

REVIEW OF NEW ZEALAND'S SEARCH AND RESCUE GOVERNANCE ARRANGEMENTS

Introduction

1. New Zealand has an international obligation to provide Search and Rescue (SAR) services in the New Zealand search and rescue region (NZSRR) covering a vast area from just south of the equator to the Antarctic, dominated by ocean expanses with a few small, isolated land masses. It can be argued that the government also has a moral obligation to provide SAR services to those that get themselves into distress in New Zealand where the outdoors is readily accessible and outdoor activities have long played an important part in the national culture. But large parts of New Zealand comprise some very difficult terrain and experience highly variable weather. History shows it is easy to get lost or injured and difficult to find people when they are in distress.
2. The current governance arrangements for SAR in New Zealand have their origins in the 2001 report of the Maritime Patrol Review and a Cabinet decision in 2003 which agreed to the establishment of the SAR Council, the NZ SAR Secretariat (based in the Ministry of Transport) and the NZ SAR Consultative Committee. These arrangements were introduced to provide stronger strategic co-ordination and governance of all SAR modes (land, marine and aeronautical). The revised structure was intended to provide strategic policy advice to government and strong strategic co-ordination of the operational aspects of SAR with the SAR Council expected to provide the vision, mission and goals for SAR expressed in a national SAR Plan. The Council was also expected to link with the Domestic and External Security Co-ordination (DESC) system through the Officials' Domestic and External Security Co-ordination (ODESC) group.
3. The arrangements for the SAR Secretariat were reviewed again in 2006. That review found strong support within the stakeholders for the SAR governance arrangements in place. The review identified availability of adequate resources as an issue for the voluntary agencies that SAR relies on, but acknowledged that it would be addressed through a strategic funding proposal.
4. Since 2003 further developments have taken place in the way government manages and co-ordinates national security issues and emergencies. In addition other trends are likely to have an implication for SAR such as increased tourist activities and the accessibility of remote areas, the availability of new technologies that aid SAR but could also lead to a false sense of security, a low awareness of the risks associated with some outdoor activities as the population becomes more urban, and the impact of demographic changes including an aging population. Two recent international SAR operations, the unsuccessful search for Malaysian Airlines flight MH370 and the mass rescue of passengers from a ferry that caught fire in the Adriatic Sea in 2014, serve to highlight the increasing high expectations the public have for SAR and the responsibilities of governments for effective SAR arrangements despite the operational challenges

such SAR Operations (SAROPs) at the upper end of the scale of response might present.

Purpose of Review

5. The purpose of this review is to examine the arrangements that the Government has in place to meet its search and rescue obligations with a view to ensuring the sector remains fit for purpose, aligned to its environment and optimized to face future issues. The Terms of Reference directed the review to specifically examine the following aspects of SAR:
 - The structural and governance arrangements for SAR in New Zealand;
 - Identify the future challenges SAR is likely to face and recommend if required, adjustments to the governance arrangements.
6. The review was not expected to examine in detail the funding arrangements for SAR nor comment on the role performance organizational or resourcing arrangements of any organization involved in SAR.

International Obligations

7. New Zealand is a signatory to the following international conventions for search and rescue which have an implication for the SAR services provided:
 - The Convention on International Civil Aviation (1944) Annex 12 SAR Standards and Procedures.
 - The International Convention for the Safety of Life at Sea (SOLAS) (1974, amended 2000) Chapter V Search and Rescue.
 - The International Convention on Maritime Search and Rescue (1979) Provision of regional SAR services and RCC.
 - Law of the Sea Convention Article 98 – Duty to Render Assistance.
8. These conventions impose an obligation on the party states to:
 - Arrange for the establishment and prompt provision of SAR services within their allocated Search and Rescue Region (SRR).
 - Establish national machinery for the co-ordination of SAR services;
 - Establish a rescue co-ordination centre for the SRR that is staffed 24 hours a day; and,
 - Provide a Marine Assistance Service.

Operational Arrangements for SAR

9. The New Zealand Search and Rescue Region (NZSRR) is derived from its agreement to the international conventions. The Convention on International Civil Aviation provides an obligation on New Zealand to provide SAR services to

air services in the NZSRR. The International Convention for the Safety of Life at Sea provides for marine SAR services in NAVAREA XIV, which is an area roughly aligned (but larger) to the NZSRR. The NZSRR is one of the largest SAR areas of responsibility in the world; an area characterized by vast distances, few land masses and few centers of population. It experiences highly variable weather and sea conditions and has a variety of geographies but nevertheless it is traversed by considerable sea and air traffic.

10. To meet its international obligations for SAR New Zealand legislation through the Civil Aviation Act 1990 makes the Minister of Transport responsible for the establishment, maintenance and operation of a search and rescue co-ordination centre to co-ordinate and conduct aviation and maritime SAROPs and any other SAROP the Minister considers appropriate. The Civil Aviation Act authorizes the Minister of Transport to appoint persons to participate in SAROPs and in practice, through the Maritime Transport Act 1994, the Minister directs Maritime New Zealand to be responsible for the Rescue Co-ordination Centre New Zealand (RCCNZ) and its co-ordination function in an aviation or maritime SAROP in the NZSRR.
11. A Cabinet decision in 2003 established the New Zealand SAR Council which in turn has established the operational arrangements for the co-ordination of SAR activities in the NZSRR in the land environment, aviation or marine. Two co-ordinating authorities have been established to manage the two categories of SAROPs. Police are the co-ordinating authority for Category I SAROPs and Maritime New Zealand maintains the RCCNZ at Avalon as the co-ordinating authority for Category II SAROPs within the NZSRR associated with aircraft in distress, missing aircraft and offshore marine SAROPs. The manner in which an alert is received does not determine the category of the SAROP or the Coordinating Authority.
12. Category II SAROPs typically require the use of national or international resources and may require co-ordination with other states. Alerts for Category II SAROPs are received directly at RCCNZ or are passed to the RCCNZ through the Maritime Operations Centre (MOC) or Police Communications Centers. The RCCNZ is also the New Zealand point-of-contact for distress beacon alerts through the COSPAS/SARSAT system irrespective of the environment in which the beacon is activated. The RCCNZ is co-located with the MOC which monitors maritime communications including distress calls and provides a messaging service and alerting function in NAVAREA XIV to meet the obligation under The International Convention for the Safety of Life at Sea and the International Convention on Maritime Search and Rescue (1979) Provision of regional SAR services. The MOC has an ability to monitor the movements of marine vessels in the New Zealand area.
13. Operational capabilities for Category II SAROPs are drawn from the New Zealand Defence Force (NZDF) (primarily air and maritime assets) and commercial operators of ships and aircraft and are employed in SAROPs under the direction and co-ordination of the RCCNZ. A Category II SAROP may make use of volunteers. The arrangements for Category II operations are well practiced and it is assessed New Zealand's obligations to the international conventions for SAR are met.

