

**13.1 PROPOSED ROUNDABOUT - SCARBOROUGH BEACH ROAD AND GREEN STREET, JOONDANNA**

Business Unit:	Engineering Services	Service: Transport Services
Ward:	Osborne	Location: <a href="#">Intersection of Scarborough Beach Road and Green Street</a>
Applicant:	Not Applicable	

**Role**

Executive - *Governing the City and the community through executive powers.*

**Recommendation**

**That Council ADVISES Main Roads WA that it supports the Scarborough Beach Road / Green Street 100% detailed design, SUBJECT to further microsimulation traffic modelling by Main Roads WA which demonstrates an adequate level of service along the adjoining roads of Scarborough Beach Road, Main Street, Brady Street and Green Street, Joondanna.**

**Purpose**

To provide a comprehensive overview of the 100% design for the proposed roundabout at the intersection of Scarborough Beach Road and Green Street in Joondanna.

**Details**Background

The Member for Balcatta, Mr David Michael MLA, and the Member for Perth, Mr John Carey MLA, have been advocating for major upgrades to the intersection since the 2017 State Election. The proposed upgrade at the intersection is funded entirely by the State Government as an election commitment.

The project was initially tasked to the City of Stirling and the City of Vincent to manage. However, the Minister for Transport, The Hon Rita Saffioti MLA, requested in late 2019 for the project to be transferred to Main Roads WA (MRWA), which was accepted by both Cities. MRWA accepted responsibility for construction of the project in 2021/2022 and have indicated that preliminary works (service relocations) at this intersection are imminent.

Scarborough Beach Road, Main Street and Green Street are all classified as District Distributor (A) roads. Main Street, Green Street and Scarborough Beach Road west have a posted speed limit of 60 km/h, and Scarborough Beach Road east has a 50km/h speed limit.

Under the existing intersection configuration, vehicles heading westbound on Green Street need to cross Scarborough Beach Road eastbound into a small median refuge, then onto the westbound lanes of Scarborough Beach Road. This causes delays to motorists and a potential safety issue due to the low approach angle, resulting in motorists obstructing the access holding point area. The small median refuge area has also resulted in bus routes being diverted (by the Public Transport Authority) to avoid this manoeuvre.

The project aims to improve safety for all road users, with the design based on traffic data, accident and congestion statistics, engineering design standards and community consultation.

### Concept Design

A concept design was prepared by MRWA which included a roundabout at the intersection of Scarborough Beach Road and Green Street as well as traffic signal modifications at the intersection of Scarborough Beach Road / Main Street / Brady Street, as shown on the schematic plan in Figure 1.

This plan was the subject of extensive resident consultation by both the City of Stirling and the City of Vincent. The details of the City's consultation are described further in the Stakeholder Engagement section of this report. There was significant majority support from the community for the concept design as a means of improving safety for motorists and pedestrians.



Figure 1 - Concept Design Plan of Proposed Intersection Modifications

### Detailed Design

There were several significant changes implemented by MRWA between the concept design and the detailed design, which included:

- The vertical alignment of the roundabout was amended to apply fill only to minimise impacts to services and improve constructability and construction staging.
- The wombat crossing on Scarborough Beach Road east was relocated further east so that the existing driveways could be maintained on Scarborough Beach Road and to accommodate bus stop re-locations.
- The footpath was amended to avoid existing trees.
- Rationalisation of driveways and the cul-de-sac closure of Birrell Street (in the City of Vincent).
- The turning pocket at the Main Street intersection was lengthened to provide additional storage.
- Approaches to the roundabout were modified to provide more deflection, aligning more closely with Austroads Guidelines, and reducing the risk of vehicles entering the roundabout at high speeds and cutting lanes.
- The drainage design removed the pipe crossing of Main Street and connected to the existing drainage network east of the intersection to avoid issues with construction through a busy intersection.
- The drainage design was altered following receipt of service relocation requirements, additional potholing and to take account of recent drainage survey works undertaken by the City of Vincent. This included routing portions of the drainage network through the same drainage trenches as the existing network (which will be replaced) and replacing some pipes which were shown to have significant faults from recent CCTV investigations undertaken by the City of Vincent.
- Addition of loops on the western leg approach to the roundabout for monitoring of traffic queue lengths towards the Main Street intersection.

