

7. FLAT WATER FACILITY

General Manager responsible:	General Manager Community Services
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PURPOSE OF REPORT

1. The purpose of this report is to provide Council with a background of the work done with regard to a flat water facility and to describe the work done in assessing alternative sites as requested by a resolution of the Council in July 2004.

EXECUTIVE SUMMARY

Process and Council Resolutions

2. Since July 2004, Council staff have been working through a process of identifying potential sites for a flat water facility and assessing these sites in relation to their suitability as a venue for a flat water facility. The culmination of this work was a seminar to the Council on 22 March 2005. This report summarises the seminar presentation.
3. The Council has passed a number of resolutions in relation to a flat water facility. These resolutions have spanned a number of financial years as this issue has been progressed. There has been clear direction from the Council to not pursue any further action with regard to the Lake Isaac site. The Council has asked for further consideration of alternative sites to be made and in order to facilitate this a budget was allocated to allow this to happen. In summary these resolutions covered the following:
 4. A sum of \$200,000 be allowed for feasibility investigations on a preferred site for a flat water facility, not being Lake Isaac or any other site which would pose a risk to airport operations and that future provisions for funding for the Lake Isaac Watersports Trust be deleted. (NB The full resolutions are included in the background Item 19).
 5. In addition to this the Council allocated capital funding for a flat water facility over four financial years from 2005 through to 2009.
 6. More recently the Council has passed a resolution allocating \$600,000 for work at Kerrs Reach for the 2005/06 financial year.

Ecosure Report

7. A report was commissioned to investigate and report on the potential for birdstrike at Christchurch International Airport. The report concluded that the birdstrike risk at CIAL at present is significant and that all reasonable efforts should be taken to reduce that risk. Additionally the report stated that Amendment 5 of ICAO's International Standards and Recommended Practices, Aerodromes – Aerodrome Design and Operations should be taken into account when considering the construction of facilities at or near an airport. The report clearly states that authorities should take action where possible to reduce risk associated with birdstrike.
8. The report was independently assessed by Professor David Elms of Canterbury University. Professor Elms is a recognised risk expert. Professor Elms concluded that he concurs with the findings and recommendations of the Ecosure Report. In his opinion, the Lake Isaac proposal poses too great a risk of an unacceptable level of bird strike hazard, and it should not proceed.
9. The Ecosure report and the work carried out by Council staff clearly identifies that Christchurch and CIAL face a unique feature with regard to birds and bird movement. That feature is the hereditary flight paths that birds follow around Christchurch. This feature differentiates Christchurch and CIAL from other cities and other airports. It is not valid to compare the local situation to other sites unless the same conditions exist.

Site Evaluation

10. Site evaluation criteria were established at the very beginning of the process. These were developed in conjunction with Canterbury Rowing. The criteria that were used for the Lake Isaac proposal were also applied to the other sites that have been investigated as part of this process.

Other Sites

11. Other sites that have been investigated are:
 - Pegasus Bay Township. This was discounted mainly due to the space requirements for a flat water facility.
 - The adjoining Councils of Waimakariri and Selwyn were approached. The one site that was identified had similar problems to the Lake Isaac proposal.
 - Lake Crighton was considered but again due to space requirements was discounted.
 - Bottle Lake Plantation was considered but the Selwyn Plantation Board has no interest in relinquishing the required area for a lake. Relinquishing the land would totally compromise the operation of the forest.
 - Lake Forsyth was reviewed but the significant issue here is the quality of the water which has potentially fatal implications.

Kerrs Reach

12. Considerable work has been undertaken with user groups of Kerrs Reach in trying to identify ways in which to address the safety issues associated with Kerrs Reach. It is possible to improve the boat launching facilities. This will alleviate some of the safety issues and will also add value to the whole Kerrs Reach facility.
13. Additionally education with regard to river usage, water safety in relation to craft using the river will significantly improve the functionality of the river.

