A report on the monitoring of the infringement notices provisions of *The Criminal Code*

Volume 5: The cost-benefit analysis

Ombudsman Western Australia
Serving Parliament – Serving Western Australians
Volume 5 of 5

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Contact Details

Street Address
Level 2, 469 Wellington Street
PERTH WA 6000

Postal Address
PO Box Z5386
St Georges Terrace
PERTH WA 6831

Telephone: (08) 9220 7555 or 1800 117 000 (free call)
Facsimile: (08) 9220 7500
Email: mail@ombudsman.wa.gov.au
Web: www.ombudsman.wa.gov.au

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Deloitte Access Economics

Ombudsman Western Australia

Cost Benefit Analysis of the Infringement Notices Provisions of *The Criminal Code*

06 April 2017

Deloitte.

Abbreviations

Acronym or abbreviation	Definition
ABS	Australian Bureau of Statistics
BCR	Benefit Cost Ratio
CAGR	Compound Annual Growth Rate
CBA	Cost Benefit Analysis
CCIN	Criminal Code Infringement Notice
DCF	Discounted Cash Flow
DCS	Department of Corrective Services
DOTAG	Department of the Attorney General
FER	Fines Enforcement Registry
IMS	Incident Management System
INP	Infringement Notices Provisions
NPV	Net Present Value
NTIMS	Non-traffic Infringement Management System
OWA	Ombudsman Western Australia
PV	Present Value
WAPOL	Western Australian Police

Glossary

Term	Definition
Assessment case	The alternative state of affairs to the base case (see below), that is, the scenario expected to eventuate following the commencement of the Infringement Notices Provisions of *The Criminal Code*.
Assessment period	The five-year period of time that is covered by the analysis. This includes the monitoring period and a period of four years beyond the monitoring period.
Base case	The state of affairs that would eventuate in the absence of the INP. The results of the cost benefit analysis are measured as the incremental difference between the assessment case and the base case.
CCIN policy	Refers to the policy developed by WAPOL, which guides the operationalisation of the Infringement Notices Provisions following the legislative change.
Fine	A court-ordered fine.
Legislative change	Refers to The Criminal Code amendment following the Criminal Code Amendment (Infringement Notices) Act 2011 and the subsequent Criminal Code (Infringement Notices) Regulations 2015, which provides authorised officers of Western Australia Police with the power to issue an infringement notice under The Criminal Code (i.e. a CCIN) with a modified penalty for prescribed offences.
Magistrates Court	Magistrates Court of Western Australia.
Monitoring period	The period over which the legislation requires the Ombudsman to keep under scrutiny the operation of the Infringement Notices Provisions. This period commenced on 5 March 2015 and ended on 4 March 2016.
Present Value (PV)	Values presented in present terms have been discounted to reflect the time value of money and the uncertainty of future cash flows.
Prescribed offence	The offences for which a Criminal Code Infringement Notice can be issued, namely stealing and disorderly conduct.
Unadjusted Value	Cash flows presented as an unadjusted value have not been discounted to present value terms (see above), and are expressed in real terms.

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Executive Summary

Purpose of this study

The provisions of the *Criminal Code Act Compilation Act 1913*, commonly referred to as *The Criminal Code,* has been amended many times since its initial implementation, although it continues to codify many criminal offences in Western Australia today[1]. One such amendment is provided for in the *Criminal Code Amendment (Infringement Notices) Act 2011* (the Act). The *Act* amended *The Criminal Code* by inserting Chapter LXXIII – Infringement Notices, now referred to as the Infringement Notices Provisions (INP).

Deloitte Access Economics was engaged by Ombudsman Western Australia (OWA) to undertake a cost benefit analysis (CBA) of the Infringement Notices Provisions (INP) of *The Criminal Code*. The objective of the analysis is to estimate the expected net economic benefits and costs to society that arise from the operation of the Infringement Notices Provisions during a one-year monitoring period (5 March 2015 to 4 March 2016) and a further four-year period beyond the monitoring period.

The purpose of this analysis is to assist in fulfilling the Ombudsman's responsibility under Section 723 of The Criminal Code to keep under scrutiny the operation of the provisions and regulations for a period of 12 months after sections 3 and 4 of the Act are proclaimed (operative from 4 March 2015).

Legislation of the Infringement Notices Provisions

The *Criminal Code (Infringement Notices) Regulations 2015* (the Regulations) provides authorised officers of Western Australia Police (WAPOL) with the power to issue an infringement notice with a modified penalty for prescribed offences identified in *The Criminal Code*. These infringement notices are referred to as Criminal Code Infringement Notices (CCINs). The INP came into operation with the Regulations on 4 March 2015.

The prescribed offences under *The Criminal Code* and associated modified penalties of $500 are specified in Schedule 1 of the Regulations. These are:

- Behaving in a disorderly manner:
    - in a public place or in sight or hearing of any person in a public place; or
    - in a police station or lock-up
- Stealing anything capable of being stolen valued at $500 or less.

Objectives of CCINs

Prior to the introduction of the INP, police officers would generally have five discretionary options with which to respond to each of the alleged prescribed offences:

1. Arresting the alleged offender (which involved taking the offender to a police station to be charged)
2. Issuing the alleged offender with a summons to have the alleged offence dealt with at a later time by the court system
3. Issuing the alleged offender with a caution
4. Issuing the alleged offender with a 'move-on' notice
5. Taking no action.

These responses are relevant even in cases that involve relatively minor offences, including those now identified as prescribed offences under the INP.

1 Law Reform Commission of Western Australia: Project 92 - Review of the criminal and civil justice system in Western Australia – Final Report, 1999

The arrest and summons processes in particular remove police officers from frontline duties. Arrests require officers to process alleged offenders immediately following the arrest as part of custodial procedures, and also require significant time commitments at later stages in preparation for hearing and / or trial.

Summonses similarly require significant time commitments from officers in preparation for the later court process, although this prosecution option does not often require officers to immediately undertake custodial procedures as per arrests.

In the context of minor offences such as disorderly conduct and stealing to the value of $500 or less, the arrest and summons processes entail significant opportunity costs for police associated with the custodial process and the prosecution of alleged offenders through the court system. A significant opportunity cost is also imposed on the court system through the prosecution paths of these minor offences.

The INP was primarily introduced as a means of minimising these opportunity costs and optimising the use of police and court time by re-directing the focus and responsibilities to frontline duties and the consideration of serious criminal offences respectively.

The key objectives of the legislative change were outlined in the second reading speech of the *Criminal Code Amendment (Infringement Notices) Bill 2010* in the WA Legislative Assembly:

- To reduce the administrative demands on police in relation to relatively minor offences, by providing a quick alternative to arrest for police officers in dealing with minor matters
- To reduce the time taken by police in preparation for and appearance at court
- To allow police to remain on frontline duties, rather than having to take the offender back to the police station
- To provide an additional general tool in the array of responses available to police
- To provide police with greater flexibility in their response to criminal behaviour
- To save the court system the cost of having to deal with relatively minor offences and thereby reducing both court time and trial backlogs
- To provide a diversionary option for the community as a means of avoiding court appearances for minor offences (where the likely outcome would be a court-ordered fine), while still providing an incentive for behaviour change[2].

A number of economic and social benefits are created in seeking to achieve these objectives, for example through outcomes such as greater availability of police and court time to process more serious offences.

CBA base case and assessment period

The CBA measures the net benefits of the legislative change as the incremental change from a specified base case, to ensure that only the benefits that can reasonably be attributed to the introduction of the legislation are included in the analysis.

To demonstrate the full value from the legislative change, this CBA adopts a 'do nothing' base case, or status quo - a continuation of the existing state of affairs. This implies a scenario where the INP is not implemented, and as such, police officers do not have the option to issue a CCIN to an alleged offender when a prescribed offence has been committed.

In contrast, the 'assessment case' is the current state of affairs - a scenario in which the INP is introduced and deployed over the assessment period.

The net benefits are measured over a 5-year assessment period from March 2015 (commencement of the 12-month monitoring period) to March 2020. This period includes all relevant capital outlays in implementing the legislative change, and the benefits generated from those outlays through to the present year (2016). A four-year future period from the present year (to 2020) is also considered to gauge how net benefits may change in future. This period is as requested by OWA.

2 Extract from Hansard: Assembly – Wednesday, 8 September 2010

Benefits of the Infringement Notices Provisions

Two primary benefits are identified in this study as being relevant and attributable to the objectives of the INP:

- Benefit 1 - a decrease in the opportunity cost of police time
- Benefit 2 - a decrease in the opportunity cost of court time

The definition, rationale and calculation of these costs are outlined in Chapter 3.

As illustrated in Table A, total benefits of approximately $13.1 million are expected to be generated over the five-year period of assessment (in present value terms, or $14.2 million in unadjusted term).

Benefits 1 and 2 are calculated by comparing the number of incidents of arrest and summonses occurring under the base case, against the number of CCINs issued for those same offences under the assessment case. The time savings created for police and the courts as a result of this substitution of arrests and summonses for CCINs form the basis of these benefits.

These benefits were identified through consultation and engagement with OWA, WAPOL and the Magistrates Court regarding the operational advantages yielded from the application of the legislative change during the monitoring period.

A number of other benefits and dis-benefits are relevant although non-quantifiable for the purposes of the CBA. These are discussed in Chapter 6 and include:

- **The intrinsic value of greater frontline policing** - the additional time made available to WAPOL officers as a result of the INP will allow more police officers to remain on frontline duties, creating an increased presence of police in the community. This may lead to a decrease in the incidence of more serious crimes. The value of this avoided crime is challenging to measure, with literature on the subject showing variability in the available approaches[3]
- **The effectiveness of CCINs as a deterrent to future criminal behaviour** - the INP may impose higher future costs on society to the extent that the prosecution of the prescribed criminal activities by way of an infringement notice fails to act as a suitable deterrent to future criminal behaviour among offenders compared to the arrest and summons process[4]
- **Offender employment outcomes** - offenders can avoid criminal records through the issuance of an infringement notice in place of a court conviction[5]. Literature suggests that this benefit to offenders may be significant, as individuals with criminal records have been found to fare worse in the job market, resulting in long-term constrained earning capacity[6]. The benefit of avoiding such circumstances under the assessment case has not been measured due to challenges in establishing the impact of a criminal record incurred as a result of a minor offence on an offender's future employment prospects.

Costs of the Infringement Notices Provisions

Taking all relevant costs into account is important in order to avoid overestimating the net benefits of the legislative change. Two costs are included in the CBA, as follows:

- Cost 1 - Capital development costs of the Non-traffic Infringement Management System (NTIMS)[7]

3 McCollister KE, French MT, Fang H. The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation. Drug and alcohol dependence. 2010;108(1-2):98-109. doi:10.1016/j.drugalcdep.2009.12.002.

4 James Q. Wilson and George L. Kelling (1982), Broken Windows, The Atlantic Monthly; and Centre for Evidence-Based Crime Policy, Broken Windows Policy, Accessed on 4 July 2016. Available from: http://cebcp.org/evidence-based-policing/what-works-in-policing/research-evidence-review/broken-windows-policing/

5 Not all summons and arrests result in criminal convictions affecting an individual's criminal record. Such outcomes will depend on the individual's previous criminal history and nature of the offence.

6 Scott H. Decker, Ph.D., Cassia Spohn, Ph.D. and Natalie R. Ortiz, M.S. Criminal Stigma, Race, Gender, and Employment: An Expanded Assessment of the Consequences of Imprisonment for Employment. Final Report to the National Institute of Justice 2010-MU-MU-004

7 NTIMS is a database and operating system developed to support the operation of the INP. It is used by WAPOL to record all information about CCINs issued. Given that NTIMS was developed to facilitate and support the INP, the cost incurred to develop the system is included as a capital cost in the study and netted against the benefit derived from the implementation and operation of the INP.

- Cost 2 - Annual operating costs of NTIMS

The definition, rationale and calculation of these costs are outlined in Chapter 4. Table A shows that these costs are expected to require a total incremental outlay of $3.8 million over the five-year period of assessment (in present value terms or $3.2 million in unadjusted terms). This includes a netting-off of the residual value of the NTIMS asset at the end of the assessment period. The residual value is netted-off the cost profile of the legislative change to reflect the remaining life of the NTIMS asset in the final year of the assessment period.

A number of other costs were also considered but excluded from the analysis on the grounds that the value of the outlays are immaterial, or of limited relevance to the benefits derived. These costs include the capital renewal outlays related to NTIMS (which occur just outside the assessment period), and the costs incurred in training WAPOL officers and rolling-out the legislative change within WAPOL (a negligible outlay given the change was rolled-out as part of WAPOL's normal operations). Further discussion on these matters is also provided in Chapter 4.

CBA outcomes

Combining the benefits and costs delineated above allows the calculation of the benefit cost ratio (BCR) of the INP. The BCR represents the net financial and economic benefits estimated to arise from the legislative change expressed in the form of a ratio.

Table A summarises all the costs and benefits included in the CBA and details the BCR. In the first year of operation, the legislative change imposes a net *cost* of $3.29 million (in present value terms) to the community. However, over the 5-year assessment period (2015 plus 4-years), it is evident that the legislative change achieves a BCR of **3.47**. This means that for every $1.00 spent by the State Government in implementing and operating the INP, a return of $3.47 is generated in benefits to the community.

Table A – Summary of CBA outcomes – operation of the INP, present value terms*

Modelled benefits / costs	2015	2016	2017	2018	2019	Total
Benefit 1 - Decrease in the opportunity cost of police time	1,069,098	1,722,702	1,678,728	1,635,876	1,594,118	**7,700,522**
Benefit 2 - Decrease in the opportunity cost of court time	741,657	1,194,151	1,163,668	1,133,964	1,105,019	**5,338,459**
TOTAL BENEFITS	**1,810,755**	**2,916,853**	**2,842,396**	**2,769,841**	**2,699,137**	**13,038,982**
Cost 1 - Capital development costs of NTIMS	(4,983,825)	--	--	--	1,743,551^	**(3,240,274)**
Cost 2 - Annual operating costs of NTIMS	(112,238)	(112,238)	(104,895)	(98,033)	(91,619)	**(519,022)**
TOTAL COSTS	**(5,096,062)**	**(112,238)**	**(104,895)**	**(98,033)**	**1,651,932**	**(3,759,295)**
NET BENEFITS	**(3,285,307)**	**2,804,615**	**2,737,501**	**2,671,808**	**4,351,069**	**9,279,686**
BENEFIT COST RATIO	**--**	**--**	**--**	**--**	**--**	**3.47**

Source: Deloitte Access Economics. *Calculated at a 7.00% discount rate. ^Adjustment to recognise the residual value of the asset at the end of the assessment period.

This represents a very strong return to the community from implementation of the legislation and is reflective of the relatively low costs incurred in implementing and operating the INP relative to the benefits yielded by way of reducing the opportunity costs of police and court time.

Total estimated benefits from the legislative change equate to $13.04 million (in present value terms or $14.25 million in unadjusted terms) over the assessment period.

Some 59 percent ($7.70 million in present value terms or $8.41 million in unadjusted terms) of the total benefit estimated accrues to WAPOL officers in the form of reduced opportunity costs (measured by time savings). Operational efficiencies realised by the Magistrates Court account for the remaining 41

percent ($5.34 million in present value terms or $5.83 million in unadjusted terms) of the total benefits. This is as a result of cases that are avoided under the operation of the INP.

Sensitivity tests

A number of sensitivity tests are also conducted against the BCR calculated in Table A by varying key assumptions and parameters (see Chapter 5.3). This allows for the relative impact that these assumptions and parameters have on the net benefit of the legislative change to be gauged and considered. Six sensitivity tests are conducted in total, including:

1. Test 1 - Varying the discount rate used in the discounted cash flow analysis
2. Test 2 - Including the OWA monitoring cost
3. Test 3 - Adjusting the allocation of NTIMS capital and operating costs to the INP
4. Test 4 - Including infringement revenue as a benefit
5. Test 5 - Applying different rates of growth in issuance of CCINs
6. Test 6 – Varying the time savings for police.

Tests 3 and 4 cause the BCR to increase from 3.47, while tests 2 and 6 cause the BCR to decline. The impact of tests 1 and 5 on the BCR depend on the test parameters adopted under each test (e.g. the BCR can move up or down depending on the discount rate or the CCIN growth rate adopted). The BCR does not fall below 1.00 under any of the individual tests applied, indicating that the legislative change returns a net benefit to society even as key assumptions are modified.

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1 Background

1.1 Scope of this engagement

Deloitte Access Economics was engaged by Ombudsman Western Australia (OWA) to undertake a cost benefit analysis (CBA) of the INP of *The Criminal Code*. The objective of the analysis is to estimate the expected net economic benefits and costs to society that arise from the operation of the INP during a one-year monitoring period (5 March 2015 to 4 March 2016) and a further four-year period beyond the monitoring period.

The purpose of this analysis is to assist in fulfilling the Ombudsman's responsibility under Section 723 of The Criminal Code to keep under scrutiny the operation of the provisions and regulations for a period of 12 months after commencement.

1.2 Legislative context

1.2.1 The Criminal Code

In Western Australia, British common law (also known as 'judge-made' or 'case' law) forms the basis of the State's criminal law. To provide a legislative basis for the criminal law, a Code of Criminal Law was enacted in Western Australia in 1902. In the subsequent years, several amendments were made to the legislation and in 1913, the Code of 1902 and its successive amendments were compiled in the *Criminal Code Compilation Act 1913*.

The provisions of the *Criminal Code Act Compilation Act 1913* are more commonly referred to as *The Criminal Code*. Although the legislation has been amended many times in the following years, it continues to codify many criminal offences in Western Australia today[8]. One such amendment is provided for in the *Criminal Code Amendment (Infringement Notices) Act 2011* (the Act).

1.2.2 The Criminal Code: Infringement Notices Provisions

1.2.2.1 Legislation of the Infringement Notices Provisions

The *Criminal Code Amendment (Infringement Notices) Act 2011* amended *The Criminal Code* by inserting Chapter LXXIII – Infringement Notices, now referred to as the Infringement Notices Provisions (INP). Under this amendment, Section 721 permits that regulations may be made to allow infringement notices to be issued for offences under *The Criminal Code*, and that *The Criminal Code* is considered a prescribed Act for the purposes of Part 2 of the *Criminal Procedure Act 2004* (CP Act).

Part 2 of the CP Act provides procedures for dealing with alleged offenders without prosecution, which includes the issuance of infringement notices for prescribed offences. Under Section 5, the regulations made under a prescribed Act may prescribe an offence under the Act as an offence for which an infringement notice can be issued under the CP Act, along with a modified penalty applicable for each prescribed offence.

The *Criminal Code (Infringement Notices) Regulations 2015* (the Regulations) thus provides authorised officers of Western Australia Police (WAPOL) with the power to issue an infringement notice with a modified penalty for prescribed offences identified in *The Criminal Code*. These infringement notices are referred to as Criminal Code Infringement Notices (CCINs). The INP came into operation with the Regulations on 4 March 2015.

8 Law Reform Commission of Western Australia: Project 92 - Review of the criminal and civil justice system in Western Australia – Final Report, 1999

1.2.2.2 Prescribed offences and modified penalty

The prescribed offences under *The Criminal Code* and associated modified penalties are specified in Schedule 1 of the Regulations. These are outlined in Table 1-1.

Table 1-1- Prescribed offences and modified penalties

Offences under *The Criminal Code*		Modified Penalty
s. 74A(2)	Behaving in a disorderly manner: a) in a public place or in sight or hearing of any person in a public place; or b) in a police station or lock-up	$500
s. 378	Stealing anything capable of being stolen	$500

Source: Criminal Code (Infringement Notices) Regulations 2015

Section 5 of the Regulations also outlines additional criteria which would prevent a CCIN from being issued. These are as follows:

- if, on the day on which the alleged offence is believed to have been committed, the alleged offender is under 17 years of age; and/or
- if the alleged offence is for stealing under Section 378 of *The Criminal Code*, and the value of the item alleged to have been stolen exceeds $500.

A WAPOL CCIN policy has also been developed to assist officers to operationalise the INP. While this policy is not regulatory in nature (i.e. it does not *prescribe* circumstances in which officers should and shouldn't issue a CCIN), it does provide direction on circumstances where a CCIN is not appropriate for an offender, within the requirements of the Regulations. For example, the policy encourages officers not to issue a CCIN for repeat offenders.

1.2.2.3 Monitoring by the Ombudsman

Section 723 of The Criminal Code provides that the Ombudsman is to keep under scrutiny the operation of the provisions and regulations for a period of 12 months after commencement[9].

The monitoring period commenced on 5 March 2015 – one day after the commencement of operation of the Regulations – and as such, the analysis presented in this report establishes its conclusion as 4 March 2016. Further details about the monitoring period, including the gradual adoption and increasing use of CCINs by police officers as a response to alleged prescribed offences, is discussed in Appendix A (Section 7.4) of this report.

1.2.2.4 Objectives of the legislative change

Prior to the introduction of the INP, police officers would generally have five discretionary options with which to respond to an alleged prescribed criminal offence:

1. Arresting the alleged offender (which involved taking the offender to a police station to be charged)
2. Issuing the alleged offender with a summons to have the alleged offence dealt with at a later time by the court system
3. Issuing the alleged offender with a caution
4. Issuing the alleged offender with a 'move-on' notice
5. Taking no action.

These responses are relevant even in cases that involve relatively minor or low-level offences, including those now identified as prescribed offences under the INP.

