Point8
traffic engineering and transport planning

iGO Road Safety Action Plan

Technical Report

Ipswich City Council
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Table of Contents

1.0	Introduction	6
1.1	Background	6
1.2	Project Scope	6
1.3	Stakeholder Engagement	6
2.0	Road Safety Plans in Context	8
2.1	Literature Review	8
2.2	Global Strategy	8
2.3	National Road Safety Strategy	8
2.4	Queensland Road Safety Action Plan	9
2.5	Local Government Road Safety Plans	9
3.0	Safe System	10
3.1	Understanding the Crash System	10
3.2	Safe System Principles	10
4.0	Analysis	12
4.1	The Demographics of Ipswich	12
4.2	Crash Data	15
4.3	Crash Data Analysis	17
5.0	Additional Considerations	25
5.1	Health Services	25
5.2	Emerging technology	25
5.3	Education	25
5.4	Post-Incident	25
5.5	Other LGAs	26
6.0	RSAP Strategy	27
6.1	Framework	27
6.2	Horizon	27
6.3	Areas of Opportunity	28
6.4	Targets	30
7.0	Aspirations	32
7.1	Vision	32
7.2	Goals and Objectives	33
8.0	Elements	34
8.1	Themes	34
8.2	Countermeasures	36
9.0	Delivery	38
9.1	Actions	38
9.2	Funding	44
9.3	Monitoring & Evaluation	46
10.0	Summary of Recommendations	50
10.1	RSAP Strategy Recommendations	50
10.2	RSAP Aspirations Recommendations	50
10.3	RSAP Elements Recommendations	50

10.4 RSAP Delivery Recommendations 51

Appendix A
Analysis Figures
Appendix B
Crash Data Mapping
Appendix C
RSAP Actions
Appendix D
Review Framework (Five Year Period)

Table 3.1 – Haddon Matrix Crash Causal Factors and Response Actions 10
Table 4.1 – Ipswich, Five Most Common Crash Types by DCA Code 2008 – 2017 20
Table 6.1 – Areas of Opportunity 28
Table 6.2 – Potential Targets for Areas of Opportunity 30
Table 8.1 – Examples of Areas of Influence 35
Table 8.2 – Areas of Opportunity and Countermeasures 37
Table 9.1 – RSAP Actions 38
Table 9.2 – Summary of Actions (Area of Opportunity) 42
Table 9.3 – Summary of Actions (Safe Systems) 43
Table 9.4 – Summary of Actions (Responsible Stakeholders) 43
Table 9.5 – Summary of Actions (Timeframe for Completion) 43
Table 9.6 – Summary of Actions (High-Level Funding Estimates) 44
Table 9.7 – TMR Targeted Road Safety Programs (TRSP) of Relevance to the Ipswich Region 45
Table 9.8 – Metrics for Annual Road Safety Reporting 47

Figure 3.1 – Safe System Framework 11
Figure 4.1 – Median ages for Queensland, Brisbane and Ipswich 2006 to 2016 13
Figure 4.2 – Ipswich, Current Daily Travel Mode Share Split 14
Figure 4.3 – Ipswich LGA FSI Crashes per Year 2008-2017 17
Figure 4.4 – Ipswich, FSI Crashes per 100,000 Population in 2016 18
Figure 4.5 – FSI Crashes by Roads in Ipswich, 2008-2017 19
Figure 4.6 – Ipswich, Intersections with Most FSI Crashes 2008-2017 21
Figure 4.7 – Ipswich, Casualty (Fatal and Hospitalisation) Crashes by Speed Zone 2008-2017 22
Figure 4.8 – Ipswich, Pedestrian Casualties (Fatal and Hospitalisation) by Hour of the Day 2008 - 2017 23
Figure 4.9 – Ipswich, Circumstances Contributing to Casualty (Fatal and Hospitalisation) Crashes 2008-2017 24
Figure 6.1 – Strategic Framework 27
Figure 8.1 – Safe System Framework 34
Figure 8.2 – Areas of Influence 35
Figure 8.3 – Framework of Elements 36

Abbreviations

TERM	ABBREVIATION
Cooperative and Automated Vehicle Initiative	CAVI
Definitions for Coding Accidents	DCA
Department of Education	DoE
Department of Transport and Main Roads	TMR
Fatal and Serious Injury Crash	FSI Crash
Global Plan for Decade of Action for Road Safety	GPDARS
iGO Road Safety & Operations Committee	iGO RS&OC
Intelligent Transport System	ITS
Ipswich City Council	Council
Local Government Area	LGA
National Road Safety Action Plan	NRSAP
National Road Safety Strategy	NRSS
Project Advisory Group	PAG
Queensland Fire and Emergency Services	QFES
Queensland Health	QH
Queensland Police Service	QPS
Road Safety Action Plan	RSAP
Safer Roads, Safer Queensland: Queensland's Road Safety Action Plan 2017-2019	QRSAP
Targeted Road Safety Program	TRSP
Working Group	WG

1.0 Introduction

1.1 Background

Ipswich City Council (Council) published the City of Ipswich Transport Plan (branded as iGO) in June 2016. The document forms the masterplan for the City's transport future and outlines Council's vision and objectives for the city's transport system to accommodate a projected population of 435,000 people.

As part of the Road Network and Active Transport Actions within the City of Ipswich Transport Plan – iGO, two statements have been identified which require the development and implementation of a citywide Road Safety Action Plan (RSAP). The relevant extract from Active Transport Action 14 and Road Network Action 10 is shown below:

> *Develop and implement a citywide Road Safety Action Plan which will consider all road users. This will include analysis of historic data of incidents across the city to identify trends and then develop targeted investment and community programs to address these safety issues* (Ipswich City Council, 2016a).

The primary purpose of the RSAP is to reduce the likelihood of Fatal and Seriously Injured (FSI) crashes occurring on the road network in the Ipswich region.

Point8 was engaged by Council to develop the iGO RSAP Technical Report (this document) which will inform the basis of the iGO RSAP.

1.2 Project Scope

The RSAP has been developed over five stages that include:

- Stage One: Project Inception
- Stage Two: Review and Identification of Key Issues
- Stage Three: Strategy Development
- Stage Four: Implementation Planning
- Stage Five: Project Finalisation

This Technical Report summarises the work undertaken in Stages 1-4 and consolidates Working Papers 1-3 which were prepared as in-progress deliverables. A draft Summary Report has been provided for Council to further develop as a public facing version of the iGO RSAP.

1.3 Stakeholder Engagement

1.3.1 Project Stakeholder Groups

The development of the RSAP has been guided by a series of collaborative workshops with various organisational stakeholders contributing to the Project Advisory Group (PAG) and Working Group (WG). The members of these groups included:

- Ipswich City Council
- Department of Transport and Main Roads (TMR)

- Queensland Police Service (QPS)
- Queensland Fire and Emergency Services (QFES)
- Queensland Health (QH)
- Department of Education (DoE)

It is important to note that the project scope for development of the RSAP strategies and actions (and therefore the influence of the PAG and WG) has been limited to issues and actions that are related to reducing the incidence and effects of road trauma associated with road crashes that occur within the public road reserve network in the Ipswich Local Government Area (LGA) with a focus on FSI crashes.

1.3.2 Industry Consultation

Outside of the project workshops and meetings, industry consultation was undertaken with several key organisations external to the PAG and WG to gain an understanding of their organisation's impression of road safety in Ipswich and how they can influence it at a regional level. The organisations approached that provided input included:

- The Royal Automobile Club of Queensland
- Brisbane West Bicycle User Group
- Centre for Accident Research and Road Safety - Queensland
- Bicycle Queensland
- Australian Road Research Board

Other organisations that were approached included Motorcycling Queensland, Motorcycle Riders' Association of Queensland and the Department of Communities, Disability Services and Seniors but were unavailable to provide input.

The key messages from these organisations include:

- On-going education of all road users and support for a road safety culture is extremely important and should be supported by enforcement of behaviours that contribute to road trauma.
- Improvements to transport networks (particularly active travel and public transport), is likely to have a positive outcome for road safety in Ipswich, by reducing private vehicle trips and in particular long commuter trips.
- On-going maintenance of poor condition roads is important as well as reducing congestion where possible.
- Lower speed limits are desired within built-up areas of Ipswich, and a 40 km/h speed limit was considered desirable in major centres with high volumes of active transport users.
- Acknowledgement that funding and competing priorities can be difficult to overcome.

2.0 Road Safety Plans in Context

2.1 Literature Review

To inform the development of the RSAP, a literature review was undertaken with regard to Council's obligations and commitments under global, national and state road safety planning instruments as well as benchmarking best practice road safety action planning by other similar-sized local government authorities.

The three tiers of global, national and state-based road safety planning instruments have a general alignment of principles. All adopt a Safe System approach that recognises the acceptance of human error and shared responsibility for road safety.

2.2 Global Strategy

The Global Plan for Decade of Action for Road Safety (GPDARS) (United Nations, 2011) was adopted by the United Nations General Assembly in 2010, with 2011-2020 declared the Decade of Action for Road Safety. With over one hundred signatory countries (including Australia), the plan sets the global goal of stabilising and then reducing the forecasted level of global road fatalities by increasing activities conducted at the global, national and regional levels. The plan provides guidelines for participating countries for the implementation of road safety plans. It adopts the Safe System approach based around five pillars of road safety management, road infrastructure, vehicle safety, road user behaviour and post-crash response.

The plan is a guideline directed at coordinating global efforts in improving road safety while allowing flexibility for individual country needs. It serves as a tool to support the development of national plans, while also providing a framework to align plans at various levels of government within a country.

2.3 National Road Safety Strategy

Australia's *National Road Safety Strategy* (NRSS) 2011-2020 (Australian Transport Council, 2011) is closely aligned with the GPDARS. The NRSS represents the commitment of governments at the federal, state, and territory levels to strive to achieve road safety goals and objectives and develop action plans to address prioritised issues. Comprehensive reporting and performance monitoring are prescribed to evaluate the success of plans.

The NRSS is based on the Safe System approach, as advocated by the GPDARS. The Safe System Framework adopted in the NRSS is a four-pillar approach consisting of safe roads, safe speeds, safe vehicles and safe road users. The NRSS acknowledges a 'towards zero' visionary target. Vision Zero advocates that Australians should not accept road deaths as inevitable. It acknowledges that the task of eliminating deaths and serious injury is difficult and that some crashes will always be inevitable but should not be considered acceptable.

"No person should be killed or seriously injured on Australia's Roads" (Australian Transport Council, 2011)

An inquiry into the NRSS was initiated by the Australian Government in 2017 and later published in 2018. The inquiry recommended setting a national Vision Zero target for 2050 with an interim target of vision zero for all major capital city CBD areas, and high-volume highways by 2030.

Since the establishment of the NRSS, two National Road Safety Action Plans (NRSAP) have been developed to support the implementation of the NRSS. These include the NRSAP 2015 – 2017 and NRSAP 2018 – 2020.

2.4 Queensland Road Safety Action Plan

The *Safer Roads, Safer Queensland: Queensland's Road Safety Action Plan* 2017-2019 (QRSAP) (Department of Transport and Main Roads, 2017) is a plan to address areas of the road network that have the greatest potential to reduce the number of casualties on Queensland roads. The plan predominately focuses on the State-controlled road network but does have actions relating to partnership with, and investment in local road authorities, as well as broad-based actions that will have benefits for all road users (e.g. behaviour modification campaigns, research, etc.).

The plan acknowledges the need for shared responsibility and provides a summary of actions to occur within four priority areas. These include:

- *Delivering safer roads for Queenslanders.*
- *Getting people into safer vehicles.*
- *Encouraging safer road use.*
- *Planning our future and strengthening our partnerships.*

Actions that have either a direct (e.g. programs that will include changes to Ipswich roads to reduce crash frequency or severity) or indirect impact to Ipswich (e.g. educational programs focusing on the broader State community) have been considered in the development of the RSAP.

2.5 Local Government Road Safety Plans

The role of local government in delivering road safety is acknowledged in the national and state government road safety strategies and plans. Austroads *Guide to Road Safety Part 4: Local Government and Community Road Safety* 2009 (Austroads, 2009) states that local government programs should be based on the same general principles as those managed by national and state bodies while retaining specificity towards the local environment. It follows that the RSAP should align with the same four-pillar approach adopted at the State and National Level (consisting of safe roads, safe speeds, safe vehicles and safe road users).

While local government programs are limited in their domain of influence, they have certain advantages in developing tailored road safety programs that can prioritise local issues using state or federal road safety funding sources. Local knowledge of the area and the community allows the plan to be proactive as well as reactive, as high-risk areas can be identified in advance of incidents occurring. Unlike higher-level authorities, local government has direct links with community members and networks, allowing specific community issues to be raised and acted upon. Local-level media and police enforcement campaigns can be targeted to specific local demographics, problem locations, events and seasonal issues.

Also, local governments have responsibility for the majority of local land use planning and development approvals. They have the ability to directly influence road safety outcomes relating to infrastructure associated with new development, and the activities and movement of people associated with specific land uses (e.g. licensed premises, aged care housing, youth facilities, etc.).

3.0 Safe System

3.1 Understanding the Crash System

Crashes are the outcome of a series of events occurring that result simultaneously in the transfer of kinetic energy from the movement of a vehicle to the body of one or more persons and causing physical harm. Crash events involve three stages (pre-crash, crash and post-crash) as summarised in the Haddon Matrix shown in Table 3.1 below. Haddon emphasised the need to understand all of these factors and phases and to treat the system (World Health Organization, 2004), which was an early precursor to the development of the Safe System Approach to road safety.

Table 3.1 – Haddon Matrix Crash Causal Factors and Response Actions

PHASE	CATEGORY	HUMAN	VEHICLES AND EQUIPMENT	ENVIRONMENT
Pre-crash	Crash prevention	Information Attitudes Impairment Police enforcement	Roadworthiness Lighting Braking Handling Speed management	Road design and layout Speed limits Pedestrian facilities
Crash	Injury prevention during the crash	Use of restraints Impairment	Occupant restraints Other safety devices Crash-protective design	Crash-protective roadside objects
Post-Crash	Life-sustaining	First-aid skill Access to emergency response and medical services	Ease of access Fire risk	Rescue facilities Congestion

Source: World Health Organization (2004)

3.2 Safe System Principles

Since the 1970s, road safety best practice has been developing towards the holistic approach advocated by Haddon, leading to the development of the Safe System Approach. The following summarises the essence of Safe System principles:

"It starts from the acceptance of human error and thus the realization that traffic crashes cannot be completely avoided. This approach means shifting a major share of the responsibility from road users to those who design the road transport system" (United Nations, 2011)

Central to the Safe System Approach is the recognition that people make mistakes and therefore crashes are inevitable. Still, the transport system should be designed such that crashes should not result in serious injuries or fatalities. To achieve this, the road transport system must be designed such that the forces generated in crashes are within the limits of those tolerated by the human body.

The system also promotes the need for shared responsibility. Road safety is not an issue that can be solved in isolation but needs government, communities, business, and individuals to all take responsibility, ownership and action. A diagrammatic description of the Safe System framework is shown in Figure 3.1.

Figure 3.1 – Safe System Framework

Source: Safer Roads, Safer Queensland: Queensland's Road Safety Strategy (2017)

The principles of the Safe System Approach are:

- mistakes are inevitable
- human beings have natural limits
- the system should account for this
- people should not die as a result of a crash
- everyone shares the responsibility for road safety

4.0 Analysis

4.1 The Demographics of Ipswich

In determining an appropriate strategic direction for the RSAP, the current and future demographic profile of the Ipswich region was considered to identify challenges and opportunities for safety initiatives in the community.

4.1.1 Population

The population in Ipswich is approximately 220,000 as of June 2019 (Ipswich City Council, 2019) and is expected to reach 435,000 over the next few decades (Ipswich City Council, 2016a). From a road safety perspective, it is critical to understand where this growth is expected to occur. The City of Ipswich Transport Plan – iGO outlines that significant growth is expected in greenfield areas (e.g. Springfield and Ripley), activity centres and regional business and industry areas. The growth in these areas is expected to increase the travel demand between various centres leading to increased exposure and escalated crash risk, particularly on higher-order, higher speed roads.

4.1.2 Journey to Work

For many road users, most travel is associated with journeys to work, and correspondingly the frequency of crashes across the state network as a whole is highest during peak periods of travel (typical work commute and school hours). The mode and duration of travel have a direct bearing on the crash risks for the residents within a region. Council's report, *Our Community: Demographic profile of Ipswich*, outlines that almost half of work-related journeys for Ipswich residents involve travel outside the region (Ipswich City Council, 2016b). In combination with the high mode share of passenger transport trips, this means that Ipswich residents are likely to regularly drive long distances which may increase the risk of fatigue as well as generally increasing the total number of kilometres travelled by each resident per year (increasing exposure risk in comparison to other areas of the state). Notably:

- 47.5% of working residents live and work in Ipswich
- 48.1% of working residents live in Ipswich, however, work outside of the LGA
- Most of the employed residents working outside of the LGA are employed in Brisbane (83%)

Strategies and actions should be considered in the RSAP to specifically focus on Ipswich residents who commute to Brisbane by passenger vehicle.

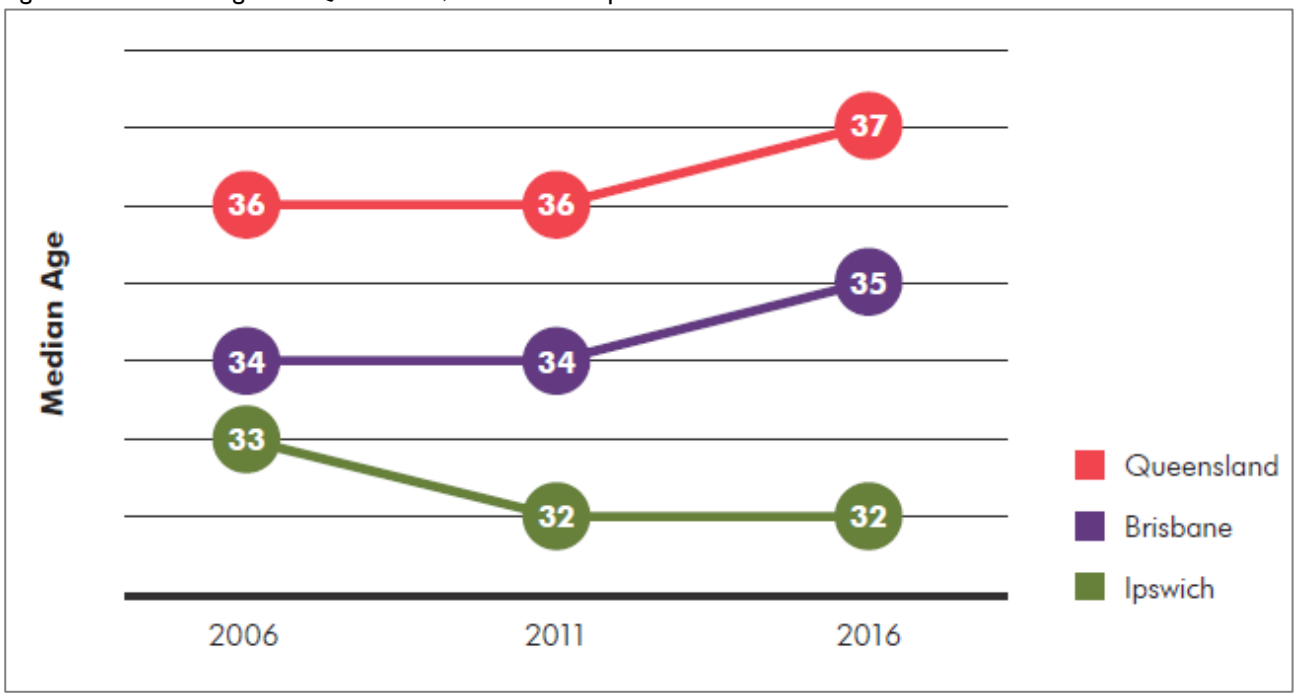
4.1.3 Age Profile

Ipswich has a younger population in comparison to Queensland and LGAs such as Townsville, Logan and Brisbane. According to the 2016 census, the median age is 32 years and is considerably lower than the State median age of 37 years. While the median age has been increasing across the state, in Ipswich it has reduced from 33 to 32 years between the 2006 and 2016 Census dates.

The 2016 Census data also showed the largest population increases were in the 0-4, 5-9 and 30-34 year age groups, reflecting strong growth in young families and the rapid growth rates and expansion into greenfield suburbs. This is an important consideration for the RSAP as it implies the risk to vulnerable road users such as school children is likely to increase in the short term. In the long term (10+ years), it means a growth in the proportion of young drivers on the road network. Similar to trends across the state and the country, younger drivers are overrepresented in the FSI crashes (see Figure A.18 at Appendix A).

While the population is getting younger, there has also been significant growth in a portion of the population of senior citizens, with the 65-69, 70-74 and 75-79 age groups growing by an average of 30% between the 2011 and 2016 Census dates.

Figure 4.1 – Median ages for Queensland, Brisbane and Ipswich 2006 to 2016



Source: Ipswich City Council (2016b)

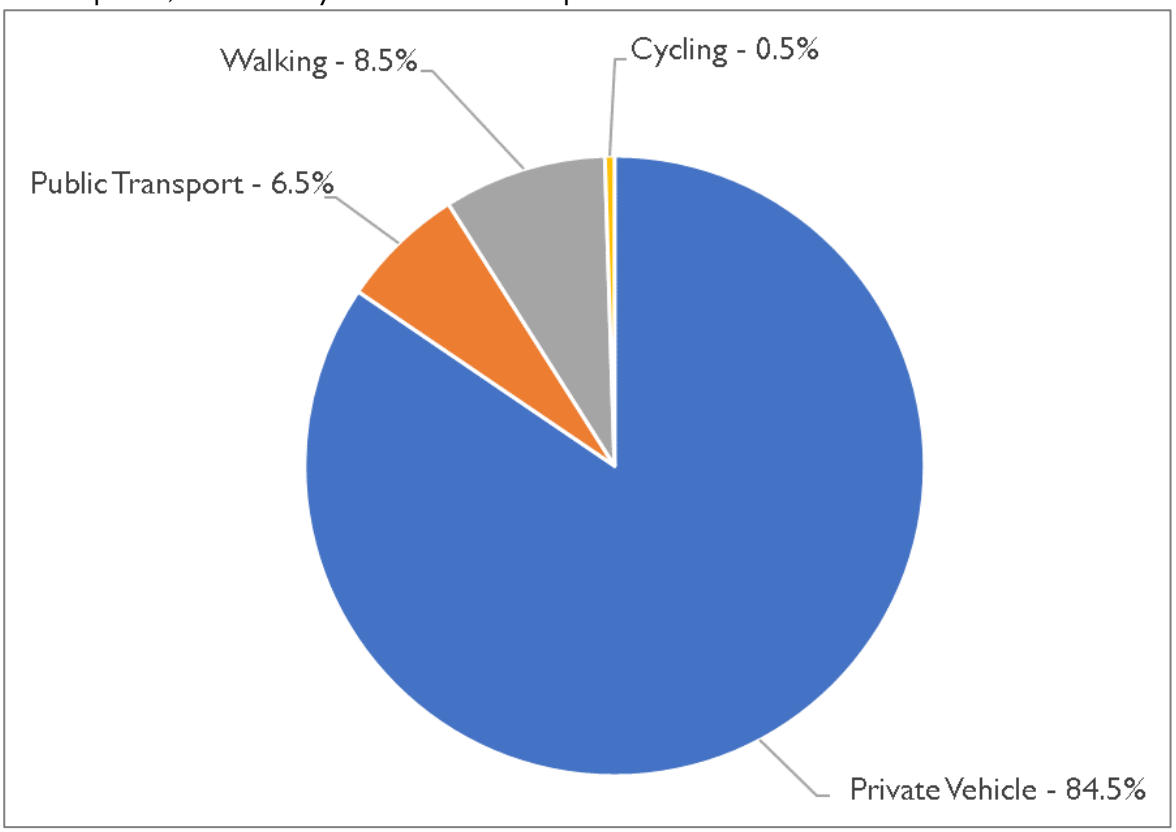
4.1.4 Mode Share

An important factor in the characteristics and causes of crashes in any region is the mode share of different transport users across the network as a whole. Having passenger vehicles represent the majority of trips on the network increases the risk of incidents occurring (i.e. the exposure of crash risk per vehicle kilometre travelled). While increasing the mode share of active travel (walking, cycling, skateboarding, electric and mobility scooters etc.) has both health benefits and alleviates congestion, it may increase the proportion of higher severity incidents due to the vulnerable nature of these users. The current mode share split in Ipswich as per the City of Ipswich Transport Plan – iGO is shown in Figure 4.2.

The mode share target specified in the City of Ipswich Transport Plan – iGO (for the population target of 435,000) includes:

- 11% of total trips will be by public transport
- 11% of total trips will be by walking
- 3% of total trips will be by cycling

Figure 4.2 – Ipswich, Current Daily Travel Mode Share Split



Source: Ipswich City Council (2016a)

4.2 Crash Data

To plan and implement safety initiatives, it is important to gain an understanding of historical trends in incidents across Ipswich to identify opportunities for actions and initiatives to address road safety issues within the community. An analysis of available crash data has been undertaken to inform the development of the RSAP and to provide insight into specific local issues that stakeholders may have opportunities to influence. When analysing and interpreting crash data, it is important to consider the sources and limitations of the data. These are outlined herein.

4.2.1 Sources of Analysis Data

The analysis has been undertaken using a range of data sources. These include:

- The Queensland Road Crash Database, accessed online
- The Australian Bureau of Statistics 2011 and 2016 Census

Unless otherwise stated, all Queensland (and Ipswich) crash data statistics presented in this document are based on the Queensland Road Crash Database, using a ten-year reporting period between 2008 and 2017. Only FSI crashes have been considered in the statistics (unless otherwise stated), and from 2010, QPS and TMR have ceased recording and reporting Property Damage Only crash data. The accuracy of individual crash records has not been investigated.

4.2.2 Crash Terminology & Definitions

Road safety terminology varies widely (even within the same state) and can be confusing. For example, all of the following terms can be used to mean a serious injury associated with a crash:

- Serious Injury/Serious Injuries
- Serious Casualties
- Hospitalisation
- FSI (Fatal & Serious Injury)
- Casualty

The TMR Data Analysis Road Crash Glossary February 2014 is a useful reference for persons unfamiliar with crash terminology. The following definitions may vary slightly from the state glossary definitions and apply specifically when reading statistics and figures in this document:

- The term casualty is used to refer to a person who is either killed or injured as the result of a crash (on public roads). This document primarily focuses on fatal and hospitalisation casualties, and therefore statistics refer only to these two types of casualties.
- In this document, the term "FSI crash" refers to a crash in which there is at least one fatality or hospitalisation casualty and may include multiple injured persons of the same or lesser severity. Crash numbers and casualty numbers are not the same and should not be confused, with frequently several casualties occurring as a result of one crash. Total casualty numbers usually exceed total crash numbers for a given category.

- The term involved refers to the presence or absence of a specific type of person (e.g. age), illegal behaviour, or other circumstance which may or may not have contributed to a crash. Involved does not necessarily imply fault or direct causal relationship to the crash. "Involved" should not be interpreted to imply that the person was a casualty (for example a driver involved in a crash is not necessarily the person who is the crash casualty), nor should it imply a responsibility for the crash.

4.2.3 Limitations of Crash Data

Understanding the limitations of recording, measuring, and reporting of crashes must be considered when discussing crash data. These issues can affect the reliability of data and introduce bias in data interpretation. Key limitations of crash data are:

- quality and quantity of data available
- different methodologies for data collection and reporting between jurisdictions
- crash reporting thresholds
- sources of crash reporting

Data quality issues may include:

- data entry error (inaccurate GIS coordinates)
- imprecise information (not enough detail)
- incorrect information (wrong street name, wrong DCA code)
- subjectivity (where data collection requires a judgement by an individual and may vary due to inexperience, lack of time, lack of accurate information. For example, whether a victim is hospitalised versus being sent to hospital but not admitted may be subjective)

Many state authorities (including Queensland) do not record data for crashes between cyclists and pedestrians. Single cyclist crashes are also unlikely to be reported unless a fatality occurred. For these reasons, cyclist hospitalisation crash statistics are believed to be under-reported. Crash reports generally do not include pedestrian-only injuries such as slips, trips and falls on footpaths, verges or when crossing roadways. While some of these may be of minor consequences, falls for vulnerable road users such as seniors may result in quite severe injuries which have long-lasting impacts.

In addition to the above, road crashes may not be reported if the Queensland Police Service are not contacted. This may occur if the parties involved in the crash do not want legal or insurance authorities involved or do not consider there to be a sufficient legal or medical reason to require emergency services or the QPS.

