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Access Economics



Northern Territory youth justice models

Fixing a broken system

24 October 2017

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Glossary

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
BCR	benefit to cost ratio
CBA	cost benefit analysis
JDAI	Juvenile Detention Alternatives Initiative
MST	multi-systematic treatment
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
SA	South Australia
SCRGSP	Steering Committee for the Review of Government Service Provision
TAS	Tasmania
UK	United Kingdom
US	United States
VIC	Victoria
WA	Western Australia

Key terms

Apprehensions	Apprehensions were defined to be youths who are apprehended and proceed to court for this report due to the intended target population and availability of data.
Bail accommodation	A pre-sentencing accommodation option to ensure youths who have committed crimes too serious to warrant diversion attend court and for this report it is proposed to include a secure element.
Cautioning	There are two forms of cautioning – formal and informal. Informal cautioning is where a police officer will give a person a verbal or written warning. Formal cautioning generally involves some conditions, such as requiring the young person to attend support services.
Detention	Detention refers to a young person being either detained on remand or serving a sentence in a detention facility.
Diversion	Cautioning, conferencing, and programs aimed at diverting young people away from the court system and thus assist in avoiding a criminal record.
Minor offence	Any offence for which diversion is permitted under Section 39 of the <i>Youth Justice Act (NT)</i> .
Recidivism	Where a person has multiple episodes of incarceration.
Reoffend	Where a person has multiple episodes of apprehension.
Restorative detention	Supervised living arrangements that take a more holistic approach to a young person's needs, avoiding the negative social and life consequences of being incarcerated.
Sentenced community-based supervision	Includes orders such as probation, suspended detention, and parole or supervised release.
Sentenced detention	When a young person is convicted and receives a legal order to serve a period of detention.
Serious offence	Unless specified otherwise, an offence for which diversion is not permitted under Section 39 of the <i>Youth Justice Act (NT)</i> .
Unsentenced community-based supervision	Includes orders such as supervised or conditional bail and home-detention bail.
Unsentenced detention	Where young people have been detained while waiting for a court outcome, which in the NT is mostly youths who are remanded in custody.
Warning	Includes any verbal or written warning.

Executive summary

The incarceration and treatment of young people in detention has become a topic of national public concern. In response to alarming reports regarding not only the treatment but also future life outcomes of young people in detention, the Royal Commission into the Protection and Detention of Children in the Northern Territory (the “Commission”) was established. The Commission seeks to investigate the treatment of young people in the Northern Territory (NT) justice system, and identify associated deficiencies.

Key issues being uncovered by the Commission’s recent work call for a new approach to juvenile detention and sentencing, not only in the NT but also globally. Accordingly, a three-pronged response specifically tailored to the NT has been proposed. This new system would employ additional diversionary efforts to keep young people from entering detention in the first place, while also employing a more rehabilitation-focused approach to addressing the needs of those young people who still get detained from re-entering detention. This report outlines the results of a cost benefit analysis (CBA) of implementing these options using a ‘PICO’ approach – i.e. target population, intervention, comparator and outcomes.

Intervention and comparator

This report discusses the viability and benefits of one holistic intervention compared to a do nothing scenario – i.e. diversion and supervision of youths in the NT continues as it has for the last 10 years where funding changes are only to maintain existing levels of supervision and diversion. Thus, the **target population** for the intervention was young people living in the NT who are aged 10-17 years old and who are apprehended and would proceed to court for a crime between the 2017 and 2027 financial years. For the purposes of this report, all results are presented for financial years (i.e. 2017 refers to the 2016-17 financial year).

The **intervention** comprises three components, which act at different stages of the youth justice system, including:

1. **diversion**: cautioning, conferencing and programs aimed at diverting young people away from the court system and thus assist in avoiding a criminal record;
2. **bail accommodation**: a pre-sentencing accommodation option to ensure youths who have committed serious crimes (crimes too serious to warrant diversion) attend court, which includes a secure component as a replacement for existing remand and a non-secure component for bail support; and
3. **restorative detention**: supervised living arrangements that take a more holistic approach to a young person’s needs, avoiding the negative social and life consequences of being incarcerated.

As noted, the **comparator** was a do nothing scenario where the diversion and supervision of youths in the NT continues as it has for the last 10 years based on historical trajectories. This scenario is referred to as the base case. The base case model outlines the expected costs to the NT if the youth justice system continues on its current trajectory from 2017 to 2027. The model uses established trends in the number of youths who are supervised in various settings (either community or detention) during or after sentencing (either sentenced or unsentenced)¹ relative to underlying demographics to project the expected number of youths who are coming into contact with the youth justice system in the NT.

¹ Pathways for youth justice modelled in this report have been based on availability of published data. For example, the AIHW (2017) uses the terms as follows:

- **unsentenced detention** – where young people have been detained while waiting for a court outcome, which in the NT is mostly youths who are remanded in custody;
- **unsentenced community-based supervision** – includes orders such as supervised or conditional bail and home-detention bail;
- **sentenced detention** – when a young person is convicted and received a legal order to serve a period of detention; and

The total costs of the youth justice system (not including court and police costs) were estimated to be \$37.3 million in 2016-17. The daily average costs of the youth justice system are expected to grow rapidly over the coming decade, at an average rate of 6.9% per annum, which is in line with the real growth in youth justice system costs across Australia (Productivity Commission, 2017) – reaching \$113.4 million by 2026-27 (real 2016-17 dollars). The main driver of this growth is growth in daily detention costs using existing facilities.

The main **outcomes** analysed in this report were:

- reoffending rates for the 12 months following participation in either a diversion program, or bail accommodation services; and
- recidivism rates (return to sentenced detention) for the 12 months following participation in restorative detention.

Benefits included the **change in costs** (the interventions were estimated to have a lower per unit cost than the comparator) in the current year and the subsequent pathways for **adult incarcerations** and **future crime costs**.

Table i shows a list of key modelling inputs and assumptions and how they differ between the base case and the intervention.

• **sentenced community-based supervision** – includes orders such as probation, suspended detention, and parole or supervised release.

Table i: Modelling inputs and assumptions

Assumption or input	Base case	Intervention
Diversion		
Diversion participants as a proportion of apprehensions proceeding to court	34%	38%
Average cost of expanded diversion programs	-	\$12,053
Reoffending rates (apprehended) within 12 months for those proceeding directly to court (base case) versus those sent to diversion programs (intervention)	46.5%	32.0%
Bail accommodation		
Participants as a proportion of apprehensions proceeding to court	-	7.6%
Upfront capital costs, \$ million	-	15.3
Average daily cost of detention (remand vs bail accommodation) in 2017, \$	1,691	797
Average daily cost of detention (remand vs bail accommodation) in 2027, \$ (real 2016-17 dollars)	3,256	1,534
Restorative detention		
Average daily cost of detention per detainee in 2017, \$	1,691	682
Average daily cost of detention per detainee in 2027, \$ (real 2016-17 dollars)	3,256	1,312
Upfront capital costs, \$ million	-	17.4
Recidivism rates (return to sentenced detention) within 12 months	75%	46%
Recidivism rates for youth who progress to adult detention	61%	38%

Source: Deloitte Access Economics estimates.

Intervention 1 – diversion

The benefits of diversion were measured in terms of reducing the number of people in unsentenced community or detention supervision in the current year, reducing the number who are sentenced to community supervision, and reducing reoffending and therefore apprehensions² in the following year (with subsequent benefits for reduced sentences to detention).

It was estimated that up to 50% of all apprehensions may be diverted in a given year based on NT Government data (Yick, 2016).³ The incremental number of diversion participants was modelled as 4% of total apprehensions in any given year, which was based on NSW diversion rates applied to the profile of offences committed by young people in detention or remand in the NT. Therefore approximately 100 apprehensions would be diverted in a given year between 2017 and 2027. Thus, given that total diversions were approximately 34% in 2016, the diversion ratio with this component of the intervention would represent 38% of apprehensions.

Overall, it was estimated that benefits of increased diversion (without bail accommodation) relative to the base case between 2017 and 2027 would increase from approximately \$4.2 million to \$6.9 million (in real

² In this report, apprehensions typically refer to youths who are apprehended and would otherwise proceed to court to align with the target population for expanded diversion. Apprehensions were based on the available data from Yick (2016).

³ Homicide and related offences, dangerous and negligent acts endangering persons, and prohibited and regulated weapons and explosives were all considered to be offences that would still require court processes.

discounted⁴ 2016-17 dollars), respectively (as shown in Table ii). Over the same period, costs are expected to increase from \$1.0 million to \$1.5 million (in real discounted 2016-17 dollars). The total net benefits of increased diversion were estimated to be \$52.2 million.

Table ii: Overall costs and benefits of diversion intervention, real discounted 2016-17 dollars (rate = 7%)

Cost or benefit (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Benefits of diversion programs	4.19	5.02	5.53	5.90	6.15	6.37	6.51	6.60	6.68	6.74	6.86
Costs of diversion programs	1.01	1.09	1.17	1.24	1.30	1.36	1.39	1.42	1.44	1.46	1.50
Net benefit	3.18	3.93	4.36	4.65	4.85	5.01	5.12	5.18	5.23	5.28	5.36

Source: Deloitte Access Economics calculations. Note: results are for financial years where 2017 refers to 2016-17, and so on for other years. Components may not sum to totals due to rounding.

Intervention 2 – bail accommodation

The benefits of bail accommodation relative to the base case were measured in terms of reducing the number of people in unsentenced detention, and reducing the number of people sentenced to detention for a breach of justice order. Bail accommodation would be delivered to approximately 7.6% of total apprehensions following diversion, with considerably lower unit costs than current remand detention – approximately \$797 per youth per day compared with \$1,605 per youth per day.

Overall, it was estimated that benefits between 2017 and 2027 would increase from approximately \$20.7 million to \$31.6 million (in real discounted 2016-17 dollars). Over the same period, operational costs are expected to increase from \$7.2 million to \$11.1 million (in real discounted 2016-17 dollars), and there would be associated upfront capital costs of \$15.3 million – a total of \$22.5 million in 2016-17. The total net benefits of bail accommodation were estimated to be \$183.3 million (in the absence of diversion and restorative detention).

Table iii: Overall costs and benefits of bail accommodation, real discounted 2016-17 dollars (rate = 7%)

Cost or benefit (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Benefits of bail accommodation	20.71	23.08	24.96	26.56	27.74	28.85	29.62	30.13	30.57	30.97	31.62
Costs of bail accommodation	22.46	8.00	8.67	9.24	9.66	10.06	10.34	10.52	10.68	10.83	11.06
Net benefit or cost	-1.75	15.08	16.29	17.32	18.07	18.79	19.28	19.61	19.88	20.14	20.56

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

Intervention 3 – restorative detention

The primary financial benefits of restorative detention are linked to reduced reoffending, with fewer young people returning to sentenced detention, although there are also lower associated costs for youths who remain in sentenced detention.⁵ As with diversion and bail accommodation, there are also fewer crimes and adults sentenced to detention who have a juvenile record.

⁴ Future benefits and costs were discounted using an annual real discount rate of 7% per annum, which is a standard rate recommended by the Department of the Prime Minister and Cabinet (2016). Discounting future costs and benefits is necessary due to time-preference – where society would rather have a dollar today than in the future – and to reflect the opportunity cost of money – i.e. money spent today could be diverted to alternate uses and earn a rate of return. Thus discounting savings in the future allows for comparability with any costs incurred today.

⁵ From a societal perspective, enabling youth to get on with education and work would bring greater benefits in the long run, but data limitations do not permit these benefits to be modelled here.

After diversion and bail accommodation, 66 youths were expected to be sentenced to detention in 2017, of which 15 would be newly sentenced and 52 would be returning from a prior incarceration (noting there were 69 youths sentenced to detention in 2016 and the recidivism rate was estimated to be 75%).

Table iv: Unique youths sentenced to detention after diversion and bail accommodation, no restorative detention

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total sentenced	66	70	73	76	80	83	87	90	93	97	103
Returning to youth detention (r=75%)	52	50	52	54	57	59	62	65	67	70	73
New sentences	15	20	21	22	23	24	24	25	26	28	30
Exit youth justice as youth (r=25%)*	11	12	13	13	14	14	15	15	16	17	18
Exit youth justice as adult (r=32%)	21	22	23	24	25	27	28	29	30	31	33
Returning to adult detention (r=61.5%)	13	14	14	15	16	16	17	18	18	19	20
Net exits from detention	20	21	22	23	24	25	26	27	28	29	30

Source: Deloitte Access Economics calculations. Note: results are for financial years. Total exits calculated as the sum of the number of youths who exit youth justice as a youth plus those who become an adult and do not return to adult detention. * calculated after youth exit as an adult. 'r' represents the relevant rate or proportion – e.g. for return to youth detention it is the recidivism rate, while for exit youth justice as adult, it represents the proportion of youths who become an adult in each year.

With restorative detention, 66 youths were still expected to be sentenced to detention in 2017. However, the pathways from there are substantially lower due to decreased recidivism rates (approximately 40% lower).

In chapter 3, **the upfront capital costs to implement restorative detention were estimated to be \$17.4 million (in the presence of bail accommodation and greater diversion)**, which would result in total benefits of approximately \$159.7 million (real 2016-17 dollars, discounted at 7%). The benefits are likely to far outweigh the capital costs of building the new facilities.

The benefits were estimated to increase from approximately \$8.6 million to \$16.4 million between 2017 and 2027 (in real discounted 2016-17 dollars). The total net benefits of restorative detention were estimated to be \$142.3 million (in the absence of diversion and restorative detention). Table v presents the summarised results for restorative detention.

Table v: Overall costs and benefits of restorative detention, real discounted 2016-17 dollars (rate = 7%)

Cost or benefit (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Costs of restorative detention*	17.44	-	-	-	-	-	-	-	-	-	-
Benefits of restorative detention	9.83	12.73	14.38	15.42	16.05	16.53	16.83	16.98	17.07	17.15	17.34
Net benefit or cost	-9.88	12.73	14.38	15.42	16.05	16.53	16.83	16.98	17.07	17.15	17.34

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding. * operating costs of restorative detention have been included within benefits (i.e. the cost differential is a benefit). Costs have been modelled in the presence of diversion and bail accommodation for simplicity.

Cost benefit analysis results

Combined, the modelled interventions would result in total discounted benefits of \$473.2 million (discounted, real 2016-17 dollars) between 2017 and 2027. The total cost of the intervention was estimated to be \$137.7 million (discounted, real 2016-17 dollars) between 2017 and 2027. The per year discounted costs, benefits and net benefit/cost is shown in Table vi.

Table vi: Overall costs and benefits of intervention, real discounted 2016-17 dollars (rate = 7%)

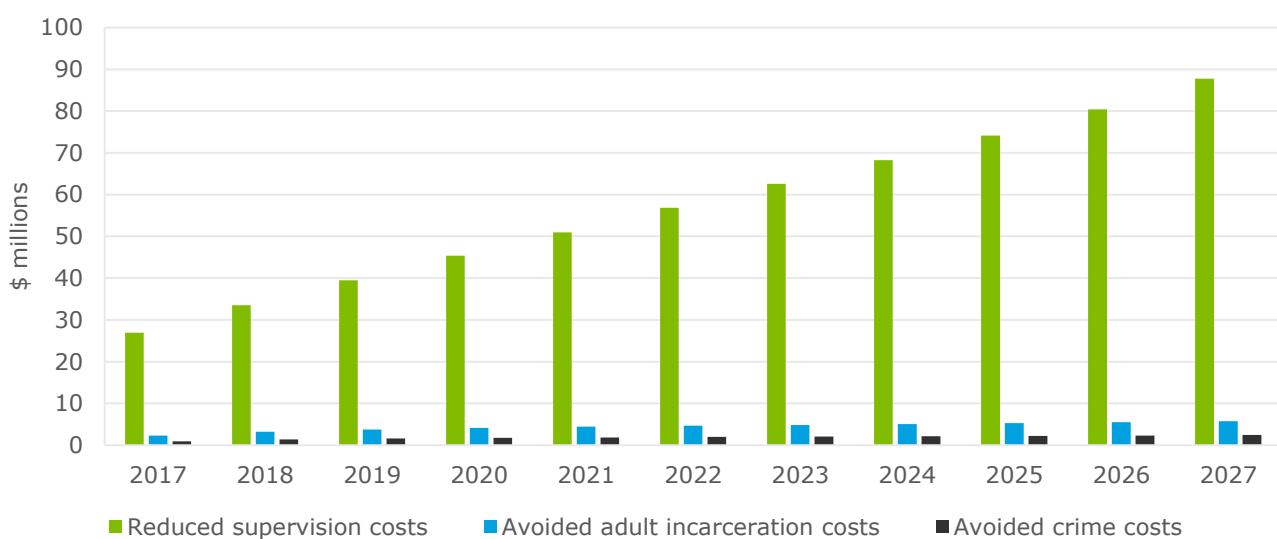
Cost or benefit (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Costs of intervention (discounted, r = 7%)	39.9	7.9	8.6	9.1	9.5	9.9	10.2	10.4	10.5	10.7	10.9
Benefits of intervention (discounted, r = 7%)	30.1	35.6	39.2	41.9	43.7	45.3	46.3	47.0	47.5	48.0	48.8
Net benefit or cost	-9.8	27.7	30.6	32.7	34.1	35.3	36.1	36.6	36.9	37.3	37.8

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding. * operating costs of restorative detention have been included within benefits (i.e. the cost differential is a benefit).

The total net benefits were estimated to be \$335.5 million, and the benefit to cost ratio (BCR) was estimated to be 3.4 – meaning for every \$1 the NT Government spends on the interventions, the return to the NT community would likely be \$3.40 on average. This estimate is conservative as it does not include subsequent benefits for productivity and wellbeing which can be substantial for adult interventions (Deloitte Access Economics, 2013). However, there are a number of limitations to the data outlined in the background to the report.

The net benefits derived from the intervention can be separated into three distinct components: cost of crime avoided, adult outcomes and change in sentenced numbers due to increased diversion. Change in the number of young people now avoiding a sentence because of diversion programs is the largest contributor to the growing net benefits across the ten year time horizon (as shown in Chart i).

