

Report No:	RESC11-08-03
File No:	RD3332
Date:	18 July 2011
Decision Required	

REPORT SUMMARY

Report to: Engineering Services
Meeting Date: 4 August 2011
Report Author: Transportation Projects Engineer
Subject: **Proposed Speed Limit and Intersection Changes - Mapua Drive & Stafford Drive Ruby Bay**

EXECUTIVE SUMMARY

With the opening of the Ruby Bay Bypass, State Highway 60, the former coastal highway, was handed over to Council in late 2010. The former state highway carried approximately 8000 vehicles per day where now it only carries around 2000 vehicles per day.

With the opening of the new bypass residents alongside the old state highway as well as Schools and the Police requested a review of the current speed limits. Further to this there has been numerous calls over the years regarding the intersection of Aranui Road with Stafford Drive and the confusion caused by having two lanes of merging traffic entering Aranui Road and who should give way.

RECOMMENDATION/S

That the Committee approves the proposed changes for public consultation.

DRAFT RESOLUTION

THAT the Engineering Services Committee receives the report Proposed Speed Limit & Intersection Changes - Mapua Drive & Stafford Drive Ruby Bay, RESC11-08-03.

THAT the Engineering Services Committee approves public consultation being undertaken for the proposed speed limit and intersection changes noted in the report RESC11-08-03.

Report No:	RESC11-08-04
File No:	RD3332
Report Date:	18 July 2011
Decision Required	

Report to: Engineering Services
Meeting Date: 4 August 2011
Report Author: Steve Elkington, Transportation Projects Engineer
Subject: **Proposed Speed Limit and Intersection Changes - Mapua Drive & Stafford Drive Ruby Bay**

1. Purpose

- 1.1 The purpose of this report is to seek approval to proceed to public consultation on the proposal to lower the speed limits on several roads near Mapua in Ruby Bay and close off the south bound slip lane from Stafford Drive into Aranui Road.

2. Background

- 2.1 With the opening of the new section of The Coastal Highway (Ruby Bay Bypass) in late 2010, the old section of state highway was handed over to Council ownership along with responsibility for operations and maintenance.
- 2.2 When the former section of The Coastal Highway was under the control of the New Zealand Transport Agency it carried all state highway traffic to Motueka. The traffic flows have significantly reduced since it came under Council control and the road function changed from being a main commuter and commercial transport link to that of a Collector function carrying what is perceived to be mainly local and tourist traffic. The road section has now been split into separate road lengths with individual names these are:
- Mapua Drive – Extending between SH60 to Aranui Road/Stafford Drive;
 - Stafford Drive between Aranui Road to Aporo Road near Kina Bluffs;
 - Aporo Road – Extending between Stafford Drive to SH60 at Tasman end.
- 2.3 For the purposes of this report only the speed limits from the intersection of State Highway 60 at Higgs Reserve to where Stafford Drive ends at Aporo Road at the top of the Kina Cliffs are under scrutiny.
- 2.4 Mapua School fronts on to what was an arterial route with a speed limit of 70km/h. The School and community have requested the speed limit in front of the school be lowered. The main problem is the speed of traffic entering Aranui Road from the slip lane from Stafford Drive. The existing 70km/h speed limit ends
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approximately 40 metres into Aranui Road. An intersection does not make a good speed limit transition point as drivers are focusing on changes in the road ahead and there is usually a proliferation of signage which can cause information overload.

- 2.5 It is proposed to extend the 50km/h Urban Traffic Area for Mapua to Warren Place and towards Seaton Valley Road thereby covering the frontage along the school and encompassing the 90 degree curve which has an advisory 35km/h speed (see attached map). Further to this is the proposal to implement an 80km/h speed limit on Mapua Drive between SH60 at Higgs Reserve to the existing 100/70 km/h speed limit change transmission east of Seaton Valley Road. Finally, to help reduce confusion for merging traffic at the Aranui Road and Stafford Drive intersection it is proposed to close off the existing slip lane further limiting traffic speed and improving safety.
- 2.6 The predominant speed limit over the Mapua Drive, Stafford Drive and Aporo Roads is 100km/h with this reducing to 70km/h through Ruby Bay and Tasman.
- 2.7 There is currently in place a temporary 70km/h speed limit on Mapua Drive near the intersection with The Coastal Highway (SH60). This temporary speed limit is due to the changes made to the intersection approach including the pedestrian refuge close to this intersection which provides connectivity with the car park on the inland side of Mapua Drive and Higgs Park on the Coastal side, as well as the Chaytor Road walkway. The permanent posted speed limit is 100km/h.

