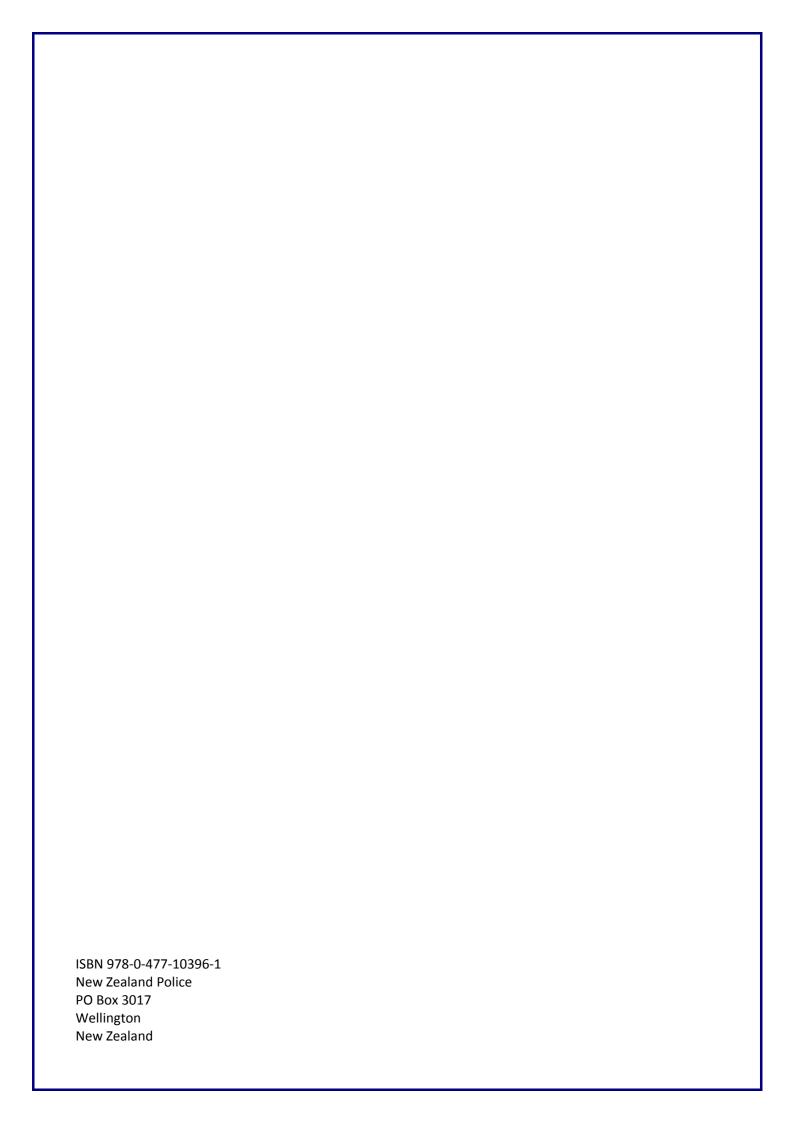


Evaluation Services *Police National Headquarters*

Mobility Trial Evaluation Final Report February 2013

Melanie Brown **Evaluation Services**



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Lead evaluator, analyst, and author of the report:

• Melanie Brown, Senior Evaluator, Evaluation Services, New Zealand Police.

Responsible for the development of the initial evaluation framework, support throughout the project, and review of the draft report:

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 and partly due to the often difficult and sensitive situations which they attended with their observed
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1 Executive Summary

The introduction of mobile devices and applications to frontline Police officers represents a transformational change for New Zealand Police. Providing frontline officers with innovative, state of the art, mobile access to important Police systems, is a key component of New Zealand Police's drive towards improving organisational capability and operational efficiency.

The Mobility Trial was the first step in the Mobility Workstream—part of the *Policing Excellence* portfolio of projects arising from a November 2009 report, *A Comprehensive Approach to Policing Excellence*, accepted by the Cabinet Strategy Committee.

This final report presents the findings from the evaluation of the New Zealand Police Mobility Trial undertaken over eleven months from February to December 2012.

The high level outcomes and benefits sought from the trial were:

Ou	Outcome		nefits
1.	Frontline Police officers capture and distribute timely, quality information at source, increasing policing efficiency	•	Optimised use of Police Resources Better service delivery at lower cost
2.	Frontline Police officers are less dependent on Police infrastructure and colleagues, increasing policing effectiveness	•	Optimised use of Police Resources Better service delivery at lower cost
3.	Frontline Police officers receive timely and accurate information to make informed decisions, enhancing officer and community safety	•	Enhanced Officer and Community Safety Optimised use of Police Resources

An outcomes framework was developed for the evaluation which, using intervention logic, set out a series of measurable intermediate level outcomes (lower level expected benefits) for each of the three high level outcomes show above, (see also Appendix C). A fourth area was added for assessment—*Unexpected outcomes / Unanticipated consequences*.

The evaluation was a combined outcomes and formative evaluation, looking at the outcomes of the trial, the usability and suitability of the devices, and the implementation of the trial, to inform decision-making and planning for a national roll-out of devices. A mixed-methods approach was taken, combining the results from an observational study, participant surveys, focus groups and administrative data analysis to assess the achievement of these outcomes.

Key findings

The Mobility Trial successfully provided insights into the potential benefits Police could expect from the provision of mobile devices to all staff, and provided valuable lessons about which devices, software and systems to deploy, as well as how to deploy them. (A summary of the devices and functionality is attached at Appendix E.)

The findings of the evaluation relate only to the conditions of the trial, and to the combinations of devices and applications, and functionality, that existed during the trial. The same findings cannot be assumed to also apply to a roll-out of different combinations of devices, applications and functionality.

Mobility changes the way Police officers work. It can increase efficiency and effectiveness. It has given
 Police officers more effective tools for doing their job, and improved some aspects of their job markedly.

- Many staff have reported that they can 'be more thorough' and do a better job, detect more offences, identify more offenders and deal with some jobs more easily and quickly than they would have before. Some staff still prefer the old ways of doing things, have been frustrated with some of the technical problems they've encountered, and would like more training.
- The trial showed that if officers try to do something more than two or three times, and it doesn't work, they give up and use the old tried and trusted method.
- Effective communication, training, and support for staff, are key to ensuring that staff quickly, easily, and happily, adopt the new technologies and ways of working, and therefore realize the benefits for themselves and the organisation.
- Making sure the technology works, and staff are well-informed and well-trained, is critical to success.

Outcome 1 - Frontline Police officers capture and distribute timely, quality information at source, increasing policing efficiency

Trial participants are able to capture and distribute more information while out on the street now than ever before, as their smartphones, or iPads allow them to record more information (such as photographs, bail breaches, intelligence notings, or comments on jobs) directly into the system in electronic form, or use Winscribe or email to pass information directly to relevant colleagues.

With mobility, officers are able to spend more time in the community

Trial participants spent the equivalent of 25.4 more minutes out of the station per officer, per 8 hour shift (i.e. 5.3% of their shift), than those without mobility. This was extra time spent being visible in the community and doing work that they would otherwise not get time to do, or would have to do back at the station.

With mobility, officers spend less time returning to the station to undertake tasks that they can now do on their devices

Trial participants spent the equivalent of 2.9 fewer minutes returning to the station per officer, per 8 hour shift (i.e. 0.6% of their shift), for reasons that could be avoided with mobility (such as making or receiving phone calls, emails, checking information/photographs on their computer, consulting with their supervisor, getting a camera or map), than those without mobility.

The new bail management and Intel noting software has the capacity to reduce time spent on data entry across a range of workgroups

Although the full potential of the new mobile bail management and Intel noting software has not yet been realised (as they have only fairly recently been implemented, and there is a need for some technical enhancements and more training for staff), there are indications from staff that the software will result in reduced data entry for Intel and File Management Centre (FMC) staff as well as frontline staff.

Outcome 2 - Frontline Police officers are less dependent on police infrastructure and colleagues, increasing operating effectiveness

Officers can do many more things for themselves now that they have access to querying software (eQuip), event management software (Mobile for Public Safety/MPS and Smartphone for Public Safety/SPPS), bail management and Intel noting software (also on eQuip) and maps. Without going through Comms they can now do their own queries, create jobs, self-assign, result and log jobs themselves.

They can communicate with complainants, witnesses, supervisors and colleagues by phone or email, from anywhere, without needing to go through Comms. This enables them to be much more independent. It also has the potential to reduce the Comms centre workload so that Comms staff can focus on managing priority incidents.

> \	Vith mobility,	officers are	spending less	time on	the radio	o
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Trial participants spent the equivalent of 6.7 fewer minutes on the radio per officer, per 8 hour shift (i.e. 1.4 % of their shift) than those without mobility.

With mobility, officers spend more time doing 3Ts (preventative task - vehicle turnover)

Trial participants spent the equivalent of 9.6 more minutes doing 3Ts, per officer, per 8 hour shift (i.e. 2% of their shift) than those without mobility.



Outcome 3 - Frontline Police officers receive timely and accurate information to make informed decisions, enhancing officer and community safety

Improved access to Police information and systems is enabling the correct, confident, identification of offenders, and improving on the spot decision-making for most officers with mobility. It enables more-informed decisions to be made more efficiently and effectively, without officers having to go back to the station to find out extra information or discuss the matter with a supervisor. They can use their devices to get the information they need, and their phones to talk over their approach with supervisors, if necessary.

> With mobility, officers are conducting more queries

Trial participants undertook 2.26 more QPs and QVRs, per person, per average shift, than those without mobility.

> Most officers say they can usually get the information they want when they want it

Most officers with mobility say they can usually (some always) get the information they want when they want it—82% from eQuip Those in busy radio areas compare this favourably to waiting for free airtime to get on the radio. There were times in the past where they just wouldn't have asked for information because they did not want to use air-time for non-priority purposes.

Mobility is informing and improving decision-making

Most officers have reported improved options (87%) and decision-making (73%) on the street as a direct result of mobility, particularly through access to eQuip.



Access to more information and improvements in decision-making seem to be having an impact on the number of offences being detected and offenders apprehended (as measured by *warrants to arrest* created and expired).

Officers with mobility have created and expired more warrants for arrest than comparison officers without mobility

An analysis of administrative data has shown a statistically significant difference between the number of warrants being created, (0.7 more per officer, per average shift) and warrants being expired, (0.36 more, per officer, per average shift) by staff with mobility, than staff without mobility.

There are mixed messages coming from the trial in terms of staff perceptions of safety.

Information can assist with risk assessment and approach to jobs, which enhances safety

The extra information that officers can access from their mobile device can increase their safety and that of the community as a result of being better informed about potential risks when attending events or dealing with suspects or offenders.



Outcome 4 - Unexpected outcomes / Unintended consequences

As with any project there were some unexpected outcomes/unintended consequences identified during the mobility trial, which ought to be monitored and managed.

>			

- Staff working more while off-duty/at home
 - Now that they have the smartphones and iPads officers have 24hr access to phone calls and emails and find it difficult not to check for and respond to messages and calls.
- > Staff have the capacity to record more evidence electronically than ever before, including statements and signatures.

They need policies and procedures to ensure that what they are doing is admissible in court, and that they protect personal information.

Mobility can 'create work'

With better access to information, more offenders and offences can be more easily detected



> Suspects 'spill the beans', lying less and volunteering more information!

As officers have more information at their finger-tips, an interesting consequence is that suspects assume they know even more than they actually do, and so start talking more.

Usability and Suitability of Devices

Overall, the trial participants enjoyed trialling the devices, and once they began to use them they all said they would not like to give them back. The found them invaluable in their job. Despite some individual differences in preferences there was a fairly high degree of consensus among participants about the

	devices they preferred. Two smartphones were trialled, the devices, the iPad tablet devices, the iPad tablet devices.
>	The preferred smartphone was the iPhone Both the and the iPhone helped participants to communicate with colleagues, complainants and witnesses through phone calls, email and texts, and access information such as queries on eQuip, or locations on maps—but the iPhone was generally found to be easier to use, and the bigger screen and keyboard were preferred.
>	The preferred large device for General Duties Branch (GDB) (frontline) and Neighbourhood Policing Teams (NPT) was the iPad Both the and the iPads were appreciated by staff for their larger (than smartphone) screens and keyboards. Once they had their large devices the participants preferred to do most tasks on them rather than on their smartphones. However, of the two large devices, the iPad was preferred among GDB and NPT staff for its ease of use, its size, and its portability.
A	
>	The ideal device for GDB would be an iPad/tablet that can do what the does Most staff would like to have the functionality of the having the portability of the iPad. (with access to all Police systems) while
>	In-car mounts or brackets for the devices would make it easier and safer to use the devices in the car. The lack of a fixed bracket or mount in the car means that if officers are to use the device in the car it must be held in the hand or set on the officer's knees.
>	One large device (iPad) per car would be enough Many GDB staff commented that they did not each need a large device as well as a smartphone, and that one device in a car would be enough to meet their needs.
>	
>	The preferred mobile event management application was Smartphone for Public Safety (SPPS) Of the two mobile event management applications trialled (Mobile for Public Safety/MPS and Smartphone

for Public Safety/SPPS) the purpose-built SPPS was considered easier to use.

Mobile querying and bail management software was well received

The eQuip querying software was taken up really quickly by triallists who generally found it easy to use. Similarly when the bail check/reporting function was added, most found it easy to use

> Feedback on the mobile Intel noting software was mixed

The Intel noting function on eQuip was considered a bit tricky to use by most staff, although some had mastered it and used it a lot. Most felt they needed more training on it and many felt that it was not as well developed (or as intuitive) as the other software.

The different applications did not always 'talk to each other' very well

The mobile software environment provides various windows into Police systems for different purposes. Ideally, once officers have logged-in to the device and the Police system, this should be reflected in the various windows, and when they make changes to the system through one window that change should be visible in the other windows where relevant (if not automatically, then after a very quick 'refresh'). This did not always happen

Key lessons learnt from implementation

Good training is crucial in maximising use of mobility devices

The staff who felt most confident in knowing how to use the devices used them the most. Staff who felt 'left behind' in the training were not confident in using them and so didn't use them as much.

Staff suggested in focus groups that professional trainers would be preferable for the national roll-out, partly because they may reduce the amount of jargon used, and partly because they might pitch the training at a lower level so that those less tech-savvy could follow it more easily. More staff (54%) stated a preference for face-to-face training over Te Puna (online) training (21%).

> A dedicated mobility support team helps staff deal with problems

The central mobility team was considered the most useful source of support by trial staff – better at handling mobility related problems or issues (whether 'how-to' or technological) than the helpdesk or other sources of support. The helpdesk were often not able to help with the issues being faced by mobility trial staff. The implications for national roll-out are that either the helpdesk needs to be highly trained in the mobility devices and software, or a dedicated mobility support team needs to be available to staff.

> Champions and supervisor engagement are pivotal to successful adoption by staff

One trial section from Counties Manukau West showed extremely positive results across most areas of use and effectiveness compared to all other sections across the trial. A key reason for this appears to be leadership and engagement from its leads/champions and supervisors. The 'super-section' was enthusiastically encouraged to use the devices. Mobility was a focus of team discussions, and time was set aside for informal training sessions for the section, where they worked through how to do things on the devices, despite working in a very busy environment. It clearly made a difference to the way the section used their devices and the attitude they had towards them. (There were other examples of good leadership and sections using mobility well – but this particular section stood out.)

> Stakeholder identification and involvement should inform the development of software and systems
The trial would have benefited from more engagement, sooner, with users and other stakeholders,
(including Communications Centre staff, Intel and FMC) in the development of applications, and
identification and planning for practice changes. This may have reduced some of the need for postdevelopment enhancements.

"Make sure it works!"

When asked what recommendation they would make for a national-roll out, trial participants overwhelmingly said "Make sure it works!". Because the trial involved testing devices and software, staff tolerated technical problems and difficulties more than they would have if they had not been part of a trial. They persevered more because it was a 'trial'. Even then, some said that when they tried something a few times and it failed each time, they would give up and go back to the old way of doing it. The expectations of staff during a national roll-out will be that devices and software will be tried and tested, and will work.

Conclusions

In introducing mobile devices to its constabulary, NZ Police has paid attention to most lessons learnt by Police overseas, most notably in the UK. There, there were criticisms of Police forces introducing mobile devices without consideration of how they could be used to maximise their potential, and without adapting Police practices and systems to accommodate their introduction.

In New Zealand, the trial of mobile devices did consider how their potential could be maximised, and included the trial of purpose-built Police system software/applications, so that staff were not just being given commercial consumer devices, but new Police operational tools with two-way secure access to Police system information.

The technical challenges of the mobility trial and mobility generally, in an operational environment like Police, where security of information is so critical, mean that the mobility trial was very much a trial of the technology and the programming behind the mobile devices and applications, as well as a trial of the Police experiences and potential outcomes of using mobile devices.

Technologically, the trial was a *work-in-progress*. The trial participants were testing the devices and the systems while the systems were being developed and refined—rather than trialling a finished product. This means that what may be rolled out nationally could in some ways be quite different to what was trialled, as the 'product' has evolved over the course of the trial.

The trial was well-served with monitoring systems and feedback loops, so that staff experiences and technical problems were tracked throughout the trial, problems could be dealt with and enhancements made where necessary. The project team was responsive to feedback from both the trial participants and the interim evaluation report.

One lesson from overseas experience that NZ Police could still learn from, is not to rush implementation. Police culture internationally tends towards impatience and wanting to 'get on with it'. In the deployment of mobility, taking the time necessary to make sure the technology solutions are right, and ready, and that an optimal training and support infrastructure is in place for staff, is likely to result in greater benefits, sooner, than rushing ahead before everything is ready and placing user uptake at risk.

This report does not attempt to quantify the findings of the evaluation in financial terms. A business case has already been prepared for the national roll-out of mobility devices. The findings of the evaluation suggest that the estimated benefits of mobility, as used in that business case, are not unrealistic.

If the technology all works, and the staff are well trained and supported, mobility could deliver significant improvements to the efficiency and effectiveness of NZ Police.

Recommendations for national roll-out

The following recommendations are proposed in order to support and enhance a national roll-out of mobility devices and applications (see more detail in Section 7 on Recommendations). They lead directly from the findings outlined in this report, unintended impacts and consequences of the introduction of mobility, and lessons learnt from the implementation. They largely mirror the suggestions made in the interim evaluation report.

- 1. Consider deploying the iPhones and iPads to GDB and NPT staff and these devices are the most suited to their needs.
- 2. **Implement a staggered roll-out:** to enable Communications Centres to identify the implications of mobility for their workload and address any issues prior to full national roll-out.
- 3. Provide comprehensive and on-going training and support for users, including face-to-face training: to meet the needs of staff according to varied levels of ability and willingness to engage with new technology and functionality—including providing basic training on using the general functions of devices.
- 4. **Provide comprehensive information and training sessions for Communications Centre staff:** to make sure they know what functionality officers have access to, and what it means for dispatchers in terms of managing events and officer safety.
- 5. **Monitor and measure the impacts of mobility during the first year of implementation:** to ensure that the expected benefits are realised and possible negative impacts are managed:
 - 5.1. **Monitor officer safety in the transition to mobility:** to ensure that officers' safety is not being compromised by using GPS-generated, unverified lat-long coordinates for officer location.
 - 5.2. **Monitor the recoding of family violence cases in the transition to mobility:** to ensure that victim safety is not being compromised by inaccurate recoding.
 - 5.3. **Monitor the levels of off-duty data usage and overtime being recorded by officers:** to ensure responsible and healthy work practices and encourage maintenance of work-life balance.
- Retain a centralised mobility implementation team for the duration of the national roll-out and for a
 period beyond: to measure benefits, monitor impacts, coordinate issues that arise across Training,
 Communications and ICT, provide advice and manage teething problems.
- 7. Develop policies and processes on the use of electronic evidence, especially statements and signatures that are admissible in court: in order to maximise the efficiency gains possible with mobility.
- 8. Develop/Communicate policies and guidance on the use of mobility devices during non-work hours and communicate them to staff: to clarify what is expected of staff, mitigate the risk of any negative consequences for them or their families, and ensure that New Zealand Police is meeting its obligations as an employer.
- 9. Consider area/district differences when planning and calculating potential impacts and benefits of mobility implementation: to ensure that anticipated benefits are realistic given local contextual factors.
- 10. Consider implementing a series of practical suggestions from staff: to improve the national roll-out of mobility devices /applications, particularly the inclusion of a bracket or mount in the car for the iPad so that it can be used more effectively and safely, and the option of allocating iPads one per car for GDB (much like the old mobile data terminals (MDTs)), rather than one per person.

Table 1. Summary of Findings on Expected Benefits/Outcomes

The following table summarises the final status of the lower level expected outcomes/benefits of the trial according to the evaluation.

- 9 of the 21 expected outcomes/benefits can confidently be said to have been achieved.
- 6 out of 21 are looking very promising, but would benefit from further monitoring during at least the first stage of national roll-out.
- 5 out of 21 have got mixed or limited results and so would benefit from being monitored during at least the first stage of national rollout.
- 1 out of 21 could not be properly assessed at this stage and so should be included for monitoring during at least the first stage of national roll-out.

Status		Number of Expected Outcomes/ Benefits	
Dark Green	Achieved	9	
Light Green	Looks promising – needs further monitoring	6	
Orange	Mixed results – needs further monitoring	5	
Red	Not achieved	0	
Grey	Not able to be assessed	1	
Total		21	

E>	Expected benefits/outcomes		Findings		
1.	Frontline Police	1.1 Officers spend less time returning to the station (for reasons considered avoidable with mobility)	 GDB officers with mobility were observed to spend the equivalent of 2.9mins per officer per 8h shift (0.6% of their shift), less time returning to the station for reasons that could be avoided with mobility (phone calls, emails, checks, supervisor discussions), than officers without mobility. This difference was statistically significant. This is a small proportion of the overall time spent returning to the station, (5.0% of their shift for the officers with mobility - equivalent to 24 minutes per officer, per 8hr shift), most of which is unavoidable (transporting suspects/offenders, returning for meal breaks, return at end of shift). 		
	officers capture and distribute timely, quality information at source, increasing	1.2 Officers spend less time completing administration at the station and more time in the community	 Officers with mobility were observed to spend the equivalent of 25.4mins per 8hr shift (5.3% of their shift) less time at the station, than those without mobility. When they were at the station they spent less time on desktop computers and desk phones and more time on watch-house computers than those without mobility. 		
	policing efficiency	1.3 Officers enter intelligence information in real time	 There has been mixed feedback from trial participants on whether they are entering Intel more quickly than before. Almost as many of those who use the Intel noting function¹ are saying it is taking more time (32%) as are saying it is taking less time (36%). Improvements to the Intel noting application and associated training might help to increase the real time entry of Intel. 		
		1.4 Officers record more intelligence	 Officer feedback is mixed but some officers (40% of those using the Intel noting function²) are reporting that they are doing more notings than before. There has not been any statistically significant increase in intelligence being recorded in Police 		

¹ (n=53)

² lbid.