Following completion of a detailed design by MRWA, the cost estimate for the project had far exceeded the funding commitment provided by the two local Members of Parliament. The project was subsequently reduced in scope by MRWA to works limited to the roundabout with an emphasis on reducing service impacts and improving the constructability. MRWA have now prepared a detailed design for a roundabout at the intersection of Scarborough Beach Road and Green Street, as shown in Figure 2.





### City Comments on Detailed Design

The City has been requested by MRWA to provide final comments regarding the 100% design shown in Figure 2. The City has maintained its concerns for some time regarding the extent of modelling undertaken by MRWA, and the uncertainty about the potential impacts within the surrounding local road network.

The City considers that microsimulation traffic modelling should be undertaken, as it would play an important role in assessing the traffic impacts of a new roundabout and could give some guidance as to how the network would operate. The traffic effects could extend up to 500-plus metres along each of the legs along Main Street, Scarborough Beach Road and Brady Street. Microsimulation modelling would need to include the following key considerations:

- **Detailed Assessment:** Microsimulation provides a granular view of traffic behaviour by simulating individual vehicles, pedestrians, and cyclists. It would allow a better understanding of how they interact within the vicinity of the roundabout.
- **Predicting Traffic Flow:** Traffic flows around the roundabout can be predicted, including entry, exit, and circulating movements. It helps identify potential congestion points and bottlenecks. (What would happen in the scenario where a substantial number of vehicles travelling eastbound along Scarborough Beach Road wished to use the roundabout to travel south down along Brady Street south bound). It is recommended that MRWA do some sensitivity testing on extra right turn movements along Scarborough Beach Road at the roundabout westbound and eastbound.
- **Safety Evaluation:** Microsimulation helps assess safety aspects. It predicts conflict points like in the point above, such as potential collisions or near-misses, allowing the roundabout design to be optimised for safety.
- **Queue Lengths and Delays:** The model estimates queue lengths at entry points and calculates delay times for vehicles waiting to enter the roundabout. This information aids in optimising signal timings and lane configurations. The queuing lengths for the roundabout appear highly unlikely as it shows in Appendix of the design report.
- **Pedestrian and Cyclist Behaviour:** Microsimulation considers pedestrian crossings and cyclist interactions. It evaluates waiting times, crossing distances, and potential conflicts with vehicles.
- **Scenario Testing:** Modelling can simulate various scenarios, such as adjusting lane widths, changing signal phasing, or modifying entry/exit geometries. This helps optimize the roundabout design to minimize traffic impacts.
- **Environmental Impact:** Microsimulation assesses fuel consumption and emissions based on vehicle behaviour. It aids in understanding the environmental impact of the roundabout.
- **Validation and Calibration:** Modellers would need to validate the model using real-world data (e.g., traffic counts, travel times). Calibration ensures that the simulated results align with observed behaviour.

In summary, the City considers that microsimulation modelling should be scoped into the design checks, as it would provide a detailed and dynamic understanding of traffic behaviour, enabling informed decisions during the planning and design of the new roundabout. In turn this information may assist the City of Stirling and the City of Vincent with future project submissions while allaying major traffic queuing concerns from residents.

At this stage there is no further State Government funding commitment in addressing the traffic signals at Main Street / Scarborough Beach Road / Brady Street, and it would be proactive to plan with the State Government in delivering the next stage of works. Black Spot funding normally requires a treatment to be reassessed on its impact after five years of operational use.

If microsimulation modelling is not carried out prior to these works being undertaken and problems such as congestion / queuing are not resolved or become worse due to the proposed design, the Cities will be expected to consider further works as these are local roads and not under the control of MRWA.

### **Financial Assessment and Implications**

The State Government initially committed \$3 million in funding for the project, which resulted from a State Government election commitment made by David Michael MLA and John Carey MLA. There were significant cost escalations during the detailed design stage, primarily due to service relocations costs, and additional funding was made available by the State Government. The City understands the costs have continued to escalate during the design stage. MRWA has advised that based on the confirmed service relocation costs and 100% design, the project cost for the roundabout is now in the order of \$21 million. If the project was to proceed, it would be based on being 100% funded by the State Government.