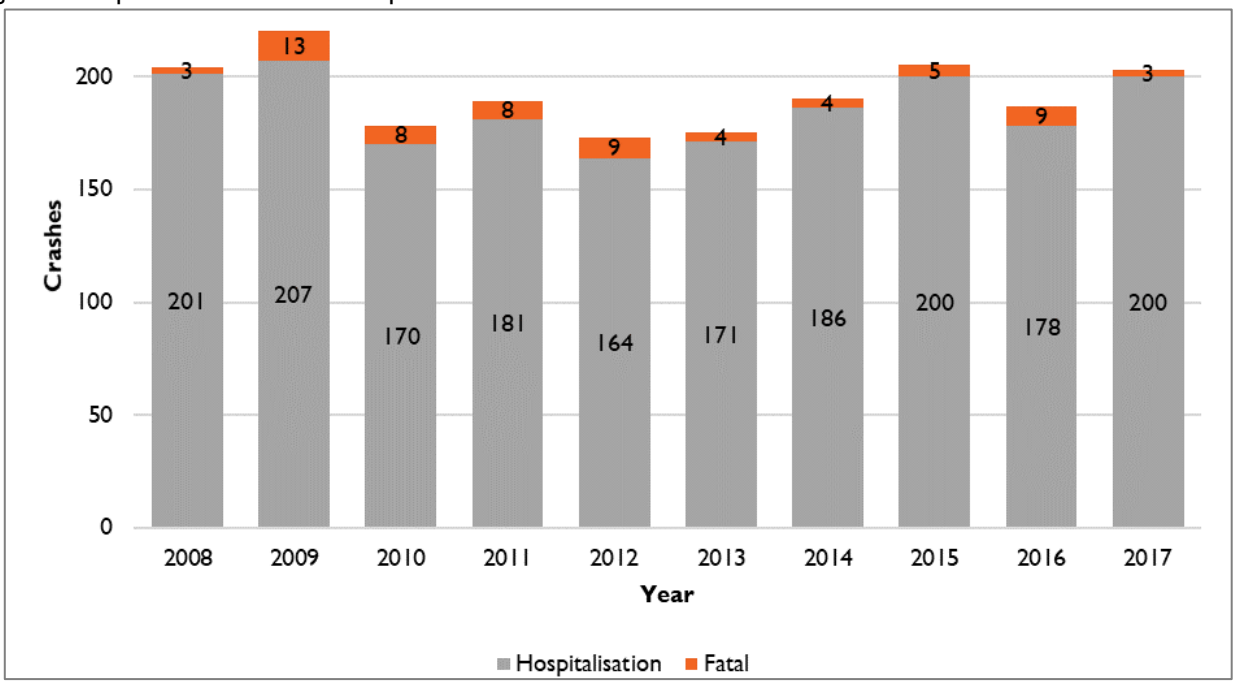
Crashes involving either unregistered or registered vehicles that do not occur on public roads (e.g. farm vehicles, incidents on a non-public road such as a commercial parking area) are typically not included in the State road crash database. The scope of the RSAP does not include road safety-related issues that occur outside of the public road reserve which may include issues such as farm vehicle rollovers, off-road motorbike or mountain bike incidents, or any incidents that occur on private property. Incidents involving pedestrians on train tracks or public platforms are also outside the scope of the RSAP.

4.3 Crash Data Analysis

Between 2008 and 2017 there were a total reported 1,924 FSI crashes in Ipswich. As shown in Figure 4.3, reasonably large fluctuations in total casualties occurred across the years in this period, generally remaining at less than 200 crashes per year. This is similar to the trend for annual fatal, and hospitalisation crashes occurring across the state as shown in Figure A.2 at Appendix A. When consideration is given to the increase in population for the Ipswich region during the same period, this relative stability should be considered as a positive outcome as the number of crashes occurring per capita has been on a downward trend during this period (refer to Figure A.21 at Appendix A). This trend is consistent with all other regions in Southeast Queensland. Figure A.19 at Appendix A shows that there is no significant increase in recorded crashes across all Southeast Queensland LGAs (despite there being considerable population growth). Thematic maps showing crashes within the Ipswich Region (recorded 2008-2017) have been included at Appendix B.

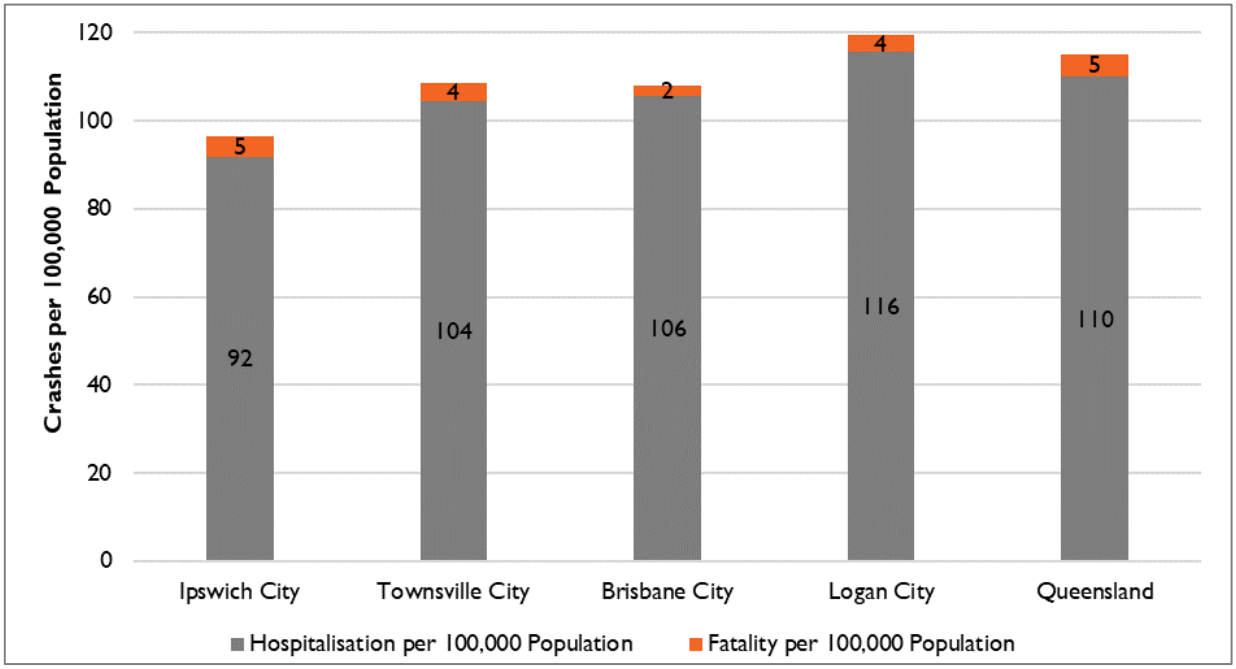
In development of the actions for the RSAP, while acknowledging and aligning with a Vision Zero target (which is based on the principle that all lives matter), it is important to consider that setting targets for reducing FSI crashes may be more relevant than targets for reducing fatalities alone due to the relatively low number of fatality crashes and large fluctuations in the historic crash data over the decade between 2008-2017. While setting a Vision Zero target for fatalities may be consistent with the NRSS, this may create credibility and support issues from stakeholders as there is a reasonable statistical chance that there may be zero fatalities early in the life of the RSAP. Conversely, one incident involving multiple persons could significantly increase fatality results. In the development of the RSAP, this should be balanced by acknowledging the importance and general principle of Vision Zero in setting objectives.

Figure 4.3 – Ipswich LGA FSI Crashes per Year 2008-2017



The current rate of fatalities per capita in Ipswich is in alignment with the state and national rate of approximately five deaths per 100,000 population (based on 2016 population data – see Figure 4.4 below and Figure A.1 at Appendix A). It is, however, relatively higher than the rate of fatalities in LGAs such as Brisbane, Logan and Townsville. In contrast, the rate of hospitalisation crashes is relatively lower when compared to these LGAs. As shown in Figure A.21 at Appendix A, the fatality rate per 100,000 population has fluctuated widely over the past ten years (ranging from 1.45 to 8.04 fatalities per 100,000 population).

Figure 4.4 – Ipswich, FSI Crashes per 100,000 Population in 2016



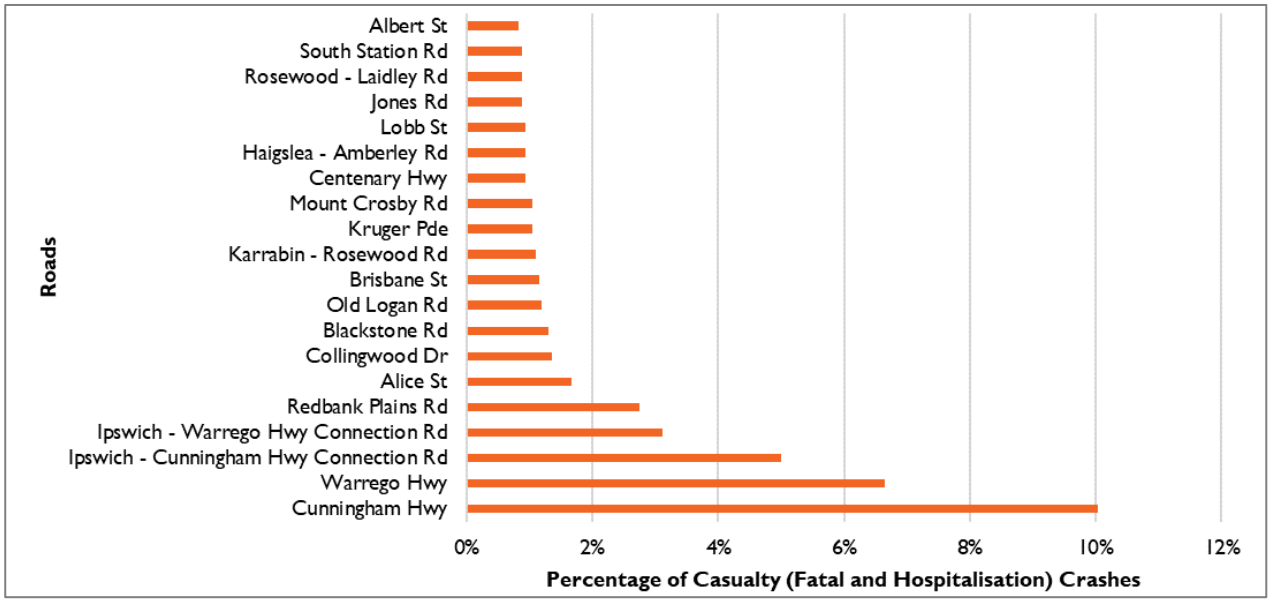
4.3.1 Roads

The location of crashes recorded on the Ipswich road network was analysed to determine if any hot spots/geographical locations may proportionally be over-represented in the crash data. Additionally, aspects such as road authority and road hierarchy classification were considered to understand whether any road safety issues are prevalent on certain types of roads. Key statistics from the analysis include:

- 56% of FSI crashes in Ipswich have occurred on local roads and 44% on State roads (see Figure A.5 at Appendix A).
- Just four roads account for 25% of all FSI crashes. All four are high speed, State-controlled roads and experience high volumes of traffic, reflecting the increased risk of exposure associated with high volumes. As shown in Figure 4.5 below, they include:
  - Cunningham Highway
  - Warrego Highway
  - Ipswich – Cunningham Highway Connection Road
  - Ipswich – Warrego Highway Connection Road
- Figure 4.5 also shows that just 20 roads in the region account for 44% of all FSI crashes and notably 10% of all crashes occurred on the Cunningham Highway

While acknowledging the relationship between traffic volume and crash frequency, these statistics highlight that only a small portion of roads require significant improvements in crash statistics to achieve overall reductions in FSI crashes in Ipswich. An alternative way to consider this is to acknowledge that it would be very difficult to achieve significant reductions in FSI crashes within the Council's LGA without reducing the number of crashes occurring on the top 20 roads. Importantly, this does not suggest that the condition or management of these roads is deficient, but that these roads should be at the forefront of consideration in the development of RSAP actions.

Figure 4.5 – FSI Crashes by Roads in Ipswich, 2008-2017



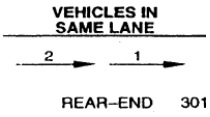
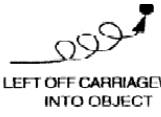
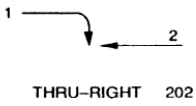
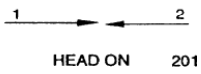
4.3.2 Common Crash Types

The Queensland Crash Database uses standardised Definitions for Coding Accidents (DCA) to record the direction of vehicles (and other unit types) involved in crashes. Understanding common trends in the types of movement involved in crashes can assist in identifying a variety of actions (from increased enforcement of related behaviours to improvement in specific infrastructure types).

Key statistics from the crash data analysis have shown that:

- The five most common crash types represent 39% of all FSI crashes. These are shown in Table 4.1. The 20 most prevalent crash types are shown in Figure A.8 at Appendix A.
- Approximately 40% of FSI crashes are single-vehicle crashes (see Figure A.9 at Appendix A).
- Approximately two-thirds of these crashes involved hitting roadside objects (see Figure A.10 at Appendix A) after a loss of control.
- 'Hit object' crashes generally prevail in the number of fatal crashes (see Figure A.12 at Appendix A).

Table 4.1 – Ipswich, Five Most Common Crash Types by DCA Code 2008 – 2017

	DCA 301	DCA 703	DCA 202	DCA 101	DCA 201
DCA					
% of FSI crashes	10%	8%	8%	7%	5%

The prevalence of the crash types identified above (particularly rear-end and run-off-road crashes) are to be expected and can be addressed through targeted programs. There is a variety of contributing circumstances for rear-end crashes which may include driver distraction, tail-gating, and excessive speeding and they generally occur during peak congestion periods. Run-off-road crashes can be contributed to factors such as inattention, fatigue and loss of control due to excessive speeding.

4.3.3 Intersections

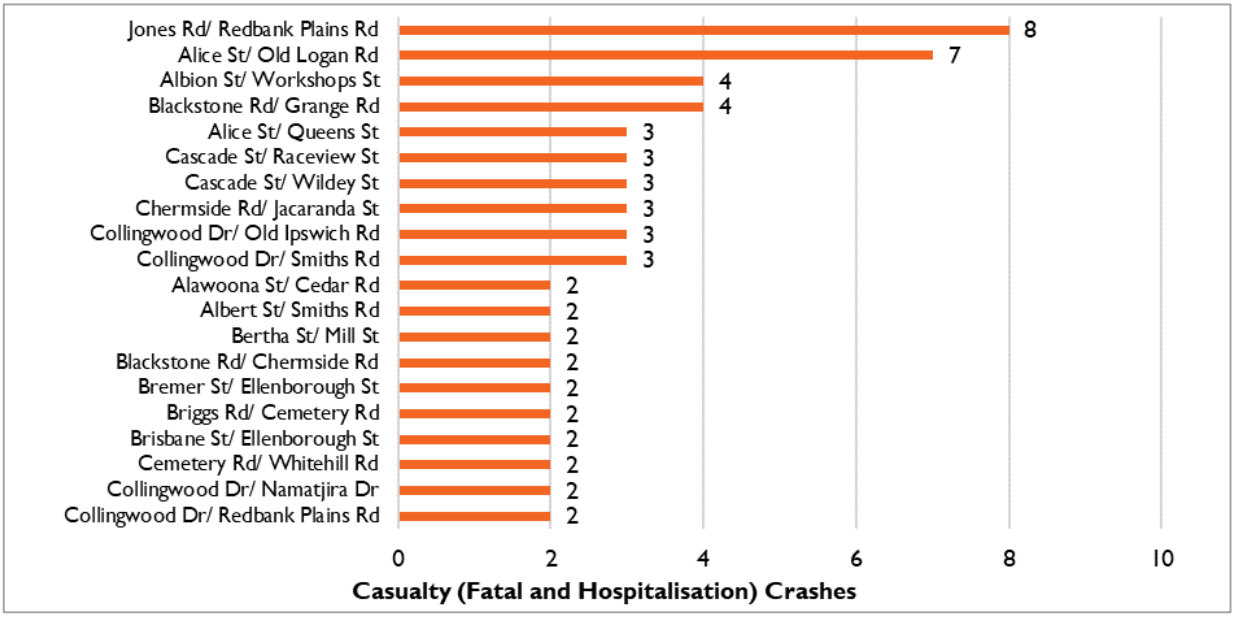
Intersections are critical to the safety and operation of the road network. Crashes at intersections have been specifically analysed due to the number of conflict points that they introduce to the road network. Key statistics relating to intersection crashes in Ipswich include:

- 41% of all FSI crashes have occurred at intersections
- 11% of all FSI crashes have occurred at signalised intersections
  - 1/4 of these crashes have occurred at only 8 intersections (see Figure 4.6)
  - 1/2 of these crashes have occurred at 26 intersections (see Figure 4.6)
- At 20 signalised intersections that have experienced the greatest number of FSI crashes, thru-right (DCA 202) crashes and thru-thru (DCA 101) crashes are most prevalent accounting for 49% and 19% respectively, as shown in Figure A.13 at Appendix A.

The prevalence of through-right crashes may be contributed in part to motorists taking short gaps when filtering through opposing traffic, while the through-through crashes can likely be partially contributed to red-light running.

As signalised intersections generally accommodate higher volumes of traffic, it is inherently expected that more crashes would occur at these locations. From the above statistics, 11% of FSI crashes occurred at 114 signalised intersections, while approximately 30% occurred across almost 400 unsignalised intersections. The locally controlled and State-controlled intersections with the most FSI crashes are shown in Figure A.6 and Figure A.7 at Appendix A. Council have implemented improvements at a number of these intersections (between 2008-2017) to address safety issues; Figure A.16 at Appendix A identifies the improvements.

Figure 4.6 – Ipswich, Intersections with Most FSI Crashes 2008-2017



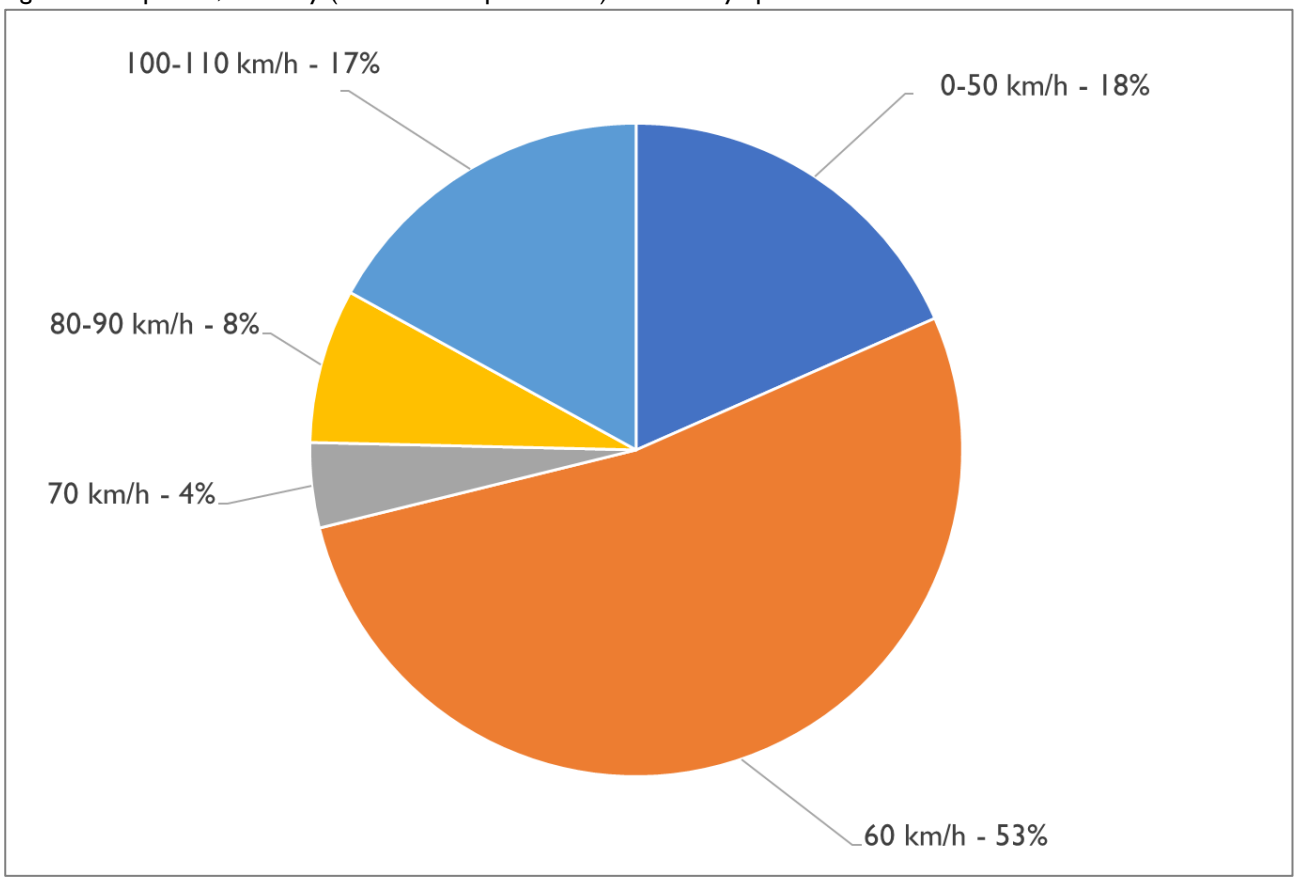
4.3.4 Speeds

Research has shown that human tolerance to speed decreases exponentially above 30 km/h. Ensuring that the road environment has suitable speeds or controls to facilitate persons driving at the right speed for the road environment is integral to creating a Safe System.

FSI crashes have been summarised by the speed zone they have been recorded in. It was found that:

- 71% of FSI crashes have occurred in speed zones of 60km/h or lower (see Figure 4.7 below).
- The crashes in the high-speed zones have predominantly occurred on state-controlled roads (see Figure A.3 at Appendix A).
- Figure A.3 also shows that for State-controlled roads an equivalent number of crashes on roads with a 60km/h speed zone as for 100-110km/h speed zones. However, there are fewer fatalities in lower speed zones which is reasonable to expect as higher speed zones typically experience higher severity crashes.

Figure 4.7 – Ipswich, Casualty (Fatal and Hospitalisation) Crashes by Speed Zone 2008-2017



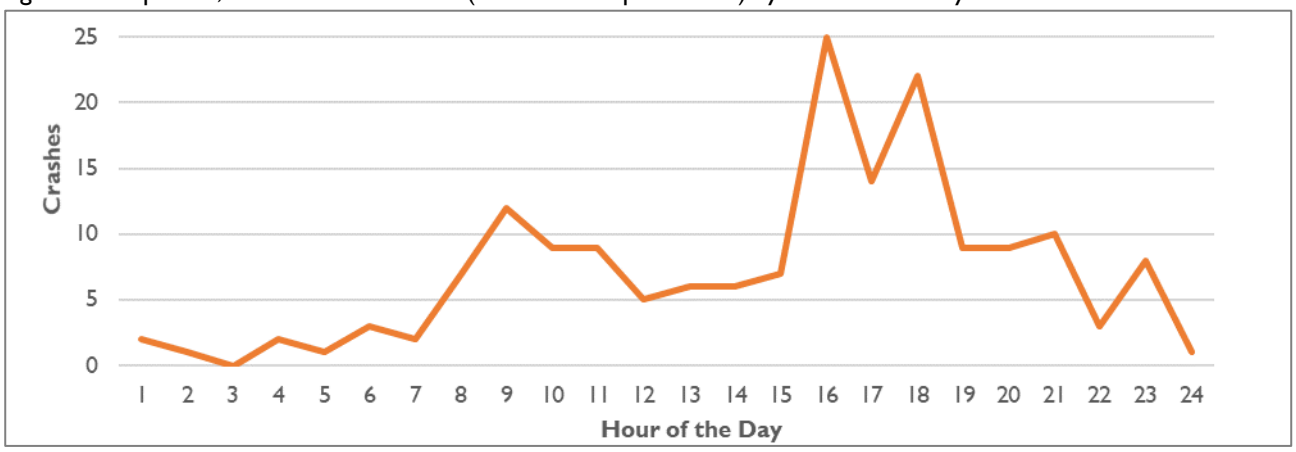
Given the high proportion of crashes that occur on lower speed roads, significant improvements in the crash statistics on these roads are required to achieve significant overall results.

4.3.5 Vulnerable Road Users

Pedestrians, cyclists and motorcyclists are classified as vulnerable road users due to the increased risk of higher severity injury in the event of crashes with vehicular traffic. Key statistics (based on crash data between 2008 – 2017) relating to vulnerable users in Ipswich include:

- 7.3% of FSI crashes are pedestrians.
- 51% of pedestrian FSI crashes occur between the hours of 3 pm and 9 pm (see Figure 4.8).
- 2.9% of FSI crashes are cyclists.
- Data from the Southern Police Region (which includes the Darling Downs, Ipswich and Moreton Districts) shows that while no particular trend is evident across the age groups for both pedestrian and cyclist casualties (see Figure A.16 and Figure A.17 at Appendix A), males in both user groups are generally involved in more crashes, particularly, younger (17-24) and older (50-74) cyclists.
- 13.5% of FSI crashes are motorcyclists.

Figure 4.8 – Ipswich, Pedestrian Casualties (Fatal and Hospitalisation) by Hour of the Day 2008 - 2017



The prevalence of crashes from 3 pm to 6 pm is likely to be directly related to the high volumes of vulnerable users on the road in the afternoon school peak and evening commuter period. This assumption is supported by Figure A.14 included at Appendix A, showing a higher number of occurrences on weekdays, as opposed to the weekend. A breakdown of the crashes in this period by DCA code, as shown in Figure A.15 at Appendix A, indicates that most of these crashes involve pedestrians being struck while attempting to cross the road (30 involving pedestrians crossing from the far side of the road).

Figure A.20 at Appendix A shows the breakdown of user groups involved in crashes. There are no notable statistics, with cars being the prevalent user type involved in a crash (aligning with regional mode share preference). The maps contained at Appendix B show the location of crashes by road user types on the Ipswich network.

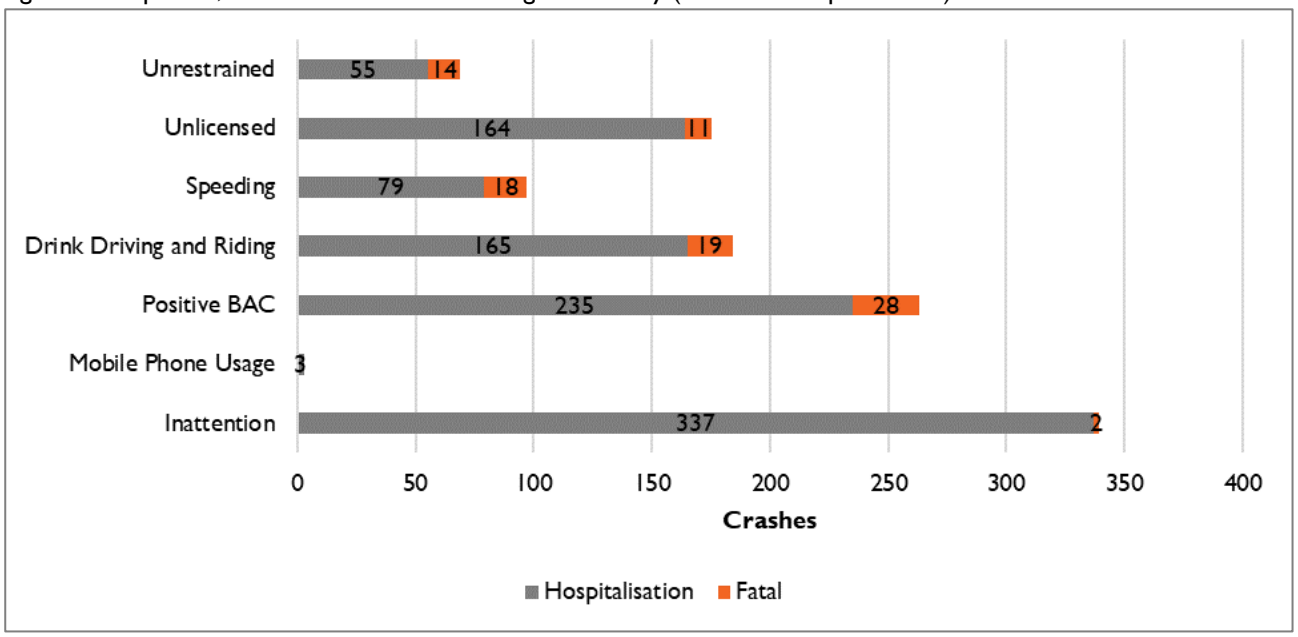
4.3.6 Contributing Circumstances

The behavioural factors contributing to FSI crashes in Ipswich (in the period 2008 – 2017) are shown in Figure 4.9 below. Inattention has been reported as the most common contributing circumstance to crashes in Ipswich.

There are inherent limitations associated with data capture of behavioural factors as the circumstances of what has contributed to a road crash may not always be clear. This introduces a degree of uncertainty concerning the accuracy of the reporting of contributing factors and it is also unclear how many crashes are attributed to a combination of these factors. The low number of FSI crashes resulting from mobile phone usage contradicts anecdotal evidence that suggests that the figure should be higher (however this is likely difficult for QPS officers to determine in post-crash reporting as drivers may be reluctant to provide this information for legal reasons).

It is also worth noting that approximately 14% of the FSI crashes have involved positive Blood Alcohol Content (BAC). While improved enforcement is often the most commonly proposed solution, in the long term the most effective way to reduce crashes resulting from 'undesirable' behaviour is likely to be through influencing cultural change. This may be most effective in targeting younger audiences (primary school age). Stakeholders attending Workshop 1 indicated that there is an opportunity to improve collaboration between organisations such as the DoE, QPS and QFES to deliver educational programs and campaigns.

Figure 4.9 – Ipswich, Circumstances Contributing to Casualty (Fatal and Hospitalisation) Crashes 2008-2017



5.0 Additional Considerations

5.1 Health Services

Collaboration with health service departments may yield information that cannot be identified through standard sources of data used for road safety analysis (crash records, road safety audits, etc.). As road crashes are only reported to police in the instance of crash investigation or for insurance purposes, a large number of incidents are not captured in the data sources that are typically consulted for road safety projects. Examples of unreported incidents include cyclist injuries from falling and pedestrian injuries from tripping over a hazard.

There are presently three hospitals within the Ipswich LGA that are a potential source for understanding these types of incidents. Access to records of hospital admissions will enable a better understanding of Active Transport incidents. Additionally, working with stakeholders in health industries may help in identifying additional strategies for future editions of the RSAP, such as post-incident treatment actions and rehabilitation programs.

