial could be improved.

"There are far too many street signs (40 kmh Limit, End of 40 kmh Limit) along Bulwer St that add confusion"

"It's not signposted enough/clear"

"The speed signs are so unclear as it will say end of 40 km/h but it hasn't ended"

"Far better signage required for 40 kmh zones - some were hidden behind trees and not as clear as normal speed limit signage"

City of Vincent 40km/h Trial Evaluation 2 Data Analysis

Improvements - A small number of the respondents suggested improvements, such as traffic calming and electronic speed limit signs should be implemented.

"Speed limit should be enforced, especially by physical means i.e. speed humps, etc."

"I feel it would be much better and more acceptable generally if there was a solar powered adjustable speed limit"

"There need to be flashing 40 signs as there are on Beaufort Street in order to remind drivers who don't live in the area"

"Need better speed humps on Harold St"

Rat running - Fourteen of the respondents were concerned about rat running, either through the trial or as a result of the trial (the quantitative results indicate that concern about rat-running has reduced over the trial period, refer to Table 3-25 in section 3.4.5).

"Rat run traffic still speed and ignore the limit"

"I have regularly had annoyed rat runners overtake and speed away down my street"

"Lots of rat running on Barlee Street since the no right turn on Beaufort/Walcott intersection causes much more unsafe traffic than the 40 km speed limit"

"Specific action to address rat running would be more beneficial"

One traffic warden emphasised the effectiveness of on-road 40km/hr patches and suggest they could be painted on more local roads, perhaps on area wide basis, as an additional reminder to drivers. The warden also commented that repeater signage along their relatively long school frontage may also improve driver compliance and safety.

The final question put to the traffic wardens concerned their preference between a conventional school zone, and the 40 km/h trial area covering a wider area of local roads around the school.

"My preference is for 40 km [speed limit] across day – so when school happens, people are more used to it... there's no reason why there shouldn't be a permanent 40 km/h limit."

The other warden provided a similar response, but noted the importance of enforcement:

I think [a 40 km/h area limit provides] enhanced safety for children and parents walking to school - pupils getting off buses etc. - they would benefit. There's not too much [of a benefit] for my crossing, because it already has a 40 km/h limit... I think local roads being 40 km/h is a good idea – but we don't have the police presence to enforce 27/4"