### **Stakeholder Engagement**

The City, in conjunction with the City of Vincent and the local Members of Parliament, have engaged with the local community to provide feedback to MRWA on a new roundabout configuration, signalling upgrades and improved pedestrian crossing facilities.

During the concept design stage in 2020, the City undertook consultation with the surrounding community of Osborne Park and Joondanna to determine the level of support for the Concept Design shown in Figure 1. The consultation included direct letters sent to surrounding residents, notices on the City's website and several social media posts.

A total of 56 responses were received during the consultation period, with 79% of respondents indicating support for the plans put forward by MRWA. Further details on the survey responses are provided in Attachment 1.

No specific public consultation has been undertaken on the final design.



## Options Summary

The following options were considered.

OPTIONS	
1.	That the City SUPPORTS the Scarborough Beach Road / Green Street 100% detailed design, subject to further microsimulation traffic modelling by Main Roads WA which demonstrates an adequate level of service along the adjoining roads of Scarborough Beach Road, Main Street, Brady Street and Green Street.
2.	That the City DOES NOT SUPPORT the Scarborough Beach Road / Green Street 100% detailed design due to the uncertainty of impacts on the local road network.

## Recommended Action

The City is generally supportive of the proposed upgrades to the intersection, as this location has been the subject of numerous queries and concerns over many years. However, there are still outstanding concerns and the City considers that further investigation is warranted.

It is recommended that approval of the 100% design is provided to MRWA, subject to traffic modelling which demonstrates that the traffic queuing / congestion along Main Street, Scarborough Beach Road, Brady Street and Green Street be no worse than prior to the inclusion of the roundabout and secondary treatments associated with the 100% detailed design.

## Relevant Policies, Legislation and Council Resolutions

[Local Government Act 1995](#)

## Sustainable Stirling 2022-2032

**Key Result Area:** Our built environment

**Objective:** An accessible and connected City

**Priority:** Provide and maintain safe and accessible roads and parking



## Strategic Risk

Strategic Risk	Risk Appetite
Reputation	The City will ensure that any decisions that may affect the City's reputation are made at the appropriate level with stakeholders remaining informed and engaged.
Community	The City will ensure that it engages with the community in accordance with its Community and Stakeholder Engagement Plan.
Funding	The City will take sufficient financial risk to enable it to achieve its strategic objectives, providing it does not significantly impact on the long term financial sustainability of the City.

## Relevant Documents and Information

### Attachments

Attachment 1 - Results of Community Consultation [↓](#)

### Available for viewing at meeting

Nil

### Linked Documents

Nil

**Your Say Stirling**

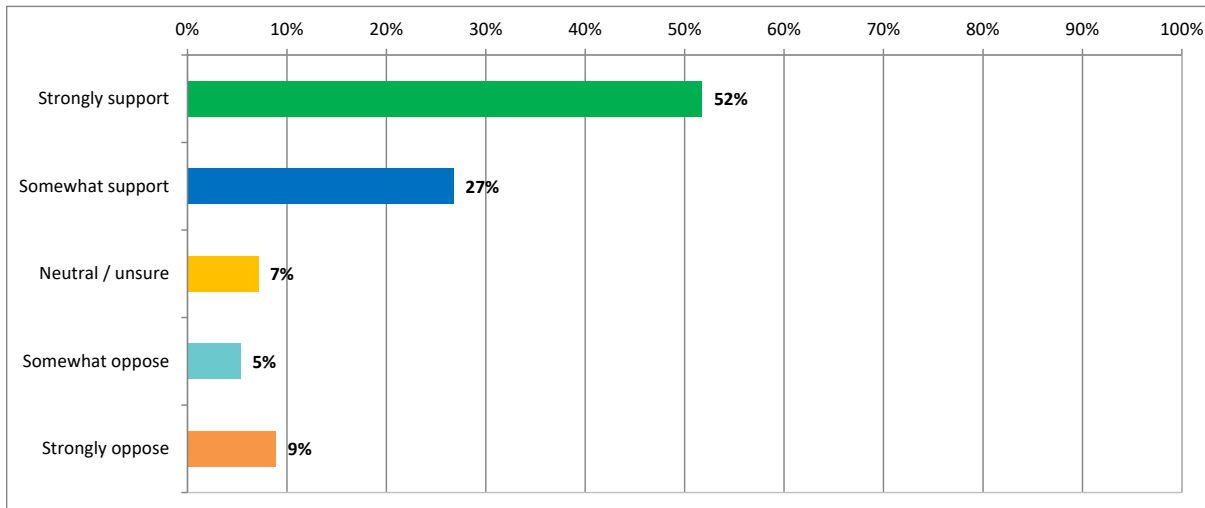
**Scarborough Beach Road / Green Street Intersection upgrade**