Ex	pected benefits/outcom	es	Findings
			systems, although the data is pointing in the right direction. The potential is there, and may be realised with improvements to the application and associated training.
		1.5 Reduced data entry	 Staff feedback suggests some reductions to data entry time for: Intel and FMC staff in terms of Bail breaches and Intel notings, and frontline staff in terms of being able to do some administrative work while out of the station.
		1.6 Reduced overtime	 Staff gave mixed feedback about the impact of mobility on overtime. Some officers report getting work done on the road that they would previously had to stay back after shift to finish. Some officers are reporting doing more work at home now, because they can. 74% of staff said they used their or iPad at home at least occasionally, including 11% who use them frequently or very frequently.
		2.1 Officers request less information by radio - decrease in radio transmissions	 GDB officers with mobility spent the equivalent of 6.7 fewer minutes on the radio, per person, per 8hr shift (i.e. 1.4% of their shift), than comparison officers without mobility. They spent about half as much time on the radio as those without mobility.
		2.2 Security of information - silent, cannot be intercepted	• Staff feel more confident that the information they communicate is more secure now, especially in analogue radio areas.
2.	Frontline Police officers are less	2.3 Staff have greater confidence, independence	Staff are more confident and independent now that they have all of the information they need at their fingertips.
	dependent on police infrastructure and colleagues, increasing operating effectiveness	 2.4 Reduced Comms workload 2.5 Frees up Comms staff for customer-facing activities, time to focus on major incidents 2.6 Radio used less for routine transmissions and more for command and control purposes 	 In areas where mobility is being actively used, some Comms staff have reported: a very slight change in workload—allowing them to "do the job the way it is supposed to be done" a little more time to focus on major incidents/priority events and customer-facing activities, and less radio use for routine transmissions and more for command and control. Others have not noticed any difference.
		2.7 Staff undertake more proactive activities	 Officers with mobility spent more time, than those without mobility, doing: 3Ts (an extra 2% of their shift - equivalent to 9.6 more minutes, per officer, per 8 hour shift) Officers with mobility undertook more preventative tasks per shift than those without mobility but the difference was not statistically significant.

 $^{^{\}bf 3}$ Statistically significant at the 5% level using Mann-Whitney U non-parametric test.

Ex	pected benefits/outcome	es	Findings
		3.1 Officers receive full and accurate information when it is needed	 Most officers with mobility say they can usually (if not always) get information when they need it—82% from eQuip and 73% from iPad. Most have said they are doing more queries than before, and the administrative data analysis found they conducted 2.26 more QPs and QVRs (in combination) per person, per shift, than comparison officers without mobility.
		3.2 Improved on the spot decision making	 Most officers have reported improved options (87%) and decision-making (73%) on the street as a direct result of mobility, particularly through access to eQuip.
		3.3 Supervisers know location of their staff	 Supervisors may not always know the location of their staff, depending on how well the new applications are being used, especially if staff are not logging their locations over the radio. However because they all have phones now the supervisors can call them if they want to confirm where they are.
3.	Frontline Police officers receive timely and accurate information to make informed decisions, enhancing officer and community safety	3.4 Improved management of demand - what events they are dealing with and how long events have been waiting	 The new mobile functionality, enabling mobile event management by officers and self assignment to events, has resulted in work practice changes for Comms and GDB staff, which were not originally well communicated or understood during the trial. Feedback is mostly positive, but some concerns were also expressed.
		3.5 More staff agree that they 'have the tools to do the job'	 Staff feedback about their new tools is generally positive. Most trial staff are reporting that their new tools are helping them to do the job, and improving their ability to do the job more efficiently and effectively.
		3.6 Improved staff perception of safety	 About half (49%) of survey respondents reported that using mobility devices has made no change to their feelings of safety. 40% feel safer with mobility devices, but a small proportion (10%) feel less safe. Reasons for feeling less safe included reduced radio communication about locations, technical issues with correct locations being logged by devices, and the practical issue of safety while being 'head down' using mobility devices.
		3.7 Increase in the detection of certain offences	 More offences are being detected (0.7 more warrants being created, per officer, per shift) and more offenders are being apprehended (0.36 more warrants being expired, per officer, per shift) by staff with mobility, than staff without mobility. These results are statistically significant.
		3.8 Requests for urgent assistance from other patrol cars are heard immediately, enhancing safety	There were too few units in the trial relative to others on their radio channels that it was not possible to monitor this. It should be included in monitoring for the national roll-out.

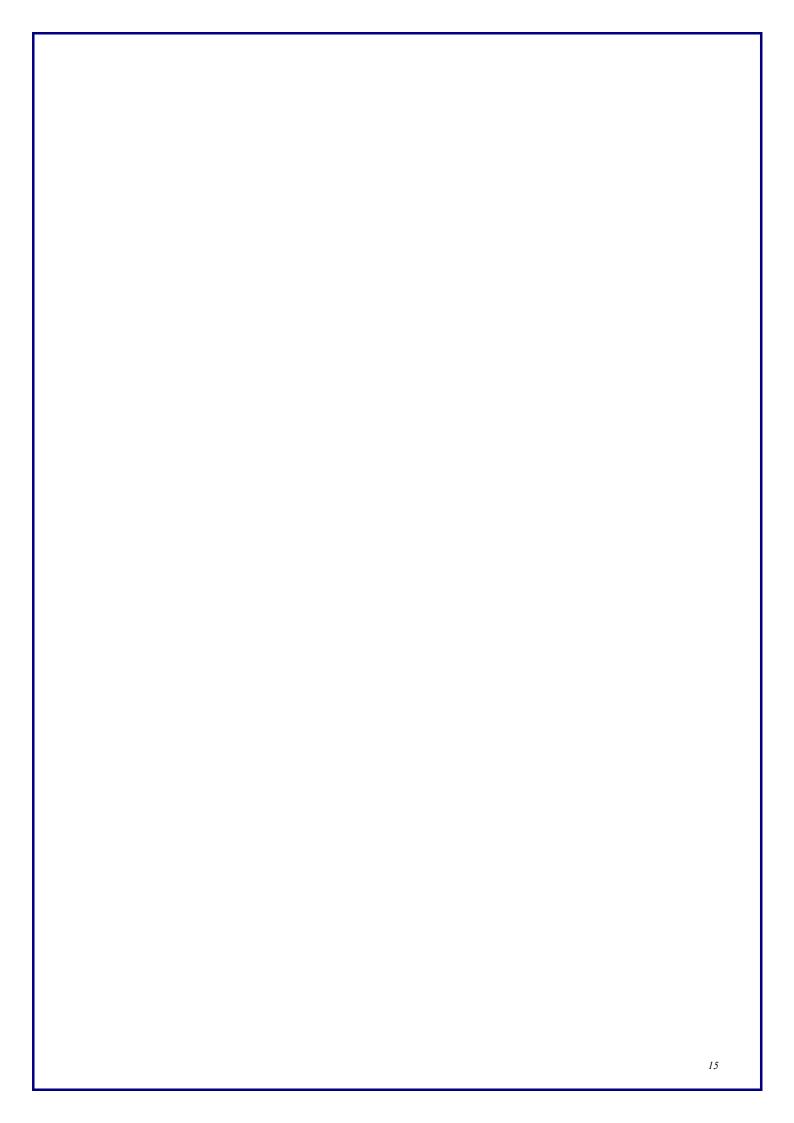


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2 Introduction

Background to the Mobility Trial

In November 2009, the Cabinet Strategy Committee accepted the report *A Comprehensive Approach to Policing Excellence*. This has been translated into the Policing Excellence Portfolio containing a set of workstreams that are focused on lifting organisational performance, and reducing pressure on the criminal justice pipeline. The overarching goals of Policing Excellence are a 13% decrease in recorded crime, a 19% reduction in prosecutions, and a 4% shift from reactive to proactive (prevention policing), by 2014/15.

One of the key workstreams for enhancing capability and operational efficiency is the Mobility Workstream.

This involves officers being provided with mobile electronic devices giving them mobile access to information systems. It is expected that this will enable officers to stay productive for a greater proportion of their shift and remain visible in the community. The anticipated benefits of greater mobility include enhanced officer and community safety, optimised use of Police resources and better service delivery at lower cost (see Appendix D: Investment Logic Map). The initiative is expected to contribute to the overarching goals of Policing Excellence primarily through the reinvestment of time saved into proactive policing.

The first stage of the Mobility workstream was a trial of mobility devices and applications from February to December 2012. The trial ran across four sites: a busy metro area - Counties Manukau West, a remote rural area - West Coast, and two more 'average' areas – Lower Hutt and Hawkes Bay. It involved 106 staff trialling iPhone smartphones, iPad tablets and a range of mobile software applications providing staff with direct mobile access to Police information and systems.

The high level outcomes and benefits sought from the trial were:

Ou	Outcome		Benefits	
1.	Frontline Police officers capture and distribute timely, quality information at source, increasing policing efficiency	•	Optimised use of Police Resources Better service delivery at lower cost	
2.	Frontline Police officers are less dependent on Police infrastructure and colleagues, increasing policing effectiveness	•	Optimised use of Police Resources Better service delivery at lower cost	
3.	Frontline Police officers receive timely and accurate information to make informed decision, enhancing officer and community safety	•	Enhanced Officer and Community Safety Optimised use of Police Resources	

The Evaluation

A combined outcome and process evaluation was undertaken during the course of the trial, to examine:

- the usability and usefulness of the mobile devices and applications trialled
- the extent to which the mobility trial demonstrated the expected outcomes, and
- lessons that could be learnt from the implementation of the trial.

The evaluation used a mixed-methods approach (see Appendix B: Methodology), combining the results from:

1. An observational study recording time spent undertaking activities and comparing data from sections with no mobile devices (within the trial sites), with data from trial participants who have all of the mobile devices and functionality.

- 2. Surveys of, and Focus Groups with, trial participants, on the usability and usefulness of:
 - Smartphones (iPhones
 - the eQuip application
 - Bail and Intel enhancements to eQuip
 - their laptops/tablets iPads), and
 - the Mobile for Public Safety (MPS) and Smartphone for Public Safety (SPPS) (Mobile Responder) applications.
- 3. Interviews/focus groups with Communications Centre, Intel and FMC and other staff about the impact of the Mobility trial on them.
- 4. Administrative data analysis.

Caution should be exercised when interpreting the findings, as:

- the numbers of mobility trial participants is small (106 in total) and not all of them responded to the surveys or participated in focus groups, and
- the number of respondents in each survey was less than 100, so the use of percentages may create an impression of larger differences than the real numbers indicate for example, where there are 10 respondents in a category, a change of one person is a change of 10%.

Changes to the original evaluation project plan

Because the timeline for preparing the Mobility business case was changed and a business case for national roll-out prepared in September 2012, the evaluation team modified the evaluation plan in order to be responsive and inform the business case. It was changed to include:

- undertaking a series of focus groups and interviews with trial staff and Communications Centre staff during Jun-Aug, as well as during October/November, so that some of the early impacts of the smartphones and eQuip could be assessed, and
- provision of an interim report in August, summarising the data collected from the surveys, focus groups and interviews from first stage of the evaluation.

Focus groups were still conducted in Oct/Nov because staff feedback needed to be gathered on the iPads, MPS and SPPS software, and Bail and Intel enhancements to eQuip.

This report does not attempt to quantify the findings of the evaluation in financial terms. A business case has already been prepared for the national roll-out of mobility devices. The findings of the evaluation suggest that the estimated benefits of mobility, as used in that business case, are not unrealistic.

This report includes and builds on the information provided in August's interim report, and sets out additional data from the comparative observational study, administrative data analysis, and feedback from further surveys and focus groups. The findings of the evaluation are to be used to inform decision-making and planning for a national roll-out of devices.

3 Outcome Findings

The evaluation aims to assess the extent to which the Mobility Trial achieves its expected outcomes.

- Frontline Police officers capture and distribute timely, quality information at source, increasing policing efficiency
- Frontline Police officers are less dependent on Police infrastructure and colleagues, increasing policing effectiveness
- Frontline Police officers receive timely and accurate information to make informed decisions, enhancing officer and community safety

This section sets out the detailed findings of the evaluation in relation to each of the intermediate level outcomes (lower level expected benefits) that were developed for the evaluation using intervention logic. They are organised into the three high level outcomes sought from the mobility trial. Findings on unexpected outcomes/unintended consequences have also been included.

The findings draw on findings from an observational study and an analysis of administrative data, both of which compare GDB officers with and without mobility, a series of participant surveys and a series of focus groups and interviews with trial participants including supervisors, GDB, CIB and NPT staff as well as Comms, FMC and Intel staff.

The table below summarises the final status of the lower level expected outcomes/benefits of the trial according to the evaluation.

Despite the fact that not all of the lower level expected outcomes have been allocated a dark green "Achieved" rating, the evaluation has found that the three high level expected outcomes of the mobility trial have been achieved to some extent, and that based on the outcomes of the trial, a national rollout of mobility could deliver significant improvements to the efficiency and effectiveness of NZ Police.

Status		Number of Expected Outcomes/ Benefits	
Dark Green	Achieved	9	
Light Green	Looks promising – needs further monitoring	6	
Orange	Mixed results – needs further monitoring	5	
Red	Not achieved	0	
Grey	Not able to be assessed	1	
Total		21	

- 9 of the 21 expected outcomes/benefits can confidently be said to have been achieved.
- 6 out of 21 are looking very promising, but would benefit from further monitoring during at least the first stage of national roll-out.
- 5 out of 21 have got mixed or limited results and so would benefit from being monitored during at least the first stage of national roll-out.
- 1 out of 21 could not be properly assessed at this stage and so should be included for monitoring during at least the first stage of national roll-out.

3.1 Outcome 1 - Frontline Police officers capture and distribute timely, quality information at source, increasing policing efficiency

Summary

Trial participants are able to capture and distribute more information while out on the street now than ever before, as their smartphones, iPads allow them to record more information, including photographs, bail breaches, intelligence notings, or comments on jobs, directly into the system in electronic form, or use Winscribe or email to pass information directly to relevant colleagues.

With mobility, officers spend less time returning to the station to undertake tasks that they can now do on their devices.

Trial participants spent the equivalent of 2.9 fewer minutes returning to the station per officer, per 8 hour shift (i.e. 0.6% of their shift), for reasons that could be avoided with mobility (such as making or receiving phone calls, emails, checking information/photographs on their computer, consulting with supervisor, getting a camera or map), than those without mobility.

With mobility, officers are able to spend more time in the community.

Trial participants spent the equivalent of 25.4 more minutes out of the station per officer, per 8 hour shift (i.e. 5.3% of their shift), than those without mobility. This was extra time spent being visible in the community and doing work that they would otherwise not get time to do, or would have to do back at the station.

> The new bail management and Intel noting software has the capacity to reduce time spent on data entry across a range of workgroups.

Although the full potential of the new mobile bail management and Intel noting software has not yet been realised (as they have only fairly recently been implemented, and there is a need for some technical enhancements and more training for staff), there are indications from staff that they will result in reduced data entry for Intel and File Management Centre (FMC) staff as well as frontline staff.

Outcome 1.1 Officers spend less time returning to the station (for reasons considered *avoidable with mobility*)

Evaluation Findings:

GDB officers with mobility spend less time returning for reasons considered avoidable with mobility⁴ (0.6% of a shift – equivalent to 2.9mins per officer per 8hr shift).

This outcome specifically focuses on time spent *returning to* the station rather than time spent *at* the station. Time spent *returning to* the station has been considered *wasted* or *avoidable* return time—time which is not being used effectively. Time spent *at* the station is generally time spent doing work which will still need to be done, even if it is moved out of the station and done *on the street*. In terms of trying to create a time saving (extra hours per shift), the rationale for this outcome is: if some of the work that used to be done at the station could be done *on the street*, then the time spent returning to station could be reduced, and the saved time channeled into other, proactive or preventative, activities.

⁴ Statistically significant at 1% level.

Results from the Mobility Evaluation Observational Study of GDB officers show that:

- There was no real difference between the trial group and the comparison group in the *overall* amount of time they spent returning to the station.
- ➤ However, there was a statistically significant difference⁵ in the time spent returning for reasons considered avoidable with mobility—i.e. to make phone calls, receive phone messages, check and respond to email, find or check information, discuss issues with supervisors, pick up a camera, or print out information, maps or photographs.
 - GDB officers with mobility were observed to spend less time (0.6% of a shift equivalent to 2.9mins
 per officer per 8hr shift), returning to the station for reasons that could be avoided with mobility
 (phone calls, emails, checks, supervisor discussions), than officers without mobility. This difference
 was statistically significant.
 - Officers in the trial group spent, on average, 0.5% per shift (equivalent to 2.4 minutes per officer per 8 hour shift) returning for reasons that could be considered avoidable, compared to an average of 1.1% per shift (equivalent to 5.3 minutes per officer per 8 hour shift) spent by officers in the comparison group. This means that officers are using their mobility devices as intended, and are working more efficiently.
 - The trial group's return time for avoidable reasons could have been reduced further if the technology always worked, if all officers always used it when it did work, and if functionality was increased to facilitate the mobile completion of statements, family violence reports, and other paperwork.
- > The observational study also found that:
 - less of the time officers spent returning to the station could be considered wasted or avoidable with mobility than previously thought—21% of return time (on average) in the comparison group (equivalent to 5.3mins per 8 hour shift), and 10% of return time (on average) in the trial group (equivalent to 2.4mins per 8 hour shift),
 - most of the time spent returning to the station was for reasons that are currently considered unavoidable—i.e. taking suspects, offenders or evidence back to the station or hub for processing, collecting equipment, taking meal breaks, or returning at the end of shift, and
 - officers frequently undertake preventative tasks while returning to the station, such as choosing their route so that they can pass through a hot spot area, or check out a particular location.

The table below shows the differences between the groups.						

⁵ Statistically significant at the 1% level.

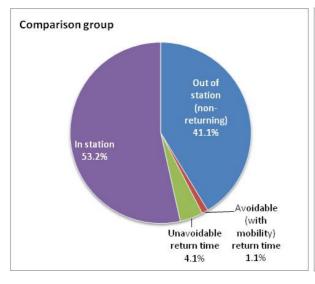
Table: Time spent returning to the station (Observational Study findings)

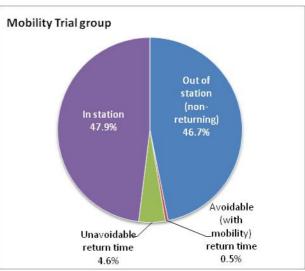
	Avoidable (with mobility) Time Spent Returning to Station (Average per GDB officer per shift)		Unavoidable Time Spent Returning to Station (Average per GDB officer per shift)		Total Time Spent Returning to Station ^A (Average per GDB officer per shift)	
Group	Proportion of shift	Equivalent minutes per 8 hour shift	Proportion of shift	Equivalent minutes per 8 hour shift	Proportion of shift	Equivalent minutes per 8 hour shift
Comparison group	1.1%#	5.3mins	4.1%	19.7mins	5.2%	25mins
Mobility Trial group	0.5%#	2.4mins	4.6%	22.1mins	5.0%	24mins
Difference (per GDB officer, per shift)	0.6 [#] (percentile points)	-2.9mins	0.5 (percentile points)	+2.4mins	0.2 (percentile points)	-1min

^{*}Data from Mobility Evaluation Observational Study (2 groups X 16 participants X 3 shifts each = 96 shifts (48 shifts in each group))

Although there are differences between the two groups in terms of the average amounts of *unavoidable* time spent returning to the station (per person per shift), total time spent returning to the station, and total time spent on shift, these differences were not statistically significant.

Figure: Average time GDB officers spent in and out of the station, and returning to the station (for *avoidable* with mobility and unavoidable reasons) per officer, per shift. (Observational Study findings)





> Staff feedback through focus groups confirms the findings that they are not returning to the station for some of the reasons they used to, because mobility allows them to continue working out of the station. And, as can be seen in the next section, the data indicates that the mobility trial group spent less time in the station than the comparison group.

[#] The difference between the Comparison and Mobility Trial groups' "avoidable" time (mins and % of shift) spent returning to the station is statistically significant (at the 1% level).

^ATotals may not equal sum of parts, due to rounding.

Outcome 1.2 Officers spend less time completing administration at the station and more time in the community

Evaluation Finding:

- Less time being spent in the station (5.3% of a shift equivalent to 25.4mins per 8hr shift) and more in the community
- Less time being spent on desktop computers (6.3% of shift - equal to 30.2 fewer minutes per person, per 8hr shift)

Being able to undertake administrative tasks in the community rather than in the station increases visibility on the street, potentially has a crime-prevention or deterrent effect, and increases officers' ability to be more responsive.

... even if we are doing work and we are not watching traffic, or not watching something, everyone is watching us and they see a police car parked on the side of the road "oh there is a police car better slow down or not do anything stupid" so we might not be actually monitoring at that time but it appears like we are.

I was out in the car doing another job and got an email from prosecutions saying one of my people had a warrant to arrest, so that was quite handy - so I replied back and said we'll go and trace them now. Went out, found them and then I was able to ring back the prosecutor and jack up to go straight to Court. So without the phone and the email then I would have had to come back to the station, wouldn't have known anything about it, seen it and gone oh shivers and had to go back out again and so forth and that. So it was quite good, it just means that you can get those emails and those things, and you can action them straight away if you're in that position. You don't have to wait to get back to your computer.