Chart i: Breakdown of total benefits following intervention



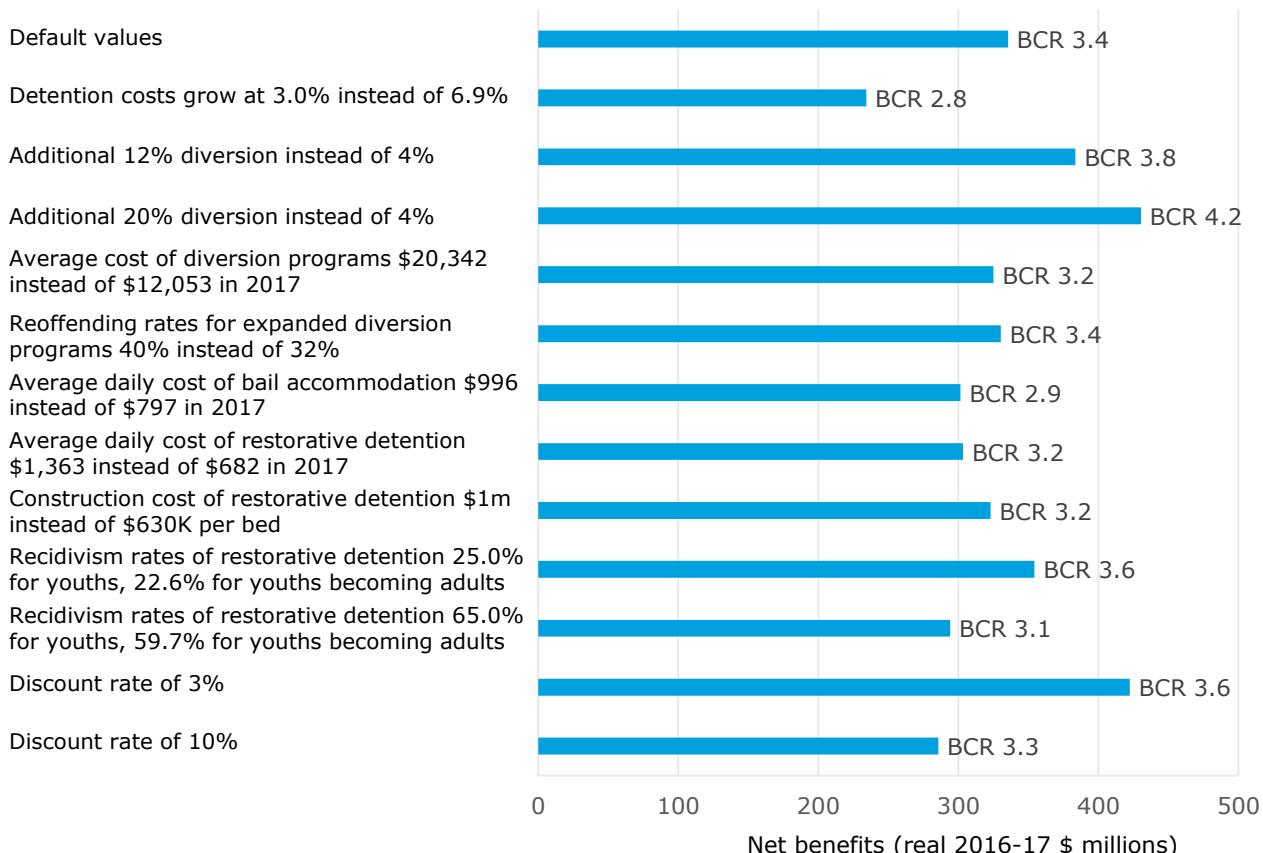
Source: Deloitte Access Economics calculations.

Sensitivity analysis

One-way sensitivity testing revealed the BCR of the proposed intervention was likely to range between 2.8 and 4.2 depending on some of the key assumptions made. The results were most sensitive to the costs of bail

accommodation and the expected costs of detention into the future. The net benefits of the proposed intervention are likely to range between \$234.3 million and \$430.4 million. Chart ii shows the results of the one-way sensitivity analysis and expected ranges.

Chart ii: Results of sensitivity analysis, BCR and net benefit, real 2016-17 dollars, \$ millions



Source: Deloitte Access Economics calculations.

A multivariate sensitivity analysis was conducted to identify the likely “worst case” given the available range of evidence presented throughout the report, which included changing the expected growth rate, cost of diversion programs, reoffending and recidivism rates for diversion and restorative detention, and changes in the construction costs and average daily cost of bail accommodation and restorative detention. When considering the combination of all of these measures, **the BCR was estimated to be 1.4 and the discounted net benefits were estimated to be \$79.6 million**. The total discounted benefits were estimated to be \$259.1 million and the total discounted costs were estimated to be \$179.4 million.

Conclusion

Because in many cases, evidence has had to be drawn from outside the NT, conservative parameters have been employed wherever there was a range to choose from. For example, the smallest observed impact of restorative detention on recidivism rates has been used, new fixed capital costs have been treated as an upfront lump sum rather than being amortised and discounted over future years, and costs of detention have been assumed to grow at considerably less than historical rates.

Any relaxation of these assumptions would only further strengthen the existing large net benefits.

Conversely, even in the multivariate analysis where the set of parameters were set to the worst case, the BCR still favoured intervention over the base case (BCR of 1.4 to 1). **The available evidence strongly supports reforms to increase the use of diversion and bail accommodation, and there is a compelling case that restorative detention substantially reduces recidivism rates.**

Thus, implementation of interventions by the NT Government for youth justice would deliver real benefits and help create life changing opportunities for young people at risk of entering the justice system. By activating interventions that work to address the root cause of offending in young people in a holistic manner, these young people would be given the opportunity live a full and productive life in the community.

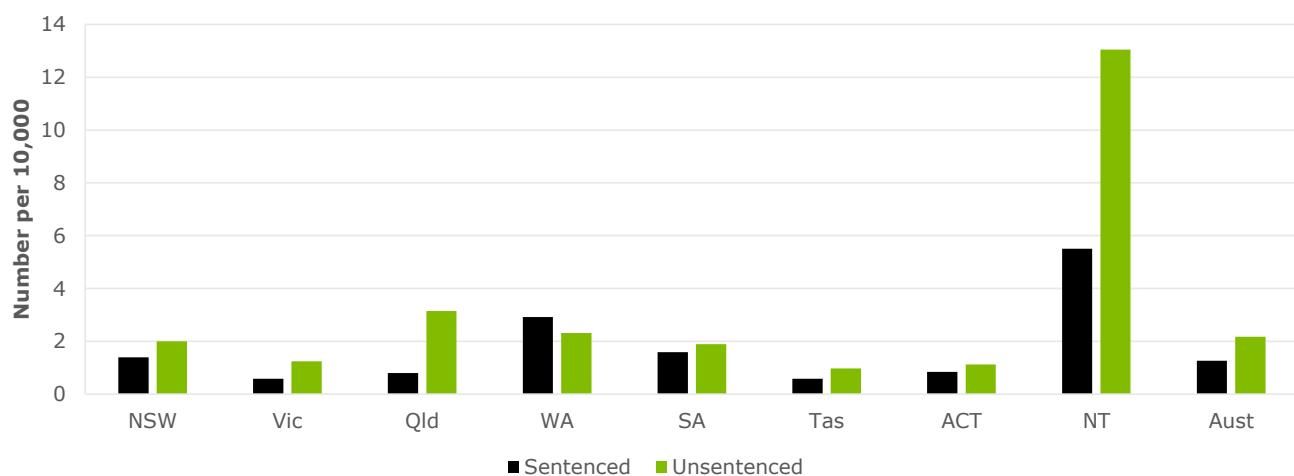
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1 Background

Deloitte Access Economics was engaged by the Royal Commission into the Protection and Detention of Children in the Northern Territory (the “Commission”) to undertake a cost benefit analysis (CBA) of an alternative youth justice model in the Northern Territory (NT).

The rate of detention⁶ of young people in the NT is substantially higher than any other state or territory in Australia. While other jurisdictions have seen improvements in young people’s detention rates across Australia over the last 5 years, the NT has experienced an increase in detention rates over the same period from 55 to 63 per 10,000 young people.

Chart 1.1: Young people aged 10-17 in detention on an average day, by legal status and jurisdiction, 2015-16 (rate)



Source: Australian Institute of Health and Welfare (AIHW) (2017).

The number of young people apprehended in the NT each year has grown substantially over the last decade – increasing by 36% from 2006 to 2016, with Indigenous males comprising the greatest share of that growth (Royal Commission into the Protection and Detention of Children in the Northern Territory, 2017). Young people are being apprehended from a younger age, with an increase in the number of 10-14 year olds in detention (growing 168% between 2006 and 2016). A total of 94% of young people in detention in the NT during 2015-16 were Indigenous (Yick, 2016).

The peak age for offending in the NT, as with most jurisdictions, is late teens to early twenties (ABS⁷, 2017a), which is also applicable to young males, who constitute over 80% of young people in detention in the NT. Research has shown that incarcerating youths can interrupt and delay the normal pattern of ageing out of the system since detention disrupts their engagement with families, school and work (Holman and Ziedenberg, 2006).

Accordingly, this report outlines a three-pronged response to reduce the number of young people in detention in the NT by preventing young people from entering detention in the first place and rehabilitating young people who will still go to detention. The modelled intervention includes an **increase in diversion, bail accommodation and detention that is restorative, and rehabilitates young people in detention (“restorative detention”)**. The interventions act at different stages of the youth justice system. These stages are termed pre-court diversion (defined to include bail accommodation) and post-sentence. The **bail**

⁶ Detention refers to a young person being either detained or serving a sentence in a detention facility.

⁷ Australian Bureau of Statistics.

accommodation aspect is an alternative to unsentenced detention (remand) and helps ensure youths meet bail requirements and turn up to court.

Some key terms in this report are outlined as follows.

- **Youths** are young people aged between 10 and 17 years of age, who have committed, or are at risk of committing, an offence.
- Youths that come into contact with the justice system may be **diverted**, involving the delivery of verbal or written warnings by police, or formalised programs aimed at targeting the root causes of the offending behaviour.
- If an offence is serious enough, a young person will formally enter the justice system at the court level. Prior to trial, there are a number of options for young people awaiting their judgement. Young people may be detained while awaiting a court outcome, which includes either:
 - **unsentenced detention**, including remand in custody; or
 - remain **unsupervised in the community**.
- Following presentation at court, a young person may be ordered to:
 - **unsentenced community-based supervision**, which includes supervised or conditional bail, and home detention bail;
 - **sentenced detention**, involving a legal order to serve a period of detention; or
 - **sentenced community based supervision**, including orders such as probation, suspended detention, and parole or supervised release.

1.1 Overview of modelled intervention

This report outlines a three-pronged response which may assist to ameliorate the current rates of supervision in the NT. The intervention places greater emphasis on **diversion**, the use of **bail accommodation** (both secure and non-secure) to serve as an intermediary while young people are awaiting a court finalisation, and an alternative form of detention that focuses on rehabilitation and restoration of young people in detention “**restorative detention**”.

In the base case, the comparator was considered to be a do nothing scenario where the diversion and supervision of young people in NT continues on the trajectories based on the past 10 years. Funding changes are only to maintain existing (or increase in line with demographic trajectories) service provision for current programs and services.

The target population for the intervention was considered to be young people living in the NT who are aged 10-17 years old and who are apprehended for a crime between the 2017 and 2027 financial years.

The following sections outline the proposed models and the context underlying each model.

1.1.1 Diversion

Diversion aims to prevent further offending by minimising a person’s contact with and progression through the criminal justice system and reduce the impact of the criminal justice system. Where necessary, diversion can include appropriate interventions with young people that have come into contact with the justice system and can help to avoid negative labelling and stigma associated with criminal conduct (Joudo, 2008).

1.1.1.1 Background and overview of diversion

The NT offers a range of diversionary programs to youths at risk of, and already in contact with, the juvenile justice system. Young people who have committed an offence may receive a verbal or written warning or be placed in a diversion program (including conferencing with the youth and victim or family), which will generally occur before proceeding to court.⁸ Diversion programs may be specifically tailored to the needs of young people. For example, the NT currently offers drug and alcohol programs, camp programs where young people undertake various activities such as hiking, and various community programs where young people generally work with not for profit organisations.

⁸ Diversion can also occur after proceeding to court, although data provided by the NT Government to the Royal Commission (personal communication, June 2017) indicate only 7% of referrals for diversion programs are from a court source.

In the 2017-18 Budget, the NT Government committed \$18.28 million to improve the youth justice diversion system. This was comprised of (NT Government, 2017):

- \$8.05 million to support youth outreach and re-engagement;
- \$4.95 million for youth diversion including intensive camp programs for young people;
- \$4.86 million for bail support programs; and
- \$0.42 million to establish a legislative framework for the development of a contemporary youth justice and rehabilitation system, including an independent oversight mechanism.

1.1.1.2 Diversion intervention

For this report, it was assumed that eligibility for diversion would need to be altered (or sufficient efforts would need to be made to utilise alternative diversion programs) to enable more youths to participate. Specifically, it was assumed that a youth could be eligible for diversion programs more than twice and that diversion would be based on the NT specific crime profile, but with greater rates of diversion (based on observed experience in NSW).

Thus, the proposed diversion model would in essence be based on seriousness of offence, and still recognises that some offences will not be diverted due to public safety considerations. Specifically, the increase in diversion programs was assumed to be equally allocated across a range of programs including:

- additional conferencing;
- greater use of youth camps; and
- increased use of education, alcohol and drug programs and other targeted interventions.

There has been a limited number of evaluations performed on NT programs, and as such, evidence for effectiveness and inputs necessary for modelling the benefits of (expanded) diversion requires assumptions. The evidence used as modelling inputs is presented in Chapter 3.

1.1.2 Bail accommodation

Bail accommodation is a proposed intervention that is pre-sentencing (rather than pre-court) diversion. The primary purpose of bail accommodation is to ensure youths who have been released on bail attend court, and to provide a place for children or young people on bail who have no other alternative address to reside. For the purposes of the intervention, it was also envisaged that there would be a secure version of bail accommodation that could serve as a replacement for remand while young people await their court sentencing outcome.

1.1.2.1 Background and overview of bail accommodation

A number of youths who are given bail do not then appear in court. NT Government (Yick, 2016) data show that, behind burglary and assault, breach of justice orders represent the largest single category of youths in sentenced detention. Penalties for breach of justice orders are substantial – the same data show that the average sentence length is nearly four months (115 days).⁹

Some young people who end up in remand are there as they may have no alternative address to reside, and it may not reflect the crime they allegedly committed. PWC (2017) suggest this is one of the biggest barriers to releasing Indigenous young people on bail. As such, a bail accommodation program would reduce the number of Indigenous young people in detention while on remand.

There are currently only two pre-trial pathways open to NT youths charged with offences serious enough to warrant a court appearance: remand or bail.¹⁰ Under the *Youth Justice Act*, detention (including unsentenced detention) should be a last resort for children and young people. Yet evidently those given bail instead often do not front the court on the due day – Yick (2016) shows that in 2015-16 almost half (47%) of NT youths given bail subsequently committed breach of bail offenses – and thus may receive a subsequent sentence.

Bail support programs exist in various forms for all other states and territories, but not for the NT (although bail support initiatives were announced in the NT 2017-18 Budget). For the NT, a Bail Accountability Program

⁹ Sentence length does not necessarily align with time spent in supervision.

¹⁰ Technically, they are remanded on bail, or remanded in custody, but the terms bail and remand (respectively) are commonly used.

is being developed by Territory Families, to be rolled out in Darwin and Alice Springs. By providing supported accommodation and supervision to young people awaiting trial, young people who do not otherwise have a place to live, or require additional support will be assisted. Overall, this is intended to help reduce the number of young people in detention (Kerr, 2017).

1.1.2.2 Bail accommodation intervention

For this report, it was assumed that the full Bail Accountability Program would be initiated. Bail accommodation support would be available to young people who require a safe place to reside while on bail. The program is also intended to offer (Kerr, 2017):

- food, shelter, education, health and wellbeing services, dependant on the young person's needs;
- access to support services that will assist their youth justice concerns;
- electronic monitoring infrastructure including police bail electronic monitoring;
- transport and other transportation-related services required;
- supervision to ensure the safety of young people living in the facility; and
- a Bail Support Advisory Service to both police and young people.

Specifically, bail accommodation was modelled to reduce the number of young people who are remanded in custody. Based on limited evidence from the United Kingdom (UK) (Freeman, 2008), the analysis assumed that two-thirds of young people on remand (excluding those who would be diverted through expanded camps and other programs) would receive bail accommodation services, while the remaining one-third would require a secure bail accommodation facility. The secure accommodation facility was not included within the proposed model by Territory Families, and while not strictly bail accommodation, a secure model was envisaged to fully replace existing remand in current detention facilities.

1.1.3 Restorative detention

A secure accommodation model will still be required to hold children who cannot be diverted, with at least a facility in Darwin and a facility in Alice Springs. However, the facilities would be new purpose built, small scale, home style facilities in community settings. Staff would be trained youth specialists focused on delivering interventions to young people rather than simply being there for punitive measures.

It was envisaged that this model would help reduce future contact with the juvenile justice system, improve youth safety, and increase the likelihood of young people in detention returning to school or work.

1.1.3.1 Background and overview of restorative detention

Restorative detention models have been used to successfully alter youth justice outcomes in some states within the United States (US).

Restorative detention facilities offer high quality facilities and programs to young people along with a short amount of time spent in detention. Missouri has created humane, constructive and positive youth programs that have produced lower rates of recidivism, a good safety record, and positive youth outcomes – with a smaller budget than a number of other states, partly driven by shorter lengths of stay.

In Missouri, youths who do not have an extensive offending history and who are at a lower risk of reoffending usually stay in a group home for 4 to 6 months. Those who stay in moderately secure facilities spend roughly 6 to 9 months in a care facility. Secure care facilities still have a length of stay of around 9 to 12 months (Mendel, 2010).

While not strictly a model of restorative detention, the Juvenile Detention Alternatives Initiative (JDAI) has reduced reliance on pre-trial detention for youths awaiting placement due to reducing the size of detention facilities and populations and focusing on a model more closely aligned with strategies to reduce youth detention numbers (Mendel, 2014).

Restorative detention systems have required substantial improvement in staff training and education, and a change in the mix of staff employed. In the early 1980s, Missouri made the decision to re-define the role of its staff. Staff were no longer working in their traditional role as guards or correction officers, but instead were working as youth specialists and were responsible for the safety and care of the youth.

1.1.3.2 Restorative detention intervention

There are a range of approaches to restorative detention facilities. Arifuku et al (2010) provide a useful overview of the characteristics of a model that rehabilitates young people in detention, and the proposed restorative detention modelled for this report.

Key features include (Arifuku et al, 2010):

- an open facility with minimal security controls rather than a heavily secure locked facility;
- a continuum of services rather than limited services;
- strong relationships between staff and young people in detention, where staff are often counsellors, teachers and others trained in providing effective therapeutic interventions;
- a treatment model that incorporates family and community rather than limiting interactions;
- greater structure around programs, rules and regulations and a focus on facilitating exploration of rules and boundaries with the aim of youths internalising and understanding those boundaries; and
- the model results in cognitive change and development rather than improved behaviour compliance.

Specifically, the modelled restorative detention intervention was based on Jara (2013), where the model of care is an intensive therapeutic intervention in secure but small facilities. The facility was based on the New Beginnings Youth Development Center in Washington, DC, which includes:

- accommodation buildings;
- an education building;
- a gym; and
- a warehouse.

For modelling purposes, it was assumed that restorative detention would only be provided to young people who are sentenced to detention, while young people who are remanded in detention would receive alternative services (through a secure bail accommodation model above, which does not necessarily focus on rehabilitation and therapeutic intervention given the shorter time frames than sentenced detention).

