



ANZSOG Case Program

Riding roughshod: The removal of quad bikes from WA Emergency Services (A)

2017-191.1

In December 2013, Peter Bassett – Fleet and Equipment Officer with Western Australia’s Department of Fire and Emergency Services (DFES) – made his way to the Perth premises of TerrainX Vehicles.¹ He was looking forward to placing an order for the new all-terrain vehicle that DFES wanted the volunteers of the State Emergency Services (SES) to start using for search-and-rescue and emergency relief operations. ‘I arranged to meet with [the supplier] to sort things out,’ Peter recalled. But when he arrived, he was astonished to find the vehicles already sitting there, ready for use. ‘When I get there they’re all finished! Not very well either, but they were there!’

It was yet another unexpected development in a protracted process to replace the SES’s signature quad bikes with all-terrain vehicles that had begun nearly two years earlier. By the time the changeover was finally concluded sixteen months later, relationships between DFES and the SES, and between different teams within DFES, had become strained.² Target dates had been repeatedly missed, communication had broken down and trust had been eroded. What had gone wrong?

This case was written by Belinda Cham (The University of Western Australia), Dr Ying (Lena) Wang (RMIT University), Karina Jorritsma (The University of Western Australia) and Dr Wayne Gregson (WA Department of Fire and Emergency Services – DFES). It has been prepared from field research and published materials as a basis for class discussion rather than to illustrate either effective or ineffective handling of a managerial situation. The authors acknowledge with appreciation the assistance of DFES staff and State Emergency Services (SES) volunteers in researching this case. However, the views expressed are the responsibility of the authors, and do not necessarily reflect the views of either the DFES or SES.

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¹ Throughout, the real names of individuals and external parties have been changed.

² A timeline of the events described in the case is set out in *Exhibit C*.

Proud histories, distinctive cultures: DFES and the SES in Western Australia³

The Department of Fire and Emergency Services is one of the leading hazard management agencies in Western Australia (WA). Its primary role is to minimise the impacts of emergencies (such as fires at residential and commercial properties, bushfires, cyclones, floods, earthquakes, tsunami and vehicle crashes) and to coordinate land and marine rescues. The department's 1,100 professional firefighters and 300 corporate staff are supported by an extensive network of over 29,000 volunteers. Together with other emergency management partners, DFES is responsible for delivering emergency services across a state that covers more than 2.5 million square kilometres and is home to more than 2.6 million people.⁴

The State Emergency Service (SES), which comes under the DFES umbrella, comprises over 2,100 volunteers who help the community cope with disasters and emergencies, both natural and man-made.⁵ They carry out emergency repairs on buildings, restore essential services, and assist WA Police with land searches, road crashes and cliff/cave rescues. Apart from taking part in field operations, SES volunteers also visit service groups, senior centres and homes, local businesses and schools to educate citizens about safety, prevention and preparation measures. Many also work behind the scenes as radio or computer operators, in administration or incident control, or in planning and logistics.

The SES has a long and proud history in Western Australia. It was formed in 1959 and came under the control of DFES only twenty years ago.⁶ The organisation has a strong and unique culture fuelled by a passion for volunteer service to the community. SES volunteers take pride in the duties they perform and are committed to maintaining their distinctive identity.

By contrast, the long-standing focus of DFES is on preventing and fighting fires. Like the SES, the department has a well-entrenched and distinctive culture, but it is quite different. As one SES volunteer has observed: 'They [DFES] know nothing about what we do in the SES, but that's no reflection on them because most of them are career [firefighters]. We've fought for so many years for the SES and career [firefighters] to meld, so that we can be mates more or less with another. But there's still that "us and them"'.⁷

Quad bikes: essential tool or dangerous liability?