14. Police are the coordinating authority for Category I SAROPs which are coordinated at the local level and include land searches, subterranean operations, river, lake and inland waterways and close to shore marine operations. The Policing Act 2008 does not specifically refer to Police's responsibilities for search and rescue but Section 9 of the Act lists Functions of Police including to maintain public safety, provide community support and reassurance and emergency management. Section 10 of the Act acknowledges 'that it is often appropriate, or necessary, for the Police to perform some of its functions in co-operation with individual citizens, or agencies or bodies other than the Police'.
15. Police have SAR Co-coordinators appointed in each Police District but not all of them are fulltime appointments as determined by the SAR need and other policing priorities in the District. The alert for a Category I SAROP can be raised locally with Police or a Coast Guard unit, regionally through a call to 111 and the Police and emergency services' communications centers, and by delegation from the RCCNZ following the reception of a beacon alert or the notification of an aircraft or vessel in distress.
16. Operational capabilities for the conduct of Category I SAROPS are drawn from local resources that can include the emergency services, helicopter operators, Coastguard New Zealand, Surf Living Saving clubs, Land Search and Rescue Groups, Department of Conservation staff, Police SAR teams, Police maritime units, the Police helicopter, NZDF assets, members of the Amateur Radio Emergency Communications group and local tramping clubs and other volunteers and groups. Typically close to shore marine operations are conducted out to the 12nm limit but depend on the capabilities available and the conditions at the time. A Category I operation can be escalated to Category II where the RCCNZ takes responsibility for the coordination of the SAROP and a Category II operation can be reclassified as a Category I and delegated to Police to coordinate.
17. The operational arrangements that provide for two SAR co-coordinating authorities are an effective and pragmatic structure. At the local level it provides for a swift and coordinated response drawing on local capabilities and local knowledge but with an ability to escalate the operation to those with call on greater capabilities if required. The arrangements for the conduct of Category I operations have a number of characteristics which deserve to be highlighted:
 - The operational capability is based largely on volunteers and the clubs and units they belong to. These participants show extraordinary willingness and commitment to the SAR role and provide the backbone for Category I SAR in New Zealand and an outstanding SAR capability. Volunteers may also participate in Category II operations.
 - Being based on volunteers, the national SAR capability for Category I operations represents extraordinary value for money, which may not always be acknowledged by Government.
18. While having two co-coordinating authorities suits the New Zealand response setting there are a number of centers in New Zealand staffed 24/7 to monitor

various fields, and some of which are responsible for activating a response. These centers include the RCCNZ, the MOC, Police/Fire communications centers, Ambulance communications centers, the NZDF's Headquarters Joint Forces New Zealand and others, each responsible for managing their host agency's requirements. The caller seeking assistance does not care about the location of the operations centre or the parent agency of the staff taking the call. The caller expects a swift response from the call receiver and the response to be transferred to the agency best placed to conduct the response. Given the number of operations centers staffed, there could be a perception of duplication and overlap and therefore some value in greater sharing of facilities and staff for the monitoring and alerting function. But while centralization may reduce staffing levels and the number of facilities, there are a number of challenges to centralization:

- There will be an increased training burden for cross-training staff onto other response systems and structures;
- There would need to be an agreement on where the responsibility and accountability lies for the activities undertaken by a central operations centre when the staff and facilities are shared and are not necessarily under command of the organization responding to an emergency;
- Centralization tends to reduce local knowledge available to the those responsible for co-coordinating a SAROP; and,
- Implementation of a shared facility would require some investment initially.

19. The value and costs of centralization of the monitoring and alerting function across many agencies is beyond this review and would require a separate study. From a SAR perspective there is no imperative to investigate the benefits of sharing operations centers. However if one of the other agencies operating a 24/7 center was to investigate the costs and benefits of sharing, the SAR Council would be expected to work with the ODESC RRB to ensure the current responsiveness of the SAR sector is maintained.

Risks and Capabilities

20. The review has identified a number of operational factors drawn from the nature of the NZSRR and the recent publicity around the ability of authorities in other jurisdictions to locate missing aircraft quickly or in the case of the ferry fire in the Adriatic Sea, to affect a mass rescue. New Zealand has the responsibility for coordinating SAROPs in some of the most remote parts of the world be that in the Southern Ocean, at the eastern extremities of the SRR or to the north in the tropics. The capacity to search these areas is limited by the range of aircraft and vessels, the transit times involved and the time-on-station available. The ability to rescue those in distress in those areas is similarly limited. While the SAR system is known to be effective close to New Zealand, the limitations that apply at the extremities of the NZSRR are not well known, and the challenges may not be appreciated by the public but potentially also by Ministers and other key stakeholders. Given the attention searches in remote areas have received recently, it is suggested the SAR Council provide key stakeholders with an explanation of the SAR capabilities and their limitations at the extremities of the

NZSRR in order to manage the reputational risk.

21. Another reputational risk exists in the under-developed planning and exercising of a mass rescue scenario that could be encountered by a cruise ship or airliner in distress in the NZSSR and potentially, in a remote part of New Zealand. The SAR Strategic Plan identifies a mass rescue event that overwhelms normal SAR capabilities as a risk and acknowledges that such an event might be infrequent but would have severe consequences. But the Strategic Plan was developed before the 2014 loss of MH370 and the subsequent publicity the search for that airliner has generated. To help manage the risk the NZ SAR Secretariat has drafted a strategic policy for mass rescue and is working on the development of a plan for coordinating an all-of-government response to a mass rescue. The review assesses there is some way to go before the required procedures are developed fully and can be trialed. Until that work is completed there will remain a gap in preparedness and a risk to the sector, the Council and the Government. It is recommended the SAR Council encourages the NZ SAR Secretariat to complete the planning for a mass rescue operation.

Governance Arrangements

22. The current structure for the governance of national SAR was agreed by Cabinet in 2003 in the wake of the Maritime Patrol Review and resulted in the establishment of the SAR Council, the NZ SAR Secretariat (in the Ministry of Transport) and the NZ SAR Consultative Committee. It aimed to provide strong strategic co-ordination and governance of all modes of SAR.
23. The revised structure was intended to provide strategic policy advice on SAR to government and strong strategic co-ordination of operational aspects of SAR. The SAR Council was expected to provide the vision, mission and goals for SAR, expressed through a New Zealand SAR Plan. The Council was expected to link with the Domestic and External Security Co-ordination (DESC) system through the Officials' Domestic and External Security Co-ordination (ODESC) group. Terms of Reference were developed by the SAR Council for the three governance levels and have been implemented.
24. The Terms of Reference for the SAR Council provides for the following objectives:
- To provide strategic SAR policy advice to government.
 - To provide strong strategic co-ordination and leadership for all SAR strategies (land, sea and air) within the NZSRR.
 - To provide a centralised public voice for strategic SAR issues.
 - To monitor New Zealand's international SAR obligations and provide strategic advice to government when needed.
 - To establish and maintain New Zealand's SAR vision, mission, goals and plan and monitor performance agreements and goals within the plan.
25. The membership of the Council is restricted to the Chief Executives or their delegated representative of the Ministry of Transport, the New Zealand Police,

New Zealand Defence Force, Maritime New Zealand, the Civil Aviation Authority and the Department of Conservation. The Council is intended to operate as a board of directors and the Terms of Reference encourages members “to examine issues before the council from a strategic viewpoint not withstanding individual agency responsibilities”. The Council is expected to meet at least three times each year.