1.1.4 Summary of interventions

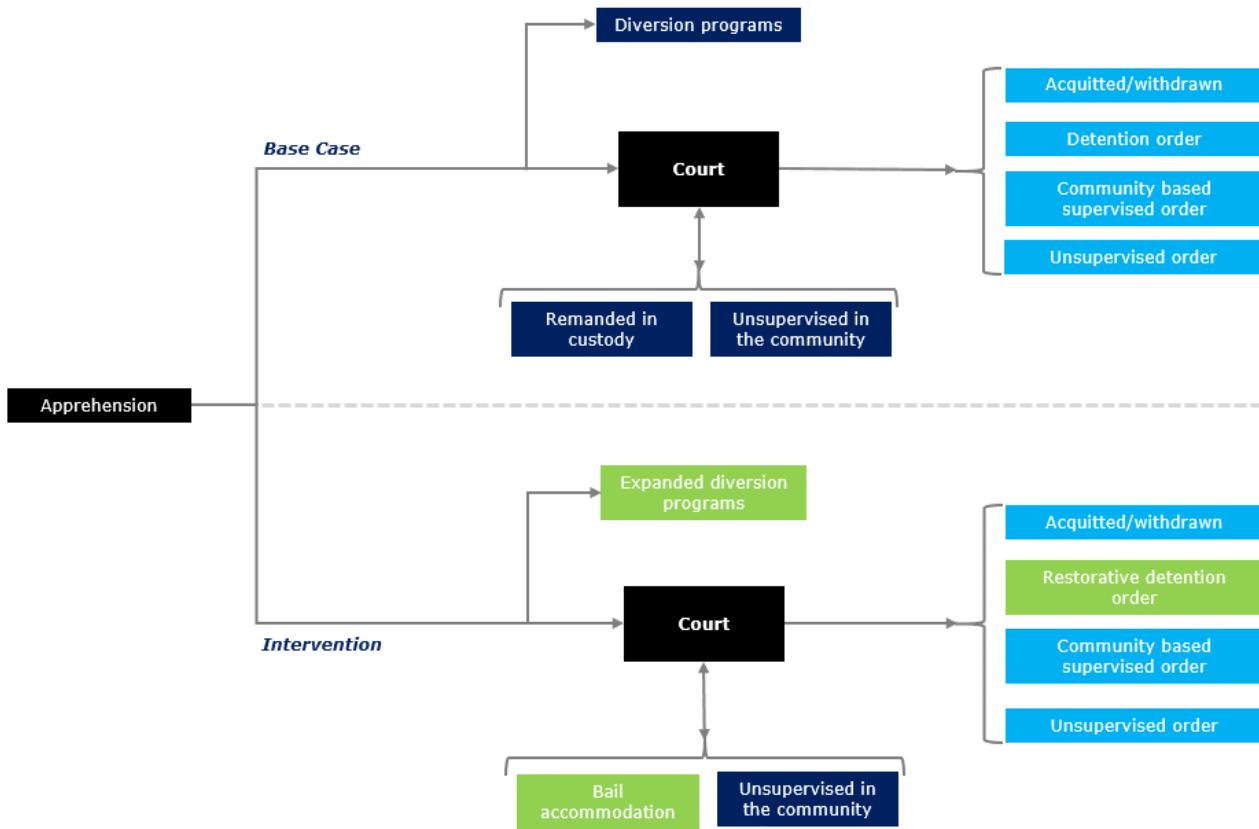
Each intervention – diversion, bail accommodation and restorative detention – could work together to improve outcomes for youths who are supervised in the NT. The proposed interventions will act at different stages and for different young people in contact with the justice system. More youths would be expected to be diverted to other, appropriate diversion programs, such as driver education courses, camp programs, and alcohol and drug programs.

For youths who are likely to not meet bail conditions (or have already failed to meet bail conditions), they would be expected to receive bail accommodation support services – either secure (to replace existing remand detention in the NT), or not secure in a support role.

Finally, for young people who are still sentenced to detention, they would receive services which would help rehabilitate them and return them to society.

Figure 1.1 provides an overview of how the interventions would interact with and alter the existing pathways for young people who come into contact with the youth justice system in the NT. It is noted the diagram is heavily simplified for illustrative purposes only, and there would be numerous legislative and other considerations which are beyond the scope of this report.

Figure 1.1: Summary of modelled interventions in the justice system



Source: Deloitte Access Economics.

1.2 Key assumptions and caveats

This report outlines a (mostly) conservative approach to estimate the benefits of the proposed alternative youth justice model for the NT, although a number of assumptions and caveats should be made clear relating to what information is available and what assumptions were necessary to model the costs and benefits of the justice system in the NT.

For this report, information was requested from the NT Government to inform a range of modelling inputs. The items requested, their use and any further assumptions that were made are outlined in Table 1.1.

Table 1.2: Data requested for modelling

Information requested	Comments
Number of young people in detention by legal status, including characteristics such as age, gender and Indigenous status	Data were provided, however a decision was made to use data published by the AIHW.
Average length of stay for young people in detention	Data were provided, however a decision was made to use data published by the AIHW.
Compensation claims by staff	Data were provided, although the expected quantum of costs was considered to be immaterial to the benefits reported.
Data on any deaths and hospitalisation of inmates	Data were provided, however it was not possible to determine whether these were for usual care purposes such as dental services or general ill health. As such, no

Information requested	Comments
	benefits of a change in assaults on other inmates were included in this report. ¹¹
Costs of running detention facilities, including a breakdown by capital costs, staff costs, staff numbers	Average daily costs of running detention facilities was provided.
Any budget allocation for new regular detention facilities	Partially provided, although the advice given indicated that no firm cost allocation had been made at the time of writing. Consequently, costs of new regular facilities were conservatively excluded from the modelling.
Cost data and number of participants in current and past diversion programs, and details about the nature of programs	Data were provided, and combined with inputs sourced from the Report on Government Services.
Recidivism rates for young people in detention	No NT specific data were provided for existing programs. Rates were derived from youth justice in other states and triangulated with adult recidivism rates.
Data on the offence profile, and pathways through the youth justice system	Data were provided, although a decision was made to use published statistics from the AIHW for young people in the NT as it represented actual outcomes rather than sentenced outcomes.

Source: Deloitte Access Economics.

The data requested were combined with a range of inputs from official government sources, and a number of assumptions were necessary to estimate the benefits of the proposed model in the absence of data specific to the NT. Assumptions were also required in some instances when data were either incomplete or not fit-for-purpose. It is noted that there are limitations to this approach.

For example, as there are no published recidivism rates for young people exiting detention in the NT, it was assumed that the recidivism rates would be equivalent to that of other states and territories in Australia. Another key assumption is that the benefits observed from US models of restorative detention would be realised in Australia, although the applicability of such models in the NT has not been tested and is subject to large caveats.

Table 1.2 outlines a list of primary assumptions, and attempts to highlight the limitations and shortcomings to the estimates presented in this report (noting the myriad of ways the NT is different from other jurisdictions in Australia).

Table 1.3: Key assumptions and limitations used in the modelling

Assumption/ limitation	Comments
Base case and intervention recidivism rates for detention	In the absence of NT specific data, recidivism rates from other jurisdictions were used in the base case, and recidivism rates for the intervention were based on similar restorative detention models in the US.
Benefits of diversion for reoffending rates	There has been a limited number of evaluations performed on NT programs, and as such, the reduction in reoffending due to diversion was estimated by calculating the average change for diversion programs tailored to the current demographic profile of young people who are apprehended in the NT using the results published by Cunningham (2007). These rates are potentially outdated, although the study does include a comparison group which was not available in more recent annual reports published by the NT Youth Diversion Unit (Renfree, 2017).

¹¹ Mendel (2010) reports that under restorative detention in the US (compared to regular detention), youth-on-youth assaults are 4.5 times lower, youth-on-staff assaults are 14 times lower, sexual assaults are 20 times lower, and there have been no suicides for over 25 years, compared to more than 100 in regular detention over the same period.

Assumption/ limitation	Comments
Cost and mix of expanded diversion programs	Average cost of new programs were based on the average cost per participant for existing diversion programs. Participants were allocated to new programs equally, on the assumption that discretion would be used by the Youth Diversion Unit to appropriately allocate participants to the program that would be effective for each youth. In reality, effectiveness is highly dependent on a range of characteristics for each youth, and mix of expanded programs may not be appropriately allocated, although the cost range is not excessively large.
Eligibility for diversion	It was assumed that a youth could be eligible for diversion programs more than twice, and that eligibility for diversion would match that of NSW (the state that appears to divert the most young people from the justice system). Eligibility is decided at the discretion of the Youth Diversion Unit for a number of offence types and methods would need to be decided upon to reach the targeted diversion rates.
Cost growth for supervision types	Although costs of supervision, particularly in detention, have been growing rapidly, it was assumed that this would not continue as rapidly in the future. This is because a substantial proportion of costs are likely due to external factors of the current facilities (i.e. deterioration). Therefore, real growth in the detention costs was assumed to be the average real growth for all youth detention in Australia over the last four years. Costs of restorative detention and bail accommodation were assumed to grow at this same rate.
	Costs of community correction were based on the historical growth in youth community correction supervision for all of Australia over the last four years.
Number of days supervised	For youth who receive either bail accommodation services or restorative detention, the average number of days in the supervision types was assumed to be the same as in the base case – remand and regular detention, respectively.
Costs of bail accommodation	The cost of bail accommodation is based on the proposed budget for Bail Support Accommodation. This included \$15.3 million for construction costs, which would provide 58 beds in total across Darwin, Alice Springs, Tennant Creek and Katherine. Ongoing annual costs are expected to total \$16.87 million per year. As such, the ongoing annual cost of bail accommodation was expected to be \$290,862 per bed, or \$797 per child in bail accommodation per day, which was grown in line with average detention costs. It is possible the cost may be higher or lower depending on whether secure models would be included.
Participants for bail accommodation	A third of those currently on remand were assumed to remain there, the remaining remandees (excluding those who are diverted in the other interventions) were assumed to receive bail accommodation support. This assumption is based on United Kingdom (UK) data from Freeman (2008). For the third who continue to be remanded in custody, it may be an option to have secure bail accommodation facilities until they receive their court finalisation outcome. Thus, the remaining third were also modelled as receiving bail accommodation (in terms of costs). Overall, remand would be replaced with bail accommodation until court finalisation occurs.
Benefits of bail accommodation on sentenced detention outcomes	Data from the AIHW (2016) showed that of youths who are first supervised in the community while awaiting court finalisation, 66% will have a subsequent pathway through youth justice compared with 73% of youths in unsentenced detention. The relative reduction was applied to court reoffending rates to estimate the reduction in reoffending rates attributed to bail accommodation.
Costs of restorative detention	In the absence of NT specific data, costs were based on similar restorative detention models in the US. In the “no change” base case, it is conservatively assumed that the current Berrimah facilities would be used for another decade, rather than any new regular youth detention facilities being constructed. Rather than median staff costs, it was assumed that staff in restorative detention facilities would be paid in the top 25% of salaries for their professions, due to recruitment and retention issues in the NT, and the need to have more highly trained staff.

Source: Deloitte Access Economics.

In summary, this report outlines the likely or indicative benefits that may result from an alternative youth justice model as described, and it is recognised that key assumptions will greatly influence the expected costs and benefits and this is really a best efforts exercise in the absence of hard data. As such, sensitivity analysis was conducted on key assumptions, and a range of results are presented to ameliorate the influence of any assumptions on the final outcome.

2 Base case

To model the outcomes for the intervention, it is necessary to know what the youth justice system in the NT will look like in the future. A ten year modelling horizon has been used, where the base case outlines the expected costs to the NT if the youth justice system continues on its current trajectory.

2.1 Base case model

To model the base case, there are a number of modelling inputs and assumptions. A demographic model of NT children capturing relevant factors such as age, gender and Indigenous status was constructed to inform the base case projections. Primarily the model uses established trends in the supervised population relative to underlying demographics to project the expected number of youths who are:

- apprehended;
- supervised in unsentenced community or detention settings; and
- supervised in sentenced community or detention settings.

The expected trajectories by age and gender are outlined in Appendix A, and includes the:

- number of youths in the NT, including mix by age, gender and Indigenous status which was used to determine apprehension numbers; and
- average daily number of youths supervised by setting by age, gender and Indigenous status.

The following sections discuss factors relevant to the base case, including brief methods, and cost inputs, particularly for the costs of supervision and the existing diversion programs.

2.2 Base case trajectories

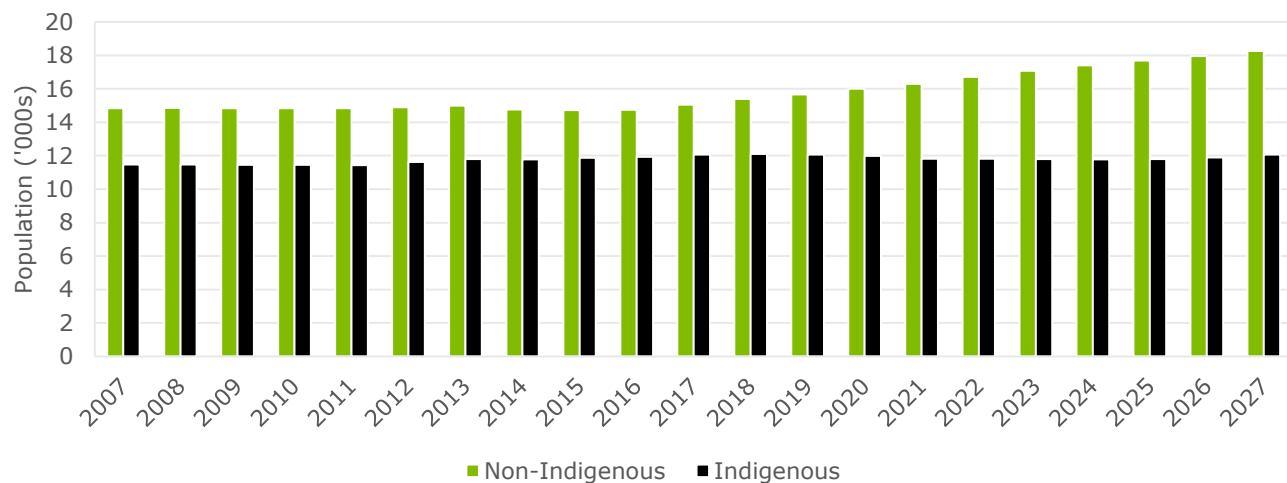
To estimate the trajectory for the current NT youth system, it was necessary to get population projections by age, gender, and Indigenous status (NT Treasury, 2016). Apprehensions data were obtained from the NT Government, which defined age groups as 10-14, 15-16, and 17 (Yick, 2016). Any apprehensions that occur over 18 years of age were excluded from the modelling.

Trends in the Indigenous status, gender and age of youths in the NT between 2016 and 2027 are shown in Chart 2.1, Chart 2.2, and Chart 2.3, respectively.

As a share of the population living in the NT, Indigenous youths are expected to essentially be stable (a very marginal decline) as a share of the total population over the coming decade based on population projections by the NT Treasury (Chart 2.1). The changes in the underlying demographics are not sufficient to substantially alter the supervision of children and young people in the youth justice system.

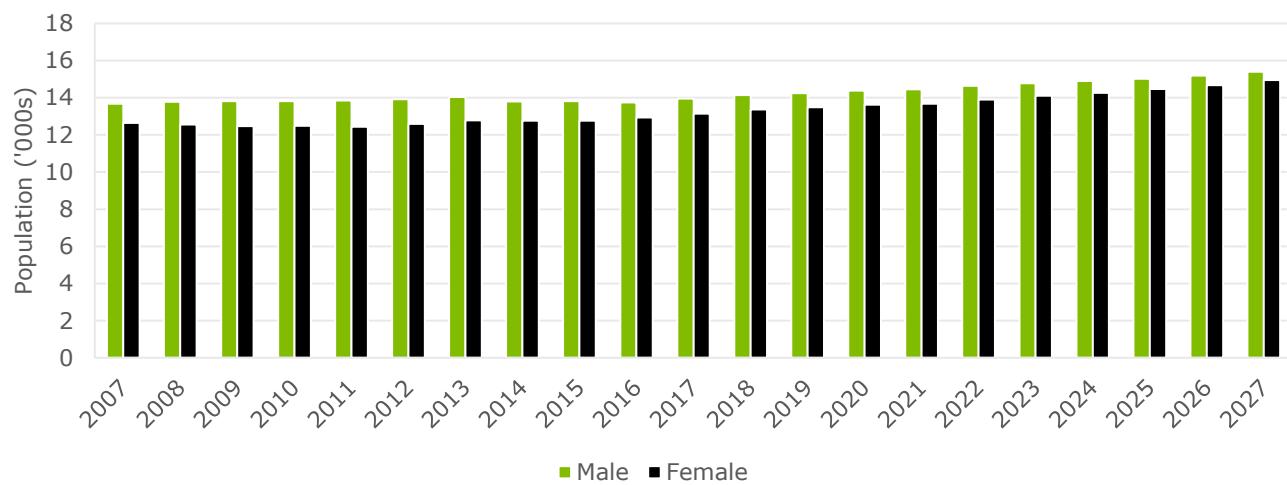
Of more importance, there are projected to be more youths aged 10-14 (Chart 2.3), which will grow as a share of the total youth population – meaning that more younger children will be in supervision over time and the average age of youths under supervision will decline.

Chart 2.1: Youth population by Indigenous status in the NT, 2007 to 2027



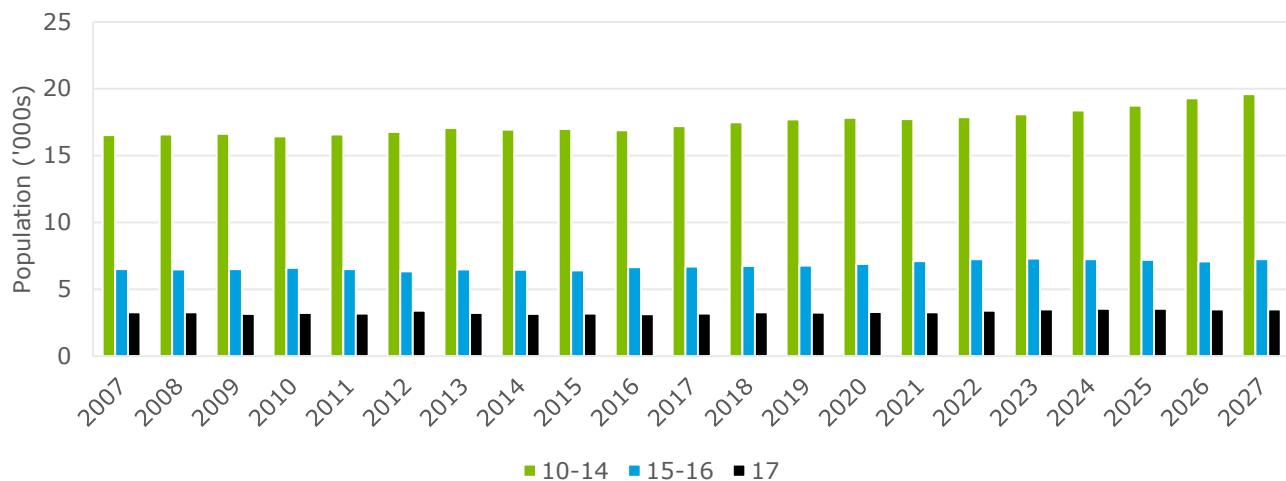
Source: ABS (2016), NT Treasury (2016) and Deloitte Access Economics calculations.

Chart 2.2: Youth population by gender in the NT, 2007 to 2027



Source: ABS (2016), NT Treasury (2016) and Deloitte Access Economics calculations.

Chart 2.3: Youth population by age in the NT, 2007 to 2027



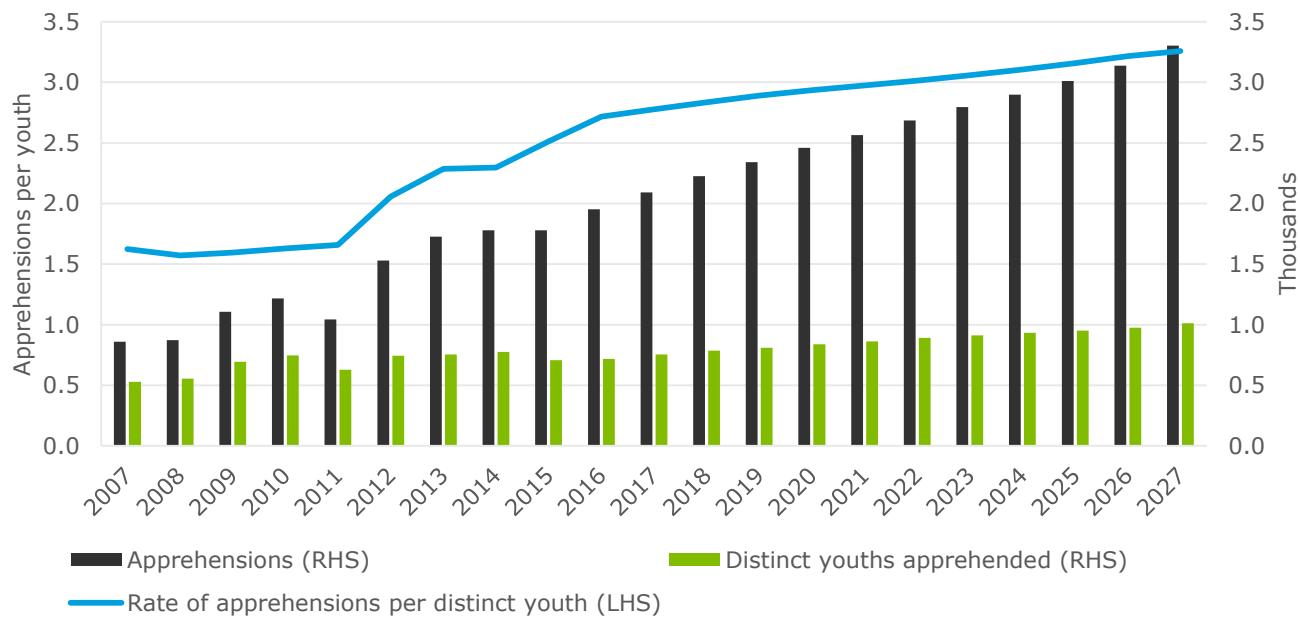
Source: ABS (2016), NT Treasury (2016) and Deloitte Access Economics calculations.

