

**Environment Southland Planning evidence relating to
submission 85
on Proposed Gore District Plan
Prepared by Marcus Roy**

Date 21 February 2025

1. My name is Marcus Roy. I am the Policy and Government Reform Manager at Environment Southland. I hold a Masters of Resource and Environmental Management from Massey University.
2. I have been a full member of the New Zealand Planning Institute (NZPI) since 2018 and I have 17 years' experience in planning and resource management, including consenting, compliance, policy development and associated report and evidence preparation. I was the Planning Manager at the Southland District Council for six years and have the Making Good Decisions certificate which enables me to be a hearing commissioner.
3. I have been involved in the Environment Southland Submission on the proposed Gore District Plan and have attended a number of the hearings to present verbally.

Code of Conduct

4. I confirm that I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023 and that I have complied with it when preparing this evidence. Having reviewed the submitters and further submitters relevant to this topic I advise there are no conflicts of interest that would impede me from providing independent advice to the Hearings Panel. The opinions expressed in this evidence are based on my qualifications and experience and are within my area of expertise. Where I have relied on the evidence or opinions of another my evidence will acknowledge that position.
5. I am authorised to give this evidence on Environment Southland's behalf to the Proposed District Plan (**PDP**) hearing commissioners (**Hearings Panel**).

Overview of evidence

6. My evidence focuses on how the new Environment Southland flood modelling (Environment Southland Model), presented as part of Jo Paterson's evidence, should be embedded into the PDP and how the provisions are developed in accordance with the Southland Regional Policy Statement (**sRPS**). Two other technical briefs of evidence are also submitted alongside my evidence, with the evidence of Matthew Garner addressing the model and methodology, and the evidence of Jo Paterson addressing the model and a comparison with the Tonkin & Taylor modelling also completed. My evidence draws on this technical information to assess the implications for the PDP framework.
7. The Environment Southland submission on the PDP was broad and covered a number of topics. A key theme of the submission was the management of natural hazards. The submission made a number of submission points across various chapter submission summary and points raised at previous PDP hearings.
8. This evidence identifies and works through the main objectives and policies relating to the natural hazard chapter of the PDP. It outlines in my view how the PDP gives effect to the sRPS. Further, it identifies where changes can be made to give effect to the sRPS.
9. The evidence identifies how the recent modelling provides guidance on what constitutes significant natural hazard risk in accordance with Policy NH.5 of the

sRPS. My evidence addresses the general principles I consider relevant to the Hearing Panel's assessment of Environment Southland's submission, as well as the specific changes I consider should be made to the PDP in response. The specific changes in response to the section 42A report are included in **Appendix 1** to my evidence.

10. My evidence aims to support the Hearings Panel to ensure that the PDP gives effect to the sRPS.

Overview of ES and statutory role

11. Section 6(h) of the Resource Management Act 1991 (**RMA**) provides for "the management of significant risks from natural hazards" as a matter of national importance, which all persons exercising functions and powers under the RMA shall recognise and provide for.
12. Section 30 of the RMA outlines the functions of Regional Councils. Subsection (1)(c)(iv) directs that the Regional Council controls the use of land for the purpose of the avoidance or mitigation of natural hazards.

Potential introduction of new national direction.

13. Currently there is no National Policy Statement (**NPS**) or National Environmental Standard (**NES**) providing national direction on the management of natural hazards. However, a proposed National Policy Statement is expected to be released in the next few months with the proposed packages of national direction.
14. The Government has indicated that the national direction package will be finalised by the end of 2025.
15. Once the National direction becomes operative and has legal effect the Hearings Panel will need to consider it. In the event that an NPS or NES relevant to natural hazards is introduced and has legal effect prior to the Hearings Panel making its decisions on the natural hazard provisions of the PDP, then the Hearings Panel will need to consider its direction when making decisions.

Southland Regional Policy Statement 2017

16. Work began on the sRPS in 2009. It was notified in 2012, decisions issued in 2014 and it became operative in October 2017.
17. Sections 67 and 75 of the RMA require that regional and district plans give effect to the sRPS.
18. The natural hazards section of the sRPS is located in Chapter 8, and provides a framework for managing natural hazard risk in Southland. It also sets out the responsibilities of the local authorities in the region for the control of land use to avoid or mitigate natural hazards.
19. The chapter seeks to reduce the vulnerability to hazard events and build resilient communities that can cope with events should they occur. It is broken into the following key components, being:
 - identifying risk;

- taking a precautionary approach;
 - management priorities;
 - avoiding significant risk; and
 - mitigating effects.
20. The next sections of my evidence step through these components and particularly how they apply to the PDP.