Owles Terrace

14. There is the possibility of establishing another river access point at Owles Terrace. The Council is considering development of the Owles Terrace site. Owles Terrace is bordered by the Avon River and presents an opportunity to establish an additional river access using floating pontoons the same as what is proposed for Kerrs Reach.

FINANCIAL AND LEGAL CONSIDERATIONS

15. The Council has a current budget of \$11M allocated for a flat water facility. The funding is allocated as detailed in item 18.
16. The current Council resolution passed in March 2005 is for the allocation of \$600,000 for improvements at Kerrs Reach.
17. The balance of the \$11M allocated to the flat water facility is to be reviewed.

STAFF RECOMMENDATIONS

It is recommended that the Council:

- (a) Accept that there is no site suitable for a flat water facility that meets the criteria required to have such a facility, and that no further work be done by the Council on feasibility studies.
- (b) Request staff to develop detailed upgrade options for Kerrs Reach, in particular the following items:
 - Install pontoon launching facility at Kerrs Reach
 - Install signage at water access points
 - Assist with water education

- (c) Request staff to report back on options for a launching facility at Owles Terrace and incorporate that into the development plans for the site.
- (d) Request that a communication plan is developed which details the process, background information, includes earlier Council resolutions and the reasons why decisions were made. The plan to also include details on improvements to Kerrs Reach.
- (e) Decide whether to retain the balance of the \$11M currently in the LTCCP for a flat water facility.

BACKGROUND ON FLAT WATER FACILITY

Council Resolutions

18. This matter has been considered by the Council at a number of different meetings and seminars. There has been clear direction from the Council to not pursue any further action with regard to the Lake Isaac site. The Council has asked for further consideration of alternative sites to be made and in order to facilitate this a budget was allocated to allow this to happen. The following resolutions have been passed by the Council in relation to a flat water facility:

2003/04 Annual Plan Process resolved:

- That a sum of \$150,000 be included in 2003/04 for the investigations to be undertaken on the provision of a Christchurch flat water sports facility.
- That the investigation include an independently reviewed business case which establishes a demand for such a facility in Christchurch, its operational viability, available land options (including all aspects of environmental, transport and other impacts) and the construction costs.
- Having regard to the increasing concerns relating to the risk of aircraft birdstrike, that the officers report to the Parks, Gardens and Waterways Committee on a strategy for minimising such risks, and in the preparation of such strategy, the Chief Executive be requested to establish a project team that would include representation from Christchurch International Airport Limited, Environment Canterbury and Fish and Game Council.
- That future budget provisions for the Lake Isaac Watersports Trust be deleted.

2004/05 LTCCP

The following recommendations were made for a flat water facility:

1. That the Council provide \$200,000 in 2004/05 for feasibility investigations on a preferred site for a flat water facility, not being Lake Isaac or any other site which would pose a risk to airport operations.
2. That the following capital funding provision be made for this facility:

2005/06	\$600,000
2006/07	\$3,000,000
2007/08	\$3,600,000
2008/09	\$3,800,000

Ecosure Report

19. The Ecosure report covered an extensive review of birdstrike at CIAL. Ecosure Pty Limited were approved by both CIAL and Christchurch International Rowing Centre Charitable Trust as being an appropriate expert to carry out the investigations and produce a report. Ecosure Pty Limited is an Australian based consultancy specialising in advising airports about birds and birdstrike risk. Base data was provided from surveys that had been undertaken by Council staff over a number of years.
20. Ecosure Pty Limited were engaged to specifically comment on:
- International standards which pertain to circumstances where land use changes near an airport and may create a bird hazard.
 - Review a previous report prepared by Ecosure in 2002 and indicate how current information changes the findings if there is any change at all.
 - Recommend a course of action for the Council.