The arrest and summons processes in particular remove police officers from frontline duties. Arrests require officers to process alleged offenders immediately following the arrest as part of custodial procedures, and also require significant time commitments at later stages in preparation for hearings and / or trial. Summonses similarly require significant time commitments from officers in preparation for

9 This report has been prepared to assist the Ombudsman in fulfilling this responsibility.

the later court process, although this prosecution option does not often require officers to immediately undertake custodial procedures as per arrests.

In the context of minor offences such as disorderly behaviour and stealing to the value of $500 or less, the arrest and summons processes entail significant opportunity costs for police associated with the custodial process and the prosecution of offenders through the court system. A significant opportunity cost is also imposed on the court system through the prosecution paths of these minor offences.

The INP was primarily introduced as a means of minimising these opportunity costs and optimising the use of police and court time by re-directing the focus and responsibilities to frontline duties and the consideration of other criminal offences respectively.

The key objectives of the legislative change were outlined in the second reading speech of the *Criminal Code Amendment (Infringement Notices) Bill 2010* in the WA Legislative Assembly:

- To reduce the administrative demands on police in relation to relatively minor offences, by providing a quick alternative to arrest for police officers in dealing with minor matters
- To reduce the time taken by police in preparation for and appearance at court
- To allow police to remain on frontline duties, rather than having to take the offender back to the police station
- To provide an additional general tool in the array of responses available to police
- To provide police with greater flexibility in their response to criminal behaviour
- To save the court system the cost of having to deal with relatively minor offences and thereby reducing both court time and trial backlogs
- To provide a diversionary option for the community as a means of avoiding court appearances for minor offences (where the likely outcome would be a court-ordered fine[10]), while still providing an incentive for behaviour change[11].

A number of economic and social benefits are created in achieving these objectives, for example through outcomes such as greater availability of police and court time to tackle other offences.

The strategy itself is not a new concept; infringement notices have long been available to police in Western Australia as a means of dealing with alleged offenders without prosecution (where a prescribed offence has been committed under an Act that is a prescribed Act under the CP Act).

However, these prescribed offences have historically been those considered regulatory in nature (for example parking and minor traffic offences, fare evasion and littering). In addition, the introduction of the INP is representative of an emerging shift by governments interstate and overseas[12] to expand the use of infringement notices into minor offences characterised as criminal in nature.

10 A fine imposed in the Magistrates' Court may be with or without a conviction and may be imposed by itself or in addition to another penalty. In addition to a fine, a magistrate can make a number of other monetary orders, including orders that one party pay the costs of the other or the cost of attending court to a witness in the proceeding, that one pay restitution or compensation to a victim of a crime.

11 Extract from Hansard: Assembly – Wednesday, 8 September 2010

12 In Australia, the use of infringement notices for criminal offences is currently applied in New South Wales (http://www.police.nsw.gov.au/community_issues/the_law_and_you/criminal_infringement_notices) and Victoria (http://online.fines.vic.gov.au/fines/Content.aspx?page=93), while the United Kingdom also has a similar approach (http://www.btp.police.uk/advice_and_information/travelling_safely/penalty_notice_for_disorder.aspx)

2 Methodology

2.1 About cost benefit analysis

2.1.1 What is cost benefit analysis?

CBA is a tool that supports evidence-based policymaking and can be used widely for this purpose. The basis of a CBA is simple: for a given policy proposal, it compares the total forecast costs to the community and economy with the total forecast benefits, to consider whether the benefits outweigh the costs, and if so, to what extent.

2.1.2 When to undertake cost benefit analysis?

CBAs are often undertaken to support decision-making of governments at all levels regarding investment. For example, CBAs are the preferred tool of quantitative assessment under Western Australia's Department of Treasury's Strategic Asset Management Framework (SAMF). However, CBAs can also be used to evaluate policy decisions about taxation, regulation and program spending (as is the case for the CBA undertaken for OWA as part of this engagement).

The CBA is a valuable assessment tool given that governments desire to minimise the costs to society from their decision-making while maximising benefits. Where government outlay is required, the rationale for CBAs is stronger still given that public funds come at a significant cost to Australian society, through taxes collected by local, State and Territory, and Commonwealth governments.

If governments had not collected these taxes, the funds would have been available to private individuals and businesses to spend, save or invest. It is therefore in the interests of all Australians that government expenditure and decision-making prioritises policies and investments that generate the largest net benefits for society. When this occurs, taxation and government effort yields substantial rewards to the Australian community and supports the economy.

The basis of a CBA is simple. For a given policy proposal, it compares the total forecast costs to the community and economy with the total forecast benefits, to consider whether the benefits outweigh the costs

2.1.3 The logic of cost benefit analysis

In undertaking a CBA, the total forecast benefits of a proposal are compared to the total forecast costs in a discounted cash flow (DCF) framework, to determine whether the benefits exceed the costs in present value (PV) terms. This net difference is also expressed in the form of a ratio, referred to as the benefit cost ratio (BCR).

A BCR greater than one indicates that net benefits from the option to society are greater than net costs, suggesting value in investing in the option. The reverse is true if the BCR is below one.

A simpler way of interpreting the BCR is as an economic and financial return on investment – for every $1.00 of cost or outlay incurred; how many dollars are yielded back as a benefit to society.

In this way, a CBA provides a framework for analysing information in a logical and consistent manner. It can assist policymakers to determine which policy most effectively and efficiently achieves a stated objective, or to prioritise the most beneficial of a suite of potential policy options. It can also be used to optimise the level of funding allocated to a specific policy or to deliver the greatest benefit from a policy for a given budget.

2.2 Approach in undertaking this cost benefit analysis

Five key steps have been undertaken to perform this CBA:

- Step 1 - Definition of the base case
- Step 2 - Definition of the assessment period
- Step 3 - Benefit specification and estimation
- Step 4 - Cost specification and estimation
- Step 5 - DCF modelling

Each step is described in more detail below

2.2.1 Step 1: Definition of the base case

Defining a counterfactual scenario or base case is a critical component of a CBA. The net benefits of the policy are measured as an incremental change from the specified base case, to ensure that only the benefits that can reasonably be attributed to the policy are included in the analysis. It is therefore important to specify an appropriate and reasonable base case for the analysis, so it is clear from what base the incremental values have been calculated.

To demonstrate the full value from the policy, this CBA adopts a 'do nothing' base case, or status quo - a continuation of the existing state of affairs. This implies a scenario where the INP is not implemented, and as such, police officers do not have the option to issue a CCIN to an alleged offender when a prescribed offence has been committed.

In contrast, the 'assessment case' is the current state of affairs - a scenario in which the INP is introduced and operational over the assessment period. The incremental difference between the costs and benefits realised under these two scenarios forms the basis of the CBA.

Further detail on the key assumptions underpinning the formulation of the base case is provided in Appendix A part 7.2.

2.2.2 Step 2: Definition of the assessment period

The length and timing of the assessment period are also critical considerations for the CBA. The length of the period will dictate the quantum of the net benefits generated from the policy change. Generally, a longer assessment period will result in larger net benefits, as the benefit streams tend to grow and accumulate over time following the initial financial outlays (net of any renewal capital outlays and discounting effects).

The timing of the assessment period is also critical. The timing should allow for all relevant costs and benefits applicable under the chosen framework of analysis to be included.

In this case, a 5-year assessment period from March 2015 (commencement of the monitoring period) to March 2020 is utilised. This period includes all relevant capital outlays in implementing the INP change, and the benefits generated from those outlays through to the present year (2016). A four-year further period from the present year (to 2020) is also considered to gauge how net benefits may change in future. This period is as prescribed by OWA.

2.2.3 Step 3: Benefit specification and estimation

A CBA must consider all relevant, quantifiable benefits related to the implementation and operation of a policy. In this case, benefits are considered from the perspective of the government and community of Western Australia in implementing the INP.

In determining which benefits to measure, it is important to first consider the objectives of the policy being assessed. The objectives will be associated with target outcomes which will in turn be expected to generate certain benefits.

From review of the second reading speech and following consultation with OWA and WAPOL, two benefits were identified as directly attributable to the INP and included in the CBA:

- Benefit 1 - a decrease in the opportunity cost of police time
- Benefit 2 - a decrease in the opportunity cost of court time

Benefits 1 and 2 are calculated by comparing the number of incidents of arrest and summonses occurring under the base case against the number of CCINs issued for those same offences under the

assessment case. The time savings created for police and the courts as a result of this substitution of arrests and summonses for CCINs form the basis of these benefits.

The definition, rationale and calculation of these costs are outlined in Chapter 3.

A number other benefits were also considered but excluded from the analysis due to an inability to credibly quantify the value of the benefit. These benefits are addressed in qualitative terms in Chapter 6.

2.2.4 Step 4: Cost specification and estimation

Similar to benefits, a CBA must also consider all relevant, quantifiable costs related to the implementation and operation of a policy. In this case, costs are considered from the perspective of the government and community of Western Australia in implementing the INP. Relevant costs are those associated with achieving the related benefits. Taking all relevant costs into account is important in order to avoid overestimating the net benefits of the given policy.

Two costs are included in the CBA, as follows:

- Cost 1 - Capital development costs of the Non-traffic Infringement Management System (NTIMS)[13]
- Cost 2 - Annual operating costs of NTIMS

The definition, rationale and calculation of these costs are outlined in Chapter 4.

A number of other costs were also considered but excluded from the analysis on grounds of being relatively immaterial in value or of limited relevance. These costs include the capital renewal outlays related to NTIMS (occurring just outside the assessment period), and the costs incurred in training WAPOL officers and rolling-out the INP within WAPOL (a negligible cost given the INP was implemented as part of WAPOL's normal operations). Further discussion on these matters is also provided in Chapter 4.

2.2.5 Step 5: Discounted cash flow (DCF) modelling

The values of costs and benefits related to the INP that are expected to occur over the assessment period are presented as either 'unadjusted values' or 'present values'.

'Present values' are discounted to account for time-value of money and the uncertainty of future cash flows using a traditional DCF framework. A discount rate of 7 percent per annum has been adopted in this analysis for these values (although a sensitivity test in Chapter 5.3 investigates how the results of the CBA change with a lower bound discount rate of 4 percent and an upper bound discount rate of 10 percent). The total present value of benefits is divided by the total present value costs to derive a BCR.

No discounting has been applied to cash flows described as 'unadjusted values'. These values are presented simply in real terms (i.e. excluding inflation).

2.3 Supporting activity

2.3.1 Consultations

Deloitte Access Economics consulted with selected stakeholders to understand the INP and to validate key assumptions that would be integral to the analysis. A summary of the key groups consulted during the engagement is provided below.

Ombudsman Western Australia

The CBA has been undertaken to assist the Ombudsman in fulfilling his monitoring role, which includes the development of a broader report on the operation of the INP. In the course of preparing the report, OWA consulted widely with WAPOL, DOTAG and the Magistrates Court and other stakeholders and also requested specific data. This allowed OWA to develop a thorough understanding of the key issues relevant to the INP. OWA subsequently debriefed the Deloitte Access Economics project team regarding the outcomes of various consultations and on the nature and nuances of the data received from various sources (see Chapter 2.3.2 below for more information on data sources).

13 NTIMS is a database and operating system developed to support the operation of the INP. It is used by WAPOL to record all information about CCINs issued. Given that NTIMS was developed to facilitate and support the INP, the cost incurred to develop the system is included as a capital cost in the study and netted against the benefit derived from the implementation and operation of the INP.

Western Australia Police

WAPOL were engaged on three occasions to support the development of the CBA. The Assistant Commissioner Regional Western Australia was engaged to discuss the implications of the INP on WAPOL from an executive management perspective. Specifically, this engagement helped to clarify aspects of implementation and operation of the INP within WAPOL, and the nature of the benefits accruing to police from the legislative change.

A workshop was also held with WAPOL officers to gain further understanding of the time costs involved in engaging in an arrest, issuing a summons, and issuing a CCIN for the prescribed offences. Workshop participants represented a cross-section of senior and frontline officers who were able to provide consensus estimates of the approximate time required to undertake each of the relevant police responses to the prescribed offences. The data collected during this workshop forms a critical input to the analysis.

Finally, a representative from WAPOL's Business Information Systems team was also engaged to understand the timing and nature of costs incurred in establishing the technology platform required to record CCINs offences. These conversations helped to inform the assumptions made regarding the capital and operating costs related to the legislative change.

2.3.2 Data compilation and sources

The availability and quality of data was critical to the CBA undertaken given the complexity arising from the various transition paths possible between the base and assessment case scenarios. Although the short duration of the INP monitoring period was somewhat of a limitation, the availability of source data (i.e. actual data that has been collected by OWA for the purpose of undertaking this analysis) in general allowed a robust set of assumptions and projections to be compiled (see Chapter 7 for further details on key assumptions). Through OWA, access was granted to the following data sources, which helped inform the study:

- **Non-Traffic Information Management System (NTIMS): CCIN activity data (*WAPOL)***. This data source contained information relating to the issuance of CCINs over the monitoring period. This data was critical in informing numerous assumptions about the outcomes realised in the assessment case. For example, CCIN data was a key input in estimating the number of arrests and summons avoided under the assessment case – a key driver of benefits.
- **Magistrates Court data (*Court and Tribunal Services*).** This data source contained the value of court fines issued to persons who committed disorderly conduct and stealing offences. A process was undertaken to filter cases, to ensure that only those broadly comparable to CCIN offences were included to inform the analysis. The average value of fines and payment rates were used as key assumptions in the analysis to develop the base case outcomes.
- **Fines Enforcement Registry (FER) data: cases referred from CCIN recipients (*Department of the Attorney General*).** This data source contained 759 CCINs that have been referred to FER. It also identified CCINs that have been paid, entered into a 'time-to-pay' agreement, and those for which an enforcement warrant has been issued. This data informed the assumption developed for the rate of CCIN payment following referral to FER.
- **FER data: cases referred from WA Courts (*Department of the Attorney General*).** This data source contained all court fines (34,685)[14] that have been referred to FER over a 20 year period. This data was used to develop assumptions regarding the rate of CCIN payment following referral to FER (rather than the CCIN-specific data identified above).
- **Incident Management System (IMS): activity for stealing and disorderly offences between 2011 and 2016 (*WAPOL).*** This data source contained information on summonses and arrests in response to stealing and disorderly conduct offences for the past five years. This data was used as a benchmark to establish police responses under the base case.
- **'Briefcase' and IMS data: combined data sources provide disorderly conduct activity during 2014 and 2015 (*WAPOL*)**. This data source contained the number of disorderly conduct offences committed during the one year prior to the monitoring period (5 March 2014

14 Note that the DoTAG case classification of this cohort are as follows: 1) Behaving in a disorderly manner in a public place or in sight or hearing of any person in a public place, 2) Behaving in a disorderly manner in a police station or lock-up, 3) Disorderly behaviour in public and 4) Disorderly behaviour in a police station or lockup.

and ended on 4 March 2015, and during the monitoring period itself (5 March 2015 and ended on 4 March 2016). This information was used to compare forecast and actual disorderly offences over the assessment period.

2.3.3 Model development

Initial scoping

Prior to establishing the CBA model, it was critical to establish a thorough understanding of the implications of the INP. This understanding was developed through a review of literature related to the INP, and further enhanced by a number of consultation sessions with OWA.

The purpose of this step was to identify the key benefits arising from the legislative change and the potential approaches that could be applied in their measurement. This was a critical first step that helped to refine the scope of the analysis and identify the data that would be required.

Assumption development

Having refined the scope of the analysis, data requirements were identified to inform key assumptions. OWA requested and was provided data from relevant sources (see Chapter 2.3.1 above); Deloitte Access Economics undertook analysis of the data and regularly confirmed its approach and findings with OWA. The majority of key assumptions have been developed based on source data (i.e. actual data that has been collected by OWA for the purpose of undertaking this analysis).

The relatively short monitoring period for the INP was perhaps the main limitation in developing the assumptions. This limited the volume of data available from which critical assumptions about the assessment case could be made. For example, data from the 12-month monitoring period reveals a number of trends, which are assumed to continue over the assessment period. In using historic outcomes as a basis for forecasts, it is preferable that a time series of data and information longer than 12 months in duration is available.

In recognition of these limitations, the sensitivity of key assumptions and the associated impact on the BCR is discussed in Chapter 5.3.

Model development

A Microsoft Excel-based CBA model was built following the development of the assumptions. Due to the complexity of the analysis (the model defines a number of 'transition paths' between the base case and assessment case), the development of the model involved creating a number of bespoke features to allow dynamic measurement of benefits. Key features of the model include:

- *Assumptions*: all assumptions in the analysis are contained within the model, with links to source data where possible.
- *Monthly transitions*: the model clearly identifies the number of offenders transitioning through each stage in the analysis. This allows the relative value of each benefit associated with each process stage to be identified and compared.
- *Cash flow*: the summary output of present value (or discounted) costs and benefits is presented on the cash flow sheet. This summary presents the timing and values of each of the costs and benefits. This sheet also provides the functionality to toggle key assumptions within the model which demonstrate the sensitivity each has on the overall BCR.
- *Data*: The various source data relied upon to develop assumptions in the study are available on separate sheets in the model.

3 Benefits

3.1 Summary of benefits

As noted in Chapter 2.2.3, two primary benefits were identified for assessment. These are:

- Benefit 1 - a decrease in the opportunity cost of police time
- Benefit 2 - a decrease in the opportunity cost of court time

These benefits were identified through consultation with OWA, WAPOL and the Magistrates Court regarding the operational advantages yielded from the application of the legislative change during the monitoring period. A number of other benefits are relevant although non-quantifiable for the purposes of the CBA. These are discussed in Chapter 6.

As illustrated in Table 3-1, total benefits of approximately $14.25 million over the five-year period of assessment (unadjusted values[15]) are estimated under the assessment case. Note that the values shown in Table 3-1 differ from those shown in Table A in the Executive Summary due to the effect of discounting. The values in Table A are discounted to present value terms at a 7.00% discount rate.

Each of the benefits comprises a number of components. A summary of the benefits and associated components arising from the INP are discussed in this chapter. This includes a description of each benefit, the rationale for including each in this study, and the mechanics of the benefit calculation.

Table 3-1- Summary of the INP benefits over the assessment period, unadjusted values (unless otherwise indicated)

Modelled benefits	2015	2016	2017	2018	2019	Total
Benefit 1 - Decrease in the opportunity cost of police time	**1,069,098**	**1,722,702**	**1,796,239**	**1,872,915**	**1,952,864**	**8,413,817**
1.1 Time saving from avoided arrests and summons	478,602	770,213	803,091	837,372	873,117	**3,762,394**
1.2 Time cost for CCINs involving custodial procedures	(78,524)	(124,977)	(130,312)	(135,875)	(141,675)	**(611,362)**
1.3 Time saving from avoided court attendance	696,184	1,120,366	1,168,191	1,218,058	1,270,053	**5,472,853**
1.4 Time cost for CCINs elected to go to court	(27,164)	(42,900)	(44,731)	(46,641)	(48,632)	**(210,067)**
Benefit 2 - Decrease in the opportunity cost of court time	**741,657**	**1,194,151**	**1,245,125**	**1,298,276**	**1,353,695**	**5,832,904**
2.1 Time savings from avoided court cases	761,788	1,225,943	1,278,274	1,332,840	1,389,735	**5,988,579**
2.2 Time cost for CCINs elected to go to court	(20,131)	(31,792)	(33,149)	(34,564)	(36,040)	**(155,675)**
TOTAL BENEFITS (unadjusted)	**1,810,755**	**2,916,853**	**3,041,364**	**3,171,191**	**3,306,559**	**14,246,721**
TOTAL BENEFITS (PV[16])	1,810,755	2,916,853	2,842,396	2,769,841	2,699,137	13,038,982

Source: Deloitte Access Economics. Note: totals may not add due to rounding

15 No discounting has been applied to cash flows described as 'unadjusted values'. These values are presented simply in real terms (i.e. excluding inflation). Outcomes in 'present value terms' (i.e. discounted to reflect the time value of money and uncertainty of future cash flows) are presented in Chapter 5.

16 Present value - values presented in present terms have been discounted to reflect the time value of money and the uncertainty of future cash flows.

3.2 Benefit 1 - Decrease in the opportunity cost of police time

3.2.1 Description and rationale

The INP allows WAPOL officers responding to a prescribed offence to deal with an offender more quickly, relative to the time involved in undertaking an alternative prosecution path. In particular, the alternative paths of arrests and summonses often require officers to spend significant amounts of time and resources carrying out custodial duties, and in preparing for related hearings and trials post custody[17].

As such, the INP yields a benefit to society in the form of a reduced opportunity cost of police time. That is, officers are able to spend more time on frontline duties, which increases community benefit through a greater presence of police in the community, and a greater focus of police on more serious offences.

This benefit is measured by the time avoided by police under the assessment case that would typically otherwise be incurred in carrying out custodial duties and in preparing for and appearing at hearings and trials for cases involving the prescribed minor offences[18].

These time savings have been estimated as an increment against the base case and applied to all relevant offences that occurred during the monitoring period, and those offences expected to occur during a period of four years from the monitoring period (this is termed the 'assessment period' – see Chapter 2.2.2). There are two key components of Benefit 1:

- **Component 1.1 - time saving from avoided arrests and summons** - the custodial time avoided by police officers in issuing a CCIN, rather than making an arrest or issuing a summons
- **Component 1.3 - time saving from avoided court attendance** - the court preparation and appearance time avoided by police officers in issuing a CCIN, rather than making an arrest or issuing a summons.

