

### 3. AKAROA HARBOUR BASIN SETTLEMENTS STUDY – PREFERRED OPTIONS FOR CONSULTATION

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#### PURPOSE OF REPORT

1. This report (including attachments) outlines the issues and options to inform long-term strategic planning for the eight settlements of the Akaroa Harbour Basin (Wainui, Tikao Bay, French Farm, Barrys Bay, Duvauchelle, Robinsons Bay, Takamatua and Akaroa). It identifies areas needing proactive planning studies in order to manage anticipated growth; it also identifies options by theme to address planning-related issues across all settlements.
2. In particular, the report identifies:
  - (a) The issues which have been agreed through public consultation processes in November 2007; and
  - (b) The options that have been subsequently identified and evaluated for their potential to address the issues. Due to the broad scope of the study, options are expressed as future potential 'work programmes', rather than being a detailed analysis of alternative growth areas. These options provide long-term direction to work that may need to be planned for through future LTCCP processes in order to address settlement planning issues.
3. Preferred work programme options are indicated, along with a recommendation that the options be supported by the Committee for adoption by the Council, for public consultation in early 2009.
4. The scope of the Study does not include the Lyttelton Harbour Basin. However, proposed funding for the Lyttelton basin has been included within the Draft 2009–19 LTCCP, which is currently in preparation.
5. The Akaroa/Wairewa Community Board considered the Akaroa Harbour Basin Settlement Study on 20 November. This report takes account of any amendments made during this consideration.

#### EXECUTIVE SUMMARY

##### Study Scope

6. The project stems from the Memorandum of Understanding (MoU) between the former Banks Peninsula District Council and Christchurch City Council, which specifies that a 'Greater Akaroa Community Plan' is needed as a matter of high priority. Investigation revealed that many of the issues facing Akaroa are inextricably linked to the wider area, resulting in the need for a strategic level study to understand and provide a framework for addressing these issues.
7. The brief of work for the Settlements Study focuses on addressing strategic issues facing the urban settlements of the Akaroa Harbour Basin and contributes to achieving the wider outcome of strong and sustainable communities and settlements over the next 20–30 years (refer **Attachment 2**). The project focuses on the eight settlements in the harbour basin which currently have some urban zoning (refer map: **Attachment 1**):

Akaroa	Barrys Bay
Takamatua	French Farm
Robinsons Bay	Tikao Bay
Duvauchelle	Wainui

##### Study Process

8. The Study is progressing through the following process:

• Release of 'Identifying the Issues' discussion document	October 2007
• Public consultation on the issues	November 2007
• Commissioning of technical reports to fill information gaps	late 2007 – mid 2008
• Final 'Statement of Issues' released	June 2008
• Mapping of constraints and opportunities ('sieve mapping')	September 2008
• Options identified for potential work programmes	July – October 2008
• Key Outcomes identified (refer <b>Attachment 2</b> )	October 2008
• Assessment criteria identified	October 2008
• Options evaluation completed	October 2008
⇒ Adoption of issues and options for consultation	<b>current</b>
• Consultation on issues and options	early 2009
• Final 'Issues and Options' and Implementation Plan	mid 2009

### Key findings

9. Eighty-nine issues (ranging from locality-specific to harbour-wide) have been identified, covering:
  - Natural Environment (including coastal issues, landscapes, freshwater resources, climate change, slope stability);
  - Social Environment (including historic character, population, community facilities);
  - Physical Environment (including water, wastewater, stormwater, transport);
  - Economic Environment (including housing affordability, business growth, tourism); and
  - Subdivision, Land use, Managing Urban Change (including settlement patterns, capacity for urban growth).
  
10. Results of mapping known constraints and opportunities ('sieve mapping') show that Wainui displays the best potential for settlement consolidation, followed by Duvauchelle and the Takamatua/Akaroa area. These four settlements are likely to experience growth pressures over coming years. French Farm, Robinsons Bay and the upper valleys of Duvauchelle show greater long-term suitability for rural-residential development. Further investigation of these areas would require an expansion of the study areas beyond those analysed in this report.
  