**Results of Community Consultation**



Do you support the design proposed by Main Roads for upgrades to the Scarborough Beach Rd/Green St/Main St intersection?

Answers	Responses	%
Strongly support	29	52%
Somewhat support	15	27%
Neutral / unsure	4	7%
Somewhat oppose	3	5%
Strongly oppose	5	9%
<b>Total</b>	<b>56</b>	



**Your Say Stirling**

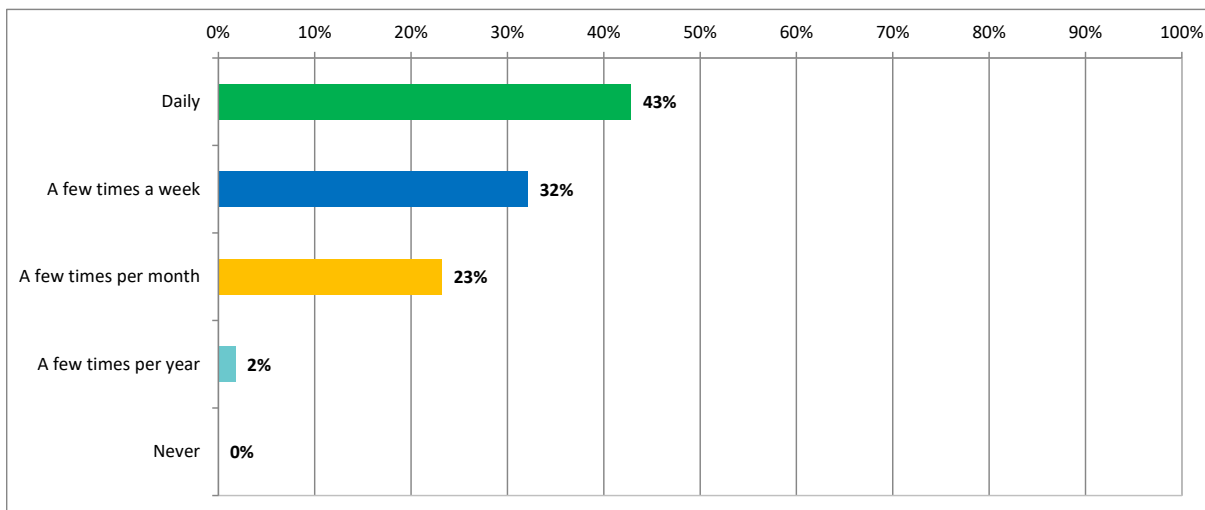
**Scarborough Beach Road / Green Street Intersection upgrade**

**Results of Community Consultation**



Approximately how often do you use the intersection?

Answers	Responses	%
Daily	24	43%
A few times a week	18	32%
A few times per month	13	23%
A few times per year	1	2%
Never	0	0%
<b>Total</b>	<b>56</b>	