5.2 Emerging technology

Advances in transportation technology are providing the population with more options for travel; however, current road safety practices are yet to consider the implications of these emerging technologies fully. High-powered electric scooters and bikes are becoming easier to access (due to reducing entry costs) and provide the user with an easy and fast method for travel. Ipswich will likely see an increase in vulnerable users on electric transportation devices and therefore increasing incidents involving the devices. The RSAP will need to consider this emerging technology and potential mitigative options for it such as changes to active transport infrastructure design standards.

The presence of autonomous vehicles and Intelligent Transport Systems (ITS) will also require on-going consideration in future reviews of the RSAP. Ipswich is serving as a pilot site for the Cooperative and Automated Vehicle Initiative (CAVI) project with 500 test vehicles being retrofitted with ITS devices.

5.3 Education

The projected growth of Ipswich and current trends show that the youth population is increasing and growth in school infrastructure will be required to accommodate it. This will result in increased levels of vulnerable users on the road network and numbers of high school students driving to school. This has been considered in the development of RSAP actions.

5.4 Post-Incident

Actions to improve road safety are not limited to the prevention of or reaction to road trauma incidents. The lasting effects of road trauma incidents can impact those involved for significant periods following the incident. In the future, setting actions to investigate options to improve post-incident treatment or development of initiatives to assist those affected may be an aspect that sets the Ipswich RSAP apart from other road safety strategy documents.

5.5 Other LGAs

There may be opportunities to collaborate with other LGAs in Southeast Queensland that have Road Safety Strategies. This could enable Ipswich to share the cost of campaigns and projects, as well as enable it to apply for grants that it may otherwise be ineligible to receive. Other Southeast Queensland LGAs that currently have a Road Safety Strategy include:

- City of Gold Coast 2015-2020 (58 actions)
- Logan City Council 2017-2021 (47 actions)
- Toowoomba Regional Council 2019-2023 (55 actions)
- Sunshine Coast Regional Council 2016-2020 (23 actions)

6.0 RSAP Strategy

6.1 Framework

The RSAP requires a framework to define its direction and priorities, and also to demonstrate alignment with the City of Ipswich Transport Plan – iGO. The framework is a core component of the strategy that will influence decision making and the delivery of actions. Typically, the structure of a road safety action plan will be presented in a way that details the road authority's approach to the following:

- vision for road safety
- objectives and targets for the plan
- themes to be addressed and countermeasures to be considered
- actions to be implemented to achieve the objectives and targets

The vision and objectives inform the aspirations of a road safety action plan and direct its stakeholders towards a common goal. The themes and countermeasures of a plan identify elements that require attention and how to address it. The actions of a plan outline the commitment of relevant stakeholders to improving road safety in the region.

The framework recommended for the RSAP is the same that is utilised for the City of Ipswich Transport Plan – iGO: Aspirations, Elements and Delivery. This approach is to establish a document branding that is consistent with the iGO brand. Figure 6.1 outlines how the traditional road safety action plan framework will be presented under the iGO branding.

Figure 6.1 – Strategic Framework

6.2 Horizon

In developing the RSAP, a clear horizon is needed to assist in managing accountability from stakeholders and also to demonstrate a commitment to the community. The horizon of a strategic plan refers to the timeframe in which the plan aims to achieve goals or implement specified actions. Road safety action plans typically have horizons that can vary between short-term (1-3 years), medium-term (4-5 years) and long-term (5+ years).

Set periods commonly define the horizon of strategic plans (for example, the Queensland RSAP 2017-2019), however, the horizon of the City of Ipswich Transport Plan – iGO is a population target that is based on ensuring that the Ipswich transport network can support a population of 435,000 (and therefore there is no set time). To maintain consistency with the City of Ipswich Transport Plan – iGO horizon philosophy, it is recommended that the RSAP also adopts the population-based horizon of 435,000. This will ensure that the current RSAP (and future iterations) remain consistent with the goals and objectives outlined in the current regional transport plan.

It is acknowledged that a time-based horizon establishes accountability by defining a period for action delivery, whereas a performance-based horizon does not. To ensure that progress is measured and achieved within reasonable timeframes, the RSAP should assign delivery timeframes to its actions: short-term (1-3 years), medium-term (4-5 years) and long-term (5+ years). Additionally, to ensure that the RSAP remains relevant to current road safety issues in Ipswich, a comprehensive review and refresh should be undertaken at five-year intervals. The review will identify the elements that have been delivered successfully, aspects that require continued efforts and emerging road safety issues in the Ipswich region.

6.3 Areas of Opportunity

The statistical analysis undertaken for the project has identified areas in which the development of targeted actions is likely to yield significant improvements to road safety within the Ipswich region. Table 6.1 outlines the key road trauma and safety statistics that will be targeted as part of the RSAP. The first edition of the RSAP should have a primary focus on addressing the areas of opportunity to increase the likelihood of achieving significant benefits early in its implementation. This list is not exhaustive, and other actions that focus outside these areas have also been developed.

Table 6.1 – Areas of Opportunity

AREA	KEY STATISTIC	OPPORTUNITY
Driver behaviour	10% of all FSI crashes in the region are rear-end crashes (DCA Code 301).	Rear-end crashes may be attributed to driver inattention or distraction. Developing actions to focus on improving driver behaviour may decrease this statistic.
Drugs and alcohol	14% of FSI crashes had one or more driver involved register a positive Blood Alcohol Content (BAC).	Actions that encourage a positive cultural shift may reduce the number of motorists driving under the influence of drugs and alcohol.
Motorcyclists	14% of all casualties (fatal and hospitalisation) were motorcyclists.	Development of actions to focus on improving motorcyclist safety in Ipswich may result in a reduction of crashes involving motorcyclists.
Commuter fatigue	48% of working residents in the region work outside of Ipswich, with 83% of those employed in Brisbane.	Improving road safety culture and addressing fatigue management may reduce the occurrence of crashes on high-speed roads in the Ipswich region.
Roadside hazards	40% of all casualties (fatal and hospitalisation) involved a single vehicle only.	Actions to remove roadside hazards or mitigate high severity run-off road crashes is likely to reduce the number of high-severity single-vehicle crashes in Ipswich.

AREA	KEY STATISTIC	OPPORTUNITY
Pedestrians	7% of all casualties are pedestrians. 51% of pedestrian casualties (fatal and hospitalisation) occur between 3 pm-9 pm.	An investigation into the causes for pedestrian casualties during the PM periods and development of targeted actions is likely to yield significant improvements to pedestrian safety in Ipswich.
Speeds	71% of FSI crashes occurred on roads with a posted speed limit of 60km/hr or lower.	Focusing on improvements to road safety in the CBD and urban residential catchments of Ipswich may need to take priority over high-speed rural areas in the first iteration of the RSAP.
Males (young and old)	8% of FSI crashes involved a male driver between 17 and 24 (males of this age represent approximately 7% of the population in Ipswich). 6% of FSI crashes involved a male driver over the age of 75 (males of this age represent approximately 2% of the population in Ipswich).	Campaigns to target the male demographic may improve road trauma statistics in the region. Options to reduce reliance on private vehicles may decrease the number of elderly male drivers involved in FSI crashes.
Intersections	41% of all FSI crashes occurred at intersections.	Implementing actions that better manage and mitigate conflict points at intersections will improve road safety at intersections in Ipswich.
Core arterial roads	25% of all FSI crashes occurred on the Warrego Highway and Cunningham Highway.	Improved collaboration with TMR to identify and address issues will reduce the number of crashes on the core arterial roads in the Ipswich region.
Health	70% of the Darling Downs/West Moreton Priority Health Network is identified to be overweight or obese.	Health-related issues can influence road safety with fatigue and heart disease being contributing factors in severe crashes. Actions to encourage a healthy lifestyle may in-turn improve road safety in Ipswich.

6.4 Targets

The Areas of Opportunity identify where the RSAP can focus efforts to achieve effective outcomes. Setting road safety targets in each of these areas that are achievable based on comparable experiences and stakeholder resources is a key step toward reducing road trauma in the region. Table 6.2 outlines the recommended reduction goals for each of the Areas of Opportunity.

Table 6.2 – Potential Targets for Areas of Opportunity

AREA OF OPPORTUNITY	KEY STATISTIC	TARGET
Driver behaviour	10% of all FSI crashes in the region are rear-end crashes (DCA Code 301).	A 15% reduction in rear-end FSI crashes within the next five years (using the 2019 total as the baseline).
Drugs and alcohol	14% of FSI crashes had one or more driver involved register a positive Blood Alcohol Content (BAC).	Reduce the number of FSI crashes in which drugs and alcohol were a factor to below 10% (of all FSI crashes) in the next five years.
Motorcyclists	14% of all casualties (fatal and hospitalisation) were motorcyclists.	Reduce the number of FSI crashes involving motorcyclists to below 10% (of all FSI crashes) in the next five years.
Commuter fatigue	48% of working residents in the region work outside of Ipswich, with 83% of those employed in Brisbane.	Align with City of Ipswich Transport Plan – iGO targets and increase mode share in public transport and active transport modes (by the promotion of road safety benefits).
Roadside hazards	40% of all casualties (fatal and hospitalisation) involved a single vehicle only.	A 20% reduction in the number of single-vehicle incidents resulting in FSI crashes in the next five years (using the 2019 total as the baseline).
Pedestrians	7% of all casualties are pedestrians. 51% of pedestrian casualties (fatal and hospitalisation) occur between 3 pm-9 pm.	Reduce the overall percentage of pedestrian casualties to below 5% of all FSI crashes in the next five years, with a focus on pedestrian safety during PM peak period.
Speeds	71% of FSI crashes occurred on roads with a posted speed limit of 60km/hr or lower.	Reduce the number of FSI crashes occurring on roads with posted speed limits of 60km/hr by 30% in the next five years (using the 2019 total as the baseline).

AREA OF OPPORTUNITY	KEY STATISTIC	TARGET
Males (young and old)	8% of FSI crashes involved a male driver between 17 and 24 (males of this age represent approximately 7% of the population in Ipswich). 6% of FSI crashes involved a male driver over the age of 75 (males of this age represent approximately 2% of the population in Ipswich).	Reduce the number of FSI crashes involving males between the ages of 17 and 24 by 10% in the next five years (using the 2019 total as the baseline). Halve the number of FSI crashes involving elderly males over the age of 75 in the next five years (using the 2019 total as the baseline).
Intersections	41% of all FSI crashes occurred at intersections.	A 20% reduction of intersection FSI crashes in the next five years (using the 2019 total as the baseline).
Core arterial roads	25% of all FSI crashes occurred on the Warrego Highway and Cunningham Highway.	Collaborate with TMR to achieve a reduction in the rate of FSI crashes on the Warrego Highway and Cunningham Highway over the life of the RSAP.
Health	70% of the Darling Downs/West Moreton Priority Health Network is identified to be overweight or obese.	Establish a baseline metric for community awareness towards the road safety benefits associated with maintaining a healthy lifestyle and achieve an annual improvement in the baseline.

In addition to the targets listed in Table 6.2, it is recommended that the final RSAP includes a high-level road safety target such as:

On a per-capita basis, achieve an annual reduction in both fatal and serious injuries that occur on the Ipswich road network.

7.0 Aspirations

7.1 Vision

Road safety is a shared responsibility that requires ongoing collaborative efforts from both key stakeholders and the community. Setting an appropriate vision will succinctly establish Council's aspirations for road safety in Ipswich and also serve as a statement for endorsement by stakeholders. The development of the RSAP vision must be ambitious but have boundaries that ensure realistic definition and refinement of objectives, goals and actions (for endorsement and adoption by stakeholders).

Three options for vision statements were presented to stakeholders during the Stage 3 workshop with the intent of identifying preferred elements and statement styles. The vision statements presented were:

1. The iGO Road Safety Action Plan will adopt a collaborative approach to reduce road trauma and save lives in the Ipswich Region.

2. The Road Safety Action Plan forms a key part of Ipswich's commitment to work towards a growing city where the community can travel freely and safely.

3. To make road safety the shared responsibility of the community and to collaboratively work towards reducing transport-related trauma and saving lives.

Based on stakeholder feedback, the RSAP vision will, desirably, contain elements that refer to the Ipswich community, collaboration, responsibility and reduction of road trauma in the Ipswich region. The refined vision statement adopted by the PAG and recommended for inclusion into the RSAP is:

The Ipswich community has a shared responsibility and commitment to collaboratively working towards reducing transport-related trauma, saving lives and improving road safety on the Ipswich transport network.

7.2 Goals and Objectives

The goals and objectives of the RSAP have influenced the specification of countermeasures and actions. During the first and second WG workshops, input was received that assisted in developing goals for the RSAP. The goals developed and adopted by the PAG include:

- Reduce the occurrence of road trauma (for all road users) on the Ipswich road network.
- Influence road safety culture through education and marketing strategies.
- Promote fit-for-purpose solutions that improve the safety of the road network without compromising functionality.
- Improve collaboration between regional and local organisations to provide targeted and consistent road safety advice.
- Improve road-trauma incident response and post-incident follow up.

Objectives describe measurable results that a strategy will aim to achieve during its implementation. The objectives of the RSAP that have been developed and adopted by the PAG include:

- Emphasise the importance of road safety education for all ages and abilities.
- Strategically engage with the wider community to deliver targeted road safety programs and initiatives.
- Review infrastructure programs to ensure that significant road safety issues are addressed.
- Ensure that transport networks are accessible and support safe travel, encouraging shifts away from driving.
- Encourage the use of alternative forms of transportation, such as public transport.
- Ensure that road safety is a key metric in discussions between road authorities and supporting stakeholders.
- Encourage private organisations to promote a road safety culture from within.
- Improve existing traffic and transport infrastructure to assist in ensuring prompt responses to incidents.
- Increase awareness on the effect that health issues can have on road safety.
- Investigate post-incident follow-up beyond medical care that ensures that the transport network is restored and improved as required.

The goals and objectives developed as part of the project workshops are relevant to the RSAP Areas of Influence (discussed herein) and should be used for the refinement and justification of RSAP actions.

8.0 Elements

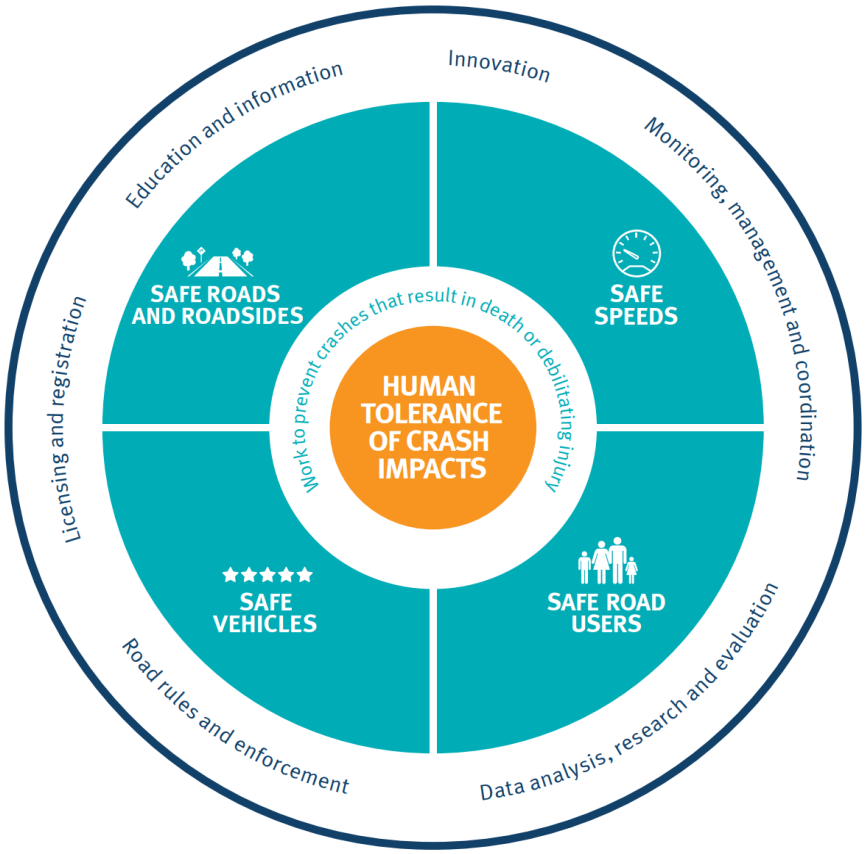
8.1 Themes

The issues and mitigative actions promoted in the RSAP have been aligned with key themes that are relevant at both national and local levels. The RSAP acknowledges the Safe System Framework as its fundamental guiding principle but presents local issues and actions under Areas of Influence.

8.1.1 Safe System Framework

The RSAP acknowledges the Safe System Framework; however, due to the broad nature of the framework (four areas defined at a high-level), local issues can be difficult to categorise or present credibly. For example, the Safe Vehicles component of the framework may be difficult for Council and local stakeholders to influence outside of promoting the use of safer fleet vehicles and enforcement. It is recommended that a different approach to theming is utilised to ensure that all components of the RSAP are relevant at a local level.

Figure 8.1 – Safe System Framework



Source: Safer Roads, Safer Queensland: Queensland's Road Safety Strategy (2017)

8.1.2 Areas of Influence

The Areas of Influence, as shown in Figure 8.2, refer to key areas that Council and local stakeholders can directly influence at a local level. These areas can be linked back to the Safe System Framework; however, Ipswich's road safety issues and mitigative actions are presented under these areas to demonstrate a bespoke approach that has considered the most effective way to address local issues. It is recommended that Council adopts the Areas of Influence for theming the RSAP.

Figure 8.2 – Areas of Influence

Table 8.1 outlines examples in which the RSAP can address for each Area of Influence. The table is not a definitive summary of what each Area of Influence can include.

Table 8.1 – Examples of Areas of Influence

AREA OF INFLUENCE	EXAMPLES
Users	• Vulnerable users • Heavy vehicles • Young and elderly demographics • Male drivers
Infrastructure	• Roadside hazards • Intersections • ITS infrastructure
Community	• Education • Culture • Health
Systems	• Regulation and enforcement • Planning, design and construction • Land use planning and development approval • Post-incident response and treatment
Organisations	• Collaboration between road authorities • Partnership with community organisations • Partnerships with business organisations.

The Areas of Influence provide a basis for Ipswich's road safety issues to be addressed on a local level by focusing on improvements within these areas. These areas can be directly linked to both national and state road safety frameworks. By utilising these categories as a framework for action development, a diverse range of draft actions can be presented for stakeholder consideration, encompassing the major areas of road safety that require improvement within the region.

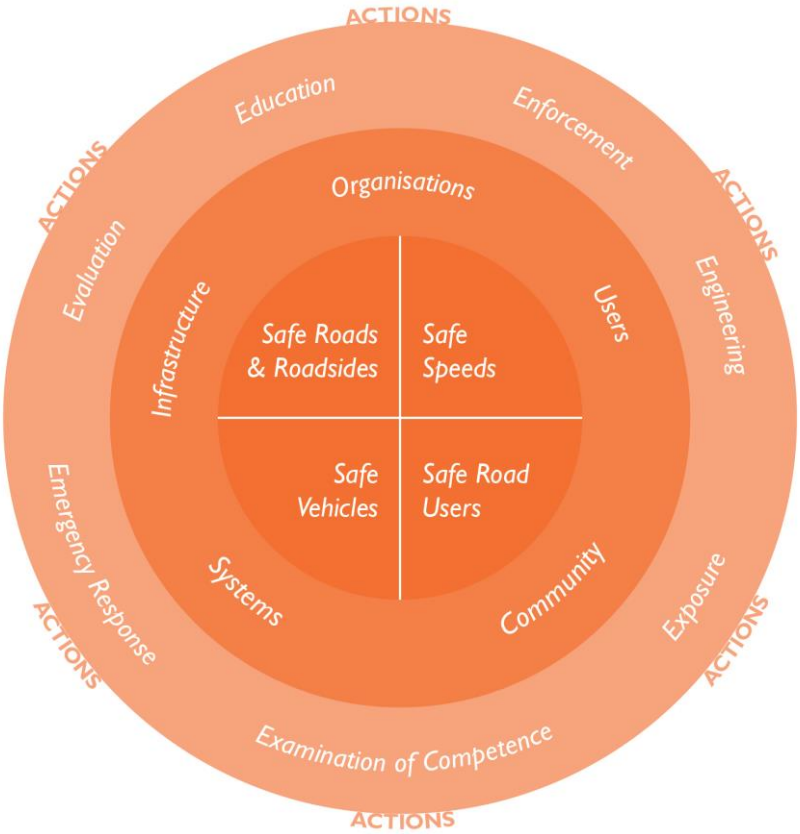
8.2 Countermeasures

Countermeasures are the interventions taken to negate the impact of a specific set of circumstances. They are a necessary tool in the development of targeted road safety actions. The seven E's of road safety, as initially established by J. Harvey (1923) and further developed by J. Groeger (2011) outline seven categories of countermeasures that mitigative road safety actions typically fall under. The seven categories are:

- Education
- Enforcement
- Engineering
- Exposure
- Examination of Competence
- Emergency Response
- Evaluation

As shown in Figure 8.3, the countermeasure categories form the link between the Areas of Influence and RSAP actions. The countermeasures categories have been considered in application to all Areas of Influence to identify options to improve road safety. It is recommended that the development of actions considers these countermeasures to allow for responsibility to be assigned to relevant stakeholders and for the identification of opportunities for collaboration.

Figure 8.3 – Framework of Elements



As outlined previously, the ten areas of opportunity are where actions are likely to yield the highest road safety benefits for the Ipswich region. Table 8.2 outlines which countermeasures can be applied by RSAP stakeholders to influence key road safety issues in Ipswich. This matrix was used to inform the WG of possible actions that should be considered for the RSAP.

Table 8.2 – Areas of Opportunity and Countermeasures

AREAS OF OPPORTUNITY	EDUCATION	ENFORCEMENT AND ENGAGEMENT	ENGINEERING	EXPOSURE	EXAMINATION OF COMPETENCE	EMERGENCY RESPONSE	EVALUATION OF COUNTERMEASURES
Driver behaviour	✓	✓	✓		✓		✓
Drugs and alcohol	✓	✓					✓
Motorcyclists	✓	✓	✓		✓	✓	✓
Commuter fatigue	✓	✓	✓			✓	✓
Roadside hazards			✓	✓		✓	✓
Pedestrians	✓		✓	✓			✓
Speeds	✓	✓	✓				✓
Males (young and old)	✓	✓			✓		✓
Intersections	✓	✓	✓	✓			✓
Core arterial roads	✓	✓	✓	✓		✓	✓
Health	✓	✓			✓	✓	✓

9.0 Delivery

9.1 Actions

The RSAP aims to improve road safety and reduce the number of FSI crashes within the Ipswich region through the implementation of a series of targeted actions. A table of actions is presented in Table 9.1 and at Appendix C (with additional details such as responsible stakeholders) for Council's consideration for inclusion into the RSAP. The actions address specific issues and broad issues to positively impact road safety across the region. The actions have been developed to mitigate risk on the Ipswich road network and consider:

- Areas of Influence
- Areas of Opportunity
- Countermeasures

Table 9.1 – RSAP Actions

ID	ACTION	TIMEFRAME
C1	Identify opportunities to enable inter-organisational shared access to road safety tools, information and statistical resources to enable timely response to road safety issues.	Short
C2	Encourage the use of facilities such as Willowbank Raceway to provide motorsports enthusiasts with a safe, controlled environment away from local traffic and other road users.	Short
C3	Investigate innovative opportunities to increase the delivery of road safety education for young people in the Ipswich region. This will include targeted education with respect to the unique road safety risks experienced by different age groups.	Medium
C4	Improve community awareness of the dangers of driving while fatigued by providing information on the road safety risks associated with a variety of health problems and lifestyle choices. Campaigns will encourage at-risk persons to seek medical advice to reduce their fatigue risks as well as consider alternative modes of transport.	Medium
C5	Encourage and improve active travel amongst school students by further developing school-based road safety programs such as the Active School Travel (AST) program and walk to school week.	Short
C6	Enable community groups (such as sporting clubs, not-for-profit organisations, etc.) to assist in generating road safety awareness within the region through the development and distribution of promotional road safety packages and materials.	Short
I1	Identify mass action programs that can provide low-cost safety improvements and be delivered through new works programs with additional funding (e.g. guardrails, lighting, guideposts, signs and lines).	Medium
I2	Review existing trends at intersections within the region and identify opportunities to improve pedestrian safety by providing increased pedestrian protection phasing at signals or low-cost treatments to increase awareness of pedestrian presence.	Medium
I3	Develop and deliver a program of works for the implementation of safe cycling and pedestrian facilities in accordance with iGO ATAP (e.g. Action 2.1) in urban activity centres and locations such as the CBD, train stations or public transport interchanges to encourage changes to preferred transport mode in the region.	Medium

ID	ACTION	TIMEFRAME
I4	Investigate, upgrade and improve the safety and functionality of existing intersections and mid-block sections through on-going review/upgrade programs. The intersections to be considered include, but are not limited to: - Robertson Road and Whitehill Road, Eastern Heights - Cobalt Street and Johnson Road, Carole Park - Collingwood Drive and Smiths Road, Redbank - Alice Street and Old Logan Road, Camira - Grange Road and Robertson Road, Raceview - Haig Street and Vogel Road, Brassall - Alice Street and Queen Street, Goodna - Cyprus Street and Hill Street, North Ipswich - Cedar Road and Redbank Plains Road. Redbank Plains - Collingwood Drive and Eagle Street, Collingwood Park The mid-block sections to be considered include, but are not limited to: Redbank Plains Road, Redbank Plains Queen Street, Goodna Brisbane Street, West Ipswich Old Logan Road, Camira Redbank Plains Road, Bellbird Park School Road, Redbank Plains This list shall be reviewed annually based on available data.	Long
I5	Improve safety and functionality on motorways, highways and arterial roads including Warrego Highway, Cunningham Highway and Brisbane Road with a focus on opportunities to improve safety and operations at major intersections and connecting signalised intersections.	Medium
I6	Identify opportunities to improve the safety of existing and new infrastructure at or around schools within the network through existing infrastructure programs such as the School Transport Infrastructure Program.	Short
I7	Investigate opportunities to improve cyclist and pedestrian safety by providing signage and line marking to increase awareness amongst road users with respect to priorities on roadways and in shared spaces. Focus will be placed on the priority routes identified in the Principal Cycle Network Plan such as Brisbane Road (Stafford Street to Ipswich Motorway) and Glebe Road.	Medium
I8	Improve cyclist and pedestrian safety through the delivery of designated user infrastructure.	Medium
I9	Improve pedestrian and cyclist safety through the identification of locations where safety can be implemented at low-cost, through measures such as speed reductions and pedestrian prioritisation treatments.	Short
I10	Investigate opportunities to make infrastructure changes that can assist emergency services and improve response times.	Long

ID	ACTION	TIMEFRAME
O1	Improve road safety awareness through the delivery of collaborative education campaigns, focusing on key periods such as Road Safety Week, Fatality Free Friday and Bike Week.	Short
O2	Develop and implement targeted programmes of enforcement focusing on issues such as unlicensed driving/riding, speeding, use of helmets.	Short
O3	Engage with major employment generators to develop and implement Sustainable Workplace Travel Plans to encourage and provide incentives for employees to travel to work via sustainable modes of transport. A pilot program for Ipswich City Council workers could be considered in the short term.	Long
O4	Collaborate with local and state government departments to encourage the implementation or update of standards and regulations that relate to the maintenance of fleet vehicles and safe operating procedure.	Medium
O5	Collaboratively review all fatal and serious injury crash incidents (with the objective of identifying site-specific issues) as part of the iGO Road Safety and Operations Committee.	Short
O6	Discourage unsafe driving behaviours such as driving under the influence or using mobile devices through the implementation of targeted programs of enforcement and pro-active programmes to engage high-risk users through community outreach to schools, sporting clubs, not-for-profit organisations, etc.	Short
O7	Encourage and incentivise safe driver behaviour through novel programs that provide positive reinforcement messages and unanticipated rewards for positive road user behaviour such as wearing bicycle helmets, complying with speed signs, wearing seatbelts, and driving courteously.	Short
O8	Integrate the key strategies, objectives and goals of the iGO Road Safety Action Plan into other Ipswich City Council policy, procedures and guidelines such as the Streetscape Design Guidelines.	Medium
S1	Establish a stakeholder agreement that commits all volunteering organisations to work collaboratively towards the improvement of road safety within the Ipswich region. Conduct an unveiling ceremony at the completion of the Road Safety Action Plan to signify this moment.	Short
S2	Establish an iGO Road Safety and Operations Committee made up of key stakeholders which meet quarterly to discuss general road safety issues and annually to review the iGO Road Safety Action Plan progress.	Short
S3	Continue to apply for state and federally-funded infrastructure programs such as the Safer Roads Sooner and the Black-Spot Program.	Short
S4	Document the extent of the road network for which road safety audits have been undertaken and review of the outcomes of audits undertaken in the past. Subsequently, develop a prioritised list of high-risk locations to be considered for infrastructure improvements.	Short
S5	Develop a long-term programme of road safety audits for the local road network.	Long

ID	ACTION	TIMEFRAME
S6	Generate increased awareness of road safety issues through the development of monthly social media messages on forums such as Ipswich First and other platforms.	Short
S7	Monitor and evaluate the progress of the Road Safety Action Plan annually through the use of evaluation tools and periodic performance reviews.	Short
S8	Monitor and evaluate the overall progress of the Road Safety Action Plan at the end of the five-year period and review the impact on fatalities and serious injuries on the Ipswich road network.	Long
S9	Undertake a review of roads within urban centres with high volumes of Active Transport users. Identify opportunities where localised or targeted speed limit reductions may be appropriate and warranted.	Short
S10	Investigate opportunities to encourage mode-shift towards public transport through education and infrastructure that highlights the relationship between road safety and public transport (i.e. that choosing public transport may be a safer alternative than commuting long distances).	Long
S11	Investigate opportunities for the incorporation of low-cost smart road safety initiatives across the Ipswich region in alignment with the iGO Intelligent Transport Systems Strategy.	Short
S12	Ensure that the safety of personal mobility device users (e.g. scooters and e-bikes) is at the forefront of future policy, planning and operations considerations.	Long
S13	Assist in ongoing plan implementation by ensuring adequate resources are assigned as a part of the iGO Resourcing Strategy.	Short
S14	Establish an operational framework to enable the introduction and operation of Cooperative Intelligent Transport System (C-ITS) safety applications in Ipswich	Long
S15	Actively support the Queensland Government's C-ITS trial in Ipswich, working with key stakeholders to achieve safer road environments and operations.	Short
S16	At the completion of the C-ITS trial, identify opportunities to further improve road safety in the C-ITS space and potentially roll out infrastructure throughout the city for connected vehicles.	Medium
S17	Support the ongoing C-ITS testbeds in Ipswich and encourage future undertakings to support the actions and objectives of the Road Safety Action Plan.	Long
U1	Encourage elderly drivers to utilise alternative travel modes by developing and delivering targeted road safety information programmes.	Long
U2	Encourage increased awareness of the dangers associated with driving under the influence through ongoing campaigns and collaboration with key road safety stakeholders.	Medium

ID	ACTION	TIMEFRAME
U3	Engage with the motorcycling community to co-design solutions to reduce serious road trauma among this vulnerable group. This may include improving the knowledge of learning motorcyclists and returning motorcyclists who have not rode for a long period.	Medium
U4	Identify intersections where illegal manoeuvres are known to be performed regularly and develop passive and reactive enforcement measures to reduce the occurrence of illegal manoeuvres. As part of this, collaborate with TMR and QPS to identify opportunities for the installation of enforcement devices such as speed or red-light cameras.	Short

As previously outlined, focusing on road safety improvements towards and developing actions to target the Areas of Opportunity will yield the most significant benefits to road safety within the Ipswich region.