11. To address the issues, Council staff identified and evaluated a range of options for future work programmes. This evaluation has identified:
  - (a) Options which are important to pursue and are higher priority, for incorporation in an Implementation Plan to be developed following community consultation in 2009. These become the 'preferred options' and reflect a proposed work programme, to be given effect through future LTCCP budgets;
  - (b) Options which staff could pursue if possible; and
  - (c) Options which did not score well and are recommended not be pursued at this stage.

(Refer **Attachment 3** for further detail on the issues, the options and their relative priorities.)

### Preferred Options for Consultation

12. The preferred options (as outlined in the Issues and Options report in **Attachment 3** – attached separately for members, copies available at Committee meeting) consist of two 'comprehensive work streams' and a number of other standalone work streams.
  
13. The two comprehensive work streams are:
  - (a) Detailed planning studies for Wainui, Duvauchelle and Akaroa/Takamatua to enable the Council to be proactive in terms of managing anticipated long-term residential demand, while protecting and enhancing key elements of the natural, social, physical and economic environment; and
  - (b) A 'Places and Spaces Plan' for Akaroa to provide direction for the future management of the public areas of the town and ensure that these reflect historic and community values.

14. The standalone work streams are listed in the following table and serve to address planning-related issues across all settlements. These would accompany or extend current Council work programmes.
15. The following table provides a brief summary of both the comprehensive work streams and the standalone work streams. The full text of these options is provided in **Attachment 3** and a more comprehensive summary is given in Table 4 of this report. Final preferred options and work programmes will be determined following community consultation in early 2009 and the study outputs will include an Implementation Plan to set out the timing for the final agreed work programmes.

**Table 1: Preferred Options for Consultation**

<b>Comprehensive Work Streams</b>
<p><b>Detailed planning studies</b>            Develop detailed plans for Wainui, Duvauchelle, and Akaroa/Takamatua, to be proactive in terms of anticipated long-term residential demand in the harbour basin.            Such plans will include public consultation and will consider and/or specify matters related to:</p> <ul style="list-style-type: none"> <li>• The Natural Environment (eg rural character, flooding, climate change)</li> <li>• The Social Environment (eg population, community facilities, historic sites)</li> <li>• Infrastructure (eg pedestrian linkages, water and wastewater, internet availability)</li> <li>• The Economic Environment (eg commercial centre development), and</li> <li>• Managing Urban Change(eg settlement form, areas for intensification, staging of development) as relevant.</li> </ul>
<p><b>Akaroa Places and Spaces Plan</b>            Develop an Akaroa 'Places and Spaces' Plan that provides guidance for the future direction and management of public sites and areas in Akaroa, and which includes guidelines regarding matters such as traffic and parking management, public works, tourist facilities and the BP Meats site, to ensure that these reflect the local history, character and environment while ensuring safety and efficiency of movement:</p>
<b>Standalone Work Streams (by theme) to address issues relating to settlements</b>
<p><b>District Plan</b> – investigate amendments concerning:</p> <ul style="list-style-type: none"> <li>• Integration of transport and land use planning</li> <li>• Heritage and/or cultural landscapes</li> <li>• Flexibility of allotment and dwelling size</li> <li>• Preferred form of long-term growth</li> <li>• Urban design for stormwater</li> <li>• Business growth</li> <li>• Rural-residential development</li> </ul>
<p><b>Water</b></p> <ul style="list-style-type: none"> <li>• Research spring and stream flows;</li> <li>• Undertake hydrological modelling to investigate flooding potential.</li> </ul>
<p><b>Soil</b></p> <ul style="list-style-type: none"> <li>• Increase awareness regarding local ground conditions and best practice to reduce erosion</li> </ul>
<p><b>Wastewater</b></p> <ul style="list-style-type: none"> <li>• Research effects of clustering septic tanks – options and costings</li> </ul>
<p><b>Stormwater / inundation</b> – investigate and address:</p> <ul style="list-style-type: none"> <li>• Locations susceptible to fast stormwater runoff</li> <li>• Locations likely to experience inundation (sea level rise, coastal erosion, storm surge)</li> <li>• A stormwater infrastructure inventory</li> <li>• Consultation processes with runanga over any new stormwater systems</li> </ul>
<p><b>Transport</b></p> <ul style="list-style-type: none"> <li>• Address State Highway and arterial road issues regarding safety and land use integration.</li> <li>• Determine locations for roadside stopping points: short term parking, interpretation signage</li> <li>• Maintain safe transport corridor for locations where roads are likely to erode with future sea level rise / storm surge events.</li> </ul>
<p><b>Recreation</b></p> <ul style="list-style-type: none"> <li>• Assess and prioritise new walkways</li> <li>• Determine and plan for pressures on coastal recreational infrastructure</li> <li>• Determine supply and demand for recreational facilities</li> </ul>