Identifying.Risk

21. Policy NH.2 of the sRPS requires that where practicable, areas subject to known natural hazard risk are identified in district plans, and they use the most up-to-date information available.
22. The Tonkin & Taylor and Environment Southland Models provide an accurate overview of the potential flood risk pertaining to the Gore and Mataura townships. The Environment Southland Model does not extend across the whole District, but the Tonkin & Taylor one does.
23. These models are far superior to the natural hazard maps provided in the notified version of the PDP as they show depth and velocity. These important factors indicate the likely impact of floods and therefore the associated risk to life and property.
24. The Tonkin & Taylor and Environment Southland Models outline that currently the flood banks in both Gore and Mataura would be overtopped by a 1% Annual Exceedance Probability (**AEP**) flood. Furthermore, the report outlines the potential hazard classification based on depth and velocity of flood in relation to the Australian Emergency Management Institute (AEMI) Guideline 2014. This guideline is important as it establishes an escalating hazard profile for buildings and people as water depth increases and how that correlates with water velocity. This classification is outlined in paragraph 57 of the section 42A report and the Environment Southland Flood model. It is outlined below for further reference.

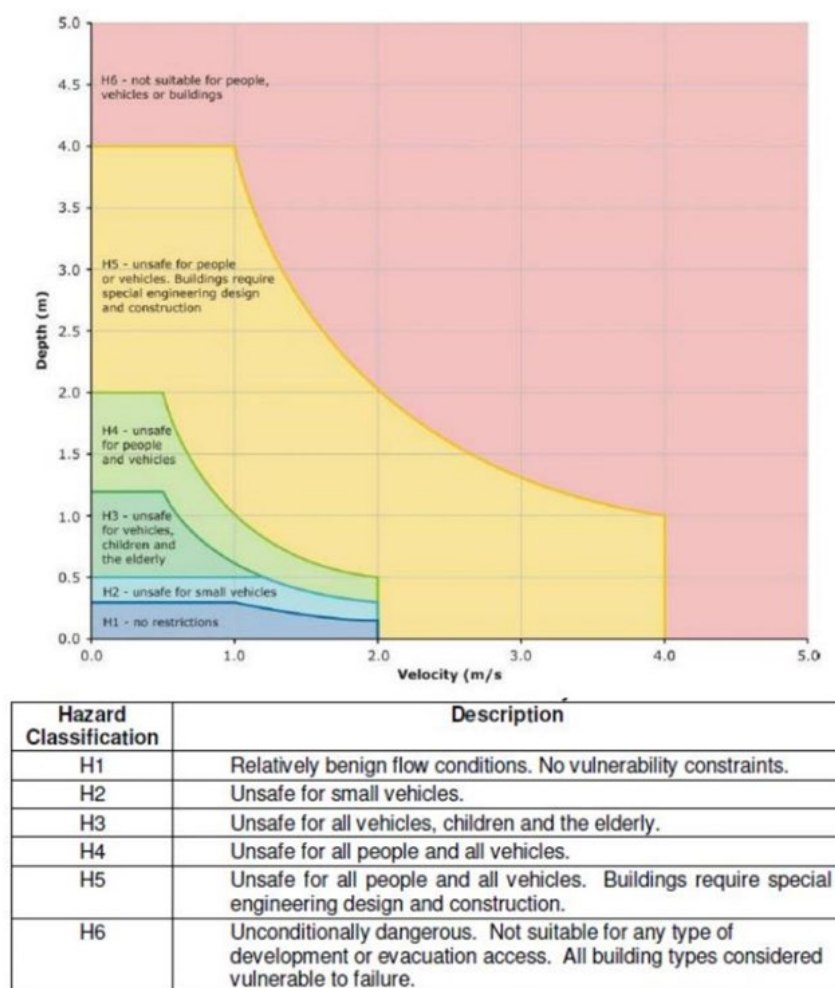


Figure 1: Australian Emergency Management Institute (AEMI) Guideline 2014 – Risk categories.

