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## Requirements for a Future Path for Forensic Science in New Zealand

### A submission to Te Ara Paerangi

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*[I have had thirty-eight years service with ESR and its predecessor DSIR as a Forensic Scientist, Science Leader and Crime Scene Labs Manager. I retired in June 2021. I welcome this opportunity to comment on a future pathway for Forensic Science in New Zealand.]*

#### **Summary**

*Forensic Science makes a critical contribution to law and order and security in New Zealand. As such it must be a core government function. Forensic science services must be available to help victims of serious crime; it must be for public good and not for profit. It needs to be locally resourced, so that the science used is relevant to and validated for New Zealand conditions. Forensic evidence is transitory therefore Forensic Scientists must be available locally to get to crime scenes rapidly to preserve and analyse evidence to assist in criminal investigations.*

#### **Purpose of this Submission**

The central theme of this submission is that *Forensic Science needs to be a core government function, provided impartially for the courts and independent from prosecution agencies.* Only as a part of the core government justice system will forensic science work optimally for Police investigators, the courts and most importantly the victims of serious crime in NZ. The current commercial CRI model has a number of limitations discussed below.

Because forensic work incurs high overhead in the commercial CRI model, the amount of the budget available for funding the actual forensic work is reduced. The result of this is that some victims cases do not get forensic services as a part of the investigation.. It is ridiculous for government money, passing from a government department to government owned CRI, to incur an overhead in this way.

As a government core function the forensic science service could be run on a bulk funding model and indeed it has been in the past.

The purpose should be focussed on delivering as much forensic science as possible for the funding available to bring perpetrators of serious crime to justice.

It should be noted that:

#### **1. Forensic Science has developed inconsistently over a long history in NZ:**

The current provision of forensic services in NZ is inconsistent in that some forensic work is carried out within Police as a core government function, while the rest sits with ESR and is subject to a commercial model. There is no logic to this arrangement (Figure 1).

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2. **It is not realistic to buy our forensic services from overseas:**

Forensic evidence is fragile and once deposited at a crime scene it can be rapidly lost. Similarly evidence transferred from the crime scene to the perpetrator will not persist for long. Therefore Police investigators need forensic scientists available at short notice for serious crime scenes. A decentralised crime scene and evidence recovery response is needed to ensure such evidence is found and to enable rapid progress in solving crimes where the **NZ public remain at risk while the offender is at large**. For example urgent work undertaken in unknown offender sexual assaults. The ability to rapidly locate semen stains by chemical testing at the crime scene or on clothing items and then carry out urgent DNA testing and Databank searching has, on numerous occasions, allowed Police to arrest dangerous offenders rapidly. This is why ESR currently operates 3 crime scene and evidence recovery labs, known as the ESR Forensic Service Centres, in Auckland, Wellington and Christchurch. The close proximity to main population centres allows a rapid response to Police callouts and rapid screening of exhibits when required. [Note: about 10 -20% of the Service Centres work will be carried out at the crime scene, the remainder involves screening of exhibits in dedicated laboratories using chemical and immunological tests to locate and identify body fluid stains and other evidence. These are fully equipped science labs that have international accreditation and strict anticontamination protocols to protect evidence.]

Ideally a fourth Forensic Service Centre located in Hamilton should be considered due to changing population demographics.

The required level of service for effective outcomes cannot be delivered from overseas.

3. **Research:**

Research to underpin forensic casework is vital. Much of this is relates to the application of forensic best practice procedures in the NZ environment. Such work validating procedures for NZ specific circumstances is not going to be done for us. This is applied research that needs to be done for the science that will ultimately be used to convict or acquit accused individuals in court. So it has high importance but will struggle to get funding in a contestable process with non-forensic research proposals such as geological hazards research. Examples would be:

- Surveys of DNA profile data for the NZ mixed population. Knowledge of the frequency of DNA profiles in our unique mix of ethnic groups is essential to fairly and accurately weight DNA profile evidence for the courts
- Validation of forensic testing methods for use in NZ conditions

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- Surveys of the occurrence of glass fragments found in our environment for reference in cases involving breaking and transfer of glass. This is to answer the questions like “if this person did not commit the crime how likely is it that they would have glass fragments of a corresponding type on their clothing?”.

In my opinion such forensic research should be funded via the NZ Government **Proceeds of Crime funding**. Currently only government departments involved in investigations that lead to seizure of assets of a person upon conviction have access to this funding (Police, Customs). ESR does not. There is unfair in that ESR involvement in cases does contribute to the fund, for example examining a cannabis hydroponic growing set up to estimate cannabis crop yields over a year and hence income derived from it. Any ESR proposal for access to the funding has to have Police or Customs as a sponsor to apply on their behalf. Obviously they are unlikely to prioritise an ESR application over their own.