Historical apprehension patterns were based on data from the NT Government (Yick, 2016). The apprehensions were derived relative to the respective population subgroups. Trends were fitted to the ratios of apprehensions to the total number of youths in each group, which were used to estimate the expected change in apprehensions per youth in the NT over the modelling horizon. Linear trends were used to project ratios that were growing as a share of the population and logarithmic trends were used to project ratios that were declining as a share of the population (to prevent any single ratio from becoming negative over the modelling horizon).

The trends indicate that apprehensions will worsen over the decade between 2017 and 2027, in terms of both total numbers and the apprehensions per distinct youth. That is, more NT youths will be apprehended multiple times in a given year, and the frequency of contact will likely increase as well.¹² The trends in apprehensions are shown in Chart 2.4.

¹² An implicit assumption in the modelling is that the sentence time will not increase dramatically, and it will likely need to decrease to enable youths to be apprehended so many times in a given year. This assumption is not inconsistent with historical trends, based on NT Government data (Yick, 2016), which show that the average length of stay for detention has been declining historically.

Chart 2.4: Youths apprehended and rate of apprehensions per distinct youth in the NT, by year

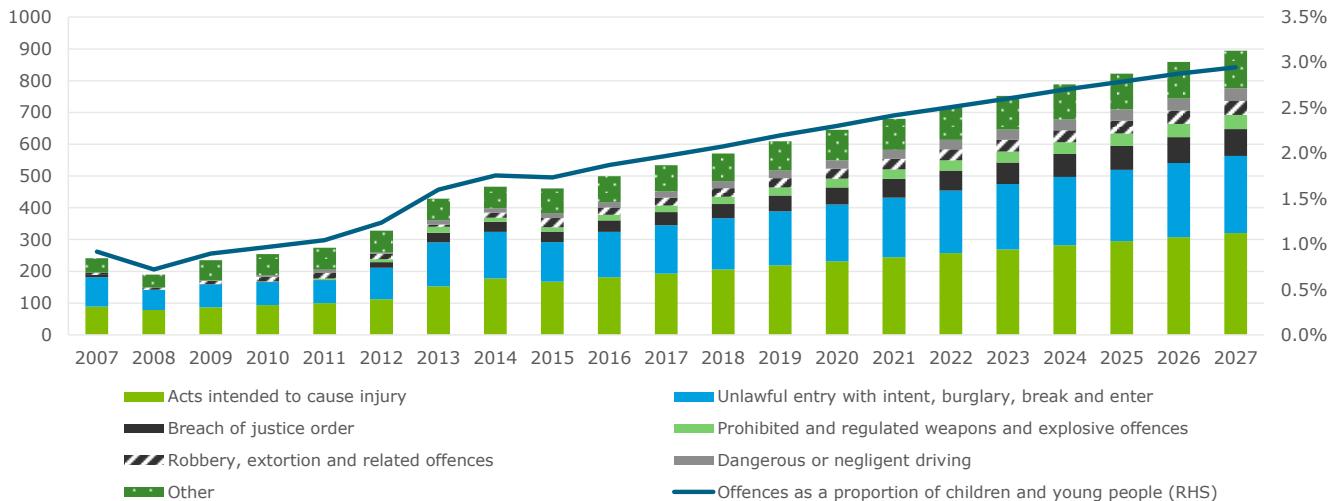


Source: Deloitte Access Economics calculations. Note: results are for financial years.

Based on past trends, it would be expected that more cases heard in court will finalise with an outcome of detention and community orders over time. Very few youths receive sentences for home detention and suspended detention, and there are expected to be fewer monetary and other orders over the coming decade.

While there are some trends in court finalisation outcomes, the profile of youth offences does not appear to have relevant trends – meaning the seriousness of offence appears to be stable over time. While there are a growing number of crimes in the NT, overall and relative to the population, no substantial changes were projected based on past crime profiles or the trends in court finalisation patterns based on data from Yick (2016). The trends in the offence profile are shown in Chart 2.5.

Chart 2.5: Historical and projected offence profile for young people in detention in the NT, total and relative to population

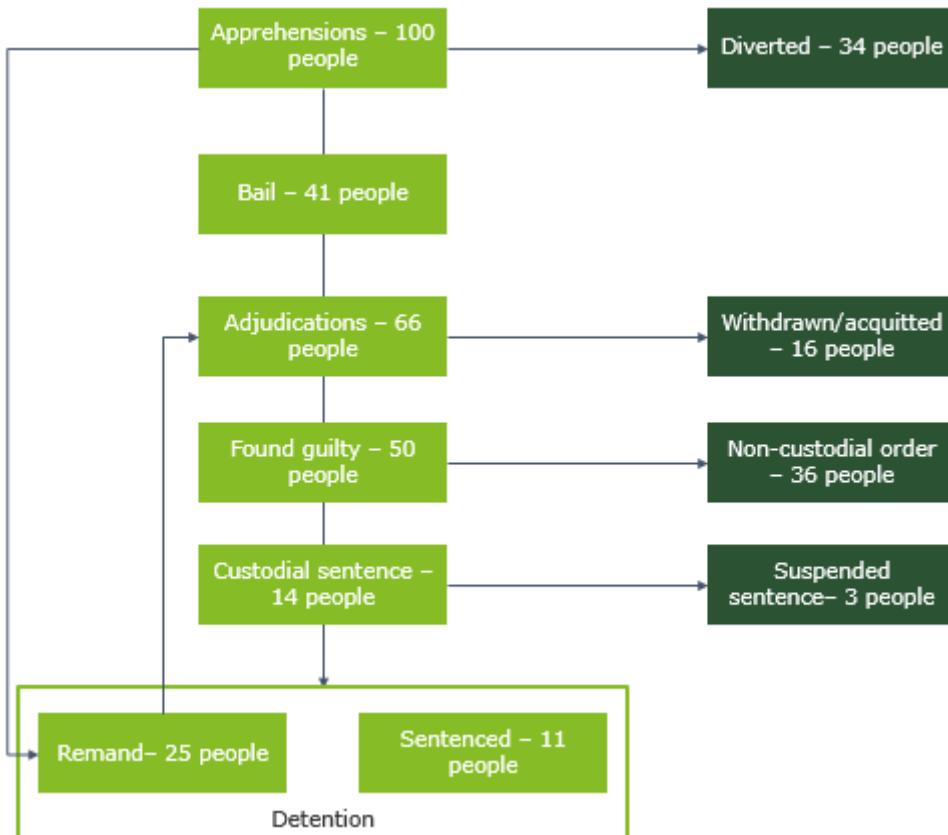


Source: Yick (2016).

There are a number of important realisations from NT court finalisation data (Figure 2.1).

1. A number of youths are diverted from court processes.
2. Bail occurs, although there are a substantial number of youths who receive a breach of justice order, leading to increased numbers in detention – both remanded in custody and sentenced.
3. For every 100 apprehensions, approximately 66 cases are heard in court¹³, of which around 16 are withdrawn or acquitted. Approximately 50 of the 100 cases will be found guilty, and 14 will be given a custodial sentence with 13 apprehensions being in sentenced detention. Approximately 36 apprehensions would therefore receive a non-custodial order – i.e. sentenced to community including monetary penalties.
4. Of people in detention, approximately 25 are on remand, and 11 are sentenced, noting this is representative of average daily numbers over a number of years (many more youths go to detention each year).

Figure 2.1: Average pathways of youths apprehended in the NT, 2006-07 to 2015-16



Source: Yick (2016).

However, sentenced outcomes differ from real world numbers of youths who are detained in a given year, or sentenced to a community order. For modelling purposes, the apprehension numbers in a given year were associated with the number of unique youths who go through any of the following pathways:

- unsentenced detention;
- unsentenced community-based supervision;
- sentenced; and
- sentenced community-based supervision.

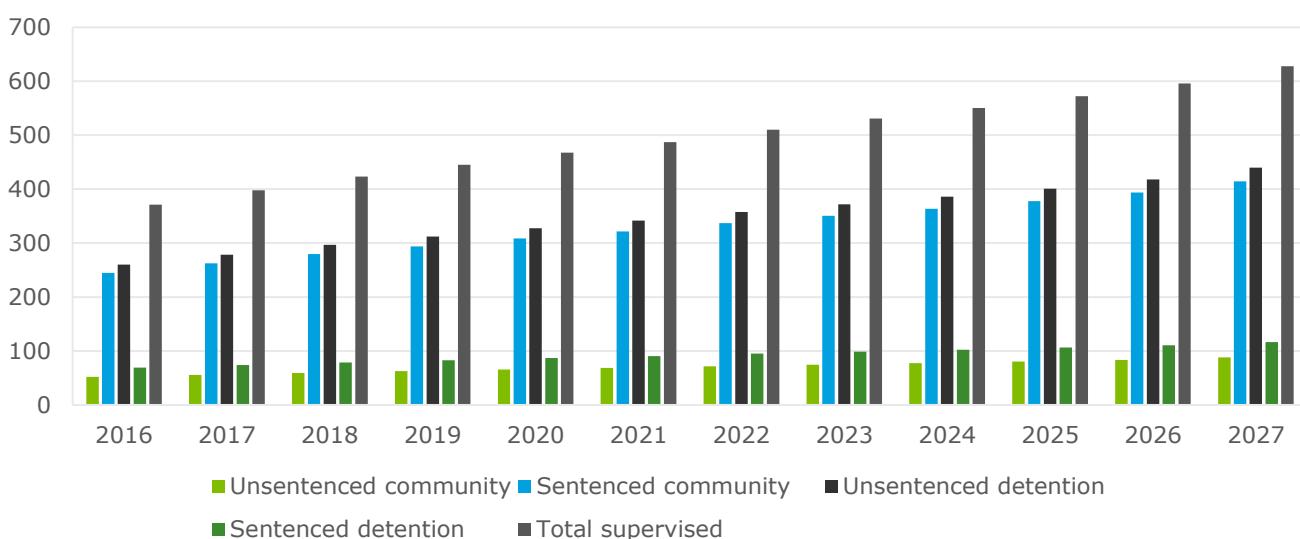
¹³ Based on number of court finalisations, which may not accurately represent the number of apprehensions as there may be multiple court finalisations for one apprehension or vice versa.

The AIHW's *Youth Justice in Australia* series of reports provide key characteristics about the number of young people who experience each type of supervision, and also the total number of youth who experience any type of supervision in the NT.¹⁴ Based on the *Youth Justice in Australia* for 2015-16 (AIHW, 2017):

- 260 youths, or 13.3% of apprehensions, were remanded in custody;
- 52 youths, or 2.7% of apprehensions, were supervised in unsentenced community-based settings;
- 69 youths, or 3.5% of apprehensions, were sentenced to detention;
- 245 youths, or 12.5% of apprehensions, were supervised in sentenced community-based settings; and
- 371 youths, or 19.0% of apprehensions, were supervised in any setting.

The ratio of supervised youths to total apprehensions was held constant for each type of supervision over the coming decade, and applied to the total estimated apprehensions to estimate the number of youths who would be supervised in any setting over the coming decade. The growth is shown in Chart 2.6. Given that diversion acts on the number of apprehensions in subsequent years, it is then possible to model the effect of diversion on supervision numbers (holding the ratios constant).

Chart 2.6: Projected numbers of supervised youth in the NT



Source: AIHW (2017) and Deloitte Access Economics calculations. Note: results are for financial years.

It was estimated that the number of supervised youths in the NT will grow by almost 70% (based on growth in apprehensions) from 2016 to 2027, representing 628 youths, or 257 more youths in 2027 than in 2016. A number of apprehended youths will experience more than one supervision type in any given year (Table 2.1). A more detailed breakdown of the expected number of supervised youths is included in Appendix A – outlining the breakdown by age, gender and Indigenous status.

¹⁴ Data relevant to the NT youths of interest were obtained from the latest reports in the series as necessary, to fill in information about historical trends.

Table 2.1: Supervised youths by year in the NT

Supervision type	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Sentenced detention	69	74	79	83	87	91	95	99	102	106	111	117
Sentenced community	245	263	279	294	309	322	337	351	364	378	394	414
Unsentenced detention	260	279	296	312	328	341	358	372	386	401	418	440
Unsentenced community	52	56	59	62	66	68	72	74	77	80	84	88
Any supervision	371	398	423	445	468	487	510	531	551	572	596	628

Source: Deloitte Access Economics calculations based on AIHW (2017). Note: results are for financial years.

2.2.1 Diversion in the NT

Historically, funding for youth diversion has been around \$5 million annually, including grants to other organisations to provide diversion programs and funding to the NT Youth Diversion Unit to facilitate diversion and provide warnings and cautions (Renfree, 2017).

Data from the NT Youth Diversion Unit (Renfree, 2017) provides information on five types of diversion programs as shown in Table 2.2, although there are some additional diversions in other programs such as existing boot camps and residential facilities. Table 2.2 shows the number of youths participating in each program category over the last four years. The majority of these participants were Indigenous youths. More than 669 young people either completed or failed a youth diversion program in 2015-16, representing approximately 34% of youth apprehensions in the NT for the year.

Table 2.2: Number of participants by diversion category, 2012-13 to 2015-16

Program category	2012-13	2013-14	2014-15	2015-16
Drug diversion	44	40	59	42
Family conference	137	276	232	330
Verbal warnings	25	13	22	37
Victim/offender conference	77	96	68	86
Written warnings	95	173	217	174
Total	378	598	598	669

Source: Renfree (2017).

There were no apparent trends in the ratio of diversions to apprehensions, so the ratio was held constant over the modelling horizon (at 34%) for the base case.

2.3 Cost inputs

Cost inputs used to inform this report include the costs of apprehensions, costs of supervision, costs of adult incarceration, and average length of stay.

2.3.1 Costs of apprehensions

The Australian Institute of Criminology (Smith et al, 2014) estimated that the costs of all crime in Australia in 2011 were \$47.5 billion, which included \$23.0 billion directly due to crimes, criminal justice costs of \$16.3 billion, and other costs of \$8.3 billion. The other costs were comprised of victim assistance, security industry, insurance administration, and household precautions. Corrective service costs were estimated to be \$3.8 billion, which are netted from the total costs of crime as they are costed separately in the modelling for this report. The incidence of crime in Australia was used to derive average costs by crime types which was calculated to be \$3,590 per crime in 2016-17 dollars (Smith et al, 2014). The average costs of various crimes

were then weighted by the NT crime profile for young people in detention to estimate the costs of crime in the NT¹⁵ as \$4,179 per crime.

The costs of criminal justice, victim assistance, the security industry, insurance administration and household precautions were assumed to scale in line with the NT youth crime profile – representing an additional \$4,454 per crime committed in the NT. In the NT, youths were charged with 8,233 offences and there were 1,953 apprehensions, representing an average of 4.21 offences per apprehension. The average cost of crime per apprehension in the NT (net of corrective service costs) was therefore estimated to be \$36,391 (\$8,633 * 4.21), which was applied to the number of averted apprehensions to estimate the benefits of averted youth crime. The cost breakdown is shown in Table 2.3.

Table 2.3: Cost of crime, inputs by cost type

Cost type	Total Australia (\$ million), 2010-11	Per apprehension in the NT (\$), 2016-17
Costs of crime to victims	22,995	17,615
Criminal justice	12,419	12,453
Victim assistance	1,877	1,438
Security industry	3,400	2,605
Insurance administration	670	513
Household precautions	2,360	1,808
Total crime and other costs	43,718	36,430
Assets confiscated*	-64	-49
Total	43,668	36,391

Source: Smith et al (2014). Components may not sum to totals due to rounding. * represents money and assets recovered from crime which are sold and may be returned to victims or realised as revenue.

2.3.2 Costs of supervision

Costs of supervision were derived from the Productivity Commission's *Report on Government Services* and from the NT Government (Campbell, 2016).

Costs of supervision, particularly in detention, have been growing rapidly. It was assumed that the costs of detention in the NT were unlikely to continue to rise at the same pace, as a substantial proportion of costs are likely due to external factors of the current facilities (i.e. deterioration). As such, real growth in the detention costs have been constrained to 6.93% per annum over the modelling horizon – the average real growth for all youth detention in Australia over the last four years.

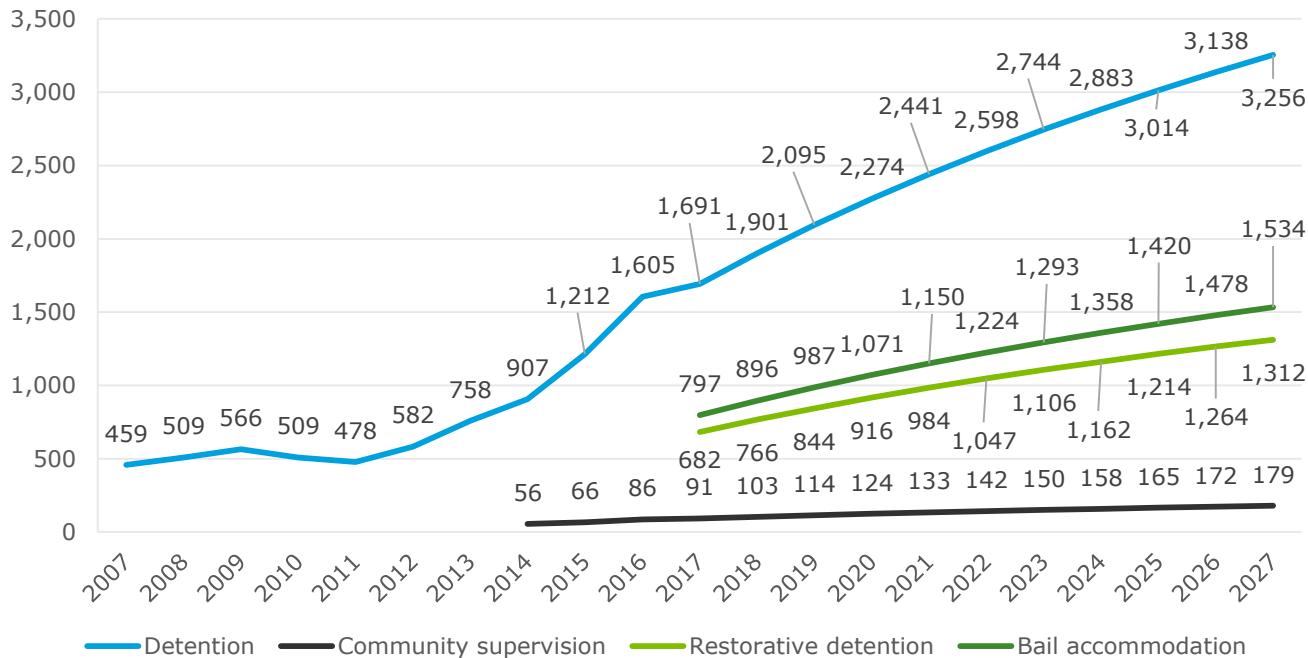
Costs of restorative detention and bail accommodation were assumed to grow at the same rate. Costs of community correction were based on the historical growth in youth community correction supervision for all of Australia over the last four years – an average of 7.14% per annum.