[Mixed focus group, Hawkes Bay]

Results from the Mobility Evaluation Observational Study show that:

- Officers with mobility were observed to spend less time (5.3% of a shift equivalent to 25.4mins per 8hr shift) at the station, than those without mobility.
 - The Mobility trial group spent a greater proportion of their shift *out in the community* (52.1%) than in the station (47.9%)
 - The Comparison group spent a greater proportion of their shift in the station (53.2%) than out in the community (46.8%).

The differences between the mobility trial group and the comparison group in the observational study is shown in the previous charts, and the table below.

Table: Time spent In and Out of the Station (Observational Study findings)

Time spent In and Out of station ⁶ (Average per GDB officer	Compai	rison group	Mobility trial group		Difference (per GDB officer per shift)	
per shift)	Proportion of shift (%)	Equivalent hrs/mins per 8 hour shift	Proportion of shift (%)	Equivalent hrs/mins per 8 hour shift	Percentile points	Equivalent hrs/mins per 8 hour shift ^A
In the station	53.2%	4hrs 16mins	47.9%	3hrs 50mins	-5.3	-25.4mins
Out of the station	46.8%	3hrs 44mins	52.1%	4hrs 10mins	+5.3	+25.4mins
Data from Mobility Evaluation Observational Study (2 groups X 16 participants X 3 shifts each = 96 Shifts (48 shifts in each group)) A May not equal addition/subtraction of parts due to rounding						

During the observational study, the mobility trial participants spent more time on average (per officer, per shift) out of the station, and less time on average (per officer, per shift) in the station, than the comparison group.

The findings are a positive indication of what might be expected from a successful national roll-out of mobility—especially as further functionality will be available over time from mobility, including electronic family violence forms.

> Each location is different

Some officers in smaller, more rural stations were a little concerned about the expectations around the capacity of mobility to increase their time out of the station. Unlike GDB in larger stations, they undertake a wide variety of tasks including inquiries and associated paperwork. They note that in bigger stations there are specialist teams to do this e.g. Inquiry sections, Incident Reporting Centres, etc.

The differences across regions and sites are well recognised by Police, and this is why the four sites chosen for the Mobility Trial included a very busy, densely populated urban area (Counties Manukau) as well as a rural, remote area (West Coast). Lower Hutt and Hawkes Bay also have unique features. Each Police district and area faces unique challenges in terms of population and geography. And each is at a different stage in implementing a variety of organizational change initiatives. All of these factors combine to mean that an initiative like mobility will have a different impact in each area. The purpose of the trial is to help assess the differences across each site.

Results from the Mobility Evaluation Observational Study show that:

Across the four trial sites, GDB officers spend quite different amounts of time in the station, with officers in Counties Manukau spending the least amount of time, followed by those in Lower Hutt, then Hawkes Bay and finally the West Coast, where officers spent the most time in the station. These results are not unexpected, given the different sets of conditions that impact on each site. (None of these differences are statistically significant, although they all provide indications in the right direction.)

⁶ The average shift length actually observed for the trial group was 9hrs 22mns, 13 minutes shorter than the average for the comparison group 9hrs 35mns - not a statistically significant difference. The difference between the shift lengths across the two groups was due to fewer ten hour shifts, and more nine hour shifts, being observed in the trial group. This was not by design but arose out of necessity as a result of availability of observers, participants etc. The shift length has been standardised 8 hours for ease of comparability and further computation.

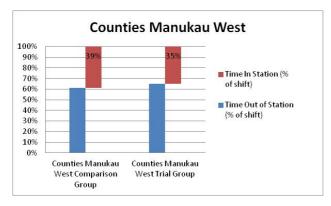
Table: Time spent in the Station* by Trial Site (Observational Study findings)

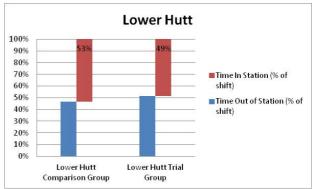
Time spent in the Station (Average per GDB officer	Comparison Group		Mobility Trial Group		Difference ^A (per GDB officer per shift)	
per shift) Site	Proportion of shift (%)	Equivalent hrs/mins per 8 hour shift	Proportion of shift (%)	Equivalent hrs/mins per 8 hour shift	Percentile points	Equivalent hrs/mins per 8 hour shift
Counties Manukau West	39%	3hrs 7mins	35%	2hrs 48mins	-4.0	-19.2mins
Lower Hutt	53%	4hrs 14mins	49%	3hrs 55mins	-4.0	-19.2mins
Hawkes Bay	56%	4hrs 29mins	53%	4hrs 14mins	-3.0	-14.4mins
West Coast	67%	5hrs 22mins	57%	4hrs 34mins	-10.0	-48mins

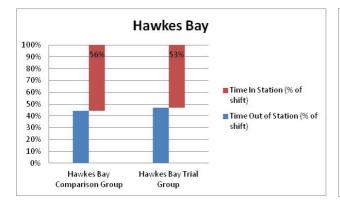
Data from Mobility Evaluation Observational Study (2 groups X 16 participants X 3 shifts each = 96 Shifts (48 shifts in each group))

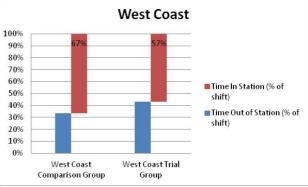
A May not equal addition/subtraction of parts due to rounding

At each site, officers in the Mobility trial group spent less time in the station and more time out of the station than the comparison group.









- > The biggest difference in the average proportion of a shift⁷ that GDB officers from the trial and comparison groups spent in the station was on the West Coast, where the difference was 10 percentile points (67% for the comparison group, and 57% for the trial group). The smallest difference (3 percentile points) was in the Hawkes Bay, followed by 4 percentile points of a difference in Lower Hutt and Counties Manukau West. (None of these differences are statistically significant, although they all provide indicators in the right direction.)
- The Observational Study findings about the West Coast difference confirms Focus Group feedback from West Coast staff:

Spending a lot less time in the station. You can do a lot of stuff out and about.

Probably an extra 10% of the time we're out and about. Probably an hour or two every shift. Say we spend 3-4 hours in the station here doing filing and that sort of thing, now you can do a lot of that when you're out and about so definitely an hour or two a day. It seems to be really positive in that respect. The guys aren't hanging out here anymore. You don't see them in the station. They're out and about.

[GDB Supervisor, West Coast]

- Many officers have reported in focus groups, across all sites, that they are completing more tasks while out in the community, rather than in the station. This should increase as more enhancements are made and more tasks can be completed on the mobile devices.
- > The Observational Study also showed that when they were at the station GDB officers with mobility spent less time on desktop computers and desk phones and more time on watch-house computers than those without mobility.
 - The GDB staff with mobility spent, on average, 8.6% of each shift on the desktop computer at the station—less time than GDB staff the comparison group who spent 14.9% of each shift, on average, on the desktop computer. This is a statistically significant⁸ difference equal to 30.2 fewer minutes per person, per 8hr shift.
 - The staff with mobility also spent less time on the desk phone at the station (0.8% of each shift), than staff in the comparison group (1.2% of each shift) a difference of 1.9 minutes per GDB officer, per 8hr shift (not statistically significant).

Time spent on desktop computer (average, per GDB officer, per shift)	Comparison Group	Mobility Trial Group	Difference (per officer per shift)	
Proportion of shift	14.9%	8.6%	-6.3 [#] (percentile points)	
Equivalent number of minutes per 8 hour shift	71.5mins	41.3mins	-30.2mins	

Data from Mobility Evaluation Observational Study (2 groups X 16 participants X 3 shifts each = 96 shifts (48 shifts in each group)) # Statistically significant at the 1% level

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⁷ Average observed shift

⁸ Statistically significant at the 1% level

Comparison Group	Mobility Trial Group	Difference (per officer per shift)
1.2%	0.8%	-0.4* (percentile points)
5.8mins	3.8mins	-1.9mins
	Group	Group Group 1.2% 0.8%

* Not statistically significant

These results align with focus groups feedback where trial participants talked about just going straight out to the cars after fall-in, because they can do some administrative tasks, and check their email on their mobile devices. Many are now undertaking tasks in their cars, while on the road, that they would have had to do back at the station before.

A lot of our jobs are domestics and we go and we are filling out the forms a lot of the time. What we used to do in the past was check them on Comms - Comms was busy so we wouldn't delve much deeper into it from there. While we are in the car doing that, what we do now is you look through their eQuip dossier, will be able to have all our numbers appearing and our new identities written down all ready to just come back and print it all up at the base, whereas before you would be finishing stuff off looking through the history when you come back to base and if you are getting five domestics in a night that time adds up it could be half an hour at least just in domestics.

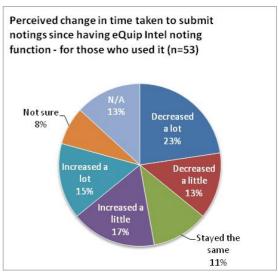
It keeps us on the road longer.

[GDB, Counties Manukau West]

Outcome 1.3 Officers enter intelligence information in real time

Evaluation Finding:

- There has been mixed feedback from trial participants on whether they are entering Intel more quickly than before.
- Almost as many are saying it is taking more time (32%) as are saying it is taking less time (36%).
- There were mixed views from staff on the time it takes to submit notings since having the mobile Intel application:
 - Over a third (36%) of survey respondents⁹ using the new Intel noting function (n=53) said they were able to submit notings sooner since using it than they were able to previously.
 - Almost a quarter (23%) thought the time taken to submit notings had decreased a lot.
 - 13% thought it had decreased a little.
 - Just under a third (32%) thought it took longer to submit their notings.
 - 17% thought the time it took had increased a little, and 15% thought it increased a lot.
 - 11% thought it took about the same amount of time as before.



Without mobility

During the Observational Study it was noted that there were various ways for staff to enter Intel notings:

- GDB on the West Coast use Sharepoint to enter Intel notings. Most officers enter the notings themselves either at the end of their shift or during their next shift. Some leave notes for Intel to enter.
- Officers in Lower Hutt recorded Intel notings in a variety of ways via NIA, jobsheets, e-forms, emails to Intel or
 personal communication with Intel. They tried to do them during the same shift but occasionally it could take
 up to a week.
- Most officers in the Hawkes Bay use Winscribe to record notings. They try to do it on the same shift. The time taken for it to then be entered in the system is variable.
- Officers in Counties Manukau West write notings or type them up in forms and put them into the Intel in-tray. Some send emails to Intel. They did not know how long it then took for Intel to put them into the system. The time taken depended on how busy they were but important ones were done quickly.

With mobility

Staff are still using a variety of methods for submitting notings but they are now using their mobile devices to assist doing them while out of the station. They can It is about changing the way you do things. I saw something and I headed to the car and I put a note in, you know, I did it as soon as the car had left. I just Winscribed the note out straight away and it's done. I didn't have to go back to the station to do it.[...] If you did it at the time it's done [entered] when you get back.

⁹ Te Puna online Mobility Evaluation Survey (n=70)

Winscribe their notings more easily now that they have their own mobile phone, and they can more easily email notings to Intel from their phone or iPad/ Survey findings show that more trial participants prefer the new Intel noting application than alternative methods of submitting notings. 37% preferred the new method, with Winscribe being the next most popular method at 24%.

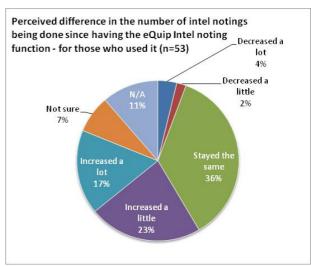
Some staff using the function said it allowed them to do their notings quickly and immediately, rather than having to wait until the end of a busy shift when they may not get time to do them at all.

Feedback from focus groups confirms the survey findings that some staff have been using their devices to record more Intel in real time, but also shows that some staff have found the new application difficult to use. 40% of survey respondents who used the application (n=53) found it difficult or very difficult to use. The reasons given by staff for why they found it difficult or did not use it were related to not knowing how to use it, and finding it technically frustrating. They had suggestions for how it could be improved, and these have been passed on to the mobility implementation team.

Improvements to the Intel noting application and associated training might help to increase the real time entry of Intel.

Outcome 1.4 Officers record more intelligence | Mobility has not yet led to an increase in intelligence being recorded in Police systems, although the potential is there. | Officer feedback is mixed but some officers are reporting that they are doing more notings than before.

- An analysis of administrative data comparing the activities of GDB officers in the mobility trial with those of GDB officers in comparable non-trial sections, shows no real difference between the two groups in terms of the number of notings created.
- However, 40% of respondents using the new Intel noting function on eQuip think they are doing more notings since having the mobile function:
 - 17% think the number has increased a lot.
 - 23% think it has increased a little.
 - Over a third (36%) think that they are doing the same number of notings as before.
 - 6% think they are doing fewer.



There was variable feedback from focus groups about the Intel notings function. Some officers found it difficult to use and would like the process to be streamlined. Those who did use it found that it enabled them to do

more notings, and about things that they may not have sent to Intel previously because they were not regarded as important enough. One officer, from a section in Counties Manukau where officers have been receiving extra information training, said not only were they doing significantly more notings, but they are also including notings that they would not have included before.

I will say they [a couple of dodgy looking guys] were in the car just for the sake of linking in to the car. There might not be any real Intel as such, but these two characters were in this car — as simple as that. Whereas before, I would never have done that. [GDB]

Staff who felt confident that they knew how to use the Intel noting function were much more likely to use it than those who felt unsure or who had tried and found it difficult or frustrating.

In addition to the purpose-built Intel noting function, some officers have said that their devices have helped them with recording information.

Proportion of respondents who said the mobility device had helped them 'quite a lot' or 'a lot' in:	Smartphone	iPad
Recording information	35%	43%

During focus groups the camera was commonly cited as helping with recording information. 79% of officers participating in the trial found the camera to be to be 'useful' or 'very useful' in helping them to do their job.

Outcome 1.5 Reduced data entry

Evaluation Finding:

- Staff feedback suggests some reductions to data entry time for:
 - Intel and FMC staff in terms of Bail breaches and Intel notings, and
 - frontline staff in terms of being able to do some administrative work while out of the station.
- Some GDB staff reported in focus groups that the time they spent completing administration at the station or end of shift had reduced because they were able to complete some of it on their devices. This included extra data entry such as Intel notings and breaches of bail that they may not have got around to before.

It does save so much time, and it is one of those things that if someone breaches bail on the old system it used to be like you would do all your files and important stuff and then if you still had ten minutes right at the end you would do your breach of bail, but if you didn't have that extra ten minutes it wouldn't get done. The bail wouldn't be breached because it would go off the back of the trolley. [GDB]

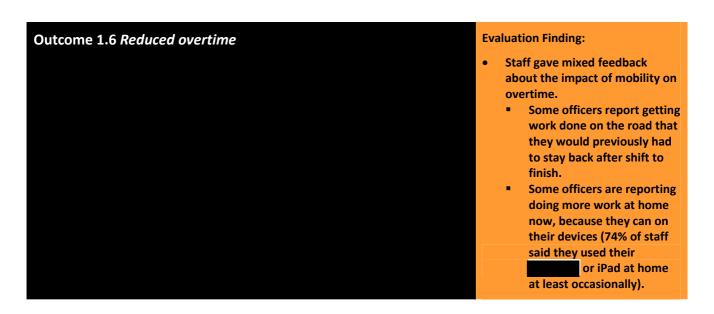
It is probably one of the other [...] really good points is the ability to photograph suspects and offenders at the scene - what they're wearing. We went to a burglar in [location] where we had multiple offenders and we were able to take photos of people we were talking to before they came back, and subsequently matched up what was being worn by who to internal CCTV footage. It turned out that some of them had swapped some of the clothes but we were able to take photos of them at the scene, where we were and then it becomes identification and it isn't so much of an issue. Prosecutions were quite impressed with that.

- Intel staff noticed a decrease in data entry time for them, as bail breaches could be automatically entered into NIA through the eQuip Bail check/reporting function.
- > FMC staff noticed a significant reduction in data entry in relation to entering Intel notings—the eQuip Intel noting function requires very little work from them compared to entering more traditional types of noting.

It is a whole lot better than actually entering in the actual noting because when I first started we used to manually enter them so we would get them in paper format. So I then picked up four or five pages and then sometimes the officers didn't actually save their narrative and you were always searching for that sort of stuff. Then it moved to electronic, which was a little bit better, the notings were still quite long but you can copy and paste and you search through what you need and enter that in. Now with the eQuip notings you do basically next to nothing because everything is already entered.

As staff become more familiar with eQuip Intel notings it may be possible to undertake a short study with FMC staff to record the time taken to enter eQuip notings versus other kinds, in order to estimate the time saving — which would be directly attributable to mobility. Additional notings being submitted may fill up any time saved, but it would still represent an increase in efficiency. Also, some mobility trial participants felt that it took longer to do notings using the new system, so it may be that there are tradeoffs, with increases in data entry time for some staff and decreases for others.

> The potential for mobility to reduce data entry should be improved over time as officers become more familiar with the devices and the applications – and with the development of new mobile applications such as family violence forms.



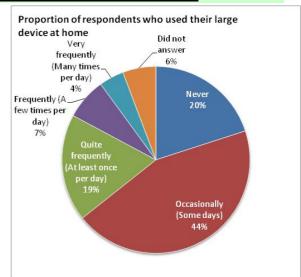
- There was mixed feedback about the impact of mobility on overtime (or on time off in lieu).
- Some overtime is being avoided by officers having access to mobile devices



Some staff are working more while off-duty/at home, but not necessarily claiming overtime.



It is to the user's discretion. By and large, most cops, every probationary constable I've ever had, has come in on their days off and in their own time. I'd much rather be doing stuff in the comfort of my own home at a time convenient with me.[...] It saves a trip into work and sitting here. It is still work but it is at a more comfortable environment. [GDB Supervisor]



Many officers and supervisors have reported reading and responding to emails and texts in their own time, because they have access to them 24 hours a day. 74% of staff said they used their iPad at home at least occasionally. The devices were personally issued to staff, who were responsible for looking after them and told they could use them for personal use, as long as they abided by the code of conduct and managed information securely.

They found that dealing with emails and texts as they receive them saved time when they next returned to work.

If it's urgent you can do it straight away. I'm finding I probably save about half an hour to an hour every Monday morning because I go through emails as they come in, whereas on Monday I used to trawl through my emails as you arrive at work and that was the best part of the early morning gone. [GDB]

A number of officers said during focus groups that their partners had commented on this, and that it could become an issue, but most staff have found it useful or interesting to have access to Police information at home. Some have used their devices to read journals or other Police information that they do not always get time to read at work.

The ability to be near email. As a supervisor I'm receiving anything up to 20 emails a day so for the sake of 10 minutes a day I can clear all my emails, even on a day off, rather than coming back after 4 days off to 100 emails sitting there that work wise can take up to three or four hours to wade through. I can go through in an evening, clear them, flag things for follow up, transpose them into the calendar. [Supervisor]

Some staff have felt under pressure to be responsive and to use their devices while off-duty/at home. In addition to the possible negative impacts on home life, the potential to overwork and the risk of doing too much unpaid overtime, a concern was raised in one of the focus groups that there might be an increased expectation that staff will work when they are off duty and respond quickly to emails and/or texts because they have the ability to do so. There was concern that this could lead to more 'responsive' staff being viewed more favourably for promotion etc.

A small number of staff in focus groups said that they have stopped using their work phone for personal use and have chosen to leave it locked in their desk at work instead, so that they will not be tempted to look at it—commenting on the 'curious nature' of Police officers!

It is recommended that:

- policy/guidance be developed or enhanced to clarify expectations for staff around using devices while offduty/at home, and
- off-duty data-usage levels for mobility devices be monitored closely, along with overtime levels, during the national roll-out of mobility devices.

3.2 Outcome 2 - Frontline Police officers are less dependent on Police infrastructure and colleagues, increasing operating effectiveness

Summary

Officers can do many more things for themselves now that they have access to querying software (eQuip), event management software (Mobile for Public Safety/MPS and Smartphone for Public Safety/SPPS), bail management and Intel noting software (also on eQuip) and maps. Without going through Comms they can now do their own queries, create jobs, self-assign, result and log jobs themselves. They can communicate with complainants, witnesses, supervisors and colleagues by phone or email, from anywhere, without needing to go through Comms. This enables them to be much more independent. It also has the potential to reduce the Comms centre workload so that Comms staff can focus on managing priority incidents.

With mobility, officers are spending less time on the radio

Trial participants spent the equivalent of 6.7 fewer minutes on the radio per officer, per 8 hour shift (i.e. 1.4 % of their shift) than those without mobility.

➤ With mobility, officers spend more time doing 3Ts (preventative task - vehicle turnover)

Trial participants spent the equivalent of 9.6 more minutes doing 3Ts, per officer, per 8 hour shift (i.e. 2% of their shift) than those without mobility.

There are some concerns that this new technology and independence could decrease officer safety, as officers are not logging their location over the radio as much and so Comms, supervisors and colleagues are not hearing where they are. On the other hand, many officers have indicated that they feel safer now that they have finger-tip access to so much more information about the jobs and locations they are going to and the people they are dealing with.

Outcome 2.1 Officers request less information by radio - decrease in radio transmissions

Evaluation Finding:

 GDB officers with mobility spent the equivalent of 6.7 fewer minutes on the radio, per person, per 8hr shift (1.4% of a shift) than comparison officers without mobility 10. (They spent about half as much time on the radio as those without mobility.)

The Mobility Evaluation Observational Study showed that the GDB officers with mobility spent less time per shift on the radio than the comparison (without mobility) officers—(1.3% of each shift compared to 2.6% of each shift) a statistically significant¹¹ difference equal to 6.7 fewer minutes spent on the radio, per person, per 8hr shift. (This is about half as much time as those without mobility spent on the radio.)

¹⁰ Statistically significant at the 5% level using Mann-Whitney U non-parametric test.

¹¹ Statistically significant at the 5% level using Mann-Whitney U non-parametric test.