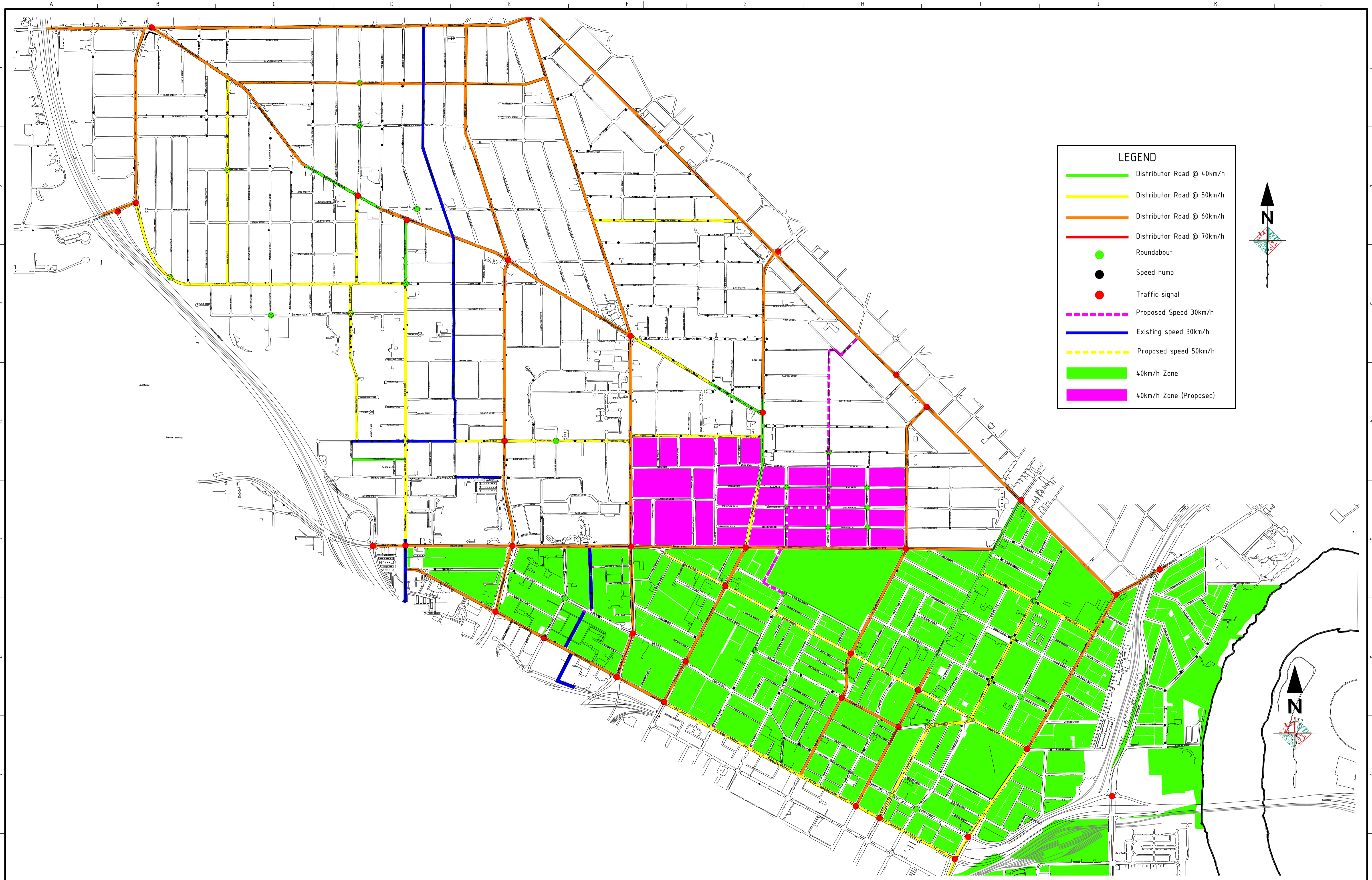
3 Conclusion

A collation of surveys and documents were analysed to determine the general feedback of the 40km/h trial from the residents within the City of Vincent. A summary of the key themes is shown below:

- The trial has had little to no effect on reducing rat-running
- An observed trend in residents feeling safer over time when walking and cycling on 40km/h routes
- An observed trend in 40km/h streets feeling safer for children over time
- The trial has had little impact over time in observed traffic noise
- An observed trend in trips becoming easier over time as a result of the trial
- An increase in support of the trial going ahead and being extended
- An observed trend in driving at the 40km/h speed limit being more acceptable over time
- An observed trend in residents' perception of the local area being more liveable over time due to the trial
- A general increase in local transport being encouraged over time due to the trial
- An observed trend in local recreation being encouraged due to the trial
- Vulnerable road users (children and the elderly) would require further interventions to reducing speed limits by 10km/h to feel more confident walking, cycling or using mobility aids
- Almost 3 times as many responses were received for benefits of the trial as opposed to issues of the trial
- Each project is generally supported by more than 50% of the residents with general issues relating to loss of on-street parking
- Law enforcement in the 40km/h areas would encourage complying speeds
- The 40 km/h trial within the City of Vincent has resulted in some speed reduction and crash benefits
- An increase in the total number of pedestrian and cyclists observed suggests that local street amenity has somewhat improved.

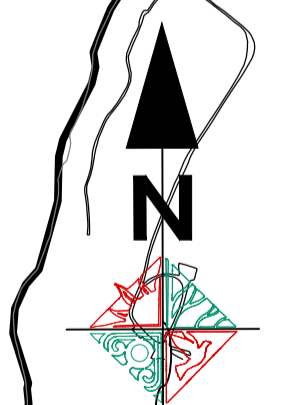
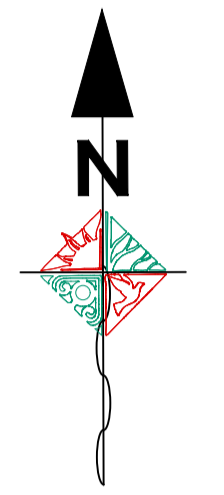
In summary, the 40km/h has become more widely acceptable over time with residents feeling safer and more encouraged to live healthy and sustainable lives. This is shown by the shift towards agreeing with the purpose of the trial over time i.e. safer, easier, enjoyable and environmentally friendly travel for all modes. Residents generally support the application measures where careful consideration taken to the location, proposed treatments and route choice is taken.





LEGEND

- Distributor Road @ 40km/h
- Distributor Road @ 50km/h
- Distributor Road @ 60km/h
- Distributor Road @ 70km/h
- Roundabout
- Speed hump
- Traffic signal
- - - Proposed Speed 30km/h
- Existing speed 30km/h
- - - Proposed speed 50km/h
- 40km/h Zone
- 40km/h Zone (Proposed)



CITY OF VINCENT
 244 VINCENT STREET LEEDERVILLE, 6007
 TECHNICAL SERVICES

REVISION		AMENDMENTS DESCRIPTION		AUTHORISED	
A	XXX	17.08.21	XXX	Issued for Review (85%)	XXX 17.08.21
0	XXX	17.08.21	XXX	Issued for Construction	XXX 17.08.21
No.	DRN	DATE	CHKD		BY DATE

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BUDGET: - DESIGNED: AJ 17/08/21 SURVEYOR: TOPO 20/10/20
 CHECKED: SF 17/08/21 DRAWN: AJ 17/08/21
 APPROVED: DTS / ME
SEAN FOSTER (CCD)

GRID: PCG AHD DATUM: GDA2020
 SCALE: 1:10,000
 0 100 200 300 400 500 METRES

CITY OF VINCENT
TRAFFIC MANAGEMENT DATA
 Treatments, Speeds, etc, etc

A1	SHEET 1 OF 1	REVISION D
DRAWING NUMBER		3741-CP