A logistic growth curve was estimated based on the existing trends, which accommodated the constrained growth path and matched the total growth over the forecast period. The projected cost series is shown in Chart 2.7.

The expected costs of bail accommodation and restorative detention are discussed in sections 3.2.1 and 3.3.1, respectively, although they are also shown in Chart 2.7 for comparison purposes.

¹⁵ The crime profile for the NT was based on the crime profile for young people in detention (rather than all crime in the NT) as it was the only data available to us at the time of writing the report which reported the primary crime committed.

Chart 2.7: Costs of detention and community-based supervision per youth per day in the NT (real 2016-17 dollars)



Source: Productivity Commission (2017), Campbell (2016), Kerr (2017), and Deloitte Access Economics calculations.

2.3.3 Costs of adult incarceration

No direct pathways were modelled for the base case into adulthood due to limitations of available data. However, the effect of diversion on the adult detainee population was modelled incrementally (section 3.3).

The costs of adult incarceration were based on results presented in Deloitte Access Economics (2013), where it was estimated the average national costs of an adult Indigenous incarceration (including discounted future recidivism) was \$385,915 in 2014-15.¹⁶ Allowing for higher NT incarceration costs¹⁷, but the lower recidivism rates for the 16% of adult NT prisoners who are not Indigenous, **adult incarceration costs in the NT were estimated to be \$345,256 in 2016-17.**

The effect of the intervention on the adult cost of incarceration is explored in the intervention chapters.

2.3.4 Average length of stay

The average length of stay by supervision type for the NT was derived from AIHW's (2017) *Youth Justice in Australia* publication. Historical NT data were obtained for the financial years between 2012 and 2016. The length of stay for other years was assumed to be the average of the five year historical period for detention supervision. For community-based supervision, the length of stay was assumed to be the same as for the 2016 financial year. The length of stay inputs are shown in Table 2.4. Length of stay was available by Indigenous status and so it was applied to the expected number of Indigenous and non-Indigenous youths in each sentence type.

¹⁶ That study also included costs of lost wellbeing from diseases and injuries contracted in prison. As such costs are not included in this study, they have been netted out here.

¹⁷ The cost of adult incarceration was based on 2014-15 values from the 2016 Report on Government Services (Productivity Commission, 2017). The costs were assumed to remain constant in real terms, as it has been declining marginally in real terms for the last couple of years.

Table 2.4: Average length of stay for supervision types in the NT (days)

Supervision type	2012	2013	2014	2015	2016	Average
Indigenous youth						
Sentenced detention	93	101	94	60	78	85
Sentenced community	-	-	-	-	156	156
Unsentenced detention	50	48	49	49	49	49
Unsentenced community	-	-	-	-	46	46
Non-Indigenous youth						
Sentenced detention	29	159	42	60	72	72
Sentenced community	-	-	-	-	112	112
Unsentenced detention	15	29	44	44	52	37
Unsentenced community	-	-	-	-	41	41

Source: Deloitte Access Economics calculations and AIHW (2017). Note: results are for financial years.

2.4 Base case results

To estimate the base case costs of youth offending in the NT, it was necessary to know the number of youths who will be supervised in any given year, as well as the average length of stay in supervision for those youths. The historical average length of stay and expected youth entering supervision in each given year were multiplied together to give the total expected days of supervision. This was then converted to the average daily population by dividing by 365. Average daily costs of supervision were applied to the total days spent in supervision. The average daily population and estimated days of supervision are shown in Table 2.5.

Table 2.5: Supervised youth and days of supervision in the NT, by year

Supervision type	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Average daily population												
Sentenced detention	14.7	17.1	18.2	19.2	20.2	21.0	22.0	22.9	23.7	24.7	25.7	27.1
Sentenced community	103.0	110.5	117.6	123.8	130.1	135.6	142.1	147.8	153.3	159.4	166.1	175.0
Unsentenced detention	35.0	36.9	39.3	41.3	43.4	45.2	47.4	49.3	51.1	53.1	55.4	58.3
Unsentenced community	6.5	6.9	7.4	7.7	8.1	8.5	8.9	9.2	9.6	10.0	10.4	10.9
Days of supervision ('000s)												
Sentenced detention	5.4	6.3	6.7	7.0	7.4	7.7	8.0	8.4	8.7	9.0	9.4	9.8
Sentenced community	37.6	40.3	42.9	45.2	47.5	49.5	51.8	54.0	56.0	58.2	60.6	63.9
Unsentenced detention	12.8	13.5	14.3	15.1	15.8	16.5	17.3	18.0	18.7	19.4	20.2	21.3
Unsentenced community	2.4	2.5	2.7	2.8	3.0	3.1	3.2	3.4	3.5	3.6	3.8	4.0
Total	58.1	62.6	66.6	70.1	73.7	76.8	80.4	83.7	86.8	90.2	94.0	98.9

Source: Deloitte Access Economics calculations and AIHW (2017). Note: results are for financial years. Components may not sum to totals due to rounding.

Costs of the NT youth justice system (not including court and police costs) are expected to grow rapidly over the coming decade, at an average rate of 6.9% per annum (section 2.3.2), in line with the growth in supervision costs seen for all youth justice across Australia. The total cost was estimated to be \$37.3 million in 2017, reaching \$113.4 by 2027 (real 2016-17 dollars), which will primarily be driven by growth in daily detention costs using existing facilities.

Table 2.6: Costs of supervision in the NT, current year, \$ million, 2016-17 dollars

Supervision type	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Sentenced detention	8.6	10.6	12.7	14.7	16.7	18.7	20.9	22.9	25.0	27.1	29.4	32.2
Sentenced community	3.3	3.7	4.4	5.1	5.8	6.5	7.3	8.0	8.7	9.4	10.2	11.2
Unsentenced detention	20.5	22.8	27.3	31.6	36.0	40.3	44.9	49.4	53.8	58.4	63.4	69.3
Unsentenced community	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7
Total	32.6	37.3	44.6	51.7	58.9	66.0	73.5	80.8	88.0	95.6	103.7	113.4

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

3 Intervention

Three interventions have been proposed, which include an increase in diversion programs that are tailored and specific to children and their offences, bail accommodation (both secure and not secure) to reduce the number of children remanded in custody, and restorative detention to rehabilitate young people sentenced to detention. The benefits of each intervention are modelled in slightly different ways.

- **Diversion programs** remove children and young people from any pathway in the current year, and reoffending rates at 12 months are used to model the subsequent reduction in apprehensions in the subsequent year. To be conservative about the total benefits of diversion, no subsequent year benefits are included as insufficient evidence was available for the severity and frequency of offending following diversion programs compared to children who go to court.
- **Bail accommodation** serves two purposes. First to act as a substitute for remand in the NT, so that all less serious cases of remand receive bail accommodation. Second, it is envisaged that remaining remand cases may need a secure bail accommodation arrangement equivalent to remand, except with higher staff to detainee ratios much like restorative detention. Bail accommodation has benefits of reduced reoffending relative to current remand, and also removes some existing sentenced detention who were on bail and were then sentenced to detention for breach of justice orders.
- **Restorative detention** acts to rehabilitate young detainees, reducing the recidivism (return to sentenced detention). There are also associated reductions in apprehension numbers (assumed to be the same as the change in detainee population numbers).
- **All pathways** alter the number of apprehensions, and have associated reduced crime costs. There would also be a smaller adult detention population as a result of the interventions.

The following chapter outlines the expected savings to the NT community from a societal perspective for the three interventions. The benefits are modelled in a three stage approach, whereby:

- **Diversion** acts first:
 - reducing the number of people in unsentenced community or detention supervision in the current year, and also reduces sentenced community (i.e. less serious crimes); and
 - reduces reoffending and therefore apprehensions in the following year.
- **Bail accommodation** acts second:
 - further reducing the number of people in unsentenced detention, and also reduces the number of people sentenced to detention for breach of justice order;
 - a secure alternative is considered as an alternative for serious offences in unsentenced detention (in terms of costs); and
 - there are small benefits to reoffending in the following year.
- **Restorative detention** acts third:
 - all children sentenced to detention receive restorative detention, which has no first year impacts except for change in costs; and
 - in subsequent years, fewer children reoffend, so fewer return to sentenced detention.

Each subsection discusses the costs and benefits of the intervention, and then the subsequent overall net benefits or costs.

3.1 Diversion

Based on data from the NT Government (Yick, 2016), it would seem that a number of children who are detained in the NT are there for relatively minor offences. Consequently, it was presumed that a substantial proportion could be diverted to community based programs, which would produce savings to the youth justice system as diversion is cheaper than secure accommodation and it may also result in reduced reoffending rates.

The purpose of this section is to outline the savings to the NT community for adopting increased diversion as a suggested reform.

3.1.1 Costs of diversion intervention

The costs associated with increasing government expenditure on diversion programs is inherently founded on the cost per participant for each program category, as discussed below.

3.1.1.1 Cost per participant

The average cost per person for each program category was derived from existing funding for NT youth diversion in 2015-16 using total funding and the total number of participants. Total funding for the NT Youth Diversion Unit was \$4.89 million in 2015-16, of which agency expenditure was \$2.43 million and there were \$2.46 million worth of grants provided to other organisations to provide diversion programs. All diversion programs were assumed to have the same agency cost – \$2.43 million divided by the number of diversion participants (669 in total). Conferencing and drug and alcohol programs were estimated to have additional costs per person of \$5,365, which represents grant funding divided by the number of conferencing and drug and alcohol participants (458).

The costs of youth camps were based on evidence from Queensland (KPMG, 2015) and incorporated the costs of BushMob's residential treatment program. KPMG (2015) reported average costs per participant for early intervention youth camps in Fraser, Gold Coast and Rockhampton were \$13,589, \$8,844 and \$15,352, respectively. The average cost per participant for a sentenced youth boot camp in Queensland was \$44,496 based on an initial target to have 84 participants in the programs (lower end of the range). For BushMob's residential treatment program in the NT, total expenditure on the program was \$1.494 million and there were 110 participants during 2015-16, resulting in an average cost of approximately \$13,582 per participant (BushMob Aboriginal Corporation, 2016). Taking a weighted average of the camp programs, it was estimated youth camps would cost \$20,342.¹⁸

The average costs of diversion programs per participant used in the modelling are presented in Table 3.1 (in 2016-17 dollars).

Table 3.1: Cost per person, 2016-17 dollars

Program category	Cost per person
Drug diversion	\$9,290
Family conference	\$9,290
Victim/offender conference	\$9,290
Youth camps	\$20,342
Alternative programs*	\$12,053

Source: Renfree (2017); KPMG (2015); Deloitte Access Economics calculations. * This represents a weighted average of equal participants in each of the four programs (drug diversion, family conference, victim/offender conference and youth camps).

3.1.1.2 Increase in diversionary expenditure

Based on the Steering Committee for the Review of Government Services Provision (SCRGSP, 2016), NSW has the highest rates of diversion out of all states and territories (53.7%). The NSW non-Indigenous juvenile diversion rates by crime type were selected to reflect the potential eligibility for diversion for the proposed intervention in the NT. The 2015 NSW juvenile diversion rates by crime type are shown in Table 3.2.

It is noted that the estimated eligibility reflects an ideal or aspirational diversion rate for the NT. As noted in Table 1.3, achieving an increase in diversion rates will likely require changes to existing legislation and more flexibility in the types of crimes that can be diverted. Moreover, achieving such eligibility would require an expansion of appropriate and targeted diversion programs for youths, and the effectiveness of any such programs would need to be tested and proven.

The potential eligibility for diversion based on NSW by crime type was weighted by the NT crime profile for young people received into detention during 2015. Using this approach, it was estimated that at least 38.3% of apprehensions in a given year may be diverted – noting the crime types which were not received into

¹⁸ Participant numbers for Queensland boot camps were 58, 60, 44 and a targeted value of 84, respectively.

detention are likely to be less severe. Sensitivity analysis was also conducted using the total diversion rate for NSW and for SA in section 4.4.

As a comparison, using NT Government data (Yick, 2016), it was estimated that as many as 50% of total apprehensions could be diverted if all crimes aside from assaults, homicide, abduction and harassment, prohibited and regulated weapons, or robbery, extortion and related offences were diverted.

Table 3.2: Juvenile diversion rates and number of apprehensions by crime type, non-Indigenous, 2015

Crime type	Young people received into detention, NT	Potential eligibility for diversion based on NSW diversion rates
Homicide and related offences	1	0.0%
Acts intended to cause injury	167	36.2%
Sexual assault and related offences	16	12.4%
Driving under the influence of alcohol or drugs/dangerous or negligent driving	16	0.0%
Other Dangerous Acts	7	54.2%
Abduction, harassment and other offences against the person	5	26.7%
Robbery, extortion and related offences	29	0.0%
Unlawful entry with intent, burglary, break and enter	125	54.7%
Illegal use of motor vehicle	12	75.3%
Theft other	14	54.7%
Fraud, deception and related offences	0	75.3%
Illicit drug offences	4	73.2%
Prohibited and regulated weapons and explosive offences	14	70.5%
Property damage and environmental pollution	16	40.5%
Public order offences	0	62.2%
Traffic and vehicle regulatory offences	2	99.2%
Offences against justice procedures, government security and operations	33	7.8%
Miscellaneous offences	0	75.3%
Total/weighted average	461	38.3%

Source: SCRGSP (2016).

Costs of diversion were assumed to grow in line with the projected growth for all unsentenced community costs (i.e. real growth of 7.14% as in section 2.3.2). This was applied to the participant numbers to estimate the cost of diversion in the future.

Table 3.3: Overall costs of diversion, real 2016-17 dollars.

Costs	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Additional participants	84	89	93	98	102	107	111	115	119	124	131
Cost of programs (\$m)	1.01	1.20	1.40	1.60	1.79	1.99	2.20	2.39	2.60	2.83	3.09

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

3.1.2 Benefits of diversion intervention

3.1.2.1 Effectiveness of diversion in the literature

The following subsections outline the benefits of diversion in the literature to provide context, although not all programs were included in the modelling due to data constraints.

Youth Group Conferencing

Group conferencing is where the youth meets with the victim or victim's legal representative, their family, victim support workers, police, and their legal representative. The aim of the conference is to help the youth to understand the consequences of their actions. An outcome of the conference is to put in place actions that the youth can take to address the underlying reasons for their criminal activity.

Conferencing has been found to be effective in reducing offending across Australia and in the NT specifically.

- Allard et al (2010) reported a 21.1% reduction in re-contact with the juvenile justice system for Indigenous men, a 21.4% reduction for Indigenous women, and for all participants a 24.5% reduction in re-contact (compared to young people who had attended court).
- KPMG (2010) reported a 23.7% reduction in reoffending (convicted of multiple offences) over the 24 month period following the conference compared to a group of young people who had received a Probation or Youth Supervision Order.
- Luke and Lind (2002) found a 19.0% decrease in reoffending (convicted of multiple offences) compared to young people who had attended court.
- Cunningham (2007) reported an 18.0% reduction in reoffending for young people who were diverted in the NT.

Youth conferencing is also related to other benefits such as improved educational attainment that, combined with reduced recidivism, improves employment outcomes.

Cautioning

There are two forms of cautioning – formal and informal. Informal cautioning is where a police officer will give a person a verbal or written warning. Formal cautioning generally involves some conditions, such as requiring the young person to attend support services.

Due to the lack of monitoring for informal cautioning there are limited data about the efficacy of informal cautioning. Formal cautioning requires follow up and monitoring and as a result, data are available to estimate the efficacy of the program.

The effectiveness of formal cautioning varies considerably in the literature¹⁹:

- Allard et al (2010) found that formal cautioning of Indigenous men and women reduced re-contact with the juvenile justice system by 0.3% and 8.3%, respectively. The average reduction in recidivism across all respondents (males, females, Indigenous and non-Indigenous) was 19.4%.
- Dennison et al (2006) reported a decrease in re-contact with the juvenile justice system of 11.0%.

¹⁹ In each study the reoffending rates of those who had been cautioned were compared to reoffending rates of those who had proceeded to court.

Indigenous healing programs

These programs provide culturally appropriate services to Indigenous youths within the youth justice system. Programs may have a particular focus such as drug and alcohol addiction.

The literature search for this report did not uncover any cost-efficacy data for healing programs for Indigenous youth in the NT. As an example, the Canadian Aboriginal Justice Strategy takes into account higher rates of crime, incarceration and victimisation of Indigenous people and subsequently formulates policies, programs and initiatives to address such issues. This strategy has been found to reduce recidivism amongst Indigenous people by up to 13%, although it is not clear if this indicative rate would apply in an Australian setting (Office of Strategic Planning and Performance Management, 2011).

Other diversion programs

There are a number of other diversion programs, including boot camps, drug courts, and more targeted programs including programs which aim to reduce offending by "scaring offenders". Available evidence does not tend to indicate positive benefits, so these programs are mentioned but not modelled.

A consistent finding in the literature is that programs that aim to scare the youth off crime, such as prison visits or the **scared straight** program, can increase the rate of recidivism. Scared straight programs are those that aim to deter future offending by having youths observe prison life and/or meet adult inmates (Petrosino et al, 2013). A study by Drake et al (2009) analysed the impact on reoffending of a scared straight program and found that on average, the program increased recidivism by 6.1%. The Attorney-General's Department (2013) also supported these findings and found that scared straight programs can increase recidivism by up to 26.0%.

Similarly, **boot camp** type programs have also been found to be ineffective at reducing recidivism or increase recidivism. The Attorney-General's Department (2013) found in a review of the literature that boot camp type programs may increase recidivism by up to 10%. Wilderness camps were also found to have no impact on recidivism. For the purposes of this report, no evidence was found which referred to the early intervention youth camps which are proposed by the NT Government.

In addition, **drug courts** such as those offered by the NT Government have not been found to successfully divert young people. Rysavy et al (2011) attribute this to a significant proportion of Indigenous men failing to complete the programs prescribed by drug courts.

Summary of effectiveness of diversion programs

With regard to the benefits of diversion programs, literature tends to focus on reducing reoffending rates. Table 3.4 summarises the findings from the literature, although NT specific outcomes were reported where available (i.e. Cunningham, 2007). The reoffending rates from Cunningham (2007) were adjusted by a factor of 1.19 to reflect the distributional differences in the cohort of youths who proceed to court relative to all diversions, noting that a larger proportion are Indigenous. The reoffending rates for conference programs would therefore be around 25.1% based on Cunningham (2007).²⁰

²⁰ The Northern Territory Police, Fire & Emergency Services annual report publishes reoffending rates for youth conferences in the NT, where the reported rates are substantially lower (15%). The reoffending rates include youths who have commenced but not yet completed diversion, and thus may not appropriately represent final outcomes over a 12 month period.

Table 3.4: Reoffending rates by diversion program

Type of diversion	Reoffend within 12 months	Source
Written warning	22.7%	Cunningham (2007)
Verbal warning	22.7%	Cunningham (2007)
Drug diversion	32.0%	Office of Crime Statistics and Research (2012)
Family conference	25.1%	Cunningham (2007)
Victim/offender conference	25.1%	Cunningham (2007)

Source: as itemised in table.