25. I consider that this guideline to classifying natural hazard risk supports the implementation of sRPS as it identifies where the flood risk should be considered as significant and where there is a lower risk exposure. In my view this guideline should be used alongside the significant risk criteria outlined in the explanation of Policy NH.5 of the sRPS.
26. In my view hazard classification “H3” and above in the guideline should be classified as a significant risk due to it being unsafe and (therefore a risk to life) for children and elderly and will cause wide spread damage to property.
27. The Environment Southland Model identifies the flood risk in Gore and Mataura in terms of flood depth and flow for 1% and 2% AEP and accordingly classifies the risk in terms of H1-H6 as per the above Figure 1. These models are located in the report at Page 217. The Tonkin & Taylor model does this for the rest of the Gore District Flood plains.
28. Para 58 of Mr Osborne’s evidence outlines that in his view the Tonkin & Taylor and Environment Southland Modelling work cannot be considered by the panel for inclusion into the PDP for scope and natural justice reasons.

29. In my view, the residents are already aware of the potential flood extent in the Gore District, as this risk is captured in the current Operative Gore District Plan and also identified in the PDP maps. If Environment Southland's relief is accepted, all that would be introduced to the PDP is the hazard classification (which provides some further demonstration of the potential depth and velocity of floodwaters) to sit alongside the already mapped extent. In my opinion, this information would provide further context to the mapped flood extent and enable plan users (both the public and the Gore District Council) to more easily understand and assess the scale of risk for a particular property.
30. In my opinion, submitters on the PDP were alerted to Environment Southland's concerns and point of view as Environment Southland lodged a submission on the PDP seeking that the provisions of the Natural Hazard chapter of the PDP gave effect to the sRPS, in particular the requirement in Policy NH.5 to avoid areas of significant risk from natural hazards. The further work to be carried out by Environment Southland was recognised in its submission and submission point S85.087 in the summary of submissions report. For completeness, I note that issues of scope will be addressed in the legal submissions filed by the Council in due course.
31. The sRPS directs the use of the most up-to-date hazard information. The most recent Environment Southland and Tonkin & Taylor flood reports provide the best available understanding of the extent and impact of flooding in the District.
32. Furthermore, using the models will provide a level of certainty about management of flood risk within the District. It will prevent flood hazard studies from being required at the time of making an application for resource consent, and provide confidence that the provisions of the sRPS have been given effect to.
33. While there are some valid concerns about the use of the models, not implementing the risk areas identified in the Tonkin & Taylor or Environment Southland Models in the District Plan means the Council is not giving effect to sRPS Policy NH.2, which requires that areas subject to natural hazard risk be identified in District Plans.
34. To be clear, the relief sought in this section of evidence is to include the Tonkin & Taylor and Environment Southland flood models into the PDP as this will give effect to Policy NH.2 of the sRPS. This is addressed in more detail in Appendix 1 of my evidence.
35. While the section 42A report acknowledges that this could be the subject of a future variation or plan change, the PDP may enable further development in the meantime before this plan change or variation is able to be carried out. If this is done in the absence of reliance on these most recent models, there is a risk that further development will be enabled in areas subject to unacceptable risks from natural hazards, which could have been avoided if the most up-to-date information was used.

Precautionary approach

36. Policy NH.3 of the sRPS outlines that a precautionary approach is needed towards managing the effects of climate change and any associated changes in the scale and frequency of natural hazards.
37. There are two key aspects to this policy which are applicable to the Hearings Panel, being the likelihood of natural hazards getting worse over time with climate change, and that flood banks are constructed to a design specification which means they will be unable to withstand all flood scenarios.
38. The 2018 Southland Climate Change Impact assessment outlines that Southland is likely to experience more frequent heavy rain days and increases to accumulated five-day rainfalls towards the end of this century. It is expected that with the increased intensity of rainfall that more frequent floods will be expected across the region.
39. The Gore and Mataura flood schemes were upgraded following the 1978 floods. The flood banks were designed to withstand another flood of the same scale as 1978, with an additional 500 mm of height as a freeboard.
40. The flood banks were not built higher due to the financial constraints at the time and the information available which indicated that the 1978 flood was equivalent to a 1% AEP (one in 100 year event).
41. What is clear from the Environment Southland Model is that the flood banks in their current form will not be able to withstand a modern day 1% or worse AEP event.
42. Additionally, flood bank breaches are a possibility. This was experienced in Edgecombe in 2017 when the flood banks protecting the township breached causing widespread damage.
43. There is often a perception in the community that “stop banks” will stop floodwater and land behind the flood banks is safe to build on. Unfortunately, there is still a residual flood risk behind the flood banks and the presence of flood banks and a permissive planning regime can exacerbate the intensity of development and therefore the impact of flood inundation.
44. The relief sought in this evidence is to implement a precautionary approach as directed in Policy NH.3 of the sRPS by using up-to-date information to establish a fit for purpose natural hazard framework in the PDP that manages development around known risk.
45. In my view this framework cannot and will not disrupt existing use rights for existing activities located in floodable areas, rather it seeks to enable development to occur in a way that creates a resilient community in the medium and long-term.