The SES had been successfully using quad bikes for more than a decade before they became the subject of DFES scrutiny. Quad bikes are compact all-terrain vehicles that typically travel on four large low pressure tyres, with a seat that is mounted by the operator. Handlebars provide steering control. Designed to handle a wider variety of terrain than most other vehicles, they are used in agricultural, industrial and emergency service settings, and sometimes for recreation, although they are not road-legal in most Australian states. Many SES bikes had been purchased with funds raised by SES crews themselves through charity events such as community barbeques, or were donated by local

³ Source: <https://www.dfes.wa.gov.au/aboutus/corporateinformation/Pages/default.aspx>

⁴ Source: Department of Fire and Emergency Services, *2016-2018 Strategic Plan*

⁵ Source: <https://www.dfes.wa.gov.au/aboutus/operationalinformation/Pages/stateemergencyservice.aspx>

⁶ Source: <http://www.armadaleses.com/aboutus.htm>

⁷ This quote is taken from interviews recorded by the first author in 2015. It was one of sixteen formal interviews she conducted with key personnel from DFES, SES and external partners between April 2015 and July 2015. Unless stated otherwise, all quotations that appear in this case are from these interviews, which are described more fully in the accompanying Teaching Note (2017-191.2).

communities. They were regarded as valuable assets that allowed SES volunteers to traverse extensive areas of difficult terrain in rescues, searches and other emergencies. The bikes had also come to constitute a key part of the SES identity (see *Exhibit A*).

Since their inception, quad bikes have been associated with a range of safety issues. Because most types have negligible structural protection, there is risk of serious crush injuries and/or fatalities from rollovers or operator ejection at speed. This is particularly the case in challenging terrains or when the vehicles are driven aggressively, although risks can be mitigated by correct training and the use of protective equipment. WorkSafe WA⁸ has issued multiple warnings and safety advice regarding quad bike use, and the Queensland government has developed a four-year state-wide plan for improving quad bike safety.⁹ SES crews developed a training and operational regime to minimise the risk of unnecessary injuries and accidents when using quad bikes. According to a volunteer: 'We had an internal course that we developed right from the outset of obtaining the quads. Aligned to manufacturer's video regarding safety, how to operate'. At the time the temporary ban was introduced, there had been no serious quad bike accidents since SES began using them.

But in early 2011, several factors prompted DFES to formally assess the risks of quad bike use. First, the SES bikes had been subject to ten years of wear and tear and were due for replacement. Second, the risks and dangers associated with quad bikes were in the news, especially their use in farming. Media reports had drawn attention to the farming industry's record, with 84 deaths involving quad bikes recorded over a seven-year period.

Concerned, DFES¹⁰ decided to commission a formal Occupational Safety and Health Risk Assessment on SES use of quad bikes. They appointed an external consultant from the Chamber of Commerce and Industry WA (CCIWA), a not-for-profit member-based employee relations organisation, who visited SES premises across the state and inspected their bikes.

The consultant's conclusion was unequivocal: quad bikes posed an unacceptable and extreme risk to SES operators, and DFES should consider removing all these vehicles from service. DFES released the results of the risk assessment to SES volunteers, at the same time imposing an immediate temporary ban. But the SES Volunteers Association rejected the consultant's report for several reasons.

First, SES volunteers had little to no practical involvement in the risk assessment. Consequently, the report failed to take proper account of how they used the vehicles in carrying out their duties. 'The [consultant] basically came here to look at our quads and talk to us', recalled an SES volunteer in 2016. 'Took some photos and went away. He might have gone to other sites. Then we got a report'.

Second, although the report alluded to the farming industry's 84 deaths over seven years, there had been no history of serious accidents involving SES quad bike operators. As stated in the report, the SES had only three minor incidents in a 12-year span – one causing no injury, one leaving a volunteer with a chipped tooth, and the third resulting in a broken arm during a quad bike training session. As the volunteers pointed out, they had themselves developed a training and operational procedural regime to mitigate many of the risks associated with quad bike use. Said one volunteer:

⁸ <https://www.commerce.wa.gov.au/worksafe/quad-bikes>

⁹ *State-wide Plan for Improving Quad Bike Safety in Queensland, 2016-2019*, Queensland Government.

¹⁰ At this time, DFES was known as the Fire and Emergency Services Authority of Western Australia, or FESA. DFES came into being as a result of the Perth Hill Bush Fire Review in November 2012. Throughout this case, the organisation is referred to as DFES.