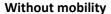
Time Spent on Radio (average, per GDB officer, per shift) ^A	Mobility Trial Group	Comparison Group	Difference (per officer per shift)
Proportion of shift	1.3%	2.6%	-1.4* (percentile points)
Equivalent number of minutes per 8 hour shift	6.2mins	12.5mins	-6.7mins

Data from Mobility Evaluation Observational Study (2 groups X 16 participants X 3 shifts each = 48 shifts in each group)

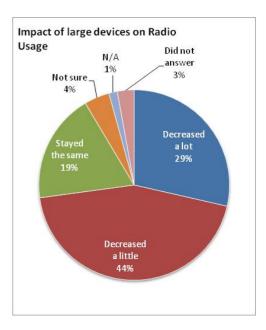
- Nearly three quarters (73%) of mobility trial survey respondents said that their radio use has decreased a little (44%) or a lot (29%) since getting their iPad respondents. They attribute this to a decrease in radio use for basic routine transmissions (logging, resulting jobs or updating their status), and due to the ability to do queries (of people, vehicles, locations etc.) for themselves, on their devices, rather than asking Comms to do them.
- This does not mean that there was an obvious equivalent decrease in overall requests for information or radio transmissions on the channels used by the mobility trialists. Any reduction in their use freed up airtime for previously unmet demand to be met by Comms for staff without mobile devices. Although trial participants reported decreases in their own radio use, Comms staff did not notice any changes, until right at the end of the trial when MPS and SPPS were deployed and increasingly used by trial participants. The impact on radio transmissions might have been more noticeable if the mobility trial had involved all, or the majority, of the staff on an individual radio channel.

Some staff have embraced the technology more than others and hardly ever use the radio except in potentially risky or emergency situations, or in dealing with Priority 1 and 2 jobs, which are still supposed to be dealt with over the radio. Others still prefer to use the radio for everything, as they find it quicker. It depends to some extent on the devices they have, how good the connectivity is, how user-friendly they find the devices and the software, and how confident or well-trained they feel. Officers who are one-up in a car still tend to use the radio, whereas those who are two-up can have the passenger using a mobile device most of the time.

The relationship between the mobile devices and the radio is complex. Some of the routine information requested by radio is now accessed on mobile devices. This has left space for others to get air time. It also has freed air time for mobility staff to ask different, more focused questions for specific additional information that they would not have asked for before, either because they couldn't get on the radio, or they didn't think to ask because they didn't have the basic level of information in front of them to elicit additional questions.



Without mobility, staff are having to wait to get on the radio at busy times, reluctant to use analogue radio for sensitive or secure information and reluctant to tie up radio time if their query is not urgent.



^{*} Statistically significant at the 1% level

A Figures may not appear to add/subtract correctly due to rounding.

With mobility

Since getting their devices there are staff in Counties Manukau West who have said they do not use the checks channel anymore.

I don't need to use the checks channel anymore because it works and it is much more reliable than the MDTs. I know it is going to work and the speed in which the information comes back it is so much quicker. [GDB]

Proportion of all respondents who said that since getting their mobility device or app, their:	iPhone	eQuip	iPad + SPPS
Radio use decreased	65%	62%	85%

The staff are very conscious of tying up the radio and prefer not to if they can avoid it. Now they can avoid it.

The ability to send out information amongst your work mates quickly and securely without tying up the radio is great. [GDB]

I don't need to get Comms to request a towie for me anymore because I can. I don't need to call Comms to get them patch me though to a number, as I would normally from my personal phone. I would have called Comms to patch me thorough so that my number comes 'Withhold'. Using the administrative channel significantly less. [GDB]

Impact on radio use across sites

- Almost all Counties Manukau West staff (91%) reported a decrease in radio usage after getting their smartphones, compared to half of Lower Hutt staff (50%) and about a third of Hawkes Bay (32%) and West Coast staff (36%).
- 87% of Counties Manukau West staff said their radio use had decreased after getting their eQuip, compared to a quarter (27%) of West Coast staff—while more than half of the Hawke's Bay (56%) and Lower Hutt (55%) staff reported a decrease.
- Possible reasons for this difference include different experience with the devices, or local contextual factors—
 Counties Manukau West staff have reported more difficulty in getting radio time so they are likely to make more use of the available mobility device than officers in the West Coast who don't have the same problems getting on to the radio and might have cellphone network coverage problems.

Outcome 2.2 Security of information - silent, cannot be intercepted

Evaluation Finding:

- Staff feel more confident that the information they communicate is more secure now, especially in analogue radio areas.
- Officers, particularly those who are operating in analogue radio areas, feel confident that their information is more secure on the mobility devices.
- Staff generally expressed the view in focus groups that they have to trust the security of the phone system they have been given.
- For staff still on analogue radio it is really useful to have access to eQuip so that they do not have to do queries over the radio which can be picked up by scanners. There are some types of checks that officers just wouldn't do over the radio as it might alort people

I had on one occasion when I was doing observations I was able to just do QVRs to check some cars without having to go on the air and perhaps giving my position away. [CIB]

just wouldn't do over the radio, as it might alert people who are listening in.

Outcome 2.3 Staff have greater confidence, independence

Evaluation Finding:

 Staff are more confident and independent now that they have all of the information they need at their fingertips.

- Staff are reporting having greater confidence
- They are more independent as they do not have to wait to access Comms, but can get the information themselves.

They have better access to information through mobility, which makes them feel more confident going into and dealing with situations.

The feedback from many officers is that they are making better decisions, and working more thoroughly and effectively as a result of having more accessible information.

You are able to get a really good appreciation of who you are dealing with prior to going to the job if you are able to QP them and check them out and again that is your own interpretation as opposed to someone just reading a script and calling out what they think is important. [GDB]

Yeah, well you can refer back to it more and you can read it and you can confirm the alert or not as opposed to going, "What was that? What did Comms say? Was he wanted or not wanted? Has he got a sufficient to K9?" and that sort of thing. Because we used to have hand held radios and they'd have a lot of interference and scratchiness and that sort of thing so being able to refer to it and keep going back to it is good. [GDB]

Supervisors are more confident that their staff can make decisions, knowing that they can call them at any time if necessary.

I know that if they're making a decision it is going to be one that they are confident about because if they've made the decision on their own about it, because they have got that capacity to call me. If they're not calling me it means that they're very confident about what they're doing. I also know that if they're not sure they will call. So I suppose that means I'm quite relaxed about knowing that whatever they're doing out there it is going to be the right thing and if they're unsure they will be asking the question. I suppose in that sense it has helped with my confidence in their ability to do their job, because they have the ways and means to get through the right decision. [GDB Supervisor]

Outcome 2.4 Reduced Comms workload

Outcome 2.5 Frees up Comms staff for customer-facing activities, time to focus on major incidents

Outcome 2.6 Radio used less for routine transmissions and more for command and control purposes

Evaluation Findings:

In areas where mobility is being actively used, some Comms staff have reported:

- a very slight change in workload—allowing them to "do the job the way it is supposed to be done"
- a little more time to focus on major incidents/priority events and customer-facing activities, and
- less radio use for routine transmissions and more for command and control.

Others have not noticed any difference.

Because the trial involved a small number of units relative to the total number of units using a Communications channel at any particular time, the Communications Centre data on volume of traffic cannot provide meaningful insights. This is partly because if some units are using the radio less often, that radio time will be taken up by other units waiting to get on the radio. When mobility is rolled out to most or all of the units on a given channel it will be possible to measure the impact more accurately and reliably ¹². Results from the observational study suggest that staff with mobility devices have been using the radio half as much as those without mobility. However, because the dynamics of radio use are to some extent dependent on how busy the chennels are, it will be difficult to tell what the impact will be when everyone has a mobility device.

- Focus groups with Comms staff, who have worked on the channels used by mobility trial staff, have indicated that when the mobility devices are being actively used:
 - there is less "chatter" on the radio

- they are not having to repeat themselves as often
- they have more "breathing space", to focus on priority jobs and major incidents

You get to concentrate more on the command and control functionality that we're supposed to be doing rather than repeating of information, updating units of less important information that's coming in for the jobs they're assigned to. They can see the updates themselves. [Comms]

• they have more time to be thorough and "do the job the way it is supposed to be done"

The less we have to talk and read at the same time the more we're going to be able to keep calm and do the stuff that we're meant to do without getting more and more stressed. [Comms]

 communications have changed—officers ask more focused questions than before, wanting information that they do not have access to on their devices

Impact of mobility trial on radio traffic

Some Central Communications staff (responsible for the Comms channels used by the Lower Hutt and Hawkes Bay trial staff) had noticed a reduction in radio traffic when mobility sections were on duty. Others thought that rather than a change in the amount of radio traffic, there was a change in the type of traffic—fewer questions and logging of proactive tasks—which freed the radio up for more priority work. Others had not really noticed much of a difference.

Radio traffic as well. I've noticed a difference that it's not as busy. They're doing all their own enquiries and stuff like that so you don't have to worry about that. [Comms]

I don't think the radio traffic is any less but I think there's less stuff that you don't need. The radio traffic still gets filled so there's less chatter and questions, because they're able to do their own questions, but we are still busy and other people can get on the radio without them clogging it up with their questions. [Comms]

Northern Communications staff (responsible for the Comms channels used by the Counties Manukau West trial staff) had noted a difference, and particularly when one section was on duty. They said you hardly heard that section on the radio.

They are very proactive and you very rarely even hear them on air. They'll assign themselves the jobs, they'll clear themselves on where they should be and they very rarely pipe up and say anything. [Comms]

Southern Communications staff (responsible for the Comms channel used by the West Coast trial staff) had not noted any difference as a result of the mobility trial. Only five units are assigned to Greymouth at any one time, which was too small a number to make an impact when they were looking after a large number of units on a channel.

Across the sites, Comms staff noted that the ability for GDB to log their own preventative taskings (e.g. 3M, 3T, 3R, 5K) on their mobility devices should make a very significant difference to the radio traffic when mobility is rolled out nationally. With the emphasis on 'Prevention First' (across NZ Police) there had been a notable increase in preventative taskings logged by all GDB and the new community teams (including NPT). This put a lot of additional pressure on dispatchers, so they were very positive about GDB/NPT being able to log these themselves on their mobile devices.

Outcome 2.7 Staff undertake more proactive activities¹³

Evaluation Finding:

- Officers with mobility spent more time than those without mobility doing 3Ts (equivalent of 9.6 more minutes, per officer, per 8 hour shift / 2% of a shift)
- ➤ Both the observational study and the administrative data analysis, undertaken as part of the Mobility Evaluation, found that GDB officers in sections with mobility recorded slightly more preventative tasks and spent slightly more time doing preventative tasks, on average, than comparison sections in the same stations. These results were not statistically significant because of the variability among officers and shifts, apart from the time spent doing 3Ts (vehicle turnovers) which only just met the threshold at 10% level, but they all point in the right direction.
- Data from the Observational Study showed that the mobility group participants (GDB officers) spent more time on preventative tasks on average (14.7% of each shift) than those in comparison (non-mobility trial) sections from the same stations (13.5% of each shift). Time spent on 3Ts contributed to this difference, with the mobility trial GDB officers spending an average of 3.8% of each shift doing 3Ts, compared to 1.8% of each shift for non-trial GDB officers from comparison sections.

Time spent doing 3T (Vehicle Turnover) (average, per GDB officer, per shift)	Comparison Group	Mobility Trial Group	Difference (per officer per shift)	
Proportion of shift	1.8%	3.8%	+2.0* (percentile points)	
Equivalent number of minutes per 8 hour shift	8.6mins	18.2mins	+9.6mins*	
Data from Mobility Evaluation Observational Study (2 groups X 16 participants X 3 shifts each = 48 shifts in each group)				

Data from Mobility Evaluation Observational Study (2 groups A 16 participants A 3 Shirts each = 48 Shirts in each group

* Statistically classificant to the 10% lovel

The increase in time spent doing 3Ts, however, is likely to be directly related to having mobility—through eQuip and instant mobile access to QVRs. Staff reported an increase in QVRs and 3Ts in their survey and focus group feedback, and the administrative data analysis showed a significant difference between the mobility and comparison sections in the numbers of QPs and QVRs they are doing per officer per shift. This will have had an impact on total numbers of preventative tasks undertaken by those with mobility.

^{*} Statistically significant to the 10% level

[#] Not statistically significant

^{13 (}Preventative tasks included in the analysis: Turnover - 3T Road Checkpoint - 3R Electronic Monitoring Bail Check - 5H Bail Check - 5K Foot Patrol 3F Directed Patrol - 3M Watching/Observations - 3W Licensed Premises Visits - 3H Arrest Warrant - 2W Second Hand Dealer Check - 5V Other Preventative Tasks - 3Z)

Time spent doing all Preventative Tasks (average, per GDB officer, per shift)	Comparison Group	Mobility Trial Group	Difference (per officer per shift)
Proportion of shift	13.5%	14.7%	+1.2 [#] (percentile points)
Equivalent number of minutes per 8 hour shift	64.8mins	70.6mins	+5.8mins [#]
Data from Mobility Evaluation Observational Study (2 group * Statistically significant to the 10% level # Not statistically significant	os X 16 participants X 3	shifts each = 48 shifts i	in each group)

> The analysis of administrative data has shown that the average number of proactive/preventative activities undertaken by mobility trial staff in September 2012 (1.29 per GDB officer per shift), was higher than the number undertaken by comparison (non-mobility trial) units from the same stations over the same period (0.95 per GDB officer per shift).

Number of preventative tasks (per GDB officer, per shift)	Comparison Group	Mobility Trial Group	Difference (per officer per shift)
Average number ^A per GDB officer, per shift	0.95	1.29	+0.34#
Analysis of Administrative Data for test period (Sept 2012) # Not statistically significant ^ Average median value			

3.3 Outcome 3 - Frontline Police officers receive timely and accurate information, to make informed decisions, enhancing officer and community safety

Summary

Improved access to Police information and systems is enabling the correct, confident, identification of offenders, and improving on the spot decision-making for most officers with mobility. It enables more-informed decisions to be made more efficiently and effectively, without officers having to go back to the station to find out extra information or discuss the matter with a supervisor. They can use their devices to get the information they need, and their phones to talk over their approach with supervisors, if necessary.

With mobility, officers are conducting more queries

Trial participants undertook 2.26 more QPs and QVRs, per person, per average shift, than those without mobility.

Most officers say they can usually get the information they want when they want it

Most officers with mobility say they can usually (some always) get the information they want when they want it—82% from eQuip and 73% from //iPad. Those in busy radio areas compare this favourably to waiting for free airtime to get on the radio. There were times in the past where they just wouldn't have asked for information because they did not want to use air-time for non-priority purposes.

> Mobility is informing and improving decision-making

Most officers have reported improved options (87%) and decision-making (73%) on the street as a direct result of mobility, particularly through access to eQuip.



Access to more information and improvements in decision-making seem to be having an impact on the number of offences being detected and offenders apprehended (as measured by *warrants to arrest* created and expired).

> Officers with mobility have created and expired more warrants for arrest than comparison officers without mobility

An analysis of administrative data has shown a statistically significant difference between the number of warrants being created, (0.7 more per officer, per average shift) and warrants being expired, (0.36 more, per officer, per average shift) by staff with mobility, than staff without mobility.

There are mixed messages coming from the trial in terms of staff perceptions of safety.

> Information can inform risk assessment and approach to jobs which enhances safety

The extra information that officers can access from their mobile device can increase their safety and that of the community as a result of being better informed about potential risks when attending events or dealing with suspects or offenders.

Outcome 3.1 Officers receive full and accurate information when it is needed

Evaluation Finding:

- Officers with mobility are accessing more full and accurate information when they need it.
- Most can usually get the information they want from their device when they want it.
- Most have said they are doing more queries than before and the administrative data analysis found they conducted 2.26 more QPs and QVRs (in combination) per person, per average shift, than comparison officers without mobility.
- More officers are accessing more full and accurate information, when they need it, than prior to mobility.
 - Most (87%) eQuip survey respondents were either 'usually' or 'always' able to get the information they wanted from eQuip, and get it when they needed it (82%).
 - /iPad survey respondents¹⁵ can always (26%) or usually (47%) access the iPad when they want it. information they want on their

Without mobility

The key challenges noted by GDB staff without mobility¹⁶, in terms of getting the information they needed from Comms were:

- difficulty accessing information on the radio because of the volume of radio traffic, especially at weekends:
 - resulting in either having to wait or choosing not to do a query, and
 - impacting on their ability to deal with an incident or track an offender, because they feel they should leave the channel open for more important matters, and
- concerns about the quality or completeness of the information provided, because:
 - it was sometimes difficult to convey the level of detail of information required over the radio
 - it was not always desirable to convey information over the radio, especially on analogue channels, and
 - Comms operators were variable in terms of the amount of information they provided.

¹⁵ Mobility Evaluation online Te Puna survey

¹⁶ 18 staff with no mobile devices interviewed during the first stage of the observational study component of the evaluation.

With mobility

With mobile devices and applications trial staff have said that they are much better able to:

- access information when they want to, and
- access the information they need because they can see it themselves.

As the trial has progressed, officers have have found each new device helpful in doing queries and accessing information.

- 84% of smartphone survey respondents¹⁷ in the trial thought that the smartphone alone (prior to eQuip) had helped them with accessing information. (44% thought it helped 'a little', 27% 'quite a lot' and 13% 'a lot'.)
- Most of the respondents to the eQuip survey were either 'usually' or 'always' able to get the information they wanted from eQuip (87%), and get it when they needed it (82%).

All Counties Manukau West staff said they could 'usually' or 'always' get the information they wanted (possibly because they have enjoyed extra informal training compared to staff at other sites).

The most recent _____/iPad) survey showed that staff with iPads were able to access the information they wanted more often, when they wanted it, than the staff with

- 85% of iPad users could *usually* (54%) or *always* (31%) access the information they wanted to, compared
- None of the respondents said they could *never* access the information they wanted when they wanted it.

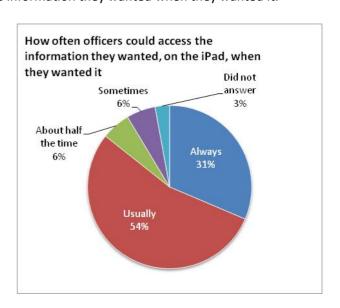
How often officers could access the information they wanted, when they wanted it

Did not answer
6%

Always
2.0%

About half the time
17%

Usually
40%



44

¹⁷ 87 trial staff responded to the smartphone survey

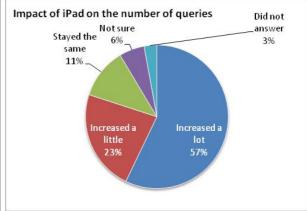
- Mobility made a significant difference¹⁸ to the number of Queries of Persons (QPs) and Queries of Vehicles (QVRs) officers are able to undertake.
 - An analysis of administrative data shows that on average, during the month of September 2012, GDB officers participating in the Mobility trial conducted 2.26 more QPs and QVRs (in combination) per person, per shift, than those from comparison units (from the same stations, but not participating in the mobility trial), and that the difference was statistically significant.

Number of QPs and QVRs Undertaken (per officer per shift)	Mobility Trial Group	Comparison Group	Difference (per officer per shift)
Average number ^A per GDB officer, per shift	5.78	3.51	2.26*
Analysis of Administrative Data for test period (Sept 2012) *Statistically significant at 1% level	·	-	

Having the large mobile device, particularly the iPad, has contributed to the ability to access more information and do more queries. iPads have helped 80% of iPad users to do more queries, whereas the has helped 60% to do more. Some users (9%) said they had been doing *fewer* queries since getting their device. This was mostly related to loss of time through poor connectivity and time taken to log-in.

So it's not faster than Comms doing it because they're pretty whiz bang at it but once you get the QPs it's more worthwhile because you get to see the person's photo and the flags for yourself and that sort of stuff. [GDB]





Access to information

Key kinds of information that officers have increased access to when they need it are:

- Information about people, vehicles, and addresses through eQuip, including bail management information and offender photographs and details.
- Information about jobs/events/incidents to attend, through MPS/SPPS
- Email
- Maps

¹⁸ For 'QPs QVRs Undertaken', the trialist group in 2012 had a significantly higher average value (square root) than the control group at 1% level of significance.

- External phone numbers and addresses
- Staff phone numbers
- Calendar/diary

Officers use their smartphones to communicate with victims and complainants, other units and section supervisors. Quite a few mentions were made of the benefits of having the phones in order to get hold of doctors to deal with sudden death cases - both in terms of having the phone to use to contact the doctor, but also in terms of being able to track down phone numbers etc.

The radio channels are generally busy and at peak times are very busy. Many staff reported during focus groups that they have not historically done as many checks or queries as they would like via radio, or to the degree of depth as they would like.

Many officers found access to these sources of information to be invaluable when out in their cars, or on the street, in terms of being able to give and receive information when they needed to, even before being able to access information on eQuip.

It also gives them access to more detail than they would normally get from Comms, as they can drill down into links themselves, which they would sometimes not want to do over the radio. Most importantly, it gives them photographs of offenders.

Access to offender photographs is operationally, probably the most useful new information available to officers.

Prior to having access to photographs, officers had to rely on descriptions relayed by Comms, which were not always easy to match to suspects, particularly in cases where the known offender may be a relative of the suspect. Now that officers have access to photographs they can be more certain about who they are dealing with on the street, are much less likely to be given false details, and are less likely to falsely identify suspects. The result is that identifications can be made much more quickly, without suspects having to be taken to the station, and offenders are not getting away with telling lies.

Quality of information

Some officers prefer to see information themselves on eQuip, because they know what they are looking for.



They can navigate through it and interpret

it themselves rather than hearing what the Comms operator has chosen to tell them. They prefer this and have more confidence in it. They appreciate not having to ask the Comms operator to repeat what they've said and they know they can easily go back to the query to re-check information.

Officers reported that they were being much more thorough in their interrogation of the information in the system since getting eQuip. Whereas before they would not have delved too deeply into a query when the radio was busy, now they can do that without tying up the air.

This can prevent them from missing something at the time which would need to be dealt with later, like identifying a suspect with an outstanding warrant or breach of protection order, which wouldn't necessarily have been picked up before having the ability to do more detailed queries from the car or on the street.

Outcome 3.2 Improved on the spot decision making

Evaluation Finding:

 Most officers have reported improved options and decisionmaking on the street as a direct result of mobility.