Table 9.2 details the developed actions for the identified Areas of Opportunity.

Table 9.2 – Summary of Actions (Area of Opportunity)

	AREA OF OPPORTUNITY										
AREA OF INFLUENCE	DRIVER BEHAVIOUR	DRUGS AND ALCOHOL	MOTORCYCLISTS	COMMUTER FATIGUE	ROADSIDE HAZARDS	PEDESTRIANS	SPEEDS	MALES (YOUNG AND OLD)	INTERSECTIONS	CORE ARTERIAL ROADS	HEALTH
Users	1	1	1	-	-	-	-	1	1	-	-
Infrastructure	-	-	-	-	2	5	1	-	2	1	-
Community	1	-	-	1	-	2	-	2	-	-	1
Systems	1	-	-	-	3	1	1	-	3	3	1
Organisations	2	1	-	-	-	1	-	-	-	-	-

The principles of the Safe System Framework have also influenced the development of the RSAP. Consideration of the Safe System Framework is required to ensure a consistent approach (with other strategies and international road safety philosophy) to addressing road safety issues within the Ipswich region. Table 9.3 outlines the relevance of the Areas of Influence to each Safe System category and the number of actions that fall within each group.

Table 9.3 – Summary of Actions (Safe Systems)

	SAFE SYSTEMS			
AREA OF INFLUENCE	SAFE ROADS	SAFE PEOPLE	SAFE SPEEDS	SAFE VEHICLES
Users	1	3	-	-
Infrastructure	9	-	1	-
Community	-	6	-	-
Systems	10	3	1	1
Organisations	2	5	-	1

9.1.1 Lead Stakeholders

Lead stakeholders have been assigned to developed actions and will be expected to assume ownership and a degree of accountability to deliver actions within agreed timeframes. As shown in Table 9.4, Council will be responsible for a broad range of actions across all Areas of Influence. TMR will be responsible for leading actions predominantly focused on improving State-controlled roads. Other organisations such as QPS, QH, QFES and the DoE are identified as lead stakeholders on a small number of actions. They remain integral to the delivery of actions and will be required to assist lead stakeholders throughout the life of the RSAP.

Table 9.4 – Summary of Actions (Responsible Stakeholders)

	LEAD STAKEHOLDER					
AREA OF INFLUENCE	ICC	TMR	QPS	QH	QFES	DOE
Users	2	3	-	1	-	-
Infrastructure	10	8	-	-	-	-
Community	6	2	-	1	-	-
Systems	13	4	1	1	1	1
Organisations	6	3	5	2	1	2

9.1.2 Timeframe for Implementation

The RSAP proposes several key actions to be delivered within short (1-3 years), medium (4-5 years) or long (5+ years) timeframes. These actions are summarised by estimated delivery timeframes in Table 9.5 below.

Table 9.5 – Summary of Actions (Timeframe for Completion)

	TIMEFRAME		
AREA OF INFLUENCE	SHORT (1-3 YEARS)	MEDIUM (4-5 YEARS)	LONG (5+ YEARS)
Users	1	2	1
Infrastructure	2	6	2
Community	4	2	-
Systems	10	1	6
Organisations	5	2	1

9.2 Funding

9.2.1 Council Funding

Council currently conducts programs that target improved road safety on its network, mainly delivered through the Road Safety and Operations Sub-Program. It is understood that the dedicated budget for road safety improvements has varied between $0.5M and $3.8M in the past five years. Council's other infrastructure programs do not specifically target road safety improvements, but indirectly provide them through upgrading facilities to current standards and maintenance of assets. These programs include:

- Strategic roads programs
- Traffic signal modifications programs
- Signage and line-marking maintenance works
- Mass action rehabilitation programs
- Footpath rehabilitation works
- Minor improvements programs
- Public transport and sustainable travel programs

The RSAP presents numerous actions that may be considered as 'business as usual' and are unlikely to require an additional level of funding beyond current provisions. It is estimated that a third of the actions proposed for the RSAP is unlikely to be delivered as part of current programs and may require additional budget to be sourced. The table of actions in Appendix C also provides high-level estimates on the cost to deliver (low, medium and high) and whether on-going funding will be required.

Table 9.6 – Summary of Actions (High-Level Funding Estimates)

	LEAD STAKEHOLDER					
ESTIMATED COST	ICC	TMR	QPS	QH	QFES	DOE
Low cost	25	11	4	2	1	1
Medium cost	9	7	2	3	1	2
High cost	3	2	-	-	-	-

9.2.2 Direct Sources

TMR currently assists local governments with funding road safety works through the Targeted Road Safety Program (TRSP). During 2017-2018, over $148 million in TRSP funded safety projects were delivered across the Queensland road network. The TRSP covers a broad range of programs, focused on providing high benefit, cost-effective solutions that align with the current Queensland Road Safety Strategy.

Direct funding of road safety is provided by sources such as the TRSP consist of works programs that cater specifically to improving road safety in a variety of different manners. These programs are specific and are allocated based on application process undertaken by local governments and may be funded by either state or federal entities.

A series of programs that may be of benefit for safety within the Ipswich region and to the RSAP is outlined in Table 9.7.

Table 9.7 – TMR Targeted Road Safety Programs (TRSP) of Relevance to the Ipswich Region

PROGRAM OF FUNDING	FUNDED BY	DESCRIPTION
Safer Roads Sooner	State	Minor capital works program aimed at improving the safety of state-controlled road networks through-high benefit, cost-effective safety treatments.
Black Spot Program	Federal	Minor capital works program aimed at improving the safety of federal, state and local road networks through-high benefit, cost-effective countermeasures and safety treatments. Both a reactive and proactive program to address locations with a high risk of high severity crashes occurring.
Enforcement Infrastructure	State	Supports infrastructure projects related to road safety enforcement activities such as the installation and maintenance of speed/red light cameras.
Vulnerable Users	State	Designed to treat state-controlled network locations with safety issues relating to vulnerable road users.
School Transport Infrastructure Program	State	Funds improvements of safety and operation of schools through new and improved infrastructure.

9.2.3 Indirect Sources

While direct funding of road safety through programs such as the TRSP is easily quantifiable, definitively tracking the level of funding road safety receives via indirect funding is difficult. Road safety may indirectly benefit from works not specifically being undertaken with a purpose to improve road safety. Current funding for road safety improvements within Council sits in Capital Expenditures and Operational Expenses budgets. Spending that is not categorised as road safety is referred to as indirect funding.

Indirect funding of road safety might consist of basic infrastructure maintenance programs or simple works such as vegetation maintenance within the immediate vicinity of roadways that are likely to influence the safety of both roadways and road users positively. Such programs are not covered by road safety funding, despite their benefits to road safety often being significant. The advantage of such programs to improving road safety can at times be immeasurable. Costs incurred indirectly due to crashes on the Ipswich road network may exceed the indirect benefit of these programs. Indirect costs include emergency response costs, hospital fees, education and enforcement. Therefore, the cost of road safety is borne by all and it is particularly difficult to estimate the exact monetary value that assists in improving road safety.

9.3 Monitoring & Evaluation

Monitoring and evaluation of the RSAP are required to understand how successful the plan is in tracking towards achieving its goals. The process allows for an assessment of what type of actions are effective, whether realistic targets have been set and if current actions require an amendment to achieve plan objectives. The monitoring and evaluation process will ultimately identify how the RSAP is performing (by the completion of actions) and whether it has been a success in achieving the road safety targets and reducing casualty crashes in the Ipswich region.

Monitoring the implementation of the RSAP will require a process that methodically gathers data for particular key performance indicators that provide the basis for progress assessment. Evaluation is the assessment of the information provided through monitoring, to gauge the success of individual actions and subsequently, the overall success of the RSAP.

For monitoring and evaluating the RSAP, it is recommended that the following procedures are undertaken:

- progress tracking
- dashboard development and assessment of key performance indicators
- annual reviews

9.3.1 Progress Tracking

The wide variety of actions in the RSAP means that a 'one-size-fits-all' monitoring methodology for each action is not suitable. It is recommended that Council focuses predominately on monitoring and progress evaluation of both individual actions and the overall RSAP to assess the contribution of each action to road safety within the region and ensure the accountability of lead stakeholders.

A progress report template will be developed for recording progress and self-evaluating each action. Progress reports will capture the timeframe, lead stakeholder, implementation progress and lessons learnt. The following questions will be used to provide a high-level indication of performance:

1. Is the action progressing in accordance with the target timeframe?
2. Is the action likely to be completed within the allocated budget?
3. Are the resources allocated to the action sufficient to ensure its successful completion?
4. Have identifiable results been achieved as a result of the action?
5. Is additional monitoring/data collection required to enable a reasonable evaluation of action success?
6. Are the community/stakeholders responding positively to this action?
7. Are other benefits likely to come from this action?
8. Are there learnings from the implementation of this action that may help with other actions?

The self-evaluation approach allows for the responsible lead stakeholder to identify what evaluation (if any) can be undertaken within the context of the action and resource and timing constraints. The RSAP shall note that amendments or changes might be required to some actions to ensure that they are timely, responsive to emerging issues and reflect progress made. Self-evaluation of actions will assist in identifying if actions require amendment and particularly if subsequent actions can be improved based on lessons learnt.

9.3.2 Key Performance Indicators

Crash statistics should be reviewed annually to evaluate overall plan progress against targets set as a part of the RSAP, as well as intermittently as a part of individual action evaluation. It is recommended that annual reporting is undertaken, as opposed to more frequent reporting, due to the lag in the availability of crash statistics from TMR and the effort involved in analysing the data. This may also result in some efficiencies in staff resources as data analysis can be done in conjunction with planned annual network-wide reviews to identify candidate sites for funding applications using programs such as Black Spot or Safer Roads Sooner.

Using the key performance indicators shown in Table 9.8, a dashboard should be developed for the annual assessment of crash statistics. TMR crash data has been nominated as the basis for statistical analysis of the majority of these key performance indicators as it allows for consistency with State-level analysis and provides continuity of analysis used in the development of the RSAP.

Table 9.8 – Metrics for Annual Road Safety Reporting

AREA OF OPPORTUNITY	METRIC	KEY PERFORMANCE INDICATOR	DATA SOURCE
Driver behaviour	Reduction in rear-end casualty crashes.	15% in five years	TMR Data Analysis
Drugs and alcohol	Reductions in casualty crashes involving drugs and alcohol as a factor.	10% in five years	TMR Data Analysis
Motorcyclists	Reductions in casualty crashes involving motorcyclists.	10% in five years	TMR Data Analysis
Commuter fatigue	Increased mode share through the uptake of public and active transport.	9.5% for future population of 435,000 (City of Ipswich Transport Plan – iGO target)	Australian Bureau of Statistics (ABS) Journey to Work (JTW) Data
Roadside hazards	Reduction in single-vehicle casualty crashes.	20% in five years	TMR Data Analysis
Pedestrians	Reduction in the overall number of casualty crashes involving pedestrians during the PM peak period.	2% in five years	TMR Data Analysis

AREA OF OPPORTUNITY	METRIC	KEY PERFORMANCE INDICATOR	DATA SOURCE
Speeds	Reduction in casualty crash percentages on roads with a posted speed limit of 60km/hr or less.	30% in five years	TMR Data Analysis
Males (young and old)	Reduction in the number of casualty crashes involved young males (17-24 years old). Reduction in the number of casualty crashes involving males over the age of 75.	10% in five years 50% in five years	TMR Data Analysis
Intersections	Reduction in casualty crashes at intersections.	20% in five years	TMR Data Analysis
Core arterial roads	Annual reduction in casualty crashes on the Warrego Highway, Cunningham Highway and associated connection roads.	20% in five years	TMR Data Analysis
Health	*Baseline metric to be confirmed by Council at a later stage.*	Number of targeted campaigns	Queensland Health (QH) Data Analysis

9.3.3 Annual Reporting

It is recommended that an annual report is produced to provide additional commentary on progress and conduct a review of the key performance indicators. This report will capture implementation updates from stakeholders (as collected via the progress reports) and provide an overview of plan success, lessons and existing/emerging trends. Action outcomes may be included if an action was progressed significantly in that year. It is recommended that the reporting be structured to address the Areas of Influence that frame the RSAP. It is anticipated that the content from the annual reporting materials can be used in corporate communications to the public on an as-needed basis.

This reporting can also include collected information (separate from crash data information) that provides key information from recently completed (or ongoing) actions in the program. Other identified information sources that could be used may include:

- Funding submissions (e.g. Blackspot and Safer Roads Sooner Programs): the locations and success of each funding application can be used to demonstrate progress on infrastructure improvements
- General and Councillor Requests: the percentage of closed requests can be summarised and reported as an indicator of community engagement. It is recommended that a register is established that identifies and documents requests related to safety improvements or actions.

9.3.4 RSAP Review

It is recommended that five years following the implementation of the RSAP, a detailed review of all actions and the overall plan is carried out, assessing the effectiveness of each action and overall contribution to improving road safety within the region. As a part of this process, all actions should be reviewed individually to identify the most effective and to determine where key lessons can be taken from the implementation of the plan. A high-level framework for the five-year lifespan of the RSAP and its subsequent review is displayed in Appendix D.

An extensive statistical review of existing and emerging trends from the five years of RSAP implementation should be conducted that considers the metrics identified for annual plan evaluation (shown in Table 9.8). It should also consider the impact of new technology and assess trends identified before the implementation of the RSAP and the progress made towards reducing these trends, to quantitatively evaluate the success of each action and the overall RSAP. To ensure the ongoing improvement of road safety on the Ipswich road network, a subsequent road safety action plan will be developed and will be ready for uptake following at the completion of the RSAP.

9.3.5 Existing LGA Benchmarks

Other local and state government road safety plans were reviewed to identify if benchmarking of outcomes was possible. The extent of monitoring and evaluation varies significantly across all road safety action plans considered. At the national and state level, more comprehensive monitoring and evaluation occurs due to the level of expenditure and resource capability. At the local government level, the task of monitoring and evaluation uses readily available information. The wide range of approaches means that benchmarking to other plans is not feasible in the short-term without collaborative efforts from multiple jurisdictions.

10.0 Summary of Recommendations

10.1 RSAP Strategy Recommendations

It is recommended that the following is undertaken concerning the RSAP Strategy:

- Adopt a framework that presents the RSAP under the components of Aspirations, Elements and Delivery.
- Adopt a population-based horizon (for consistency with the City of Ipswich Transport Plan – iGO) and assign timeframes (short-, medium- and long-term) to individual actions.
- Present key road safety issues as the Areas of Opportunity with road safety targets and develop actions to focus on the targets.

10.2 RSAP Aspirations Recommendations

It is recommended that the following is undertaken concerning the RSAP Aspirations:

- Adopt the RSAP vision of *"The Ipswich community has a shared responsibility and commitment to collaboratively working towards reducing transport-related trauma, saving lives and improving road safety on the Ipswich transport network."*
- Use the goals and objectives (developed during project workshops) to refine and justify RSAP actions.

10.3 RSAP Elements Recommendations

It is recommended that the following is undertaken concerning the RSAP Elements:

- The theming of the RSAP should:
  - acknowledge the importance of the Safe System Framework and
  - adopt the Areas of Influence to represent road safety issues at a local level.
- Use the seven E's of road safety as countermeasures in the development of RSAP actions.

10.4 RSAP Delivery Recommendations

It is recommended that the following is undertaken concerning the RSAP Strategy:

- Adopt the developed RSAP actions (refer to Appendix C), working with the nominated lead stakeholders to deliver actions within the specified timeframes.
- Monitoring of the RSAP should involve:
  - holding iGO Road Safety & Operations Committee (iGO RS&OC) meetings quarterly with key stakeholders of the iGO RSAP, with an annual meeting set aside for plan review and implementation planning.
  - implementing a standing agenda item at the iGO RS&OC for an overall progress update of the iGO RSAP actions. Updates should be given by action leads at the meetings when relevant.
  - lead stakeholders committing resources to conduct annual self-reporting of action progress. Reports should be collated in a simple to complete, standardised format and summarised in annual reports to be presented at iGO RS&OC meetings.
- Evaluation of the RSAP should involve:
  - creation of an iGO RSAP Dashboard and annual updates using crash data statistics as well as providing updates about actions that have been progressed in the previous period.
  - prepare crash data statistical analysis annually to coincide with annual network analysis for Black Spot funding applications. This should include key performance indicators based on the eleven key areas of influence identified in the iGO RSAP.
  - utilise Annual Report materials to form the basis of targeted corporate communications (if appropriate and required).
- The review process of the RSAP should involve:
  - a review of all action progress reports prior to the completion of the iGO RSAP. Identify which actions were successful and review key lessons learned from implementation.
  - facilitation of workshops with the key road safety stakeholders to re-confirm commitment to a formal road safety plan, the governance structure and to facilitate the preparation of the revised plan.
  - conducting a detailed statistical evaluation and workshopping to identify existing trends or emerging trends that could be addressed by the next road safety plan.
  - beginning preparation for the succeeding road safety action plan, with the view to uptake this plan following the completion of the iGO RSAP.

Appendix A

Analysis Figures

Figure A.1 – Road Fatality Rates per 100,000 Population Among OECD Countries in 2016

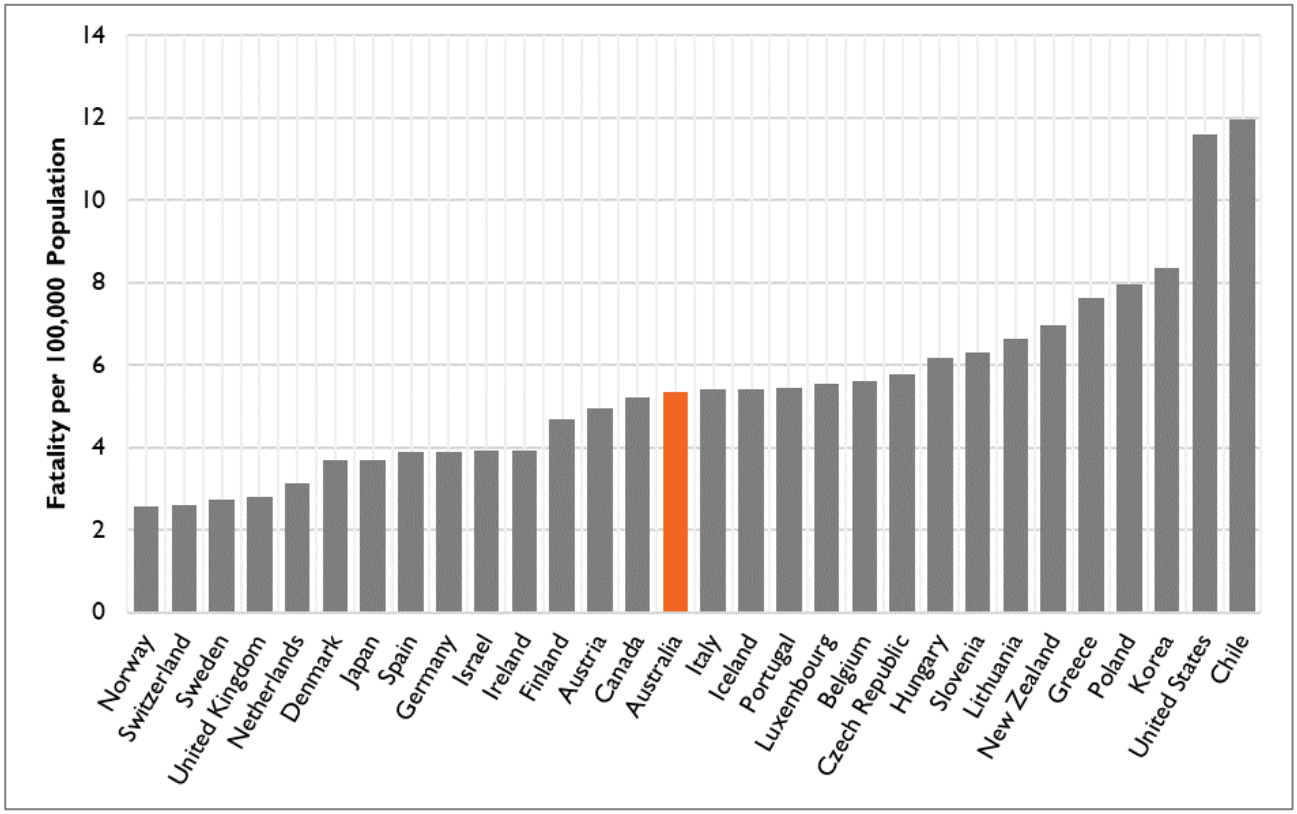


Figure A.2 – Queensland, FSI Crashes 2008-2017

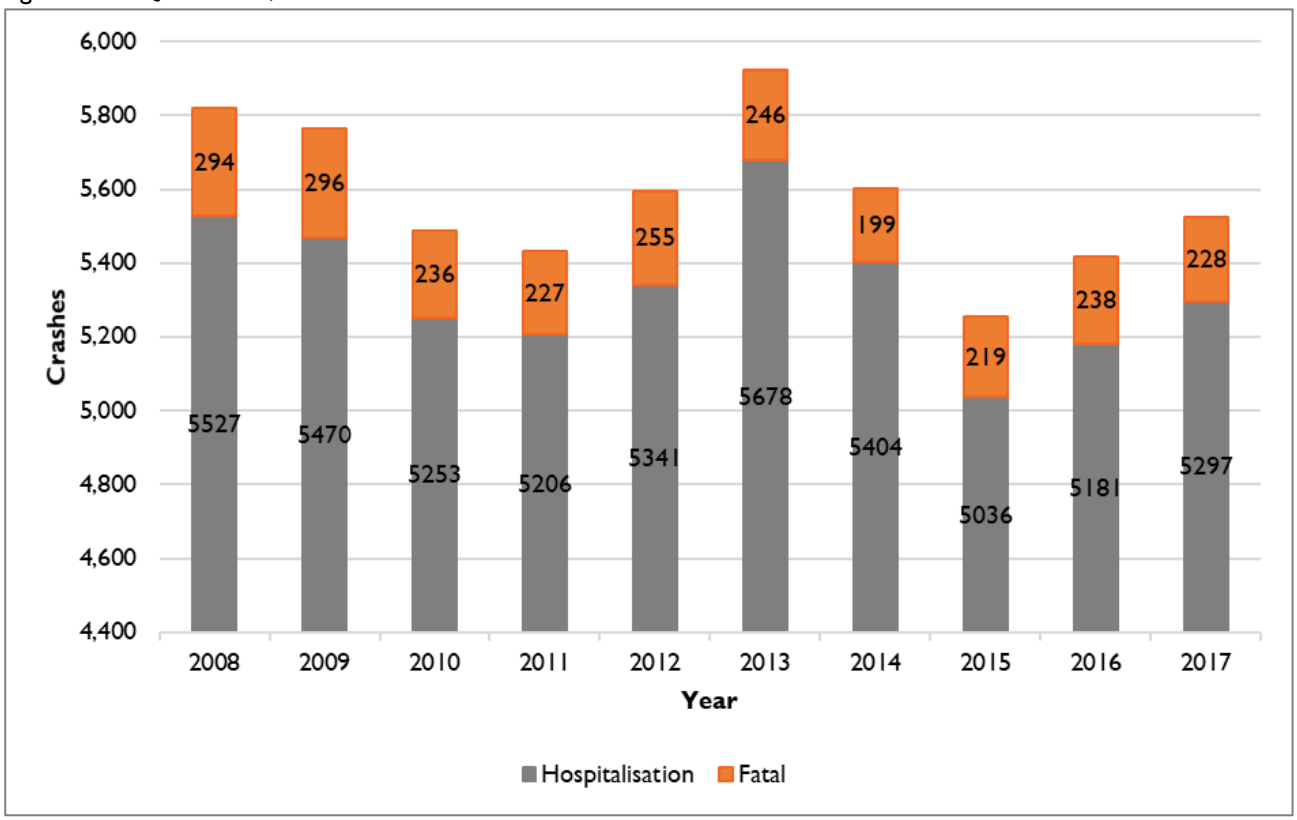


Figure A.3 – Ipswich, FSI Crashes by Speed Zone on State-Controlled Roads 2008-2017

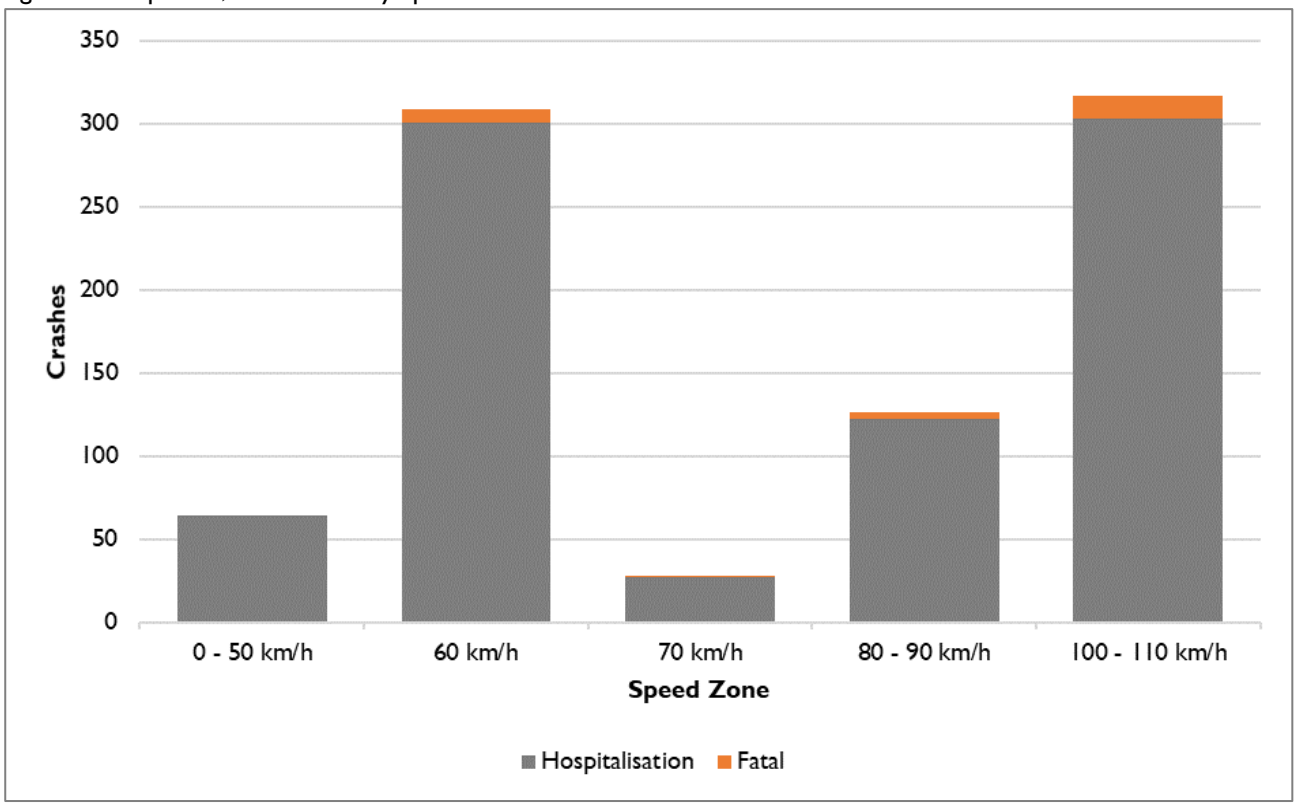


Figure A.4 Ipswich, FSI Crashes by Speed Zone on Locally-Controlled Roads 2008-2017