Programs were found to reduce recidivism by engaging young people in addressing the behaviours and root causes of their offending behaviour. A meta-analysis conducted by Wilson and Hoge (2012) reported that both caution and intervention diversion programs are significantly more effective in reducing recidivism in young people than incarceration. The authors identify a common theme in the youth diversion discussion, regarding the increased risk of reoffending when a young person is participating in programs with negative peers and values. However, the analysis found that considering the risk level of participants and matching this to the programs they are enrolled in can effectively mitigate the risk, based on limited available evidence. Programs were found to be effective across all offender risk categories. In fact, the greatest reductions in recidivism were programs targeted at medium and high risk offenders (Wilson and Hoge, 2012).

While there was considerable evidence for reoffending rates, the literature does not sufficiently focus on seriousness of offence for inclusion in the modelling (without access to more detailed data). For example, Piggott (2015) found that subsequent offence was generally more serious than the initial offence for both caution and conference groups, but did not have data available to allow comparison with matched groups who attend court.

In the base case, reoffending rates for youths who would proceed to court were estimated to be 46.5% based on Cunningham (2007). Cunningham (2007) found that 39% of youths who proceed to court reoffend within 12 months. As with the results reported for conferencing and warnings, the result was adjusted to reflect the greater representation of Indigenous youths at the court level (a factor of 1.19).

For conservatism, the reoffending rate for expanded diversion programs was modelled to be 32% under the intervention rather than the 25.1% estimated for conference programs. The higher rate was based on the results of the drug diversion program (Office of Crime Statistics and Research, 2012). It is recognised that the drug diversion program may not appropriately represent real world outcomes for diverted youths in the NT; however it was selected for two reasons.²¹

1. The likelihood of success for diversion programs would depend on individual characteristics of offending youths, including the type of offence committed and their historical offending pattern. There was insufficient data to assess the impacts in the NT context, although it was considered likely that youths who proceed to court may have offending patterns that limit the effectiveness of diversion programs (e.g. they are more likely to be repeat offenders than all youths who are apprehended by police).
2. Youths may have environmental or criminogenic risk factors, or other personal factors that would limit the effectiveness of diversion programs, and would require more intensive targeted programs and additional whole of government funding to address. Some examples include factors such as family circumstances, a history of substance abuse, and intractable behaviours and/or characteristics.

²¹ Sensitivity analysis was conducted on reoffending rates due to the noted uncertainty around reoffending rates. There was minimal variation in the overall net benefits when changing the reoffending rates.

3.1.2.2 Benefits of changed and reduced need for supervision

The benefits of diversion and bail accommodation were modelled by considering the effects of diversion on reoffending rates, and also the change in setting for the current supervision period. That is, benefits of diversion and bail accommodation were modelled for two periods.

First, preventing a youth from going to court will prevent their initial supervision period in the current year, thus avoiding the entirety of the expected supervision period. A youth may then reoffend in the current year (although data are generally only available for 12 month outcomes post-intervention). There is a one-to-one relationship between the number of diversion recipients and the periods of supervision avoided in the current year based on the existing apprehension numbers.

Second, reoffending benefits were then considered in the subsequent year as a change in apprehensions based on the reoffending rates for each individual diversion program. The avoided apprehensions in the subsequent year were assumed to have the same average pathways as all apprehensions in that year (i.e. the youth may end up in detention or community-based supervision, either sentenced or unsentenced based on the pathways experienced for all youths).²²

To estimate the effect of diversion programs on future reoffending, an average effectiveness was applied from Table 3.4. While it is expected that new diversion programs will need to be offered, the effectiveness of new programs will likely have the same average effectiveness at the margin when delivered to appropriate participants. Alternatively, at the margin, increased diversion eligibility may still appropriately be handled by existing programs, and the average would be applicable.

For those youths who now receive diversion programs, reoffending rates are expected to be 32% within 12 months, rather than 46.5% had they gone through the court system (section 3.1.2.1). As such, for every apprehension diverted, there would be 0.24 fewer youths apprehended in the following year. Between 2017 and 2027, 1,093 extra participants would go through NT diversion programs, resulting in 260 fewer apprehensions over the same period.

The ratios of supervised youth to total apprehensions were applied to the lower number of total apprehensions to determine the subsequent changes in supervision in following years. As noted in section 2.4, of total apprehensions:

- 13.3% were remanded in custody;
- 2.7% were supervised in unsentenced community-based settings;
- 3.5% were sentenced to detention;
- 12.5% were supervised in sentenced community-based settings; and
- 19.0% were supervised in any setting (i.e. there is considerable overlap between the supervision groups in any given year).

Thus, in the model, a change in apprehensions predicted the subsequent decrease in supervised populations. All current diversion participants were assumed to be removed from unsentenced detention and community, and sentenced community supervision orders. The benefits of diversion are shown in Table 3.5.

²² Note apprehensions are averted as the reoffending rates for youths who go through court are higher than for youths who receive diversion programs.

Table 3.5: Change in diversion participants and associated reduction in apprehensions and days of supervision in the NT

Supervision type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Intervention participants											
Additional number of participants	84	84	87	91	94	98	102	106	110	115	121
Additional participants as % of apprehensions	4	4	4	4	4	4	4	4	4	4	4
Apprehensions	-12	-18	-20	-22	-23	-25	-26	-27	-28	-29	-30
Average daily population											
Sentenced detention	0.0	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
Sentenced community	-15.5	-17.0	-18.2	-19.2	-20.0	-21.0	-21.9	-22.7	-23.6	-24.6	-25.9
Unsentenced detention	-5.2	-5.7	-6.1	-6.4	-6.7	-7.0	-7.3	-7.6	-7.9	-8.2	-8.6
Unsentenced community	-1.0	-1.1	-1.1	-1.2	-1.3	-1.3	-1.4	-1.4	-1.5	-1.5	-1.6
Days of supervision ('000s)											
Sentenced detention	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Sentenced community	-5.7	-6.2	-6.6	-7.0	-7.3	-7.7	-8.0	-8.3	-8.6	-9.0	-9.4
Unsentenced detention	-1.9	-2.1	-2.2	-2.3	-2.4	-2.6	-2.7	-2.8	-2.9	-3.0	-3.1
Unsentenced community	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6
<i>Total</i>	<i>-7.9</i>	<i>-8.7</i>	<i>-9.3</i>	<i>-9.8</i>	<i>-10.3</i>	<i>-10.8</i>	<i>-11.2</i>	<i>-11.6</i>	<i>-12.1</i>	<i>-12.6</i>	<i>-13.3</i>
Cost of supervision (\$m)											
Sentenced detention	0.00	-0.07	-0.11	-0.14	-0.16	-0.18	-0.20	-0.22	-0.24	-0.26	-0.28
Sentenced community	-0.52	-0.64	-0.76	-0.87	-0.97	-1.09	-1.20	-1.31	-1.42	-1.54	-1.69
Unsentenced detention	-3.20	-3.95	-4.64	-5.31	-5.95	-6.64	-7.30	-7.96	-8.64	-9.37	-10.24
Unsentenced community	-0.03	-0.04	-0.05	-0.05	-0.06	-0.07	-0.07	-0.08	-0.09	-0.10	-0.11
<i>Total</i>	<i>-3.74</i>	<i>-4.70</i>	<i>-5.55</i>	<i>-6.37</i>	<i>-7.15</i>	<i>-7.98</i>	<i>-8.78</i>	<i>-9.57</i>	<i>-10.40</i>	<i>-11.28</i>	<i>-12.32</i>

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

3.1.2.3 Benefits of reduced crime costs and adult incarceration

Diversion programs (ignoring bail accommodation for now) result in lower offending for participants, and can therefore reduce later adult incarceration due to changing the offending trajectory. Based on data from the NT Government, there were approximately 70 adults aged 18-22 who were first time adult detainees and who had a juvenile detention record.

The impact of additional diversion on adult detainees was modelled using average pathways and recidivism rates for youth in sentenced detention progressing to adult detention (see section 3.3 for a full description). The pathways were modelled as averages, so that less than a full sentence could be avoided in each year, and thus there can be incremental benefits over time.

Each adult sentence was assumed to have associated benefits of \$345,256 in future pathways (no real growth applied)²³ as per section 2.3. For every apprehension avoided, there were expected to be \$36,391 of benefits in reduced crime costs including reduced costs of crime to victims and the community as per section 2.3. As with adult incarceration costs, no real growth was applied to the cost of crimes avoided to be conservative and capture the uncertain nature of the type of crimes avoided.

Table 3.6 presents the change in adult incarcerations due to increased diversionary efforts today, and the associated reduction in costs of incarceration.

Table 3.6: Change in adult incarcerations and costs of crime and incarcerations due to increased diversion expenditure, real 2016-17 dollars, undiscounted

Benefit type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Reduction in adult incarcerations (n)	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Reduction in apprehensions (n)	12	18	20	22	23	25	26	27	28	29	30
Reduced costs of incarcerations (\$m)	0.00	0.03	0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07
Reduced costs of crime (\$m)	0.44	0.64	0.74	0.81	0.85	0.90	0.94	0.97	1.01	1.05	1.10
Total benefits (\$m)	0.44	0.67	0.78	0.86	0.91	0.95	1.00	1.04	1.08	1.12	1.17

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

The benefits of increased diversion on future crime costs and adult incarceration were expected to be around \$0.44 million in 2017, increasing to around \$1.17 million annually by 2027.

3.1.3 Summary of diversion costs and benefits

The benefits of increased diversion arise from additional participants being directed to appropriate programs such as conferencing, cautions, drug and alcohol programs and other new programs. The primary financial benefits are on reduced supervision costs per person in the current year – i.e. it is much cheaper to provide a diversion program than it is to remand a youth in custody, or to sentence them to detention. Not only that, there are benefits of reduced recidivism – modelled as lower apprehensions in the subsequent year.

While these benefits are logical, they are more likely to apply at the margin, as it would be highly improbable that 100% of youths who are apprehended could be diverted each year. There are obvious costs to society of such an approach through a potential increase in crime over time and lower community safety. Thus diversion programs need to be tailored to individual characteristics and represent the varying needs of diverted youth. For example, the NT Government (2011) recognised the need for driver education programs for youth who had committed driving offences.

Overall, **it was estimated that benefits between 2017 and 2027 would increase from approximately \$4.2 million to \$6.9 million** (in real discounted 2016-17 dollars), respectively. Over the same period, costs are expected to increase from \$1.0 million to \$1.5 million (in real discounted 2016-17 dollars). The total net benefits of diversion were estimated to be \$52.2 million.

²³ Data from the 2017 Report on Government Services reveal that the cost of detention per adult detainee has been stable in real terms over the last five years.

Table 3.7: Overall costs and benefits of diversion intervention, real discounted 2016-17 dollars (rate = 7%)

Cost or benefit	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Benefits of diversion programs	4.19	5.02	5.53	5.90	6.15	6.37	6.51	6.60	6.68	6.74	6.86
Costs of diversion programs	1.01	1.09	1.17	1.24	1.30	1.36	1.39	1.42	1.44	1.46	1.50
Net benefit	3.18	3.93	4.36	4.65	4.85	5.01	5.12	5.18	5.23	5.28	5.36

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

Benefits may be higher than indicated if there are subsequent improvements in both education of young people who are successfully diverted (e.g. through education programs), and if there are then increases in lifetime earnings. From a government point of view, there would also be benefits to government through increased tax receipts and lower expenditure on the youth justice system. From a societal point of view, there would be reduced deadweight losses (economic efficiency losses imposed by raising taxes to pay for government services) associated with corrective services, and there would be benefits to individuals in the community (lower victim costs of crime).

However, there would also be other costs to implement reform. Expanded diversion programs are likely to require a whole of government approach to fund initiatives (e.g. in child protection) to fully realise the benefits of greater diversion and reduce the cycle of offending. The costs that may be associated with other government expenditure have not been considered in the report.

3.2 Bail accommodation

Similarly to the diversion intervention, the purpose of bail accommodation would be to reduce the number of children remanded in custody while awaiting a court finalisation outcome. The purpose would be to ensure that children attend court, and therefore it could also have potential benefits of reducing the number of children sentenced to detention for breach of justice orders.

The purpose of this section is to outline the savings to the NT community for implementing bail accommodation as a suggested reform.

Most young people who end up in remand rather than on bail appear not to be sent there because they are charged with serious crimes. Based on evidence from the UK, Freeman (2008) found that around a third of remandees had been sent there because of not having a fixed abode or someone willing and able to pay surety. More than a third had originally been released on bail, but had breached bail conditions. Less than a third were there because of serious offending behaviour. These rates may have some similarities in the NT context, and were used as a basis due to the lack of available evidence of similar programs in the NT.

Accordingly, a third of those currently on remand would be expected to remain there (but in a secure bail accommodation facility), because of the severity of their alleged crime. The remaining remandees (excluding those who are now diverted) were assumed to receive bail accommodation support – termed bail accommodation in the following tables.

For the third who continue to be remanded in custody, the costs of supervision were modelled as bail accommodation as they would be remanded in a secure bail accommodation model under the proposed intervention. This group is still referred to as unsentenced detention in the following tables.

3.2.1 Costs of bail accommodation

The expected costs of bail accommodation were based on information provided by the NT Government (Kerr, 2017). Territory Families has been scoping cost options to include bail accommodation in the NT. The proposed budget for Bail Support Accommodation is \$15.3 million for construction costs, which would provide 58 beds in total across Darwin, Alice Springs, Tennant Creek and Katherine. Ongoing annual costs are expected to total \$16.87 million per year, including:

- repairs and maintenance, \$500,000;
- property management, \$710,000; and

- operational grants to non-government organisations, \$15.66 million.

As such, the ongoing annual cost of bail accommodation was expected to be \$290,862 per bed, or \$797 per child in bail accommodation per day. The annual operating cost was grown at the same expected real rate as for detention (i.e. 6.93% per annum) and the cost series is shown in section 2.3. This is similar to the \$682 dollars per day proposed for the NT restorative detention facilities (Table 3.15) and far cheaper than current remand costs (assuming that as these are also in Don Dale, they are the same as regular detention costs).

Washington DC (Department of Youth Rehabilitation Services, 2012) provides secure bail accommodation through its Youth Services Center.²⁴ This centre is an 88-bed secure detention facility that provides youth with 24-hour supervision, care, and custody. Services include diagnostic screenings, onsite medical care, individual and group counselling, education provided by the DC Public Schools, structured recreational activities, and family visits. Costs per youth per day in 2001 were \$US 522 per day (\$823).

Overall, remand would be replaced with bail accommodation until court finalisation occurs. The expected costs of this model are shown in Table 3.8.

While the average daily remand population in the NT was expected to be 36.9 in 2017, the average daily remand population may grow to 58.3 by 2027. As such, the total capital costs of bail accommodation were assumed to be necessary (i.e. all 58 beds) to allow for fluctuations in the average daily population numbers, noting that the total average daily population is lower with all three interventions.

Table 3.8: Overall costs of bail accommodation

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Average daily remand population, including:	36.9	39.3	41.3	43.4	45.2	47.4	49.3	51.1	53.1	55.4	58.3
Bail accommodation	24.6	26.2	27.5	28.9	30.2	31.6	32.9	34.1	35.4	36.9	38.9
Unsentenced detention	12.3	13.1	13.8	14.5	15.1	15.8	16.4	17.0	17.7	18.5	19.4
Costs of bail accommodation, including:	7.2	8.6	9.9	11.3	12.7	14.1	15.5	16.9	18.4	19.9	21.8
Bail accommodation	7.2	8.6	9.9	11.3	12.7	14.1	15.5	16.9	18.4	19.9	21.8
Unsentenced detention*	-	-	-	-	-	-	-	-	-	-	-
Capital costs	15.3	-	-	-	-	-	-	-	-	-	-
Total	22.5	8.6	9.9	11.3	12.7	14.1	15.5	16.9	18.4	19.9	21.8

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding. * the costs of unsentenced detention are treated as a benefit (i.e. bail accommodation is cheaper per day compared with existing remand). Costs and participant numbers are calculated in the absence of the diversion and restorative detention interventions.

3.2.2 Benefits of bail accommodation

3.2.2.1 Effectiveness of bail accommodation

Bail accommodation assists young people to meet their bail conditions, so that fewer young people will be sentenced to detention for breach of justice orders.

Richards and Renshaw (2013) noted that there are a limited number of evaluations of bail support programs in Australia that quantitatively estimate the benefits of the programs. As such, it is difficult to determine the efficacy of the program. The following section discusses relevant literature assessing the appropriateness of bail accommodation and support programs in Australia and internationally. Unfortunately, most of the

²⁴ This is termed a detention centre, but in US parlance detention is used to mean remanded, and committed is used to mean sentenced.

available evidence refers to adult programs, so it was necessary to assume that programs for young people in the NT would have similar efficacy.

Completion rates of bail support programs are typically positive. An evaluation of the Queensland Conditional Bail Program for youths cited a 72% successful completion rate (Venables & Rutledge, 2003). Internationally, a 2005 UK evaluation of youth national bail support schemes reported a 54% program completion rate (Thomas, 2005).

An evaluation of Victoria's adult and youth Bail Support Program conducted by Henderson (2008) looked at the effects of diverting unsentenced people from prison by providing early intervention and access to drug treatment, legal welfare and housing services. Diversion was provided with the intent of improving the likelihood that the person would be granted (and successfully complete) bail. However, only 54% of the 1,720 participants successfully attended court and all subsequent treatment program episodes. The study did not provide baseline figures for comparison, but Yick (2017) shows that 53% of youth granted bail in the NT do not commit breach of bail offenses.

In 2006, Deloitte UK reviewed an evaluation of the Youth Justice Agency's Bail Supervision and Support scheme, which used remand fostering²⁵ rather than providing bail accommodation. The majority (55%) of young people in this program fully complied with their bail supervision program. However, the recidivism rate (those that reoffend at least once within a two year period) was 91%, and subsequent offending likewise remained high, with (Deloitte UK, 2006):

- 40% of program participants reoffending with a less serious offence,
- 46% reoffending at the same level, and
- 14% reoffending with a more serious offence.

In light of this, it was considered unlikely that youths would completely cease offending as a result of receiving bail support. However, the aim of bail support and accommodation is to improve upon the number of young people attending their court dates, and reduce the likelihood of receiving a sentence. Overall, the average completion rate for bail support was 59%, across the aforementioned studies.²⁶

Accordingly, the introduction of bail accommodation was assumed to result in a 59% increase in successful bail completion, and therefore reduce the subsequent breach of justice orders sentenced to detention. Approximately 17.5% of youths in sentenced detention are there for breach of justice orders (Yick, 2016), so in any given year, **the average daily number of youth in detention was assumed to be reduced by 10.3%**. These youths were assumed to be sentenced to community supervision instead which results in a small increase in days overall, but at a much lower cost.

Table 3.9: Number of bail accommodation participants

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Remand, including:	279	296	312	328	341	358	372	386	401	418	440
Bail accommodation	186	198	208	218	228	238	248	257	267	278	293
Unsentenced detention	93	99	104	109	114	119	124	129	134	139	147

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding. * Bail accommodation was not assumed to have a positive effect on reoffending rates for more serious cases. Benefits are calculated in the absence of the diversion and restorative detention interventions.

²⁵ Remand fostering is an alternative use of secure accommodation when a person is under prison custody.

²⁶ Defined as not having been re-arrested or reported to the police as being in breach of their bail supervision program, or any other bail condition, and also attending all court appearances during the bail supervision period.

3.2.2.2 Benefits of changed and reduced need for supervision

As with diversion, the ratios of supervised youth to total apprehensions were applied to the lower number of total apprehensions to determine the subsequent changes in supervision in following years. The benefits of bail accommodation are shown in Table 3.10.