Most officers have reported improved options and decision-making on the street as a direct result of mobility.

Without mobility

Without mobile devices and applications, officers on the street had to rely on Comms operators, phone communication with their supervisor, or go back to the station for information. This meant that:

- decisions could not be made on the spot
- decisions were not being made in a timely way, and
- officers were not able to operate as efficiently or effectively as possible.

With mobility

Having access to information through eQuip has made a big difference to officers' ability to make decisions on the spot.

Most survey respondents (including 100% of Counties Manukau West respondents) reported, as a result of having eQuip, increases or improvements in their:

- ability to confirm the identity of individuals (92%) (including 100% of Hawke's Bay respondents)
- options on the street (87%) (including 100% of Lower Hutt respondents)
- decision-making on the street (73%)

Some also reported increases or improvements in their:

- detection of offences (62%)
- resolution rate (45%), and
- arrest rate (38%)

The decisions that officers are able to make are of a better quality than the decisions they may have made before mobility. They can make on the spot decisions with more confidence. They are making more informed decisions, because they have information they may not otherwise have been able to access, if for example they couldn't get on the radio.

The times I've used it it's been great - to be able to stand there and check the person who I've 'locked up' who had been in a fight, while he is sitting in the car. I did a quick QP [on him] - it was a busy Friday night and I couldn't get on the radio -... saw the previous history, and made a decision there and then that he wasn't going to get a warning [...] he was going to come back to the station. [GDB]

Officers can now be more sure about who they are dealing with and what their history is, which helps in deciding what action to take, such as whether a simple warning is appropriate or the person needs to be taken back to the station.

[GDB]	We had a job the other day with a couple of drunks in town and we could do checks on them via the phone on their history, one had no history and the other was next to nothing so it was just like a warning. Whereas if they had been mongrels in the past then sweet, they would have been coming back. That was just a very minor thing.
Interviewer	So if you hadn't had your phone there you would have probably taken them back?
[GDB]	Yeah and locked them up

Improved on the spot decision-making is not just related to eQuip and access to QPs and QVRs.

Mobility trial staff are also finding that having access to maps, especially those with a 'satellite view', is improving on the spot decisions around where to deploy cordons or how to approach a residence where a burglary may be underway.

The map function is quite good if you're on a cordon. If you've got like a burglary on and you put a cordon and you're standing there not knowing your West from the North to the East but you can just go on to the map and you know the burglary has happened over there and you can pull it out and get a better idea from that, so that is quite handy for that. [GDB]

The deployment of smartphones has enhanced accessibility and ease of communication between staff and supervisors who they could consult about decision-making.

So in terms of them being able to speak to a supervisor you get that clarity and you get a second opinion. It is a good way of risk mitigation. [GDB]

The Mobile for Public Safety (MPS) and Smartphone for Public Safety (SPPS) software allows supervisors to monitor what jobs are coming through while they are mobile and read job details, which informs their discussions with staff and decisions about appropriate actions/responses.

Yeah, I look what jobs are on and I can do that out and about. I don't have to say "I'll come back to the station and dig it out". That's definitely saved time. [GDB Supervisor]

I find the iPad is so easy to use and it has been reliable. It is easy to flick between the job and the units and what I'm doing so I can get out there. [GDB Supervisor]

However not all supervisors used these applications to this extent, either because they had technical issues with MPS or found it quicker to ask Comms what jobs were waiting, than to scroll through and prioritise on SPPS.

Outcome 3.3 Supervisors know the location of their staff

Evaluation Finding:

- Supervisors may not always know the location of their staff, depending on how well the new applications are being used, especially if staff are not logging their locations over the radio.
- However, because they all have phones now, supervisors can call them if they want to confirm where they are.
- Supervisors may not always know the location of their staff, depending on how well the new applications are being used, especially if staff are not logging their locations over the radio.

Without mobility

Without mobility, supervisors know where their staff are because of their radio communications. Staff will log

their location when they do checks/queries through Comms or they will update their status with Comms. Supervisors may also ask

Everybody knows where you are when you're on the radio, they don't necessarily know otherwise. [GDB]

Comms to give them an overview of where units are.

During the first 'without mobility' part of observational study, staff noted that the advantage of getting a job through Comms is that other units will also hear about it and can offer back-up, warnings, or information, if they know the offender.

However, there were times when staff would not be able to get onto the radio quickly enough or they would be reluctant to interrupt more important transmissions, so their location would not necessarily get logged.

With mobility

The focus groups undertaken with mobility trial officers who had smartphones and eQuip (prior to the deployment of the MPS and SPPS applications) found that officers were conscious that other people (supervisors, Comms staff and other units) did not know where they were if they did not do their queries, or log their location, over the radio.

Many staff have reported doing more checks/queries on their phones and iPads using eQuip, and fewer on the radio, but they are

It is important to tell Comms where you have stopped a car even though your phone records it, just so that your units can hear "Oh yes, stopped on Great South Road - we will just keep that in the back of our minds, so if we hear screaming on the radio....[GDB]

conscious of wanting people to know where they are if there is any reason for concern, and so on those occasions they prefer to log their location over the radio.

Some supervisors also preferred to hear where their staff were, and were nervous if they knew their staff were doing checks 'on their own' (without going through Comms).

Outcome 3.4 Improved management of demand (events)

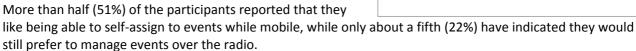
Evaluation Finding:

- The new mobile functionality enabling mobile event management by officers and self assignment to events, has resulted in work practice changes for Comms and GDB staff, which were not originally well communicated or understood during the trial.
- Feedback is mostly positive, but but some concerns were also expressed.
- There are reports of improved management of demand from some constables, supervisors and Comms staff. However, feedback is variable, and concerns have been reported as well as benefits.
- > During the roll-out it should be possible to monitor P1 and P2 response times to identify whether mobility results in a decrease. This was not possible in the trial due to the nature of Comms data and the small size of the trial relative to the number of units on a Communications Channel.

The mobile event-management applications, Mobile for Public Safety (MPS) and Smartphone for Public Safety (SPPS), allow officers to view, self-assign to, comment on, and result, events/jobs, while out on the street. They cannot self-assign to Priority 1 or 2 jobs however—which are still managed by Comms and Supervisors.

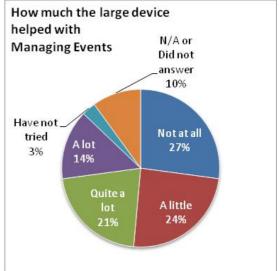
The changes are still bedding in with mobility trial staff (and Comms staff). Some staff are using the mobile systems a lot to manage events while others are still getting used to how the applications work.

The ability to view and manage jobs while mobile is a significant change for all staff.



A large proportion of the trial participants found MPS and SPPS useful for a variety of event management tasks.

46%-50% found MPS/SPPS useful or very useful for viewing and resulting events and updating their status,



while 37%-44% found it *useful* or *very useful* for creating events, self-assigning to events, and adding comments to them. However the flip-side of this is that more than half of the participants found the applications only *a little useful* or *not* at all useful for these purposes or had not tried to use them.

I use it all the time, SPPS, for minor jobs. If it is something reasonably serious I will get on the radio again and do it like that, but for minor jobs I use it all the time. I assign myself to jobs, I look up a job on the side of the road and then I'll get the number of the informant and give him a call on my and get more information if I need to. [GDB]

35% reported that the large mobile device or iPad) had helped them to manage events a lot or quite a lot. (More iPad trialists (51%) said the device had helped a lot or quite a lot,

Feedback from Comms staff indicated that with MPS/SPPS sergeants and supervisors would have a better overview of jobs and units, particularly if they were also out of the station. It would inform their decision-making about managing their resources. Current practice for sergeants/supervisors without mobility devices was to consult with Comms about availability of units so they can re-task units or find someone else to attend. They noted this would require a change in work practice for Comms staff and for GDB supervisors.

Some Comms staff thought the implications of GDB self-assigning non-priority jobs meant historic jobs would be attended more quickly and there would be better management of existing jobs. GDB would be more aware of what else was pending and make decisions about what they had time to do. They thought it would be a good thing when dispatchers were dealing with high priority jobs, but they were a little nervous and talked about needing to get used to the change and be confident that the checks and balances were in place, so that GDB were self-assigning to appropriate jobs.

It should also be noted that there are other new initiatives, such as those in the Policing Excellence Deployment Model workstream, that have been developed to improve the management of demand in a wider sense.

Outcome 3.5 More staff agree that they 'have the tools to do the job'

Evaluation Finding:

 Staff feedback about their new tools is generally positive. Most trial staff are reporting that their new tools are helping them to do the job, and improving their ability to do the job more efficiently and effectively.

Without mobility

Without mobility, staff could only access their email, calendar/diary and Peoplesoft at the station. They could use old fashioned paper maps or print maps off at the station. They could only access Police information

systems at the station or via Comms staff on the radio. They could not easily communicate fully with each other or with complainants, victims, informants or service providers (such as tow truck operators, or doctors) and would have to either do this at the station, or through Comms which they were reluctant to do, especially if Comms was busy.

GDB staff¹⁹ reported frequently using their personal mobile phones for the following work purposes:

- long or sensitive conversations, when they didn't want to take up radio airtime or wanted to ensure better security of information
- communication (talking or texting) with their sergeant, other units, witnesses, or work-related service providers (e.g. doctors)
- taking photographs when they didn't have a work camera (rather than going back to the station to get one),
 and
- accessing google maps.

They tended to receive calls or get calls patched through, rather than pay for work calls.

Sergeants tended to have access to 'sergeants' phones' for work purposes and some I-cars in the Hawkes Bay had work cell phones in them. However, staff would still use their own personal smartphones to use google maps, as the work phones were generally more basic mobile phones (not the new bigger screen generation).

With mobility

Staff feedback about their new tools is generally positive. Most trial staff are reporting that their new tools are helping them to do the job, and improving their ability to do the job more efficiently and effectively.

Mobility trial staff have reported that they are much better equipped now to do the job than before the trial. They have much greater access, more of the time, to the tools they need to do the job, and to do it more efficiently and effectively. Not all staff are well practiced at using the tools yet, and many are still learning how to use them to their best advantage, but all are appreciating even the most basic extra functionality of having their own work mobile phone for making and receiving work related phone calls and texts.

All trial staff are now able to use their work mobile phones for the purposes outlined above, that only some officers were previously able to do using their personal mobile phones. Now all GDB staff in the trial can make or receive phone calls where that is more appropriate than using the radio, communicate more easily with a wide range of people, take photographs without having to worry about finding a digital camera and access maps.

Additional Police-specific functionality such as access to Police email, calendar/diary, eQuip (querying software), and for those who had access to the Police intranet - Peoplesoft (HR, time, rostering, payroll and leave management tool), and the Police manual, reference materials, etc. has enabled officers to access information and systems, while out of the station, in a much more timely way than before.

We can now easily access email Outlook Expres	ss, Te Puna and Peoplesoft, this combin	ed
with eQuip and SPPS gives us just about everyt	thing we need.	

¹⁹ According to the first observational study

The phones alone, without the /tablets, and without event management software, has provided the

officers, in one device, with many more tools that they can use to do their job, and they are reporting that they are using these tools and enjoying having access to them.



Supervisors

Supervisors commented on having remote access to Peoplesoft as being a key benefit to them, allowing them to manage staff time and leave requests, etc. much more easily, from anywhere. (Note however that new Workforce Management systems are being implemented which mean supervisors will no longer need to approve leave.)

I like access to Peoplesoft so when people call me up and hit me up at short notice, "can I have the next day off", and I can go into Peoplesoft and have a look and go "yip, we've got plenty of people", so I can find out straight away. So it's good having access to Peoplesoft, being able to use the phone for work purposes outside of work hours, if that makes sense. [GDB Supervisor]

Supervisors also like having ready access to good quality maps for directing staff on a job.

CIB staff

CIB staff found the phones really useful for making them more accessible to informants. Having a work mobile number meant that they could confidently and safely give people that number, whereas before they would not have given out their own personal mobile number. They find that the people they are communicating with can cheaply and easily send and receive texts and so it has made it much easier to manage those relationships.

Some CIB staff have reported that access to eQuip has improved their ability to work more effectively when communicating with informants.

I tend to use it home probably more than I do at work because we deal with some informants and then you often say such and such is doing such and such and you don't know who they are talking about so you jump on and find out who they are talking about and you can talk knowledgably and ask more questions. [CIB]

NPT staff

Neighbourhood Policing Team staff appreciate being more accessible as a result of having a dedicated mobile work number which members of the community can use to phone or text them directly. They also appreciate the instant access to email, particularly because their job involves liaising with local agencies and community groups. They find that they can be more responsive to the people they are working with now because they can receive and respond to emails in a more timely way while still being out in the community.

K	Outcome 3.6 Improved staff perception of safety	Evaluation Finding:
		About half (49%) of survey respondents reported that using mobility devices has made no change to their feelings of safety. 40% feel safer with mobility devices, but a small proportion (10%) feel less safe.
		Reasons for feeling less safe included reduced radio communication about locations, technical issues with correct locations being logged by devices, and the practical issue of safety while being 'head down' using mobility devices.
>		



With mobility

Staff feel well-informed

Mobility trial staff have reported that they feel better-informed when attending events, because they can do the checks themselves via eQuip before arriving at a scene, or when they want to know more about a person or vehicle, and this contributes towards feeling safer.

If I am going to a dangerous domestic or something like that, if we know who they are I might look him up and start reading through what sort of things they are known for and I will tell my partner he got arrested for this and that and it just gives you that – it is a safety thing as well, it helps us with our safety. We have got alerts to firearms and if Comms have missed it or something, or even the photo. [GDB]

Concerns about knowing where staff are

Two thirds of survey respondents have reported that they are using the radio less than before mobility. They have reported that they are doing fewer checks on air. A negative outcome from this is that supervisors and other units cannot hear where staff are, and some have reported that this makes them uncomfortable.

The new MPS and SPPS software allows staff to log their location and update their status in the system themselves. This may provide reassurance, although it requires information to be *seen* rather than *heard*.

All GDB staff interviewed said they prefer to use radio if they think there are safety concerns so their colleagues hear where they are and can come to their assistance if required.

They are familiar with listening to radio and it is easier if you are one-up to be listening while driving. Participants pointed out it



was much quicker and easier to hear where someone was than scrolling through the events monitor to find the job where a unit was in need of assistance.





Safety while using the devices

Staff are conscious of personal safety when using devices, as they require active attention—and divert the eyes from the street and what is going on in the surrounding environment.

They have reported learning strategies for where, when and how to use them so that



they minimise risk. Most will only use the devices in situations with offenders if they are with a partner, and they use their smartphones like their notebook, holding them up and out in front of them so that they can still see what is happening.

GDB staff reported increased use of the iPad when they were 'two-up' in the car as the passenger could take responsibility for using the device. In 'one-up' cars the driver could only use the device when stopped.



Outcome 3.7 Increase in the detection of certain offences

Evaluation Finding:

More offences are being detected (0.7 more warrants being created, per officer, per shift) and more offenders are being apprehended (0.36 more warrants being expired, per officer, per shift) by staff with mobility than staff without mobility.

- Officers have reported improvements in detecting offences and apprehending offenders as a result of mobility—particularly as a result of being able to undertake more thorough QPs and QVRs on the spot, and use photographs to correctly identify offenders more easily and immediately than before.
- An analysis of administrative data confirms these officer-reported improvements. The comparative analysis shows that on average, during the month of September 2012, the number of warrants created and expired by GDB officers participating in the mobility trial was higher²⁰ than the number created or expired by GDB officers in comparable sections (from the same stations, but not participating in the mobility trial).

Warrants to Arrest - Created (per officer per shift)	Comparison Group	Mobility Trial Group	Difference (per officer per shift)
Average number per GDB officer, per shift	0.32	1.02	+0.70*
Analysis of Administrative Data for test period (Sept 2012) *Significant at 1% level			

Warrants to Arrest - Expired (per officer per shift)	Comparison Group	Mobility Trial Group	Difference (per officer per shift)
Average number per GDB officer, per shift	0.25	0.61	+0.36*
Analysis of Administrative Data for test period (Sept 2012) *Significant at 1% level			

About three quarters of staff are reporting improvements in the detection of offences (76% of survey respondents said that their iPad/ had improved their detection of offences – 40% said it had improved a lot or quite a lot).

Staff have reported a much improved ability to confirm people's identities and to detect the provision of false details as a direct result of being able to access QPs and QVRs, and see photographs of offenders. Even before eQuip was loaded onto the smartphones staff were getting photographs emailed to them which they could access and view on their phones. Now with iPads they can really easily access and view photographs of offenders.

Being able to correctly identify offenders has resulted in an increase in the detection of a range of offences, including, provision of false details, breaches of bail and protection orders, and driving offences. Having the photo saves time as in some cases staff can be tied up 'at the station for hours trying to find out who they are, or dropping someone to station to get them fingerprinted and then dropping them back.'



The Observational Study found that the GDB staff with mobility spent more time each shift on the watchhouse computer than the non-mobility comparison staff—2.3% of each shift, compared to 0.5% of each shift (statistically significant). This suggests that they spent more time processing offenders, perhaps due to expiring more warrants as indicated by administrative data analysis.

Time spent on the Watch-house computer (average, per GDB officer, per shift)	Comparison Group	Mobility Trial Group	Difference (per officer per shift)
Proportion of shift	0.5%	2.3%	+1.8%* (percentile points)
Equivalent number of minutes per 8 hour shift	2.4mins	11mins	+8.6mins
Data from Mobility Evaluation Observational Study (2 groups : * Statistically significant at the 5% level	X 16 participants X 3 shi	fts each = 48 shifts in ea	ach group)

Outcome 3.8 Requests for urgent assistance from other patrol cars are heard immediately, enhancing safety

Evaluation Finding:

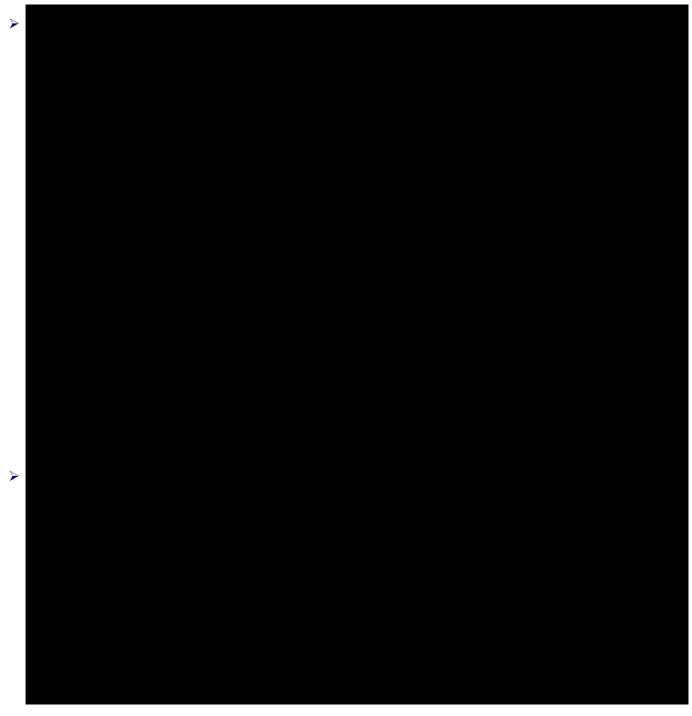
There were too few units in the trial relative to others on their radio channels that it was not possible to monitor this. It should be included in monitoring for the national rollout.

> The likely impact of mobility on the capacity for calls for assistance (10-9s or 10-10s) to be heard cannot be estimated until more officers (especially relative to the number using a designated radio channel) are using mobile devices for at least a few months.

The number of units in each trial site was too small, relative to the number of units using its corresponding Comms channel, for mobility to make much of a noticeable, measurable, difference to the channel's traffic.

3.4 Outcome 4 - Other impacts or consequences of the introduction of mobile technologies

Mobility has produced a number of unintended impacts or consequences which need to be monitored and managed.



Staff are working more while off-duty/at home

Officers and supervisors participating in the trial reported reading and responding to emails and texts in their own time, because they have access to them 24 hours a day. They find that doing this saves them time when they next return to work.

There is a risk that this will jeopardise family relationships. Some staff reported that their partners are not very happy about it, and a small number of staff in focus groups said that they have stopped using their work phone for personal use and have chosen to leave it locked in their desk at work instead.

It is recommended that policy/guidance be developed or enhanced to clarify expectations for staff.

> Staff have the capacity to record more evidence electronically than ever before, including statements and signatures—they need clarity about what is admissible in court

The ability to record evidence electronically, including making notes and taking statements, has the potential to significantly reduce the time it takes to do the administrative work on a case.

Staff would like to be able to use electronic signatures for formal written/typed statements taken at a scene, as it would speed up their preparation of papers for court. Otherwise, where statements need signatures, staff would need to have printers in the car, or ask the signatory to come to the station to sign the statement, or bring a printed statement back to the signatory, or use hand written statements and signatures at the scene. It would be more efficient to enable the use of formal electronic signatures that are admissible in Court.

It is recommended that policy/guidance (or legislation) be developed or enhanced to enable to use of electronic signatures in court for formal written statements.





> Suspects 'spill the beans', lying less and volunteering more information!

A welcome and unexpected consequence that officers have been reporting about mobility, particularly the

ability to do checks through eQuip, is that suspects and offenders lie less once they know that officers can access information, and there have been a number of instances where suspects answer not only

People lie to you less, for instance, today [my partner] was using it asking questions and we had access to all her information right there and he was like, that's not true and as soon as she realised that he could see that she just started spilling things and we got a lot more than we would if you were just trying to get an admission without it, and that was just using eQuip for QP and all that info on there. [GDB]

the questions that officers are asking, but they are volunteering additional information as well!

I have had a time when I was taking a QP from a guy and getting his details on the phone and he was asking "what are you doing?", "I am just making sure that you are telling me is correct", he gives me all this information "yes it comes through as correct" and I go "oh no it is all good" and he goes "how do you know?", "because this is your photo isn't it?" and he looks at it and he goes "wow you can do that now?" so from there he opened up he never lied about anything I asked you know "were you involved in this?", "yes but it his idea" so it opened up a lot of doors of stuff like that. [GDB]

4 Usability and Suitability of Devices and Applications

The evaluation aimed to assess the usability and suitability of devices used in the mobility trial. It also aimed to look at the ways work procedures, relationships, equipment, and infrastructure changed as a result of introducing mobile technologies. This section considers the usability, suitability and impacts of each device and application in turn.