**Your Say Stirling**

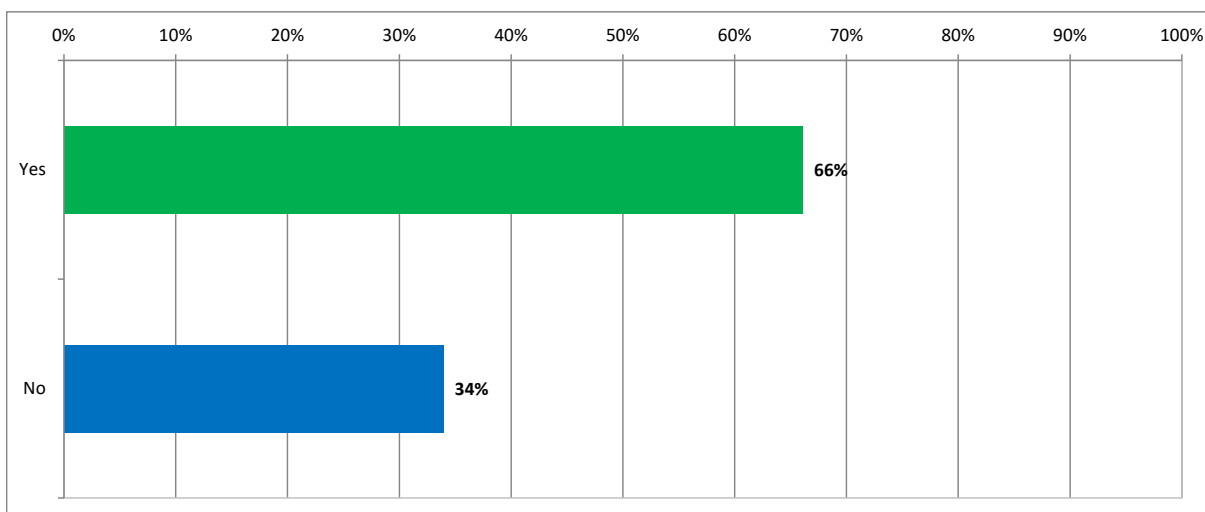
**Scarborough Beach Road / Green Street Intersection upgrade**

**Results of Community Consultation**



Do you live near the Scarborough Beach Road/Green Street intersection (within approximately 2 kms)?

Answers	Responses	%
Yes	37	66%
No	19	34%
<b>Total</b>	<b>56</b>	



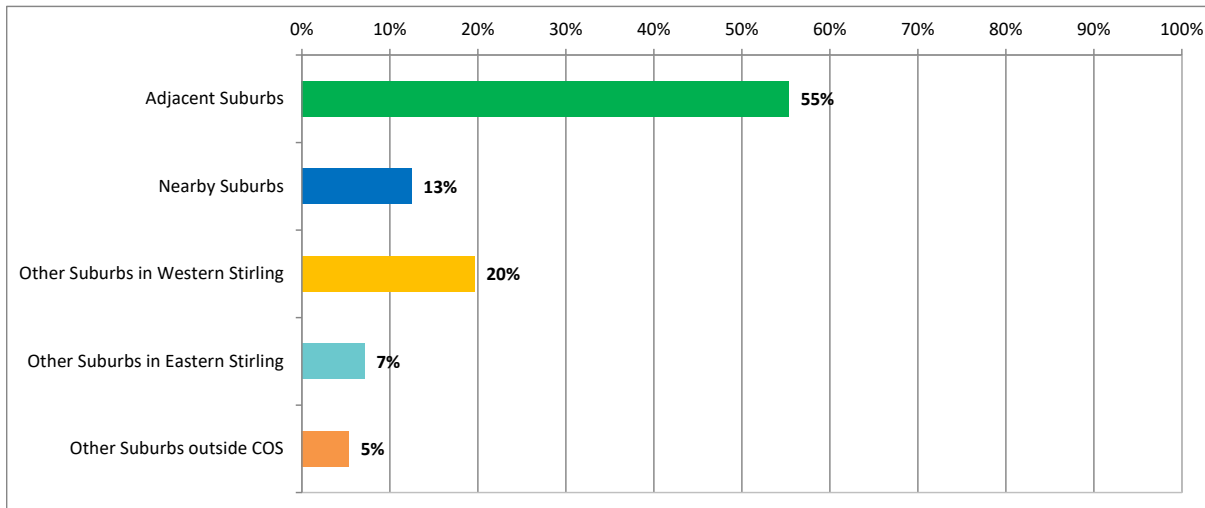


**Your Say Stirling**  
**Scarborough Beach Road / Green Street Intersection upgrade**  
**Results of Community Consultation**