3. Present Situation/Matters to be Considered

- 3.1 This report only reviews speed limits from the Mapua end of the former state highway route (from SH60) through to the intersection of Stafford Drive and Aporo Road in Ruby Bay.
 - 3.2 **Mapua Drive/Stafford Drive – Speed Limits** – For some time the local community and Mapua School has questioned the speed limit of the road particularly past Mapua School. With the recent change in ownership and function it was timely to review the speed limits on the route between The Coastal Highway at the Mapua end through to the Tasman end of the former state highway route.
 - 3.3 **Crash History** – The crash rate of both Mapua Drive and Stafford Drive is high when compared to the national average calculated from all roads. It should be noted that both Mapua Drive and Stafford Drive now carry at least 50% and 25% respectively of the previous traffic volume of approximately 8000 vehicles on average per day.
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- 3.4 When Mapua Drive was part of the state highway network, there were nine crashes over the last five year period with four of these being reported as minor injury. There were three crashes where speed was the main factor with a one further incident having speed as a contributing factor.
- 3.5 For Stafford Drive through the 70km/h speed limit section, approximately 2kms long and excluding the intersection with Aranui Road, there were four crashes recorded over the last five years with three of these crashes involving minor injury. However speed was not reported as the main contributing factor in any of the crashes, with alcohol being the main factor in two of them.
- 3.6 The rural road speed limit section of Stafford Drive, approximately 1.7kms long and extending to Aporo Road at the top of the Kina Bluffs, has experienced approximately 25 crashes in the last five years with eight of these crashes identified as involving speed either as the main or contributing factor.

3.7 Traffic Data

- 3.8 The following table provides speed survey and traffic count data for both Mapua Drive and Stafford Drive. The surveys were undertaken in November 2010 and February 2011 after Council had taken ownership of the roads.

Road Name	Location	Survey Date	Existing Speed Limit Km/h	Mean Speed Km/h	85 th Percentile Speed km/h	Traffic Volume (Total of both lanes) AADT
Mapua Drive	South of Higgs Rd Intersection	Feb 11	100	78.3	88.6	3,888
	Near Seaton Valley Rd	Nov 10	100	78	91.8	"
Stafford Drive	Near Pomona Rd Intersection	Nov 10	70	61.8	72	1,900
	Near McKee Domain	Nov 10	100	75.3	86.4	"

- 3.9 The table shows that the mean speeds and 85th percentile speeds are generally below the posted speed limit. This is mostly likely due to the road geometry and the motorists speed being set by the road environment that they are provided with. This is a better way to manage speeds than trying to set speed limits that do not reflect actual driver behaviour. Issues relating to inappropriate speed limits usually results in more enforcement, more crashes and bad driver behaviour.

3.10 **Speed Warrant Surveys** - Speed limits are set based on the Land Transport Rule - Setting of Speed Limits 2003. This Rule requires any changes to speed limits to be first assessed by using the arithmetic/survey tool *Speed Limits NZ* to quantify what the appropriate speed limit should be. This evaluation method provides an objective and hence consistent approach to setting speed limits. However, the Rule does recognise the need to consider each location in context of the road environment and hence some variance from the quantitative result of *Speed Limits NZ* is permitted.

3.11 The following table provides the results of surveys carried out in accordance with the Speed Limits NZ provisions.

Road Name	Location	Posted Speed Limit Km/hr	Average Rating & Speed Limit	Survey Rating R	Recommended Speed Limit Km/hr
Mapua Drive	SH60 to 70/100 Speed limit change (Approx 1.76km)	100	6>R>3 80km/hr	3.05	80
	70/100 Speed limit change to Aranui Road (Approx 100m)	70	R>11 50km/hr	9	50
Stafford Drive	Aranui Rd to 70/100 Speed limit change NR Brabant Drive (Approx 2km)	70	11>R>6 70km/hr	9	70
	70/100 Speed limit change to Aporo Road (Approx 1.5km)	100	R<3 100km/hr	0.5	100

3.12 As shown in the table above the requirements for the change in posted speed limits is met for the Mapua 80km/h zone. The other posted speed limits meet the criteria under the Setting of Speed Limits Rule 54001, however some of these existing posted limits are out of context in terms of the expectations of the motoring public and community.

3.13 It is important when setting speeds limits that a consistent and logical progression of speeds through a community meets the expectations of the driver and other road users. There is also a need to provide buffer zones for more intensively developed urban areas.

4. Proposals

4.4 Speed Limit Changes

4.5 Staff propose that the following changes to the posted speed limits be made to provide a safer and more appropriate speed regime for users of the former coastal highway. The proposed changes are set out below and also on the attached map.