Much of the outcome information cited in earlier sections has drawn on data relating to GDB. In this section we also look separately at the usability and suitability of the devices for CIB and NPT staff who also participated in the trial. Finally, the section considers the impacts of mobile technologies on the relationship between GDB and Comms.

The information in this section is drawn from a series of interviews and focus groups conducted with trial participants (GDB, CIB and NPT) and stakeholders (FMC, Intel, Comms), in June-July 2012 and October-November 2012, as well as a series of participant surveys.

4.1 Smartphone usability and suitability

The two types of smartphones trialled were	and iPhones. The	allowed access to the
Police intranet, while the iPhone allowed access to the	internet.	

The information in this section is based on:

- a survey of smartphone users (87²² respondents and 18 iPhone) undertaken in May 2012—when they had been using their phones, without eQuip, for about three months), and
- a series of 8 focus groups, with a sample of 39 trial staff, undertaken in June-July 2012. They had been using eQuip on their smartphones for about a month by that time.

Key findings

• The smartphones have made a difference to most staff. They are helping them, in a variety of ways, to do their jobs.

Two thirds find that they have helped them quite a lot or a lot to do their job. One third finds that they help a little.

Proportion of respondents saying their phone had:	iPhone	
Helped them 'a lot' or 'quite a lot' to do their job	71%	

²² Because the total sample size is less than 100, the use of percentages may create an impression of larger differences than the real numbers indicate—for example, where there are 10 respondents in a category, a change of one person is a change of 10%. Caution should therefore be used when interpreting these results.

- The specific tasks where the most users of both types of smartphone rated them as helping *quite a lot* or a *lot*, were 'communicating with other units' (82%) and 'communicating with complainants and victims' (78%).
- 84% of iPhone users said that the smartphone helped a lot (56%) or quite a lot (28%) with 'finding places',
- Staff find the iPhone easier to handle than the transfer of the licits more positive responses in terms of physical handling (size of screen and type of keyboard).

 - The iPhone users all found their phones easy (71%) or very easy to physically handle (29%).
 - 51% of respondents found their phone easy to handle, while 10% found it very easy.
 - Only 17% of iPhone respondents said their screen was too small compared to more than twice that proportion of respondents (39%).
- They have reported delays and lack of reliability in sending and receiving email, and they find the extra log-in requirements to be frustrating and time-consuming.
- There were some differences across the trial sites:
 - 55% of Counties Manukau West staff said their phone had helped a lot with their job, compared to 10% in Hawke's Bay, 24% in Lower Hutt and none on the West Coast.

Which features are most useful?

Usefulness of different features of the phone for helping with the job

- Overall:
 - most trial participants have found the smartphones to be useful or very useful for making phone calls and emailing
 - many found them useful or very useful for their camera and ability to display photographs
 - about two thirds for texting and using Winscribe
 - under two thirds for maps, and
 - just under half for the calendar/diary.

Feature	Proportion of trial participants who found it to be 'useful' or 'very useful'
phone calls	94%
email	93%
camera	79%
photo-viewing	75%
texting	65%
Winscribe	63%
maps	59%
calendar/diary	48%

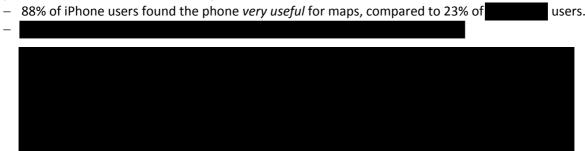
Phone function

Having an allocated phone was a tremendous advantage to GDB staff as they have easier access to their supervisor, colleagues, victims, witnesses and offenders, agencies and businesses e.g. tow truck companies. They did not have to go through Comms to ask them to ring people which must also cut down on radio time and Comms workload. Providing victims and witnesses with a direct contact number was also better customer service as one GDB Supervisor said,

I think it is hugely important to give a victim or a witness complainant to give a number that they can call you on. If you give them the station number here..... different shifts, days off or on leave means they cannot reach you. Some people end up ringing victims to let them know what is happening on their time off. [GDB]

Maps

• The most extreme difference reported between the two phone types was in relation to maps: the staff preferred to use the iPhones for maps.



4.2 eQuip usability and suitability

eQuip is a mobile application that is loaded onto officers' smartphones enabling them to do queries or checks on people (QPs) or vehicles (QVRs) directly on their phone while out on the street. They would normally have to contact Communications Centre staff via the radio, who would then do the checks for them and then relay the information back to them. With eQuip they can do checks by themselves, bypassing the radio and Comms staff.

The information in this section is based on:

- a survey of trial participants (78²³ respondents 60 users and 18 iPhone users), and
- a series of 8 focus groups, with a sample of 39 trial staff, undertaken in June-July 2012 when they had been using eQuip on their smartphones for about a month (prior to getting laptops/tablets).

Key findings

- Generally the eQuip application has been very well received by trial staff and is working well. Two thirds (66%) have said that it has helped them a lot or quite a lot in doing their job. Only a few (4%) said that it had not helped at all.
- Most are finding it easy or very easy to use (90%), and a large proportion *usually* or *always* get the information they want from it when they need it (82%).
- Most respondents (92%) said that eQuip has increased their ability to confirm identities, and a large number said it had improved their options (87%) and decision-making (73%) on the street.

•	The iPhones seem to be easier to use than the	

²³ Because the total sample size is less than 100, the use of percentages may create an impression of larger differences than the real numbers indicate—for example, where there are 10 respondents in a category, a change of one person is a change of 10%. Caution should therefore be used when interpreting these results.

Site differences

There was a marked difference between sites in the extent to which trial participants found eQuip helpful:

- 87% of Counties Manukau West staff said it had helped *a lot* with their job, compared to 11% in Hawke's Bay, 5% in Lower Hutt and none on the West Coast
- More than half (56%) of the Hawke's Bay trial staff said it helped them *quite α lot*, compared to 40% in Lower Hutt (where 55% said it helped only *α little*).
- Nearly two thirds (65%) of West Coast staff said it had helped only a little.

This highlights the need to interpret the results within the local context, and indicates that the anticipated benefits of mobility will not be experienced in the same way in each area or district. They are likely to be dependent on a variety of local contextual factors.

Across most of the questions, Counties Manakau West staff provided more positive responses than those from the other sites. More of them found eQuip useful, more of them were doing more QPs (Query Persons) and QVRs (Query Vehicles), more of them had reduced radio use, and more reported improvements in effectiveness (e.g. ability to confirm identities, more options and decision-making on the street). More also found their lead/champion helpful than staff at other sites.

The West Coast staff were at the other end of the continuum. Fewer of them found eQuip useful, fewer were doing more QPs or QVRs, and fewer reported improvements in effectiveness.

However, there are possible contextual reasons for these differences:

- Feedback from focus groups indicated that many of the improvements experienced in effectiveness
 are related to the QP capability of eQuip, and the ability to see photographs when trying to confirm
 identities—which officers feel directly improves their options and decision-making on the street.
- Feedback from the focus group in the West Coast was that the staff there actually know a lot of the people living there, especially known offenders, so have less need to do as many queries as those in larger centres where they are less likely to know so many people.
- The radio channels for Counties Manukau are incredibly busy, and the need to do queries is greater because of the population size, so it is not surprising that staff there found eQuip more helpful in doing their job than staff at the other sites.
- In addition, many areas on the West Coast have poor cellphone network coverage, and so staff will not have the same opportunities to use eQuip, even if they may wish to. Also, their radio channel is easier to get onto since it was changed from Tasman to Otago.

In addition, the impact of a lead/champion/supervisor who encourages staff and makes time for informal group training cannot be underestimated in accounting for the difference between the results for the Counties Manukau site and the other trial sites.

eQuip and query function

- About two thirds of survey respondents reported doing more queries per shift than before they got eQuip (see administrative data analysis reported under outcome 3.1, in section 3.3).
- Overall, a third (32%) of the trial staff said they are doing the same number of QPs (Query Persons) as before they got eQuip, while two thirds (65%) said they are doing more.

- Once again there is a marked difference between trial sites:
 - 96% of Counties Manukau West staff said they are doing more QPs compared to 20% of West Coast staff.
 - Two thirds (67%) of Hawke's Bay staff said they are doing more QPs, along with more than half (55%) of the Lower Hutt staff.
- Of those who responded to this question²⁴ just over a quarter (27%) said the number of QVRs they had done per shift since getting eQuip was the same as before, whereas over two thirds (69%) said they had done more since getting eQuip.
- Again the difference between the sites was considerable:
 - 90% of Counties Manukau West staff said they are doing more QVRs compared to 14% of West Coast staff.
 - More than two thirds (69%) of Hawke's Bay and Lower Hutt staff said they are doing more QVRs.

eQuip and bail check/reporting function

There was very positive feedback about the Bail check/reporting function which most staff thought made doing bail checks, and bail breaches in particular, a lot quicker than the 'old' system. The instantaneous update of breaches on NIA meant that other GDB staff would also be aware of a breach straight away.

The bail reporting function meant a lot less paperwork for GDB staff and some thought this ensured the breach was properly recorded, as at the end of a busy shift sometimes recording might not get done.

Good for breaches as goes straight through to NIA and updates immediately so that others can see if there is a breach. Normally, if it was a Friday night the breach wouldn't be loaded until Monday. [GDB]

I think the bail app is awesome. I use that on my phone as opposed to the lap top. By the time I've sat back in the car I've noted my comply or my breach.[GDB]

There was some variability in uptake of using the application as people got used to it. Some used it all the time while others had only used it a few times.

- About a third of (34%) participants reported using the eQuip Bail check/reporting function on every shift. This includes 17% that used it *very frequently* (many times per shift).
- 30% said they used it occasionally (some but not all shifts).
- Another third (34%) said they never used it. For most of these the reasons given were that it was not part of their role (included CIB and NPT staff as well as supervisors), but about 7% of respondents said that they prefer to use the radio for speed and safety, as people can hear where they are.

Feedback from focus groups was that the bail function:

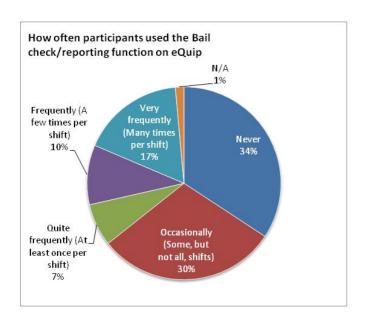
- saves time, particularly for doing bail breaches
- makes it easier for staff to do breaches
- ensures they do actually enter breaches, as it does not require paperwork at the end of a busy shift

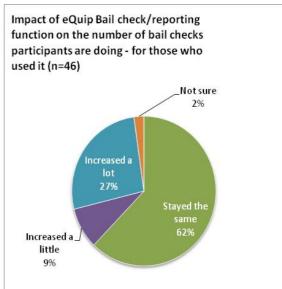
²⁴ n=62 In terms of QVRs (Query Vehicles), 15 respondents did not provide a response about whether the number they had done per shift had changed. This could be because they weren't sure about whether the number they had done had increased or not, or because they had not tried to do them on eQuip.

- has the potential to lead to more arrests for breach of bail, as other staff are more quickly informed if someone is breaching, and
- saves radio time by logging 5Ks, and
- ensures 5Ks are logged.

More than a third (39%) of those who used the eQuip Bail check/reporting function reported that they were doing more bail checks.

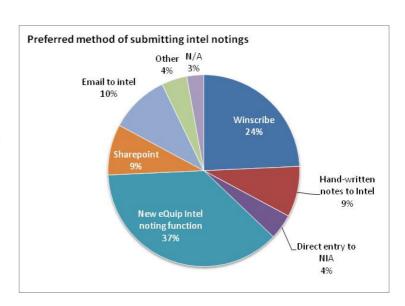
- Over a quarter (27%) said the number had increased a lot.
- Just under two thirds (62%) said the number of bail checks they were doing had stayed the same.





eQuip Intel noting function

There was conflicting feedback from trial participants about the eQuip Intel noting function. One section in Counties Manukau all agreed they were doing more notings than before, and found the application really easy to use. They linked people with cars and addresses and included quick narratives. Other GDB staff said they found the noting application difficult to use and wanted more training on how to use it. They thought the application should be simplified.



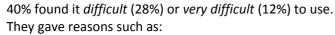
However, the *new eQuip Intel noting function* was the most preferred method for submitting Intel notings reported in the online Te Puna Mobility Evaluation Survey (n=70). 37% of respondents chose this new method, with *Winscribe* being the next most favoured at 24% followed by emails to Intel at 10%, and *Sharepoint* and *Hand-written notes to Intel* at 9%.

- 40% of CIB and 41% of GDB respondents preferred the new eQuip-based noting method, whereas none of the NPT respondents chose it, preferring instead to use *Winscribe* (50%) or *Email to Intel* (33%).
- Winscribe was the next method most favoured for GDB staff (24%), followed by Sharepoint (12%).
- CIB's second choice was Email to Intel (20%) followed by Winscribe (13%) or Direct entry to NIA (13%).
- Half (50%) of the survey respondents reported that they used the eQuip Intel noting function occasionally (some, but not all, shifts).
- 10% said they used it on every shift, either *quite* frequently (at least once) (6%), or Frequently (a few times) (4%).
- 39% said they never used it. GDB were more likely to use it than CIB or NPT staff. Half of NPT (50%) and 53% of CIB respondents said they never used it, whereas 33% of GDB said they never used it. Reasons participants gave for never using it were that they had:
 - little opportunity due to role (e.g. supervisors),

easy (47%), or very easy (13%), to use.

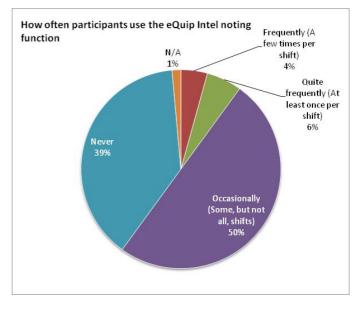
- missed out on training or felt that the training was not adequate,
- felt that it was too confusing, difficult or time-consuming compared to other options (e.g. Winscribe).





- training was inadequate, or they missed it
- difficulty in "getting people and vehicles into the actual noting",
- verifying the location of the noting
- linking people, vehicles and locations
- having their notings sent back for changes
- too many steps, so giving up after trying a few times
- time-consuming or overly-complicated
- not well-practised.

79% of users wanted more training on some aspects of the eQuip Intel noting function — very high compared to those who wanted training on the eQuip Bailcheck/reporting function, which was considered much easier to use.





How easy the eQuip Intel noting function

was to use - for those who used it (n=53)

Feedback from File Management Centre (FMC) was that the new eQuip noting function makes their job easier and quicker. It reduces data entry time for them. They prefer the eQuip notings compared to other types they get, as the eQuip notings just require them to check that the links are correct and in place, particularly 'location'.

4.3 /Tablet Usability and Suitability

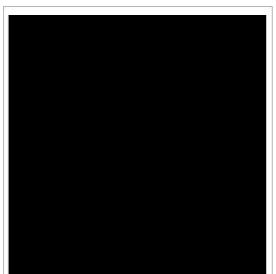
Two types of large-form devices were tested in the trial—and Apple iPad tablets.

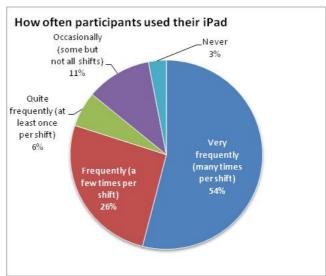


The iPad which is very light and portable, did not provide access to Police systems (or NIA), but included the Smartphone for Public Safety (SPPS) application—purpose-built for NZ Police for managing jobs/events and eQuip.

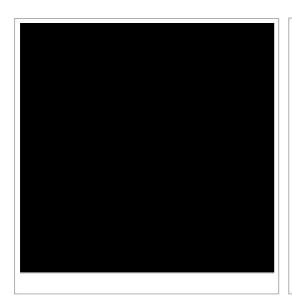
Key findings

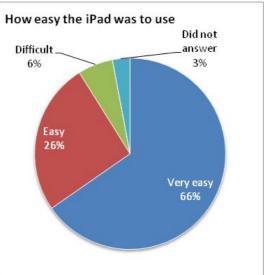
- Those with iPads were much more likely than those with to use their device *very frequently* (54%, compared to 23%), or *frequently* (26%, compared to 17%).
- Those users who said they never used their device pointed to technical difficulties such as poor connectivity or the device timing out too quickly, or lack of necessity in their role, as reasons.





• Most users (80%) found the devices easy (36%) or very easy (44%) to use. (92% of iPad users and 69% of





Technical problems

Trial participants experienced numerous technical problems with their and iPads.

Proportion of survey respondents who experience the following technical problems	iPad (%)
Not able to log on/off device	17
Battery Drain	14
SPPS didn't work	20
Not able to connect to Pinecone (iPad only)	
Other problems with Pinecone (iPad only)	
Not able to connect to Police System Ethernet	N/A
Not able to connect to Police Enterprise remotely	N/A
MPS didn't work	N/A
Other	3
I have not experienced any technical problems	3
Did not answer	6
Te Puna Mobility Evaluation Survey (n=70) n=35 iPad n=35	



The most frequently identified technical issue that came through in the focus groups about iPads was the screen freezing, which required users to restart.

The mobility project team tracked technical problems throughout the trial and many were dealt with during the course of the trial. Some were related to problems with individual devices which would either be sent away to be fixed or replaced, while others were to do with glitches or problems with systems or software. (Any technological issues uncovered by the Evaluation team during the course of the evaluation were forwarded to the mobility project team.)

Surveyed staff said that the iPad battery lasted much longer than the

- Most (83%) of the respondents with iPads said the battery lasted over 9 hours.
- Less than half (46%) of respondents said the battery lasted over 9 hours.

The extent to which the large devices helped staff with aspects of their job

The iPad were found to be most helpful with queries, identifying suspects and accessing information.

Proportion of survey respondents who said their /iPad helped with the following	71700 01 Quite a 100		Not at all	
aspects of their job Quite a lot or A lot – or Not at all		iPad users		iPad users
		(%)		(%)
Accessing information		89		0
Doing queries		89		0
Identifying Suspects		83		3
Communicating with complainants or victims		29		31
Communicating with Comms		49		17
Communicating with other units		29		37
Recording information		37		14
Finding places		66		9
Conducting inquiries		49		6
Completing administrative/paperwork		20		46
Responding to events		43		31
Managing events		51		29
Managing cases		26		37
Te Puna Mobility Evaluation Survey (n=70):		•	•	

The has been particularly useful for NIA queries, I/net viewer, the shared drive, PeopleSoft and accessing the intranet. The iPad has been particularly useful for doing queries, identifying suspects and finding places. The iPad is less likely to be used in the station or for administrative work than the

Which is preferred – or iPad?

The clear favourite larger device for GDB to use in the field was the iPad due to its relative lightweight and size. Staff seemed to have a lot less technical difficulties with the iPad and found it user friendly and adequate for most of their needs while out of the station.



Staff with an were more likely than those with iPads to use the device back at the station if there were not enough desktop computers available.

Which is preferred - larger devices or smartphones?

The larger devices were clearly preferred by most users for accessing and recording information, accessing the intranet and internet, doing queries and identifying suspects. The smartphone was preferred by most users for communicating with victims or complainants, and with other units. Although more staff preferred the larger device for undertaking queries and viewing photos etc. (generally because of the size of the screen), a quarter to a third preferred the smartphone (generally because of portability – when out of the car), and more than this number reported using their smartphone for these purposes.



Proportion of respondents who preferred either their large device (iPad) or their smartphone for undertaking the following activities	All users (%)	
	/iPad	Smartphone
Communicating with complainants or victims	6	79
Communicating with Comms	33	44
Communicating with other units	4	73
Doing queries	69	24
Identifying Suspects	73	20
Recording information	71	9
Accessing information	81	11
Finding places	57	24
Conducting inquiries	70	16
Managing events	60	4
Emailing	54	36
Photo-viewing	57	33
Using Calendar/diary	27	34
Accessing internet	83	4
Accessing Police intranet	80	7
Accessing maps	60	21
Bail checks	59	6
Intel notings	58	4
Te Puna Mobility Evaluation Survey (n=70):	Pad n=35	

The portability of phones was a significant advantage when GDB staff were out of their cars. GDB staff tended not to take laptops out of the car, although a few talked about taking them inside an address and typing up statements. Those with iPads generally said they would check the situation at scene first and then if they thought it was required they would get their iPad from car.

4.4 MPS/SPPS Usability and Suitability

Mobile for Public Safety (MPS) and Smartphone for Public Safety (SPPS) are mobile applications that allow trial staff to view, create, and manage non-priority jobs/events and update their unit status. MPS was only available on the during the trial whereas SPPS was available on both smartphones and the iPads.

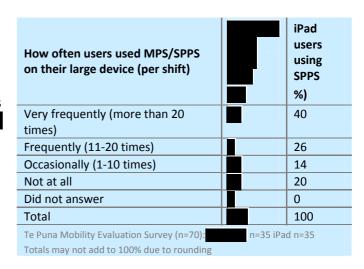
They allow staff access to functionality on their smartphones and laptops/tablets that would otherwise be managed by Comms staff.

Key findings

GDB focus group participants reported variable usage of the MPS/ SPPS applications, some using it a lot and finding it very useful, while others hardly used it. Factors inhibiting usage included technical issues, 'user-friendliness' of the applications, and most commonly, safety concerns.

Frequency of use MPS/SPPS

SPPS on the iPad was used much more frequently than MPS on the 66% of iPad users reported using SPPS on the iPad *frequently* (11-20 times per shift), or *very frequently* (more than 20 times per shift), compared to 14% of users with MPS.