The above time savings are netted-off against related time costs incurred under the assessment case. These time costs include:

- **Component 1.2 – time cost for CCINs involving custodial procedures** – while the issuance of most CCINs avoid the need to take the alleged offender into custody, some still require certain custodial duties to be performed, such as the recording of photographic, fingerprint identification and DNA data. Where this is the case, this component gauges this additional time cost to the police
- **Component 1.4 - time cost for CCINs appealed** - being an infringement notice, an alleged offender may elect to have the CCIN reviewed. This subsequently requires officers to prepare for the related hearing (as per the base case in regard to arrest and summonses). This component gauges the court preparation and appearance time incurred by police officers upon appeal.

The net time savings yielded to police officers (i.e. the sum of benefit components 1.1 and 1.3, less the sum of components 1.2 and 1.4) is recognised as a benefit reflecting the reduced opportunity cost of police time from the operation of the INP.

The key aspects of the calculation are discussed below according to each of the four components described above.

3.2.2 Benefit calculation

3.2.2.1 Component 1.1 - time saving from avoided arrests and summons

The issuance of a CCIN by a police officer under the assessment case is assumed to replace the base case policing response of an arrest, summons, caution, move-on notice, or other informal action not

17 The issuance of a CCIN can be contested by the alleged offender in court, which requires a similar preparation time on behalf of police as an arrest or summons, although this occurrence was rare during the implementation period.

18 It is recognised that time savings achieved from the legislative change do not precisely reflect the benefit to the community of greater police presence and focus on serious crime. Due to limitations in valuing such outcomes, this study utilises the value of the time savings realised by WAPOL officers as a result of the INP as a proxy for these target outcomes. This aspect is discussed in greater detail in Chapter 6.3.

resulting in custody or court appearance (e.g. a de-escalating discussion, or release upon the wishes of the victim, which is most applicable to stealing in the retail environment[19]).

The estimated value of the benefit only extends to offences that under the base case would have been dealt with through an arrest or summons. This is because a proportion of CCINs issued during the monitoring period are 'additional', that is, these offences are prosecuted by police in the assessment case (by issuing a CCIN) purely as a result of officers having the CCIN as new tool of prosecution.

Under the base case, it is assumed that these offences are unlikely to have been prosecuted by means of arrest or summons, and may have alternatively been treated by way of a caution, move-on notice, or some other informal action not resulting in custody (the assumptions utilised to generate the number of offenders who are dealt with by means of one of the police responses are described in Appendix A part 7.3).

In this context no benefit was assigned to the prosecution of these 'additional' prescribed offences using CCINs given that the time saving to police is non-existent compared to dealing with the offence by means of caution, move-on notice or other informal action. The time costs related to such actions are identical to CCINs in that police time is not expended on custodial or court duties.

For these reasons, a time saving benefit has not been estimated for CCINs issued to alleged offenders committing *stealing* offences [20]. This is due to the approach applied to forecast the rate of substitution between arrests and summonses and CCINs beyond the monitoring period.

The rate of substitution for stealing offences is based on the difference between the forecast growth in stealing offences and the actual growth in stealing offences observed during the monitoring period. Substitution between arrests and summonses for stealing offences and CCINs are only assumed to occur if the forecast growth in stealing offences is greater than the actual growth in stealing offences observed during the monitoring period.

The forecast growth in stealing offences is based on the rate of growth of theft in WA between 2009-10 and 2015-16. During this period, the rate of growth in theft (5.8 percent compound annual growth) has actually been lower than the growth arrests and summonses for stealing observed during the monitoring period (7.6 percent and 14 percent respectively).

Therefore, the forecasting method employed suggests that future growth in issuances of CCINs for stealing are not necessarily occurring *in place* of arrests and summonses, but rather are 'additional', that is likely occurring in place of cautions, move-on notices or other informal actions.

Therefore, no substitution is assumed to occur, and no benefit is assigned to CCINs issued for stealing.

The overall outcome of this suggests that all CCINs issued for stealing offences in future are *entirely* 'additional' under the assessment case, and are therefore not issued in place of an arrest or summons under the base case. Further details on this approach are contained in Appendix A part 7.3.

There are two critical parts to the calculation of component 1.1:

- Police officer labour costs[21]
- Time taken by police officers to engage in custodial duties.

These aspects and how they affect the benefits are discussed below.

Police officer labour costs

19 Consultation with WAPOL revealed that many cases of stealing in a retail environment tended to go unpunished in the base case. This is because retail establishments rarely wish to press charges due to the time costs involved for its staff in appearing in court and (in some cases) the opportunity cost for the establishment in having stolen goods taken as evidence for court cases.

20 Although no time saving is recorded against CCINs issued for minor stealing offences, there is still an intrinsic value to society from the legislative change in relation to its application for stealing offences. For example, consultations with WAPOL undertaken for the study revealed that the 'additional' nature of the use of CCINs for stealing may reflect the fact that the CCIN provides a useful supplementary prosecution tool for minor stealing offences as, prior to the introduction of the INP, minor stealing offences in the retail environment often went unpunished (via means of arrest or summons).

It was reported that this was due to the unwillingness of retailers to commit staff time to preparing for and attending court cases against alleged offenders, particularly where the stealing offence was relatively minor in nature (i.e. less than $500 in value). In addition, in order to prosecute the alleged offender, the stolen item(s) often needed to be held in police custody as evidence until the court hearing, representing an opportunity cost to the retailer. For these reasons, many retailers elected not to press charges against offenders. However, the introduction of the INP appears to have provided a useful tool of prosecution for stealing in this context, whereby court appearance and evidence is not required, although the offender receives an immediate penalty. This is discussed in more detail in Appendix part 7.3.2.

21 These labour costs include base salaries plus on-costs such as higher duties allowance, superannuation, long service leave allowance and leave loading.

Although WAPOL provided data from NTIMS on the seniority of the issuing police officer for each CCIN, the related time saving attached to each CCIN may not necessarily accrue solely to issuing officers. For example, the custody process can often require input from various officers of different rank depending on the circumstances. Therefore, valuing police time savings using the unit labour cost of the issuing officer alone may understate benefits.

Given this uncertainty, a simplifying conservative estimate of the value of police time is applied to quantify time savings under component 1.1, with the 2016 hourly labour cost of a 1st Constable Base ($49.71/hr; inclusive of leave loading, superannuation, long service leave and higher duties allowance) applied to estimate the value of time saved. This same cost is also applied to relevant components of the time spent in preparation for court by these officers (see Chapter 3.2.2.2).

Time taken to engage in custodial duties by officers

During consultation, WAPOL also provided estimates of the average time incurred in issuing a CCIN, and in dealing with an alleged offender by means of an arrest and summons (in response to the prescribed offences). On average, a saving of approximately five hours of custodial time is achieved as a result of issuing a CCIN rather than engaging in an arrest or summons for disorderly offences (as noted above, no benefit is registered against stealing offences as these are not assumed to replace arrests or summonses in the base case).

A breakdown of all time and cost estimates (based on police officer labour costs) is provided in Table 3-2. This component of Benefit 1 yields an estimated incremental benefit of approximately $3.8 million (unadjusted value).

The sharp increase in the counts of summonses and arrests in 2016 reflects a number of the assumptions applied in developing the forecasts of CCIN issuance. This includes the effect of annualising the number of CCINs issued during the monitoring year, given that police districts around WA implemented CCINs at different times during the monitoring year (CCINs issued during the monitoring year are not annualised given they are observed actuals).

Additionally, a growth component is also added to reflect the expected increase in uptake of CCINs within WAPOL as officers grow more accustomed to the new option. Finally, broader growth in the number of offences (in line with historical trends) also contributes to this increase. The growth recorded post 2016 predominantly reflects the latter growth component as annualisation and uptake is only accounted for in 2016. These assumptions are discussed in detail in Appendix A, part 7.4.

Table 3-2 - Calculation of benefit for component 1.1 - time saving from avoided arrests and summonses, by prescribed offence, unadjusted values (unless otherwise indicated)

	Modelled outcomes	2015	2016	2017	2018	2019	Total
Stealing <$500	Total time saved per arrest (hrs)	9.63	9.63	9.63	9.63	9.63	--
	Hourly police officer labour costs ($)	49.71	49.71	49.71	49.71	49.71	--
	Count of arrests (number)	--	--	--	--	--	--
	Benefit of avoided arrests ($)	--	--	--	--	--	--
	Total time saved per summons (hrs)	9.43	9.43	9.43	9.43	9.43	--
	Hourly police officer labour costs ($)	49.71	49.71	49.71	49.71	49.71	--
	Count of summons (number)	--	--	--	--	--	--
	Benefit of avoided summons ($)	--	--	--	--	--	--
Disorderly Behaviour	Total time saved per arrest (hrs)	5.47	5.47	5.47	5.47	5.47	--
	Hourly police officer salary costs ($)	49.71	49.71	49.71	49.71	49.71	--
	Count of arrests (number)	533	858	895	933	973	--
	Benefit of avoided arrests ($)	**144,815**	**233,050**	**242,998**	**253,371**	**264,186**	**1,138,420**
	Total time saved per summons (hrs)	5.30	5.30	5.30	5.30	5.30	--
	Hourly police officer labour costs ($)	49.71	49.71	49.71	49.71	49.71	--
	Summons (count)	1,267	2,040	2,127	2,218	2,312	--
	Benefit of avoided summons ($)	**333,787**	**537,163**	**560,093**	**584,001**	**608,930**	**2,623,974**
TOTAL BENEFIT (unadjusted)– Component 1.1		**478,602**	**770,213**	**803,091**	**837,372**	**873,117**	**3,762,394**
TOTAL BENEFIT (PV) – Component 1.1		478,602	770,213	750,552	731,393	712,723	3,443,483

Source: Deloitte Access Economics, WAPOL.

Consultation with WAPOL revealed that a CCIN can be issued at three possible points during the initial interaction with the alleged offender:

1. issued at the location of the incident
2. issued after taking the offender into custody to carry out photographic and fingerprint identification
3. issued after taking the offender into custody to carry out photographic, fingerprint identification and a DNA sample.

For points 2 and 3 above, it is necessary to account for the additional time required under the assessment case in taking the alleged offender into custody and performing the relevant photographic, fingerprint identification and / or DNA sample-taking. This is because, where this occurs, the time saving benefit to police of issuing a CCIN is eroded by the need to take the alleged offender into custody.

The NTIMS data provided by WAPOL confirmed that most stealing (79 percent) and disorderly (84 percent) offences dealt with via CCINs involved issuance of the infringement at the location of the incident. The remaining proportion for each prescribed offence required officers to take the alleged offender into custody to carry out photographic, fingerprint and / or DNA identification.

The time required to undertake these duties were provided during consultation with WAPOL (see Appendix B on page 50). Time costs are calculated by multiplying these estimates by the police salary benchmarks illustrated in Table 3-2 to derive a cost estimate of $611,362 (see Table 3-1, component 1.2). This is netted off from Benefit 1 in recognition of the manner in which they erode total benefits as part of the initial interaction between police and alleged offenders in the assessment case.

3.2.2.2 Component 1.3 - time saving from avoided court attendance

While the previous section can be considered the 'front end' incremental time costs incurred by officers in initially interacting with alleged offenders and executing custodial duties immediately following arrest, further costs at the 'back end' of the prosecution process are also incurred by police following release of alleged offenders from custody. These costs are incurred in preparing for and appearing at the hearings and trials of the accused.

Similar to the benefits related to initial interaction, the time costs avoided by police in issuing a CCIN and avoiding these 'back end' court duties are treated as a benefit arising from the INP.

The approach for measuring court time related savings for police are underpinned by some of the same assumptions and parameters relevant to Component 1.1 above.

In particular, the estimated value of court related benefits only extends to alleged offences that under the base would have been dealt with through an arrest or summons. No benefit is attached to the prosecution of 'additional' prescribed offences using CCINs given that the timing saving to police is non-existent compared to dealing with the offence by means of caution, move-on notice or other informal action (see Chapter 3.2.2.1 for more detail).

There are four critical parts to the calculation of component 1.3:

- The number of cases with a finalised hearing
- The number of cases with a trial
- The labour cost of police officers
- The time taken to engage in court preparation and appearance by police officers.

These aspects and how they affect the benefits are discussed below.

The number of cases with a finalised hearing

Under the base case, stealing and disorderly offenders dealt with via an arrest or summons would be required to attend a court hearing. However, in some cases a hearing may not proceed, for example, when the case is withdrawn by the prosecution before the hearing. Data from the Australian Bureau of Statistics (ABS)[22] was used as a proxy to estimate these outcomes.

The ABS reports that in 2014-15, approximately 95 percent of stealing offenders and 98 percent of disorderly behaviour offenders saw offences finalised via an adjudicated outcome, when cases were presented to the Magistrates Court. In the context of this study, these rates have been applied over the assessment period to apportion the percentage of cases proceeding to hearing and trial stage.

The number of cases with a trial

Following the court hearing, a number of cases proceed to trial, although this is rare for the prescribed offences covered under CCINs given their relatively minor nature (these offences tend to be dealt with at hearings as a result).

Data provided by the Magistrates Court for the period 2008 to 2016 showed that only three percent of stealing cases and four percent of disorderly cases involved a trial. These rates are applied to the cohort of cases assumed to attend court under the base case to estimate the time cost incurred by WAPOL. Although only a small proportion of cases involved a trial, where trials do occur, significant time can be expended by both frontline police and police prosecutors in preparing for and appearing at the trial.

Police officer labour costs

As per component 1.1, a simplifying conservative estimate of the value of police time is applied to quantify time savings under component 1.3, with the 2016 labour cost of a 1st Constable Base ($49.71/hr; inclusive of leave loading, superannuation, long service leave and higher duties allowance) applied to estimate the value of time saved for court hearings.

However, preparation for trial often requires the input of senior officers / prosecutors above the rank of 1st Constable. Therefore, to reflect this additional cost, the labour cost of a senior sergeant ($71.66 per hour) is applied to estimate the time costs relating to cases proceeding to trial.

Time taken to engage in court preparation and appearance by officers

During consultation, WAPOL also provided estimates of the average time incurred in preparing for and appearing before hearings and trials (in response to the prescribed offences). According to WAPOL, on average, officers spend 11.75 hours preparing and appearing before hearings for prescribed stealing offences, and 6.92 hours preparing and appearing before hearings for prescribed disorderly behaviour offences.

22 ABS (2016), 45190DO002_201415 Recorded Crime – Offenders, 2014–15, Table 6, Australian Bureau of Statistics

However, at trial stage, WAPOL estimated that the preparation and appearance time (while longer than at hearing stage) was equal for both prescribed offences. A breakdown of all time and cost estimates (based on police officer labour costs) is provided in Table 3-3. This component of Benefit 1 yields an estimated incremental benefit of approximately $5.5 million (unadjusted value).

Table 3-3 - Calculation of benefit for component 1.3 - time saving from avoided court attendance, by prescribed offence, unadjusted values (unless otherwise indicated)[23]

		Modelled outcome	2015	2016	2017	2018	2019	Total
Court hearing	Stealing <$500	Count of cases with a finalised hearing (number)	--	--	--	--	--	--
		Time saved per hearing (hrs)	11.75	11.75	11.75	11.75	11.75	--
		Hourly police salary costs ($)	49.71	49.71	49.71	49.71	49.71	--
		Benefit of avoided cases ($)	**--**	**--**	**--**	**--**	**--**	**--**
	Disorderly Behaviour	Count of cases with a finalised hearing (number)	1,760	2,832	2,953	3,079	3,211	--
		Time saved per hearing (hrs)	6.92	6.92	6.92	6.92	6.92	--
		Hourly officer salary costs ($)	49.71	49.71	49.71	49.71	49.71	--
		Benefit of avoided cases ($)	**605,107**	**973,797**	**1,015,366**	**1,058,708**	**1,103,901**	**4,756,880**
Court trial	Stealing <$500	Count of cases with a trial (number)	--	--	--	--	--	--
		Time saved per trial (hrs)	17.17	17.17	17.17	17.17	17.17	--
		Hourly police salary costs ($)	71.66	71.66	71.66	71.66	71.66	--
		Benefit of avoided cases ($)	**--**	**--**	**--**	**--**	**--**	**--**
	Disorderly Behaviour	Count of cases with a trial (number)	74	119	124	130	135	--
		Time saved per trial (hrs)	17.17	17.17	17.17	17.17	17.17	--
		Hourly police salary costs ($)	71.66	71.66	71.66	71.66	71.66	--
		Benefit of avoided cases ($)	**91,077**	**146,569**	**152,826**	**159,349**	**166,152**	**715,973**
TOTAL BENEFIT (unadjusted)- Component 1.3			**696,184**	**1,120,366**	**1,168,191**	**1,218,058**	**1,270,053**	**5,472,853**
TOTAL BENEFIT (PV) – Component 1.3			696,184	1,120,366	1,091,768	1,063,899	1,036,742	5,008,959

Source: Deloitte Access Economics, WAPOL. Note, totals may not add due to rounding.

As noted in Chapter 3.2.2.1, the sharp increase shown in Table 3-3 in the counts of cases involving trials and hearings in 2016 reflects a number of the assumptions applied in developing the forecasts of CCIN issuance. These assumptions are discussed in detail in Appendix A, part 7.4.

3.2.2.3 Component 1.4 - time cost for CCINs which elect to go to court

Data from NTIMS showed that a small number of CCIN recipients (47 during the monitoring year) elected to review their CCIN and have their cases heard by a court during the monitoring period. Using this proportion as a basis to forecast future instances of appeal, related costs are detracted from the total value of court cost savings estimated as part of benefit component 1.3. This cost reflects the fact that police officers are required to prepare for and attend court to contend appeals.

Court hearings for CCINs appealed are assumed to require the same time commitments from police officers as presented in component 1.3 above in relation to time taken for hearings under the base case.

Time costs are calculated by multiplying these time commitments by the number of appealed cases and the police salary benchmarks for court hearings (illustrated in Table 3-3). This cost is estimated at approximately $210,067 over the assessment period in unadjusted dollars (see Table 3-1, component 1.4).

[23] The number of offenders assumed to progress to trial is a subset of those that attend a hearing. Once attending a hearing, the matter may be resolved or the offender may proceed to trial. For example, 1,760 offenders where assumed to avoid a court hearing in 2015 as a result of CCINs, and of that cohort, 74 progressed to trial. The values presented in the table represent the benefit of each avoided court activity.

3.3 Benefit 2 - Decrease in the opportunity cost of court time

3.3.1 Description and rationale

Another key objective of the INP is to relieve case pressure on the Magistrates Court. Where a CCIN is issued by a police officer in place of an arrest or summons, society realises a benefit in the form of a reduction to the opportunity cost of court time and resources. That is, hearing and trial backlogs are reduced and court officers are able to spend more time hearing other offences.

This benefit is measured by the time avoided by the courts under the assessment case that would typically otherwise be incurred in considering hearings and trials for cases involving the prescribed offences[24].

These incremental time savings have been estimated and applied to all relevant offences that occurred during the assessment period (see Chapter 2.2.2 for the definition of and rationale for this period). The key element of this benefit is:

- **Component 2.1 - time saving from avoided court cases** - the court preparation and appearance time avoided by the courts as a result of police having issued a CCIN, rather than making an arrest or issuing a summons.

The above time saving is netted-off against related time costs incurred under the assessment case. The time cost consists of:

- **Component 2.2 - time cost for CCINs appealed** - being an infringement notice, a CCIN may be appealed by the offender, which subsequently requires the courts to prepare for and consider the related hearing (as per the base case in regard to arrest and summonses). This component gauges the preparation time incurred by the courts upon appeal.

The net time savings yielded to the courts (i.e. the value of component 2.1, less the value of component 2.2) is recognised as a benefit reflecting the reduced opportunity cost of court time from the operation of the INP. The key aspects of the calculation are discussed below according to the two identified components.

3.3.2 Benefit calculation

3.3.2.1 Component 2.1 - time saving from avoided court cases

The reduced opportunity cost of court time is measured as the difference in court time spent dealing with a prescribed offence under the assessment case compared to the time that would have otherwise been spent dealing with the same offence under the base case.

The incremental change to court time is related to processes following court preparation and appearance at hearing and trial. The time associated with duties relating to initial interaction with the alleged offender and execution of custodial duties by the police is not relevant to the courts in the context of this study.

There are three critical parts to the calculation of component 2.1:

- The number of cases with a finalised hearing
- The number of cases with a trial
- The cost to the court system in preparing for and adjudicating court cases.

Parts 1 and 2 - the calculation of the number of offenders attending court for hearings; and the number of offenders proceeding from hearings to trials – are calculated in an identical fashion as outlined above in relation to benefit component 1.3 (see Chapter 3.2.2.2). As such only the derivation of costs to the court system in preparing for and adjudicating court cases is considered here (part 3).

Cost to the court system in preparing for and adjudicating court cases

The reduced opportunity cost to the court system as a result of the INP is measured using benchmarks of costs incurred by the court system on a per case basis.

24 It is recognised that time savings achieved from the INP do not precisely reflect the benefit to the community from greater focus of the courts on serious crime. Due to limitations in valuing such outcomes, this study utilises the value of the time savings realised by court officers as a result of the INP, as a proxy for these target outcomes. This aspect is discussed in Chapter 6.3

This data was developed from information contained in the 2014-15 Annual Report of the WA Department of the Attorney General (DOTAG). The Annual Report includes a key performance indicator (KPI) relating to the average cost per criminal case finalised in the Magistrates Court. In 2014-15, this cost amounted to $912[25]. The value of this estimate is determined by dividing the total cost of processing all cases by the number of finalisations during the year.