<p><b>Community services and facilities</b></p> <ul style="list-style-type: none"> <li>• Audit voluntary / medical / emergency services and community facilities to meet long-term peak populations</li> </ul>
<p><b>Sustainable communities – general</b></p> <ul style="list-style-type: none"> <li>• Support Green Globe certification for the harbour basin</li> </ul>
<p><b>Tourism</b></p> <ul style="list-style-type: none"> <li>• Support tourism liaison group to include representatives from local community</li> </ul>
<p><b>Heritage</b></p> <ul style="list-style-type: none"> <li>• Identify heritage buildings coming under development pressure, and range of retention mechanisms.</li> </ul>

**FINANCIAL IMPLICATIONS**

16. There are no financial implications resulting from adopting the options for consultation.

**Do the Recommendations of this Report Align with 2006-16 LTCCP budgets?**

17. Yes. There is funding in the 2006-16 LTCCP for the Settlements Study.

**LEGAL CONSIDERATIONS**

18. See below.

**Have you considered the legal implications of the issue under consideration?**

19. Yes. The criteria used in the assessment of options included consideration of legal implications.

**ALIGNMENT WITH LTCCP AND ACTIVITY MANAGEMENT PLANS**

20. Where existing Activity Management Plans address existing issues, this has been picked up in the Status Quo section of **Attachment 3**. The Study will likely inform future Activity Management Plans across various Council units.

**Do the recommendations of this report support a level of service or project in the 2006-16 LTCCP?**

21. This Study was identified as a service in the current LTCCP and its outcomes will inform the development of future LTCCP budgets.

**ALIGNMENT WITH STRATEGIES**

22. The Settlements Study takes into consideration the various Council strategies that apply to Banks Peninsula through the development of evaluation criteria (for example, Biodiversity Strategy, Social Housing Strategy, Sustainable Energy Strategy). This ensures that higher priority options do not conflict with existing strategies and their associated implementation plans.

**Do the recommendations align with the Council's strategies?**

23. Yes, as above.

**CONSULTATION FULFILMENT**

24. An extensive consultation exercise was conducted in November 2007 to inform identification of the issues within the eight settlements of the harbour basin – refer paragraph 5 above. This included meetings with local runanga representatives via Mahaanui Kurataio Ltd. Further consultation on the identified options is planned to commence in 2009.

## **AKAROA/WAIREWA COMMUNITY BOARD RECOMMENDATION**

The Board considered a report on the issues and options to form long-term strategic planning for the eight settlements of the Akaroa Harbour Basin (Wainui, Tikao Bay, French Farm, Barrys Bay, Duvauchelle, Robinsons Bay, Takamatua and Akaroa). Council's Senior Policy Planner outlined the Issues and Options document.

The Board made the following comments:

- Staff to be aware that Environment Canterbury has different 'Silent Files' recorded to those of Christchurch City Council.
- Ensure that it is clearly stated in the document that Takamatua and Akaroa are separate settlements.
- BP Meats Site - This land is freehold land owned by the Council, not necessarily a "public place" as may be perceived by the Akaroa community
- Staff need to be aware of the special character of Akaroa and the rural nature of the settlements in the Akaroa Harbour.
- Endorsement of an "Akaroa Places and Spaces Report" which would emphasise the original intent of the current study.
- Social Housing should be more correctly defined as "Affordable Housing".

The Board **resolved** to adopt the staff recommendation subject to the points raised by members being incorporated, where applicable, into the document.