Effectiveness of Governance Arrangements

26. In order to assess the effectiveness of the Council the review looked for evidence that showed its involvement in providing strategic direction and leadership of the SAR sector; the way it provided oversight and coordination of the sector; how it assured government of the readiness, capabilities and risks in SAR; and how it managed relationships with the wide range of stakeholders involved in SAR.
27. The SAR Council is to be commended for its introduction of a Strategic Plan and an Annual Report. The Strategic Plan provides statements of the vision, values, concept of operations and is critical to providing the sector with direction and coordination. The Plan sets the sector the following four goals:
- To maintain a robust and integrated SAR system;
 - To ensure efficient and sustainable SAR organizations;
 - To provide capable SAR people; and,
 - Reduce the demand for SAR services.
28. The plan also identifies a number of risks faced by the SAR sector and the risks are reviewed regularly by the Council. The strategic planning for SAR is robust and effective and as the engine room working for the Council, the small SAR Secretariat staff has done an excellent job in assisting the Council to meet its role of providing strategic direction. The review has identified four aspects that could be developed further:
- SAR Council reporting to Government;
 - SAR Council representation;
 - Emphasis on preventative strategies; and
 - Performance measures.
29. The reviewer notes that in comparison to Civil Defence Emergency Management (CDEM), which like the SAR sector is also a federated system that relies heavily on local government and community involvement, there is no legislated requirement for a SAR national strategy or plan, and no legislated requirement for reporting to government. In comparison to the governance of CDEM, the legislation for SAR is permissive rather than specific.
30. The Civil Defence Emergency Management Act states the requirement for a national strategy, the national plan and reviewing and reporting as well as the authorities for those holding key positions in civil defence emergency management. While detailed SAR legislation is probably not required, the SAR Council should consider having the mandate for the current arrangements as agreed by Cabinet in 2003 affirmed by the Minister of Transport and Cabinet

including the role of the Ministry of Transport as the lead agency and host of the NZ SAR Secretariat, and the delegations to Maritime NZ for the RCCNZ and the establishment of the SAR Council, NZ SAR Secretariat and NZ SAR Consultative Committee. As a follow-on, it is the SAR Council that has established the Terms of Reference for itself and its subordinate governance arrangements and these too should be noted by the Minister and Cabinet.

31. Nevertheless the Council's annual report is passed to the Minister of Transport and the Chair's routine meetings with the Minister provide opportunities for SAR issues to be discussed. Reporting therefore is on an exception basis. But that process might not be enough to provide the assurance to Ministers that the SAR arrangements are appropriate, ready and capable.
32. In 2013 the revision of the ODESC system was agreed by Cabinet and saw the establishment of the ODESC Readiness and Response Board (RRB), which has the responsibility for ensuring government is ready to respond to major national emergencies, identifying capability gaps, monitoring performance of response and readiness systems maintained by agencies and considering readiness and response investment proposals. The role of the SAR Council pre-dates the establishment of the RRB and it currently operates independently of it although three members of the SAR Council are also members of the RRB. There is an opportunity now for SAR to be included in the scope of capabilities monitored by the RRB. This would provide a more formal reporting mechanism to government, achieve greater alignment with the ODESC processes for national security and resilience, increase the awareness in partner agencies of the capabilities and risks associated with SAR, and enhance co-operation between agencies, which is essential in a large scale response. It is recommended that the SAR Council report at least annually to the RRB on the status of SAR capabilities and risks, and that a SAR summary is included in the ODESC reporting to Cabinet.
33. The ODESC process for managing an all-of-government response to a crisis has evolved and improved during the last 10 years. The concept of "lead agency" is well accepted by government departments and agencies as is the value of co-ordination between departments to ensure resources are available for a large scale response. The role of ODESC in ensuring co-operation occurs across agencies and that government is well informed is a critical part in an all-of-government response to a crisis. In SAR there has not yet been a large scale emergency response in recent times that has required all-of-government co-ordination and the current understandings have not been tested. Yet there is the potential for a SAR response in the NZSRR that involving large numbers of people in distress, high numbers of casualties and in a remote part of the NZSRR, which would generate high political interest. Such a scenario would call for coordination of support at the strategic level across many agencies using the ODESC processes but the scenario has not been exercised fully and therefore presents some risk. As identified earlier, the NZ SAR Secretariat has drafted a strategic policy for mass rescue operations which should provide the base for developing inter-agency co-operation that would be required in that type of SAROP. The Council could mitigate some of the risk by having the mass rescue coordination procedures developed fully.

34. The NZ SAR Secretariat plays a critical role on behalf of the SAR Council in coordinating activities across the SAR sector's stakeholders and through the NZ SAR Consultative Committee, maintaining the relationship with its many diverse participants. This task is both critical to the effectiveness of the sector and is most demanding of the small Secretariat. The NZ SAR Secretariat has been effective in establishing the doctrinal guidance for SAR that informs training and provides for standardization of procedures. The stakeholders have been involved in those developments and the NZ SAR Secretariat has successfully gained their trust and participation.
35. The current composition of the SAR Council represents the government's interests well because it is comprised only of representatives of government agencies. But there remains some risk that the reliance on the participation by Non-Governmental Organizations (NGO) for the effectiveness of the SAR sector is not matched by representation on the SAR Council and they lack an ability to influence strategic decisions. The review was told the NGO participants and partners were heard by the Council from time to time but it was felt their value to the SAR system was not represented properly. If the SAR Council was to act as a board to provide the strategic direction for the SAR sector as a whole, then its membership should be widened to include non-governmental representation. Including one or two NGO representatives on the SAR Council would widen representation, provide additional perspectives in the Council's discussions, and it would enhance the Council's credibility with the sector and recognize the vital part the sector's NGOs play in the SAR arrangements. Wider representation would help to minimize the perception that the government's interest in SAR dominates others'. The challenge lies in developing a process that will provide greater representation from the NGOs. The additional representatives could be selected ex-officio from the organizations contributing to the SAR sector, or the Council Chair could invite one or two affiliated to SAR to become Council members. Alternatively, the representatives could be Ministerial appointments. Irrespective of the process, the over-riding criteria should be that members of the Council can contribute meaningfully to the Council's strategic policy and advisory function and to do that with a bi-partisan approach. The SAR Council should develop a process through which membership of the SAR Council is enhanced by adding representatives from supporting NGOs.
36. The SAR Strategic Plan includes the Council's goal of reduced demand for SAR services through collaboration and leading public-focused preventative strategies. This approach is aligned with other sectors involved in managing civil contingencies and the use of the four Rs approach of risk reduction, readiness, response and recovery as the basis for managing risk. Traditionally the SAR sector has been about response and conducting searches and rescuing those in distress. Readiness has tended to be related to the responsiveness of the SAR system to a call for assistance and little emphasis has been placed on how to reduce the demand for SAR services. Too much emphasis on response may overlook opportunities for complementary activities that promote awareness of the risks and the value of personal preparedness. To its credit the Council has been involved in developing the Adventuresmart website and its safety codes which inform the public of the value of being prepared and what should be considered. But to meet its own goal of reducing demand for SAR services the Council should use its leadership role to develop, promote and co-ordinate risk