My main concern was the methodology used [in the report] – it reviewed agricultural and tourism industry standards, where anyone could get their hands on a quad. We kept telling [DFES and CCIWA] that with our training, experience and internal restrictions we've never had a serious accident. We've only ever had a chipped tooth ... that was caused by having open face helmets which we've since replaced with full face helmets. Other industries have had an extremely bad reputation, and I'm not denying that but ours had a very good reputation for safety.

Finally, the report included information and recommendations that actually contradicted the quad bike manufacturer's safety instructions. 'There was a severe lack of understanding from the CCIWA', a volunteer said. For example, although the report commented on the absence of flag poles on the volunteers' bikes, 'the manufacturer states [not to] attach additional stuff to your [quad bike] because it becomes an additional impact point... when you try to explain that [to the CCIWA consultants], they just dismissed you'.

The Volunteers Association demanded DFES reconsider the specific applicability of the risk assessment to SES emergency operations, and argued for a more rigorous second assessment. The first risk assessment essentially considered only whether the SES had certain controls in place such as the presence of personal protective equipment, and mandatory training for operators; it did not evaluate the effectiveness of those controls. As a result, the SES were extremely eager to prove in a second risk assessment not only that it had controls in place, but that these controls were effective in mitigating the relevant risks. Acknowledging these concerns, DFES asked CCIWA to conduct a second risk assessment of the quad bikes, and also investigate All-Terrain Utilities (ATUs) as potentially suitable alternative vehicles (see *Exhibit B*).

After a short delay to allow the same consultant to be engaged and DFES to arrange for SES volunteers to take part, a second risk assessment got underway in early 2012. The focus was a field trial in March, where quad bikes and ATUs from several manufacturers were used to carry out operations typical of emergency response work, such as traversing slopes and soft sand.

The results of this second assessment were expected by the end of that month, but various delays (including consultant availability) meant DFES did not receive them until June. The conclusions were similar to the first, with the additional recommendation that DFES should consider replacing quad bikes with ATUs. The report judged these to be a safer alternative, as many of the risks associated with quad bikes had been engineered out. The ATU had a lower centre of gravity, roll-over protection, and could carry two or more people. The report included recommendations from SES volunteers involved in the risk assessment; they called for certain enhancements to be made to ATUs if these vehicles were to replace quad bikes.

Resentment builds

Looking back in 2015, all parties agreed that it was a positive step to involve SES volunteers in the second risk assessment. DFES needed buy-in and feedback from end-users, while volunteers needed to see evidence of a transparent process into which they could confidently feed their knowledge, expertise and requirements. Unfortunately, the already fragile collaborative relationship between both parties soured shortly after the second risk assessment.

SES volunteers did not receive the results of the assessment for approximately seven months. During that time, DFES was attempting to devise a plan for replacing the quad bikes with ATUs. With little communication from the department about what was happening, SES volunteers were left in the dark

about progress and the reasons for the delay (which included key DFES staff being on leave). In interviews, SES volunteers described the resulting confusion and anger:

It took so long that it built the resentment up. The fact that there was no information coming [out] regarding what the changes were, what the outcomes were. I was getting phone calls from other [SES] members and units asking 'what's happening?' But I had nothing to report, and [other SES units] said it wasn't good enough. I was of the same opinion.

Some volunteers started to believe that the risk assessments had been designed to deliver pre-determined outcomes. As the same external consultants had been engaged to conduct both assessments, the second report was unlikely to invalidate their earlier results; rather, volunteers suspected the consultants would be seeking data to support their previous conclusions. Although the second assessment was more practical – particularly by simulating activities that allowed the consultants to better judge how SES volunteers used quad bikes – it still seemed to lack objectivity and fairness. Volunteers thus remained extremely mistrustful of DFES's motivations:

I read both documents, the first one was about 10 pages long. The second document said the same thing as the first one but was 40 pages long. They just put more stuff in it. They basically hadn't changed anything, even though we did a better review than what was done last time.

Another volunteer commented that DFES's decision to use the same company for the second review, 'left a bad taste in the mouth. We knew they wouldn't challenge their original decision...there would be less angst and aggravation if the second report was independent [from the first report]'.