Management.priorities

46. Policy NH.4 of the sRPS outlines the management regime for natural hazards.
47. It establishes a cascading framework, whereby subdivision and new development should avoid exposure to significant hazards in the first instance using a precautionary approach, rather than just seeking to mitigate effects with floor levels or building up the flood bank.
48. Once avoidance has been carried out, mitigation options can be explored to manage the effects of natural hazard risk on existing buildings, additions and alterations.
49. Physical works, such as protection structures and natural features, should only be implemented as a last resort.
50. The relief sought in this section of evidence is to ensure that the provisions in the PDP establish a cascading risk framework for development as outlined in Policy NH.4 of the sRPS. This is addressed further in Appendix 1 of my evidence.

Avoiding.significant.risk

51. Policy NH.5 of the sRPS flows out of Policy NH.4 and is very directive about avoiding areas of significant risk. The explanation to the policy outlines some significance criteria to assist with determining what constitutes a significant risk. This criteria is valuable in areas that do not have a flood hazard model.
52. The PDP process benefits from Tonkin & Taylor and the Environment Southland Models to more accurately model the hazard and risk. In this instance I consider that the general guidance criteria outlined in the explanation to Policy NH.5 is inferior to the combination of depth and flow modelling such as that used in the AEMI Guideline 2014, given that specific modelling has been carried out within the District to inform these risks. As outlined above in paragraph 26 I consider that significant risk should be categorised as H3 or above using this guideline.
53. In order to give effect to Policy NH.5 of the sRPS, I consider that the provisions of the PDP need to direct new subdivision and development into locations that do not have a significant risk (i.e. H2 and below) and mitigate the effects if there is still a likelihood of flooding.
54. In unprotected areas such as Mandeville and Pukerau, the PDP should rely on the Tonkin & Taylor model to avoid subdivision and development in H3 and above hazard risk and mitigate risk for H2 and below. This in my view is adopting a precautionary approach.

Mitigating.effects

55. Similar to Policy NH.5, Policy NH.6 links to Policy NH.4. It provides guidance on mitigating the effects of natural hazards.
56. Policy NH.6 recognises that it may be impossible or impractical to avoid natural hazard risks and when this is the case, there are a number of mitigation measures that can be employed to reduce the risks.

- 57. In order to give effect to this policy, I consider that the provisions of the PDP should employ mitigation measures for new critical infrastructure that has a functional need to be located within an area of medium or high risk.
- 58. Additionally, mitigation provisions should be included in the PDP for when small scale developments such as additions, alterations and boundary adjustments are proposed within flood prone area.

Management of natural hazards within the wider plan chapters

- 59. Environment Southland's submission highlighted natural hazard submission points across multiple chapters including subdivision, development areas, infrastructure and most of the zones.
- 60. I have attended a number of previous PDP hearings on these chapters on behalf of Environment Southland. At these hearings I have not submitted written evidence and rather spoken to various submission points.
- 61. The next section of evidence outlines comments made in previous hearings relating to natural hazards.
- 62. At previous hearings I have indicated to the Hearings Panel that in my view the natural hazard provisions should be considered within each of the zone chapters as opposed to them being contained within one chapter.
- 63. While this is a comment on plan layout, I considered that the respective zones within the PDP were proposing a more permissive development regime through upzoning, expansion of zone areas and new development areas. This intensification appeared to be occurring in isolation to the known natural hazard risks in certain locations of the district.
- 64. At these hearings the Hearings Panel indicated that at the natural hazards hearing there would be a thorough unpicking of natural hazard matters and how the PDP would address Environment Southland's submission points and the direction in the sRPS.
- 65. I have previously expressed my opinion that in my view the PDP natural hazards chapter should be a policy only chapter and natural hazard rules should be located within the respective zones. This would provide clarity and a more focused approach to natural hazard management and be easier for plan users to understand what is required in each location.
- 66. In my view there is a permissive development approach indicated in the zone chapters that have already been heard which in my view risks not giving effect to the natural hazard chapter of the sRPS.
- 67. Upzoning, expanding zones, identifying development areas and enabling growth and development in identified natural hazard areas is not taking a precautionary approach nor "avoiding" the natural hazard risks.
- 68. While the flood modelling work has emerged subsequently to the PDP notification, there was an understanding of flood risk (and extent) in the notified natural hazard planning maps.