awareness and personal readiness campaigns and messages. The approach should emphasize the implementation of a system of interventions that enhance awareness of risk and better prepare those for outdoor activities. Such a programme would need to be coordinated with other agencies, government and non-government, to ensure there are consistent messages. The “Safer Journeys” road safety campaign provides an excellent model on which a joint SAR programme could be based. “Safer Journeys” is a strategy designed to guide efforts to improve road safety and ultimately reduce road deaths and injuries. It features many partners and multiple action plans that cover the way road users behave on the roads, road design and engineering, vehicle safety, and messages to the public. The “Safer Journeys” strategy is shared and coordinated with a focus on the effect: a road system that is increasingly free of death and serious injury. The SAR situation is not too dissimilar from road safety. It is recommended the SAR Council co-ordinate the development of a joint preventative strategy that will place greater emphasis on preparedness and reduce the demand for SAR services in the future.

37. In conjunction with the public-focused preventative strategies it is considered there would be value in the Council adjusting its reporting of activities undertaken and its measures of success. The annual report currently and appropriately focuses on the sector’s achievements by highlighting the number of SAR incidents undertaken. The 2013/14 report indicates the sector responded to 2348 incidents comprising 1555 Category I and 793 Category II operations, which it reports resulted in 121 lives saved, 738 rescued and 905 assisted, but in smaller print notes that 106 lives were lost before SAR services could help. It is felt the number reported as being at risk (stated as 1870 in 2013/14) is grossly underestimated and therefore does not accurately represent the value for money that the SAR arrangements provide. However it is recognized that providing a better estimate of the number at risk in the New Zealand environment is a significant challenge. How many undertake activities that could put them in a situation requiring SAR services in each of the environments? Reporting the output of the sector (the number of incidents undertaken) is important, there should also be a way of showing the performance of the SAR system as a whole including the response outputs, the responsiveness of the system to a callout, the success of preventative measures and the cost-effectiveness of the system. It is recommended that the SAR Council reviews the system of performance measures used to report progress towards its strategic goals.

International Comparisons

38. In accordance with the Terms of Reference the review compared New Zealand’s SAR governance structure with the models used in Australia, Canada, the United Kingdom and the US using publicly available information. The structures used in the comparable jurisdictions all feature layers to provide for policy advice and co-ordination at the national level, a regional level (be that State, territory or a region) to manage response operations and readiness, and the extensive use of voluntary groups working under the control of a SAR authority. All the jurisdictions have international obligations that are similar to those of New Zealand. They all centralize the co-ordination of the response to marine and

aviation distress at the national level and have a mechanism at that level that co-ordinates activities and government support in the case of a national emergency. In all the jurisdictions the management of land and inland water emergencies tend to be devolved to a more local level. All the jurisdictions have the means to escalate the management of a SAROP if the scale exceeds the capacity of the initial co-coordinating authority. In all the nations reviewed, accountability for SAR lies with a designated department or authority although in the more complex governance environments (such as in the US) there are lead agencies appointed for each of the SAR environments. It is assumed that accountability is linked to the cabinet member responsible for the department designed as the lead agency.

39. The New Zealand structure is well aligned with those used by international partners as it is based on the Canadian model. It is assessed the closest structural alignment is with the arrangements in Canada and the UK although the closest working relationship is with Australia. The NZ SAR Secretariat attends meetings of the National Australian SAR Council as an observer. In addition to the structural arrangements many of the comparable jurisdictions rely heavily on volunteers and appear to share concerns about the challenges ahead. The UK seems to have the more developed preventative strategy and is said to have a database to help manage the effectiveness of the programme. The UK approach could assist New Zealand if a preventative strategy was implemented. Canada on the other hand uses a New Initiatives Fund worth \$CA8.00M per annum to fund research and the development of SAR capability. The operation of the fund might provide lessons for New Zealand. Both Canada and the UK have concerns about attracting and funding SAR volunteers, the competition for community funds, and concerns with liabilities, insurance and workplace safety requirements. In addition Canada identifies the impact of changing climate, increased commercial and tourist activities in remote areas, the availability of new technologies, urbanization resulting in reduced “on land” knowledge, managing false sense of security derived from availability of technologies, and aging populations. These themes and challenges are similar to those likely to be faced by New Zealand and there is an opportunity to share knowledge, experiences and approaches.

Future Trends and Challenges in SAR

40. The review was tasked with looking at trends and developments that might have an implication for SAR in New Zealand and the governance arrangements. The following three themes were identified:
- Demographic changes in New Zealand that could change the nature of SAROPS in the future;
 - Changing expectations of the capabilities of the SAR sector;
 - Introduction of technologies that could change the emphasis in SAR and the way SAROPS are conducted; and,
 - Changes that impact SAR volunteers.