The report and accompanying recommendations from the Board were submitted to the Council meeting on 11 December 2008, as a report from the Chairman.

## **STAFF RECOMMENDATION**

It is recommended that the Regulatory and Planning Committee recommend to the Council that it approve the draft Issues and Options report for public consultation.

## BACKGROUND

### Origins of Study

25. The Akaroa Harbour Basin Settlements Study was initiated in early 2007 in response to both:
- (a) Calls from the community for a 'town plan' for Akaroa; and
  - (b) Budget provision for a 'Greater Akaroa Community Plan'. The Memorandum of Understanding agreed between the former Banks Peninsula District Council and Christchurch City Council referenced this Study.
26. The brief of work for the Settlements Study focuses on addressing strategic issues facing the existing urban settlements of the Akaroa Harbour Basin and contributes to achieving the wider outcome of 'strong and sustainable communities and settlements of the Akaroa Harbour Basin over the next 20–30 years'. The focus for the project is upon those areas with urban zoning within the following settlements:

Akaroa	Barrys Bay
Takamatua	French Farm
Robinsons Bay	Tikao Bay
Duvauchelle	Wainui

27. Many of these settlements comprise non-contiguous pockets of residential activity, separated by rural zoning. Eight study areas have been delineated, principally by way of a 500 metre distance from urban zoning, but adjusted to recognise ridgelines, contour lines, waterways, and property boundaries. Refer **Attachment 1**.

### Identifying the Issues

28. A discussion document 'Identifying the Issues' was prepared and released in October 2007, including via the Study website: [www.ccc.govt.nz/AreaPlans/AkaroaHarbourBasin](http://www.ccc.govt.nz/AreaPlans/AkaroaHarbourBasin). The issues identified in the discussion document are comprehensive in order to obtain the most complete understanding possible of planning-related issues. The issues are wide in scope, covering:
- Natural Environment (including coastal issues, landscapes, freshwater resources, climate change, slope stability etc);
  - Social Environment (including historic character, population, community facilities);
  - Physical Environment (including water, wastewater, stormwater, transport);
  - Economic Environment (including housing affordability, business growth, tourism); and
  - Subdivision, Land use, Managing Urban Change (including settlement patterns, capacity for urban growth).

### Public Consultation

29. During the consultation period (October/November 2007), public meetings were held in Wainui, Duvauchelle and Christchurch, with an 'open house' held in Akaroa. Staff also met separately with local runanga representatives via Mahaanui Kurataio Ltd. A consultation report was prepared in May 2008 which explains the consultation process and provides a summary of 'high-frequency' responses. This report is available on the Study website.

### Technical Reports

30. Several significant information gaps were identified during the process of preparing the discussion document and experts were commissioned to prepare technical reports on the following subject areas:
- Landslide susceptibility;
  - Coastal erosion and inundation;
  - Historical flooding;
  - Real Estate Market; and
  - Business Land Supply.

31. A further piece of work is currently in train to identify the 'tourism carrying capacity' of Akaroa, with this work likely to be finalised in early 2009. While this will not directly inform the issues and options identified through the Settlements Study, it will enable the Council to respond appropriately to tourism pressures, particularly those anticipated during summer when cruise ships visit the town.

### Final Statement of Issues

32. Following receipt of the technical reports and analysis of public feedback, the issues were amended with a final Statement of Issues released in June 2008. The issues are set out in **Attachment 3** which also covers the options assessment as explained further below.

### Sieve Mapping

33. The information obtained through the various technical reports has been mapped, along with other information available to the Council. A report titled 'Sieve Mapping Report - Constraints and Opportunities' has been prepared. This uses mapped information to build up a number of geographical layers to produce a visual representation of areas that show less (or more) potential for future settlement growth. While there is no current intent to encourage growth of any of the harbour basin settlements, the report helps to inform proactive growth management priorities.
34. A summary of the overall potential for the consolidation of each settlement (by way of infill and/or minor expansion) is outlined in the table below. It is preferable that any future settlement growth would lead to a more consolidated urban form by 'linking up' existing areas of residential zoning where possible.