69. In order to ensure the PDP gives effect to the sRPS I consider that the zone provisions need to be reviewed and adjusted to reflect and implement the precautionary approach of avoiding significant natural hazard risks in the first instance.
70. Chapter 17 of the sRPS outlines the regional objectives, policies and methods of urban areas in Southland. It identifies the importance of well-functioning urban areas and accordingly my evidence does not seek to overlook this in favour of natural hazards. However, in my view a well-functioning urban area should also be resilient to natural hazards.
71. At previous hearings I have outlined the need to maintain infrastructure in a way that is resilient to natural hazards, the need to manage development with respect to secondary flow paths once the stormwater network becomes overwhelmed.
72. The last matter that was raised in previous hearings which is worthy of noting in this evidence is the management of hazardous sensitive activities in areas of inundation. I consider that rest homes, healthcare services, emergency services and lifeline facilities should be prevented from establishing in potentially floodable areas due to the timeframe and resources needed to evacuate them should the need arise and the importance of these activities for managing response and recovery functions should a natural hazard occur.

Concluding statements

73. The Tonkin & Taylor and Environment Southland Flood Models greatly improve the understanding of flood hazard within the Gore District. These Models provide detailed information about flood depth and velocity which has previously not been well understood.
74. Producing and using the Models in the PDP gives effect to Policy NH.2 of the sRPS as it helps identify and manage risks from the known flood hazards in the Gore District.
75. In my view the PDP would benefit from incorporating the models as it will provide clarity for the community about the scale of risks and enable decisions to be made about the appropriate scale of development in various risk categories.
76. Appendix 1 outlines my views about how the provisions of the PDP should be amended to give effect to the sRPS and provide the relief as sought in the Environment Southland submission.

Appendix 1 – Comments on proposed amended provisions as outlined in the s42A report

77. The section 42A report works through submission points and recommends changes based on submission points. Below are my comments regarding the changes suggested by the section 42A report author:

- Objective NH-03 – support revised wording as indicated in the section 42A report.
- Objective NH-O4 – support suggested wording relating to critical infrastructure being located outside of natural hazard area except where there is an operational need for it to be located there.
 - Reason: amendments comply with sRPS provisions.
- General comments for NH Policies – I consider that they should be reordered to align with the clear avoid, mitigate and protect hierarchy. Currently the policies go in reverse order (P2 – manage, P3 – avoid unless, P9 – avoid). The table in paragraph 181 of the s42A report outlines the alignment to the RPS policies.
- Policy NH-P2 – I do not support the removal of “potential inundation areas” as suggested by the section 42A report author.
 - Reason: this “manage” policy applies to subdivision and development throughout the district not just within the “Stopbank Protection Area” which has a level of management. This policy needs to remain broad to capture subdivision and development in all areas of actual or potential natural hazard risk. It is recognised that over time the rest of the Gore District will have a detailed flood model such as the new model for the Gore and Mataura townships. Until there is a more detailed model this policy should capture all hazard risks across all of the district and manage development in accordance with the risk profiles outlined in the sRPS. For example subdivision in Mandeville should be managed in accordance with risk. If the land is identified as being at significant risk subdivision should be avoided (e.g. resource consent applications declined).
- Policy NH-P2(1) – I do not support the insertion of the reference to “loss of life or serious injury or significant damage to built development”.
 - Reason: the Environment Southland Model outlines hazard levels (H1-H6) which should be used to inform significance and therefore what level of hazard should be “avoided” due to it being significant risk (eg hazard 3 and above) and what level of risk should be managed (eg hazard 2 and below). This policy should be reworded to provide clarity around areas that can have development managed in accordance with the information presented in the Environment Southland Model.
- Policy NH- P2(2) – support revised wording to remove the reference to “properties”
 - Reason: removing the wording provides more scope and instances where it can be applied.