Demographic Changes

41. Having access to the outdoors and wilderness areas and taking part in outdoor activities have long been a part of the New Zealand culture. Indeed, visitors to New Zealand are actively encouraged to take advantage of our natural environment and the range of adventures and activities available and international visitors have access to myriads of information extolling the attractiveness of activities on offer. But often the risks involved and the preparations that are prudent for our conditions are not explained adequately. Irrespective of the origin of those using the outdoors, technologies such as the internet, GPS and cellphones will unwittingly induce people to take on more risk. Time spent at the start of popular walking tracks such as the Tongariro Crossing illustrates the risks that are being taken. As visitor numbers increase there is the potential for more inexperienced people to get themselves into difficulties and require SAR support.
42. In addition to increased visitor numbers an increasingly urbanized New Zealand population with high numbers of new immigrants means fewer is likely to be familiar with the outdoors, its risks and how to manage those risks at a personal level. The demand for SAR services is therefore likely to increase in the future. In addition, an aging population will present new challenges for the SAR sector because it will have to respond to an increasing number of “wanderers”, those suffering from dementia and Alzheimer’s, who get lost, often in an urban setting, and need to be found and returned to safety. These operations are different from the traditional SAROPs conducted in the back country and Police as the co-ordinating authority for Category I SAROPs, will need to accommodate this changing demand and encourage the use of technologies that will aid the relocation of patients.
43. Taken together these demographic trends imply we can expect greater numbers to be putting themselves at risk in the future and therefore the demand for SAR is unlikely to diminish and certainly not in Category I SAROPs. On the other side of the coin, a stronger, co-coordinated preventative campaign could help reduce the risk and the demand.

Expectations

44. Many of the New Zealand public is not familiar with the international obligations that form the basis for SAR in New Zealand or of the arrangements in place to affect a SAROP. Nevertheless they have a high expectation that should someone get into distress in any environment, government authorities will quickly activate a mechanism that will assist them. As has been seen overseas recently with the search for flight MH370, large sections of the public have a poor understanding of the challenges involved in some SAROPs but hold an inherent belief that the response will be swift, accurate and cost effective despite the challenges and they will show impatience when their expectations are not met. In addition, the high speed at which information is now communicated and the high volume of information being conveyed does little to dampen expectations of the performance of SAR systems.
45. High and unrealistic public expectations present the SAR sector with a reputational risk. Managing the risk should involve an approach at two levels.

The SAR Council should inform Ministers of the challenges that could be encountered by SAR in the NZSRR, and in parallel it should implement a public communications strategy that would better inform the public of the SAR capabilities and the challenges likely to manage expectations.

Technological Advances

46. Emergency beacons and other tracking technologies play an increasing role in alerting authorities to someone in distress and in helping the co-coordinating authority locate and rescue them. In a SAROP tracking systems do not always provide a real time, accurate and specific location of those in distress and so may not enable a search to home to the exact location. But they are valuable in providing a reliable datum or start point from which a search can be mounted. The advanced electronic emergency beacons on the other hand can provide an alert to a distress as well as a highly accurate and specific location and identification, and a final homing signal to enable searchers to refine the search area to a point location. If the beacon is correctly registered with authorities (a legal requirement in New Zealand) then a wide range of additional information can be held in the database or obtained from the emergency contacts listed with the registration. This information contributes to saving time, money and lives during a SAROP.

47. There are three categories of emergency beacons currently in use in New Zealand, all transmitting on 406Mhz to the global SAR satellite constellation monitored by the RCCNZ. Some devices provide a GPS based location. The technologies fall into the following three categories:

- Personal Locator Beacons (PLB) intended for use by individuals and predominantly in the land environment. They are light, highly portable and quite affordable. They are also used in some very light aircraft and increasingly in recreational boating. PLBs are usually activated by the user.
- Emergency Position Indicating Radio Beacons (EPIRB) used in the marine environment. EPIRBs are activated by the crew in distress. Some can be activated by immersion in water.
- Emergency Locator Transmitters (ELT) are required by CAA to be fitted to aircraft with more than one seat, although with some exceptions which allow an ELT to be replaced by a PLB. An ELT can be activated manually or by crash forces.

48. In January 2015 a total of 51,646 beacons were registered with the RCCNZ comprising 29,086 PLB (56%), 18,621 EPIRB (36%) and 3,939 ELT (8%). The highest growth rate in registrations of beacons has occurred in PLBs and is associated primarily with their use in the land environment. However the increasing availability and use of PLBs has a potential downside of generating a false sense of security in the user: if trouble occurs a call can be made and assistance will be on the scene quickly, when in reality it takes some time to locate and dispatch that assistance. The high expectations of beacon users will need to be managed by the SAR sector.

49. RCCNZ data indicates significant growth in the number of beacon activations in the land SAR environment, modest growth in their activations in the maritime setting and a static or perhaps slight decline associated with aviation. In the year ending in January 2015 25% of the activations were attributed to aviation, 24% to land, 35 % to maritime and 16% were of an unknown source. The growth in activations in the land environment can be associated with the increased number of PLBs registered and in use. But in the month of January 2015 only 34% of the beacon activations were for real cases of distress with 30% of the activations being recorded as false or inadvertent. Of the alerts received by the RCCNZ, 30% were resolved to another SRR. It is known that ELTs used in aviation have a high number of false alarms (often attributed to maintenance and inadvertent activations) compared to the number of real alerts. PLBs are at the opposite end of the scale and show a very low false alarm rate and correspondingly high rate of alerts for real cases of distress. Frequently the performance of the ELT in an air crash suffers because the aerial is separated from the transmitter. The CAA has work underway to reduce the false alarm rate and improve the performance of an ELT in a crash.
50. The number of electronic beacons in use will continue to grow as the technology becomes more affordable. The challenge for the SAR sector will be in its ability to respond to beacon alerts quickly and to bear the increased costs associated with those responses. The SAR Council should consider how it can assist CAA in actions that reduce the number of ELT false alarms and increase the reliability of ELTs.
51. Responding to a beacon alert currently involves some searching as well as the rescue. Advances in technologies will provide for better tracking of aircraft and vessels, and through changes in the cellular telecommunications systems, potentially those on land. Better track information should provide a better datum for the search, a shorter search phase and a swifter rescue. Tracking individuals through telecommunications technologies in the future are likely to be limited until privacy concerns and coverage issues are resolved. But there are changes underway in tracking aircraft and marine vessels in the NZSSR.

Aircraft Tracking

52. In the New Zealand Flight Information Region not all aircraft flight tracks are monitored. Tracks of those aircraft operated under Instrument Flight Rules (IFR) and in controlled airspace are monitored by Airways but aircraft operating under Visual Flight Rules (VFR) and outside controlled airspace are not tracked for the purposes of air traffic control. Flight plans submitted to Airways for a VFR flight provide Airways with the intended route of the flight, the estimated arrival time or a nominated SARTIME. Airways will take overdue action when an aircraft on a VFR flight plan has not reported its arrival within 30 minutes of the time nominated on the flight plan or 30 minutes after the nominated SARTIME. That alert is the beginning of a SAROP. An aircraft can be operated outside controlled airspace without any notification to Airways and therefore in the event of an emergency or becoming overdue, there could be some delay in activating SAR services.