Adjustments were applied to this benchmark given that the total costs used to derive the 'per case' estimate includes both fixed and variable costs. To be consistent with the approach applied in quantifying police time (which was purely labour costs), the adjustment applied reduces this benchmark to reflect only the labour costs incurred by the court[26].

As well as being consistent with the approach in quantifying Benefit 1, this adjustment reflects the fact that the fixed cost component of the benchmark cost incurred by the court is largely independent of case activity. That is, any reduction in case load resulting from the INP does not necessarily impact on the fixed costs incurred by the courts.

Employee benefits accounted for approximately 46 percent of DOTAG's total reported operating expenses in 2014-15. Applying this proportion to the average cost per criminal case of $912 yielded an estimated court labour cost per case of $422 (46.3 percent of $912). Adjusting for inflation, which takes the cost per case to $432.81, this benchmark was applied to the number of cases avoided under the assessment case to quantify the value of benefit component 2.1.

The profile of benefits to the court system is illustrated in Table 3-4 below. It is estimated that the reduced opportunity costs to the court system from the operation of the INP is worth approximately $5.9 million over the assessment period. As noted in Chapter 3.2.2.1, the sharp increase shown in Table 3-4 in the counts of cases in 2016 reflects a number of the assumptions applied in developing the forecasts of CCIN issuance. These assumptions are discussed in detail in Appendix A, part 7.4.

Table 3-4 - Calculation of benefit for component 2.1 - time saving from avoided court cases, by prescribed offence, unadjusted values (unless otherwise indicated)

	Modelled outcome	2015	2016	2017	2018	2019	Total
Stealing <$500	Count of cases (number)	--	--	--	--	--	--
	Court cost per case ($)	432.81	432.81	432.81	432.81	432.81	--
	Benefit of avoided cases ($)	**--**	**--**	**--**	**--**	**--**	**--**
Disorderly Behaviour	Count of cases (number)	1,760	2,832	2,953	3,079	3,211	--
	Court cost per case ($)	432.81	432.81	432.81	432.81	432.81	--
	Benefit of avoided cases ($)	761,788	1,225,943	1,278,274	1,332,840	1,389,735	**5,988,579**
TOTAL BENEFIT (unadjusted) – Component 2.1		**761,788**	**1,225,943**	**1,278,274**	**1,332,840**	**1,389,735**	**5,988,579**
TOTAL BENEFIT (PV) – Component 2.1		761,788	1,225,943	1,194,649	1,164,154	1,134,438	5,480,971

Source: Deloitte Access Economics, Magistrates Court, DOTAG. Note, totals may not add due to rounding.

3.3.2.2 Component 2.2 - time cost for CCINs which elected to go to Court

Data from NTIMS showed that a small percentage of CCIN recipients elected to appeal infringements issued to them during the monitoring period. Using this proportion as a basis to forecast future instances of appeal, related costs are detracted from the total value of court cost savings estimated as part of benefit component 2.1. This cost reflects the fact that the courts are required to prepare for and hear the infringement matter. Court hearings for CCINs appealed are assumed to incur the same per case costs to the courts as presented in component 2.1 above. Multiplying these costs by the number of those cases going to court yields an estimated $155,675 cost over the assessment period in unadjusted dollars (see Table 3-1, component 2.2 on page 9).

25 Department of the Attorney General (2015), Annual Report 2014-15, p 124, Government of Western Australia

26 Consultation undertaken by the OWA also suggested that the prescribed offences are likely to be less costly than the average criminal case settled by the Magistrates Court given the relative simplicity and short processing time entailed. For this reason, it was also considered appropriate to seek a more conservative benchmark of court costs.

4 Costs

4.1 Introduction

Five primary costs are identified in this study as being relevant to the implementation and operation of the INP. These are:

1. Cost 1 - Capital development costs of NTIMS
2. Cost 2 - Annual operating costs of NTIMS
3. Cost 3 - Ombudsman monitoring costs
4. Cost 4 - Capital renewal costs of NTIMS
5. Cost 5 - INP training and system roll-out

These costs were identified through consultation with OWA and WAPOL regarding the implementation and operational resources required for the INP during the monitoring period.

Of the five costs, only Cost 1 and Cost 2 are considered attributable to the INP and included in the CBA (see discussion below). These costs are expected to require a total incremental outlay of $3.4 million over the five-year assessment period. A description of each cost, the rationale for including each in this study, and the mechanics of the cost calculations are explored below.

A summary of the timing and value of the costs included in the analysis are presented in Table 4-1.

Table 4-1 - Summary of the INP costs over the assessment period, unadjusted values (unless otherwise indicated)

Modelled costs	2015	2016	2017	2018	2019	Total
Cost 1 - Capital development costs of NTIMS	(4,983,825)	--	--	--	2,135,925*	**(2,847,900)**
Cost 2 - Annual operating costs of NTIMS	**(112,238)**	**(112,238)**	**(112,238)**	**(112,238)**	**(112,238)**	**(561,188)**
Application support	*(43,563)*	*(43,563)*	*(43,563)*	*(43,563)*	*(43,563)*	***(217,815)***
License support	*(4,613)*	*(4,613)*	*(4,613)*	*(4,613)*	*(4,613)*	***(23,065)***
Printing & postage	*(12,813)*	*(12,813)*	*(12,813)*	*(12,813)*	*(12,813)*	***(64,065)***
Staff	*(51,250)*	*(51,250)*	*(51,250)*	*(51,250)*	*(51,250)*	***(256,250)***
Cost 3 - Capital renewal costs of NTIMS	--	--	--	--	--	**--**
Cost 4 - INP training and system roll-out	--	--	--	--	--	**--**
TOTAL COSTS (unadjusted)	**(5,096,062)**	**(112,238)**	**(112,238)**	**(112,238)**	**2,023,687**	**(3,409,087)**
TOTAL COST (PV)	(5,096,062)	(112,238)	(104,895)	(98,033)	1,651,932	(3,759,295)

Source: OWA, WAPOL, Deloitte Access Economics. *Adjustment to recognise the residual value of the asset at the end of the assessment period.

4.2 Cost 1 - Capital development costs of NTIMS

4.2.1 Description and rationale

NTIMS is a database and operating system developed to support the operation of the INP. It is also used by WAPOL to record all information about CCINs issued.

Given that NTIMS was developed to facilitate and support the INP, the cost incurred to develop the system is included as a capital cost in the study and netted against the benefit derived from the implementation and operation of the INP.

NTIMS was initially considered within the 'DTF 22350' funding appropriation program in 2009. Planning commenced at this time, with NTIMS expected to be used solely for recording infringement data that was relevant to the INP.

However, the scope of NTIMS was adjusted, resulting in a delay to the planning process. Key changes were made to the program scope, including the broadening of the range of infringements to be recorded within NTIMS. As such, planning continued for longer than expected to meet the increased scope and enable NTIMS to be executed across a broader application of infringements. Ultimately, the system will be able to facilitate the recording of data related to the following infringements:

- Firearms
- Liquor
- Pawnbrokers and second hand dealers
- Security and related activities (pending legislation enactment).

Additional planning costs were also incurred over time due to the use of different contractors to undertake planning and building of the system (meaning some adjustments to the original plans were required). Additionally, changes in available technology over time required modifications to initial plans, given that planning commenced in 2009.

4.2.2 Cost calculation

Given the range of infringements that are expected to utilise NTIMS in future, the study apportions the total development cost across the various uses (actual and expected).

Consultations were held with WAPOL to discuss the proportion of NTIMS development costs that should be reasonably attributed to CCINs in the context of other likely future infringement applications.

Currently, around 90 percent of the cases recorded by NTIMS are for the prescribed CCIN offences, although WAPOL anticipates that the proportion of non-CCIN offences recorded on NTIMS will increase in future years to as much as 50 percent.

However, given there is limited evidence for this estimate at present, the full cost of development and deployment is made attributable to CCINs in the study. This is a highly conservative assumption, which has the effect of reducing the net benefit of the legislative change.

As such, in Chapter 5.3, 'sensitivity testing', the effect of allocating a smaller portion of the development costs to CCIN offences is considered.

However, in recognition of the small period of assessment (just five years), an adjustment is also made to reflect the residual value of the NTIMS asset at the end of the assessment period straight. The residual value is treated as a 'negative cost' (i.e. is netted off the cost profile of the assessment case) to reflect the remaining life value of the asset at this point in time. A seven-year straight line rate of depreciation is used to determine the residual value[27].

4.3 Cost 2 - Annual operating costs of NTIMS

4.3.1 Description and rationale

Additional operating costs are also incurred as a result of the INP. These costs relate to the operation of NTIMS, where annual operating costs are incurred by WAPOL to maintain and manage NTIMS. This includes the employment of a systems analyst to monitor the issuance of infringements and to follow up on unpaid notices. As such, these costs are also included in the analysis.

4.3.2 Cost calculation

As is the case with Cost 1, it is possible to attribute only a portion of the annual operating cost of NTIMS to the INP, given WAPOL anticipate that the proportion of non-CCIN offences recorded on NTIMS will increase in future years to as much as 50 percent.

27 A five to seven-year depreciation period is considered suitable for IT related infrastructure given the rate of technological improvement and the related risk of obsolescence.

Again, however, given there is limited evidence for this estimate at present, the full operating cost is attributed to CCINs in the study. This is again a highly conservative assumption, which has the effect of reducing the net benefit related to the legislative change.

4.4 Cost 3 - Ombudsman monitoring costs

4.4.1 Description and rationale

Chapter 1.2.2.3 briefly outlines the monitoring responsibility assigned to the OWA in relation to the implementation and operation of the INP. OWA has received funding from the State Government to fulfil its obligations in undertaking this monitoring function. However, this funding cost is excluded from the CBA.

This is because the monitoring role is not recurring, applying only to the single monitoring period in 2015-16. Additionally, the OWA were assigned the monitoring task by the Parliament of Western Australia in place of Parliament itself carrying out this role. This is not considered an implementation or enabling cost of the INP.

Excluding this cost from the CBA does not imply that the OWA role is not beneficial to society. The benefits of this role are not directly related to the outcomes of the INP, but are rather qualitative in nature. For example, the monitoring role was requested of the OWA due to its independence from government, its reputation for providing robust analysis that can guide Parliament in its decisions and its ability to leverage existing stakeholder relationships and exercise its information-gathering powers to collect the relevant data and information. It is also reflective of Parliament's desire to understand the impact of the legislative change on Aboriginal and Torres Strait Islander communities (with whom the OWA often engage with).

Although the funding provided to OWA is excluded from the CBA, it is included in the study costs as a sensitivity test in Chapter 5.3.2. This test finds that the outcome of the CBA is still positive despite the inclusion of the monitoring cost.

4.4.2 Cost calculation

The OWA is expected to receive funding of $1.83 million over the three years from 2015 to 2017 (inclusive) to carry out its monitoring role. As noted above, this cost is excluded from the CBA but incorporated in a sensitivity test (see Chapter 5.3.2).

4.5 Cost 4 - Capital renewal costs of NTIMS

4.5.1 Description and rationale

Capital renewal refers to major periodic outlays which are required to maintain the operational integrity of NTIMS, including system upgrades.

WAPOL have sought advice from consultants engaged to develop NTIMS regarding the expected timing of future functional upgrades to the system. Based on this advice, WAPOL expect to submit a continuity business case in 2019, which would request funding for an upgrade in 2021.

The exact timing and cost of the upgrade would depend on changes in technology over the intervening period, as well as the future needs of the system, although WAPOL and its consultants estimate that the upgrade could cost between $100,000 and $300,000.

4.5.2 Cost calculation

This renewal outlay is excluded from the study given that the renewal cost is expected to be incurred in 2021, which is outside of the study assessment period (to 2020). However, even if this cost were included in the CBA (i.e. as a means of erring on the side of conservatism), it is not expected to markedly affect the study outcome.

4.6 Cost 5 - INP training and system roll-out

4.6.1 Description and rationale

Training and system roll-out costs include those costs incurred to deliver training to WAPOL officers to educate them about the INP (and practical elements about issuing CCINs), and to equip them to use the NTIMS software. Consultation with WAPOL indicated that this entailed a negligible cost (including opportunity cost) associated with training WAPOL officers on the application of the INP. Training

related to the INP tended to occur as part of standard learning and development programs that WAPOL officers are required to undertake, and usually occurred towards the end of normal shift periods to avoid overtime / additional labour costs. As such, no additional costs are included for officer time spent undertaking training related to the INP.

An hour-long online training module through the WAPOL 'Blackboard' system was provided to WAPOL officers based at regional sites and metropolitan officers unavailable to attend face-to-face sessions. . The remaining officers received face-to-face training from a WAPOL instructor. The instructor was not employed exclusively to deliver training related to the INP, and would have likely been employed on the same basis if the CCIN training was not required. Delivery of the CCIN training was part of a broad range of training courses delivered by the instructor. As such, no costs for this trainer are included in the study.

4.6.2 Cost calculation

Given the description and rationale above, no costs for training and systems roll-out to WAPOL were included in the study.

5 CBA outcomes and sensitivity testing

5.1 Introduction

This chapter combines the benefits and costs delineated in the previous chapters to calculate the benefit cost ratio (BCR) of the legislative change. As discussed in Chapter 2.2.5, the BCR represents the net financial and economic benefits estimated to arise from the INP expressed in the form of a ratio.

5.2 CBA outcomes

Table 5-1 summarises all the costs and benefits included in the CBA (note that values in this table differ from the value of corresponding benefits and costs reported in Chapters 3 and 4 as these values are expressed in present value terms). From a benefit-cost perspective, the INP yields a net *cost* to the community of $3.29 million (in net present value terms) in the first year (2015) of operation. However, over the full assessment period, the legislative change yields a net *benefit* to the community worth $9.28 million (in present value terms). Expressed as the benefit cost ratio (BCR), this equals **3.47** over the assessment period, meaning that for every $1.00 spent by the State Government in implementing and operating the INP, a return of $3.47 is generated in benefit to the community.

Table 5-1 – Summary of CBA outcomes – operation of the INP, Present Values*

Modelled benefits / costs	2015	2016	2017	2018	2019	Total
Benefit 1 - Decrease in the opportunity cost of police time	**1,069,098**	**1,722,702**	**1,678,728**	**1,635,876**	**1,594,118**	**7,700,522**
1.1 Time saving from avoided arrests and summons	478,602	770,213	750,552	731,393	712,723	3,443,483
1.2 Time cost for CCINs involving custodial procedures	(78,524)	(124,977)	(121,787)	(118,678)	(115,649)	(559,615)
1.3 Time saving from avoided court attendance	696,184	1,120,366	1,091,768	1,063,899	1,036,742	5,008,959
1.4 Time cost for CCINs which went to adjudication	(27,164)	(42,900)	(41,805)	(40,738)	(39,698)	(192,304)
Benefit 2 - Decrease in the opportunity cost of court time	**741,657**	**1,194,151**	**1,163,668**	**1,133,964**	**1,105,019**	**5,338,459**
2.1 Time savings from avoided court cases	761,788	1,225,943	1,194,649	1,164,154	1,134,438	5,480,971
2.2 Time cost for CCINs which went to adjudication	(20,131)	(31,792)	(30,980)	(30,190)	(29,419)	(142,511)
TOTAL BENEFITS	**1,810,755**	**2,916,853**	**2,842,396**	**2,769,841**	**2,699,137**	**13,038,982**
Cost 1 - Capital development costs of NTIMS	**(4,983,825)**	**--**	**--**	**--**	**1,743,551^**	**(3,240,274)**
Cost 2 - Annual operating costs of NTIMS	**(112,238)**	**(112,238)**	**(104,895)**	**(98,033)**	**(91,619)**	**(519,022)**
TOTAL COSTS	**(5,096,062)**	**(112,238)**	**(104,895)**	**(98,033)**	**1,651,932**	**(3,759,295)**
NET BENEFITS	**(3,285,307)**	**2,804,615**	**2,737,501**	**2,671,808**	**4,351,069**	**9,279,686**
BENEFIT COST RATIO	**--**	**--**	**--**	**--**	**--**	**3.47**

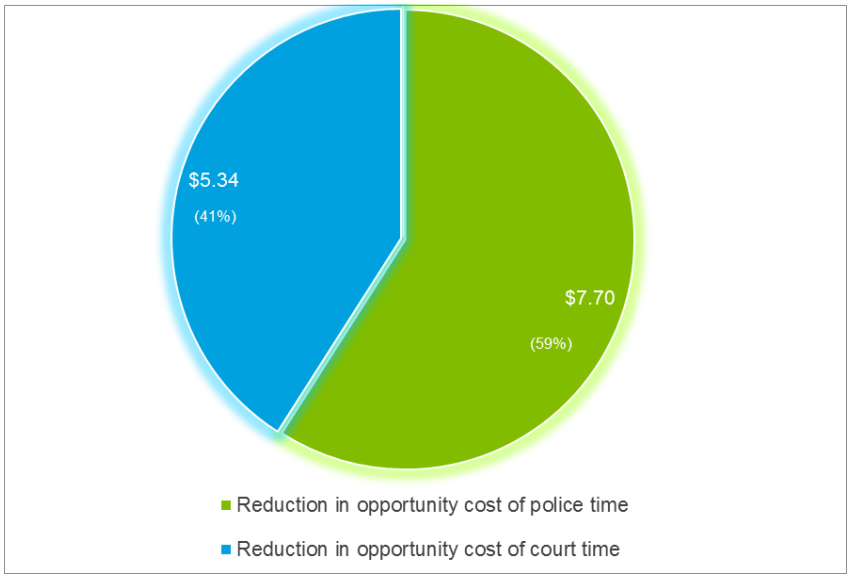
Source: Deloitte Access Economics. * Discounted at a rate of 7.00%. ^Adjustment to recognise the residual value of the asset at the end of the assessment period.

This represents a strong return to the community from implementation of the legislative change and is reflective of the relatively low costs incurred in implementing and operating the INP relative to the benefits yielded by way of achieving time savings for the police and a reduction in case load for the courts.

The largest benefit accrues to police, particularly by way of the court preparation and attendance time saved (benefit component 1.3 in Table 5-1). This yields approximately $7.70 million in savings in present value terms over the assessment period. This aligns with anecdotal feedback from WAPOL on the significance of the time savings achieved.

As illustrated in Figure 5-1, DOTAG accrues the remaining 41 percent ($5.39 million) of the total benefits as a result of the cases avoided at the Magistrates Court under the operation of the INP.

Figure 5-1 - Total benefits estimated from the legislative change by recipient ($ million, present values)



Source: Deloitte Access Economics

It is important to note that the BCR is sensitive to a number of key assumptions. Varying such assumptions result in different BCR outcomes. The nature of these assumptions are explored further in Chapter 6, while a series of sensitivity tests on these key assumptions is applied in Chapter 5.3.

5.3 Sensitivity testing

A number of sensitivity tests are conducted in this chapter against the BCR calculated above by varying key assumptions and parameters. This allows for the relative impact that these assumptions and parameters have on the net benefit of the legislative change to be gauged and considered. Six sensitivity tests[28] are conducted in total:

- Test 1 - Varying the discount rate used in the discounted cash flow analysis
- Test 2 - Including the OWA monitoring cost
- Test 3 - Adjusting the allocation of NTIMS capital and operating costs to the INP
- Test 4 - Including infringement revenue as a benefit
- Test 5 - Applying different rates of growth in issuance of CCINs
- Test 6 – Varying the time savings for police

These sensitivities are explored further below. In each test, all other assumptions and parameters are held constant apart from the assumptions or parameters that are the subject of testing.

28 Note that in the original scope of works, the WA Ombudsman requested that the Aboriginal status and residential location of alleged offenders be sensitivity tested in the study. However, given limitations in the data available, it was agreed that this aspect to the study would not be fulfilled.

5.3.1 Test 1 - Varying the discount rate used in the discounted cash flow analysis

As noted in Chapter 2.2, a discount rate of 7.00 percent is used for the CBA, which is consistent with previous CBAs carried out for State and Commonwealth agencies. However, Table 5-2 presents the impact on the BCR of a 3.00 percent higher and lower discount rate (the assessment period is still assumed to be five years in this test).

The discount rate typically represents the cost of capital (or hurdle rate) for the investor or policy proponent, while also reflecting the time value of money (the uncertainty of future cash flows means discounting is applied to reflect that uncertainty).

Therefore, applying a discount rate of 4.00 percent suggests greater flexibility around the hurdle rate to achieve net return, and greater certainty about future cash flows. Therefore, the BCR rises from **3.47** to **3.73**, while a discount rate of 10 percent suggests the opposite - less flexibility around the hurdle rate to achieve net return, and less certainty about future cash flows. Under this assumption, the BCR falls from **3.47** to **3.24**. The legislative change still yields a net benefit at both of these discount rates.

Table 5-2 – Outcome of Test 1 - Varying discount rates used in discounted cash flow analysis

	Discount rate applied:		
CBA outcome	**4%**	**7%**	**10%**
PV Benefits ($)	13,523,459	13,038,982	12,597,569
PV Costs ($)	(3,620,940)	(3,759,295)	(3,882,666)
BCR	**3.73**	**3.47**	**3.24**

Source: Deloitte Access Economics

5.3.2 Test 2 - Including the OWA monitoring cost

OWA is funded by the State Government for a key monitoring and scrutinising role for the INP. The specific functions of this role are described in Chapter 1.2.2.3, while the rationale for excluding this cost is discussed in Chapter 4.4.1.