- (i) Aranui Road – Lower the existing speed limit from 70km/hr to 50km/h from the existing speed limit change point to Stafford Drive; and
- ii) Mapua Drive - Lower the existing speed limit from 70km/h to 50km/h from the existing speed limit change point east of Seaton Valley Road to Aranui Road; and
- iii) Stafford Drive – Lower the existing speed limit from 70km/h to 50km/h between Aranui Road and the northern side of Warren Place; and
- iv) Lower the existing speed limit on Mapua Drive from 100 km/h to 80 km/h from the intersection of SH60 to the existing speed limit change point east of Seaton Valley Road (See attached map); and
- v) Lower the existing speed limit from 70 km/h to 60 km/h for Stafford Drive from Warren Place to Pinehill Road; and
- vi) Lower the existing posted speed limit from 100 km/h to 80 km/h for the section of Stafford Drive from Pinehill Road to Aporo Road.

6. Evaluation of Proposals and Pros and Cons

6.1 Extend out the Mapua Urban Traffic Area with a 50km/h speed limit along Mapua Drive and Stafford Drive - This proposal will see the Mapua Urban Traffic Area extend to include sections of Mapua Drive and Stafford Drive. It is proposed to extend the 50km/h posted speed limit from Aranui Road along Mapua Drive to the existing speed limit change point east of Seaton Valley Road intersection, and along Stafford Drive to a point 30 metres north of Warren Place.

6.2 Speed Limit Warrant

6.3 Mapua Drive - The Speed Limit Warrant result achieved for the short section of Mapua Drive between Aranui Road and the existing 70/100 km/h speed limit threshold just east of Seaton Valley Road was surveyed with a rating of nine. The

rating value of nine is below that of 11 required for a 50 km/h speed limit. However bearing in mind the 35km/h advisory speed around the curve it is considered appropriate to extend the 50km/h speed limit over this 100 metre length of Mapua Drive.

- 6.4 Stafford Drive** - The Speed Limit Warrant result achieved for the short section of Stafford Drive between Aranui Road and Warren Place was surveyed with a rating of 18 which is well above that of 11 required for a 50 km/h speed limit. This rating is mainly elevated by the presence of Mapua School on the road frontage as well as Warren Place which is a short industrial/commercial cul-de-sac with an existing speed limit of 50km/h.
- 6.5 The proposed posted speed limit change will lead to reduced speeds at the fringe of the urban area and outside the school. In turn this will lead to better safety and make turning movements at the intersection easier to assess.
- 6.6 In summary the main route along Mapua Drive and then onto Stafford Drive from Seaton Valley Road through to Warren Place includes a school, tavern and a curve with a speed advisory of 35 km/h. There is also a section of Aranui Road that is currently 70 km/h which conveys the wrong message to motorists travelling past the school and entering the Mapua Village. Accordingly, even though this section does not meet the speed warrant provisions, it is appropriate that the section of road around the intersection of Mapua Road, Stafford Drive and Aranui Road has a posted speed limit of 50 km/h.
- 6.7 It should be noted that the Police support the lowering of the speed limit in front of Mapua School and closing off of the slip lane from Stafford Drive.
- 6.8 New posted speed limit 80km/h speed limit on Mapua Drive** – Between SH60 and Existing 70/100km/h Speed Limit Threshold east of Seaton Valley Road - This section of road is curvilinear and undulating with two intersections along its approximate 1.7km length. The two side roads are Higgs Road which provides access to Mapua whilst Seaton Valley Road provides access to rural residential, life style blocks and also SH60.
- 6.9 Mapua Drive has traffic lane widths between 3.2 and 3.5 metres and has no sealed shoulders. The road now carries around 3,900 vehicles per day. The Annual Injury Crash Rate per 100Million Vehicle Kilometres Travelled is 86.5. This figure is based on nine crashes in the last five years with four of these involving minor injury and is based on previously the State Highway traffic volumes. This rate is high when compared to the national average Injury Crash Rate for 2009 of 28 Injury Crashes per 100Million Vehicle Kilometres Travelled.
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- 6.10 The Speed Limit Warrant result for the section of Mapua Drive between the intersection with SH60 and the existing 70/100 speed limit threshold just north of Seaton Valley Road was rated at approximately 3 which is the minimum rating required for an 80 km/h speed limit.
- 6.11 Based on the speed survey data shown above in Table 1, the Mean and 85th percentile speeds averaged are approximately 78km/h and 90km/h respectively. The data suggests that an 80km/h speed limit is appropriate.
- 6.12 Also Seaton Valley Road is posted with an 80km/h speed limit whilst Higgs Road is posted with a 50km/h speed limit,
- 6.13 Near the intersection with SH60 there is a pedestrian refuge which provides access between Higgs Reserve on the seaward side and carpark on the inland side as well as providing connection with the walkway and future cycle trail that climbs up to Chaytor Road to the pedestrian underpass near Gardener Valley Road that goes under the Ruby Bay Bypass. Reducing the speed in this vicinity will improve safety particularly in respect to the limited Safe Stopping Sight Distance when travelling down the incline towards the SH60 intersection.
- 6.14 The proposed changes to the posted speed limit will provide a buffer to the 50 km/h zone associated with the urban area and reflects the measured speed that road users are travelling through the area.
- 6.15 It is expected that there will be improved safety along this section of roadway that has a curvilinear design and limited sight distances.
- 6.16 New posted speed limit 60km/hr speed limit on Stafford Drive from Warren Place to Pinehill Road** – The section of Stafford Drive from Warren Place through to Pinehill Road has significant residential development along its eastern side with very limited development along the western side. This has the effect of lowering the development rating used to set speed limits even though in reality it is an urban environment.
- 6.17 Council staff are aware of crashes along this section since the opening of the Ruby Bay bypass and community concerns about speed, sight distances, and the lack of safe turning areas for intersections and driveways.
- 6.18 The average speed of vehicles moving along this section is 62 km/h with the 85th percentile being 72 km/h. While a 70 km/h posted speed limit could be considered appropriate based on the warrant rating staff suggest that 60 km/h is preferable.
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The reason for this are measured speeds, the presence of crashes post bypass opening, the road geometry and the urban nature of this section.