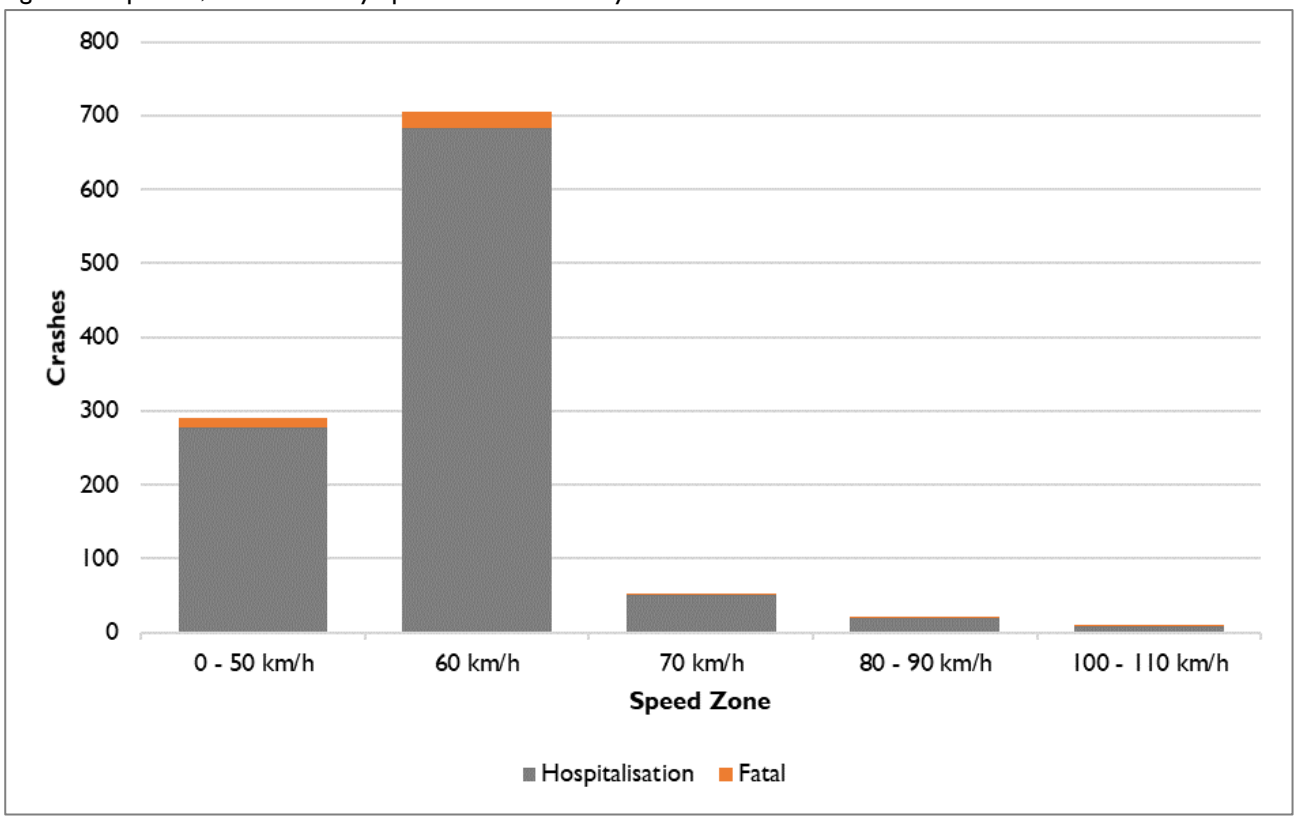


Figure A.5 – Ipswich, FSI Crashes by Road Authority 2008-2017

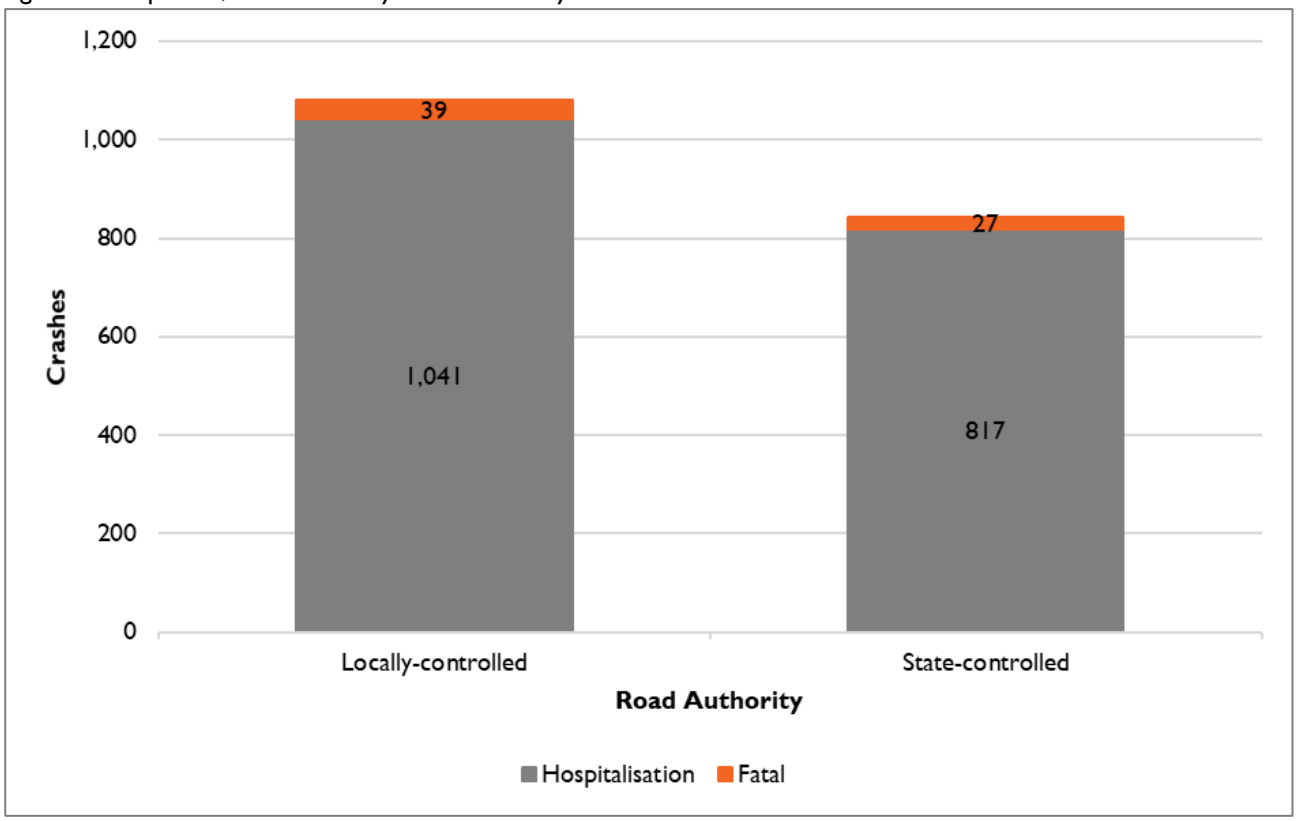


Figure A.6 – Ipswich, FSI Crashes at Signalised Locally Controlled Intersections 2008-2017

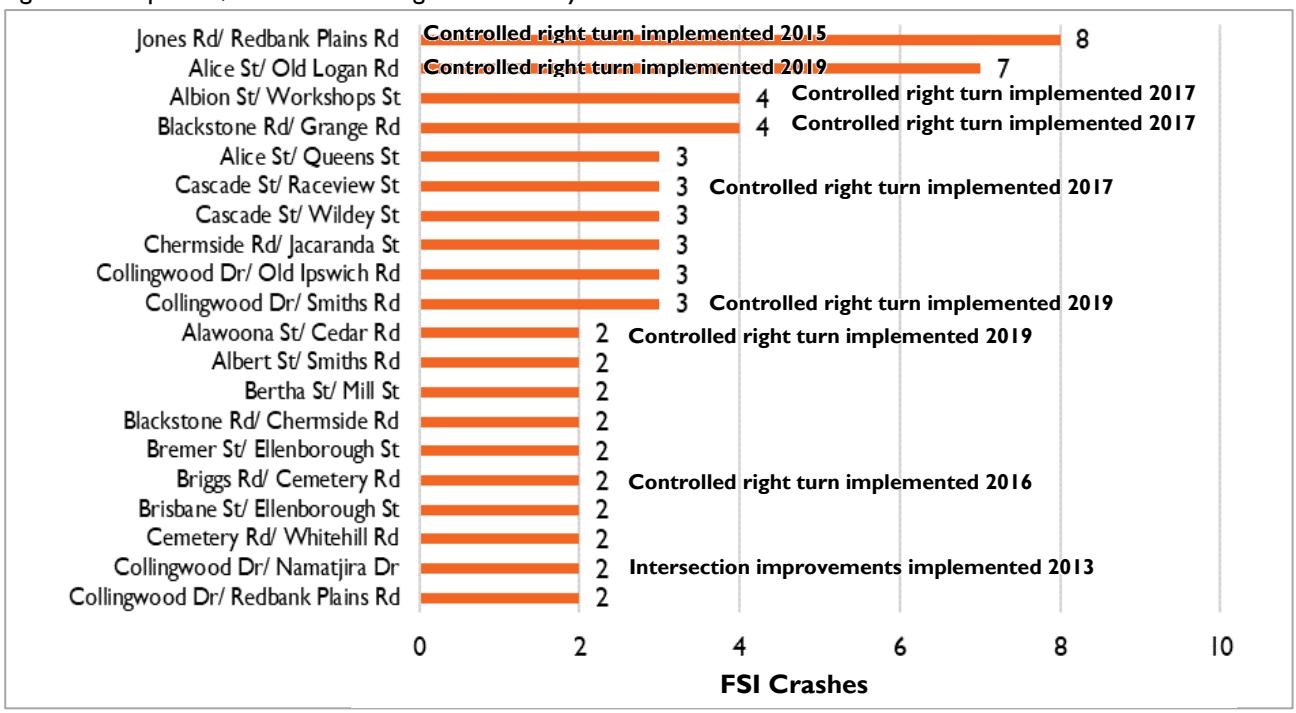


Figure A.7 – Ipswich, FSI Crashes at Signalised State-Controlled Intersections 2008-2017

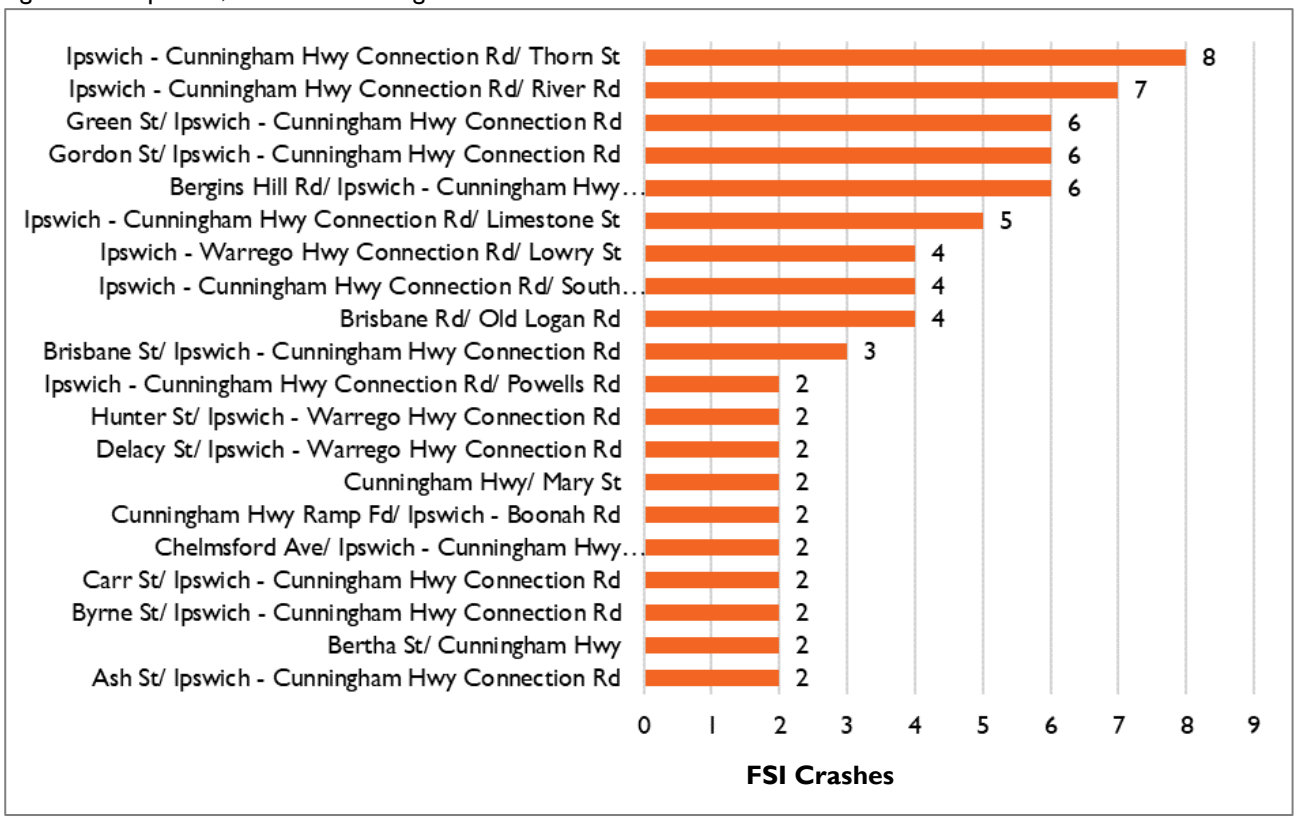
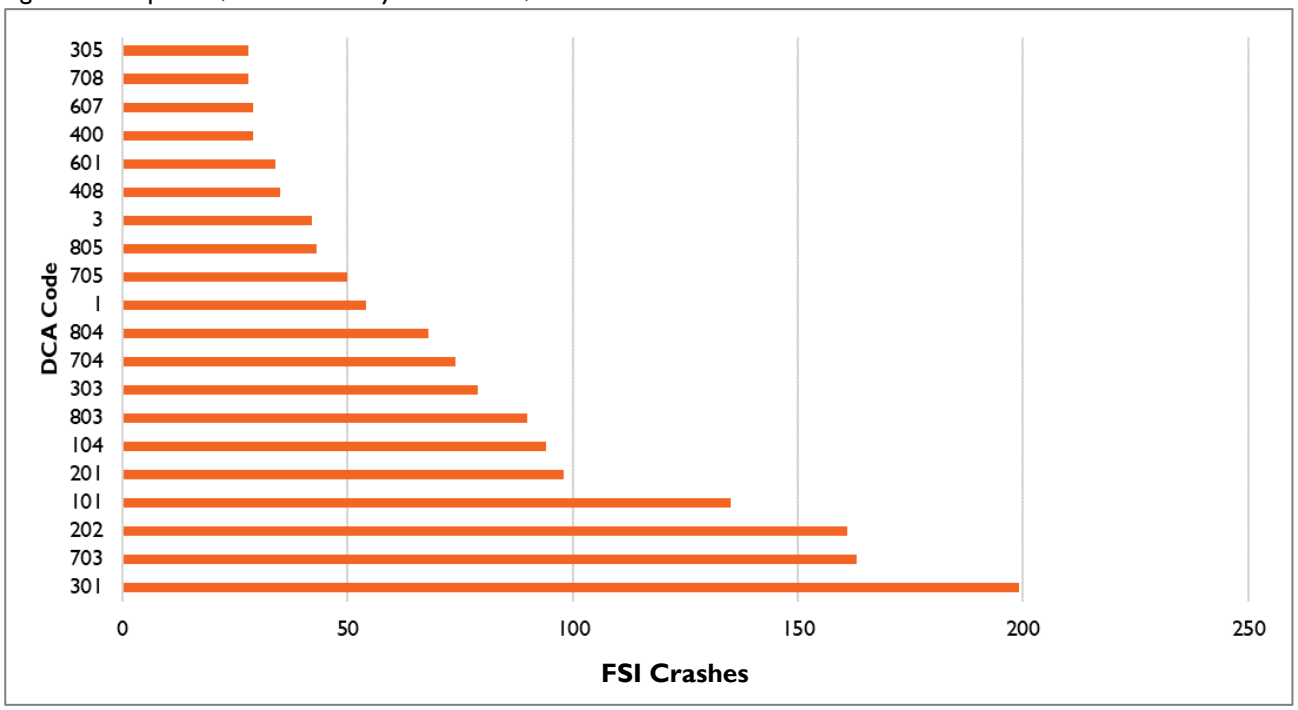


Figure A.8 – Ipswich, FSI Crashes by DCA Code, 2008-2017



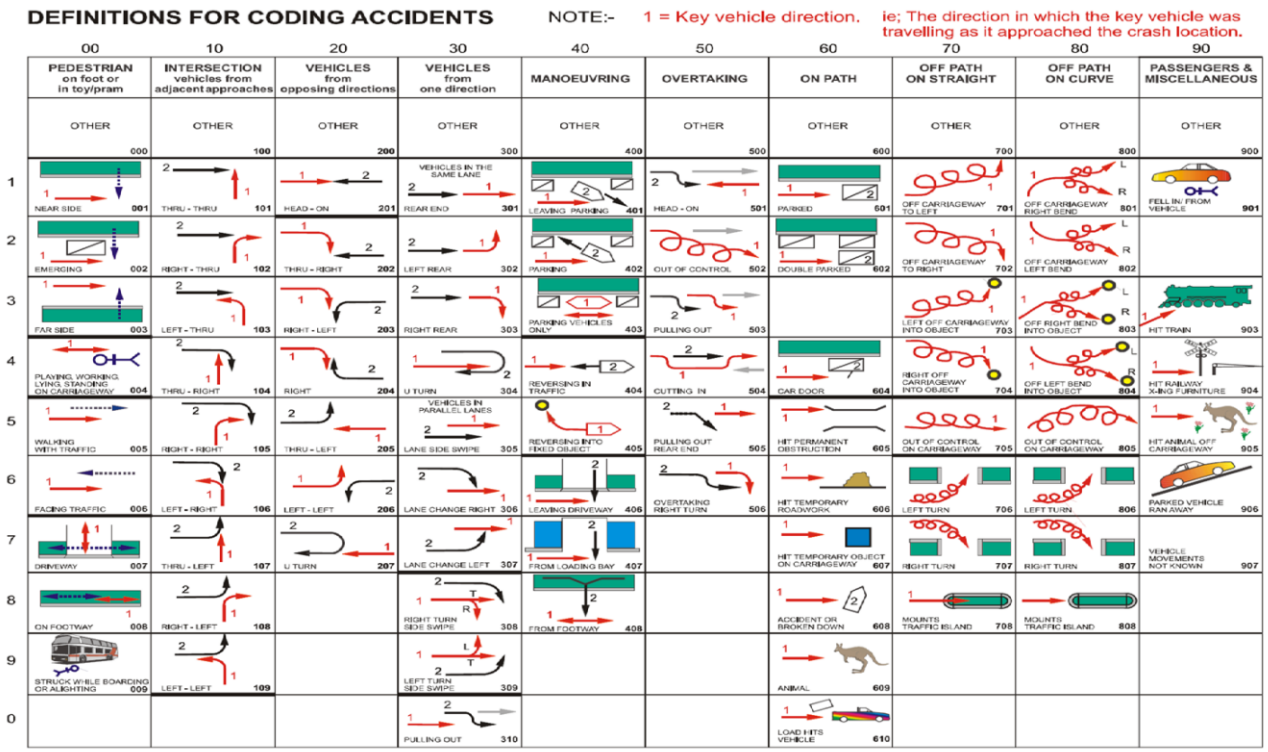


Figure A.9 – Ipswich, FSI Crashes by Crash Type 2008 - 2017

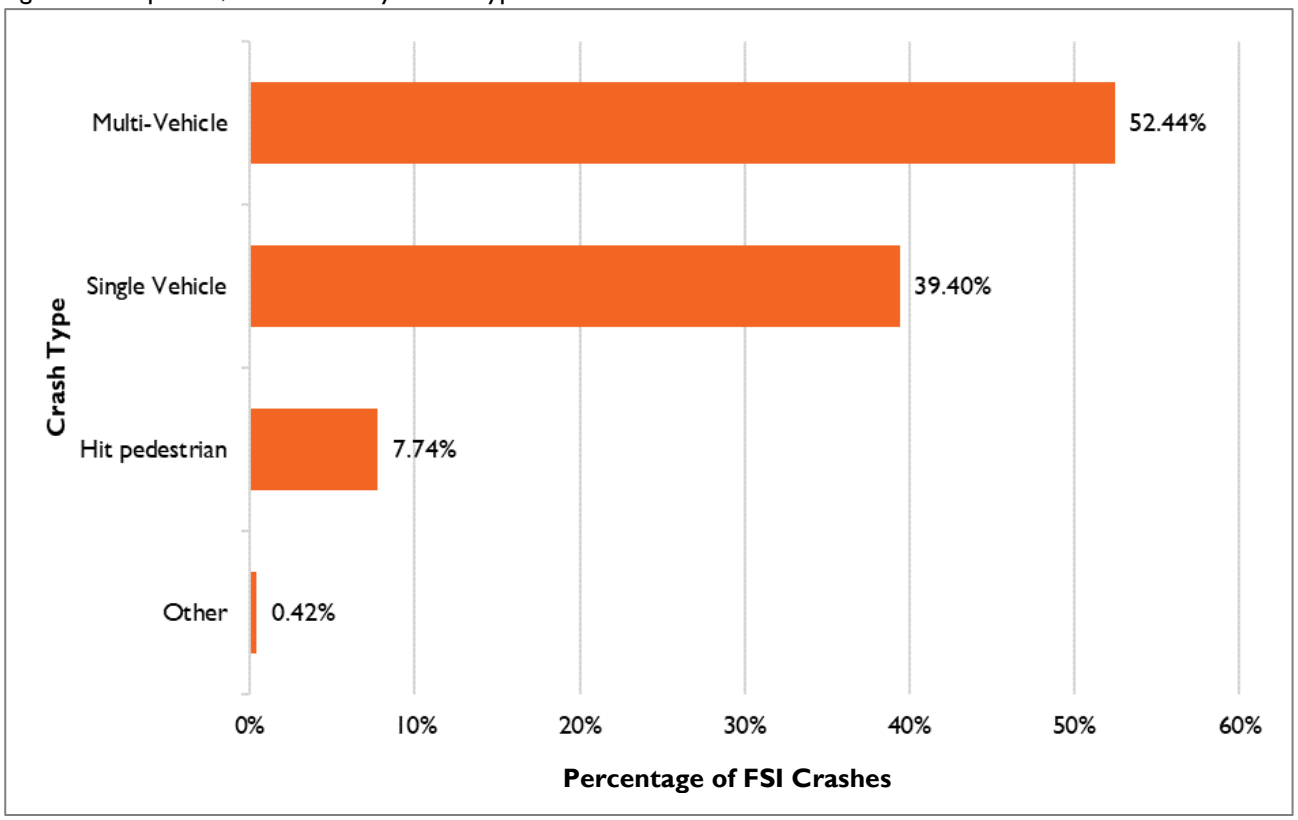


Figure A.10 – Ipswich, Single Vehicle FSI Crashes by Crash Nature 2008 - 2017

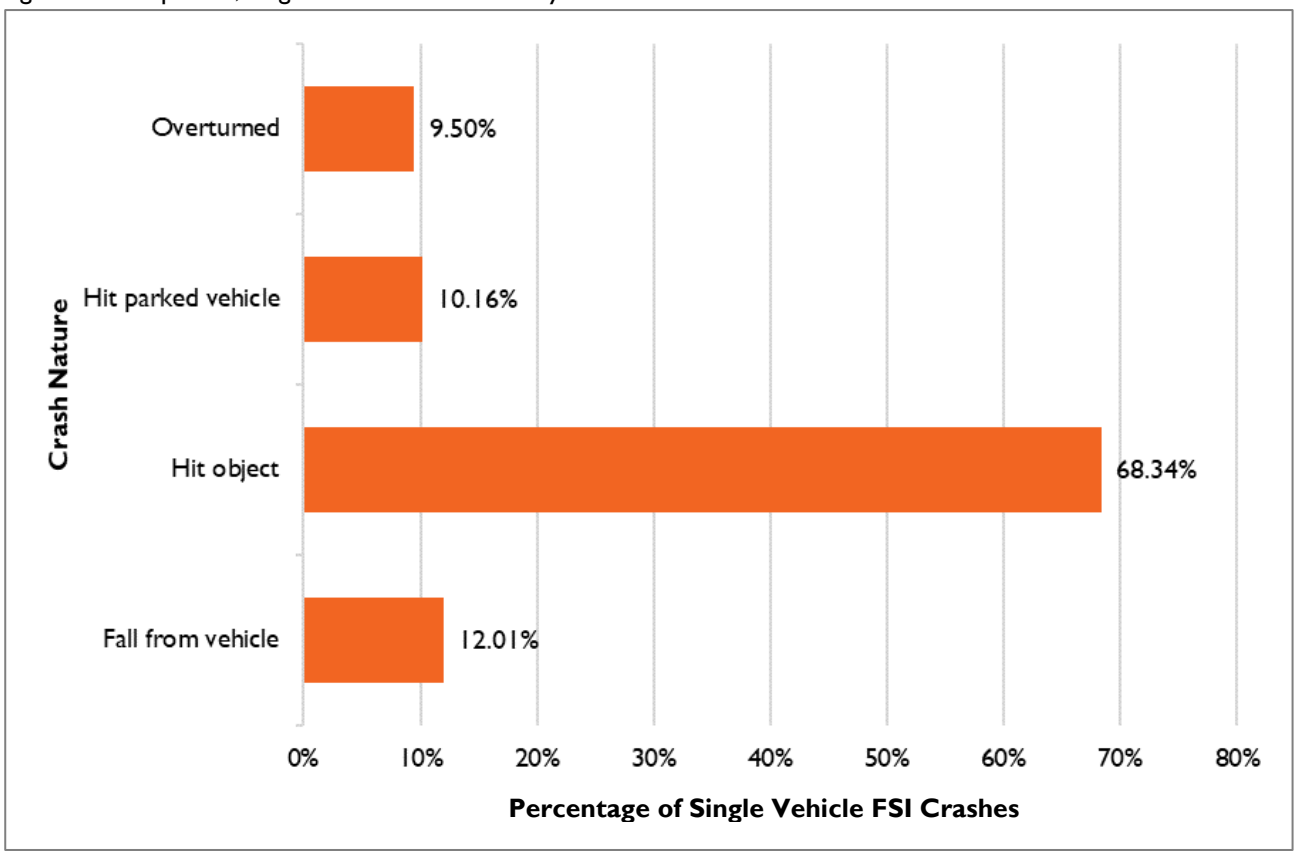
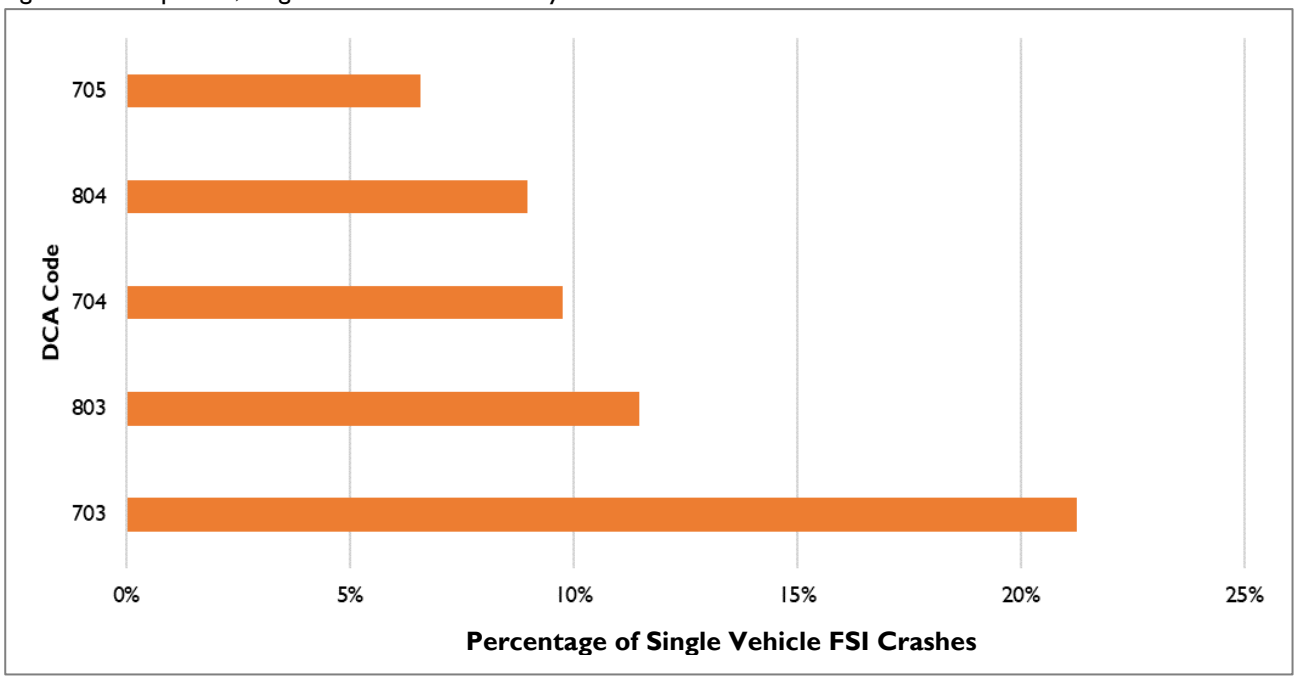