**Table 2: Consolidation potential for each settlement**

Settlement	Potential for infill	Potential for expansion/ connecting*
Wainui	High	High
Tikao Bay	None	Very low
French Farm	None	Low
Barrys Bay	None	Low
Duvauchelle	High	Moderate
Robinsons Bay	High	Low
Takamatua	Very low	Moderate
Akaroa	Moderate	Low

*\*Considers both the potential for the expansion of existing urban zones, as well as the potential for such expansion to connect existing pockets of urban zoning.*

35. Table 2 shows that Wainui displays the best potential for settlement consolidation, followed by Duvauchelle and Takamatua. These settlements are likely to experience growth pressures over coming years. French Farm, Robinsons Bay and the upper valleys of Duvauchelle show greater long-term suitability for rural-residential development. Further investigation of these areas would require an expansion of the study areas beyond those analysed in this report.

### Key Outcomes

36. Staff have identified several key 'anticipated outcomes' of the Study. These provide a framework for understanding the range of issues and options and also clarify the Council's intent for managing the harbour basin settlements. **Attachment 2** shows the link between these eight outcomes and the various issues and options.

### Identifying the Options

37. Eighty-nine issues (ranging from locality-specific to harbour-wide in scope) have been identified across a broad range of subjects including climate change impacts, business land supply shortages, decreasing percentage of permanently occupied houses and infrastructural constraints. The issues are shown in **Attachment 3** under a yellow heading. The range of options is similarly broad in scope.

38. The initial step in identifying options was to understand what is already being undertaken in the harbour basin to address the various issues. These have been identified as 'Status Quo' in **Attachment 3**, under an orange heading.
39. The options to supplement existing Status Quo initiatives are general in nature, in that they focus on future work programmes where more detailed studies may be undertaken. For example, new options include amending the District Plan in various ways, undertaking detailed planning studies for several settlements, preparing a 'Places and Spaces Plan' for the publicly-owned land in Akaroa, as well as a number of issue-specific initiatives. The options do not provide a detailed assessment of alternative growth nodes/localities but rather provide long-term direction to the type of Council-initiated work that may need to be planned for through LTCCP processes, in order to address settlement planning issues.

### Identifying the Assessment Criteria

40. The study addresses the Council's responsibilities under the Local Government Act 2002 and the Resource Management Act 1991, and its outcomes need to be consistent with or reflect the Council's adopted strategies as well as stated community views. To ensure that options achieve these requirements and enable a transparent evaluation process, a comprehensive range of assessment criteria has been formulated. Criteria cover the matters identified in Table 3 below.

**Table 3: Criteria Grouping**

Local Government Act 2002	General (four well-beings)
	Requirements in relation to decisions
	Consistency
Resource Management Act 1991	Purpose and principles
	Council functions
	Consideration of alternatives, benefits and costs
Government policy	National policy statements and plans
Regional policy	Regional policy statements and plans
CCC	Strategic Directions
	Community Outcomes
	Strategies
Local	Tangata Whenua Values
	Community Board Objectives
	Community Views

### Evaluating the Options

41. Options have been scored and weighted in relation to the above criteria and then ranked to determine relative priorities for work programmes.
42. Most matters considered by the Council involve a single issue and a small number of options. However, this Study identifies and prioritises options that address many different issues. Rather than resulting in one 'preferred option', the staff evaluation has identified:
  - (a) Options which achieved high scores and are important to pursue, for incorporation in an Implementation Plan to be developed following community consultation in 2009. These become the 'preferred options' as identified in the section below and are shown under a green heading in **Attachment 3**;
  - (b) Options which achieved moderate scores and would result in some benefit to harbour basin communities (ie 'nice to do'), shown under a blue heading in **Attachment 3**.
  - (c) Options which did not achieve a high or moderate score and are recommended not be pursued further, shown under a grey heading in **Attachment 3**.

### Preferred Options

43. The result of the options evaluation process has been the identification of 'higher priority' options, which for the purposes of this report may be considered to be the 'preferred options'. These essentially reflect a proposed work programme, to be given effect through future LTCCP budgets.