**Suburb of Origin?**

Categories	Responses	%	
Adjacent Suburbs	31	55%	Joondanna, Osborne Park, Glendalough, Mt Hawthorn
Nearby Suburbs	7	13%	Tuart Hill, Stirling, Wembley, Yokine
Other Suburbs in Western Stirling	11	20%	Doubleview, Innaloo, Scarborough, Wembley Downs, Karrinyup, North Beach
Other Suburbs in Eastern Stirling	4	7%	Dianella, Mirrabooka, Nollamara
Other Suburbs outside COS	3	5%	Floreat, West Perth, Noranda
<b>Total</b>	<b>56</b>		



**Your Say Stirling**

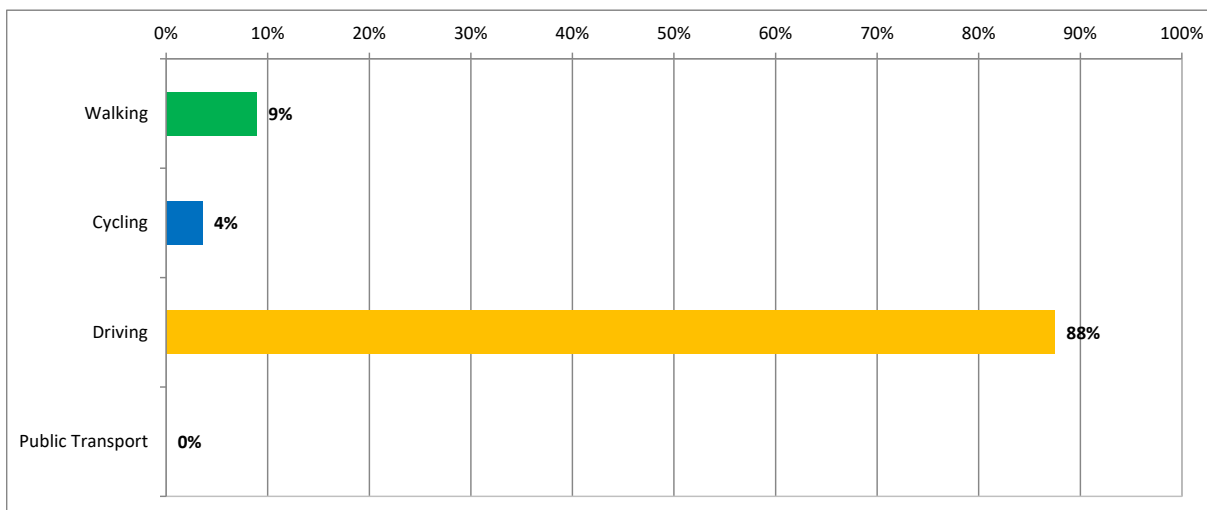
**Scarborough Beach Road / Green Street Intersection upgrade**

**Results of Community Consultation**



By what mode of transport do you most frequently use the intersection?

Answers	Responses	%
Walking	5	9%
Cycling	2	4%
Driving	49	88%
Public Transport	0	0%
<b>Total</b>	<b>56</b>	