53. Increasingly, public perceptions are that all aircraft (and particularly commercial aircraft) are tracked continuously in the NZSRR and there is a belief that authorities know where an aircraft is, often fueled by the publicly available flight tracking services (such as www.flightradar24.com) which partly uses information from air traffic control data, and gives the impression of a perfect 24/7 monitoring of flights. Hence the public impatience with the authorities trying to locate Malaysian Airlines flight MH370. The public assume an authority knows where all the flights are!
54. New technologies will change the way flights are monitored and controlled. In New Zealand CAA has embarked on an implementation programme, New Southern Sky (NSS), to redesign the aviation infrastructure, which will introduce changes to the way airspace is managed taking advantage of new technologies. NSS will be delivered in three stages over the period 2014-2023.
55. The NSS changes are intended to provide for greater navigational accuracy and therefore greater economy and efficiency in the system. But the changes will also have implications for SAR primarily through changes to the way airspace is monitored. By 2021 surveillance of domestic airspace will move from the current use of secondary surveillance radar and aircraft transponders to mandatory use of ADS-B technology for flights above 24,500 feet and in controlled airspace. ADS-B is an Automatic Dependent Surveillance - Broadcast system in which an aircraft's position is determined from GPS satellites and it is then automatically broadcast to other aircraft and air traffic control through a ground based element to give air traffic control a "radar-like" depiction of aircraft positions. Information from aircraft equipped for ADS-B could provide SAR services with data that can help inform search and rescue efforts. However the geographic coverage of the system is likely to be broadly similar to that provided by today's secondary radar based system, which means there could still be some gaps.
56. In the meantime and as a consequence of the loss of flight MH370 in 2014, ICAO in February 2015 recommended states adopt a 15-minute tracking standard for airlines as a step towards the implementation of the Global Aeronautical Distress and Safety System (GADSS) that when fully developed, would provide regular broadcast of position updates to aircraft operators, but also include a tamper-proof distress reporting capability that will transmit identification and position to a global network of rescue co-ordination centres when certain triggering conditions are encountered. The data made available from the aircraft would facilitate SAR activities and the retrieval of cockpit voice recorders and flight data recorders. In the meantime existing technologies such as ACARS (Aircraft Communications and Reporting Systems which are fitted to most large commercial aircraft) and ADS-B, where in use, could provide an interim means of tracking aircraft while aircraft and equipment manufacturers explore the potential to develop a full GADSS capability. These developments are likely to apply only to large commercial aircraft.
57. The operational implication of these developments is that in the future, large commercial aircraft will be tracked continuously and potentially irrespective of their location, by using satellite communications. The data provided could quickly alert SAR authorities of distress and will provide a highly accurate datum

on which a SAROP could be based. The development is unlikely to eliminate the search component completely but it should help hasten the rescue.

58. New Zealand registered aircraft are required to be fitted with ELTs, or in light single seat aircraft, the pilot is required to carry a PLB. The beacons are required to use 406 Mhz, the international SARSAT monitored frequency, and to be registered with the RCCNZ. Registration enables the RCCNZ to identify the beacon signaling distress and to use an associated contact database to ascertain real distress or inadvertent activation. ELTs are likely to remain the CAA's primary technology for locating aircraft in an emergency, but hopefully with better reliability.
59. In addition to the use of ELTs in aviation, there is a number of other flight tracking applications available to operators of aircraft in New Zealand not tracked and controlled by Airways. They include Spidertracks, TracPlus and other commercial cellphone based applications. These systems enable the aircraft's operator and the system provider to monitor tracks and can give them the aircraft's last known position. It can be used to calculate speed and direction and importantly incorporates an alerting function that is monitored by the provider and conveyed to the operator. But the alerts fed to these applications are not continuously monitored by the RCCNZ and these systems have other limitations including reliance on internal batteries, and limited coverage. In the current state of development, these devices are not seen as a replacement for the existing requirement for aircraft to be equipped with an ELT although they can provide a search datum.
60. Future SAROPs related to aviation will still require a search phase and the maintenance of a search capability. But the trend in operations will be to move quickly to the datum established by a flight tracking system and from there to affect the rescue and recovery. But it is important to note that in the domestic Flight Information Region aircraft operating in uncontrolled airspace will not be tracked by Airways and any SAROP for an aircraft in that category will continue to rely on an authority receiving a report of distress or of an aircraft being overdue, or by having the ELT activated and transmitting an identification and position to the RCCNZ.

Maritime Tracking

61. Maritime New Zealand through the Maritime Operations Centre (MOC) at Avalon contributes to meeting New Zealand's obligations to international conventions around distress and safety at sea communications. The MOC delivers messages related to maritime weather and maritime hazards to vessels in its area of responsibility and monitors radio traffic for distress calls and provides maritime communications facilities for use by the RCCNZ during maritime SAR activities.
62. A number of systems are used to monitor marine traffic in the NZSSR, primarily to know the position of vessels that could assist in a SAROP:
 - The Long Range Identification and Tracking (LRIT) system is an IMO initiative that provides authorities with the position, course speed and identification of

commercial vessel's over 500t on international voyages. The system uses satellite communications to provide location data to datacenters four times each day. Coastal states have the right to access the system in relation to vessels planning to call at their ports and SAR authorities can use the system at any time and in any ocean area to support SAROPs at no cost.

- The Automatic Identification System (AIS) is a global system mandated by IMO for all commercial vessels over 300t or with at least 12 fare paying passengers. The system is also used by many other vessels on a voluntary basis. It provides vessel identification, position, course and speed transmitted to shore stations directly or through satellite, and to other vessels nearby equipped with AIS to help prevent collisions. Some recreational users install AIS to help prevent collisions with larger vessels. In New Zealand AIS data is monitored by government agencies to track vessels. RCCNZ has full access to both real-time and historical data held by the system.
- Vessel Monitoring System (VMS) is used by Fisheries to monitor fishing vessels licensed to operate in the EEZ. Under a formal information exchange protocol the positional data available from VMS may be provided to the RCCNZ if required for SAR purposes.

63. Maritime NZ and the Coastguard encourage recreational boaters to notify them of their intentions which provide a rudimentary track plan but the current vessel tracking systems used for the large commercial vessels are not optimized for the recreational users. Recreational users can acquire EPIRBs which through the SARTSAT system will provide the RCCNZ with an alert, identity and position of the vessel. But EPIRBs are not usually found on the smaller inshore recreational vessels although as in aviation, there are a growing number of tracking systems available that make use of advances in GPS and cellphone and satellite technologies. These include Tracplus and Spidertracks which not only provide positional information but also incorporate an alerting function that is monitored by the provider companies in various ways but the alerts are not connected directly to the RCCNZ or a SAR coordinating authority. RCCNZ has formal information exchange protocols in place with the key service providers so that any alert received that cannot be quickly resolved by the provider and operator is escalated to the RCCNZ for the initiation of an appropriate SAR response. RCCNZ also has the ability to see the real-time position information and the historical track data from these system to help determine the location of the alerting party and to assist monitoring the positions and activities of system users supporting a SAROP.