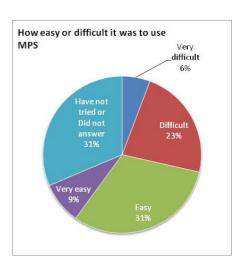


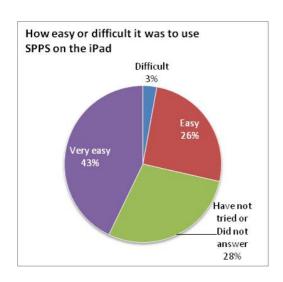
Ease of use MPS/SPPS

I don't like MPS as opposed to SPPS. It's been made user friendly for us but the amount of issues we've had going in and out of different wifi areas with the just makes it a hassle to take it out half the time.

It's [MPS] a lot more cumbersome. The way the pages and the links are set up with SPPS is much easier. [GDB]

They're different. I find SPPS quite easy to use. It's laid out in a way that's user-friendly. MPS, you have to try and find which screens take you everywhere. SPPS has your home screen and you can look at it and tell what you're doing. [GDB]







How MPS/SPPS were used

There was variation in the way GDB used SPPS/MPS to view events, monitor, log their unit status, or self-assign to non-priority jobs. Some used the applications for doing all these things but not necessarily all the time, as all users said they would revert to the radio to log jobs if they had any concerns about their safety. Participants said that it was particularly useful when the radio was busy to log jobs on MPS/SPPS, and consequently cut down on radio use.

According to survey results, substantial minorities of the trial participants found MPS and SPPS useful for a variety of event management tasks. 46%-50% found MPS/SPPS useful or very useful for viewing and resulting events and updating their status, while 37%-44% found it useful or very useful for creating events, self-assigning to events, and adding comments to them.

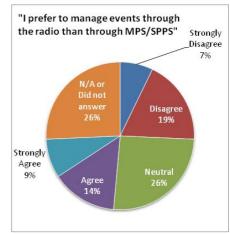
However the flip-side of this is that more than half of the participants found the applications only *a little useful* or *not at all useful* for these purposes or had not tried to use them. This is a significant proportion.

Some staff still prefer to manage events/jobs via radio

Just under a quarter of the respondents indicated that they would prefer to use the radio to manage events than MPS/SPPS. users (29%) were more likely than iPad users (17%) to prefer using the radio to manage events rather than MPS/SPPS, but half (52%) of all respondents did not indicate a preference. (Some of these will not have tried to use it.)



Yeah, I look what jobs are on and I can do that out and about. I don't have to say "I'll come back to the station and dig it out". That's definitely saved time. [GDB Supervisor]



MPS and SPPS allow supervisors to monitor what jobs are coming through while they are mobile, and read job details, which informs their consultations with staff and decisions about response.

Self-assigning to events

There was a variety of views about assigning non-priority jobs.

More than half (54%) of users and just under half (49%) of iPad users agreed with a statement that they like being able to self-assign to events with MPS/SPPS. Only 1 in 10 officers disagreed, but 40% were neutral or did not state an answer. (Some of these will not have tried to use it.)

12% of officers have been to jobs where confusion with MPS/SPPS/radio has resulted in too many units turning

up. This highlights the importance, for the roll-out, of training, communication and guidelines about what is expected in terms of officers using the radio or their devices, or both.

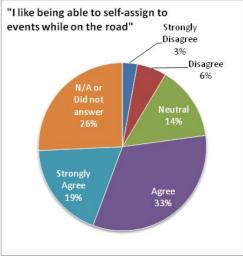
Logging unit status

The ability to log unit status e.g.4Q, 3M, 3T on SPPS or MPS saved time for GDB if the radio was busy. It also has the potential to cut down on radio traffic.

Change in practice for Comms staff

Comms dispatchers are used to controlling all the jobs on the pending queue, and planning where to send units next. They thought there would be benefits in from mobility in freeing-up time for dispatchers so that they can deal with high priority jobs. However, they felt that would need time to get used to the new

way of working, and to gain confidence that the checks and balances were in place to ensure that GDB were self-assigning appropriately.



I've had my jobs and dispatched priority jobs and known that there are jobs there in the back of my mind, like "right, when that person is free I'm going to send him to that" and you know it's there and then you turn back and it's gone. It takes you a while to click that someone has read it and they've decided to go and do it. They put in a comment "Comms, we've read it" which is cool but it's getting used to it. [Comms]



4.5 CIB experience with mobility devices

Nine CIB staff were interviewed during the second round of focus groups. They showed a strong preference for the as it had the functionality that they considered most suitable for their investigative role, which requires comprehensive access to police systems.



Ability to type statements out of the station

CIB trial participants benefited from having the statement signed straight away, either by electronic signature or portable printer, would make the process even more efficient. CIB participants:

- Generally got better quality statements when conducted at a person's home where they felt comfortable, rather than the station.
- Could easily change typed statements in consultation with the victim or witness.
- Emailed statements to their supervisor to get advice on the line of questioning.

Resource for meetings and interagency work

A Family Violence Co-ordinator (FVC) gave an example of using an at Family Violence Interagency Response weekly meetings. The FVC found the invaluable as he could quickly provide current information about a case.

Importance of the phone function for CIB

CIB, who have not been allocated a phone before, found the smartphone allows easier and quicker communication with colleagues and victims and witnesses. For example, one participant said texting is the best means of communicating with a lot of witnesses and victims.

The majority of people I deal with our role is dealing with serious crime which is basically serious assaults and dealing with witnesses and victims and preparing them for court and so forth. The best means of communicating with these people is text messages and people don't clear messages on their phones and that so I have saved I believe I have saved a considerable amount of time being able to text people rather than to have to hop in my car and drive all the way out there to see them, so that has been a big plus having that ability and also having emails on my phone.[CIB]

4.6 Neighbourhood Policing Teams' experience with mobile devices

Eight members of Neighbourhood Policing Teams (NPTs) from three sites were interviewed and all devices were trialled.

The NPT role is focused on engaging with the local community to address issues and prevent crime and crash. Their tasks include proactive policing (3M, 3R, 3T, 3F, 3H etc) and may also include bail checks, enquires,

community and interagency meetings. NPT are not first responders and Comms do not generally dispatch them to jobs.

The clear preference among focus group participants was for iPhones and iPads.

It's sped things up. Before you had a barrier, you'd organise something and then you leave the station, things happen in between time and you come back and there's an email sitting there that would've been great to have two hours ago. Or there's a phone message sitting there for you that would've been great to have two hours ago. [NPT]

iPads were preferred over	or portability, quicker login-time, and ease of	use in the car.
Larger devices and smart phones		
	l for their role but identified similar issues wi	
trial participants		The iPad users preferred
using these devices to their	for doing emails and queries	
		Other NPT staff were
strongly in favour of the iPhone as it pr	ovided them with most of the functionality th	ney required while mobile.

NPT participants did not generally use MPS or SPPS to view or self-assign jobs as they are not first responders and do not monitor jobs, although NPT can use the functions to log proactive taskings such as 3Ts and 3Rs.

4.7 Impacts of mobile technologies on the relationship between GDB and Comms

Comms staff who were aware of mobility were concerned about the impact it could have on the role and responsibilities of dispatchers. They had significant concerns about losing the oversight and control of events and officer safety that they currently have:

- Officers could become more responsible for looking after their own safety, making sure that they log their location and update their status in the system.
- Comms staff might have to work differently, watching for, rather than listening for, changes to events in CAD
- There was some uncertainty about who has command and control responsibility the lines seem to be blurring with self-assignment options—they want clear lines of responsibility.
- As mentioned previously Comms staff have concerns about officer safety as a result of the lat-long location field and not verifying addresses.
- They have a lack of clarity around when and how much information to provide to units when the units indicate that they have the information in front of them:
 - For example, one dispatcher talked about an occasion where she began to relay information about a job
 to a unit, but the unit said, 'yep got the info in front of me', indicating that the dispatcher didn't need
 to provide it. The dispatcher consequently stopped providing information, but then when the officer
 reached the job, he started asking questions which he would not have needed to ask if he had actually

read the information available on his device. The dispatcher would already have relayed the relevant information to the officer if she had known he was not reading it from the device.

For GDB, the need for radio communication with Comms is related to a number of factors:

•	Type of car:

Need for speed – communicating over the radio is generally quicker than using the devices and also
informs Comms, their supervisor and colleagues quickly about situations. There was a preference by many
GDB to hear what was happening over the radio as this was easier to do while driving or doing some other
task, rather than taking time out to look at a screen.

Just speed basically. If I know I've got time I may have a look. But if I'm going to a violent 1D (Domestic) it is easier to call Coms as I'm going and them telling me things about the address and the subjects and be processing that in my mind as I'm going there rather than me pulling over and having to QP. It can be quite hard to QP, it's quite slow sometimes. Normally it is fine. At 3Ts I do it all the time. If it is an emergency situation I do it on the radio so I can be up, they can be telling me it and I process it that way. [GDB]

• Safety - all GDB staff interviewed said they prefer to use radio if they think there are safety concerns so their colleagues hear where they are and can come to their assistance if required. If GDB staff were one-up and had any concerns for their safety they preferred the radio as it let their colleagues know where they were. It was also easier to talk on the radio while driving. Some staff used a combination, conducting queries on their device and logging the job such as a 3T with Comms so colleagues could hear where they were,

They are listening on radio when people are logging 10/7, 3Ts etc and so know where people are. If someone needs backup other units already know where they are, they recognise the voice. [GDB]

Same with 3Hs. I want everyone to know where we are rather than just doing it all on [device] so the only people who know is Comms. If I'm calling for back up fast, people know that I'm at 3H at the Railway Hotel or whatever. [GDB]

That is another thing, everyone can hear, and also if I'm 3Ting a car and I'm by myself and it's got 3 of our local thugs in it I will 3T with Coms so everyone will know where I am, but I'll tell Coms that they don't need to QVR that they just need to log the 3T so everyone can hear me on it. [GDB]

- How busy the radio channels are the radio channels in Counties Manukau can be particularly busy and GDB staff there find it very useful to use the devices for queries as it saves them waiting in a queue to talk to Comms.
- **Adjusting to change in practice** the radio is what staff are familiar with, while regularly checking a screen when mobile is a considerable change in practice and requires stopping if 'one-up'.

5 Information, training and support for trial participants

Trial participants had a lot to say about training and support and had recommendations for the national rollout. In terms of needs for training and support, among participants there appeared to be a continuum between those who needed basic step-by-step hands-on training with the devices, and those who learned by 'playing' and experimenting with the devices and applications. The following quotes illustrate the opposite ends of this continuum.



I thought the training was fine, it was just a matter of playing with it yourself and having a go and getting out there and doing it really. There is only so much you can listen to someone talk to you before you don't take it in. [GDB]

5.1 Feedback on the Trial

The majority (54%) of survey respondents preferred face-to-face training involving demonstration of the

devices and applications, while 21% preferred the on-line course available on Te Puna.

Te Puna on-line training

Most staff participating in focus groups did not appear to have accessed the existing Te Puna training, and most said they didn't have time—it was not seen as a priority. They said they'd be more likely to use it if dedicated time was set aside for it on training days.

However some staff had used the training and found it helpful.

The Te Puna training videos are fantastic, well put together and easy to follow.



Jargon

When devices and new applications were introduced, many said that they did not understand the technical jargon. They would have preferred to start with the basics, and be able to practice using the device in the session.

I will get left behind if all this techno jargon that gets fired at you ... I found that when they introduced it the guy was going on about connectivity and servers and all this sort of stuff... [GDB]

Sources of assistance

The sources of information and support rated most useful (i.e. *useful* or *very useful*) were the mobility team (89%), their section or peers (87%), the mobility emails, and the training pack (both 70%). The mobility website was the least useful, followed by helpdesk.

The Counties Manukau staff considered their lead/champion much more useful than the other sites did—73% saying *useful* or *very useful*, compared to 47% in Hawkes Bay, 35% in Lower Hutt and 50% in West Coast.

Feedback from the focus groups about mobility team assistance was very positive with participants saying they had been really supportive and responsive to their queries.

The mobility team have been pretty good. If you've got problems, you can ring them up and discuss them with them. They've been quite approachable, so that's good. They're easy to ask questions to and very accepting of the very basic stuff so that's good. [GDB]

Culture of sharing

In GDB sections, supervisors and 'tech-savvy' members who encouraged use of the devices and sharing of knowledge, increased the success of the trial. For example one supervisor provided informal training sessions, showing staff the new applications and how to use them. Several supervisors said they found the informal training sessions invaluable for upskilling staff, particularly those who are not so tech-savvy.

You've got guys realistically of different abilities. You've got your techno whizzes that love technology, and then you've got the technophobes that think oh shit how do I turn this on or which way up does it go. By having that informal support network guys are training on the job essentially and learning the different ins and outs. You're always going to get varying abilities and people who are willing to explore the technology to various levels. On a basic level it is extremely effective. [GDB Supervisor]

We will always ask each other and people show you short cuts. There are a quite a few people who are techy minded or have got devices, iPads and iPhones so they can show us shortcuts. [GDB]

Comms feedback

Feedback from Comms staff focus groups has indicated that most Comms staff were not very well-informed about the mobility trial despite having been sent information in emails at various times. There were varying degrees of confusion and lack of awareness about what mobile devices are out there, how many there are, where they are, who has them, what they can do, and what the implications are for Comms. There was some confusion between the mobility trial/project and the Road Policing trial of "smart devices".

Areas where more training is needed

Smartphones

- 50% of the iPhone respondents would like training on using the *internet*
- 44% of iPhone respondents would like more training on the Calendar/diary function.
- A small group (across all areas) would like more training on how to use their phones for basic email, phone calls and texting.

eQuip

- Just under a quarter of staff indicated they would like more training on settings (24%), accessing alerts information (23%) and menu/actions key functions (22%). Very few (4%) would like more training on how to do QPs or QVRs.
- West Coast staff would like more training compared to staff at other sites, with about half indicating they'd
 like more training on settings and menu/actions key functions (compared to 20-28% in Hawkes Bay and
 Lower Hutt, and only 9% in Counties Manukau West), and over a third wanting more training on accessing
 alert information (compared to about a fifth of others).

eQuip Bail check/reporting function

Only 4% of participants said they'd like more training on the eQuip Bail check/reporting function, and they wanted basic or refresher training.

eQuip Intel noting function

79% of respondents who used the new Intel noting function wanted more training on some aspects of it. The table shows sizable proportions wanting more training on fundamental aspects of the application, such as how to add people, vehicles or locations (43%), how to initiate (38%), submit (32%) or process (30%) a noting.

Intel staff at several sites thought officers required more training and clarity about what to include in, and how to populate, the noting narrative, as they had received incomplete notings.

Proportion of eQuip Intel noting function users (among survey respondents) who wanted more training on the following	eQuip Intel noting function users (n=53) (%)
Adding objects (persons, vehicles, or locations)	43
Initiating notings	38
Submitting notings	32
Processes/workflows for notings	32
Processing notings	30
Searching and viewing notings	28
Saving notings	26
Roles and responsibilities in relation to processing notings	23
Deleting notings	21
Other	15
Did not answer	21
Te Puna Mobility Evaluation Survey (n=70) eQuip Intel noting function use	rs n=53

One of the main difficulties for the GDB was linking the location to the noting, particularly if the location was not geo-coded. Consequently some notings would be passed to Intel without a location entered. This resulted in Intel sending notings back to GDB to be updated with a valid location. GDB then found this frustrating as some staff were not sure how to do it and tended to be discouraged from using the function again. Some sites where FMCs were established had resolved this by Intel sending the notings to FMC to check and link to the location if required. The problems around adding locations appeared to be a combination of a tehnical issue and a requirement for more training.

Site differences

- 82% of West Coast staff wanted more training on using Winscribe with their phone, compared to 41%
 Lower Hutt staff, 14% Hawkes Bay staff and 29% Counties Manukau West staff—to some extent this
 reflects the difference in adoption of Winscribe generally across areas.
- 45% of West Coast staff wanted more training on using the camera, compared to 5-18% of staff in other areas.

5.2 Training suggestions for roll-out

The message from participants was that there must be really good quality, up-front, in-person training, using very basic non-technical language, at times specifically set aside for that purpose.

Trial participants also suggested:

- Follow-up training, after they had had time to use the technology, and would have questions.
- The training should be delivered by professional trainers.

...probably more so from people who are good trainers. The mobility team have done a good job but having a trainer deliver it would probably be better. [GDB]

My view is that Te Puna won't work. You need a lot more hands-on doing it in the classroom over and over. Some of these technical geeks can get a handle on it really quick but the average Joe Blow policeman like myself, the most we do on a cellphone is make phone calls and do the odd text and that's about it. This is a huge step up from that. We need some real low group numbers intensive training to go over and over these things. Otherwise people are going to get frustrated and they won't get to know how to use them properly and therefore they won't use them. [GDB]

Other suggestions were:

- Key people (tech-savvy, communicative, enthusiastic, patient) from each station, section or workgroup, need to be specially trained to be the 'go-to' people, responsible for encouraging people to use the devices and helping them to work out how to do things.
- Hands-on training sessions need to be built into regular scheduled training days for each section/workgroup.

- Getting supervisors on-side (including at Sergeant level) is key to ensuring the staff use the devices. Without supervisor support there is less motivation for staff to use the devices. Supervisors may need to be singled out for training so that they can support staff in a practical sense.
- Giving participants problems and scenarios to work with on their devices, and encouraging them to practice until they feel competent.
- Help desk needs to be 24/7 and to be knowledgeable about the devices. Many understood that because it was a trial it was also new to helpdesk but when rolled out nationally they should be well prepared.



- Several GDB Supervisors noted the MPS and SPPS applications are a change to police practice and less
 intuitive, so require more training. They suggested training for MPS and SPPS requires a virtual
 environment, like NIA has for learners, where you can practice logging and self-assigning jobs 'Not just
 looking at pictures of screen shots.'
- Give the 'go to' people much more training.

I think there really need to be some people locally who are going to get extra training. There need to be go-to people locally who are the experts. They need to get extra training ... more in-depth training. There needs to be a few of them everywhere so people can go to them. I think they're going to need to be really careful that they don't just give the devices to people and say "go for it". [GDB]

Proportion of survey respondents who wanted more training on the following	All trialists (%)
Using search and surveillance functions in eQuip	70
Using Intel noting functions in eQuip	62
Using Bail check/reporting functions in eQuip	40
Using Smartphone for Public Safety (SPPS)	40
Using /iPad - general functions	38
Using eQuip	32
Connecting to 3G	32
Using smartphone - general functions	30
Keyboard / touchpad typing skills	11
Logging on to iPad iPad	4
Did not answer	33
Te Puna Mobility Evaluation Survey (n=70)	

Information and training for Communications Centre staff

For the national roll-out, Comms staff recommended that they have face-to face information training sessions that allow them to use devices, to see how they interface with Comms systems. These sessions would enable questions to be asked, uncertainties to be clarified, and concerns to be allayed.

6 Recommendations for National Roll-Out

The following recommendations are proposed in order to support and enhance a national roll-out of mobility devices and applications. They lead directly from the findings outlined in this report, unintended impacts and consequences of the introduction of mobility, and lessons learnt from the implementation. They largely mirror the suggestions made in the interim evaluation report.

- 1. Consider deploying the iPhones and iPads to GDB and NPT staff and these devices are the most suited to their needs.
- 2. **Implement a staggered roll-out:** to enable Communications Centres to identify the implications of mobility for their workload and address any issues prior to full national roll-out.
 - It has not been possible during the trial or evaluation to determine what the impact of mobility might be on Communications Centres—particularly in terms of volume of radio traffic on a given channel, because the number of participants in the mobility trial is so small in each area.
 - Beginning the roll-out with one or two areas or districts, aligned to radio channels, would enable this.
- 3. Provide comprehensive and on-going professional training and support for users, including face-to-face training: to meet the needs of staff according to varied levels of ability and willingness to engage with new technology and functionality—including providing basic training on using the general functions of devices.
- 4. **Provide comprehensive information and training sessions for Communications Centre staff:** to make sure they know what functionality officers have access to, and what it means for dispatchers in terms of managing events and officer safety.
 - Mobility is likely to change the way constabulary and Communications Centre staff operate and
 interact with each other if fully adopted by officers. Officers will be responsible for logging their
 location and updating their status in the system themselves. Dispatchers will need to work
 differently—watching, as well as listening, for changes.
- 5. **Monitor and measure the impacts of mobility during the first year of implementation:** to ensure that the expected benefits are realised and possible negative impacts are managed:
 - Police organisations in the UK were criticised by the National Audit Office for not being able to measure the benefits of introducing mobility. (Measuring benefits during the trial period is not enough to demonstrate, or ensure that, benefits are realised from full implementation.)
 - 5.1. **Monitor officer safety in the transition to mobility:** to ensure that officers' safety is not being compromised by using GPS-generated, unverified lat-long coordinates for officer location.
 - 5.2. **Monitor the recoding of family violence cases in the transition to mobility:** to ensure that victim safety is not being compromised by inaccurate recoding.
 - 5.3. **Monitor the levels of off-duty data usage and overtime being recorded by officers:** to ensure responsible and healthy work practices and encourage maintenance of work-life balance.