However, to gauge the sensitivity of the CBA outcome were this cost to be included, Test 2 incorporates the State funding provided to the OWA to monitor the operation of the INP over the monitoring period. As presented in Table 5-3, including this cost in the analysis sees the BCR decrease from **3.47** to **2.35**. This confirms that even if this cost were included, a high net benefit to society is still generated from the INP.

Table 5-3 - Outcome of Test 2 - Including the OWA monitoring cost

CBA outcome	Value
PV Benefits ($)	13,038,982
PV Costs ($)	(5,549,084)
BCR	**2.35**

Source: Deloitte Access Economics

5.3.3 Test 3 - Adjusting the allocation of NTIMS capital and operating costs to the INP

As outlined in Chapter 4.2, WAPOL advised that NTIMS would be increasingly be used to record infringements other than CCINs in future. Currently, approximately 90 percent of activity recorded on the system relates to CCINs offences, although WAPOL's belief was that non-CCIN infringements could account for up to 50 percent of all activity recorded in NTIMS in the future.

However, the full cost of developing and operating NTIMS was allocated to the INP as a conservative assumption despite this potential for non-CCIN related use in future.

Test 3 considers how the BCR changes if a proportion of the total costs of developing and operating NTIMS were allocated to other non-CCIN eligible infringements.

Table 5-4 illustrates the impact on the BCR from adjusting the proportion of NTIMS costs away from the INP toward other uses. As the proportion of NTIMS costs allocated to the INP decreases, the BCR increases due to the reduction in costs being attributable to the implementation of the legislative change. It is evident that if a 50-50 split were adopted (as suggested by WAPOL), then the BCR would rise from **3.47** to **6.10**.

Table 5-4 – Outcome of Test 3 - Adjusting the allocation of NTIMS capital and operating costs to the INP

	100%	80%	60%	50%	40%	20%
PV Benefits ($)	13,038,982	13,038,982	13,038,982	13,038,982	13,038,982	13,038,982
PV Costs ($)	(3,759,295)	(3,111,241)	(2,463,186)	(2,139,159)	(1,815,131)	(1,167,076)
BCR	**3.47**	**4.19**	**5.29**	**6.10**	**7.18**	**11.17**

Source: Deloitte Access Economics

5.3.4 Test 4 - Including infringement revenue as a benefit

As outlined in Chapter 1.2.2.4, a key objective of the INP is to generate time savings for WAPOL officers and reducing the case load on the Magistrates Court. The generation of infringement revenue was not an explicitly considered objective of the INP by Parliament. Therefore, the incremental revenue generated from the legislative change is not been included in the CBA. Additionally, in economic terms the payment of infringement revenues to the State can be considered a 'transfer'[29].

However, from a State Government perspective, the infringement revenue expected to be generated is nevertheless considered a financial benefit. Test 4 therefore considers the impact on the BCR if this stream of financial benefits was included in the study.

In including this net revenue stream, it is important to net-off revenue forgone from court-ordered fines which would have been earned under the base case (see Appendix part 7.5 for full details on this). As presented in Table 5-5 including this net revenue stream causes the BCR to increase from **3.47** to **4.09**.

Table 5-5 - Outcome of Test 4 - Including infringement revenue as a benefit

CBA outcome	Value
PV Benefits ($)	15,387,800
PV Costs ($)	(3,759,295)
BCR	**4.09**

Source: Deloitte Access Economics

Full details on the key assumptions underpinning Test 4 is contained in Appendix part 7.5.

5.3.5 Test 5 - Applying different rates of growth in issuance of CCINs

Perhaps the most critical assumption underpinning the CBA is the rate of growth of stealing and disorderly behaviour offences assumed to occur in future. As discussed in Appendix A part 7.2, it is assumed that stealing and disorderly behaviour offences will grow in future in line with long term rates of growth (since 2009-10), as publicly reported by WAPOL.

Stealing is assumed to grow at a rate of 5.8 percent per annum (reflecting historical growth in theft offences), while offences relating to disorderly behaviour are forecast to increase by 4.3 percent per annum (reflecting growth in the total verified offences reported by WAPOL[30]).

However, Test 6 considers the impact to the BCR if a higher growth rate is incorporated. Separate, non-published data from IMS provided by WAPOL contained information on the number of prescribed offences during a short, defined period between 2011 to 2015 (see Appendix A part 7.2 for more details).

This data suggests both prescribed offences have grown more sharply during this period than the growth rates described above. However, this data was not used in the CBA due to the relatively volatile patterns of growth (additionally, growth rates could only be calculated for the three years prior to the monitoring period).

A higher growth rate increases the value of benefits as it raises the number of offences in future that could potentially be tackled using CCINs. This assumption also increases the rate of substitution between CCINs and arrests and summonses, given the higher projected count of prescribed offences.

29 A transfer payment refers to a redistribution of income in an economy. In economic modelling, such payments are normally excluded from analysis as they are considered to be 'offsetting', given they do not directly absorb economic resources or create economic output.

30 Disorderly behaviour offences are not reported as 'verified offences' due to their minor nature. Therefore, the growth rate in 'total verified offences' has been applied as a proxy growth rate.

Table 5-6 illustrates the impact on the BCR from the application of these higher rates of growth in prescribed offences.

In particular, applying a higher growth rate to the number of CCINs issued for stealing offences in future 'activates' a benefit against this offence, as issuances move beyond being entirely 'additional' to replacing arrests and summonses under the base case (see Chapter 3.2.2.1 for more details on the additional nature of stealing offences under the assessment case).

This benefit is significant as feedback from WAPOL suggested that stealing offences require much more police time at the custody stage due to the more indictable nature of this offence and the related evidence-gathering required.

Reflecting this effect, adopting the higher growth rates sees the BCR rise from **3.47** to **8.48**, while using a zero growth rate sees the BCR decrease from **3.47** to **3.14**.

Table 5-6 – Outcome of Test 5 - Applying different rates of growth in issuance of CCINs

Source of growth rate	Offence	Response	Annual growth rate (CAGR)	BCR	Cost and benefits	PV ($)
IMS data trends	Stealing	Arrests (IMS)	+21%	8.48	PV Benefits ($)	31,863,821
		Summons (IMS)	+6%			
	Disorderly	Arrests (IMS)	+2%		PV Costs ($)	(3,759,295)
		Summons (IMS)	+19%			
No Growth trend	Stealing	Arrests (NIL GROWTH)	--	3.14	PV Benefits ($)	11,809,342
		Summons (NIL GROWTH)	--			
	Disorderly	Arrests (NIL GROWTH)	--		PV Costs ($)	(3,759,295)
		Summons (NIL GROWTH)	--			

Source: Deloitte Access Economics

5.3.6 Test 6 – Varying the time savings for police

A key source of benefits in this study arises from estimated police time savings (which account for 59 percent of the total benefits in this CBA – see Figure 5-1). However, a key assumption underpinning the time saving calculation relates to the duration of a typical arrest or summons. Estimates for the time allocated to these activities were collected during a workshop held with WAPOL.

The workshop involved a detailed exploration of the main tasks constituting each process (arrests and summons) as well as a discussion on the variable components of each (e.g. an arrest will take longer if a DNA sample must be taken). Given the depth of discussion and debate during the workshop, which included careful examination of assumptions, these estimates are likely to represent an accurate reflection of time savings.

However, Test 6 considers the impact on the BCR of reducing the time savings estimates (both custodial time and court time) provided by WAPOL by a given proportion. Table 5-7 presents the impact on the BCR assuming the time estimates are ac certain percentage lower than those provided by WAPOL (i.e. 80 percent equates to a test where the time for custodial and court processes for arrest and summonses assumed in the study are actually 80% of that provided by WAPOL).

As shown in Table 5-7, even when the estimated time to process an arrest or summons falls to 0% of that estimated by WAPOL (i.e. this assumption effectively 'turns off' the time saving benefit) the legislative change still yields a BCR above 1.00. This is because savings to the court system remain intact, helping to offset the costs related to the INP.

Table 5-7 – Outcome of Test 6 - Varying the time savings for police

	Factor by which the arrest and time saving estimate provided by WAPOL is assumed					
	100%	80%	60%	40%	20%	0%
PV Benefits ($)	13,038,982	11,386,954	9,734,927	8,082,899	6,430,872	4,778,844
PV Costs ($)	(3,759,295)	(3,759,295)	(3,759,295)	(3,759,295)	(3,759,295)	(3,759,295)
BCR	**3.47**	**3.03**	**2.59**	**2.15**	**1.71**	**1.27**

Source: Deloitte Access Economics

6 Qualitative Factors

In practice it is often impossible to quantify all relevant costs and benefits in a CBA even though such factors may materially impact the results of the analysis. For example, in many cases, no valid or credible approach exists to attribute a meaningful measure of economic value.

A number of costs and benefits are relevant in the context of this CBA, but are not able to be quantified. Some of these factors, if quantified, may lead to an increase or decrease in the net benefits estimated to arise from the INP (as outlined in Chapter 3). These factors include:

- Long-term social outcomes
- Services and materials cost savings
- The intrinsic value of greater frontline policing
- Time savings for other agencies.

Further description and discussion of these qualitative factors is provided below.

6.1 Long-term social outcomes

A number of relevant social outcomes cannot be measured and quantified effectively under a CBA framework with the given data. However, including such factors may affect the CBA outcome achieved. The most critical factors include:

- gauging the effectiveness of CCINs as a deterrent to future criminal behaviour
- adjusting for offender employment outcomes.

The nature of these factors is discussed below.

6.1.1 Gauging the effectiveness of CCINs as a deterrent to future criminal behaviour

As noted in Chapter 1.2.2.4, the objective of the INP is primarily concerned with reducing opportunity costs for police and the courts in relation to dealing with the minor offences of disorderly behaviour and stealing less than $500.

Beneficial impacts to the offender from the INP were considered at the time the legislative change was made (i.e. avoidance of a criminal record), although potential costs to society and the offender by way of instituting a potentially weaker mechanism for deterring future criminal behaviour was a less prevalent consideration. However, literature[31] suggests that such costs can arise over time.

The INP may impose higher future costs on society to the extent that the prosecution of the prescribed criminal activities by way of an infringement notice fails to act as a suitable deterrent to future criminal behaviour among offenders compared to the arrest and summons process.

There are two potential sources of this risk. Firstly, the experience of being taken into custody and subsequently progressing through the court process when arrested or summonsed can in some cases be a sufficiently costly and traumatic experience to deter future criminal acts, just as much as the final court-ordered penalty from this process is intended to act as a deterrent.

Secondly, an unpaid CCIN does not carry the risk of imprisonment for an offender, unlike a court-ordered fine. Therefore, if an offender is unable or unwilling to pay a penalty – whether it relates to a

31 James Q. Wilson and George L. Kelling (1982), Broken Windows, The Atlantic Monthly; and Centre for Evidence-Based Crime Policy, Broken Windows Policy, Accessed on 4 July 2016. Available from: http://cebcp.org/evidence-based-policing/what-works-in-policing/research-evidence-review/broken-windows-policing/

CCIN or a court-ordered fine – then the outcome of an unpaid CCIN represents a comparatively lighter penalty due to the absence of potential imprisonment from non-payment.

To the extent that this occurs, it is possible to consider a long-term economic cost to society and to the offender from the failure of a CCIN to effectively deter future criminal behaviour in the same way that arrest, summons and court-ordered fines might.

An alleged offender is generally only issued with a CCIN for their first reported stealing or disorderly conduct offence (although the WAPOL policy may still result in an increase in youth or latent offenders). It is also worth noting that arrest and summons, as courses of action to deter future criminal behaviour, are also imperfect.

For example, as discussed in Appendix A part 7.3.2, stealing offences are often not pursued by victims due to the costs imposed on them (mostly retail owners/ managers) and related witnesses (mostly retail employees) in attending court.

6.1.2 Adjusting for offender employment outcomes

Although not a primary objective of the legislation, a potential benefit of the INP includes the opportunity for offenders to avoid criminal records through the issuance of an infringement notice in place of a court conviction[32]. Literature suggests that this benefit to offenders may be significant, as individuals with criminal records have been found to fare worse in the job market, resulting in long-term constrained earning capacity[33].

For example, individuals with a criminal history may be less likely to undertake further education (tertiary or other post-secondary) to enhance their job prospects as a result of the conviction. In addition, employers may discriminate against potential candidates with a criminal record[34]. Finally, the disruptive impact of incarceration throughout an offender's working life may cause ex-offenders to seek short, transient jobs, which tend to be less stable and lower paying[35].

However, the benefit of avoiding such circumstances under the assessment case has not been measured as part of this study. This is because it is challenging to establish the impact of a criminal record incurred as a result of a prescribed offence on an offender's future employment prospects given that this could vary greatly depending on the characteristics of the offender and the offence.

For example the nature of the prescribed offences means that, in the absence of the legislative change, offenders who were prosecuted through the court system may have instead received a court-ordered fine and been eligible for a spent conviction[36]. Further, as CCINs are usually issued for first time offences, any benefit that arises for an offender when they are issued with a CCIN (as a result of the offender avoiding a possible criminal conviction) dissipates if the offender commits a future offence for which a criminal record is incurred.

Lastly, under the INP offenders may be liable for loss of a driver's licence in cases where the CCIN is not settled after referral to FER. Such a loss is also likely to affect employment outcomes.

Given the above complexities, this study has taken a conservative approach by excluding any potential benefits that arise for offenders who avoid incurring a criminal record as a result of the INP.

6.2 Services and materials cost savings

Some service and materials costs attached to arrest and summons actions were excluded from the study due to limitations in the availability of data. These costs are saved as a result of the INP but are not expected to be material to the outcome of the study. These cost savings include:

- reductions in the use of DNA testing and the provision of meals to alleged offenders

32 Not all summonses and arrests result in criminal convictions affecting an individual's criminal record. Such outcomes will depend on the individual's previous history and nature of the offence.

33 Scott H. Decker, Ph.D., Cassia Spohn, Ph.D. and Natalie R. Ortiz, M.S. Criminal Stigma, Race, Gender, and Employment: An Expanded Assessment of the Consequences of Imprisonment for Employment. Final Report to the National Institute of Justice 2010-MU-MU-004

34 Waldfogel, Joel (1994), Does Conviction Have a Persistent Effect on Income and Employment? International Review of Law and Economics, 14 (1994), pp. 103–119

35 Nagin, D, Waldfogel, J, The Effect of Conviction on Income Through the Life Cycle 15, International Review of Law and Economics, Volume 18, Issue 1, March 1998, Pages 25-40

36 An offender can apply for a spent conviction through the court at the time of sentencing. If granted, a spent conviction limits the disclosure of that conviction. It will not be listed on a National Police Clearance.

- reductions in the hospitalisation of alleged offenders

The nature of these cost savings are discussed below.

6.2.1 Reductions in the use of DNA testing and the provision of meals

Under the arrest scenario, an offender is required to be taken back to a local police station for custodial processing. Several costs may be incurred during the processing of an offender at lock-up, which have not been considered in this analysis due to data limitations at the time of analysis.

These costs include the time required for WAPOL officers to take a DNA sample from an alleged offender for stealing offences and the unit cost of DNA kits used for such processing. The time taken to extract a DNA sample can vary based on how cooperative the alleged offender is with officers, while little information was available on the time required to process the sample. Similarly, little information was available on the cost of the DNA kit itself (which cannot be re-used). As such, these costs relating to DNA extraction have been excluded from the analysis.

Omitting these costs understates the cost savings realised by WAPOL as a result of the INP, and therefore results in a more conservative CBA outcome.

Additionally, consultations with WAPOL revealed that alleged offenders are occasionally provided with a meal while they are in lock-up. The factors that determine whether a meal is provided include the duration of the offender's detention period (which may not be correlated with the nature of the offence), and the condition of the offender.

Data was unavailable on both the frequency and cost of providing meals to alleged offenders in lock-up and, therefore, related costs were also excluded from the analysis. Again, omitting these costs understates the cost savings realised by WAPOL as a result of the INP, and therefore results in a more conservative CBA outcome.

6.2.2 Reductions in the hospitalisation of alleged offenders

WAPOL officers are required to follow strict policies to support the welfare of alleged offenders while they are in custody. In undertaking their duties, officers are required to request the provision of medical assistance for offenders who present with health complaints. In some cases, this may involve the use of an ambulance service to transport an offender to an emergency department for treatment.

Although there may be a substantial cost associated with providing such offenders with medical treatment (especially where emergency health services are engaged), data on the frequency and nature of medical assistance rendered was not readily available at the time of analysis.

As such, the cost of providing medical treatment to offenders has been excluded from this analysis. Again, omitting these costs understates the cost savings realised by WAPOL as a result of the INP, and therefore results in a more conservative CBA outcome.

However, in this context there is also a potential benefit lost to alleged offenders under the assessment case. WAPOL officers anecdotally indicated during consultation that some offenders request medical services for health complaints while in custody, although they would not normally seek medical attention were they not in police custody. As the INP diverts alleged offenders from custody, the benefit to the individual of receiving medical assistance while in custody is lost and not measured in this study due to data limitations on the frequency with which this occurs, and the nature of the ailment.

6.3 The intrinsic value of greater frontline policing

As previously noted, a key objective of the INP is to free up police resources to devote greater time to frontline policing, and free-up court time to focus on the consideration of more serious offences. This is effectively a reduced opportunity cost of police time.

However, due to limitations in valuing the specific *outcome* of this lower opportunity cost to the community, this study effectively utilises the value of the time savings realised by WAPOL and court officers as a result of the legislative change as a proxy for these target outcomes. The value of these time savings is measured by the average salary of issuing and processing police officers and the labour cost component of court operating costs.

This approach is used as a proxy on the basis that the value of a police and court officer's labour cost is equal to the cost of an additional resource made available.

It is recognised that resource costs are not always an appropriate measure of value to society. The value of many public services will often significantly exceed the cost of service provision. For example, the time that is spent by a police officer in preventing a homicide, or the time spent by a nurse that may contribute to saving the life of a patient is much more valuable to society than the salary cost of these public servants. It is reasonable to expect that the additional time made available to WAPOL officers as a result of the INP will allow more police officers to remain on frontline duties, creating an increased presence of police in the community. This may lead to a decrease in the incidence of more serious crimes, as a result of the availability of police officers to respond and intervene before a crime is committed. The value of this avoided crime is vexatious to measure, with literature on the subject showing variability in the available approaches[37]. A number of approaches applied in previous studies are described in Table 6-1.

Table 6-1 – Approaches to quantifying the value of avoided crime

Method	Description	Source
Crime-ranking method	This study examined prosecutor perceptions of the seriousness of crime to determine the relative cost of each type.	Roth JA. Prosecutor perceptions of crime seriousness. J Crim Law Criminol. 1978;69:232–242.
The property-value method	This study assessed the diminished value of property subject to criminal activity	Thaler R. A note on the value of crime control: evidence from the property market. Journal of Urban Economy. 1978;5:137–145.
The quality-of-life method	This study sought to estimate the lifetime cost of injuries associated with (amongst other things) crime.	Rice DP, Mackenzie EJ, et al. Cost of Injury in the United States: A Report to Congress. Institute for Health and Aging, University of California, San Francisco, and University Injury Prevention Center, Johns Hopkins University; Baltimore, MD: 1989. pp. 101–109.
The willingness-to-pay approach	This study sought to determine the amount that households are willing to pay for programs that reduce a range of crimes.	Cohen MA, Rust RT, Steen S, Tidd ST. Willingness-to-pay for crime control programs. Criminology. 2004;42:89–109.
The life satisfaction approach	This study estimated the intangible costs of crime. Utilising a life satisfaction approach, the authors measured an individual's willingness-to-pay for crime reduction. Specifically, the results indicated the extent to which property crime in the local area detracts from an individual's life satisfaction.	Frey BS, Luechinger S, Stutzer A. Valuing Public Goods: The Life Satisfaction Approach. Public Choice. 2009;138:317–345.
The life-course model	In this study, the author proposes a life-course model for estimating the long-term costs of violent victimisation. The study measures the costs associated with violent victimisation including later earning capacity of victims.	Macmillan R. Adolescent victimization and income deficits in adulthood: rethinking the costs of criminal violence from a life-course perspective. Criminology. 2000;38:553–580.
Aggregate burden of crime	This study estimated the direct and indirect costs of crime, including: • the expenses incurred by the legal system, crime-prevention agencies and the victim (through personal loss) • the opportunity cost of time for victims, criminals and prisoners • the fear of being victimised • the cost of private deterrence.	Anderson DA. The aggregate burden of crime. J Law Econ. 1999;42:611–637.
The cost of alcohol and other drug-related crime	This paper estimates the costs of alcohol and other drug-involved and attributable crimes. The costs include tangible medical, mental health, property loss, future earnings, public services, adjudication,	Miller TR, Levy DT, Cohen MA, Cox KL. Costs of alcohol and drug-involved crime. Prev Sci. 2006 Dec; 7(4):333-42

37 McCollister KE, French MT, Fang H. The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation. Drug and alcohol dependence. 2010;108(1-2):98-109. doi:10.1016/j.drugalcdep.2009.12.002.

Method	Description	Source
	and sanctioning costs, as well as the value of pain and suffering.	