Table 3.10: Change in the number of supervised youth and funding and associated reduction in days of supervision due to bail accommodation

Supervision type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Average daily population											
Sentenced detention	-1.8	-1.9	-2.0	-2.1	-2.2	-2.3	-2.4	-2.4	-2.5	-2.6	-2.8
Sentenced community	3.2	3.4	3.6	3.8	3.9	4.1	4.3	4.4	4.6	4.8	5.1
Unsentenced detention	-24.6	-26.2	-27.5	-28.9	-30.2	-31.6	-32.9	-34.1	-35.4	-36.9	-38.9
Unsentenced community*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Days of supervision ('000s)											
Sentenced detention	-0.6	-0.7	-0.7	-0.8	-0.8	-0.8	-0.9	-0.9	-0.9	-1.0	-1.0
Sentenced community	1.2	1.2	1.3	1.4	1.4	1.5	1.6	1.6	1.7	1.8	1.9
Unsentenced detention	-9.0	-9.6	-10.1	-10.6	-11.0	-11.5	-12.0	-12.4	-12.9	-13.5	-14.2
Unsentenced community*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bail accommodation	9.0	9.6	10.1	10.6	11.0	11.5	12.0	12.4	12.9	13.5	14.2
<i>Total</i> ^	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8
Cost of supervision (\$m)											
Sentenced detention	-1.1	-1.3	-1.5	-1.7	-1.9	-2.1	-2.4	-2.6	-2.8	-3.0	-3.3
Sentenced community	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Unsentenced detention	-19.2	-23.0	-26.6	-30.4	-34.0	-37.9	-41.6	-45.4	-49.3	-53.4	-58.4
Unsentenced community*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	-20.2	-24.1	-28.0	-31.9	-35.7	-39.8	-43.8	-47.7	-51.8	-56.2	-61.4

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding. * unsentenced community has a very small reduction in costs and days. ^ The increase in days occurs because each pathway has been modelled using the average length of stay for the changed pathway and sentenced community is slightly longer on average than sentenced detention.

3.2.2.3 Benefits of reduced crime costs and adult incarceration

Bail accommodation reduces the number of adult sentences because some youth will be sentenced to community supervision, rather than being sentenced to detention (and then having higher subsequent recidivism). Overall, approximately 107 youths would not be sentenced to detention between 2017 and 2027, and therefore around 21 will not progress to adult detention.

Each adult sentence was assumed to have associated benefits of \$345,256 in future pathways (no real growth applied)²⁷ as per section 2.3. Table 3.11 presents the change in adult incarcerations due to providing bail accommodation today, and the associated reduction in costs of incarceration.

Table 3.11: Change in adult incarcerations and costs of crime and incarcerations due to bail accommodation, real 2016-17 dollars, undiscounted

Benefit type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Reduction in adult incarcerations (n)	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.2	2.2	2.4
Reduced costs of incarcerations (\$m)	0.52	0.55	0.58	0.61	0.63	0.66	0.69	0.72	0.74	0.77	0.82

Source: Deloitte Access Economics calculations. Note: results are for financial years.

The benefits of increased bail accommodation on future adult incarceration was expected to be around \$0.5 million of additional benefits in 2017, increasing to around \$0.8 million annually by 2027.

3.2.3 Summary of bail accommodation costs and benefits

The primary financial benefits of bail accommodation are reduced supervision costs in the current year – i.e. based on the costs of bail accommodation proposed by the NT Government (Kerr, 2017), it is much cheaper to provide bail accommodation to youth than it is to remand them in custody, or to sentence them to detention.

Overall, it was estimated that benefits between 2017 and 2027 would increase from approximately **\$20.7 million to \$31.6 million** (in real discounted 2016-17 dollars), respectively. Over the same period, costs are expected to increase from \$7.2 million to \$11.1 million (in real discounted 2016-17 dollars), and there would be associated upfront capital costs of \$15.3 million. The total net benefits of diversion were estimated to be \$183.3 million (in the absence of diversion and restorative detention).

Table 3.12: Overall costs and benefits of bail accommodation, real discounted 2016-17 dollars (rate = 7%)

Cost or benefit (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Benefits of bail accommodation	20.71	23.08	24.96	26.56	27.74	28.85	29.62	30.13	30.57	30.97	31.62
Costs of bail accommodation	22.46	8.00	8.67	9.24	9.66	10.06	10.34	10.52	10.68	10.83	11.06
Net benefit or cost	-1.75	15.08	16.29	17.32	18.07	18.79	19.28	19.61	19.88	20.14	20.56

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

3.3 Restorative detention

A secure accommodation model will still be required to hold children who cannot be diverted, with at least a facility in Darwin and a facility in Alice Springs. However, the facilities would be new purpose built, small scale, home style facilities in community settings. This section looks at the changes in corrective service and associated costs resulting from replacing Don Dale and related facilities with restorative detention facilities which are designed to address the factors that contribute to crime in youth, rather than simply being punitive.

Despite an extensive literature search, there appear to be relatively few published journal articles outlining the cost-benefit analysis of restorative detention facilities. Three articles were identified which are outlined as follows.

- Latessa et al (2014) assessed the incremental costs and benefits of over 10,000 youth (matched by criminogenic risk) across three pathways in Ohio: diversion programs; Community Corrections Facilities

²⁷ Data from the 2017 Report on Government Services reveal that the cost of detention per adult detainee has been stable in real terms over the last five years.

- which are small-scale, secure community residential facilities with cognitive behaviour therapy and other therapeutic interventions; and regular youth detention.
- Jara (2013) examined Missouri's Multi-Systemic Treatment (MST), an intensive therapeutic intervention for chronic, violent or substance abusing juvenile offenders that houses youth in secure but small facilities. The author conducted a detailed examination of fixed and variable costs under this system, and its impact on recidivism. She then conducted a prospective CBA of a scenario where California adopted this system, assuming the same proportional reductions in recidivism.
- Caldwell et al (2006) reported on the Mendota Juvenile Treatment Center in Wisconsin. This facility treats violent offenders in small secure facilities, with twice the staff to resident ratio of regular youth detention, most of whom have psychological qualifications. While this study was only small scale ($n=101$) it had the advantage that every participant was case-matched to another youth in regular youth detention.

3.3.1 Costs of restorative detention

The new facilities will have substantial capital costs at the outset, and may have higher running costs per person due to higher staff ratios, enhanced staff training, higher wages and likely higher needs of young people in detention (because they are higher risk children who are now detained).

The following sections outline the expected land costs, construction costs, ongoing costs and recurrent capital costs. Largely, the costs have been based on Jara (2013), who outlines both the fixed and variable costs for MST facilities.

- Another restorative detention facility of the same number of beds, but specifically designed for indigenous people, the North Cheyenne Youth Services Center, has also been included for reference on the fixed costs side. Operational costs for this facility are unknown.
- The construction costs of a regular youth detention centre in the ACT are also included for comparison.

3.3.1.1 Number of facilities required

Given that the average MST facility houses 36 detainees, it was necessary to determine how many facilities would be required for the NT. In section 3.2, it was assumed that most of the youths currently on remand would be sent to bail accommodation. As such, it was estimated that a facility smaller than an MST equivalent would be required. The expected average daily number of future youths sentenced to detention was not expected to rise over the next 10 years due to the benefits of restorative detention on recidivism.

In most recent years the average daily number of youths in detention in the NT has been close to 50 people, and in the absence of bail accommodation it would be necessary to have sufficient capacity to account for this and expected growth in the number of youth in detention on an average day. However, given the presence of bail accommodation in the modelled intervention, the average daily number of youths in sentenced detention is expected to be closer to 15.

The peak daily population of youths in detention has been up to 50% higher than average populations (for example, the annual report for the Department of Correctional Services shows that the peak number of youths in detention was 73 while the average daily number was 49 during the 2012-13 financial year), so **facilities would need to be able to cater for around 23 youths during peak times** – approximately 0.64 times the size of the average MST facility.

3.3.1.2 Land and construction costs

Jara (2013) had the most comprehensive analysis of costs, and is used as the basis for costing proposed restorative detention in the NT. Regarding establishment costs, the average MST facility is **designed to hold 36 youths** built upon 11.2 acres (4.5 hectares) of land. To house all of California's then current youth detainee population would require 31 such facilities.

A search for rural acreage near Darwin yielded an average price of \$449,450 per acre.²⁸ A restorative detention facility would also be needed to replace the current Alice Springs facility, however, there were not enough rural sites currently for sale near Alice Springs to gain an indication of value. As a substitute, houses

²⁸ <http://www.ruralview.com.au/rural-real-estate/for-sale/darwin> accessed 22 June 2017. Note, rural properties sizes are usually given in both acres and hectares.

in Alice Springs appeared to be valued around three-quarters of similar houses in Darwin.²⁹ Assuming that a similar ratio applies to rural land values as to house prices, and giving a double-weight to Darwin (as Don Dale usually has at least twice the number of detainees as Alice Springs) the weighted average cost of land was estimated to be \$409,625 per acre. **Thus, for the same amount of land as the average MST site, the total cost would be approximately \$4.6 million, or \$2.9 million for sufficient facilities to cater for 23 youths.**

- Jara (2013) estimated that the average cost of acreage near urban centres in California was \$US 255,500³⁰. Converting this to current Australian dollars (allowing for exchange rates and inflation) gives an equivalent of \$443,400 – which triangulates well with the similar figure for the NT. Thus land costs for the average facility would be \$US 2.9 million (\$4.9 million)³¹.

The MST centre which Jara (2013) based costs on is the New Beginnings Youth Development Center in Washington DC. This has an accommodation building, an education building, a gym, and a warehouse, which total 69,750 square feet. Californian prison construction costs were estimated at \$US 241 per square foot (\$418), resulting in construction costs of \$US 16.8 million (\$29.2 million) per facility based on Jara (2013).

- While the reference used by Jara was for a restorative detention facility, the costs are representative of jail construction costs in general in the United States. The Chatham County Government (2013) conducted an analysis of 26 jails constructed in North Carolina between 2000 and 2013, ranging in size from 67 beds to 1,000 beds. The average cost per square foot was identical to that used by Jara.

The Northern Cheyenne Youth Services Center is a 36 bed restorative detention facility in Minnesota. It was constructed in 2015 for \$US 6.2 million (\$9.3 million), or \$0.2 million per bed (\$0.3 million)³². Despite the low cost, it still boasts medium security, with a strengthened perimeter fence and electronic detection systems. The facility provides 36 beds in five separate living units, an alternative school including assessment capability, probation/hearing facilities, program functions, and spaces for health, dining, recreation, as well as administrative offices. There are also separate entrances for the public and staff, supplies, and a discrete detainee entrance and processing component (Figure 3.1). Total floor space is 33,000 square feet (3,066 square metres). To help detainees prepare themselves to rejoin the wider community, it offers a wide range of work and treatment programs, and they are supervised 24/7.³³ Cultural aspects of the Northern Cheyenne Tribe are expressed in the operation and design of the Center that support traditional inter-relationships residents and staff, and incorporates traditional design forms using indigenous materials and colours.³⁴

There are no restorative detention centres in Australia that can be used for cost comparisons. However, the Bimberi Youth Justice Centre in the ACT, while still a secure facility, was also the first human rights compliant youth detention centre in Australia. Announced construction costs were \$40 million for a 40 bed facility, or \$1 million per bed.³⁵

²⁹ <https://www.propertyvalue.com.au/explore/Alice%20Springs-NT>, accessed 22 June 2017

<https://www.propertyvalue.com.au/explore/Alice%20Springs-NT>, accessed 22 June 2017

³⁰ All Jara's costs are in 2010 dollars. Converting to Australian dollars using World Bank Purchasing Power Parity for 2010, and adjusting for Australian inflation since then makes Jara's figures 74% higher.

³¹ Unless specified otherwise, all costs are in current Australian dollars.

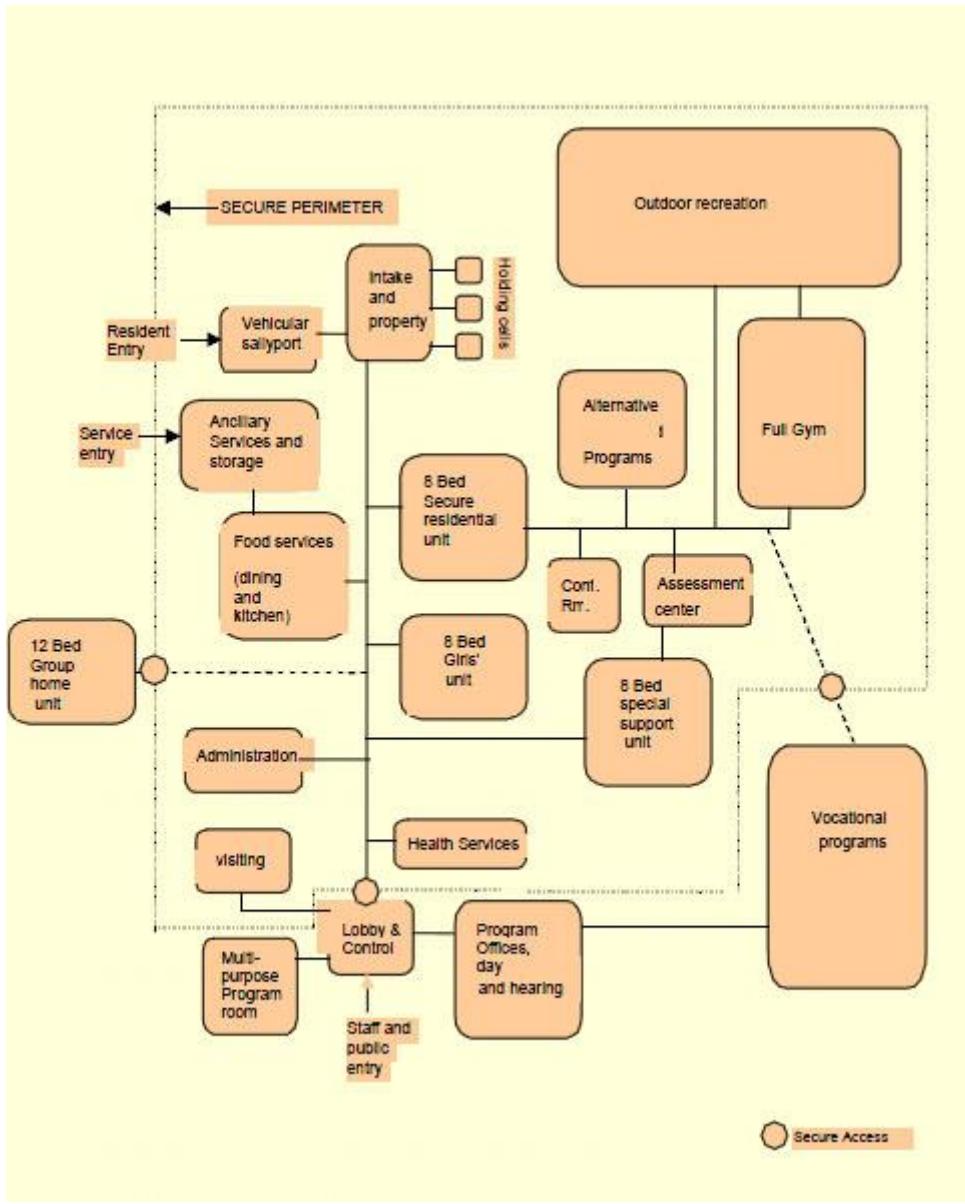
³² <http://justiceolutionsgroup.com/projects/project/northern-cheyenne-youth-services-center>

³³ <https://www.inmateaid.com/prisons/northern-cheyenne-youth-services-center>

³⁴ <http://www.kleinmccarthy.com/projects-northern-cheyenne-juvenile-detention.php>

³⁵ <http://www.abc.net.au/news/2007-07-02/youth-justice-centre-cost-blow-out/87134>,
<https://web.archive.org/web/20110220090453/http://www.dhcs.act.gov.au/ocyfs/bimberi>

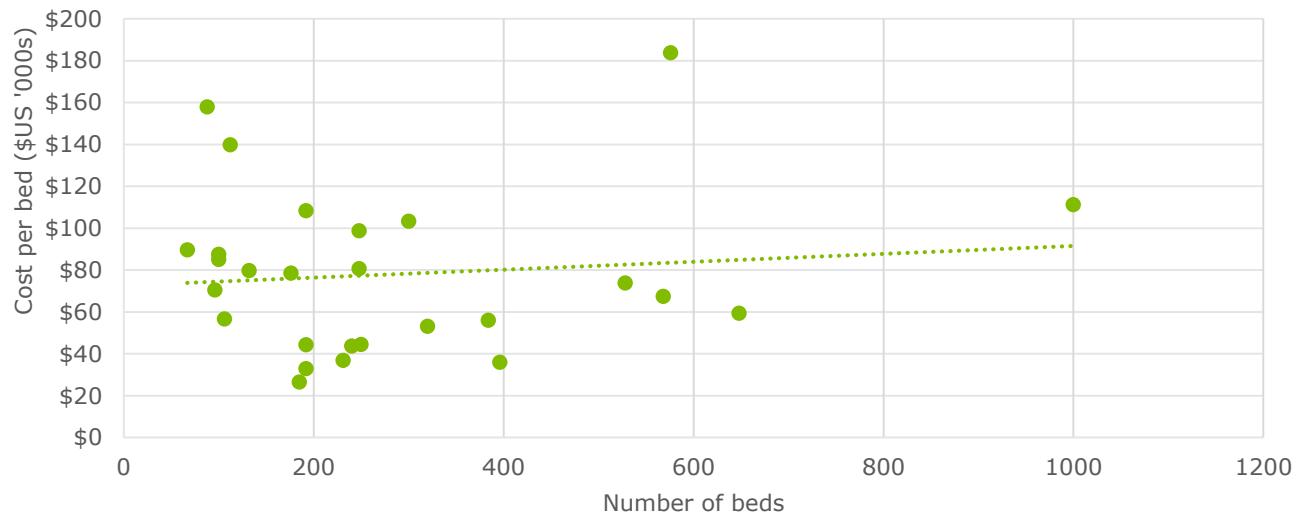
Figure 3.1: Layout of the Northern Cheyenne Youth Services Center, Montana.



Source: Klein McCarthy Architects (2017).

From such evidence as is available in the literature, larger restorative detention centres appear to have higher construction costs per bed, due to additional facilities such as medical and dental, or swimming pools and gymnasiums. The County of Chatham (2013) conducted a study of all the jails built in North Carolina between 2000 and 2013, which did not demonstrate a significant relationship between the cost per bed and facility size (Figure 3.2). Thus, the fact that the proposed restorative justice facilities in the Northern Territory are small does not necessarily indicate that they should be more expensive to construct than existing youth detention facilities.

Figure 3.2: Relationship between prison size and cost per bed in the US



Source: Chatham County Government (2013).

No evidence for prison construction costs in Australia was identified. However, a search of quantity surveyor sites yielded an indicative construction cost for a “single level boutique motel, with air-conditioning and guest facilities” of \$3,500 per square metre³⁶. Assuming this type of building is sufficiently similar to restorative detention facilities, **the total construction costs to build an equivalent MST centre near Darwin would be \$22.6 million per site, or \$17.4 million for sufficient facilities to cater for 23 youths** (or \$0.76 million per bed).

- This is approximately the same as the \$15 million the NT Government has allocated over 2018-19 and 2019-20 to replacing Don Dale and work in Alice Springs.³⁷
- This is considerably higher than the costs per bed for the North Cheyenne Youth Services Center, but there are diseconomies of scale in constructing the same number of beds across two sites rather than one. For example, each individual facility may only have half as many dormitories, but it cannot have half a basketball court. The cost per bed is lower than for regular youth detention at Bimberi, but the ACT’s per diem costs for juvenile detention were five times higher than in the NT in 2016, so this may not be an appropriate benchmark for the proposed facilities (Productivity Commission, 2017). However, construction costs for Bimberi have been included in sensitivity testing in section 4.4.6.
- By way of triangulation, the cost for the proposed NT facility is \$630,000 per bed, which is considerably higher than the \$500,000 than the Holtze prison recently opened in Darwin.³⁸
- While capital costs are not a major component of annual costs because they are amortised (see discussion following), sensitivity testing is conducted on this variable in section 4.4.