Figure A.11 – Ipswich, Single Vehicle FSI Crashes by DCA Code 2008-2017



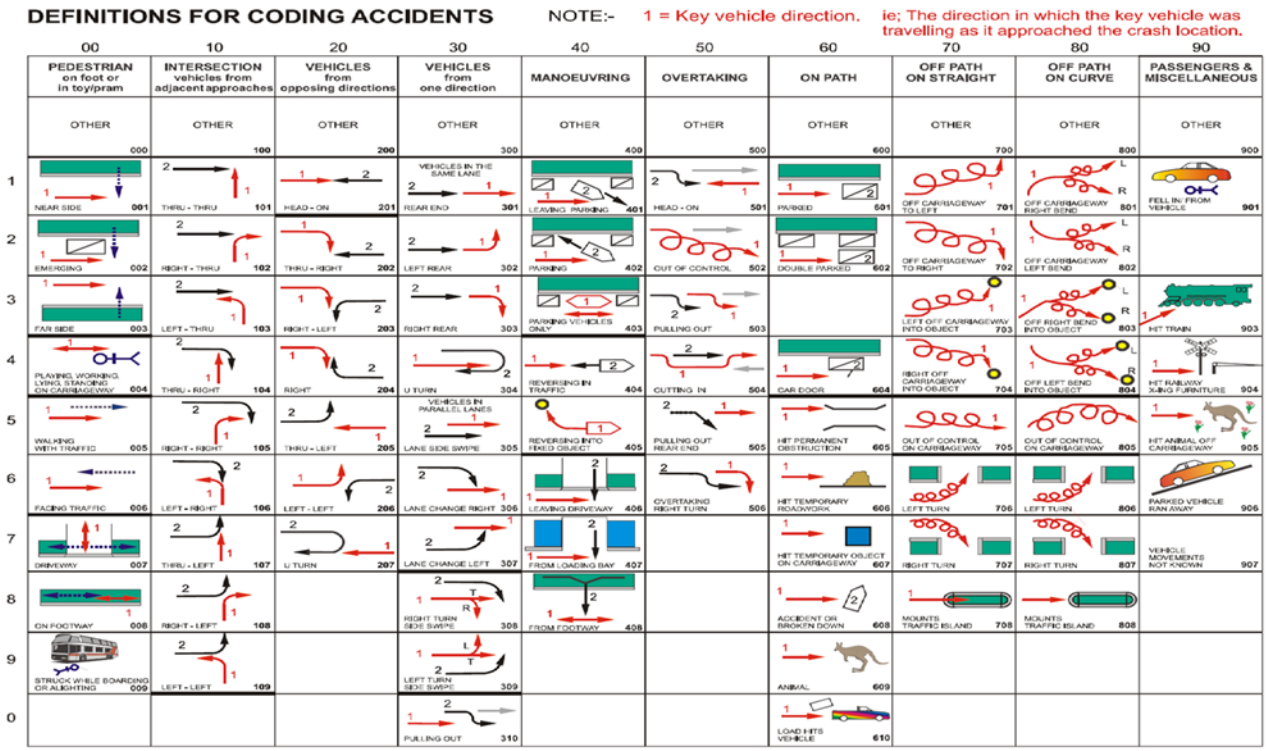


Figure A.12 – Ipswich, Fatal Crashes by Crash Nature 2008-2017

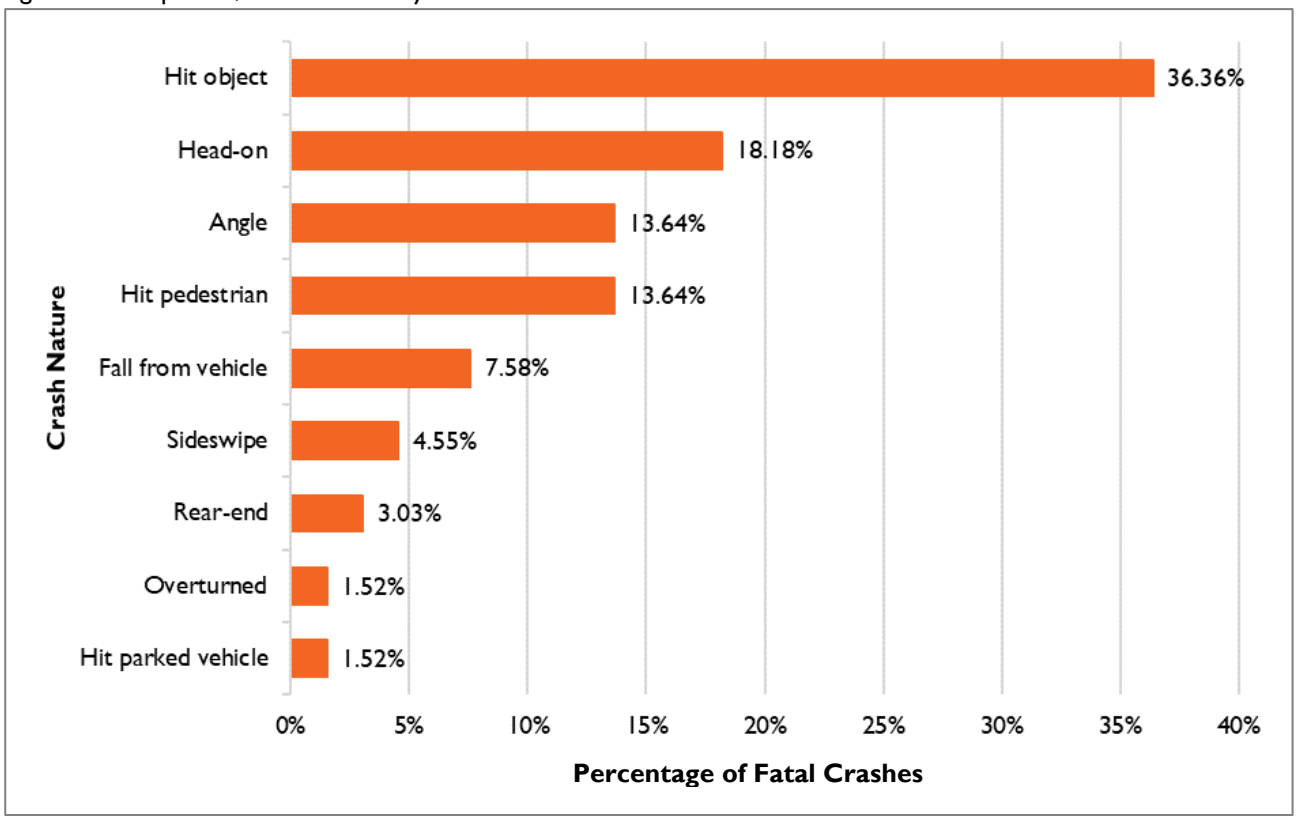
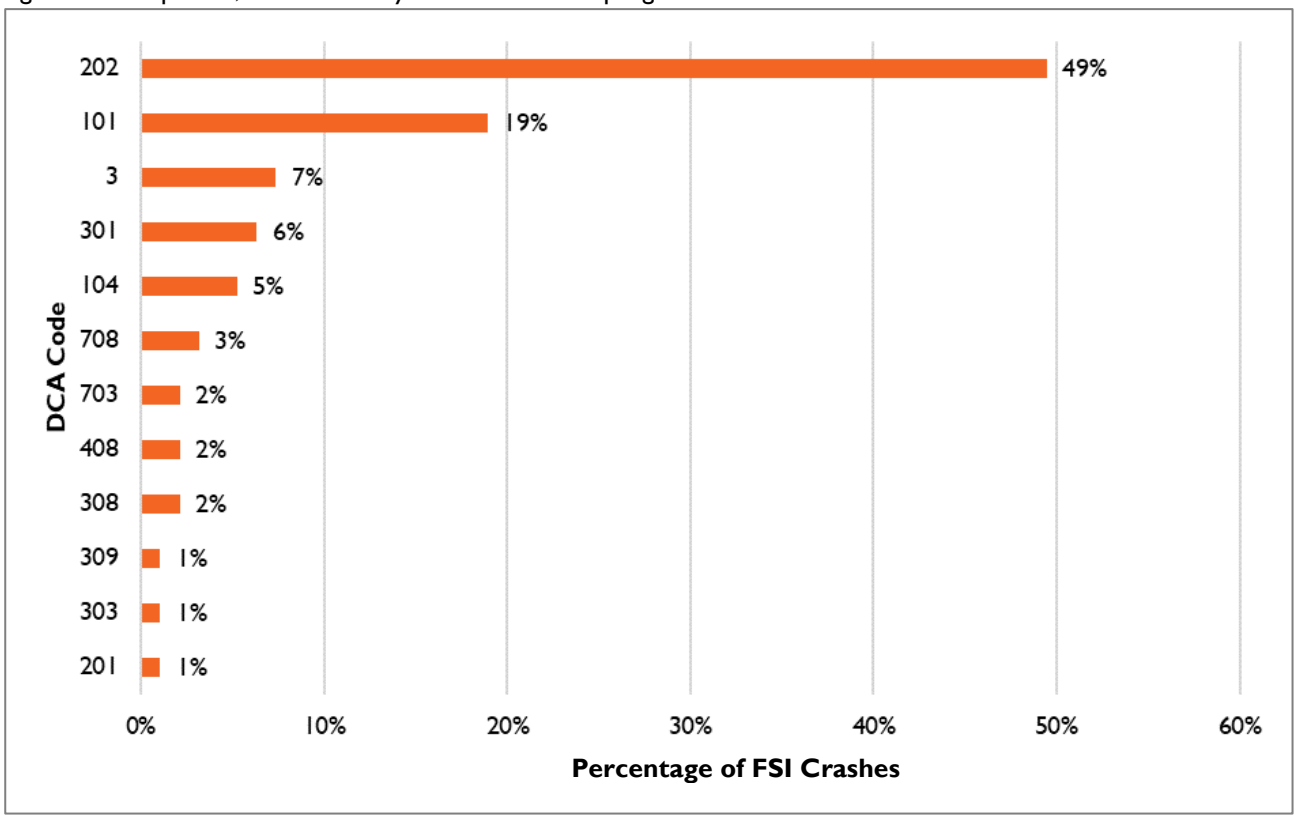


Figure A.13 – Ipswich, FSI Crashes by DCA Code at Top Signalised Intersections 2008-2017



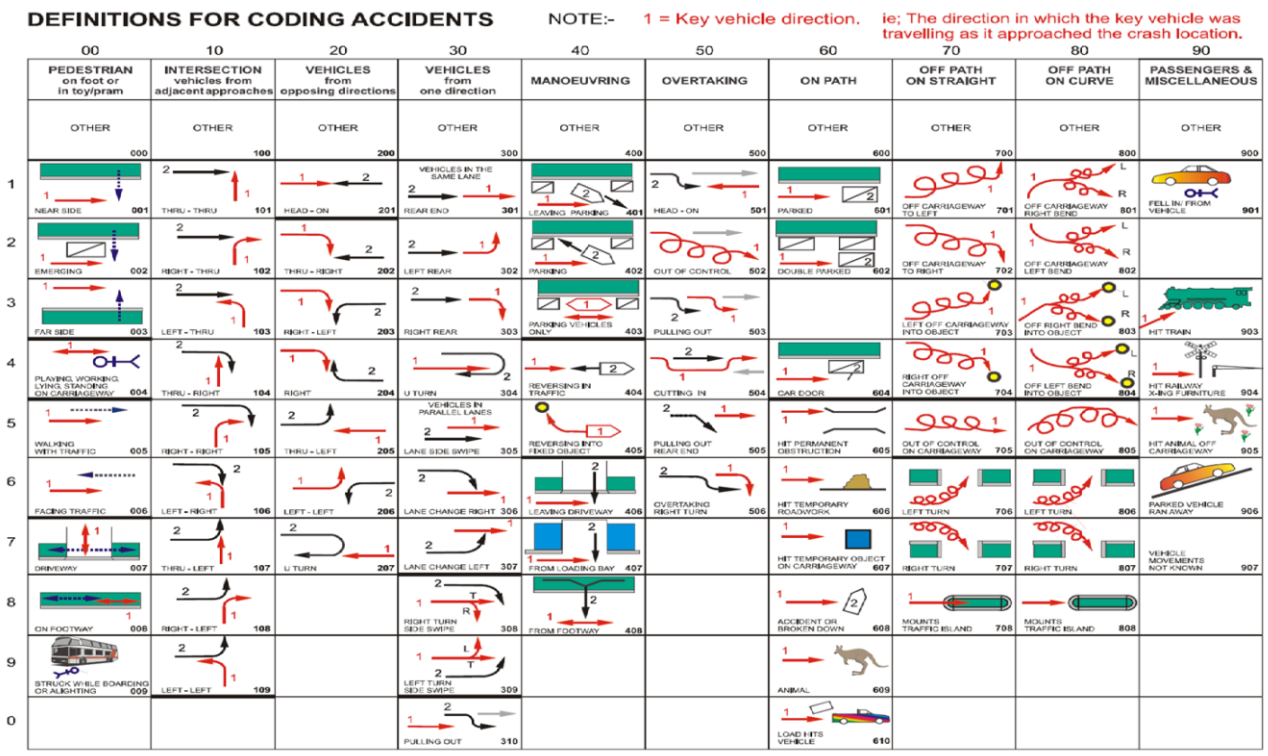


Figure A.14 – Ipswich, Pedestrian FSI Crashes Between 3pm and 9pm by Day of the Week 2008 - 2017

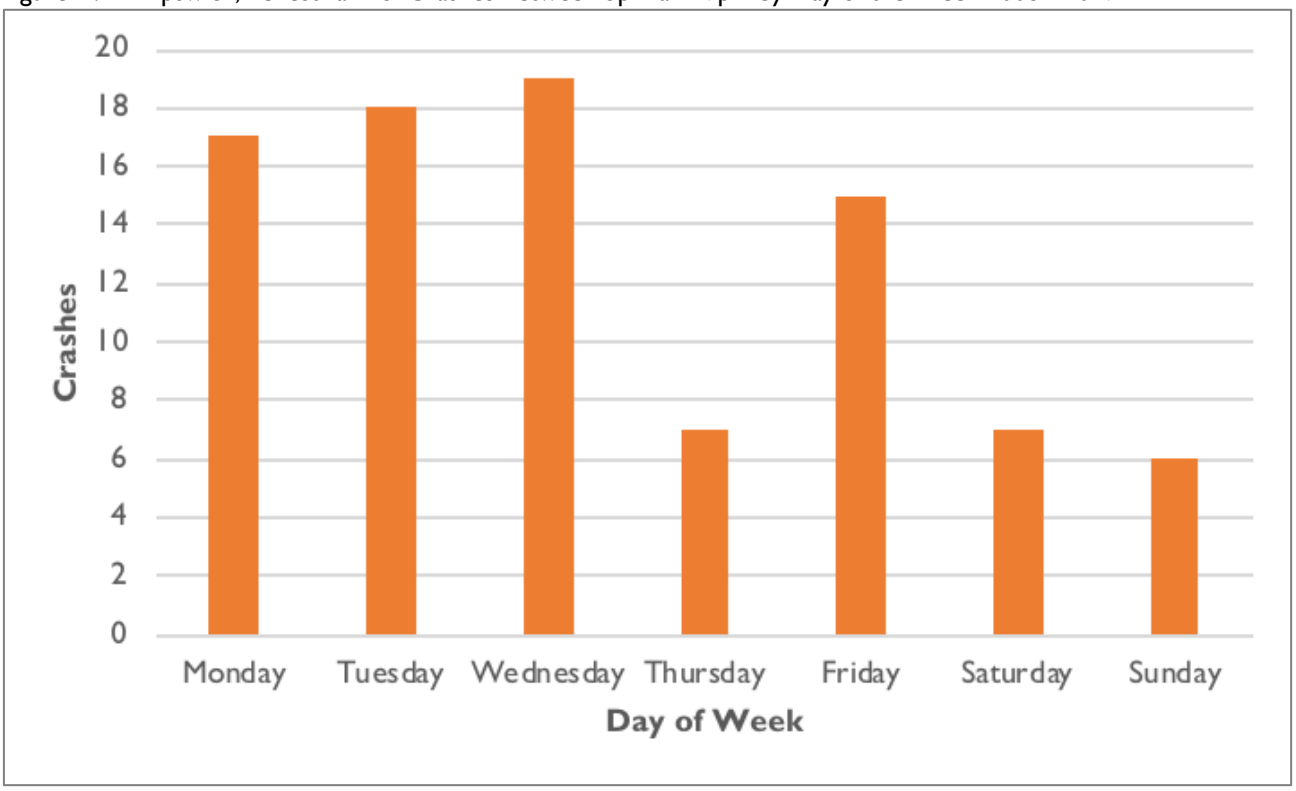
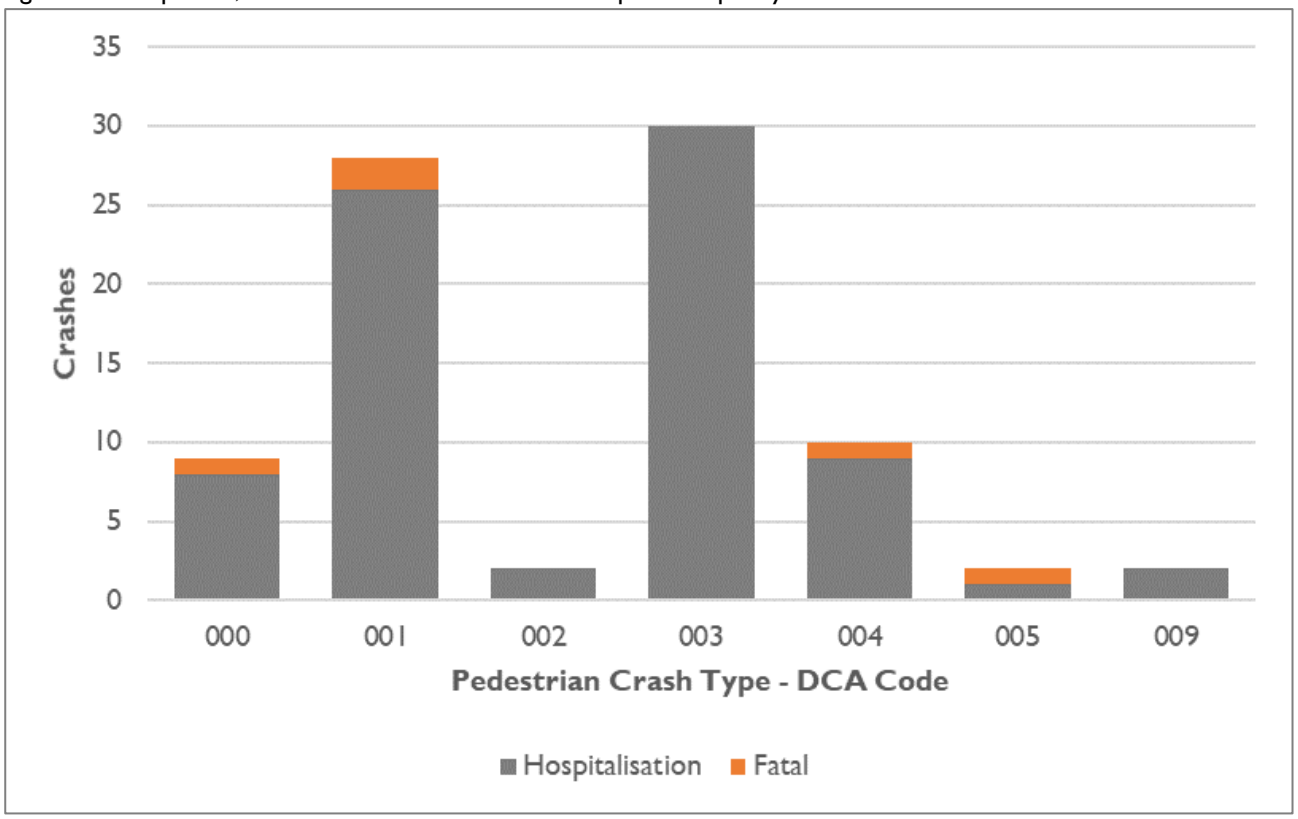


Figure A.15 – Ipswich, Pedestrian FSI Crashes Between 3pm and 9pm by Pedestrian Crash DCA Code 2008



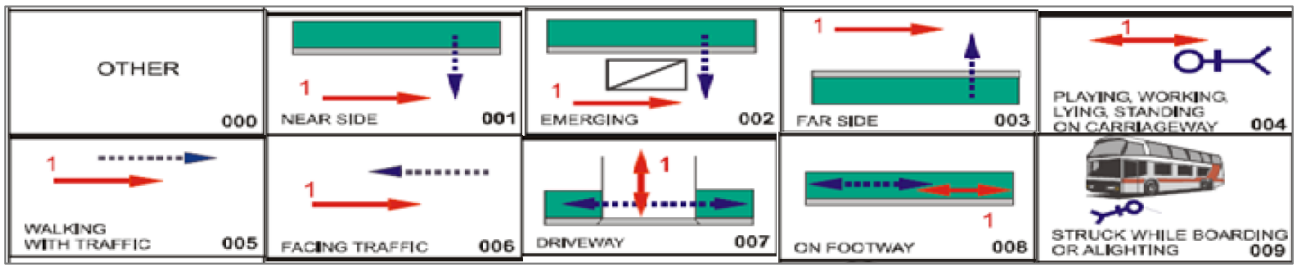


Figure A.16 – Southern Police Region, Pedestrian FSI Crashes by Gender 2008-2017

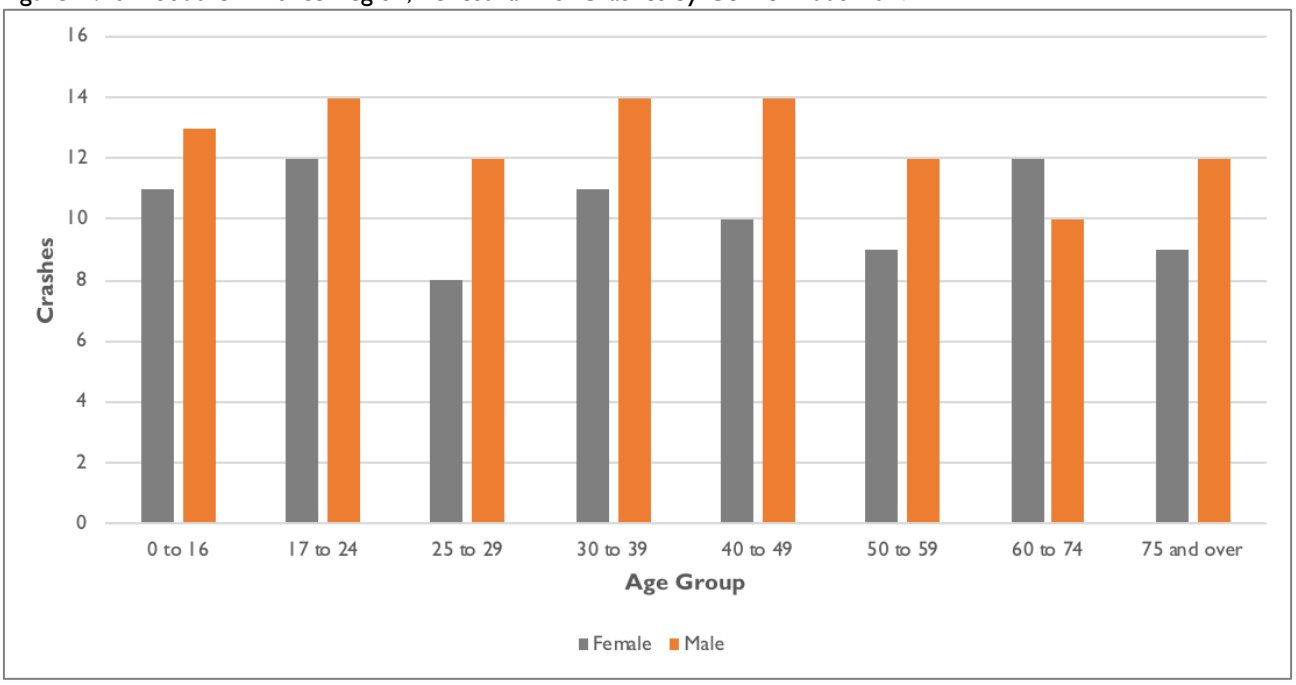


Figure A.17 – Southern Police Region, Cyclist FSI Crashes by Gender 2008-2017

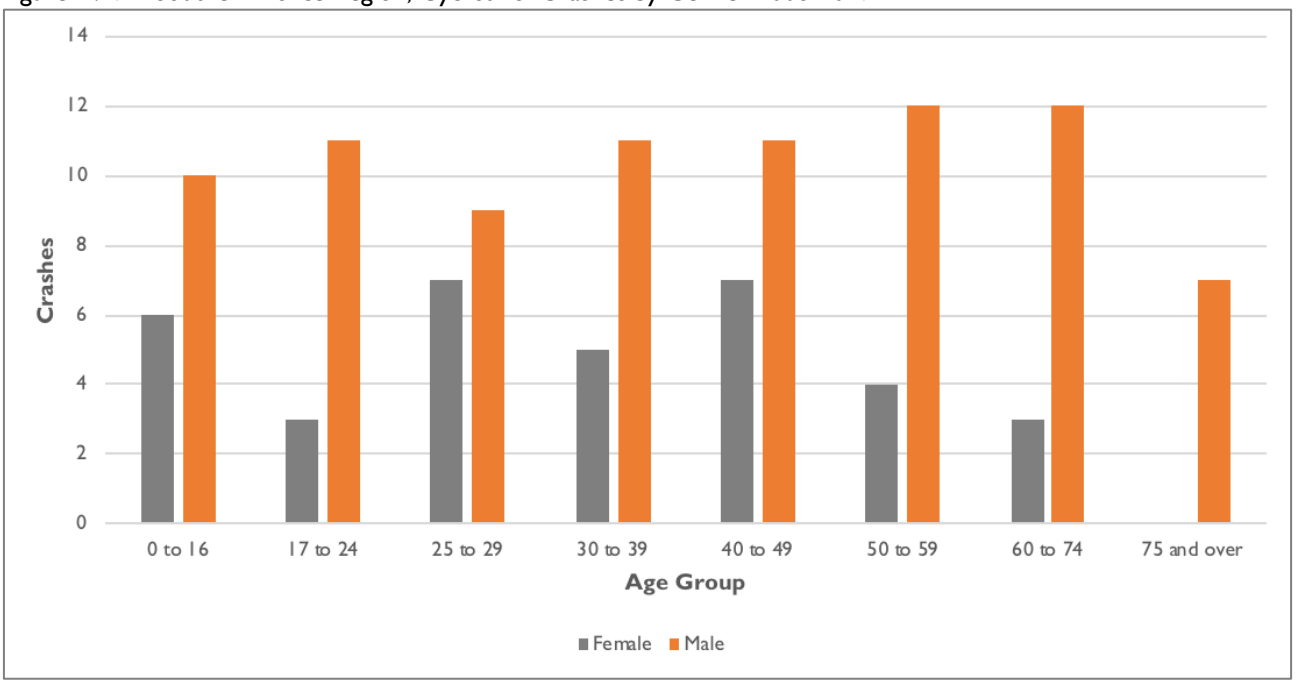


Figure A.18 – Southern Police Region, FSI Crashes by Age Group (2008-2017)

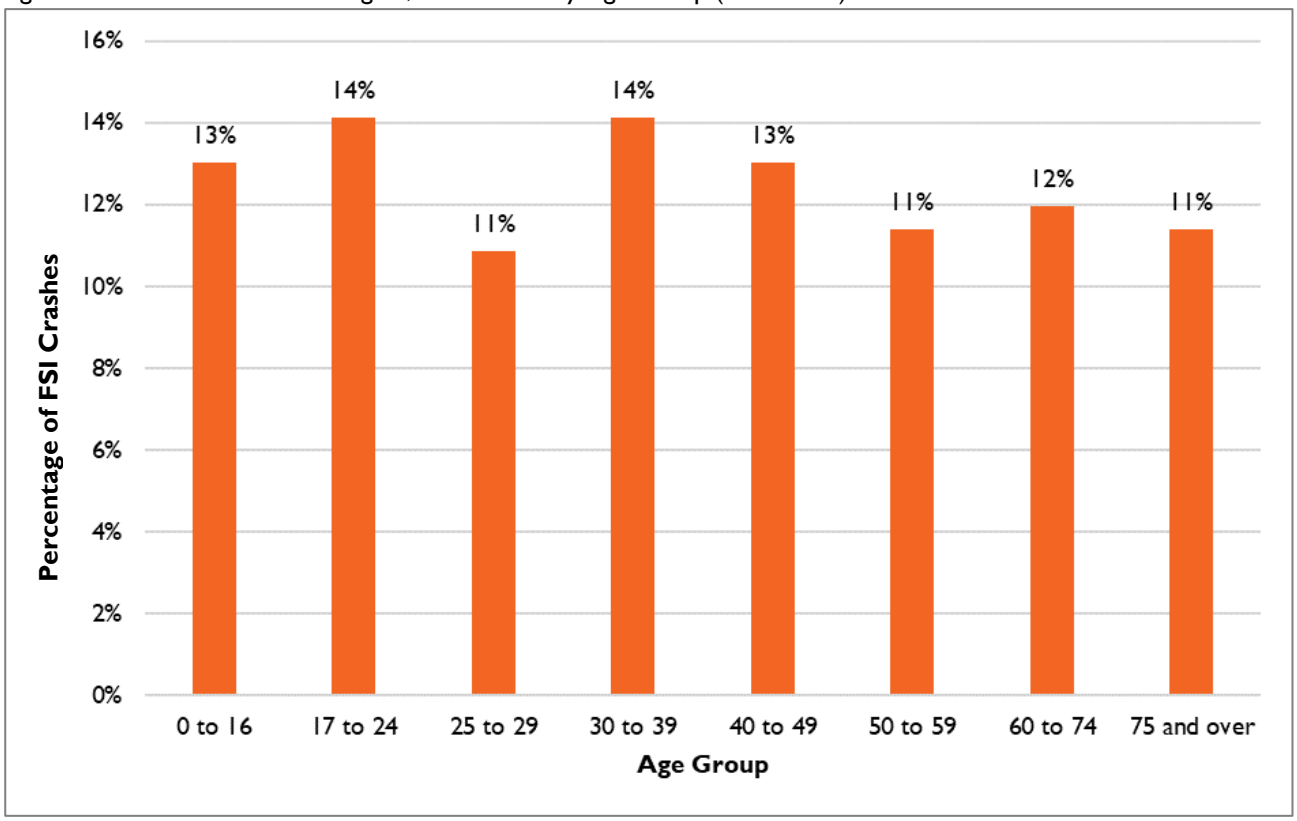


Figure A.19 – Comparison of FSI Crashes by SEQ LGA (2008-2017)