The relationship between the availability of police resources and criminal activity is also complex. For example, a greater deployment of police officers may in fact result in more prosecution activity, simply because there are more officers to respond to criminal offences.

Such influences need to be controlled for in order to observe the intrinsic value of the INP in measuring the outcome to society aside from time costs saved to the police and courts. However, to achieve this, significantly more data points are required to establish a sufficiently robust evidence base.

In the absence of this evidence base, this study has needed to adopt a conservative approach in using time savings as a proxy for the outcomes achieved as a result of the INP. However, it is recognised that overlaying the intrinsic value of the service provided (i.e. prosecution of more serious crimes and greater crime prevention) to society in increasing frontline policing and freeing up court time may result in significantly higher benefits.

6.4 Time savings for other agencies

This study estimates the value of time savings realised by key agencies that are impacted by the INP. The two entities most directly affected by the legislative change are WAPOL and the Magistrates Court. However, consultation also revealed that there are additional agencies that are likely to benefit from the legislative change.

For example, in cases where the Magistrates Court sentences an offender to a community-based order, the Department of Corrective Services (DCS) is involved in facilitating this arrangement with the offender. Where this sentencing outcome is averted under the assessment case, then DCS also realises a time saving from the legislative change. However, these benefits were not central to the original intent and objectives of the legislation, and have therefore been excluded from this analysis.

Omitting these benefits (albeit likely to be small in magnitude) understates the cost savings realised by the State as a result of the INP, and therefore results in a more conservative CBA outcome.

7 Appendix A - Assumptions

7.1 Introduction

A number of assumptions have been formulated and applied in undertaking the CBA. The nature of these assumptions significant influences the outcomes of the CBA. This appendix outlines the key assumptions applied in the study, and discusses the rationale and evidence-base underpinning the formulation of these assumptions. Core assumptions related to the development of three components of the CBA are discussed in this appendix as follows:

- Assumptions applied in developing the base case
- Assumptions applied in developing the assessment case
- Assumptions applied in developing projections of CCINs issuance.

In addition, the key assumptions applied in estimating the outcomes of Sensitivity Test 4 ('including infringement revenue as a benefit' – see Chapter 5.3.4) are also considered in this appendix.

These assumptions are discussed in detail below.

7.2 Assumptions applied in developing the base case

Defining a counterfactual scenario or base case is a critical component of a CBA. The net benefits of the legislative change are measured as an incremental change from the specified base case, to ensure that only the benefits that can reasonably be attributed to the legislative change are included in the analysis. It is therefore important to specify an appropriate and reasonable base case for the analysis, so it is clear from what base the incremental values have been calculated.

The base case in this study is constructed using historical data relating to the incidence of the two prescribed offences and the related court outcomes. This data is used to formulate projections of the number of arrests, summons and their related resolution that could be expected to occur in the absence of the INP[38]. Three key projections are formulated to establish the base case:

- Projecting growth in stealing offences
- Projecting growth in disorderly offences
- Projecting court outcomes related to disorderly and stealing offences.

The assumptions underpinning these projections are discussed below.

7.2.1 Projecting growth in stealing offences

Stealing offences are recorded within the IMS administered by WAPOL. Data obtained from IMS for the four years prior to the monitoring period showed that arrests for stealing offences of less than $500 had increased at a compound annual growth rate (CAGR) of 21 percent. Summons for stealing offences had increased at a CAGR of seven percent over the same period.

Note that to ensure the above growth rates are consistent with the assessment case, each year measured in the calculation spans the monitoring period, rather than the calendar year. For example, data from 2014 includes stealing offences committed between 5 March 2014 and 4 March 2015.

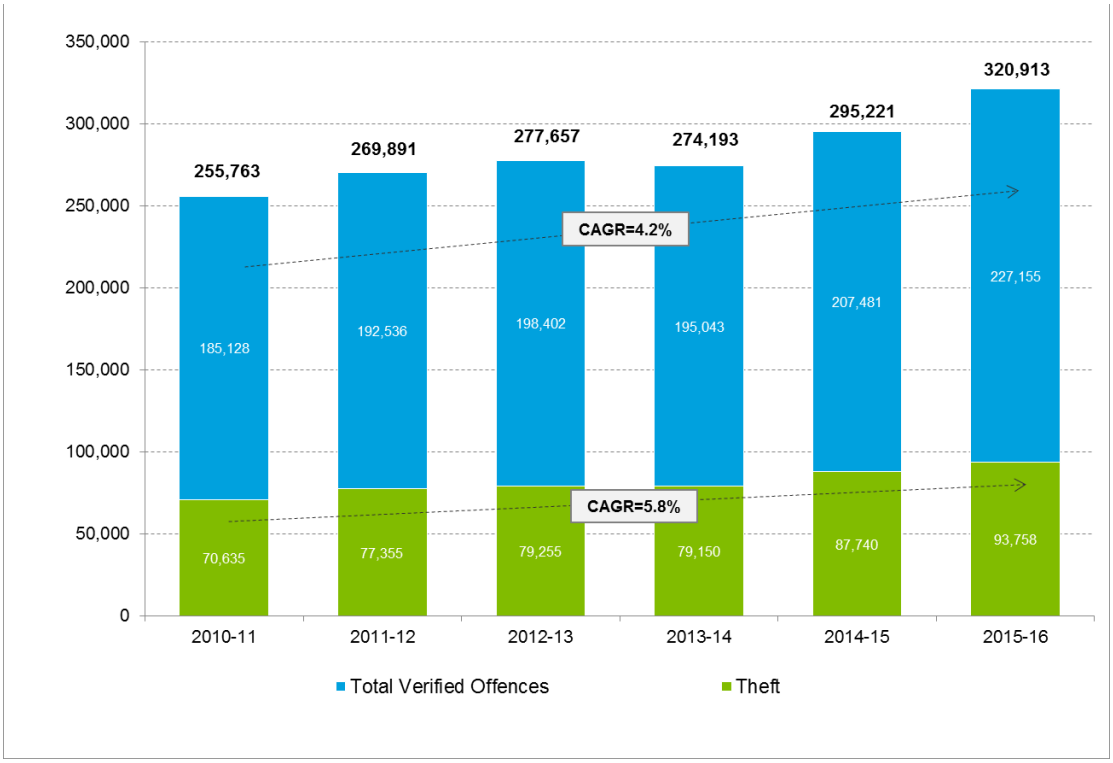
The projected growth rate in the prescribed offences under the base case has a significant impact on the benefits derived. Given the very high rate of growth recorded in IMS for arrests for stealing, it is

38 It is recognised that multiple factors influence crime rates, and therefore, the use of historical data on criminal incidence as a means of formulating future projections may not be accurate. However, the application of more detailed forecasting of future crime rates by taking into account the multiple factors that influence criminal behaviour is outside the scope of this study.

desirable that a longer, more stable time series is utilised as a basis to construct projections. However, data was only available for the previous four years from IMS.

Therefore, data reported publicly by WAPOL[39] on theft offences was used to cross-check these trends over a longer period[40]. As presented in Figure 7-1 the verified offence data suggests that the CAGR of theft[41] offences in WA is 5.8 percent for the period 2010-11 to 2015-16.

Figure 7-1 - CAGR of Theft and Total Verified offences based on 6 year incidence



Source: Deloitte Access Economics, WAPOL.

Due to the fewer IMS data observations available and their relative volatility, the study adopts the growth rates published by WAPOL, with theft used as a proxy for prescribed stealing. Compared to using the IMS data, utilising the verified offence data results in a more conservative CBA outcome as lower rates of growth has the effect of reducing benefits by removing potential future offences under the base case that would be dealt with under the assessment case (see Chapter 3.2.2.1 for more details on this).

This is a key assumption and is therefore the subject of sensitivity testing in Chapter 5.3.5, where the impact of applying the higher growth rate from IMS is examined. In particular, the sensitivity test demonstrates the significant impact of applying a higher growth rate to the number of CCINs issued for stealing offences in future. This 'activates' benefits against this offence as CCIN issuances move beyond being entirely 'additional' to replacing arrests and summonses under the base case, generating a benefit.

Table 7-1 presents the number of stealing offences dealt with by an arrest or summons in 2015 based on the application of the different growth rates discussed above. The 2015 WAPOL scenario is utilised in the study, and represents a reasonable 'mid-point' between the IMS growth scenario and a no growth scenario.

39 See the WAPOL Crime Statistics Portal - https://www.police.wa.gov.au/Crime/Crime-Statistics-Portal/Crime-Statistics-Portal/Crime-statistical-notes

40 The Australian Bureau of Statistics (ABS) publish long term time-series data on offenders by type of criminal activity as part of its publication 'Recorded Crime – Offenders'. While this data was examined, it was not considered appropriate as it captures numbers of *offenders* rather than numbers of *offences*. It is possible for offender numbers to decline while the number of offences may rise. Hence data on offences is more appropriate.

41 Theft is a broader category than stealing under $500. It refers to the unlawful taking or obtaining of money, goods or services, without the use of force, threat of force or violence, coercion or deception, with the intent to permanently deprive the owner or possessor of the use of the money or goods. This category of offence includes the theft of vehicle parts or the contents of a vehicle, but not vehicles themselves.

Table 7-1 – Alternative numbers of stealing offences dealt with via arrest or summons

Stealing responses	2014 actual	2015 IMS growth	2015 WAPOL growth	2015 no growth
Arrests	3,062	3,704 (+7%)	3,239 (+5.8%)	3,062 (0%)
Summons	2,219	2,363 (+21%)	2,347 (+5.8%)	2,219 (0%)
TOTAL	**5,281**	**6,067**	**5,586**	**5,281**

Source: Deloitte Access Economics, WAPOL

7.2.2 Projecting growth in disorderly offences

Disorderly offences in WA are recorded in two databases used by WAPOL: IMS and 'Briefcase'.

It was necessary to consolidate the data from both databases for the purposes of this study given that some historical data on disorderly offences was situated within Briefcase. OWA reviewed the data to ensure there were no duplications before passing it on for further analysis. Briefcase data was only available for 2014 and 2015, meaning a full consolidated view of the number of disorderly behaviour offences in WA can only be constructed for these two years. A summary of this data is presented in Table 7-2.

Table 7-2 - Disorderly behaviour offences in WA

	2014	2015
Arrests	1,555	1,097
Summonses	3,680	2,322
CCINs	0	1,800
TOTAL	**5,235**	**5,220**

Source: WAPOL

Given that two years of fully consolidated data on the number of disorderly behaviour offences in WA is insufficient to provide a reliable indication of future trends, the IMS data alone for the longer four-year period from 2011 was used to gauge the expected rate of change in future disorderly behaviour offences.

Analysis of historic crime activity data from IMS shows that the number of arrests for disorderly behaviour has grown at a CAGR of two percent during the four years prior to the monitoring period, while summonses had increased by 19 percent over the same period.

Again, to ensure the above growth rates are consistent with the assessment case, each year measured in the calculation spans the monitoring period, rather than the calendar year. For example, data from 2014 includes stealing offences committed between 5 March 2014 and 4 March 2015.

As with stealing offences, given the very high rate of growth recorded in IMS over a short period of time (this time for *summonses* for disorderly behaviour), it is again desirable that a longer, more stable time series is utilised as a basis to construct projections.

WAPOL's data was again used to cross-check these trends over a longer period, however this data set does not capture disorderly behaviour offences. However, as a proxy for disorderly behaviour, the *total* number of verified offences in WA shows an average CAGR of 4.3 percent between 2009-10 and 2015-16 (see Figure 7-1).

Due to the fewer IMS data observations available and their relative volatility, the study adopts the growth rates published by WAPOL as part of its reporting on 'total verified offences', with this growth rate in total verified offences used as a proxy for disorderly behaviour offences.

Compared to using the IMS data, utilising the verified offence data results in a more conservative CBA outcome as lower rates of growth has the effect of reducing benefits by removing potential future offences under the base case that would be dealt with under the assessment case (see Chapter 3.2.2.1 for more details on this).

This is a key assumption and is therefore the subject of sensitivity testing in Chapter 5.3.5, where the impact of applying the higher growth rate from IMS is examined.

As an example, Table 7-3 presents the number of disorderly behaviour offences dealt with by an arrest or summons in 2015 based on the application of the different growth rates discussed above. The 2015 'no growth' scenario is utilised in the study.

Table 7-3 – Alternative numbers of disorderly offences dealt with via arrest or summons

Disorderly responses	2014 actual	2015 IMS growth	2015 WAPOL growth	2015 no growth
Arrests	1,505	1,530 (+2%)	1,569 (+4.3%)	1,505 (0%)
Summonses	3,578	4,265 (+19%)	3,731(+4.3%)	3,578 (0%)
Total	**5,083**	**5,795**	**5,300**	**5,083**

Source: Deloitte Access Economics, WAPOL

7.2.3 Projecting court outcomes related to disorderly and stealing offences

Historical data on actual court outcomes for the prescribed offences from the Magistrates Court (from 2008 to 2015) is combined with the above forecasts of incidence of criminal activity to model possible court outcomes under the base case. This data was also used to model the likely court-ordered fine revenue foregone by the State under the assessment case.

Both adjudicated and non-adjudicated outcomes are relevant in this regard.

7.2.3.1 Assumptions regarding adjudicated outcomes

The data from the Magistrates Court illustrates that an offender may face numerous possible adjudicated outcomes following an arrest or summons. Indeed, the data identifies 116 distinct outcomes following a court referral. However, for the purposes of this analysis, the many possible outcomes are aggregated into three broad categories for simplicity[42]:

- **No financial penalty** – the offender is not prosecuted via one of the other two outcomes (fine or imprisonment). This includes offenders who receive a suspended sentence, community service order or is exonerated.
- **Financial penalty** – a court-ordered fine is imposed on the offender as a penalty for the prescribed offence
- **Imprisonment** – the court sentences the offender to imprisonment for the prescribed offence.

Although the Magistrates Court data supplied suggests that a small number of offenders are sentenced to imprisonment for the prescribed offences under the base case, the relatively minor nature of the prescribed offences means that it is unlikely that offenders would receive significant prison sentences.

Furthermore, it may be the case that offenders receiving a prison sentence are not reflective of the type of offenders receiving CCINs, meaning the data may have erroneously contained these cases. For this reason, avoided prison sentences are not measured as a benefit in the analysis.

Following aggregation across the three categories, 89 percent of stealing offences and 98 percent of disorderly behaviour offences had been consolidated into one of the above three court outcomes. The majority of those that could not be consolidated were outside the scope of this analysis. For example, outcomes relating to Juvenile Conditional Release Orders (applicable to offenders aged 17 years of age and younger) were omitted from the consolidation as this outcome is not within the scope of this study (CCINs can be issued to persons 17 years of age and older, although less than 3 percent CCINs issued during the monitoring period were to 17 year olds).

Table 7-4 below summarises the data provided on the outcomes of stealing and disorderly cases referred to the Magistrates Court between 2008 and 2016. These proportions have been applied to estimate possible court outcomes under the base case.

For example, of all offenders attending court accused of stealing under the base case, 49.5 percent are assumed to be sentenced to pay a court-ordered fine (see Table 7-4). Where offenders are assumed to receive a court-ordered fine under the base case rather than a CCIN in the assessment case, the value of these fines is netted against the revenue benefit (relevant for Sensitivity Test 4 – see Appendix A part 7.5 for further details).

42 For example, the Magistrates Court identifies the following outcomes as distinctly separate: 'No Punishment S.46 Sentencing Act'; 'No Punishment S.80 Sentencing Act'; 'No Sentence s11 Sentencing Act'. Each of these outcomes is aggregated into the 'Not guilty' category for the purposes of this analysis, being of a similar final outcome where no punishment is applied.

Table 7-4 – Distribution of court outcomes for stealing and disorderly offences, 2008 to 2016

Offence type	No financial penalty	Court-ordered Fine	Imprisonment
Stealing	45.6%	49.5%	4.9%
Disorderly	11.9%	87.7%	0.4%

Source: DOTAG

To ensure that outcomes under the base case reflected the manner in which CCINs are being applied, the data for the Magistrates Court was adjusted to ensure that only those offenders who had a single stealing or disorderly offence over the five-year period were included. The average value of court-ordered fines for this comparable cohort was $472.80. This sum has been applied to determine the value of court-ordered fines forgone under the base case.

Finally, the Magistrates Court data suggests that the prescribed offences rarely proceed to a trial hearing. Rather, most offences tend to be resolved at the initial hearing. However, where a trial is applicable, significant opportunity costs are incurred by police and the courts in terms of preparation and appearance time. The data suggests that a trial only occurs in three percent of stealing cases and four percent of disorderly behaviour cases. Therefore, this rate of incidence is applied to the base case.

7.2.3.2 Assumptions regarding non-adjudicated outcomes

While the Magistrates Court data provides evidence on the outcomes of court cases for the prescribed offences, it is important to note that not all offenders that are arrested or summonsed present for a court hearing in the first instance.

For example, according to data from the ABS[43], 98 percent of disorderly behaviour cases and 95 percent of stealing cases are resolved via an adjudicated outcome, suggesting a small percentage do not proceed to court and adjudicated outcome. The study therefore applies these same rates to calculate the incidence of non-adjudicated outcomes under the base case, whereby a small percentage of offenders are assumed to avoid sentencing (for example, this may occur in cases where the prosecution elects not to pursue the defendant).

7.3 Assumptions applied in developing the assessment case

The assessment case represents the current state of affairs – that is a scenario in which the INP is operational now and into the future. The assessment case is established using data from WAPOL over the monitoring period. Specifically, the data provided allows quantification of the number of stealing and disorderly behaviour offences dealt with via an arrest, summons or issuance of a CCIN during the period 5 March 2015 to 4 March 2016 (i.e. the monitoring period).

Data from NTIMS collected during the monitoring period is used to construct projections of outcomes under the assessment case, which are compared to modelled outcomes under the base case to estimate incremental changes between the scenarios (the difference between the two forms the basis of the CBA).

The comparison focusses on estimates of the number of CCINs issued as a substitution for arrests, summons or no formal prosecution (the latter of which represents additional offenders prosecuted as a result of the CCIN providing police with a new tool of action).

Like the base case, the most critical assumptions formulated under the assessment case relate to the development of future projections of the rate of substitution between CCINs, arrests and summonses. In this regard, two key projections are considered:

- Projecting stealing offences under the assessment case
- Projecting disorderly offences under the assessment case.

These are considered below.

7.3.1 Projecting disorderly behaviour offences under the assessment case

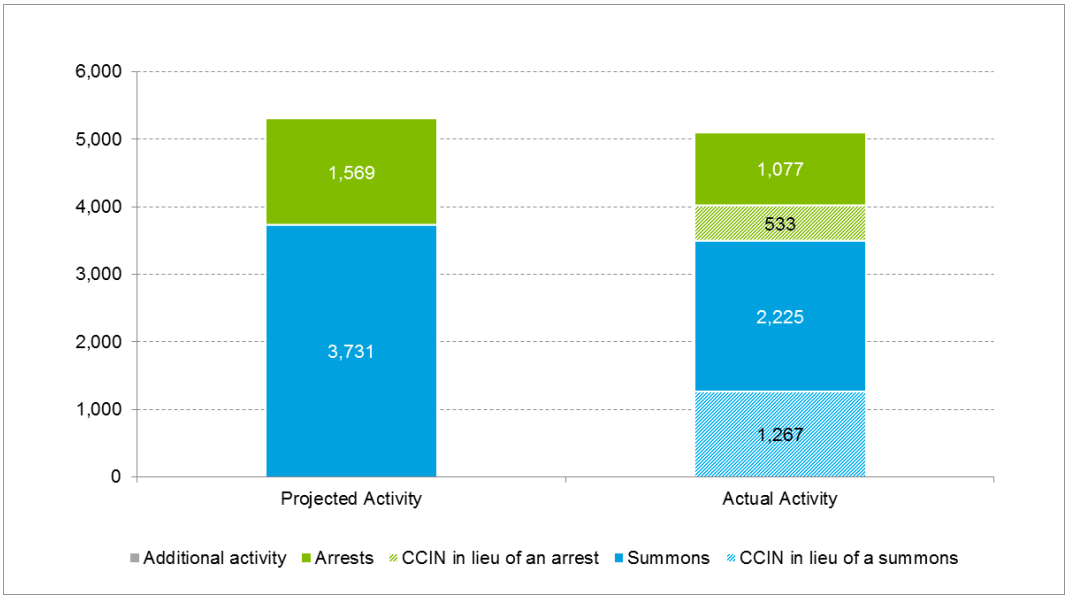
During the monitoring period, WAPOL confirmed that police responded to a total of 5,103 disorderly behaviour offences. Of these, 21 percent (1,077) were dealt with through means of arrest, while 44

43 ABS (2016), 45190DO002_201415 Recorded Crime – Offenders, 2014–15, Table 6, Australian Bureau of Statistics

percent (2,225) were managed by way of a summons. Finally, almost 35 percent (1,800) were dealt with via the issuance of a CCIN.

Figure 7-2 summarises how the projected number of disorderly behaviour offences constructed under the base case (see Appendix 7.2 for a description of the assumptions underpinning the base case forecasts) compare to the actual number of disorderly behaviour offences observed during the monitoring period. During the monitoring period, the base case projections suggest that 3,731 summonses and 1,569 arrests would have otherwise taken place in the absence of the INP.