But despite this resistance from the SES, DFES pushed forward with implementing the consultants' findings. In February 2013, two years after the department imposed its temporary ban on quad bikes, the ban became official.

Making lemonade from lemons: the procurement process begins

The process of procuring the ATUs that would replace quad bikes began with DFES establishing a project action team, responsible for everything from specification development and tendering through to implementation. The team comprised DFES employees only; there were no SES volunteers and no representatives from Fleet and Equipment Services, DFES's team of technical and mechanical experts. This was another hiccup, a member of the panel team reflected later, which had significant consequences for the development of the final specifications: 'We should have had one or two [volunteers] during those [specification] discussions'. A representative of the department's Operational Resources Review and Development (ORDD) team was also critical of the panel's composition: 'You can't have specifications developed from [an] ORRD or capability perspective without checking it from a fleet or equipment services perspective, or another party'.

Despite its limited expertise and restricted access to feedback, the project team pushed forward with a plan to replace the quad bikes within eight months. Specifications were developed, reviewed and finalised by the end of March 2013. When the tender was released to the market, four companies submitted responses. On this basis, and again without SES input, the project team shortlisted their preferred vehicles – two John Deere ATUs which were almost identical models, one being diesel powered and the other petrol powered.

It was now time for the two shortlisted ATUs to be trialled, offering DFES a chance to regain some of the SES's trust and confidence that had been earlier eroded. The department re-engaged with SES volunteers for the first time since their organisation received the results of the second risk assessment months earlier. In July 2013, eight volunteers from across WA participated in an evaluation of the shortlisted vehicles in a trial that also involved the DFES project manager, the vehicle supplier and a DFES procurement representative.

The evaluation trial was a major watershed. For SES volunteers, it provided inescapable confirmation that their quad bikes were going to be replaced by ATUs. Despite still believing that bikes were the safest and most suitable vehicles for their needs, they nonetheless decided to participate actively and constructively in the trial. Being involved meant they could at least 'have a say' on specifications and add-ons, they reasoned, whereas they would have no say at all if they refused to take part. Moreover, the trial allowed SES volunteers to see the potential advantages of the ATUs. They recognised that the new vehicles would allow them to develop new capabilities; for example, the ATUs had small trailers attached which could be used to carry the injured on stretchers. According to the vehicle supplier, once volunteers tried out the replacement vehicles, they 'started to come across when they realised they could do a lot more with the ATUs'. Volunteers themselves later echoed this observation, with one saying it was at this point that they decided 'to make lemonade out of lemons. We saw a lot of potential there'. According to another:

We had a good look at it and said to ourselves, now this is all the type of stuff we can do. We stopped thinking about the quads, and accepted the fact that this is what we had to use. We started to think – now what can we actually do with it? We can transport chainsaws and sandbags, and have re-con teams. We're not just search now – we can do a lot more. We started to get involved in that capability.

As this comment indicates, by 2013 the volunteers were identifying possible add-ons, upgrades and modifications that would enable them to capitalise on the potential capabilities of the new ATUs. They were determined to keep their requests to what was practical and achievable, proposing only standard add-ons to the vehicles. 'I spent half a day making recommendations and going through the John Deere website to see what else they had', remembered one. Another emphasised they 'were not trying to create something new and unknown'.

For the next few months, DFES liaised with the preferred supplier to discuss the results of the trial and possible modifications to the vehicles, such as fitting doors. By August 2013, a full list of specifications and add-ons had been finalised, and the contract was awarded. At this point, the ATUs were scheduled to be supplied to the appropriate SES units in September, in accordance with the original plan.

The first handover

Almost immediately after awarding the contract, DFES received advice from the supplier that it had insufficient stocks of the required ATUs. To meet the high specifications DFES required, the vehicles would need to be sent from the United States and would not arrive in Australia until the end of the year.

By early December, the ATUs and associated equipment had reached Perth. Responsibility now passed from the project team to DFES's Fleet and Equipment Services. This expert team looked after the fire service's vehicle fleet and was typically involved in all vehicle procurements, repairs, and maintenance.