### **Comprehensive work streams**

44. Many issues can be resolved, at least in part, by pursuing specific work streams that comprehensively address concerns identified for the settlements. The work streams each incorporate a number of discrete components that have been separately scored. The scoring shows that these work streams are valid to include as preferred options in their own right.
45. The first of these comprehensive work streams is that of undertaking 'Detailed Planning Studies' for areas most likely to experience a demand for urban growth (specifically: Wainui, Duvauchelle and Akaroa/Takamatua). This would enable the Council to be proactive in terms of managing anticipated long-term residential demand, while protecting and enhancing key elements of the natural, social, physical and economic environment.
46. The second work stream is that of developing a 'Places and Spaces' Plan for Akaroa to provide direction for the future management of the public areas of the town and ensure that these reflect historic and community values. This broad option brings together a number of 'sub-options' under different issue headings, including (for example) public works and infrastructure, heritage, transport and commercial operations.

### **Standalone high-ranking options**

47. In addition to the two comprehensive work streams above, a number of standalone options have been identified. All higher priority options are shown under the green headings in **Attachment 3**.

### **Summary of all preferred options**

48. The table below provides a summary of the preferred options, comprising the two comprehensive work streams and the standalone high-ranking options. For the full text of each of these options, refer **Attachment 3**.

**Table 4: Summary of preferred options**

<b>Comprehensive Work Streams</b>	
<b>Detailed planning studies</b>	
Develop detailed plans for Wainui, Duvauchelle, and Akaroa/Takamatua, to be proactive in terms of anticipated long-term residential demand in the harbour basin. Such plans will include public consultation and will consider and/or specify the following matters (as relevant):	
Natural Environment: <ul style="list-style-type: none"> <li>• climate change and coastal hazards;</li> <li>• ecosystems, biodiversity, corridors and linkages;</li> <li>• riparian corridors;</li> <li>• flooding;</li> <li>• springs and streams flows;</li> <li>• land instability;</li> <li>• local landscape values;</li> <li>• subdivision size and rural character.</li> </ul>	Social Environment: <ul style="list-style-type: none"> <li>• archaeological sites; historic and cultural character areas; waahi tapu areas;</li> <li>• population fluctuations;</li> <li>• provision of reserves; community facilities (including their provision to attract permanent residents); recreational facilities.</li> </ul>
Physical Environment (infrastructure): <ul style="list-style-type: none"> <li>• pedestrian linkages and connectivity;</li> <li>• public transport</li> <li>• cycling and mountain-biking routes;</li> <li>• capacity of the road network;</li> <li>• water and wastewater flow, capacity and disposal issues (including soil suitability for septic tanks where required);</li> <li>• stormwater (integrated catchment management plans, low impact urban design options);</li> <li>• energy (electricity lines, siting for solar gain);</li> <li>• high speed internet availability.</li> </ul>	Economic Environment: <ul style="list-style-type: none"> <li>• small commercial centre development;</li> </ul> Managing Urban Change: <ul style="list-style-type: none"> <li>• buffers from legitimate rural activities;</li> <li>• rural-residential activity;</li> <li>• areas for intensification;</li> <li>• the long-term settlement edge,</li> <li>• staging of development,</li> <li>• settlement form and structure</li> </ul>
Refer options A.1, A.2, B.1, B.2, B.3, C.1, C.2, D.1, D.2, F.1, F.2, G.1, H.1, H.2, H.3, I.1, I.2, J.1, L.1, L.2, M.1, N.1, N.2, N.3, O.1, Q.1, R.1, R.2, R.3	

<b>Akaroa Places and Spaces Plan</b>	
Develop an Akaroa 'Places and Spaces' Plan that provides guidance for the future direction and management of public sites and areas in Akaroa, and which includes guidelines regarding the following matters to ensure that these reflect the local history, character and environment while ensuring safety and efficiency of movement:	
View-shafts; landscaping; heritage features; artwork	Public works and infrastructure (including for public open space, gutters)
Traffic management; signage and interpretation; footpath design; 'walkability'; maps	Commercial operations; tourist facilities (including public toilets)
A design brief for the long-term development of the BP Meats site (incorporating two alternative options)	
Refer options F.3, F.4, F.5, J.2, K.2 O.2, Q.2. For the BP Meats site: option O.3 [preferred] and option G.6.	