**Your Say Stirling**

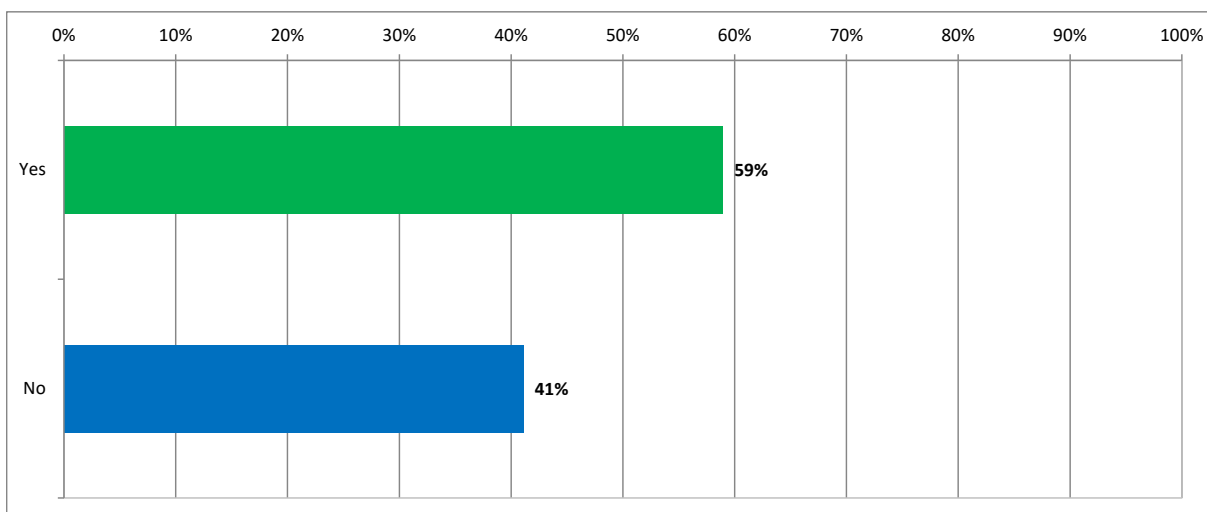
**Scarborough Beach Road / Green Street Intersection upgrade**

**Results of Community Consultation**



Is the Scarborough Beach Road/Green Street intersection part of your regular commute?

Answers	Responses	%
Yes	33	59%
No	23	41%
<b>Total</b>	<b>56</b>	



**Your Say Stirling**

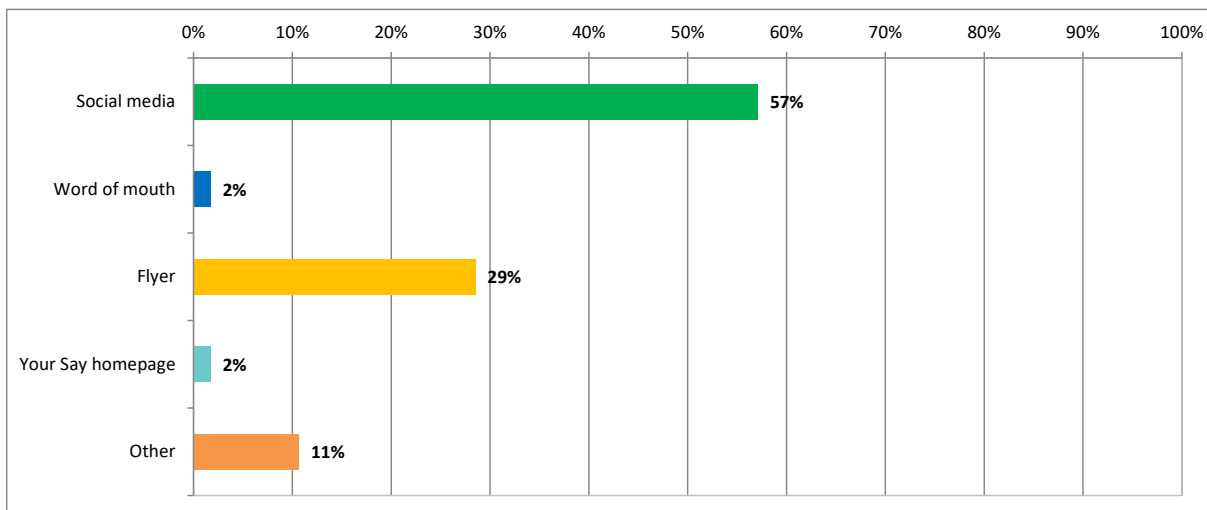
**Scarborough Beach Road / Green Street Intersection upgrade**

**Results of Community Consultation**



**How did you hear about this project?**

Answers	Responses	%
Social media	32	57%
Word of mouth	1	2%
Flyer	16	29%
Your Say homepage	1	2%
Other	6	11%
<b>Total</b>	<b>56</b>	





**Your Say Stirling**

**Scarborough Beach Road / Green Street Intersection upgrade**

**Results of Community Consultation**



Would you like to be kept informed about this project?

Answers	Responses	%
Yes	47	84%
No	9	16%
<b>Total</b>	<b>56</b>	