21. The Ecosure report was presented to a Council seminar on 16 June 2004.
22. The following recommendation was made (NB direct extract from Section 7 of the Ecosure report):

The bird strike risk at CIAL at present is significant. Various estimates range from low but significant to high and in the range where action needs to be taken to reduce it (ie it's in the ALARP region). The implication for CIAL, as the airport's operator, is that all reasonable efforts must be made to reduce risk from current levels and that no additional risk within their control should be added.

The analysis of the effects of the Lake Isaac proposal indicate that in the most optimistic case of area-wide and also facility-bird management methods, some small reduction in risk would be possible. A worst-case scenario with poor or non-existent management methods would lead to a very significant increase in bird strike risk. The reality would be somewhere between the two. Given that risk estimates must take into account all relevant sources of uncertainty, the conclusion must be that the bird strike risk would be increased significantly if Lake Isaac were to be constructed.

It certainly cannot be said that the Lake Isaac proposal is unlikely to create conditions conducive to a bird hazard problem. We must then take into account Amendment 5 of ICAO's International Standards and Recommended Practices, Aerodromes – Aerodrome Design and Operations and recommend that the proposal to build a water sports facility in this location not proceed.

23. The report was independently assessed by Professor David Elms of Canterbury University. Professor Elms is a recognised risk expert. Professor Elms makes the following statement:

"I have reviewed both the Ecosure Report in detail, and have worked with its author to make sure that we both agree on its recommendations.

In essence, the report does three things. It:

- *identifies relevant international standards and recommendations that should be taken into account in any decision.*
- *carries out a detailed comparative analysis to estimate the change in bird hazard risk which would be expected to eventuate if the Lake Isaac proposal were to proceed for two scenarios involving, first, the best possible area-wide bird management program both at the facility and area wide, and secondly, a poor bird management program.*
- *makes an assessment of the current level of bird strike risk at Christchurch International Airport, using a number of different ways of looking at the issue.*

Thus, I concur with the findings and recommendations of the Ecosure Report. In my opinion, the Lake Isaac proposal poses too great a risk of an unacceptable level of bird strike hazard, and it should not proceed.

24. Christchurch and the Port Hills are the foundation of a significant hereditary bird migration path. Birds migrate from the Waimakariri River to the Estuary and from the Estuary to Lake Ellesmere. The path from the Waimakariri River to the Estuary cuts right across the flight path of planes at the northern end of the airport runway. CIAL has been compared to other airports which are adjacent to large bodies of water and/or the sea when the issue of birdstrike was being assessed. Direct comparison with other locations/facilities is not valid, unless similar hereditary migration paths intersect aircraft flight paths. A copy of these hereditary migration paths is attached.
25. The hypothetical airport risk may almost entirely be derived from bird movements and will be dependent on a whole range of factors mainly related to what other habitats and land uses can attract birds and how these are positioned in relation to the airport, coastlines and bird migratory paths. Of course, it will also depend on the types and numbers of bird present.

26. Where the risk is considered too great, such as on the Hoo Peninsula (proposed airport at Cliff Marshes in the UK), a strong case was argued for not placing the airport there. It was found that despite all mitigation options available, the risk would still be too high. Had the same tests been applied to a range of existing airports before they were built, they may well have been built in a different location. Today, risk assessment plays a part in the approvals processes; in the past it didn't.
27. In Christchurch Airport's case, the existing risk from birdstrike is significant by almost any measure that is adopted. This is primarily due to the Waimakariri River, its Black Backed Gull and Canada Goose breeding grounds, and the available food attractions surrounding the airport and the city. In addition the river is a major flyway for birds moving between the coast/city and the mountains. With risk at this level, any prudent risk management strategy would insist that any unnecessary increases in risk are avoided, and that current risk is managed to as low as is reasonably practicable.
28. The Ecosure report provided information on international standards relating to construction of facilities adjacent or near an airport. In summary the standards clearly state that no facility should be constructed which will increase the risk of birdstrike and that all effort should be made to reduce the risk.