<b>Options (by theme) to address issues relating to settlements</b>	
<b>District Plan</b> – investigate amendments as follows:	
To update provisions encouraging integration of transportation and land use planning functions (Opt I.3)	To enable greater flexibility of allotment and dwelling size in residential zones (Opt R.4).
Investigate amending the District Plan to provide recognition and appropriate protection of heritage and/or cultural landscapes (Opt C.4).	To provide strong objectives, policies and rules concerning the preferred form of long-term growth, articulating when, where and how the various forms of growth might be appropriate (Opt R.5)
To ensure that new subdivision and development incorporates integrated urban design solutions for stormwater disposal (Opt A.4)	To manage effects of business growth while enabling some growth to occur, including maintaining a core consolidation of business activity at Akaroa, enabling the range of employment opportunities to broaden, and ensuring provision of sufficient business-zoned land (Opt O.4 )
Investigate potential locations and provisions for rural-residential development (Opt S.1)	
<b>Water</b>	
Research spring and stream flows between Wainui and Akaroa; identify and assess groundwater/aquifer supplies (potentially via joint study with ECan) and identify mechanisms to address effects of any reduced water availability (Opt M.2)	Undertake a hydrological modelling study for all harbour basin settlements to investigate flooding potential (taking climate change into account), to inform amendments to the District Plan (Opt B.5)
<b>Soil</b>	
Educate developers / landowners on local ground conditions and best practice methods for stabilising soils and reducing erosion / land subsidence (Opt A.7)	

<b>Wastewater</b>	
Research and identify (potentially with ECan) any local environmental effects of clustering of septic tanks; develop options and costings for remediation (Opt A.3)	
<b>Stormwater / inundation</b>	
Identify locations particularly susceptible to fast stormwater runoff and investigate mechanisms to address effects (Opt A.8)	Investigate areas identified as being likely to experience inundation due to sea-level rise, coastal erosion and/or storm surge inundation and identify suitable responses (Opt B.4)
Undertake an inventory of stormwater infrastructure for settlements beyond Akaroa including long-term improvement / management requirements and taking climate change impacts into account (Opt A.6)	Consult with local runanga in development of any new stormwater systems in the harbour (Opt A.5)
<b>Transport</b>	
Address State Highway and arterial road issues regarding safety and land use integration (Opt I.4)	Determine locations and opportunities for roadside stopping points for short-term parking and interpretation signage (Opt H.5)
For locations where roads are likely to erode with future sea level rise / storm surge events, identify options to maintain a secure transport corridor (Opt I.5)	
<b>Recreation</b>	
Assess potential new walkways and prioritise the most promising, including an assessment of their feasibility (Opt H.6)	Survey coastal facility users and local residents to ascertain current pressures on coastal recreational infrastructure to enable identification of appropriate responses (Opt H.7)
Undertake a study to determine supply and demand for recreational facilities, including shortage / quality issues surrounding existing recreational facilities and strategic purchase opportunities (Opt H.4)	
<b>Community services and facilities</b>	
Undertake an audit of existing and projected ability for current voluntary / medical / emergency services, and for existing community facilities to meet long-term peak population (Opt G.2)	

<b><i>Sustainable communities - general</i></b>
Support Green Globe certification for the harbour basin, including by benchmarking and monitoring performance across the community performance areas (Opt T.1)
<b><i>Tourism</i></b>
Support development of a formal tourism liaison group to include representatives from the local community (Opt Q.3)
<b><i>Heritage</i></b>
Identify heritage buildings coming under development pressure; implement / develop an appropriate range of retention mechanisms (Opt F.6)

49. Final preferred options and work programmes will be determined following community consultation in early 2009 and the study outputs will include an Implementation Plan to set out the timing for the final agreed work programmes. A final 'Issues and Options' document and Implementation Plan will be presented to the Council for adoption mid-2009.

#### **ASSESSMENT OF OPTIONS**

50. Detail of the methodology used to assess options can be provided by staff upon request.