The Fleet and Equipment Services officer charged with ordering the ATUs was Peter Bassett. Following established protocol, his first move was to set up a meeting with the supplier. However, when he arrived at the supplier's premises, he was startled to see the vehicles already sitting there awaiting delivery; without him knowing, members of the project team had already placed the order. Peter was in for more surprises when he inspected the vehicles and found that the build quality, although up to industry standard, did not meet internal DFES standards for vehicles and equipment.

Peter soon established that not only had the project team developed the original specifications without reference to DFES's own quality standards, but various undocumented changes had been made to the final set of specifications – which, as a result, now varied from the original tender document. Regardless of these discrepancies, DFES deemed the ATUs compliant, as the vehicles matched what they had ordered. It seems DFES regarded the acquisition of the ATUs more as an off-the-shelf procurement process than their usual custom-build exercises; thus, DFES determined that industry standards would be good enough. Explained Peter Bassett:

Normally what happens [is we get a program to build a certain] amount of trucks a year. We discuss with the contractors what we want to build and explain how we want it done. We build trucks from scratch and at the end of the day people love them. For the ATUs, that process didn't happen. They were built and done and dusted before it even came to [Fleet and Equipment]. [Others in the organisation] want to go to this turnkey approach of purchasing trucks off the shelf. They thought they could just buy them.

Peter was requested to proceed with the procurement process, now behind schedule. He recalled his frustration that no one from his department had been involved earlier, and that he now had to deal with off-the-shelf vehicles that were not up to the standards that had previously been the norm.

The issues with general build quality were not rectified. They were checked and signed off by someone else so that's done. I put the blinkers on.

There are a lot of technical and mechanical things that we know from experience that just won't work. [We would have had] a bit of technical and mechanical input at the start. I would think Fleet should be involved in developing of specs. In the past we are involved.

This wasn't what we asked for!

The ATUs were finally ready in January 2014. In early February, the first vehicles were delivered to DFES's training department, which was developing a training kit. John Ashton, an SES volunteer, was brought in as a subject-matter expert. Shown the completed ATU for the first time, John was aghast: 'I'm not stepping back and taking that piece of rubbish', he told DFES. His key concern was that the vehicle did not match the specifications his own organisation had recommended – specifications that had been documented in both the second risk assessment report and the tender evaluation trial.

By this time, DFES's original project manager and project coordinator had moved on, confident that the ATUs were about to be delivered to SES units. Now working elsewhere in the department, they were unavailable to help investigate and rectify these new problems. Responsibility for solving them instead rested with Peter Bassett, the fleet and equipment services officer who had become involved only very recently, and the new project manager Jeremy Percy, who had no previous involvement whatsoever.

The new team established to address the problems struggled to understand how DFES had ended up procuring a product that didn't seem to be what was wanted. One team member remembered

thinking 'that it wasn't to specification as we understood it, it wasn't to standards that we would accept ourselves, and it seemed to be contrary to what the [SES volunteers] had asked for'.

At the same time, the severe lack of documentation about how the procurement process had unfolded was becoming apparent to everyone. When SES volunteers tried to trace the decisions made by DFES employees throughout the procurement process, they were thwarted by the lack of a paper trail. This only deepened their mistrust of the department. Their frustrations intensified when Fleet and Equipment Services took over responsibility from the project team, with SES volunteers feeling they 'had to re-educate whoever came on board'. Likewise, for DFES employees now having to solve the emerging problems, this transition period was extremely difficult. Several highlighted a complete lack of formal processes for handing over documentation, recording communication and identifying final decision-makers:

There were no minutes of meetings. There was really no information on who had said what... Someone's probably got those emails but there was nothing in the file.

People had moved on already and we found it hard to catch up. We were at sixes and sevens. We were struggling to get our head around what had happened and we were concerned.

An internal DFES investigation was initiated to determine how this situation had developed: how had the department purchased vehicles that were significantly at variance with the specifications recommended by those who would end up using them? It found that while the project team had initially considered the SES's recommendations, they had ultimately decided to go to tender with a different set of specifications that the team considered more 'fit for purpose', as they interpreted it. The investigation concluded that the procured vehicles *were* consistent with the purpose for which they would be used – at least as DFES understood it.