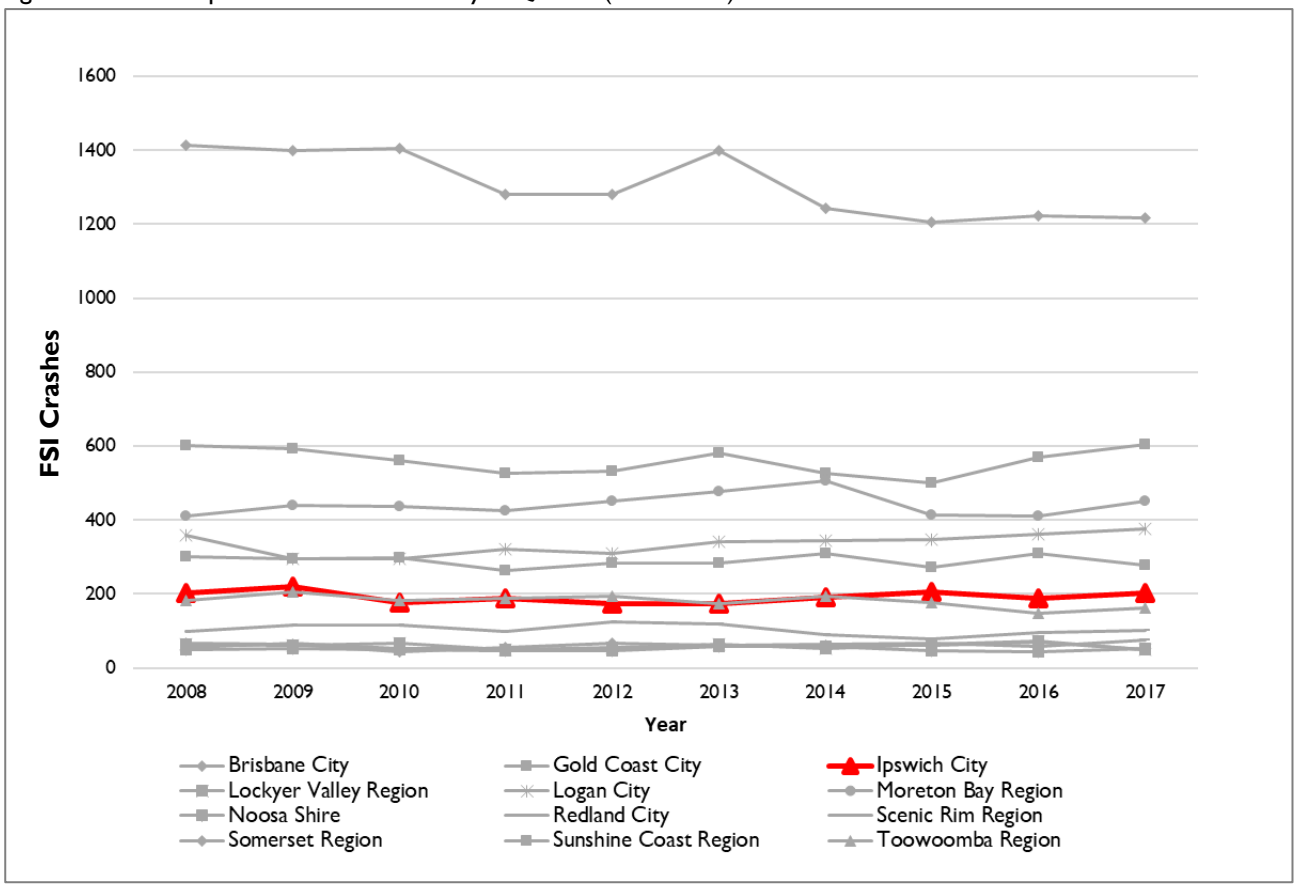


Figure A.20 – Comparison of FSI Crashes by Road User Type (2008-2017)

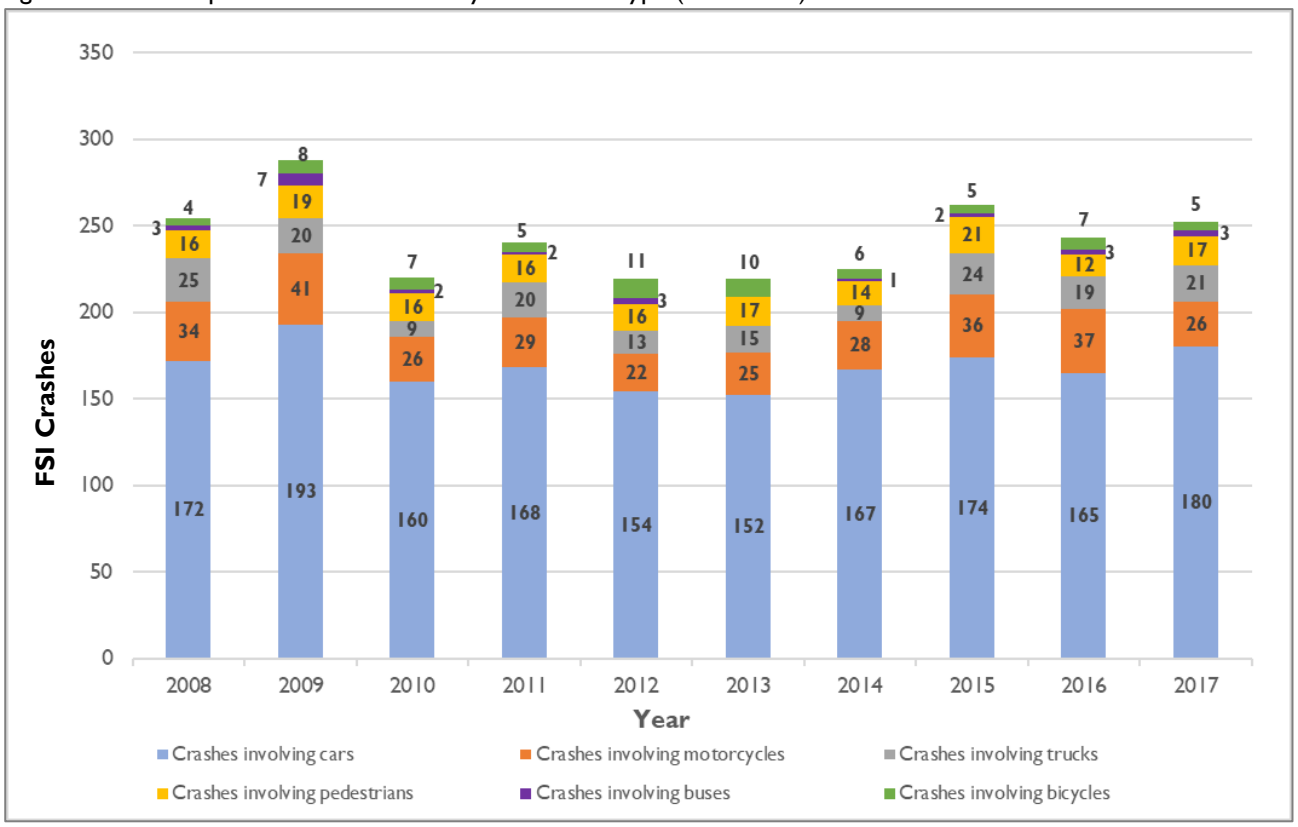
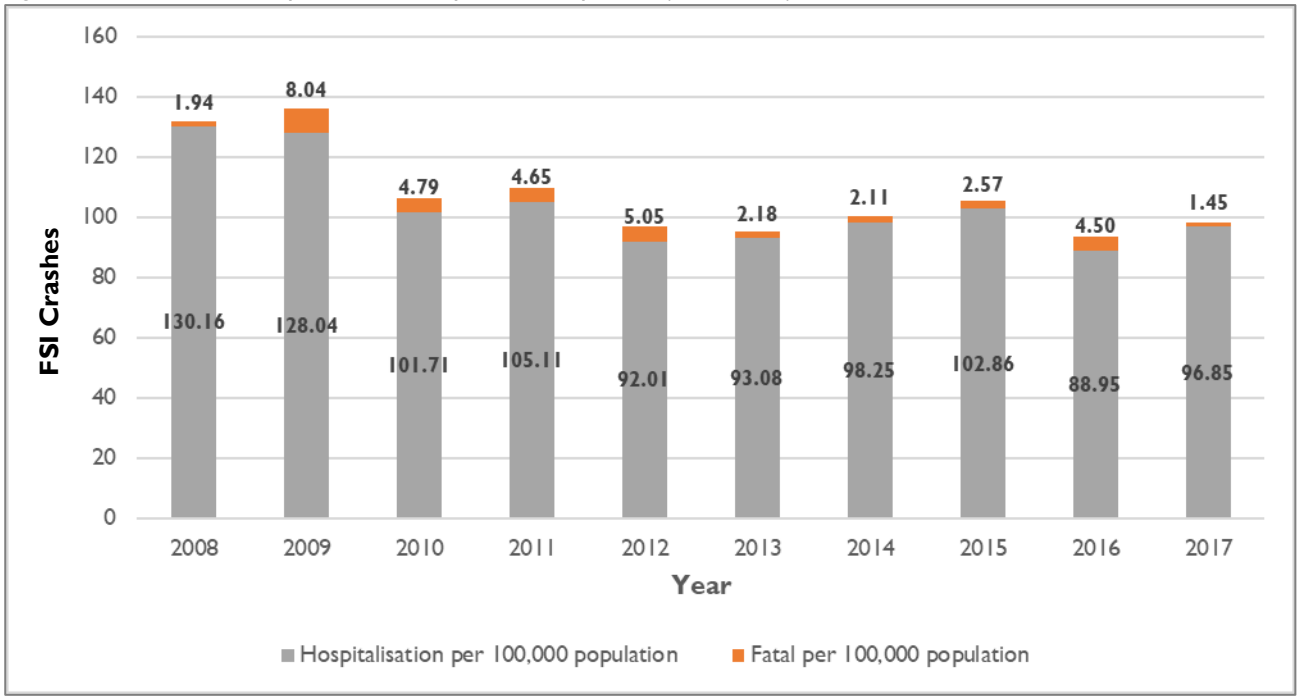
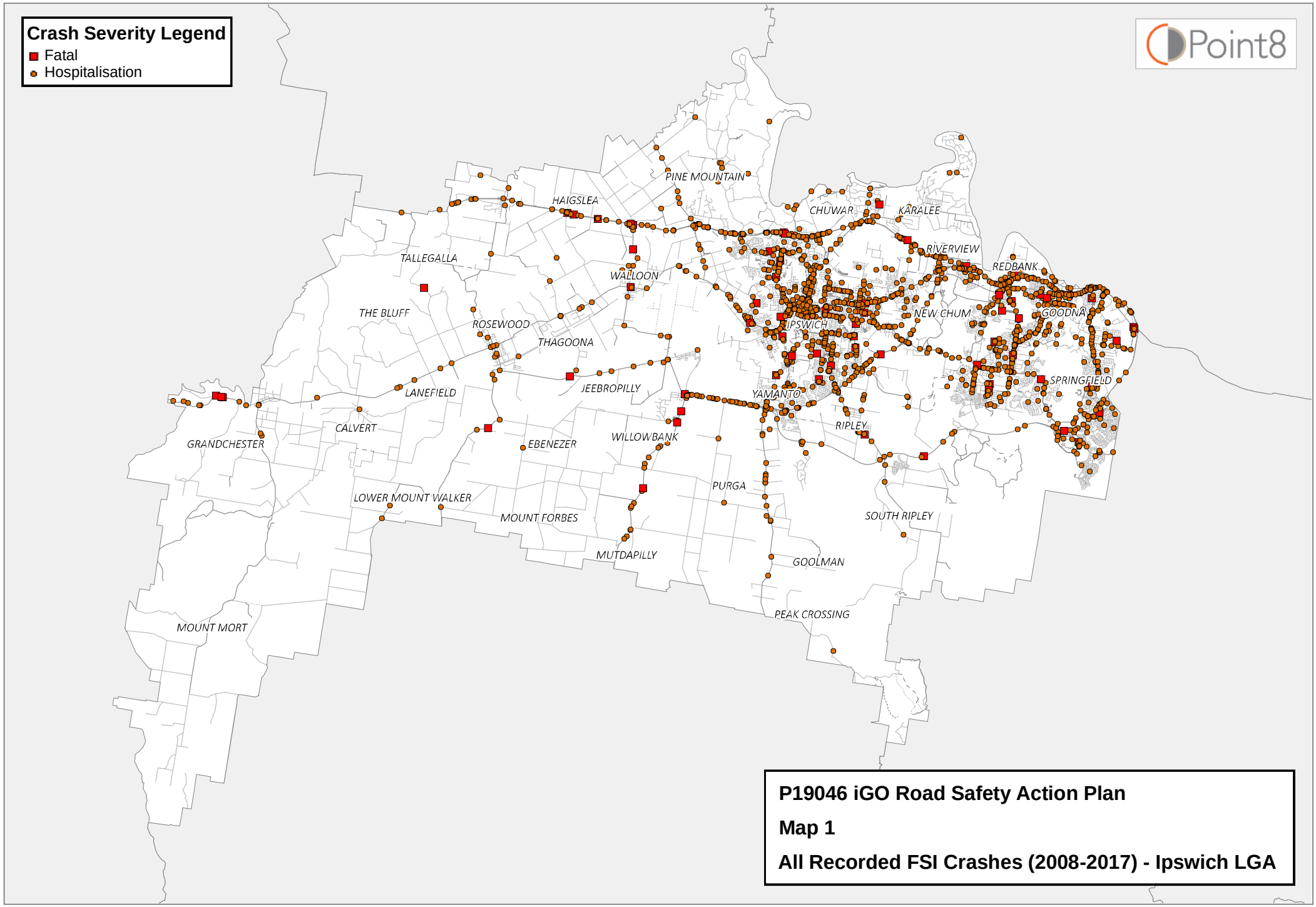


Figure A.21 – FSI Crashes per 100,000 Population in Ipswich (2008-2017)



Appendix B

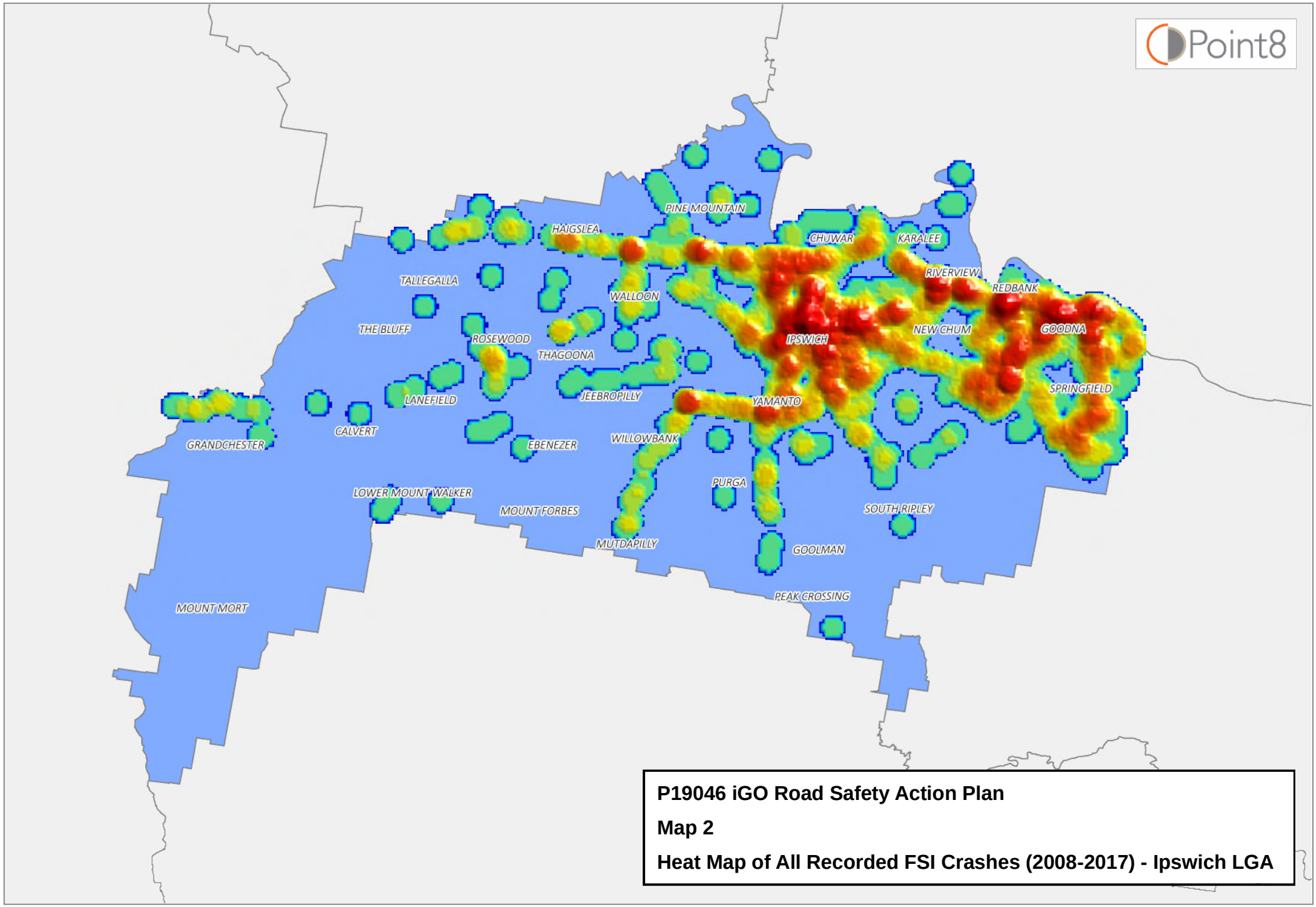
Crash Data Mapping



P19046 iGO Road Safety Action Plan

Map 1

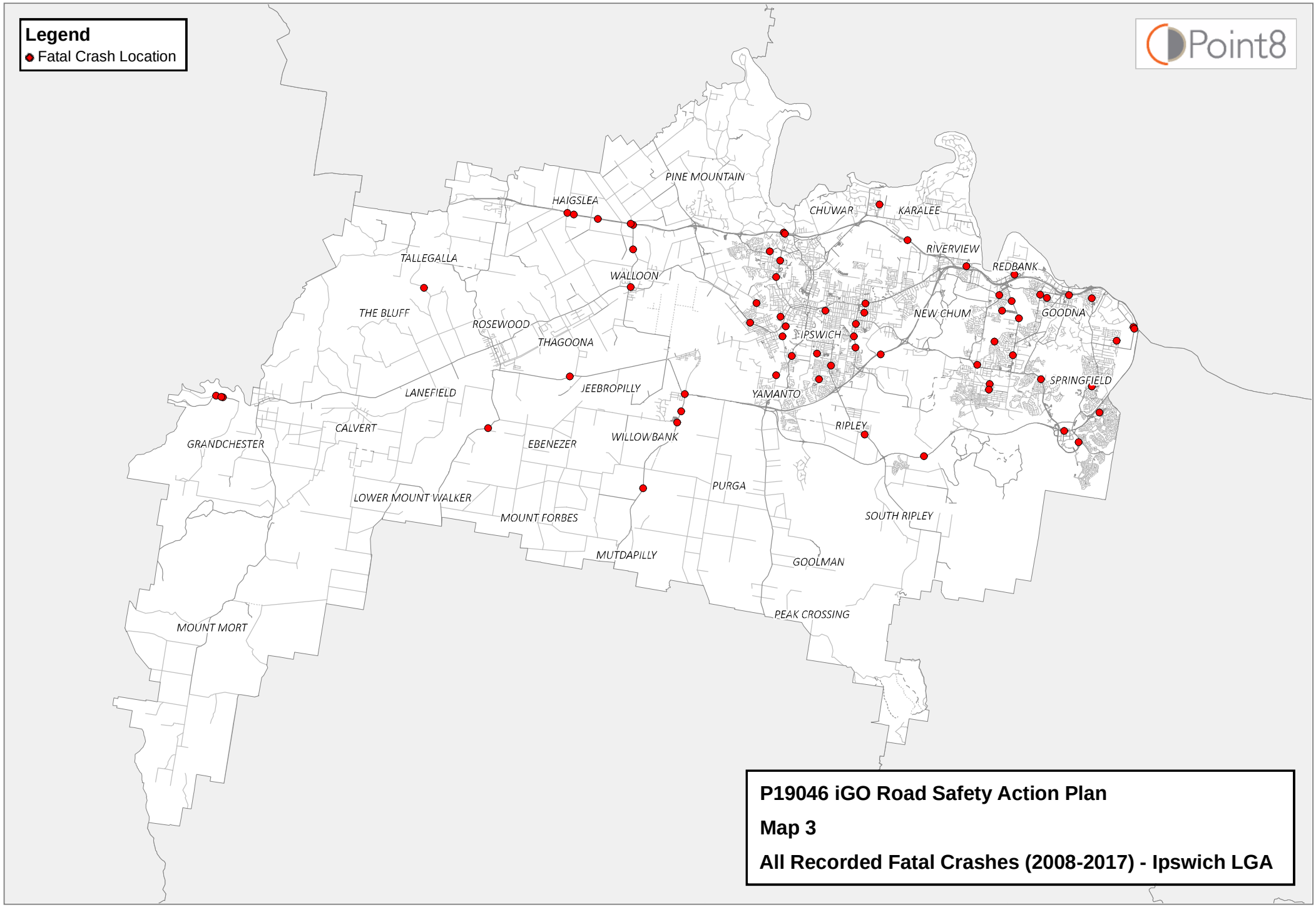
All Recorded FSI Crashes (2008-2017) - Ipswich LGA



P19046 iGO Road Safety Action Plan

Map 2

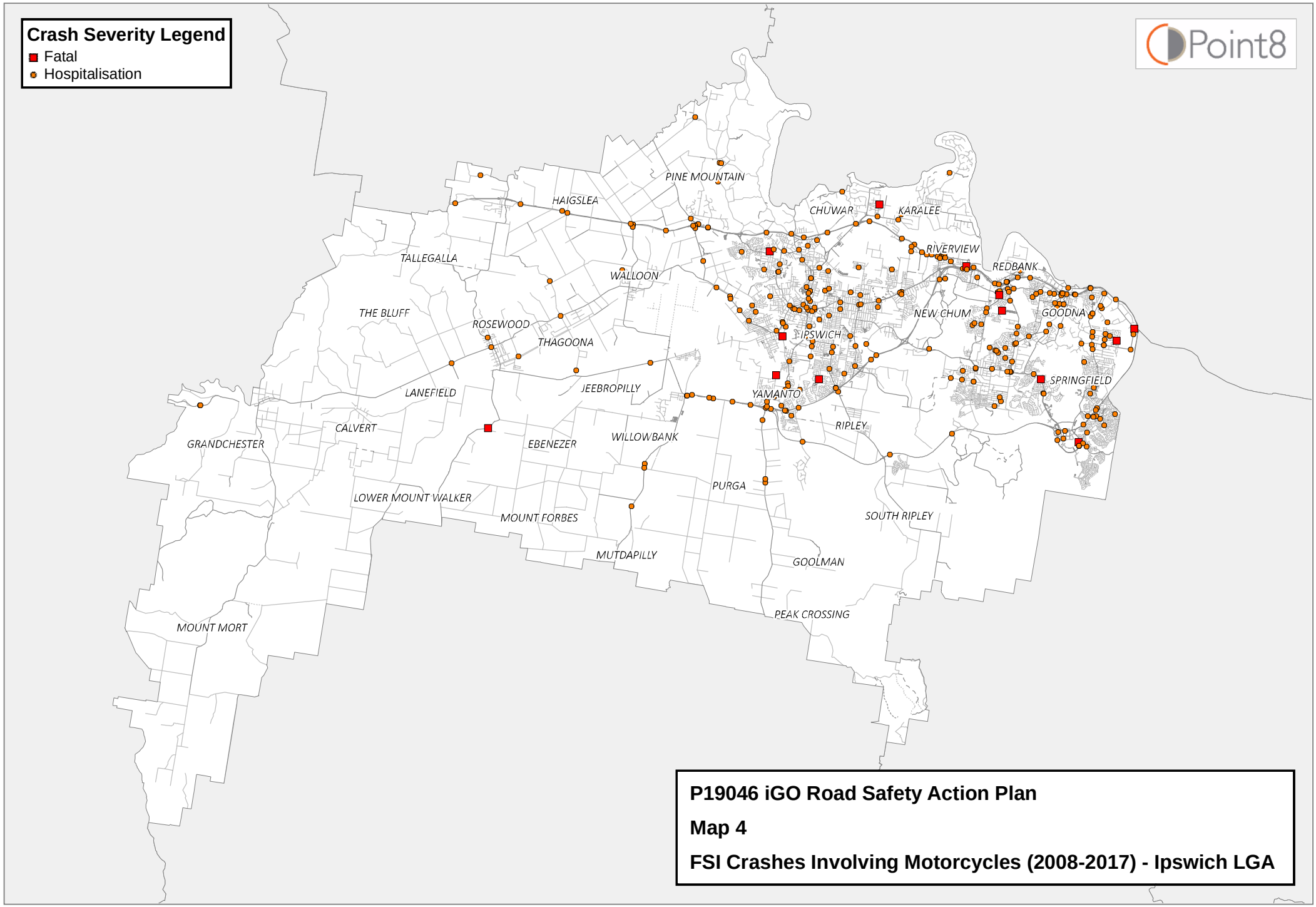
Heat Map of All Recorded FSI Crashes (2008-2017) - Ipswich LGA



P19046 iGO Road Safety Action Plan

Map 3

All Recorded Fatal Crashes (2008-2017) - Ipswich LGA



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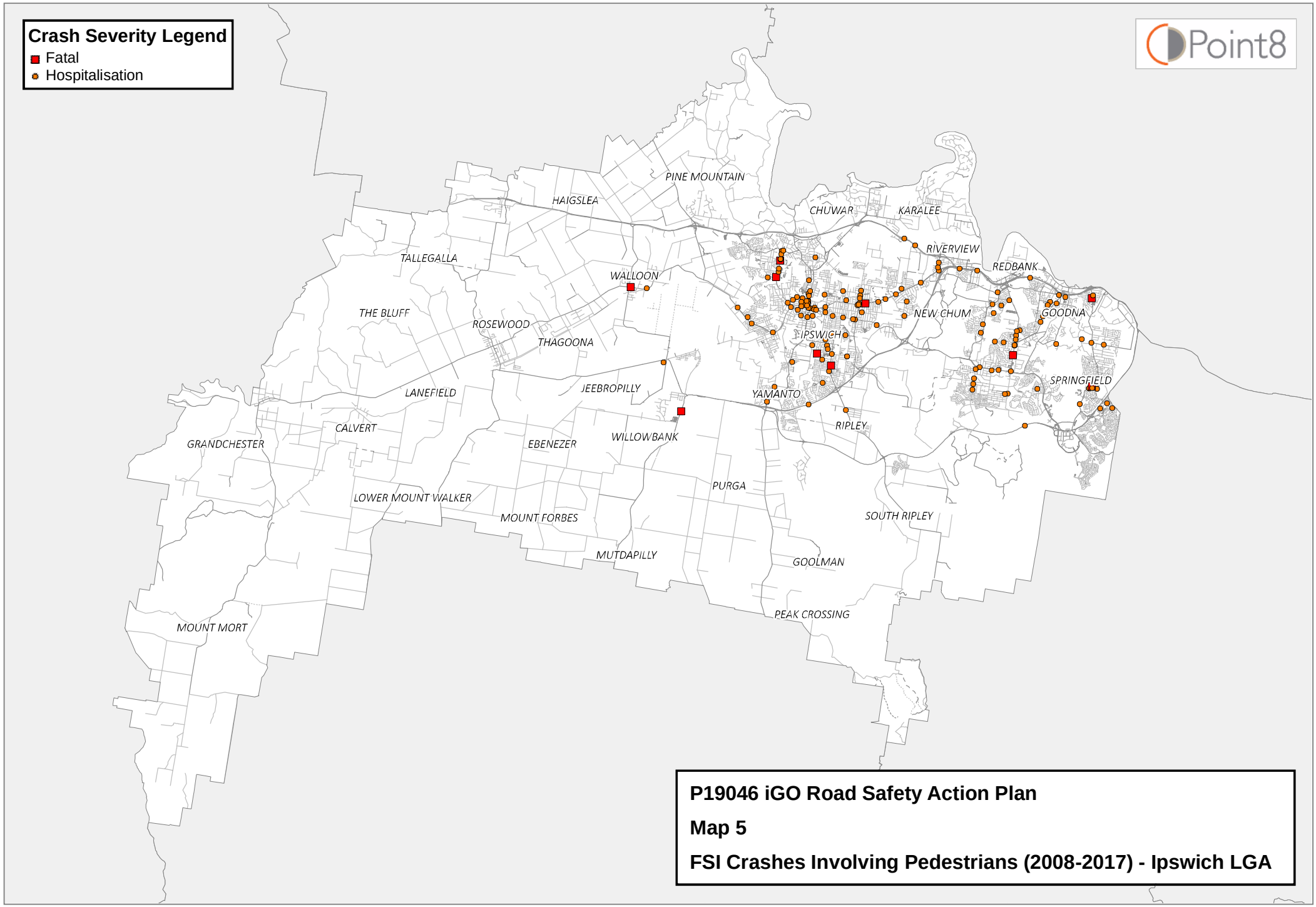
Map 4