6.19 New posted speed limit 80km/h speed limit on Stafford Drive from Pinehill

Road to Aporo Road – The final section under consideration in this report is the portion of roadway from Pinehill Road through to the top of the Ruby Bay Bluff and its intersection with Aporo Road. The warrant provides a rating of 0.5 that corresponds to a speed limit of 100 km/h. However the measured speeds along this section show that most drivers are travelling below 90 km/h which represents the road geometry limitations for this section of roadway.

6.20 Also of note is the high number of reported crashes along this section of road with 25 reported over a five year period. While there is expected to be a drop in the number of reported crashes as a result of the changes in traffic volumes, the high rate still indicates that there are some challenges for motorists driving too fast along this section of road.

6.21 Accordingly it is considered that the posted speed limit be reduced to 80 km/h for this section of road.

7. Financial/Budgetary Considerations

7.1 The cost of the consultation process and bylaw changes has not been calculated as this is generally low. The installation of signage and markings would be funded from Traffic Services Renewals budgets. These items are generally low cost and have not been estimated at this time.

8. Significance

8.1 The recommendations in this report are not considered of significance as consultation with the wider community including Police, NZTA, NZ Transport Forum and the AA will be necessary before a final recommendation is made to Council to alter its Speed Limits Bylaw.

9. Recommendations

9.1 That the report is received

9.2 That the Engineering Services Committee approves public consultation being undertaken for the change to the existing speed limits for those sections of roads described in the draft resolution below.

10. Timeline/Next Steps

- 10.1 Once approval has been given then consultation would be planned. The time provided for the public to make submissions is a minimum of one month.
- 10.2 Maps showing the existing and proposed speed limits and intersection layout would be displayed at Council's Service Centres and Libraries with the proposed changes advertised for submissions through Newsline and local papers.
- 10.3 Once submissions have closed then a report will be presented to full Council for consideration.

11. Draft Resolution

- 11.1 That the Engineering Services Committee receives the report Proposed Speed Limit & Intersection Change - Mapua Drive & Stafford Drive Ruby Bay, RESC11-08-03 and;**
- 11.2 THAT the Engineering Services Committee approves public consultation being undertaken for the following proposed speed limit. (as per the attached plan):**
- (i) Aranui Road – Lower the existing speed limit from 70km/h to 50km/h from the existing speed limit change point to Stafford Drive.**
 - (ii) Mapua Drive – Lower the existing speed limit from 70km/h to 50km/h from the existing speed limit change point east of Seaton Valley Road to Aranui Road.**
 - (iii) Stafford Drive – Lower the existing speed limit from 70km/h to 50km/h between Aranui Road to a point 30 metres north of Warren Place.**
 - (iv) Mapua Drive - Lower the existing speed limit from 100 km/h to 80 km/h from near the intersection of SH60 to the existing speed limit change point east of Seaton Valley Road (See attached map appended to this report).**
 - (v) Stafford Drive – Lower the existing speed limit from 70 km/h to 60 km/h from 30 metres north of Warren Place to Pinehill Road.**
 - (vi) Stafford Drive – Lower existing speed limit from 100 km/h to 80 km/h from Pinehill Road to Aporo Road.**

Appendices

Appendix 1 – Map showing existing speed limits

Appendix 2 – Map showing proposed speed limits