Reflecting on the events, it seems the logic and decision-making process that led to the final list of specifications was not well-communicated to SES volunteers at the time; they considered they had been 'spoon-fed a little bit of information at a time'. Thus, up until the time the ATUs were delivered, many volunteers continued to believe that they would be getting a vehicle that reflected the recommendations made in the second CCIWA risk assessment and the ATU tender evaluation trial. Unsurprisingly, they were confused and angry to find they had waited over a year for a replacement vehicle that wasn't what they expected; to many volunteers, all their collaborative efforts seemed wasted.

However, there is no record that the relevant parties (both internal and external to DFES) ever reached consensus on the intended purpose of the new ATU. Looking back, Peter Bassett considered the project team 'just didn't define what they wanted closely enough', leading to an outcome he described as both 'frustrating and disillusioning' for DFES. Other departmental staff recalled an unresolved divergence of views and a vision that – while clear to begin with – seemed to change over time. Some in DFES clearly saw the ATUs merely as replacements for the quad bikes; thus, they only needed to be functionally capable of doing what the old quad bikes did, except more safely. For the SES, however, the new ATUs represented new capabilities and functions. The specifications each group considered essential were inevitably as different as the end-uses they imagined for the vehicles.

As post-build issues continued to emerge, DFES made the belated move to officially withdraw quad bikes from SES premises. They had been temporarily banned in December 2011, and officially banned

in February 2012; however, the bikes remained in place until September 2014. It is unclear if they were deployed before their formal withdrawal. As remembered by one of the executive leaders of DFES:

One of the mistakes we made was not withdrawing the old [bikes] from the [SES] units at the time [of the ban]. [We] didn't realise how long it would take to get the new [ATUs] in. Who knows if [the SES] used the [quad bikes] during that time?

Unsurprisingly, SES volunteers were immensely frustrated during the prolonged period in which their quad bikes had been banned but not withdrawn, yet replacement vehicles had not arrived. According to one SES volunteer, they considered their organisation's operational effectiveness was compromised: '[we] were unable to go out and search for people when the ban was in place. We were tempted to use the [quad bikes] so many times'. Some DFES employees heavily involved in the replacement initiative were also frustrated, feeling the delay in removing and replacing the banned vehicles undid much of their hard work to 'sell' the benefits of safer operations and enhanced capabilities to the SES crews.

The final hurdle

The ATUs were scheduled for rollout on at least three different dates throughout 2014. 'I had them ready to be delivered, but then got a call saying don't do it. I had them ready several times', remembered Peter. The repeated delays were due to a variety of complications; contractor availability, disagreement on the exact modifications to be made, the need for an independent consultant to advise on those modifications, and a perceived lack of cooperation from local government authorities (including delays in granting permission to register the new vehicles). It took almost an entire year to sort out these and other issues, and reach a point where both the SES and DFES could deem the modified ATUs 'finished'. This milestone was achieved at the end of December 2014, and the vehicles were delivered to all SES units by mid-February 2015 – five months after the delivery date DFES had initially given the Minister of Emergency Services.

But one last hurdle remained in the form of the online training course which SES volunteers had to complete before they could use the vehicles. The course had been developed back in mid-2014, but the modifications made to the ATUs during that year meant it now had to be amended. Meanwhile, the new vehicles sat at SES premises, unable to be used. In fact, volunteers could not access and complete the online training until April 2015, at which point the vehicles delivered three months earlier could finally be put to work.