FSI Crashes Involving Motorcycles (2008-2017) - Ipswich LGA



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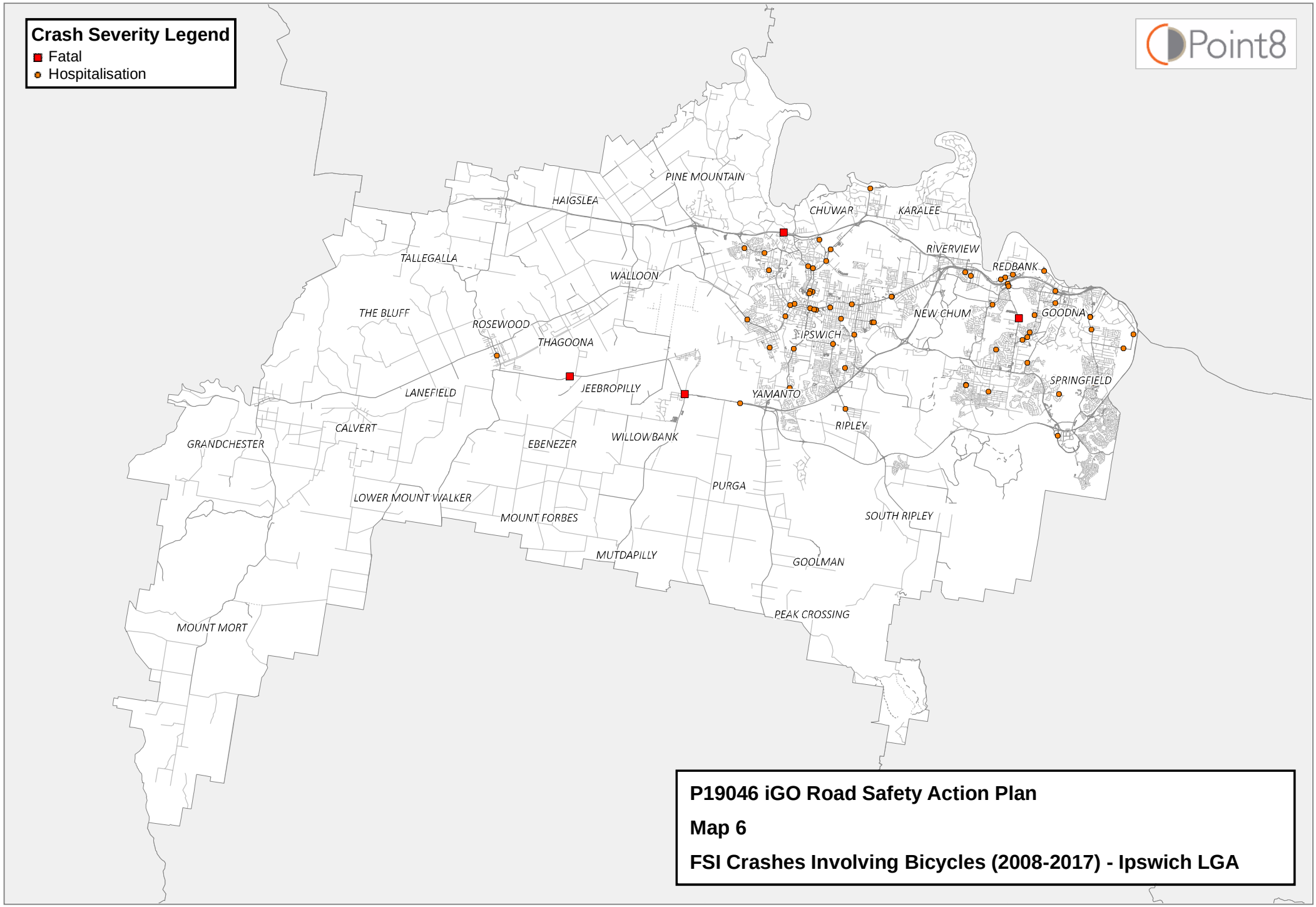
Map 5

FSI Crashes Involving Pedestrians (2008-2017) - Ipswich LGA



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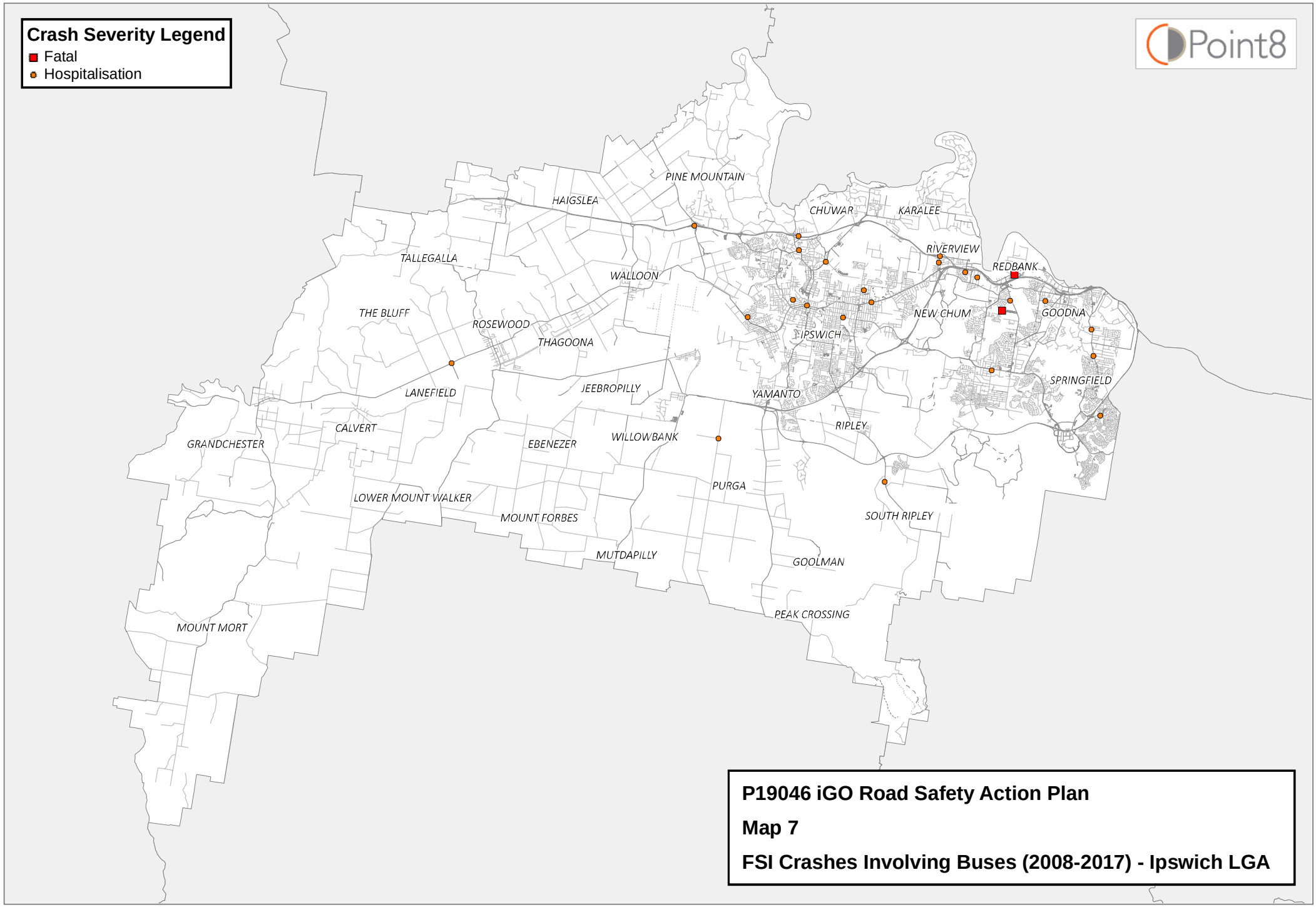
Map 6

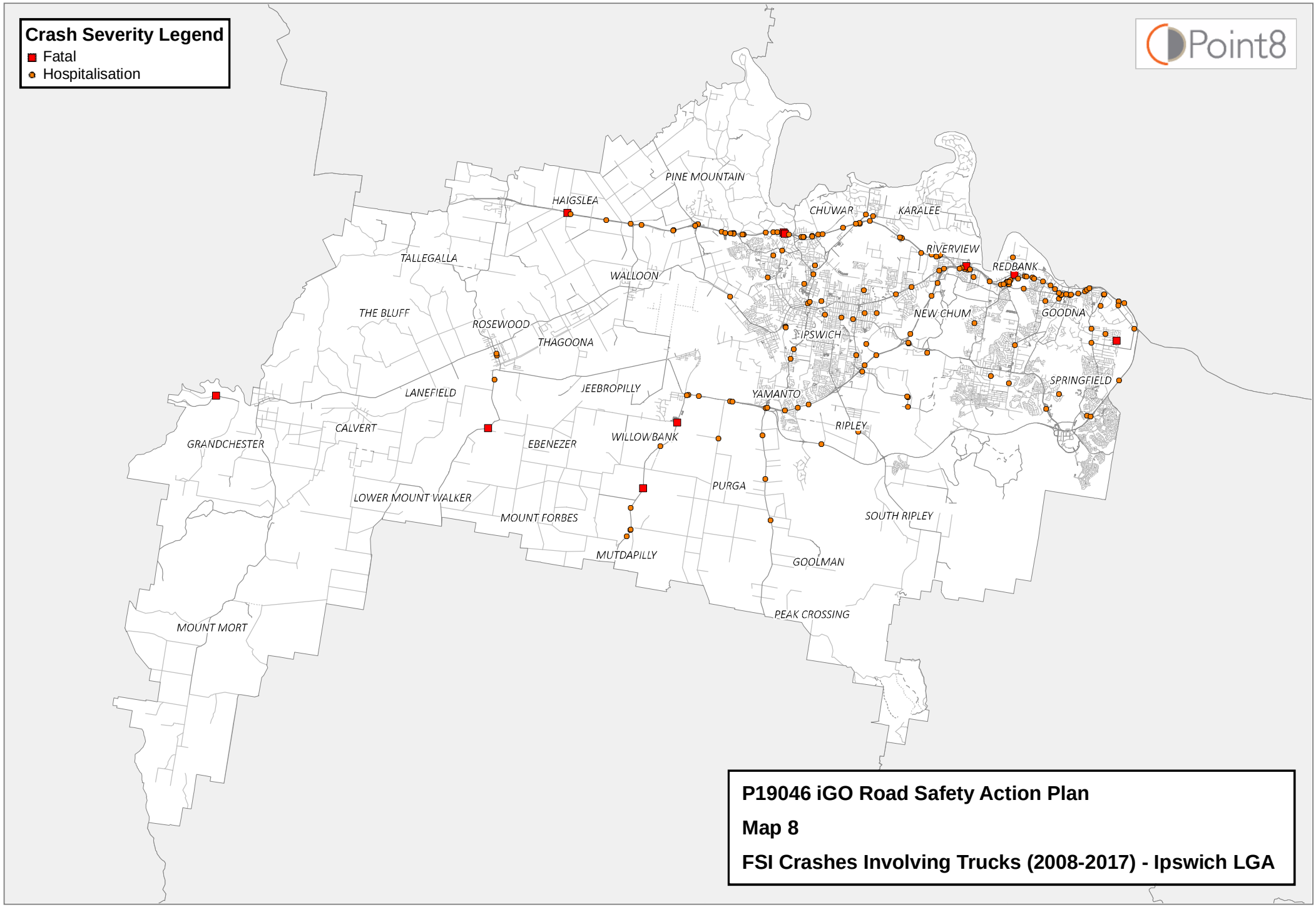
FSI Crashes Involving Bicycles (2008-2017) - Ipswich LGA



P19046 iGO Road Safety Action Plan

Map 7

FSI Crashes Involving Buses (2008-2017) - Ipswich LGA



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Map 8

FSI Crashes Involving Trucks (2008-2017) - Ipswich LGA

Appendix C

RSAP Actions

ID	Action	Action Type	Area of Opportunity	Safe System	Timeframe	LEAD	Stakeholders	Funding Requirements
C1	Identify opportunities to enable inter-organisational shared access to road safety tools, information and statistical resources to enable timely response to road safety issues.	Innovative		Safe People	Short	ICC	TMR, QPS, QH, QFES	Low cost / on-going investment
C2	Encourage the use of facilities such as Willowbank Raceway to provide motorsports enthusiasts with a safe, controlled environment away from local traffic and other road users.	Business as Usual	Males (Young and Old)	Safe People	Short	ICC	Willowbank Raceway, QPS, TMR	Low cost / on-going investment
C3	Investigate innovative opportunities to increase the delivery of road safety education for young people in the Ipswich region. This will include targeted education with respect to the unique road safety risks experienced by different age groups.	Innovative	Pedestrians & Males (Young and Old)	Safe People	Medium	ICC & TMR	DoE, QPS, QH, ICC, QFES, RACQ	Medium cost / on-going investment
C4	Improve community awareness of the dangers of driving while fatigued by providing information on the road safety risks associated with a variety of health problems and lifestyle choices. Campaigns will encourage at-risk persons to seek medical advice to reduce their fatigue risks as well as consider alternative modes of transport.	Innovative	Commuter Fatigue & Health	Safe People	Medium	QH	ICC, TMR	Medium cost / on-going investment
C5	Encourage and improve active travel amongst school students by further developing school-based road safety programs such as the Active School Travel (AST) program and walk to school week.	Business as Usual	Pedestrians	Safe People	Short	ICC	DoE, TMR, QPS, QH, QFES	Low cost / on-going investment
C6	Enable community groups (such as sporting clubs, not-for-profit organisations, etc.) to assist in generating road safety awareness within the region through the development and distribution of promotional road safety packages and materials.	Innovative	Driver Behaviour	Safe People	Short	ICC & TMR	QPS, QH, QFES, DoE	Low cost / on-going investment
I1	Identify mass action programs that can provide low-cost safety improvements and be delivered through new works programs with additional funding (e.g. guardrails, lighting, guideposts, signs and lines).	Business as Usual	Roadside Hazards	Safe Roads	Medium	ICC	TMR	Low cost / on-going investment
I2	Review existing trends at intersections within the region and identify opportunities to improve pedestrian safety by providing increased pedestrian protection phasing at signals or low-cost treatments to increase awareness of pedestrian presence.	Business as Usual	Pedestrians & Intersections	Safe Roads	Medium	ICC & TMR		Medium cost / once-off investment
I3	Develop and deliver a program of works for the implementation of safe cycling and pedestrian facilities in accordance with iGO ATAP (e.g. Action 2.1) in urban activity centres and locations such as the CBD, train stations or public transport interchanges to encourage changes to preferred transport mode in the region.	Business as Usual	Pedestrians	Safe Roads	Medium	ICC	TMR	High cost / on-going investment

ID	Action	Action Type	Area of Opportunity	Safe System	Timeframe	LEAD	Stakeholders	Funding Requirements
14	Investigate, upgrade and improve the safety and functionality of existing intersections and mid-block sections through on-going review/upgrade programs. The intersections to be considered include, but are not limited to: - Robertson Road and Whitehill Road, Eastern Heights - Cobalt Street and Johnson Road, Carole Park - Collingwood Drive and Smiths Road, Redbank - Alice Street and Old Logan Road, Camira - Grange Road and Robertson Road, Raceview - Haig Street and Vogel Road, Brassall - Alice Street and Queen Street, Goodna - Cyprus Street and Hill Street, North Ipswich - Cedar Road and Redbank Plains Road. Redbank Plains - Collingwood Drive and Eagle Street, Collingwood Park The mid-block sections to be considered include, but are not limited to: Redbank Plains Road, Redbank Plains Queen Street, Goodna Brisbane Street, West Ipswich Old Logan Road, Camira Redbank Plains Road, Bellbird Park School Road, Redbank Plains This list shall be reviewed annually based on available data.	Business as Usual	Intersections & Roadside Hazards	Safe Roads	Long	ICC	TMR	High cost / on-going investment
15	Improve safety and functionality on motorways, highways and arterial roads including Warrego Highway, Cunningham Highway and Brisbane Road with a focus on opportunities to improve safety and operations at major intersections and connecting signalised intersections.	Business as Usual	Core Arterial Roads	Safe Roads	Medium	TMR	ICC	High cost / on-going investment
16	Identify opportunities to improve the safety of existing and new infrastructure at or around schools within the network through existing infrastructure programs such as the School Transport Infrastructure Program.	Business as Usual	Pedestrians	Safe Roads	Short	ICC & TMR	DoE	Medium cost / on-going investment
17	Investigate opportunities to improve cyclist and pedestrian safety by providing signage and line marking to increase awareness amongst road users with respect to priorities on roadways and in shared spaces. Focus will be placed on the priority routes identified in the Principal Cycle Network Plan such as Brisbane Road (Stafford Street to Ipswich Motorway) and Glebe Road.	Business as Usual	Pedestrians	Safe Roads	Medium	ICC & TMR		Medium cost / on-going investment

ID	Action	Action Type	Area of Opportunity	Safe System	Timeframe	LEAD	Stakeholders	Funding Requirements
I8	Improve cyclist and pedestrian safety through the delivery of designated user infrastructure.	Business as Usual	Pedestrians	Safe Roads	Medium	ICC & TMR		High cost / on-going investment
I9	Improve pedestrian and cyclist safety through the identification of locations where safety can be implemented at low-cost, through measures such as speed reductions and pedestrian prioritisation treatments.	Innovative	Speeds	Safe Speeds	Short	ICC & TMR		Medium cost / on-going investment
I10	Investigate opportunities to make infrastructure changes that can assist emergency services and improve response times.	Innovative		Safe Roads	Long	ICC & TMR	QPS & QFES	Low cost / once-off investment
O1	Improve road safety awareness through the delivery of collaborative education campaigns, focusing on key periods such as Road Safety Week, Fatality Free Friday and Bike Week.	Business as Usual		Safe People	Short	ICC & TMR	QPS, QH, QFES, DoE	Low cost / on-going investment
O2	Develop and implement targeted programmes of enforcement focusing on issues such as unlicensed driving/riding, speeding, use of helmets.	Business as Usual	Driver Behaviour	Safe People	Short	QPS	ICC & TMR	Low cost / on-going investment
O3	Engage with major employment generators to develop and implement Sustainable Workplace Travel Plans to encourage and provide incentives for employees to travel to work via sustainable modes of transport. A pilot program for Ipswich City Council workers could be considered in the short term.	Innovative	Pedestrians	Safe People	Long	ICC		Medium cost / once-off investment
O4	Collaborate with local and state government departments to encourage the implementation or update of standards and regulations that relate to the maintenance of fleet vehicles and safe operating procedure.	Innovative		Safe Vehicles	Medium	All		Medium cost / once-off investment
O5	Collaboratively review all fatal and serious injury crash incidents (with the objective of identifying site-specific issues) as part of the iGO Road Safety and Operations Committee.	Innovative		Safe Roads	Short	ICC, QPS, TMR	QFES	Low cost / on-going investment

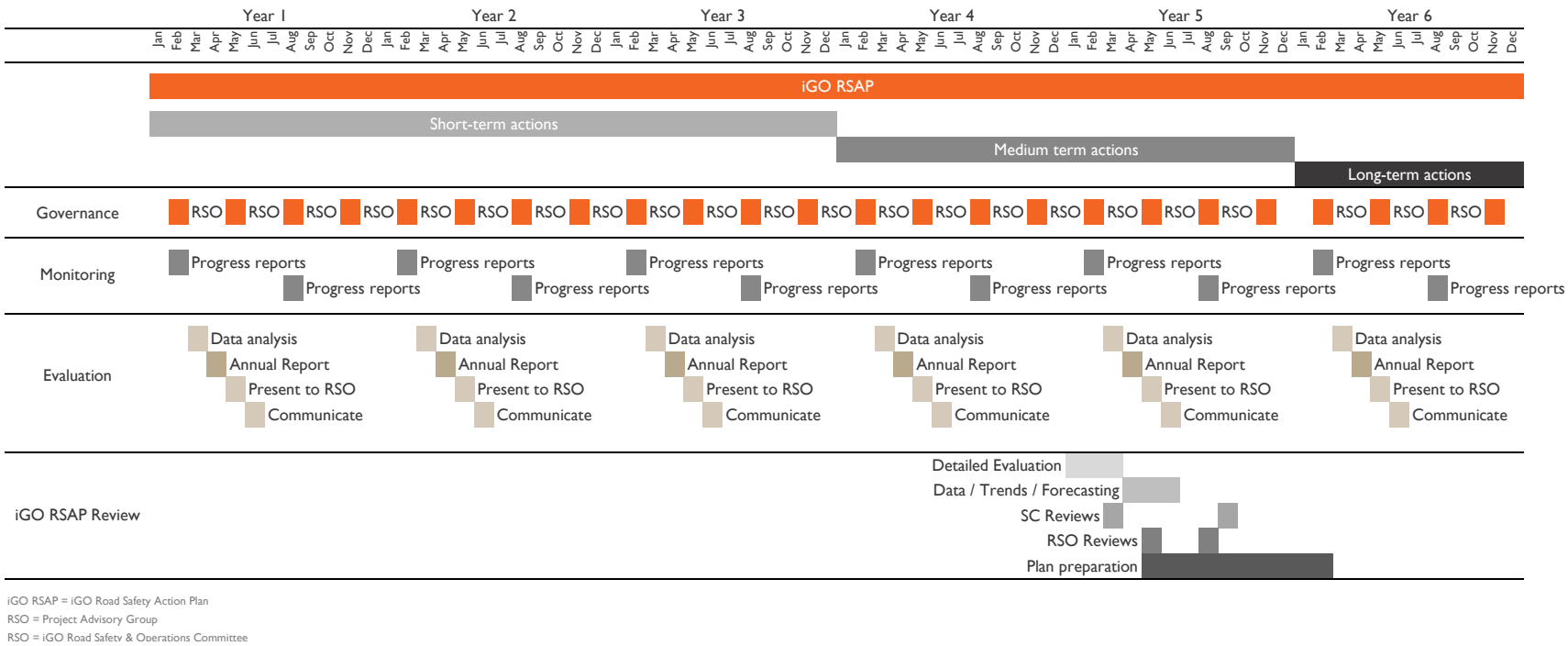
ID	Action	Action Type	Area of Opportunity	Safe System	Timeframe	LEAD	Stakeholders	Funding Requirements
O6	Discourage unsafe driving behaviours such as driving under the influence or using mobile devices through the implementation of targeted programs of enforcement and pro-active programmes to engage high-risk users through community outreach to schools, sporting clubs, not-for-profit organisations, etc.	Business as Usual	Drugs and Alcohol	Safe People	Short	QPS, QH, DoE	ICC & TMR	Medium cost / on-going investment
O7	Encourage and incentivise safe driver behaviour through novel programs that provide positive reinforcement messages and unanticipated rewards for positive road user behaviour such as wearing bicycle helmets, complying with speed signs, wearing seatbelts, and driving courteously.	Innovative	Driver Behaviour	Safe People	Short	QPS	ICC & TMR	Low cost / on-going investment
O8	Integrate the key strategies, objectives and goals of the iGO Road Safety Action Plan into other Ipswich City Council policy, procedures and guidelines such as the Streetscape Design Guidelines.	Business as Usual		Safe Roads	Medium	ICC		Low cost / once-off investment
S1	Establish a stakeholder agreement that commits all volunteering organisations to work collaboratively towards the improvement of road safety within the Ipswich region. Conduct an unveiling ceremony at the completion of the Road Safety Action Plan to signify this moment.	Innovative			Short	All		Low cost / once-off investment
S2	Establish an iGO Road Safety and Operations Committee made up of key stakeholders which meet quarterly to discuss general road safety issues and annually to review the iGO Road Safety Action Plan progress.	Innovative		Safe People	Short	ICC	TMR, QPS, QH, QFES, DoE	Low cost / on-going investment
S3	Continue to apply for state and federally-funded infrastructure programs such as the Safer Roads Sooner and the Black-Spot Program.	Business as Usual	Intersections, Roadside Hazards & Core Arterial Roads	Safe Roads	Short	ICC	TMR	Low cost / on-going investment
S4	Document the extent of the road network for which road safety audits have been undertaken and review of the outcomes of audits undertaken in the past. Subsequently, develop a prioritised list of high-risk locations to be considered for infrastructure improvements.	Business as Usual	Intersections, Roadside Hazards & Core Arterial Roads	Safe Roads	Short	ICC	TMR	Medium cost / once-off investment
S5	Develop a long-term programme of road safety audits for the local road network.	Business as Usual	Intersections, Roadside Hazards & Core Arterial Roads	Safe Roads	Long	ICC & TMR		Low cost / once-off investment

ID	Action	Action Type	Area of Opportunity	Safe System	Timeframe	LEAD	Stakeholders	Funding Requirements
S6	Generate increased awareness of road safety issues through the development of monthly social media messages on forums such as Ipswich First and other platforms.	Innovative	Driver Behaviour	Safe People	Short	ICC		Low cost / on-going investment
S7	Monitor and evaluate the progress of the Road Safety Action Plan annually through the use of evaluation tools and periodic performance reviews.	Innovative			Short	ICC	TMR, QPS, QH, QFES	Low cost / on-going investment
S8	Monitor and evaluate the overall progress of the Road Safety Action Plan at the end of the five-year period and review the impact on fatalities and serious injuries on the Ipswich road network.	Innovative			Long	ICC	TMR, QPS, QH, QFES	Low cost / on-going investment
S9	Undertake a review of roads within urban centres with high volumes of Active Transport users. Identify opportunities where localised or targeted speed limit reductions may be appropriate and warranted.	Innovative	Speeds	Safe Speeds	Short	ICC & TMR	QPS	Low cost / once-off investment
S10	Investigate opportunities to encourage mode-shift towards public transport through education and infrastructure that highlights the relationship between road safety and public transport (i.e. that choosing public transport may be a safer alternative than commuting long distances).	Business as Usual	Health	Safe People	Long	ICC & TMR		Low cost / once-off investment
S11	Investigate opportunities for the incorporation of low-cost smart road safety initiatives across the Ipswich region in alignment with the iGO Intelligent Transport Systems Strategy.	Business as Usual		Safe Roads	Short	ICC & TMR	QPS	Low cost / once-off investment
S12	Ensure that the safety of personal mobility device users (e.g. scooters and e-bikes) is at the forefront of future policy, planning and operations considerations.	Innovative	Pedestrians	Safe Vehicles	Long	ICC		Low cost / on-going investment
S13	Assist in ongoing plan implementation by ensuring adequate resources are assigned as a part of the iGO Resourcing Strategy.	Business as Usual		Safe Roads	Short	ICC		Low cost / on-going investment
S14	Establish an operational framework to enable the introduction and operation of Cooperative Intelligent Transport System (C-ITS) safety applications in Ipswich	Innovative		Safe Roads	Long	ICC		Low cost / once-off investment
S15	Actively support the Queensland Government's C-ITS trial in Ipswich, working with key stakeholders to achieve safer road environments and operations.	Innovative		Safe Roads	Short	ICC		Low cost / on-going investment

ID	Action	Action Type	Area of Opportunity	Safe System	Timeframe	LEAD	Stakeholders	Funding Requirements
S16	At the completion of the C-ITS trial, identify opportunities to further improve road safety in the C-ITS space and potentially roll out infrastructure throughout the city for connected vehicles.	Innovative		Safe Roads	Medium	ICC		Low cost / on-going investment
S17	Support the ongoing C-ITS testbeds in Ipswich and encourage future undertakings to support the actions and objectives of the Road Safety Action Plan.	Innovative		Safe Roads	Long	ICC		Low cost / on-going investment
U1	Encourage elderly drivers to utilise alternative travel modes by developing and delivering targeted road safety information programmes.	Innovative	Males (Young and Old)	Safe People	Long	QH & TMR	ICC, QPS, RACQ	Low cost / on-going investment
U2	Encourage increased awareness of the dangers associated with driving under the influence through ongoing campaigns and collaboration with key road safety stakeholders.	Business as Usual	Drugs and Alcohol	Safe People	Medium	TMR	ICC & QPS	Low cost / on-going investment
U3	Engage with the motorcycling community to co-design solutions to reduce serious road trauma among this vulnerable group. This may include improving the knowledge of learning motorcyclists and returning motorcyclists who have not rode for a long period.	Innovative	Motorcyclists	Safe People	Medium	TMR	ICC & QPS	Medium cost / on-going investment
U4	Identify intersections where illegal manoeuvres are known to be performed regularly and develop passive and reactive enforcement measures to reduce the occurrence of illegal manoeuvres. As part of this, collaborate with TMR and QPS to identify opportunities for the installation of enforcement devices such as speed or red-light cameras.	Innovative	Intersections & Driver Behaviour	Safe Roads	Short	ICC	TMR & QPS	Medium cost / on-going investment

Appendix D

Review Framework (Five Year Period)



iGO RSAP = iGO Road Safety Action Plan
RSO = Project Advisory Group
RSO = iGO Road Safety & Operations Committee

Point8