Figure 7-2 - Arrest and summons for cases of disorderly behaviour assumed to be substituted by CCINs



Source: Deloitte Access Economics, WAPOL

The lower number of arrests and summonses observed during the monitoring period relative to the projections of arrests and summonses under the base case suggests that some substitution of CCINs for arrest and summons has taken place during the monitoring period.

For example, when the number of actual arrests and summonses observed during the monitoring period (i.e. 2,225 summonses and 1,077 arrests) is compared to the equivalent number expected to have occurred under the base case (3,731 summons and 1,569 arrests), it is evident that a substitution effect is occurring. The total shortfall in projected theft arrests (492; 1,569 less 1,077) and summonses (1506; 3,731 less 2,225) exceeds the number of CCINs issued during the monitoring period (1,800).

Therefore the CCINs are proportionally allocated to each substitution group, resulting in an assumed 533 CCINs issued as a substitution for arrests and 1,267 CCINs issued as a substitution for a summons during the monitoring period compared to the base case.

In total, this suggests that arrests and summons are together lower by 1,800 (i.e. 533 plus 1,267) during the monitoring period than what would otherwise be expected under the base case. This compares with the issuance of 1,800 CCINs during the monitoring period.

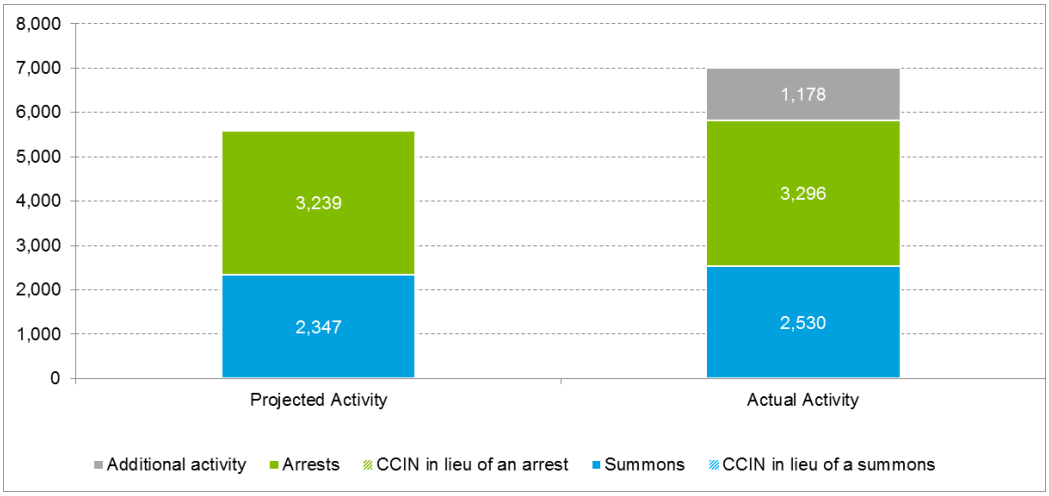
The magnitude of this substitution of CCINs for arrests and summons is a critical assumption as it drives the benefit to the police and courts from the legislative change.

7.3.2 Projecting stealing offences under the assessment case

During the monitoring period, data provided by WAPOL confirmed that police responded to a total of 7,004 stealing offences. Of this, arrests accounted for 47 percent (3,296), summonses made up 36 percent (2,530), and CCINs accounted for the remaining 17 percent (1,178).

Figure 7-3 summarises how the projections constructed under the base case for stealing offences (see Appendix 7.2 for a description of the assumptions underpinning the base case forecasts) compare to the actual outcomes observed during the monitoring period. During the monitoring period, the base case projections suggest that 2,219 summonses and 3,062 arrests would have been issued in the absence of the INP.

Figure 7-3 - Arrest and summons for cases of stealing assumed to be substituted by CCINs



Source: Deloitte Access Economics, WAPOL

It is evident from Figure 7-3 that the number of actual arrests and summonses observed during the monitoring period *exceeds* the numbers projected under the base case. Rather than an increase, a substitution between arrests and summons actions towards CCINs would be expected to result in a reduction in the number of arrests and summons during the monitoring period relative to the base case (as is the case for disorderly behaviour, as outlined in Appendix 7.3.1 above).

This is a strong indication that no substitution of CCINs occurred in place of arrests and summonses during the monitoring period for stealing offences. Therefore, it is assumed that all CCINs issued for stealing offences during the monitoring period represent *additional* individuals who are issued a CCIN during the monitoring period, where they would not normally have been subjected to arrest or summons actions under the base case.

This may reflect the fact that the CCIN provides a useful additional prosecution tool for minor stealing offences. Indeed, this finding is consistent with feedback from WAPOL, which suggested that, prior to the commencement of the INP, minor stealing offences in the retail environment often went unpunished (via means of arrest or summons). This was due to the unwillingness of retailers to commit staff time to preparing for and attending court cases against alleged offenders, particularly where the stealing offence was relatively minor in nature (i.e. less than $500 in value).

In addition, in order to prosecute the alleged offender, the stolen item(s) often needed to be held in police custody as evidence until the court hearing, representing an opportunity cost to the retailer.

For these reasons, prior to the commencement of the INP many retailers elected not to press charges against offenders. However, the introduction of the INP appears to have provided a useful tool of prosecution for stealing in this context, whereby court appearance and evidence is not required, although the offender receives an immediate penalty.

7.4 Assumptions applied in developing projections of CCINs issuance

While source data of actual CCINs issuance obtained from NTIMS is used to inform the range of assumptions discussed above (i.e. regarding the rate of substitution of arrests and summonses for CCINs over the monitoring period); compiling *projections* of CCINs issuance and related substitution over the four years following the monitoring period adds an additional layer of complexity to the study.

A combination of data collected from literature and during the monitoring period is used to inform assumptions regarding the issuance of CCINs over the four years beyond the monitoring period. The key inputs to estimating these projections include the:

- value of CCINs in future
- future growth in CCIN issuance
- process of issuing CCINs
- resolution of CCINs
- administrative costs of processing CCINs.

These aspects are discussed in further detail below.

7.4.1 The value of CCINs in future

Schedule 1 of the Regulations provides that the modified penalty for each CCIN is $500. The value of the modified penalty is assumed to remain constant over the assessment period.

7.4.2 The future growth in CCIN issuance

Estimating the future growth in issuance of CCINs follows a four-step process:

1. Step 1: Annualise the number of CCINs issued
2. Step 2: Generate the transition paths
3. Step 3: Estimate the uptake of CCINs within WAPOL
4. Step 4: Estimate the annual growth in CCINs issuance

These steps are explained below.

7.4.2.1 Step 1: Annualise the number of CCINs issued

The first CCIN issued during the monitoring period related to an offence that occurred on 20 March 2015, while the final CCIN during the monitoring period was issued for an offence that occurred on 4 March 2016. However, the CCIN data provided from NTIMS did not span a full one-year operational period of the CCIN policy for each police district, given that each district began using CCINs at various times during the monitoring period.

Therefore, adjustments were required to estimate the number of CCINs that would have been expected in each district in a full year of operation of the INP. CCIN data during the monitoring period was collected across the 13 police districts and operational divisions in WA. Table 7-5 outlines the offence date of the first CCIN issued in each district to illustrate the various dates of application.

Note that the actual CCIN implementation date by district was not available from NTIMS. Instead, the date of the first incident resulting in a CCIN was used to determine the date of implementation. OWA advise that the first incident date is a reasonable proxy for the implementation date.

Table 7-5 – First recorded issuance of CCINs by police district, WA

District	Date of implementation
Central Metropolitan District	20 March 2015
Goldfields-Esperance District	04 August 2015
Great Southern District	12 August 2015
Kimberley District	03 August 2015
Mid-West-Gascoyne District	13 August 2015
North West Metropolitan District	14 June 2015
Others	07 August 2015
Pilbara District	03 August 2015
South East Metropolitan District	19 May 2015
South Metropolitan District	25 May 2015
South West District	30 April 2015
State Operations Division	10 April 2015
Wheatbelt District	06 August 2015

Source: WAPOL

Due to the staggered introduction of the CCIN policy across the districts, IMS data was utilised to supplement information regarding the number of prescribed offences committed during the one year prior to the monitoring period (5 March 2014 to 4 March 2015).

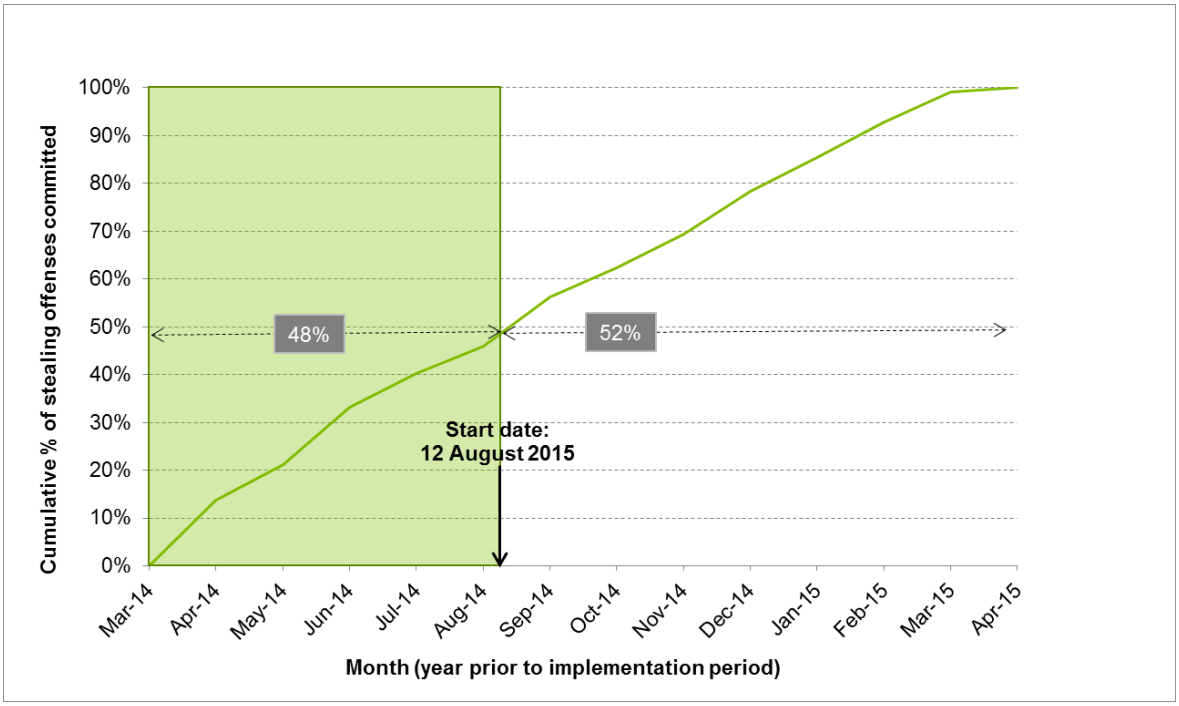
This data is recorded for all disorderly and stealing offences in IMS for each district.

For example, as shown in Figure 7-4, police officers in the Great Southern District did not begin issuing CCINs until 12 August 2015. Therefore, in order to determine a full-year forecast of CCINs in the region, an estimate of the number of CCINs that would have been issued between 5 March (i.e. the start of the monitoring period) and 11 August 2015 (the day before the CCIN policy was implemented in the district) has to be made. This is the period highlighted in green in Figure 7-4.

For cases such as these, IMS data was used to estimate the proportion of offences for which CCINs may have been issued during the monitoring period, but prior to implementation of the legislative

change. The adjustment was made separately for disorderly behaviour and stealing offences; and applied for each district in order to derive an annual estimate of CCIN issuance for both prescribed offences during the full monitoring period.

Figure 7-4 – Distribution of stealing offences committed in the Great Southern District, 5 March 2014 to 4 March 2015 (i.e. period prior to commencement of CCIN issuance)



Source: Deloitte Access Economics, WAPOL

In total, it is estimated that 3,942 CCINs were issued over the monitoring period across all police districts. A summary of the full-year results is provided in Table 7-6.

Table 7-6 – Estimated number of CCINs issued during the monitoring period, by WA police district

District	Proportion of stealing occurring following implementation of the INP	Full-year stealing estimate	Proportion of disorderly occurring following implementation of the INP	Full-year disorderly estimate
Central Metropolitan District	94%	336	97%	466
Goldfields-Esperance District	67%	30	64%	86
Great Southern District	52%	42	56%	34
Kimberley District	61%	53	46%	487
Mid-West Gascoyne District	58%	33	62%	128
North West Metropolitan District	71%	244	71%	104
Others*	76%*	7	50%	130
Pilbara District	47%	79	63%	278
South East Metropolitan District	79%	295	82%	69
South Metropolitan District	81%	220	76%	114
South West District	86%	103	82%	223
State Operations Division*	76%*	61	100%	283
Wheatbelt District	50%	12	66%	26
Total	**76%**	**1,514**	**75%**	**2,428**

Source: Deloitte Access Economics, WAPOL. *State-wide average used as IMS and briefcase data did not provide crime rates for these districts.

7.4.2.2 Step 2: Proportion of transition paths

Having estimated the annual numbers of CCINs issued, the next step is to determine the number of CCINs issued as a substitution for a base case outcome. In the base case there are three possible outcomes assumed as possible (arrest, summons and no formal prosecution). Under the assessment case, issuance of a CCIN is assumed to substitute one of these outcomes. For example, one possible substitution is that between an arrest and a CCIN for disorderly behaviour (see Table 7-7 below).

Defining the number of CCINs substituted for base case outcomes is only necessary for the year following the monitoring period, as after this time, the proportion of CCIN issued as substitution for base case outcomes is assumed to remain at a constant rate.

For example, in each year following 2016, 75.1 percent of all disorderly CCINs are assumed to be issued as a substitute for a summons. These assumptions are summarised in Table 7-7.

Table 7-7 –Substitution of assessment case outcomes for base case outcomes

	Assessment case compared to base case	Count (2015)	Proportion of stealing/ disorderly behaviour	Count (2016) adjusting for proportion
Stealing	CCIN substituted for an arrest	0	*0.0%*	0
	CCIN substituted for a summons	0	*0.0%*	0
	CCIN substituted for a warning/ caution	1,178	*100.0%*	1,514
	Sub total	**1,178**		**1,514**
Disorderly	CCIN substituted for an arrest	533	*29.6%*	719
	CCIN substituted for a summons	1,267	*70.4%*	1,709
	CCIN substituted for a warning/ caution	--	--	--
	Sub total	**1,800**		**2,428**
	TOTAL	**2,978**		**3,942**

Source: Deloitte Access Economics, WAPOL

7.4.2.3 Step 3: Estimate the future uptake of CCINs within WAPOL

When implementing new policies and procedures, there can often be a lag in compliance and usage by the target user group following initial deployment as users grow comfortable and familiar.

In academic literature, this process is theorised as the 'diffusion of innovation'. The theory relates to new ideas and technology, and provides a framework from which to study the rate of adoption by target users in response to new processes. The theory divides users into five primary groups, which are defined by their willingness to adopt the new technology – in the parlance of the theory these are described as 'innovators', 'early adopters', 'early majority', 'late majority' and 'laggards'.

Consultation within WAPOL suggests that this effect is relevant to the deployment of the CCIN policy among WAPOL officers, with some officers early adopters of the new tool, while others lag behind.

To reflect this effect, a simplified adjustment to the growth rates was applied to determine the likely increase in CCIN use due purely as a result of increased future adoption by WAPOL as officers move from 'laggards' to 'adopters' . However, this growth in use will eventually cease as the majority of users become aware of the new tool and more comfortable in its use.

Adjusting for the varied commencement dates of each region and the seasonality of offences, trends in CCIN issuance showed a 1.2 percent month-on-month growth rate over the monitoring period. That is, independent of offence trends (and after the CCIN policy had been implemented), each district on average issued 1.2 percent more CCINs in each subsequent month of the monitoring period.

However, one area of ambiguity is the duration of this uptake (or increase) in CCIN use by WAPOL officers. It would be expected that as time efficiencies are realised by officers and the relevant IT system (NTIMS) comes to be better understood, that police officers will be more inclined to issue CCINs where appropriate.

Given there is uncertainty over the duration of this effect, a conservative estimate is applied, that CCIN use will continue to grow by 1.2 percent per month for the first 12 months following the monitoring period, to reflect this uptake effect. After this period, no growth in CCIN use as a result of uptake is assumed to occur (i.e. police officers are assumed to grow used to issuing CCINs as part of their daily

process). This monthly rate of growth equates to an annualised growth of 15 percent during the 12 months following the monitoring period.

Note that this assumption is different to the *general* rate of growth in CCIN issuance, where CCIN issuance is assumed to grow in line with offence trends. This is discussed in the following section.

Table 7-8 illustrates the impact that this uptake assumption has on the number of CCINs assumed to be issued in 2016 (i.e. the year after the monitoring period).

Table 7-8 – 2016 CCIN count adjusted for increase in uptake in WAPOL usage

	Transition	Count (2016) Step 2	Count (2016) adjusting CCIN uptake
Stealing	CCIN substituted for an arrest	0	0
	CCIN substituted for a summons	0	0
	CCIN substituted for a warning/ caution	1,514	1,806
	Sub total	**1,514**	**1,806**
Disorderly	CCIN substituted for an arrest	719	858
	CCIN substituted for a summons	1,709	2,039
	CCIN substituted for a warning/ caution	--	--
	Sub total	**2,428**	**2,897**
	TOTAL	**3,942**	**4,703**

Source: Deloitte Access Economics, WAPOL

7.4.2.4 Step 4: Estimate the annual growth in CCINs issued

This step requires an estimate of the number of CCINs issued each year over the assessment period. This rate of growth is assumed to reflect the growth in prescribed offences which is driven by external determinants of crime (demographic and social).

As outlined in Appendix 7.2, data reported publicly by WAPOL[44] on 'theft' and 'total verified offences' is used as a basis to prepare forecasts of growth in prescribed offences. The historical growth rate in thefts and the historical growth rate in total verified offences are used as proxies to project growth in the prescribed stealing and disorderly behaviour offences respectively.

The future rate of growth in prescribed offences assumed in the analysis significantly influences the value of the benefits. The impact of assuming higher rates of growth is investigated in Chapter 5.3.5.

7.4.2.5 Summary of CCIN assumptions

Based on these results, the study finds that 4,703 CCINs are issued in 2016 (i.e. the total after completing step 4). During the following years of the assessment period, CCIN issuances are assumed to grow at the CAGR adopted in this analysis, as described in Appendix A part 7.4.2.4 (Step 4) above. A summary of the assumed annual growth in CCINs issued is presented in Table 7-9.

44 See the WAPOL Crime Statistics Portal - https://www.police.wa.gov.au/Crime/Crime-Statistics-Portal/Crime-Statistics-Portal/Crime-statistical-notes

Table 7-9 –Assumed CCIN count over the assessment period, categorised by substitution from base case to assessment case outcome

	Transition	2015	2016	2017	2018	2019
Stealing	CCIN substituted for an arrest	0	0	0	0	0
	CCIN substituted for a summons	0	0	0	0	0
	CCIN substituted for a warning / caution / other	1,178	1,806	1,883	1,964	2,048
	Sub total	**1,178**	**1,806**	**1,883**	**1,964**	**2,048**
Disorderly	CCIN substituted for an arrest	533	858	894	932	972
	CCIN substituted for a summons	1,267	2,039	2,126	2,217	2,311
	CCIN substituted for a warning / caution / other	--	--	--	--	--
	Sub total	**1,800**	**2,897**	**3,020**	**3,149**	**3,284**
	TOTAL	**2,978**	**4,703**	**4,903**	**5,113**	**5,332**

Source: Deloitte Access Economics, WAPOL

7.4.3 Process of issuing CCINs

A key benefit of the INP is that WAPOL officers are able to deal with an offender (who commits a prescribed offence) more quickly, saving time that may otherwise have been incurred in arresting an offender and in some cases, preparing for and appearing in court.

However, NTIMS data suggests that not all CCINs are issued at the site of the offence. In some cases, offenders were issued with CCINs while already in police custody (in lock-up). Where this is the case, an offender's identifying particulars (photograph, fingerprint and DNA sample) may also be taken.

Understanding how CCINs are issued is critical, as the time saving benefits may actually be reduced if police officers still incur additional time costs for dealing with offenders at the police station despite issuing a CCIN.

Consultation with WAPOL revealed that there are two key processes that can occur when processing an offender at the police station. These include:

1. taking an offender's photograph and fingerprint
2. taking an offender's photograph, fingerprint and a DNA sample.

Notably, according to WAPOL policy, a DNA sample can only be taken if an offender has committed a stealing offence.

The study assumes that a CCIN can be issued in one of three ways; these include following the two processes described above, as well as 'on-the-spot' (note that the CCIN is then served within 21 days). Table 7-10 presents the ways in which CCINs were issued for all 2,978 CCINs issued during the monitoring period.

The various time costs associated with issuing CCINs in these three ways is applied in the study to ensure that time savings accurately reflect the time incurred by police officers in issuing CCINs.

Table 7-10 – Manner by which CCINs were issued during the monitoring period

	1) Fingerprint and photograph	2) Fingerprint, photograph and DNA	3) On the spot	Total
Stealing	54 (5%)	194 (16%)	930 (79%)	1,178
Disorderly	283 (16%)	0	1517 (84%)	1,800

Source: Deloitte Access Economics, WAPOL

7.4.4 Resolution of CCINs

It is necessary to make assumptions under the assessment case regarding the manner in which offenders choose to resolve a CCIN. Figure 7-5 below illustrates the five possible ways that a CCIN may be resolved. These are referred to as outcomes.