Exhibit A



From:

<http://www.theadvocate.com.au/story/3948539/search-continues-for-missing-penguin-woman-pictures-photos/#slide=9>

Picture by Scott Gelston

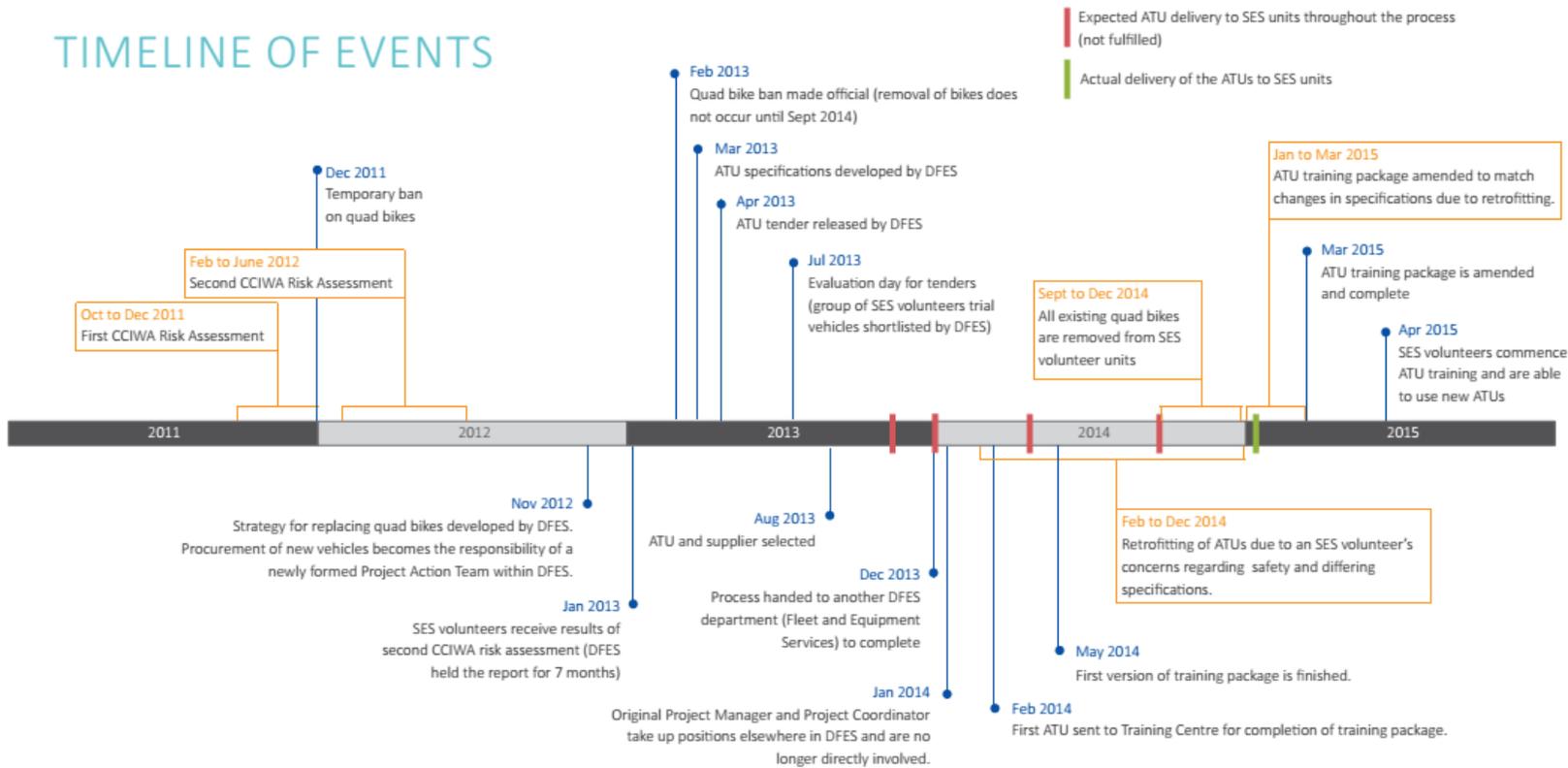
Exhibit B



From: <http://www.northshoreses.com.au/news/ledge-point-search/>

Exhibit C

TIMELINE OF EVENTS



*This figure is an estimation based on a conducting one external risk assessment, and the actual time taken for procurement minus unforeseeable delays such as stock availability and retrofitting.

** Estimation based on one new Polaris Sportsman X2 550 Quad bike and one John Deere Gator XUV 825 as modified by DFES.