The amount of money in this fund has grown markedly over the years and it is used to fund a variety of projects and new technology purchases to assist in the fight against drugs. A government forensic science service should have access to this fund for forensic research projects and equipment that will increase the effectiveness of forensic science in criminal investigations.

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**Key attributes of a quality forensic science service are as follows:**

- 1 **Justice:** forensic science supporting a safe justice system. Any convictions are supported by sound forensic science.
- 2 **Independence:** Science used in the justice system must be free from bias and external pressures. In the current system ESR forensic scientists are well aware of the need, as experts for the courts, to provide unbiased opinions in interpreting evidence. I know that

they hold themselves to the highest standards in this regard. Likewise NZ Police value the independent analysis ESR provides. They are unique in inviting independent scientists to examine their crime scenes. This is a sign that they are carrying out professional investigations seeking to find the truth for the justice system.

However there is still a perception of bias in some quarters due in part to the following factors:

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- Police decide whether or not to use ESR forensic services in a particular crime investigation.
- Police decide which exhibits are brought to the laboratory for examination.
- ESR reports are forwarded to Police only. It is left to Police to disclose findings to defence.
- Defence counsel rarely use ESR services, therefore ESR expert witnesses almost exclusively appear for the prosecution.

Critical success factors in bringing forensic science into core government would be: (i) Preserving the relationship with Police; and (ii). Ensuring the organisation is set up and clearly perceived as an independent entity working for the justice system.

There is the need to provide intelligence information to investigators in confidence during the active investigative stage of a criminal investigation but to be open with the evidential results that will be used in court. This is not a simple matter.

- 3 Quality: Currently ESR provides a high level of quality through participation in the international ANAB Quality Assurance programme (accreditation is a requirement of the Police /ESR forensic Services Level Agreement). ESR staff have a fantastic quality focus; there is a 100% case peer review policy and there is a full time Quality Manager. This must continue to ensure the possibility of miscarriages of justice due to forensic science error are absolutely minimised. Having forensic science as a core government function is an opportunity to set these quality deliverance principles as cornerstones that could not be changed or diluted by negotiation. In a commercial environment there is a risk that the high cost of international accreditation in multiple forensic disciplines leads to managers looking for cheaper options. For example in the UK a fully commercial model applied to forensic science some years ago was an abject failure. The Government was forced to appoint its own Forensic Regulator to develop universal quality standards for all testing carried out by the various commercial companies and to ensure that they were followed.

### **Some Examples of what is not Working Well with Forensic Science within a CRI:**

There have been various forensic funding models over the years (Figure 2)

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I believe that ESR, and particularly the Forensic Business Group staff, have done a very good job in delivering as much public good science they can within the constraints of the CRI commercial model. There are many examples of this. However the current “product for services” model (ESR/Police Service Level Agreement) does not serve victims of crime well. This model results in a government department, who must keep costs low as possible, negotiating a forensic contract with a CRI trying to maximise profits. While this model has been in place for several years there are a number of problems:

- ESR takes a significant overhead. Some of this is justified, for example forensic QA programme costs. However a significant amount goes to corporate overhead including vanity projects like software systems and buildings and a large communications team pushing good news stories for ESR.

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- As a CRI ESR has to operate commercially and tends to prioritise areas of new funding outside forensic science. Forensic funding seems to seek to commercialise new forensic products rather than support BAU.

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- ESR and other CRIs seek to publicise their work. This seems to be aimed at demonstrating science impact and to help lobbying of government. It is entirely appropriate that tax payers are given an understanding of the work CRI's do but in forensic matters some restraint is needed to avoid educating criminals about new techniques and disclosing information that is sub-judicae

### **Conclusion:**

How far Forensic Science should be integrated into core government will require careful consideration. However there is a clear need to "decommercialise" Forensic Science to allow more cases to be processed to better serve the victims of serious crime and the Justice System.

Possibilities would include a forensic science service within an existing government Department such as Justice or Police. The latter however would not best position the service to be seen as independent. It could also stand alone as a government funded agency. The focus needs to be on quality and provision of timely, independent and impartial results both in the investigative phase (Police) and the court phase (Justice).

Whatever model is used there needs to be funding for research and development such as the proceeds of crime fund, to support the ongoing development of casework and to maintain international best practice in techniques and equipment.

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