Site Evaluation

29. The initial site evaluation criteria were developed in conjunction with representatives of the Lake Isaac Trust. In summary the criteria are as follows:
 - Close to population and amenities
 - Capital cost (engineering feasibility)
 - Ongoing operational costs
 - Existence of natural hazards
 - Meets criteria for international events
 - Constant water flow to ensure water quality
 - Environmental management and maintenance
 - Suitable lake size
 - Sufficient total area for ancillary facilities
 - Correct wind alignment
 - Constant ground water
 - Land available
 - Ease of obtaining planning approvals

Other Sites

30. A number of other sites were considered for a flat water facility. None of the sites identified progressed to the detailed analysis stage. Each site was discounted on a fundamental issue as described below:
 - **Pegasus Bay Township**
 - The rowing lake requirements are five times larger than the lake they propose for their development.
 - Well down the track with design, resource consent and planning issues.
 - They were building a model for marketing when we approached them.
 - The lake alignment was not suitable.
 - The area required for the lake would make the development unviable.

- **Adjoining Councils**

- Enquiries were made of Waimakariri and Selwyn District Council.
- Selwyn could not identify any options that might possibly meet the criteria.
- Waimakariri identified one block of land in their ownership between Eyreton and Swannanoa of approx 250ha.
- Wrong alignment.
- Directly opposite the "Isaac" proposed site ie on the north bank of the Waimakariri, therefore same airport issues would exist.
- Relatively expensive.

- **Lake Crighton**

- Lake Crighton is sited on a block of land comprising 100 ha incl. the area of the lake therefore does not meet our size requirements.

- **Bottle Lake**

- The Selwyn Plantation Board has no interest in relinquishing the required area for a lake. The required 170ha ties strategically into their overall sustainable harvest programme across their entire forest estate, in addition Bottle Lake provides specific log qualities not easily replaced in other areas of their estate. Removal of such an area would put the long term financial viability of Bottle Lake Plantation as a commercial plantation forest block in jeopardy.

- **Lake Forsyth**

- Lake is 5.6k² in area.
- Average water depth 1-2m (4m near mouth).
- Water is brackish, salinity content 3-30% of sea salinity level.
- Water quality impacted by toxic blue green bacteria (nodularia) bloom.
- Drinking water from the lake has been fatal for sheep, cattle and dogs.
- No remedy expected soon as the bloom issue is largely a natural issue.

Kerrs Reach

31. Considerable work has been undertaken with user groups of Kerrs Reach in trying to identify ways in which to address the safety issues associated with Kerrs Reach. Consideration has been given to try and improve the launching facilities and eliminate some of the specific safety issues around accessing the river.
32. Additionally Council staff have been working closely with user groups to try and generate some rules of use/code of conduct for the river. Significant progress has been made with this. It is proposed that signage be installed to inform users of the requirements as well as providing ongoing education.
33. The following are indicative costs for upgrading and signage:
 - Install a floating pontoon for launching boats
 - Costs: approx. \$250,000
 - Signage
 - Additional signage detailing "rules" should be installed.
 - Approx. 4 signs - 1 each at launching sites.
 - Costs: \$2,500 x 4 = \$10,000
 - Ongoing Education. CCC to facilitate ongoing education on river usage, safety, interaction with other users.
 - Costs: approx \$10,000 (staff time)

Owles Terrace

34. The Council has been giving consideration to development of the site known as Owles Terrace. Owles Terrace is located on the Avon River just south of the New Brighton bridge. The Owles Terrace site consists of an old Council works yard and a large area of open space. Work is currently under way to define the extent of contamination on the site. The intent is to eventually define a redevelopment option for the site.
35. One of the elements that has been considered is how best to make uses of the adjacent Avon River. There exists an opportunity to provide an new structured river access point for river users such as rowers, canoeists, etc. Waka Ama users already gain access to the river at this location.
36. Provision of an alternative staging point for access to the river may help to alleviate the pressure on Kerrs Reach. Suitable management of user groups and appropriate education can all work towards making this happen.
37. It is proposed that further consideration be given to this site as a secondary river access point and that river access facilities such as that proposed for Kerrs Reach be installed at Owles Terrace.