- Policy NH-3 – I consider it needs to be reworded to remove the reference to “demonstrating risk of hazard can be mitigated”.
 - Reason: this wording will put an onus on developers to prepare flood impact assessments for any developments within the area causing costs and delays. The policy should be amended to reflect the hazard risk outlined in the Environment Southland Model.
- Policy NH-3(4) – support inserting a new subclause relating to “sensitive activities is avoided”
 - Reason: This addition aligns with the sRPS provisions and provides the relief sought in the Environment Southland submission.
- Policy NH-3(7) – oppose suggested wording to insert the identification of building platforms.
 - Reason: This policy is an avoid policy and there is suitable evidence in the Environment Southland Model to delineate where this policy applies. The avoid policy should avoid development and building platforms due to the significant risk.
- Policy NH-P6 – Support suggested wording.
 - Reason: provides more clarity about the management of critical infrastructure and natural hazards.
- Policy NH-9 – Support new proposed policy.
 - Reason – it provides for the relief sought in the Environment Southland submission and gives effect to the sRPS.
- Rule NH-R2 – Oppose suggested changes to the rule.
 - Reason: the Environment Southland Model outlines hazard risk categories in Gore and Mataura townships. Additions to “sensitive activities” in hazard classification H3 and above should not be permitted as it would be inconsistent with sRPS policies to avoid development where there is significant risk. The rule should also capture change of use such as the establishment of a new “sensitive activity” within an existing building located in a classification H3 or above. The matters of discretion should also provide discretion to decline if the development does not avoid significant hazard risk.
- Rule NH-R2 – oppose new proposed rule relating to accessory buildings used for primary production within an inundation area.
 - Reason: the purpose of the flood plain is to manage flood water by either slowing it down (to reduce the flood peaks) or by speeding it up (to effectively get flood water through a choke point such as the Gore township). Enabling accessory primary production buildings as a permitted activity within the flood zone will potentially impact the performance and management of the flood plain and may have wide ranging catchment implications. Additionally, enabling buildings in the flood plain may exacerbate flood risk as items stored within buildings could be carried downstream and impact on infrastructure. Environment Southland

strongly discourages the storage of baleage within the flood plain as in the 2020 floods it caused significant damage to fences throughout the entire catchment.

- Rule NH-R2.1 – oppose new proposed rule in part.
 - Reason: This rule should avoid sensitive development in hazard category H3 and above and for H2 and below be a restricted discretionary activity where the floor level meets the height suggested in the s42A report. In locations shown as H3 and above in the Environment Southland model, development should default to non-complying.
- Rule NH-R2.2 – oppose new proposed rule in part.
 - Reason: This rule does not identify how it aligns with sRPS Policies NH.2 and NH.3 to first seek to avoid development where there is a significant risk, then explore mitigation. As suggested in the s42A report it jumps straight to mitigation of flood risk by establishing a floor level. There needs to be a trigger for avoiding significant risk in the first instance. Additionally over time flood modelling across the District will provide information to clarify the depth and flow of potential flooding. To future-proof this rule reference should be made to a significant risk which should default to non-complying.
- Zone Maps should be adjusted to align with H2 and below Hazard category and sensitive activities should be a discretionary activity in these locations with applicable floor levels. In H3 and above hazard sensitive activities should be non-complying. Pukerau, Mandeville and South Gore Industrial zones should have zones adjusted to avoid development in H3 hazard areas and above as shown on the Tonkin & Taylor report. Support changes to the zone maps for McNabb.
- Consequential changes:
- Rule INFR-R9 – agree with suggested wording.
 - Reason: wider consideration of infrastructure in relation to natural hazards is important and gives effect to the sRPS.
- Rule NH-R4 – support suggested change from Earthworks Chapter to Natural Hazards Chapter but oppose wording.
 - Reason: earthworks within the areas of actual or potential inundation impact the performance of the floodway. Environment Southland has responsibility to manage flood risk. The flood infrastructure is not limited to flood banks and rather spans the extent of the flood plain. Undertaking earthworks within the flood plain can have a detrimental impact on stop banks, accelerate erosion and deflect floodwater. Environment Southland should be able to provide input into earthworks in these locations to manage potential impacts and cumulative effects.
- General comments - refer to “stop banks” as flood banks – calling them “stop banks creates an impression that they will stop flood which is not the case. They are flood banks as they provide a level of protection against floods.