Figure 7-5 - Outcomes available to an offender issued a CCIN

Source: Deloitte Access Economics

A component of the benefit is based on the assumed proportion of offenders that choose each resolution outcome.

NTIMS data recorded 2,978 CCIN issuances during the monitoring period; however, not all of these CCINs had sufficient time remaining in the monitoring period to determine the actual resolution outcome. For example, WAPOL officers have 21 days to issue a CCIN following committal of a prescribed offence. Once issued, offenders have a further 28 days to pay the CCIN before a final demand notice is issued. Following the final demand notice, offenders have a further 28 days before the CCIN is referred to FER.

Therefore, to accurately determine how CCINs were resolved, a CCIN would need to be issued at least 56 days prior to the end of the monitoring period. For example, although a CCIN issued with 10 days left in the monitoring period may have been paid on the 11th day, the data would record the infringement as unpaid. As such, CCINs which were issued with less than 56 days remaining in the monitoring period were removed from the calculations for this assumption.

Consultation with WAPOL indicated that a 'grace period' of 14 days is often granted prior to escalating infringements to a final demand notice and to FER. However, to enable the largest possible sample of CCINs to be used, and in keeping with the legislated requirements, the study assumes a 56-day cut-off period for resolution of a CCIN. This assumption is conservative, as it provides a shorter monitoring period in which offenders may resolve infringements.

Removing CCINs issued with less than 56 days left in the monitoring period leaves 2,327 CCINs from which to base assumptions about resolution outcomes. Of these CCINs, 36 (two percent) elected to go to court (outcome 1 in Figure 7-5 above); 494 (22 percent) were paid before a final demand notice was issued (outcome 2) and 106 (4 percent) were paid following a final demand notice (outcome 3). Of the remaining CCINs, 21 were withdrawn (and thus removed from this sample) and the remainder were referred to FER.

Once a CCIN is referred to FER, NTIMS data no longer tracks the progress of the case. As such, NTIMS data was only used to determine the proportion of cases that were resolved via outcomes 1, 2 and 3.

FER data on the outcomes of CCINs referred to the registry was used to determine the proportion of cases that were resolved via resolution outcome 4. This dataset contained 759 CCIN cases that were referred to FER. Table 7-11 outlines the rate of payment of CCINs referred to FER.

Table 7-11 - Rate of CCINs substantially paid following referral to FER

CCIN issue Date	CCINs referred to FER	More than 50% paid	More than $10 paid	At least something paid	2014-15 FER Infringements paid within 12 months rate*	2014-15 FER fines paid within 12 months rate*
June	1	0 (0.0%)	0 (0.0%)	0 (0.0%)	-	-
July	1	0 (0.0%	0 (0.0%	0 (0.0%	-	-
August	98	5 (5.1%)	8 (8.2%)	9 (9.2%)	-	-
September	181	11 (6.1%)	13 (7.2%)	15 (8.3%)	-	-
October	208	14 (6.7%)	21 (10.1%	23 (11.1%	-	-
November	242	9 (3.7%)	16 (6.6%)	17 (7.0%)	-	-
December	28	0 (0.0%)	0 (0.0%)	0 (0.0%)	-	-
Grand Total	**759**	**39 (5.1%)**	**58 (7.6%)**	**64 (8.4%)**	**59%**	**39%**

Source: Deloitte Access Economics, WAPOL, Annual Report of the Department of the Attorney General 2014-15, p.122

However, a key limitation of the FER case data is the brief time period to which the data relates. The data in Table 7-11 provides the status of CCIN payments that were referred to FER between 22 June 2015 and 3 December 2015.

Cases classified as 'More than 50 percent paid' refer to infringements that have been at least half paid at the end of the monitoring period. 'More than $10 paid' indicates infringement accounts that had been credited with at least $10 prior to the end of the monitoring period. Lastly, 'At least something paid' indicates infringement accounts for which the offender has commenced a repayment plan and credited any amount to the account.

The 'At least something paid' classification has been used to identify those cases that are assumed to be paid-off in full within the near future. This is because many offenders enter 'time-to-pay' agreements, which involve paying the infringement over a period of time. By including accounts for which a repayment plan has been commenced (rather than only those that are fully paid) a proportion of offenders that are likely to pay their accounts at some time in the future are included in the study.

This is a conservative assumption, as it is possible that a greater proportion of offenders may eventually pay their infringements at some time in the future. However, the analysis assumes that the remaining proportion of offenders that have their CCINs referred to FER make no payment.

Also presented in Table 7-11 is the repayment rates for court-ordered fines (39 percent) and infringements (59 percent) referred to FER during 2014-15. These rates are significantly higher than the rates observed for CCINs referred to FER; however, they may not be indicative of repayment rates for CCINs. Firstly, while fines tend to be of similar value to CCINs, non-payment can result in imprisonment, an outcome not possible for CCIN non-payment. Secondly, typical infringements referred to FER tend to be lower in value, and so may not be directly comparable to CCINs.

No clear trend appears in the FER payment data. However, it seems that offenders who pay infringements do so soon after their cases are referred to FER. This is suggested by the fact that there is no noticeable increase in payment rates the earlier a CCIN was referred to FER. Given the apparent lack of a relationship between the time of FER referral and payment rates, the analysis assumes CCINs that are paid are settled within the first month of being referred to FER. Note that the short follow-up period means that an assessment of the consequences for individuals with accumulated debts cannot be considered in this study.

The remaining cases are assumed to be resolved via resolution outcome five (the offender does not make the payment). This outcome will be relevant for offenders to which the following applies:

a) the offender makes small payments under a time-to-pay arrangement so that the payback period extends for a number of years;

b) The sheriff confiscates goods to the value of the infringement to settle the debt; or

c) The infringement and associated penalty is superseded by a future offence.

While the State may eventually receive revenue under the possible outcomes noted in points a) and b) above, the realisation of the revenue is delayed indefinitely into the future, and the current analysis has no basis on which to make an assumption about the proportions of offenders that would reach these outcomes.

Further, these outcomes carry an associated administrative or enforcement cost which reduces the value of infringement revenue benefits. As such, the assumption is made that all offenders who fail to pay their infringements within one month after having their cases referred to FER will fail to make the payment in the future.

7.4.5 Administrative CCIN processing cost

The analysis has estimated the administrative cost incurred for issuing a CCIN and following up with offenders by means of reminder notices. Consultations undertaken by OWA indicate that an average estimate for these costs is $25 for each CCIN issued. The analysis treats this cost as a negative benefit.

7.5 Assumptions applied for Sensitivity Test 4

7.5.1 Description and rationale

Chapter 5.3.4 considers a sensitivity test whereby net revenue from CCINs is included as a benefit in the CBA. CCINs for the prescribed offences of stealing under $500 and disorderly behaviour carry a penalty of $500 per infringement. While not an explicit objective of the State Government (and considered a transfer in economic assessment), it is recognised that CCINs paid by offenders nonetheless represent a financial return to the State[45].

The key element of this benefit is:

- **CCIN revenue generated** - the revenue benefit accruing to the State as a result of police having issued a CCIN, rather than making an arrest, issuing a summons or taking some other action (such as issuing a caution, move-on-notice, or other informal action not resulting in custody or court appearance).

The above time saving is netted-off against related time costs incurred under the assessment case. The time cost consists of:

- **Cost of court-ordered fines foregone** - under the assessment case, the financial benefit for the State attached to a CCIN is offset (to some extent) by the revenue that the State would have otherwise earned under the base case from court-ordered fines[46]. To avoid overstating benefits, the estimated revenue related to court-ordered fines foregone is netted-off from the CCIN revenue generated.

The net revenue yielded to the State (i.e. the net of the two components above) is recognised as a benefit under Sensitivity Test 4 (see Chapter 5.3.4). The key aspects of the calculation are discussed below according to the two identified components.

7.5.2 Benefit calculation

7.5.2.1 CCIN revenue generated

The value of CCIN revenue generated represents the incremental revenue accruing to the State from the issuance of CCINs. There are two critical parts to the calculation of this benefit:

- Likelihood and timing of CCIN payment
- Adjustments for payment arrangements.

These aspects and how they affect the benefits are discussed below.

Likelihood and timing of CCIN payment

45 The payment of a CCIN is not considered a 'transfer' (a zero-sum game whereby one party, the offender, pays the infringement to another party, the government). This is because a CCIN represents a penalty related to criminal and illicit behaviour, for which society incurs a cost.

46 A court-ordered fine is typically the outcome of arrests and summonses for the prescribed minor offences.

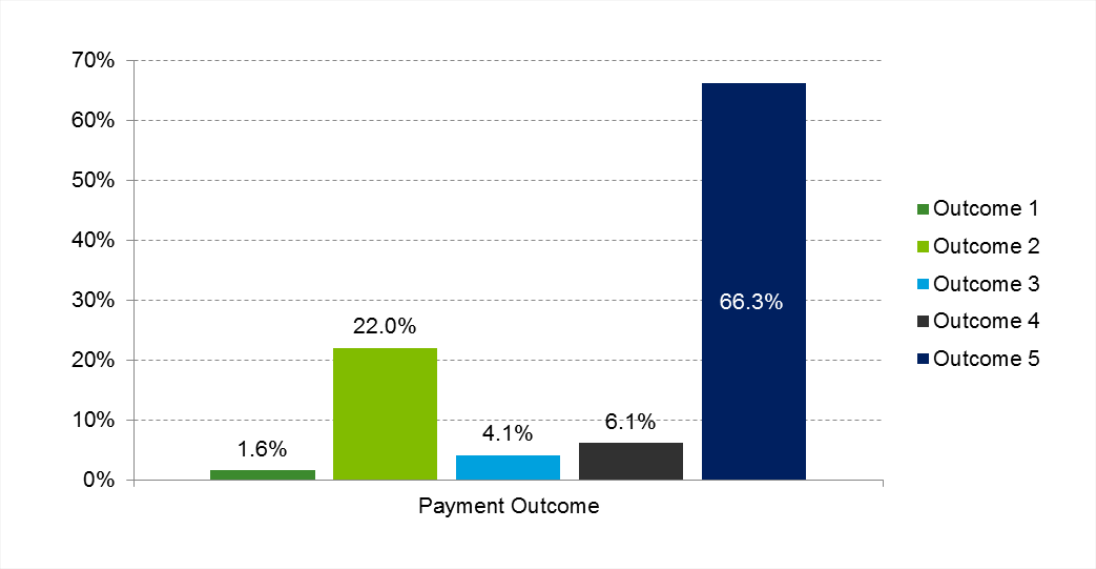
Not all CCINs issued under the assessment case are expected to be paid, or paid in full. In recognition of this, an estimate of the likely payment rate is applied and only these proceeds are recognised as a benefit.

To measure this effect, one of five different payment outcomes are modelled after an offender is issued with a CCIN. The path assumed to be followed by an offender affects the value of this benefit. Each of these five payment outcomes is summarised in Figure 7-5.

The number of offenders assumed to fall within each payment outcome is calculated for the entire assessment period using payment data provided by WAPOL and FER[47] for the monitoring period.

The proportion of offenders who fall within each of the outcome categories during the assessment period is illustrated in Figure 7-6. It is evident that a large proportion of CCINs issued are expected to remain unpaid during the assessment period (outcome 5). This is reflective of a number of factors, including the relatively high value of a CCIN ($500).

Figure 7-6 - Proportion of alleged offenders by CCIN payment outcome, assessment period



Source: Deloitte Access Economics, DOTAG

Outcome 4 (i.e. the offender makes payment only after referral to FER) was particularly challenging to estimate accurately with the given data. CCIN payment information is available for the (relatively short) monitoring period only, and in reality, offenders referred to FER may be given 'payment arrangements'. These arrangements allow the offender to spread payments over a long period of time, much longer in duration than the monitoring period. For this reason, with the given data, it is difficult to measure the proportion of offenders referred to FER who eventually pay the CCIN in full.

It is assumed that 6.1 percent of offenders referred to FER eventually make payment. This proportion represents the number of offenders who had paid at least $1.00 towards their CCIN following referral to FER during the monitoring period. The fact that some repayment was made is taken to indicate a strong likelihood that full repayment will be made at some time in the future.

This proportion is much lower than the comparable KPI reported in the DOTAG Annual Report 2014-15. The KPI 'Fines Enforcement Registry – Percentage of Infringements satisfied within 12 months' reported a 2014-15 actual of 59%.

This material difference in payment rates for CCINs relative to the FER KPI is not reflective of the effort or ability of FER to achieve repayment as per set KPIs. Rather, it is likely to reflect the relatively high value of the CCIN infringement compared to other infringements managed by FER (e.g. achieving payment against a $500 unresolved infringement is more challenging than achieving payment against an unresolved $100 infringement).

47 FER is part of the Court and Tribunal Services division of the Department of the Attorney General. The Fines Enforcement Registry (FER) enforces outstanding fines from numerous prosecuting authorities and all of Western Australia's courts. Matters are referred to the FER where further sanctions may be imposed on fine defaulters to collect fines.

The value of revenue projected to be collected during the assessment period from CCINs is presented in Table 7-12.

Table 7-12 - Calculation of benefit for component 3.1 - CCIN revenue generated, by payment outcome, unadjusted values (unless otherwise indicated)

Outcome	2015	2016	2017	2018	2019	Total
Outcome 1- offender elects to go to court to dispute the CCIN	--	--	--	--	--	--
Outcome 2- offender makes the payment within 28 days prior to final demand notice	321,027	480,626	537,480	560,424	584,346	**2,483,903**
Outcome 3- offender makes the payment after being issued a final demand notice	49,284	89,110	99,310	103,549	107,969	**449,223**
Outcome 4- offender makes payment after being referred to FER following non-payment of final demand notice	--	89,057	133,332	149,104	155,469	**526,961**
Outcome 5- The offender does not make the payment	--	--	--	--	--	--
TOTAL BENEFIT (unadjusted) – Component 3.1	**370,310**	**658,793**	**770,122**	**813,077**	**847,785**	**3,460,087**
TOTAL BENEFIT (PV) – Component 3.1	370,310	658,793	719,740	710,173	692,045	3,151,062

Source: Deloitte Access Economics, Magistrates Court, DOTAG. Note: totals may not add due to rounding

7.5.2.2 Cost of court-ordered fines foregone

The value of court-ordered fines that would have been paid under the base case is calculated and netted from the value of the infringement revenue under the assessment case in recognition of this foregone revenue.

Analysis of data from the Magistrates Court for the period 2008 to 2016 found that 50 percent of stealing cases and 88 percent of disorderly behaviour cases resulted in an adjudicated court-ordered fine. OWA analysis of this data also found that the average value of a court imposed fine for stealing and disorderly offences was $472.80[48]. DOTAG also reports that 39 percent of fines are paid in the 12 months following sentencing[49].

Using these data items, a rate of payment is calculated for court-ordered fines under the base case over a rolling 12-month period, assuming a constant rate of payment (i.e. no seasonality).

Table 7-13 shows how applying these estimates to the number of CCINs issued under the assessment case results in an estimated $1.1 million (unadjusted value) in court-ordered fine revenue is foregone by the State over the assessment period. This is netted off the value of infringement revenue generated for the State under the assessment case.

Table 7-13 - Calculation of benefit for component 3.2 - Cost of court-ordered fines foregone, unadjusted values (unless otherwise indicated)

Outcome	2015	2016	2017	2018	2019	Total
Average value of court-ordered fine foregone ($)	472.80	472.80	472.80	472.80	472.80	--
Count of offenders otherwise liable for court-ordered fine (number)	158	493	572	597	622	2,441

48 This represents the value of the court-ordered fine only. It excludes a number of other monetary orders that a Magistrate can make, including orders that one party pay the costs of the other; the cost of attending court to a witness in the proceeding and / or that one pay restitution or compensation to a victim of a crime.

49 Department of the Attorney General (2015), Annual Report 2014-15

TOTAL BENEFIT (unadjusted) – Component 3.2	**(74,513)**	**(233,007)**	**(270,520)**	**(282,068)**	**(294,108)**	**(1,154,215)**
TOTAL BENEFIT (PV) – Component 3.2	**(74,513)**	**(233,007)**	**(252,822)**	**(246,369)**	**(240,080)**	**(1,046,790)**

Source: Deloitte Access Economics, Magistrates Court, DOTAG. Note: totals may not add due to rounding

8 Appendix B - Processing time estimates

The following table presents the estimated time required to complete key tasks during the custody and court process, as developed with WAPOL officers during a workshop held on 14 June 2016. All estimates are reported in portions of an hour (i.e. 1.00= 60 minutes).

Figure 8-1 - Processing time estimates provided by WAPOL

	Summons - Stealing	Arrest - Stealing	CCIN - Stealing	Summons - Disorderly	Arrest - Disorderly	CCIN - Disorderly
Initial Police Action						
Take witness statements	1.00	1.00	0.00	0.00	0.00	0.00
Take victim(s) statement(s)	0.50	0.50	0.00	0.00	0.00	0.00
Communicate transportation intentions to lockup	0.00	0.00	0.00	0.00	0.00	0.00
Transport offender to lockup (including detaining offender, pat down and initial custodial procedures in some cases)	0.50	0.50	0.00	0.50	0.50	0.00
Sub-Total	***2.00***	***2.00***	***0.00***	***0.50***	***0.50***	***0.00***
Processing Duration Following Arrest / Summons						
Core processes:						
Custodial procedures	0.50	0.50	0.00	0.50	0.50	0.00
Brief creation (interviews etc.)	1.50	1.50	0.00	0.50	0.50	0.00
Supervisor check	0.50	0.50	0.00	0.25	0.25	0.00
Brief compilation	0.08	0.10	0.00	0.10	0.10	0.00
Incident Report	0.50	0.50	0.00	0.50	0.50	0.00
NTIMS			0.25			0.50
Brief service/post	0.10	0.10	0.00	0.10	0.10	0.00
Notation of brief in brief book	0.10	0.10	0.00	0.10	0.10	0.00
Brief conveyance to Police Prosecuting /tracking	0.10	0.10	0.00	0.10	0.10	0.00
Custodial release	0.08	0.17	0.00	0.08	0.17	0.00
Sub-Total	***3.47***	***3.57***	***0.25***	***2.23***	***2.32***	***0.50***
Other considerations:						
DNA sample - note: includes custodial procedures	0.17	0.17	0.67	N/A	N/A	N/A
Fingerprint and photograph - note: includes custodial procedures	0.33	0.33	1.00	0.33	0.33	1.00
Sub-Total	***7.43***	***7.63***	***2.17***	***4.80***	***4.97***	***2.00***
Court Preparation						
Prep - All Cases						
Brief room processes	0.17	0.17	0.00	0.17	0.17	0.00
Prosecuting Prep, Court time	0.08	0.08	0.00	0.08	0.08	0.00

	Summons - Stealing	Arrest - Stealing	CCIN - Stealing	Summons - Disorderly	Arrest - Disorderly	CCIN - Disorderly
Prep - Not Guilty Pleas						
Recording in brief register at Station	0.08	0.08	0.00	0.08	0.08	0.00
Trial Preparation paperwork, EROI log, CCTV log /tracking (statements, CCTV, etc.)	2.50	2.50	0.00	2.00	2.00	0.00
Service of witness summons, P40's etc.	3.00	3.00	0.00	0.17	0.17	0.00
Rostering changes/emails/notifications	0.50	0.50	0.00	0.50	0.50	0.00
Supervisor Trial brief check/tracking	1.00	1.00	0.00	0.75	0.75	0.00
BHM brief check/tracking	0.75	0.75	0.00	0.50	0.50	0.00
Service of Disclosure	0.50	0.50	0.00	0.00	0.00	0.00
Brief conveyance to Police prosecuting	0.17	0.17	0.00	0.17	0.17	0.00
Trial – Prep	1.00	1.00	0.00	0.50	0.50	0.00
Sub-Total	***9.75***	***9.75***	***0.00***	***4.92***	***4.92***	***0.00***
Court Process						
Court attendance:						
>> Arresting officer (trial)	8.00	8.00	0.00	8.00	8.00	0.00
>> Corroborating officer (trial)	8.00	8.00	0.00	8.00	8.00	0.00
>> Prosecutor	2.00	2.00	0.00	2.00	2.00	0.00
Prosecuting completed brief tracking	0.08	0.08	0.00	0.08	0.08	0.00
Brief received at Station/tracking	0.25	0.25	0.00	0.25	0.25	0.00
Brief write-off P77	0.33	0.33	0.00	0.33	0.33	0.00
Supervisor Check P77	0.17	0.17	0.00	0.17	0.17	0.00
Brief filing	0.17	0.17	0.00	0.17	0.17	0.00
Station Archiving	0.17	0.17	0.00	0.17	0.17	0.00
Sub-Total	***19.17***	***19.17***	***0.00***	***19.17***	***19.17***	***0.00***
Grand Total	**38.35**	**38.55**	**2.17**	**29.38**	**29.55**	**2.00**

9 Limitation of our work

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Ombudsman Western Australia
Level 2, Albert Facey House, 469 Wellington Street Perth WA 6000
PO Box Z5386 St Georges Terrace Perth WA 6831
Tel 08 9220 7555 • Freecall (outside metropolitan area) 1800 117 000 • Fax 08 9220 7500
Email mail@ombudsman.wa.gov.au • Website www.ombudsman.wa.gov.au