OPTIONS

38. Provision of flat water facility

Option 1: Continue to search for a site

Considerable effort has already been expended in searching for a site. All of the possible available options have been reviewed and subsequently discounted for specific reasons. Committing additional funding and resources to the search for a site that meets the criteria is futile.

Option 2: Do not put any more resources into looking for an alternative site. Do nothing about upgrading Kerrs Reach

This is not really a viable option, given that inaction will not help resolve any of the current issues. The issues of congestion, safety and education still exist for the Kerrs Reach facility. The same comments re looking for a site from Option 1 apply to this option.

Option 3: Do not put any more resources into looking for an alternative site. Spend some funds on upgrading Kerrs Reach and carry out further work on the Owles Terrace opportunity.

Upgrading of Kerrs Reach and carrying out further work on Owles Terrace will address some of the fundamental issues of safety, ease of access to the river and congestion. In conjunction with this work, education on river use is paramount. Doing this work will improve the current facility. It does not alleviate the issue of having a facility which can accommodate international events, but given the lack of a suitable site for a flat water facility it makes good sense to do whatever is practically possible to improve what facilities the Council does already have.

PREFERRED OPTION

39. The preferred option is Option 3 – upgrade Kerrs Reach, look at Owles Terrace, but do nothing further on looking for a site for a flat water facility

ASSESSMENT OF OPTIONS

The Preferred Option

Upgrade Kerrs Reach, look at Owles Terrace, but do nothing further on looking for a site for a flat water facility.

	Benefits (current and future)	Costs (current and future)
Social	Improved recreation facility	User groups have better utilisation of an existing asset
Cultural	None	None identified
Environmental	None	None identified
Economic	Improve an existing asset	Capital funding to carry out improvements. Future maintenance costs.

Extent to which community outcomes are achieved:
Primary alignment with community outcome for a liveable City.

Also contributes to creating strong communities.

Impact on Council's capacity and responsibilities:
Minimal impact on rates.

Effects on Maori:
No known.

Consistency with existing Council policies:
Consistent with Council policy to provide safe facilities.

Views and preferences of persons affected or likely to have an interest:
User groups have already identified the need to improve the Kerrs Reach facility

Other relevant matters:

Maintain The Status Quo (If Not Preferred Option)

Do not put any more resources into looking for an alternative site. Do nothing about upgrading Kerrs Reach.

	Benefits (current and future)	Costs (current and future)
Social	None	Negative impact on Council complete inaction.
Cultural	None	None
Environmental	None	Possible damage to existing facility through over use and no refurbishment.
Economic	None	None identified

Extent to which community outcomes are achieved:
Poor alignment with community outcome for well governed City and liveable City and creating sharing communities.

Impact on Council's capacity and responsibilities:
Not consistent with Council's responsibilities.

Effects on Maori:
Not known.

Consistency with existing Council policies:
Contrary to Council policy to provide appropriate, safe recreation facilities.

Views and preferences of persons affected or likely to have an interest:
Certain to be apposition with user groups.

Other relevant matters:

Option 3

Continue to search for a site.

	Benefits (current and future)	Costs (current and future)
Social	Creation of a new recreation facility.	User groups could get a new facility.
Cultural	None	None
Environmental	None identified.	None
Economic	Creation of a future asset.	Capital funding for new asset.
<p>Extent to which community outcomes are achieved: Primary alignment with community outcome for a Liveable City.</p> <p>Also contributes to creating strong communities</p> <p>Impact on Council's capacity and responsibilities: Capital funding for facilities has an impact on rates.</p> <p>Effects on Maori: Not known.</p> <p>Consistency with existing Council policies: Consistent with Council's policy on providing recreational facilities.</p> <p>Views and preferences of persons affected or likely to have an interest: User groups will support this.</p> <p>Other relevant matters:</p>		