Implications of Technology Developments

64. New technologies will shift the emphasis in SAR from searching for those in distress towards rescue, although the need for a search capability in all three environments will never be dispensed with. Continuing technological developments are likely to enhance the ability of authorities to monitor the position of aircraft and vessels but they are unlikely to be the panacea. Better tracking will provide a more accurate datum from which any search can start but full coverage of New Zealand is unlikely in the shorter term because that would require some form of regulation and compliance. In the land environment uptake in the use of PLBs has been rapid as these systems become more affordable.

Using its leadership role, and in collaboration with CAA and Maritime NZ, the SAR Council should promote research and development of technologies that provide for enhanced tracking and alerting, and the use of systems with higher reliability and lower failure rates. But at the same time it will be important to manage user expectations and minimize the false sense of security that users could derive from having devices available. At the operational level the Council should continue to promote the integrated approach to SAR and consider how it might assist the traditional SAR partners to understand how technologies might adjust SAROPs and therefore their roles and the emphasis moves from search towards assisting the SAR system to execute a swift rescue.

Changes Impacting SAR Volunteers

65. The delivery of effective SAR services in New Zealand relies heavily on volunteers and their parent organizations and particularly in undertaking Category I SAROPs. The volunteers are committed and willingly give their time to training and actual SAR operations. The coordinating authority currently reimburses direct costs incurred by volunteers as part of a SAROP but lost salaries and wages are not reimbursed and the willingness of SAR volunteers can never be taken for granted.
66. Attracting and retaining SAR volunteers is already a challenge as lives get busier and other activities compete for spare time. Inadequate training does not help recruiting or retention and the SAR Council has an interest in ensuring the volunteers have the training and education that ensures competency and effectiveness. Without appropriate training the effectiveness of SAR volunteers is eroded and the risk to co-coordinating authorities increases. The NZ SAR Secretariat has worked diligently to coordinate funding, which contributes to the development of training and the delivery of courses. The SAR Council will need to continue to monitor SAR training and encourage collaboration to provide for procedural standardization across the country.
67. Recent changes in workplace safety legislation have the potential to deter volunteers from taking on leadership responsibilities in SAR. This aspect is common to other areas of volunteering in New Zealand. The SAR Council could collaborate with other organizations such as the Fire Service, MCDEM and the ambulance services to work with Worksafe New Zealand to develop guidelines to show where responsibilities for workplace safety in the SAR sector related to volunteers lie, and how liabilities are to be managed. Such a guide adopted by the SAR Council should serve to allay fears and encourage volunteers to commit to SAR.
68. In some areas of the SAR support provided by volunteers the equipment that is critical to effective SAR is expensive to acquire, maintain and insure. Increasingly SAR supporters will find they are in competition for funding with other voluntary community based organizations. As funding pressures mount there will be a point in the future when it will be necessary to decide if the SAR capability (and primarily in Category I operations) is to continue to be a community based responsibility or if it is to have financial support from either local government and/or central government. Funding pressure will also be felt

by the sector and participating NGOs in updating capabilities and to research developments. The Canadian New Initiatives Fund model which applies central government money to SAR initiatives on a competitive basis might offer an option for New Zealand. The SAR Council will need to monitor the ability of its NGO partners to maintain funding levels for SAR.

Implications of Trends on Governance

69. The trends in demography, expectations, technologies and volunteers identified do not imply that the governance arrangements for SAR need to be changed. But it will be important for the SAR Council to ensure that it keeps abreast of trends and developments in these areas and is well informed of adjustments that might be necessary. Gathering information and conducting research seem to be the key enablers to keeping the Council and the sector well informed of developments. Part of that process could use existing international relationships to access partners' experiences and research and the Council could also consider commissioning research itself on aspects that are specific to the New Zealand setting. Research conducted should be linked back to the goals in the Strategic Plan and in particular to any preventative strategy that is developed. However funding SAR research will be a challenge and the Canadian New Initiatives model could be the basis for a funding model in which government might support SAR research perhaps using existing research funds. It is recommended the SAR Council investigates opportunities to research developments to ensure the SAR sector keeps ahead of changes in demography, expectations, technologies and volunteering associated with SAR that could impact SAR capabilities and responsiveness in the future. .

Conclusion

70. SAR is an important capability that is expected of New Zealand under international obligations, and it is a valued public service that is expected by the public, visitors and the Government. New Zealand's approach to providing SAR services has evolved as the demand for SAR services and the equipment used has evolved. The current operational arrangements for SAR are effective and the use of two co-coordinating authorities, Police for Category I and the RCCNZ for Category II, is a pragmatic arrangement that provides effective control and co-ordination. Government departments and agencies support both categories of SAROPs fully and willingly when required, and a range of community based organizations and their volunteers support many local SAR efforts. The current arrangements provide a highly cost effective capability that meets the international obligations and the obligation to the public, but they carry some risks and are likely to face challenges in the future.

71. The governance arrangements for SAR have been in place since 2003 and the SAR Council, NZ SAR Secretariat and NZ SAR Consultative Committee are assessed as appropriate and effective mechanisms for coordinating the sector's participants and providing governance at the strategic level. The review compared the arrangements with some international partners and the New Zealand operational and governance arrangements are well aligned with those

used by Australia, Canada and the UK, while taking into account jurisdictional differences. While the arrangements are effective there are some aspects of the approach that could be improved. Some of the risks identified by the SAR Strategic Plan have not yet been mitigated fully and with the recent publicity around the challenges in locating the missing Malaysian Airlines flight MH370, the principle risks for the Council to manage are the appreciation of the capabilities and limitations of SAR in the NZSRR, and the readiness to manage a mass rescue operation. In addition the governance arrangements could be strengthened further by having the arrangements and the mandates affirmed by the Government and the introduction of a more formal process to provide the Minister and Cabinet with assurance of SAR capabilities and readiness. The ODESC RRB process offers a suitable path to improve reporting and would also align SAR with the way other critical all-of-government response capabilities are managed.