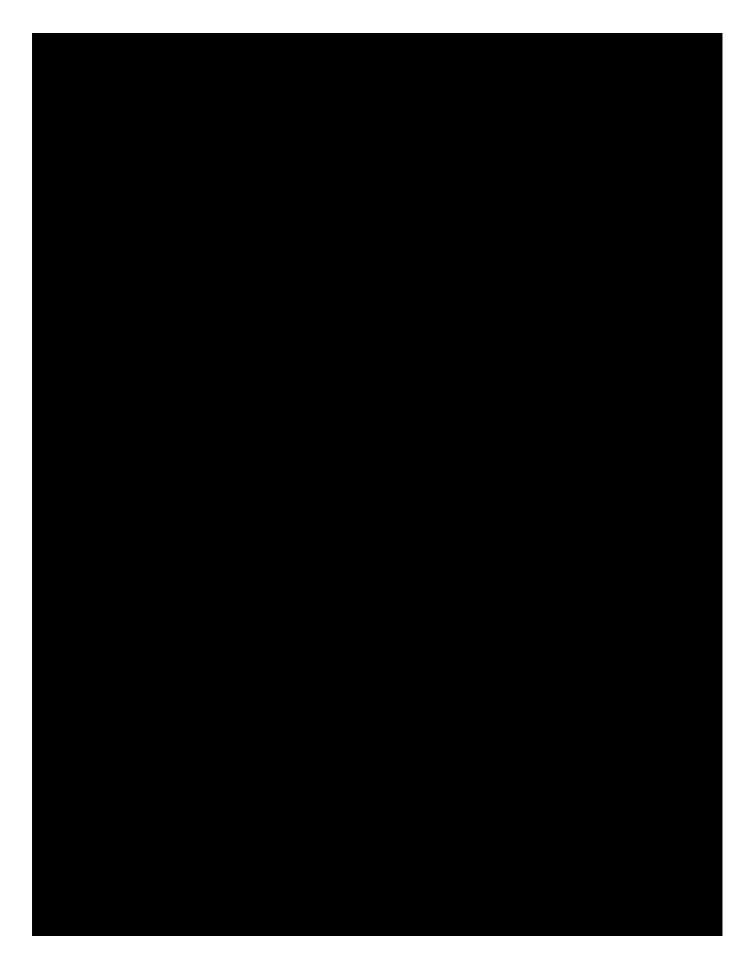
- 6. Retain a centralised mobility implementation team for the duration of the national roll-out and for a period beyond: to measure benefits, monitor impacts, coordinate issues that arise across Training, Communications and ICT, provide advice and manage teething problems.
- 7. Develop policies and processes on the use of electronic evidence, especially statements and signatures that are admissible in court: in order to maximise the efficiency gains possible with mobility.
 - Mobility enables staff to record more evidence electronically, including taking statements. Formal
 electronic signatures that are admissible in Court would be much more efficient than having to put
 printers in cars, ask the signatory to come to the station, or take a printed statement back to a
 signatory.
- 8. Develop/Communicate policies and guidance on the use of mobility devices during non-work hours and communicate them to staff: to clarify what is expected of staff, mitigate the risk of any negative consequences for them or their families, and ensure that New Zealand Police is meeting its obligations as an employer.

Many staff are using their mobility devices during non-work hours, to do work-related activities.

- While this is a personal choice, it could have a negative impact on the welfare of officers, or on their family life and personal relationships.
- Some staff are concerned that the organization will expect them to work outside of work hours, or that people who work out of work hours will be viewed more favourably, thereby creating pressure for others to do likewise.
- 9. Consider area/district differences when planning and calculating potential impacts and benefits of mobility implementation: to ensure that anticipated benefits are realistic given local contextual factors.
- 10. Consider implementing a series of practical suggestions from staff: to improve the national roll-out of mobility devices /applications, particularly the inclusion of a bracket or mount in the car for the iPad or so that it can be used more effectively and safely, and the option of allocating iPads one per car for GDB (much like the old mobile data terminals (MDTs)), rather than one per person.
 - Officers working 'two-up' tend to only use one device at a time, because one officer is usually driving.

Appendix A:





Appendix B: Methodology

The Evaluation

The evaluation was a combined outcome and process evaluation, using a mixed-methods design.

Its objectives were to examine:

- the usability and usefulness of the mobile devices and applications trialled
- the extent to which the mobility trial demonstrated the expected outcomes, and
- lessons that could be learnt from the implementation of the trial.

Conclusions were reached by triangulating (cross-referencing) the results from:

- 1. Surveys of, and focus groups with, trial participants, on the usability and usefulness of:
 - Smartphones (iPhones or
 - the eQuip application
 - Bail management and Intel noting enhancements to eQuip
 - their laptops/tablets or iPads), and
 - the Mobile for Public Safety (MPS) and Smartphone for Public Safety (SPPS) (Mobile Responder) applications.
- 2. Interviews/focus groups with Communications Centre, Intel and FMC and other staff about the impact of the Mobility trial on them.
- 3. A comparative observational study comparing data from observed shifts of GDB staff in sections with no mobile devices (within the trial sites), with data from observed shifts of trial participants who had all of the mobile devices and functionality.
- 4. Comparative administrative data analysis comparing administrative Police system data from GDB sections with no mobile devices (within the trial sites), with data from trial participants who had all of the mobile devices and functionality.

Development of the outcomes framework and measures using intervention logic

Intervention logic is an exercise that aims to clearly describe an initiative's theory of action and assist those involved to identify the necessary steps to achieve their desired outcomes. It is similar to 'investment logic' now being used to describe the rationale behind investment decisions (see Appendix D for the Mobility Project's Investment Logic Map). Prior to developing the evaluation framework, an intervention logic workshop was held, to identify a series of expected intermediate outcomes for mobility, that would contribute to the key high level outcomes expected. The process also identified a range of data sources that could be used to measure progress towards, or, the achievement of, these outcomes. See Appendix C.

Changes to the original evaluation project plan and an interim report

Because the timeline for preparing the Mobility business case for national roll-out was brought forward to be prepared in September 2012, the evaluation team modified the evaluation plan in order to be responsive and inform the business case. It was changed to:

- undertake a series of focus groups and interviews with trial staff and Communications Centre staff during Jun-Aug, as well as during October/November, so that some of the early impacts of the smartphones and eQuip could be assessed, and
- provide an interim report in August, summarising the data collected from the surveys, focus groups and interviews from first stage of the evaluation.

Focus groups were still conducted in Oct/Nov because staff feedback needed to be gathered on the iPads, MPS and SPPS software, and Bail and Intel enhancements to eQuip.

Participant Surveys

Details of the surveys are outlined in the table below.

Three paper-based surveys were administered to the trial participants in each trial site, at times when they were brought together to receive information and training on the next stage of mobility deployment. They were asked at each session to complete the questionnaire relating to the technology or software that had been deployed at the previous session. The rationale for conducting paper-based surveys in this way was that there was likely to be a higher response rate, than conducting an online survey which officers may not find time to complete. It is interesting, but not surprising, to note that the response rate decreases with each subsequent survey.

One online survey of trial participants was conducted using the Police *Te Puna* online training software. The response rate, while lower than the paper-based surveys, was very good at 66%.

Surveys of 106 trial staff on the usability and usefulness of the following devices/applications ²⁵	Conducted	Length of time they had the technology or software prior to survey	Responses (Response rate %)
Smartphones (paper-based)	May 2012	3 months	87 (82%)
eQuip (paper-based)	Jun-Jul 2012	5 – 6 weeks	78 (74%)
iPad tablet, MPS and SPPS (paperbased).	Jul-Aug 2012	4 weeks (SPPS only 1 week)	75 (71%)
This survey was mostly repeated in an online survey in			
November (see below) because the short time-frame,			
and problems with the technology/connectivity, meant			
that staff had not had sufficient time to experience the			
devices and software or consequently provide			
meaningful responses to the survey questions.			
Bail management and Intel noting enhancements to eQuip as well as a repeat survey on the	Nov 2012	3 months - bail and intel 4 months - iPad	70 (66%)
<u> </u>			
iPad tablet, MPS and SPPS (online Te Puna		and MPS/SPPS	
Survey)	Nov 2012	2-3 months	22 /240/ of
Additional survey of 67 FMC and Intel staff on use of	NOV 2012	2-3 months	23 (34% of
Intel noting enhancements on eQuip (online Te Puna			67)
survey) Only 15 (22%) responded indicating that they			
had used the function – but most did not complete the			
survey as they had not used the software. A further 8			
responded to the survey, but had not used it.			

The paper-based survey data was entered into and analysed using Excel. The online survey data was provided in an excel spreadsheet with summary analysis. It was then imported into SPSS for further analysis.

Limitations of the surveys

Caution should be exercised when interpreting the findings of the surveys, as the number of respondents in each survey was less than 100, so the use of percentages may create an impression of larger differences than

²⁵ Copies of the questionnaires are available in a supplementary document on request from NZ Police Evaluation Services.

the real numbers indicate - for example, where there are 10 respondents in a category, a change of one person is a change of 10%.

Focus Groups / Interviews

Focus groups/interviews ²⁶	Conducted	Length of time they had the technology or software prior to focus group / interview	Number of focus groups/ interviews	Number of participants
With trial participants, on Smartphones and eQuip	Jun-Jul 2012	Phones – 4 months eQuip – 5 weeks	9	41
With Communications staff, on their experiences with mobility	Jul-Aug 2012	Trial staff had technology as above	3	12
With trial participants, on iPad tablet, MPS and SPPS, and the Bail management and Intel noting enhancements to eQuip	Oct-Nov 2012	3 months - bail and intel 4 months - //iPad and MPS/SPPS	22	58
With Communications, FMC, Intel and other staff impacted by the trial, on their experiences with mobility	Oct-Nov 2012	Trial staff had most technology as outlined above. FMC and Intel had access to eQuip approx 2 months.	9	22

Focus groups and interviews were held at two points during the trial. The first round was undertaken specifically to inform the development of the Mobility Business Case which was being considered in September 2012. They informed the findings of the Mobility Evaluation Interim Report prepared in August 2012.

From June to August 2012, 12 focus groups/interviews involving 63 participants, were held across the four trial sites (Counties Manakau West, Hawkes Bay, Lower Hutt, and West Coast). They focussed on the usability and usefulness of smartphones and iPhone) and the eQuip application.

The second round, in Oct-Nov 2012, involved 31 focus groups and interviews across the trial sites, with a total of 80 participants, focussing on the usability and usefulness of the larger iPad devices, the MPS and SPPS event management software, and the Bail management and Intel noting enhancements to eQuip.

The focus groups and interviews were transcribed and analysed for key themes across workgroups and sites using NVivo software as well as traditional methods.

²⁶ Copies of the focus group/interview schedules and information sheets are available in a supplementary document on request from NZ Police Evaluation Services.

Trial participants	Number in	terviewed
Role	1 st round of focus groups	2 nd round of focus groups
	(Jun-Aug)	(Oct-Nov)
GDB Staff	17	33
GDB Supervisors	8	8
CIB	9	9
NPT	7	8
Total	41	58

Other staff involved with	Number interviewed			
or impacted by the mobility trial	1 st round of focus	2 nd round of focus		
Role	groups (Jun-Aug)	groups (Oct-Nov)		
Comms	12	15		
Intel	0	4		
FMC	0	2		
Other	0	1		
Total	12	22		

Observational Study

A substantial observational study was undertaken to compare how staff do their work with and without mobile devices and applications.

Four experienced evaluators (with experience working with Police) were recruited and trained to undertake observations with frontline GDB staff in the trial areas.

There were two sets of observations, each involving 16 staff (4 from each trial site) being observed for 3 full shifts each:

- The Comparison (pre-intervention proxy) Group was observed in April-May 2012. (Note that the
 intervention (Mobility trial) had already begun by the time the observational study could be started, so
 the trial participants could not actually be observed 'pre-intervention'. Officers from comparison, nontrial, sections at the same stations were used instead as a proxy.)
- The Mobility Trial (post-intervention) Group was observed in Sept-Nov 2012.

A purposive sample selection process was used, with Mobility project leads at each trial site and GDB Section supervisors asked to identify a range of staff for the observational study, to ensure a range of age, experience, gender, ethnicity and length of service, while also being limited by which officers were on duty during the selected observation period.

Identified officers were then contacted by the lead evaluator and provided with detailed information sheets about the study, and consent forms. Participation in the observational study was voluntary, and so officers could opt not to participate.

Each observer followed 4 officers for 3 full shifts each (including early, late and night shifts) during each stage. 48 shifts were observed in each set of observations – coming to a total of 96 shifts being observed for the study.

Observers recorded all of the observed officer's activities and how much time they took. This included the amount of time staff spent in and out of the station, returning to the station, using the difference technologies and undertaking different tasks. They also undertook interviews with each officer being observed, in each group, about how they communicate and access or share information.

Observer training and safety

Prior to finalising the data collection tools and developing the observer training, the lead evaluator undertook a trial observation on a night shift in Lower Hutt. This provided valuable insights into how it would be for the observers, and the experience informed decisions about the training required by observers, and protocols for how observer safety should be managed.

The task of undertaking observations on full shifts with frontline Police officers cannot be underestimated in terms of practical difficulty. Observers were required to complete a paper-based data collection sheet, recording their observed officer's every activity, the time it started and finished, what technology was used, etc. Doing this for a full 8-10 hour shift, sometimes in a car a high speed, or while on the beat or attending a scene, was not an easy task.

Observers were provided with a full day of training and preparation so that they could be fully informed about their task. This included an overview and discussion of the data collection tools and requirements (including participant information sheets, consent forms, etc.), a safety briefing, a briefing from the mobility trial staff, and a visit to a communications centre.

Specific communication was also sent to participants in the observational study outlining the evaluation team's duty of care to our observers, with reminders about the organisation's policies around passenger safety.

The observers were provided with mobile phone numbers for the lead evaluator and Evaluation Services Manager. They also came under the care of Police Welfare officers, who contacted them to discuss how to manage their psychological well-being any issues that may be raised through their 'frontline' experiences.

Pilot observations

The first stage of observations was undertaken over a one-week period at the Lower Hutt trial site. This was used to pilot the observation process, and a debriefing session was held with observers during this week to identify and respond to any problems they may have encountered or questions they may have had. This was a valuable process and resulted in some clarification around the data collection and entry requirements.

Data coding and re-coding

The data was entered into excel from the paper-based data sheets by each observer, and the coding then checked and cleaned by the lead evaluator.

Data from the comparison group, on *time spent returning to the station*, was retrospectively re-coded by the lead evaluator into return time that was *avoidable with mobility* (phone calls, emails, checks, supervisor discussions), and *unavoidable* (transporting suspects/offenders, returning for meal breaks, return at end of shift). This was to accurately assess any differences that could be observed between the two groups in the time they spent returning to the station, as it was not realistic to expect all of the return time to be influenced by mobility.

The observers coded these two categories separately themselves during the trial group observations and this was checked for consistency by the lead evaluator—both across observers and with the coding completed on the comparison group. Adjustments were made as necessary to ensure the conditions of *avoidable* and *unavoidable* were appropriately and consistently applied.

Analysis of the observational data

Because of time constraints the analysis focused on key areas of interest—time spent:

- in or out of the station
- returning to the station (avoidable or unavoidable)
- on the radio
- on different types of computer
- on different kinds of technology
- communicating in different ways
- doing various preventative tasks

The analysis used excel and SPSS to look at the average time spent undertaking these activities per officer, per shift, in the two groups. Differences were calculated on the proportion of a shift spent doing these activities, rather than actual time as there was some variability in lengths of shifts worked across the two groups. The statistical significance of differences between the two groups was determined by independent sample t-tests and Mann-Whitney U tests (where necessary) using SPSS.

Limitations of the Observational Study

In interpreting the data from the observational study it is worth considering the following points:

- Some staff reported in focus groups that they were trying to use their more during the observations to show the observer what they were like, even though they had not been using them so much anymore due to connectivity problems.
- Because the Mobility Trial Site leads and Section supervisors were involved in identifying staff who would
 be available to participate in the observations, it is possible that there was a bias towards the highest users
 of the technology.

The observational study instruments, information sheets, consent forms, and data collection sheet etc., are included in a supplementary document available on request from Police Evaluation Services.

Administrative data analysis

Analysis was undertaken to compare the administrative Police system (NIA and CARD) data from GDB sections with no mobile devices (comparison sections within the trial sites), with data from GDB sections of trial participants who had all of the mobile devices and functionality for a one month trial period, September 2012. By this time the officers with mobility devices would have had the opportunity to become familiar with using their devices, although their use of them might be different after further months of embedding the technology and new applications.

As a control mechanism, data from the two groups was also compared for the month of September 2011 to establish whether there were any pre-existing differences between the two groups prior to the introduction of mobility.

The analysis compared the volumes of the following types of activities undertaken by each group:

- Preventative tasks undertaken²⁷
- · QPs and QVRs undertaken

27 (Preventative tasks include: Turnover - 3T Road Checkpoint - 3R Electronic Monitoring Bail Check - 5H Bail Check - 5K Foot Patrol 3F Directed Patrol - 3M Watching/Observations - 3W Licensed Premises Visits - 3H Arrest Warrant - 2W Second Hand Dealer Check - 5V Other Preventative Tasks - 3Z)

- Notings created
- Warrants to Arrest created
- Warrants to Arrest expired
- P1 Events created
- Other Events created

Because the data for some of these activities is recorded at a 'unit' level (such as a car with two officers) rather than, or as well as, at an individual level, the overall analysis was conducted at a group level (i.e. comparison group and mobility trial group).

The results were then averaged out to represent the equivalent volume per officer per average shift. Further information is available on request.

Ethical evaluation and data management

The evaluation was conducted according to the ethical principles and standards of the Australasian Evaluation Society's Guidelines for the Ethical Conduct of Evaluations (1997).

All staff participants in interviews, focus groups and observations participated on a voluntary basis, once the purpose and conditions of participating in the evaluation were explained. Participants were informed that their personal responses would be kept confidential, and informed at what level their information would be reported, for example whether their role and location will be identified in the report.

A number of specific measures were put in place to address the ethical issues related to undertaking observations, including:

- a process for getting the full informed consent of staff being observed
- a process for managing public encounters during observations (re the role of the observer)
- a process for debriefing observers
- a process for managing the health and safety of the observers and the staff they were observing,
 and
- a protocol for observers to use if incidents that disturbed or alarmed them occurred during observations.

The evaluation team complied with the principles of the Privacy Act 1993. Individual participants' information was treated confidentially, which means that raw data was only seen by the evaluators involved in the project, any personal and identifying information was locked in a secure cabinet, and secure-access electronic folders.

Appendix C: Outcomes framework and measures

Table 1: Summary of outcome evaluation methods

		-		Location o	f measure	Timing of measur	re
High level outcome	Intermediate outcome		Qualitative method	Impleme ntation site	Comparison site/group	Pre- implementaton	Post- implementati on
	Officers receive full and accurate information when it is needed	Number of QP and QVRs by QID		V	√	√	√
			Observation	V		√	$\sqrt{}$
			Staff survey/ interviews/ focus groups	√			√
Frontline Police officers receive timely and accurate information to	Improved on the spot decision making		Observation	√		√	√
make informed decisions, enhancing officer and community safety			Staff survey/ interviews/ focus groups	V			V
	Supervisers know location of their staff		Supervisor interviews	√			√
	Improved management of demand - what events they are dealing with and how long events have been waiting	P1 and P2 response times P1 and P2 attendance		V	√	√	V
			Observation	1			$\sqrt{}$
			Staff survey/ interviews/ focus groups	V			√
	More staff agree that they 'have the tools to do the job'		Staff survey/ interviews/ focus groups	√	√	√	√

High level outcome	Intermediate outcome	Quantitative	Qualitative	Location of measure		Timing of measur	e
		measure	method	Impleme ntation site	Comparison site/group	Pre- implementaton	Post- implementati on
Frontline Police officers receive timely and accurate information to	Improved staff perception of safety		Staff survey/ interviews/ focus groups	√			√
make informed decisions, enhancing officer and community safety	Increase in the detection of certain offences	Number of apprehensions by QID			V	√	V
			Staff survey/ interviews/ focus groups	\checkmark			√
	Requests for urgent assistance from other patrol cars are heard immediately, enhancing safety		Observation	√		$\sqrt{}$	√
			Staff survey/ interviews/ focus groups				√

High level outcome	Intermediate outcome	Quantitative	Qualitative	Location of measure		Timing of measure	
		measure	method	Impleme ntation site	Comparison site/group	Pre- implementaton	Post- implementati on
2. Frontline Police officers capture and distribute timely, quality information at source, increasing policing efficiency	Officers spend less time returning to the station	GPS data from i-phones		1			1
			Observation (numeric)	1		1	1
			Staff survey/ interviews/ focus groups	√			√
	Officers spend less time completing administration at the station and more time in the community		Observation (numeric)	1		V	V
			Staff survey/ interviews/ focus groups	√			√
		GPS data from i-phones	rocus groups	√		V	V
	Officers enter intelligence information in real time	Reported time vs entered time by QID		1	V	1	√
			Observation	√		V	V
	Officers record more intelligence	Number and type of notings by creating member QID		1	√	V	V
			Staff survey/ interviews/ focus groups				V
	Reduced data entry	Hours of data entry staff		√		√	√
	Reduced overtime	TOIL by QID		√	√	V	V
			Staff survey/ interviews/ focus groups	√			√

				Location of measure		Timing of measure	
High level outcome	Intermediate outcome	Quantitative measure	Qualitative method	Impleme ntation site	Comparison site	Pre- implementaton	Post- implementati on
	Officers request less information	Volume of		√	√	√	$\sqrt{}$
	by radio - decrease in radio	radio traffic					
	transmissions	Time on radio					
		vs time on					$\sqrt{}$
		mobile device					
			Observation (Comms)	√		$\sqrt{}$	$\sqrt{}$
			Staff survey/				
			interviews/	\checkmark			$\sqrt{}$
			focus groups				
	Security of information - silent, cannot be intercepted		Observation	√		V	$\sqrt{}$
			Staff survey/				
			interviews/	$\sqrt{}$			$\sqrt{}$
			focus groups				
3. Frontline Police officers are less dependent on police infrastructure and colleagues, increasing operating effectiveness	Staff have greater confidence, independence		Observation	1		1	√
	1		Staff survey/				
			interviews/	\checkmark			$\sqrt{}$
			focus groups				
	Reduced Comms workload Frees up Comms staff for		Observation	√			1
	customer-facing activities, time		Staff survey/				
	to focus on major incidents		interviews/	$\sqrt{}$			$\sqrt{}$
			focus groups				
	Radio used less for routine transmissions and more for		Observation	1			$\sqrt{}$
	command and control purposes		Staff survey/				
			interviews/				$\sqrt{}$
			focus groups				
	Staff undertake more proactive activities	Proactive activity codes by QID		V	V	√	√
			Observation,	1			
			interviews/				\checkmark
			focus groups				
			3	Location of measure		Timing of measure	
				Impleme	Comparison	Pre-	Post-

High level outcome	Intermediate outcome	Quantitative	Qualitative	ntation	site	implementaton	implementati
		measure	method	site			on
4. Other impacts or consequences of the introduction of mobile technologies			Observation, interviews/ focus groups	1			√



Appendix E: Introduction to the Mobile Devices and Functionality being trialled