72. The SAR Council's leadership and influence in the SAR sector is critical to the integration and effectiveness of a diverse group of supporters, many of them voluntary organizations. Governance by the Council has been effective but its influence and leadership could be enhanced further by inviting one or two non-governmental representatives to become members of the Council on the basis that their personal commitment and attributes to SAR mean that they can contribute meaningfully to the strategic policy and advisory function of the Council.
73. The SAR Council and NZ SAR Secretariat have set the strategic goals for the SAR sector through its planning process and the Secretariat has led an analysis of the risks to the system. It has successfully generated an integrated SAR system with effective procedures, training and staffing. There is scope to make progress towards the goal of reducing demand for SAR services by the Council leading the collaboration with other agencies to develop and promote a preventative strategy. The strategy should aim to enhance awareness of the risks and emphasize the value of preparation.
74. The SAR sector can expect to face a number of challenges in the future arising from changes in demographics, stakeholders' expectations, evolving technologies and its reliance on volunteers. These trends do not imply a need for changes to the SAR governance arrangements but the SAR Council will need to maintain its vigilance of SAR capability and responsiveness in the face of developments. As tracking and alerting technologies develop it is likely the rescue capability will dominate the search component although the requirement to maintain search capabilities will remain. The SAR Council will need to keep ahead of developments by collaborating with international partners and researching developments that could impact capabilities and responsiveness.
75. Those involved in the SAR sector understand what a cost effective service it provides. It will be a challenge to maintain that service and reputation into the future as the sector manages challenges in funding, volunteer staffing, technologies and expectations. It will be important for the SAR Council to explain to the government the performance of the sector, the value it provides New Zealand communities and the return the government gets on its investment and

to ensure the SAR capability New Zealand has been used to, continues to be available in the future.

Recommendations

76. It is recommended that:

- The SAR Council manages expectations by providing key stakeholders with an explanation of the SAR capabilities and the limitations that apply at the extremities of the NZSRR.
- The SAR Council completes the development and trials the coordination procedures for conducting a mass rescue operation in the NZSRR.
- The SAR Council considers having the arrangements and mandates for SAR affirmed by the Minister.
- The SAR Council strengthen its reporting of capability, readiness and risk to Ministers by using the ODESC RRB reporting process and thus align SAR reporting with other all-of-government emergency preparedness and assurance reporting.
- The SAR Council develops a process through which membership of the SAR Council is enhanced by adding representatives from supporting NGOs.
- The SAR Council co-ordinate the development of a joint preventative strategy that will place greater emphasis on preparedness and reduce the demand for SAR services in the future.
- The SAR Council review the performance measures used to report progress towards the strategic goals.
- The SAR Council investigates opportunities to research developments to ensure the SAR sector keeps ahead of changes in demography, expectations, technologies and volunteering associated with SAR that could impact SAR capabilities and responsiveness in the future.

John Hamilton
Wellington
11 May 2015

Annex

A. Organizations Consulted

ORGANIZATIONS CONSULTED

The following organizations and personnel were consulted during the review of the SAR Governance Arrangements:

Ministry of Transport

Martin Matthews CE
Duncan Ferner
SAR Secretariat

Maritime New Zealand

Keith Manch CE
Nigel Clifford
Mike Hill
Rod Bracefield

Civil Aviation Authority

Graeme Harris CE
Steve Smyth

New Zealand Defence Force

Lt Gen Tim Keating CDF
Air Cdre Tony Davies

New Zealand Police

Assistant Commissioner Mike Rusbatch
Superintendent Barry Taylor

Department of the Prime Minister and Cabinet

Howard Broad
Pat Helm

Department of Conservation

Mike Edington

Ministry of Civil Defence & Emergency Management

Sarah Stuart-Black Director

New Zealand Fire Service and Rural Fire

Paul McGill
Kevin O'Connor

Coastguard

Patrick Holmes
Dean Lawrence

Ambulance New Zealand

David Waters

Surf Life Saving New Zealand

Paul Dalton

LandSAR

Harry Maher

Mr Gerry Prins

NZSAR GOVERNANCE REVIEW

NZSAR Governance Review Recommendation	NZSAR Council Approved Actions
<p>1. The SAR Council manages expectations by providing key stakeholders with an explanation of the SAR capabilities and the limitations that apply at the extremities of the NZSRR.</p>	<p>1a. Prepare a briefing note for the RRB regarding SAR capabilities and limitations.</p> <p>1b. Include relevant comment regarding SAR capabilities and limitations in briefs to Ministers.</p> <p>1c. Engage with the Ministry of Defence as they develop the 2015 Defence white paper.</p> <p>1d. Add expectations of SAR capabilities and limitations to the NZSAR risk matrix.</p> <p>1e. Conduct an abnormal flight behaviours workshop (completed 23 July 2015).</p>
<p>2. The SAR Council completes the development and trials the coordination procedures for conducting a mass rescue operation in the NZSRR.</p>	<p>2a. Complete the Raoura Mass Rescue desktop exercise series for each Police District.</p> <p>2b. Prepare a paper for the RRB regarding a full scale MRO SAREX as part of the national exercise plan. (Planned for April 2019).</p> <p>2c. Seek resources for a full scale four yearly mass rescue exercise.</p> <p>2d. Conduct a study to determine if any additional resources, skills or equipment should be considered to de-risk NZ should a mass rescue event occur within the NZSRR.</p> <p>2e. RCCNZ to continue working with other jurisdictions within the NZSRR to improve their capacity to undertake or assist with a MRO.</p>

NZSAR Governance Review Recommendation	NZSAR Council Approved Actions
3. The SAR Council considers having the arrangements and mandates for SAR affirmed by the Minister.	3a. Prepare a briefing note for the Minister of Transport confirming the NZSAR Council's membership, role and mandate.
4. The SAR Council strengthen its reporting of capability, readiness and risk to Ministers by using the ODESC RRB reporting process and thus align SAR reporting with other all-of-government emergency preparedness and assurance reporting.	4a. Prepare a briefing note for the ODESC RRB requesting formal endorsement and inclusion of search and rescue as one of their clusters. 4b. Report to the RRB according to an agreed schedule on SAR capabilities, readiness, risks and performance.
5. The SAR Council develops a process through which membership of the SAR Council is enhanced by adding representatives from supporting NGOs	5a. Develop considered options for enlarged membership of the NZSAR Council. 5b. Include advice on enlarged NZSAR Council membership in the briefing note to the Minister of Transport (see Recommendation 3)
6. The SAR Council co-ordinate the development of a joint preventative strategy that will place greater emphasis on preparedness and reduce the demand for SAR services in the future.	6a. Develop a whole of sector evidence based and measured SAR preventative strategy to support decision making and improved prioritisation of resources.
7. The SAR Council review the performance measures used to report progress towards the strategic goals.	7a. Conduct research into SAR performance measures used by other SAR jurisdictions and similar industries to determine what might be useful for incorporating into an NZSAR measurement framework. 7b. Develop and implement measures to better monitor and understand the performance of the NZSAR Council and the wider sector's achievement of the NZSAR Council goals.

NZSAR Governance Review Recommendation	NZSAR Council Approved Actions
<p>8. The SAR Council investigates opportunities to research developments to ensure the SAR sector keeps ahead of changes in demography, expectations, technologies and volunteering associated with SAR that could impact SAR capabilities and responsiveness in the future.</p>	<p>8a. Organise occasional SAR technology workshops to identify technological trends and opportunities relevant to SAR.</p> <p>8b. Seek funding to permit the establishment of a contestable SAR initiatives fund.</p>