There are a number of methods used to apportion long term capital costs over the period of a CBA:

- the Department of Corrections, in its annual reports, allows for a 50 year life for buildings;
- the Australian Tax Office allows buildings to be amortised over 30 years;³⁹

³⁶ Plainly enough, a detention facility will have significantly different design considerations to a boutique hotel, but in the absence of specific construction costs for Australian prisons, this figure is used for the purpose of this model. Further, the envisaged facility may be more akin to a motel than to a traditional high security prison. Also, after allowing for exchange rates and inflation, this figure is similar to that in Jara (2013).

³⁷ https://parliament.nt.gov.au/__data/assets/pdf_file/0006/379671/93.-Table-Labor-Infrastructure-Projects.pdf

³⁸ <http://www.abc.net.au/news/2014-09-09/new-darwin-prison-opens/5728334>

³⁹ As per Australian Tax Office rules, <http://law.ato.gov.au/atolaw/view.htm?docid=%22ITD%2FEF20151%2F00001%22>

- while land is not a depreciating asset, the usual ratio of the price of renting real estate as opposed to buying it is about 1 to 20⁴⁰;⁴¹ or
- weigh the entire establishment capital costs against the ongoing benefits.

As the benefits in this case appear to be more than sufficient to repay the capital costs within ten years, the last option is chosen here to be conservative and for simplicity.

Table 3.13: Total capital costs for proposed restorative detention facilities

Component	Cost (\$m)
Land	2.94
Buildings	14.50
Total	17.44

Source: Jara (2013) converted to current NT costs.

On 15 March 2017, the *NT News* reported that an expert panel report in 2010 for the Henderson Government deemed that the Don Dale facilities had reached the end of their economic life, and reportedly estimated that a replacement youth detention centre with 75 beds would cost \$52 million.⁴² However, in 2014, the then Coalition Government instead spent \$800,000 on refurbishments and announced that this was “enough [for] a more secure facility and more able to meet the needs of the NT population”.⁴³

Accordingly, the counter-factual for the base case is that the existing Don Dale facilities would have remained in operation for another ten years. This represents a highly conservative assumption. In reality, based on communications with the NT Government the costs of new facilities would be at least \$20 million, although it is not clear whether the construction costs would be realised within the modelling horizon.

3.3.1.3 Ongoing costs

Regarding ongoing costs, MST facilities are designed to have high staff to resident ratios. Jara (2013) reports the average facility has three psychologists, six teachers, six social workers, six correctional staff, six case managers and one executive – a total of 28 staff for 36 residents.⁴⁴

- This is a far higher staff to detainee ratio than in adult prisons. The Productivity Commission (2017) reports that the corrections offender to operational staff ratio in the NT was 10.6 to one in 2016.
- The Productivity Commission figures are staff employed, rather than posts filled. The US Department of Justice (2001) reports that ideally to man a post 24/7 ideally requires around 5 full time employees (although equally that this is seldom fulfilled in practice). This implies around one post per 53 inmates in NT adult prisons, which appears to be in line with international experience.⁴⁵

Total professional salaries were \$US 1.45 million (\$2.55 million) per year (Table 3.14). Including on-costs, administrative support and consumables brought total annual personnel costs to \$US 3.2 million (\$5.5 million).

However, while Jara (2013) used median salaries in their analysis, the expected salary costs for similar facilities in the NT were modelled using current pay rates for senior level officers in the NT. That is, salaries were determined based on a set level of seniority to reflect the higher skill set that would be required to deliver effective interventions in youth justice. As such, it was not expected that retraining costs would also

⁴⁰ <http://www.investopedia.com/terms/p/price-to-rent-ratio.asp>

⁴¹ Rent represents the economic value of the flow of services from a piece of real estate.

⁴² <http://www.ntnews.com.au/lifestyle/don-dale-riddled-with-safety-issues/news-story/449ef3b748d5b45ce19065ddf8ac00cd>

⁴³ <http://www.abc.net.au/news/2014-08-06/last-young-offenders-caught-escape-prompts-detention-centre-move/5652882>

⁴⁴ Figures are not available for the actual Washington DC facility on which Jara’s construction costs are modelled, but the overall ratio for youth detention in DC are similar to the average used by Jara. In 2012, there were 589 staff serving an average daily population of 850 committed youth across a number of facilities (Department of Youth Rehabilitation Services, 2012).

⁴⁵ See, for example, http://auburnpub.com/news/opinion/mailbag/inmates-to-officers-often-a--ratio/article_9cf9f0f4-1ec4-11e0-83ee-001cc4c002e0.html

be necessary in addition to the highly skilled staff. The expected levels and salaries are outlined in Table 3.14 (Office of the Commissioner for Public Employment, 2017).

There would also be some diseconomies of scale in the NT from running two facilities. Jara's figure of six correctional officer positions may be feasible for one facility with 36 detainees. However, following the US Department of Justice (2001) ideal model, at least five FTE correctional officers would be required at any facility, regardless of how small, simply to maintain 24/7 365 security.⁴⁶ Thus, despite having closer to half as many detainees as in Jara's model (23 compared to 36), closer to twice as many guard positions would be required simply to have one officer on duty at all times (10 versus 6). However, for both safety and detainee support reasons, Deloitte Access Economics considers it would be necessary to have two officers on duty at all times, even if there will only be around 8 detainees in Alice Springs. This makes for a total of 20 correctional officers employed.

The \$1.1 million in administrative support and consumables is simply the \$US 1 million for an MST facility from Jara (2013) converted to current Australian dollars and adjusted for anticipated NT detainee numbers. By way of comparison, Campbell (2017) notes that travel, clothing, consumables and food for Don Dale has averaged \$0.6 million annually over the last three years (\$28.95 per detainee per day). This then allows an extra \$0.5 million for administrative support, stationery, therapeutic programs and other sundry items.

- Jara (2013) appears to estimate that it would cost \$US 32,730 (\$56,800) in staff time for training at a representative facility to adjust to the new model. However, due to lack of clarity in the article as to actual training costs, these are assumed to be included in the \$0.5 million for administration costs in year one in the NT model.⁴⁷ Mendel (2010) notes that staff under the Missouri model are required to undertake 40 hours a year of training. No costs are provided, but it is reasonable to assume that this would be a similar amount to that suggested in Jara (2013). Again due to lack of clarity, these costs are assumed to be part of the ongoing \$0.5 million for administration in subsequent years in the NT. The wages bill for staff is not affected by how many hours they spend in training, but the cost of staff time could be used as a proxy for the cost of trainer time.

The total expected salaries were estimated to be \$2.6 million for the proposed NT facilities in 2015-16. With on-costs, administrative support and consumables, total annual personnel costs were estimated as \$4.3 million.⁴⁸

⁴⁶ Seven days at 3 shifts per day is 21 shifts per week. If each officer has 5 shifts a week, 4.2 guards are required. In a very small facility, to cover leave and illness, that has to be rounded up to 5 officers.

⁴⁷ There is an item labelled "staff support costs" in Table 2 that is not discussed in the text. Retraining costs are discussed in the text as though they were in the table, but are not actually not itemised in any table.

⁴⁸ On costs are superannuation (9.5%) and NT Payroll Tax (5.5%).

Table 3.14: Number, occupation and salaries of professional staff in MST facilities, and proposed NT facilities

FTE positions	MST facilities, 2011			Equivalent NT facilities, 2015-16			
	Number	Salary (\$US)	Total (\$US)	Number*	Salary (\$)	Level	Total (\$)
Psychologist	3	68,640	205,920	2	90,891	Medical Officer Level 4	181,782
Teachers	6	65,620	393,720	4	88,950	Lecturer Prisoner Education level 10	355,800
Social workers	6	39,250	235,500	4	80,321	Medical Officer level 2	321,284
Correctional Officers	6	39,020	234,120	20	63,498	Correctional Officer First Class	1,269,960
Case manager	6	47,200	283,200	4	61,001	Correctional officer	244,004
Executive	1	101,250	101,250	1	222,310	Executive Officer 1 contract	222,310
Total salaries		1,453,710					2,595,140
Admin and consumables	-	-	1,000,000	-	-	-	1,108,819
Oncosts	-	-	703,778	-	-	-	604,083
Total	28	-	3,157,488	19	-	-	4,308,042

Source: Jara (2013) and Deloitte Access Economics calculations. * the number of staff has been rounded to the nearest whole number.

3.3.1.4 Recurrent capital costs

Jara (2013) does not include recurrent capital costs, but assuming these are 8% per annum⁴⁹, these would total a further \$US 1.6 million per year (\$2.7 million) for the MST facilities. **For the NT, these costs would be \$1.4 million in 2015-16.**

3.3.1.5 Total costs

The total recurrent capital and personnel costs were \$US 4.75 million (\$8.25 million) for the MST. **For the NT, the total recurrent capital and personnel costs were estimated to be \$5.72 million in 2015-16** (Table 3.15). No specific training costs have been included as it was assumed that appropriately trained staff would be employed at the outset (i.e. staff with sufficient experience). For example, most of the staff would be psychologists, teachers, social workers and case managers who would not be expected to require additional training.

⁴⁹ Based on Kerr (2017) proposed costings for bail accommodation units.

Table 3.15: Total recurrent costs in MST facilities, and equivalent NT facilities

Component	MST (\$US m), 2011	NT (\$m), 2016-17
Land	2.87	2.94
Buildings	16.81	14.50
Capital requirements	19.68	17.44
Salaries	1.45	2.60
On costs	0.70	0.60
Admin and consumables	1.00	1.11
Recurrent capital costs	1.60	1.41
Total recurrent costs	4.75	5.72
Recurrent costs per detainee per day (\$)	361	682

Source: Jara (2013) and Deloitte Access Economics calculations. * the number of staff has been rounded to the nearest whole number.

Assuming an average residential population of 36⁵⁰, this translates to a total cost of \$US 361 per resident per day (\$628).⁵¹ **For the NT, the total recurrent costs were estimated to be \$5.72 million per year, which translates to \$682 per detainee per day.**⁵²

Finally, by way of comparison, Latessa et al (2014) reports a considerably lower average daily cost of \$US 158 per day (\$250). However, the components of this costing are not specified, so may not be directly comparable.⁵³ The Department of Youth Rehabilitation Services (2012) reports that in Washington DC, secure Residential Treatment Centers, which provide specialized educational and behavioural modification programs in a structured, supervised environment for less serious offenders has similar costs to the proposed NT facilities at \$US 294 per day (\$464). Conversely, DC's 60 bed New Beginnings Youth Development Center for the most chronic and serious offenders, which provides similar services with the addition of onsite medical and dental facilities, an education academy and vocational training, costs considerably more, at \$US \$761 per day (\$1,200). All of these facilities are based on the JDAI model.

- Costs per person per day for youth detention in the NT appear to include a fixed capital component (Campbell, 2017). Estimated per diem costs in the model used in this report would be higher if amortised capital costs were included. As noted in section 3.3.1.2, in the interests of conservatism, fixed capital costs have been treated as a lump sum. If, alternatively, they had been amortised over 30 years, this would increase per capita per diem costs by an extra \$70 a day, to \$576 per day, which is similar to the pre-Berrimah costs of \$636 per day in Don Dale (Productivity Commission, 2017). (However, it would also render the overall BCR much higher, by moving two-thirds of fixed capital costs outside the 10 year horizon of the CBA.) Thus, even doubling capital costs under amortisation would only cause daily costs to increase by around a third and still not bring them close to current NT regular detention costs.
- It is likely that the main reason for the increasing costs at Don Dale are maintenance and repairs for a facility that has reached the end of its economic life. Data from Campbell (2017) show that operational costs increased threefold after the youth detainee population was moved to the then closed Berrimah

⁵⁰ The average sentence in California is over a year. Time series data show the introduction of restorative detention does not appear to reduce length of sentences (Mendel, 2014 and 2010). This stands to reason as length of sentence is the prerogative of the courts. Sentence duration is longer in States with regular detention than in those with restorative detention, but this most likely reflects differences in adjudication than in corrective services.

⁵¹ Jara does not include maintenance, amortise capital costs, nor provide a per person per day cost. The per diem cost is derived here for benchmarking against the same figure derived for the NT.

⁵² Note this cost does not include amortisation costs.

⁵³ Caldwell et al (2006) do not report per diem costs either, only a comparison for total costs per sentenced youth without duration statistics.

facilities in 2015. Similarly, the Productivity Commission (2017) shows that cost per youth in the NT increased by a similar ratio over this period, from \$636 per day in 2014 to \$1,540 in 2016.⁵⁴

- Personnel costs of \$11.5 million for operating the youth detention (Campbell, 2017) would be sufficient for over 100 full time equivalent staff. It is possible that a substantial proportion of personnel costs are back-office support roles that would continue under the intervention scenario and thus should be included in restorative detention costs on a like for like basis.
- Campbell (2017) noted that, depending upon how certain programs are classified, and grants are treated, per diem costs could be up to \$350 lower.
- By way of comparison, net recurrent expenditure per adult prisoner (including fixed capital components) was \$315 per day in the NT in 2016 (Productivity Commission, 2017).
- The expected cost per detainee day in the proposed restorative detention facilities is higher than it was for current detainees before the move to Berrimah. In the eight years to 2014-15, the average cost of youth detention per person day was \$596 (Campbell, 2017).

3.3.2 Benefits of restorative detention

The benefits of restorative detention primarily include reduced recidivism amongst ex-detainees. There are also potential benefits for reduced harm for detainees during their stay in detention, and also potential for improved employment outcomes, depending on the design of the program. However, only the benefits on reduced recidivism rates have been modelled.

3.3.2.1 Recidivism for restorative detention

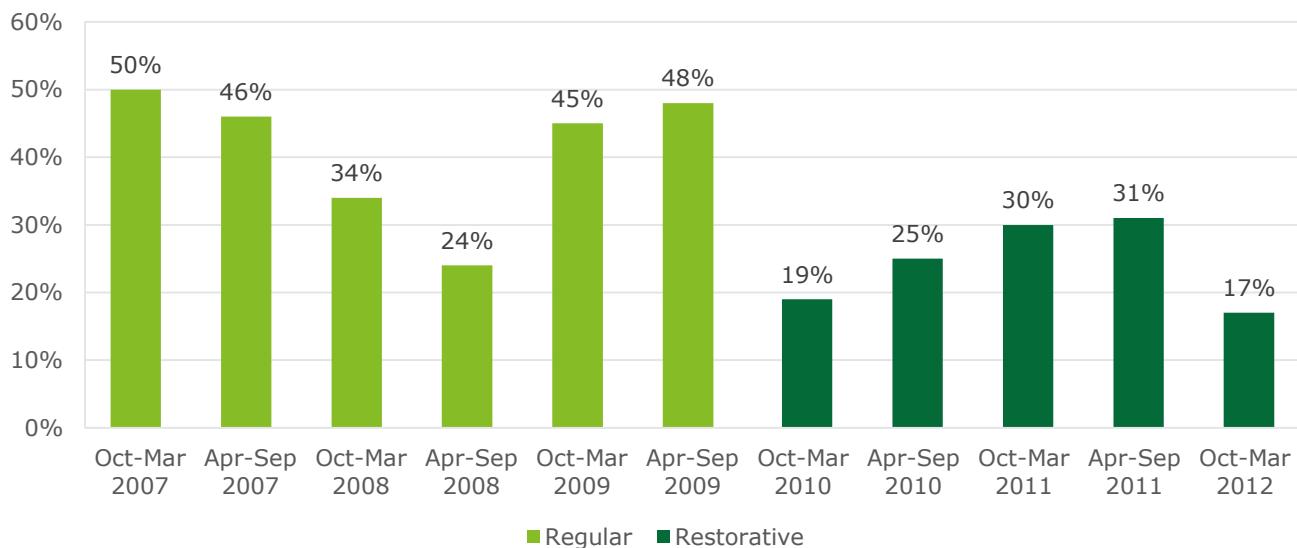
There are a number of ways to measure recidivism, including having a subsequent offense, returning to youth detention (or supervision generally), returning to adult detention, and returning to court. Different time periods are usually attached to recidivism rates, and largely depend on reported follow up times. The literature generally considers recidivism rates relative to a cohort group (either matched or not).

Time series analysis

In Washington DC (Department of Youth Rehabilitation Services, 2012) time series analysis also shows a substantial decline in recidivism after the introduction of restorative detention. In 2009 the Oak Hill detention centre, which had had 20 Directors in 19 years, was shut down (Schiraldi, 2017). It was replaced by the New Beginnings Youth Development Center, based on the Missouri Model. Six month re-conviction rates across the first three years under New Beginnings were little over half (59%) of what they had been under the last three years of Oak Hill.

⁵⁴ Six years ago, the then Commissioner of Corrections said that "the only improvement he could make to Berrimah was with a bulldozer". <http://www.abc.net.au/news/2014-08-06/last-young-offenders-caught-escape-prompts-detention-centre-move/5652882>

Chart 3.1: Six month re-conviction rates under regular and restorative detention in Washington DC.



Source: Dept of Youth Rehabilitation Services, Washington DC (2012).

- The Justice Policy Institute (2009) reported that the greatest single risk factor for future incarceration was previous incarceration. Recidivism rates in the NT are very high, 90% of those who go through Don Dale have their sentences entirely backdated to their remand period (Kerr, 2017, Annexure JK-3). This implies that remand may have as deleterious consequences for recidivism as does sentenced detention. In which case, the JDAI's impact on reducing (remand) time in regular youth correction facilities may offer helpful triangulation for the same impact of restorative detention on recidivism. Mendel (2014) conducted time series analysis of the impacts of restorative detention in New Jersey. Five years after the introduction of the state-wide JDAI:
 - annual youth detention admissions had fallen by 59%;
 - average daily youth detention populations had fallen by 55%; and
 - juvenile arrests had fallen by 33%.

Cross-sectional analysis

Across several cross-sectional studies reported in the literature, the results are reasonably consistent; restorative detention reduces recidivism rates by between one third and two thirds (Table 3.16). The average reduction (57%) also coincides closely with that reported by Mendel (2014) in his time series analysis (55%). While there may be some confounding factors in cross sectional analysis, such as race or income, the Justice Policy Institute (2009) notes that the largest cause of youth incarceration is not involvement with gangs, weapons possession or dysfunctional upbringing, but previous incarceration. Thus presumably, the largest factor affecting reductions in future recidivism will be reductions in the adverse impacts of current incarceration.

- Latessa et al (2014) and Caldwell (2006) compare restorative and regular detention facilities within the same state, which should negate confounding factors. Particularly as the latter study uses individual case matching.
- Mendel (2010) compares restorative justice facilities in Missouri against regular detention in six other states. However, differences in recidivism across states appears to be smaller than differences across time since release or across different measures of recidivism. Mendel also notes that most of the youth who have been through restorative detention have had felony convictions – serious crimes carrying penalties of a year or more incarceration, so it is not the case that recidivism rates are low because the offenses are petty.

- Mendel (2014) notes that the declines in recidivism observed under the JDAI have been nearly identical for white youth and youth of colour. This would imply that racial composition has not been a major factor in the relative efficacy of restorative detention.
- Observed recidivism rates are lower in the US than in Australia. However the United Nations reports that proportionally the US incarcerates more than five and a half times as many of its citizens than Australia does⁵⁵. This may mean that many more petty offenders - who are not likely to become repeat offenders - are detained in the US than in Australia.

Importantly, restorative detention has a lasting effect. Youths released from restorative detention appear to be less likely to reoffend over time compared to their peers released from usual detention, as shown in Chart 3.2.

Table 3.16: Observed differences in recidivism between regular and restorative detention across US States (various years)

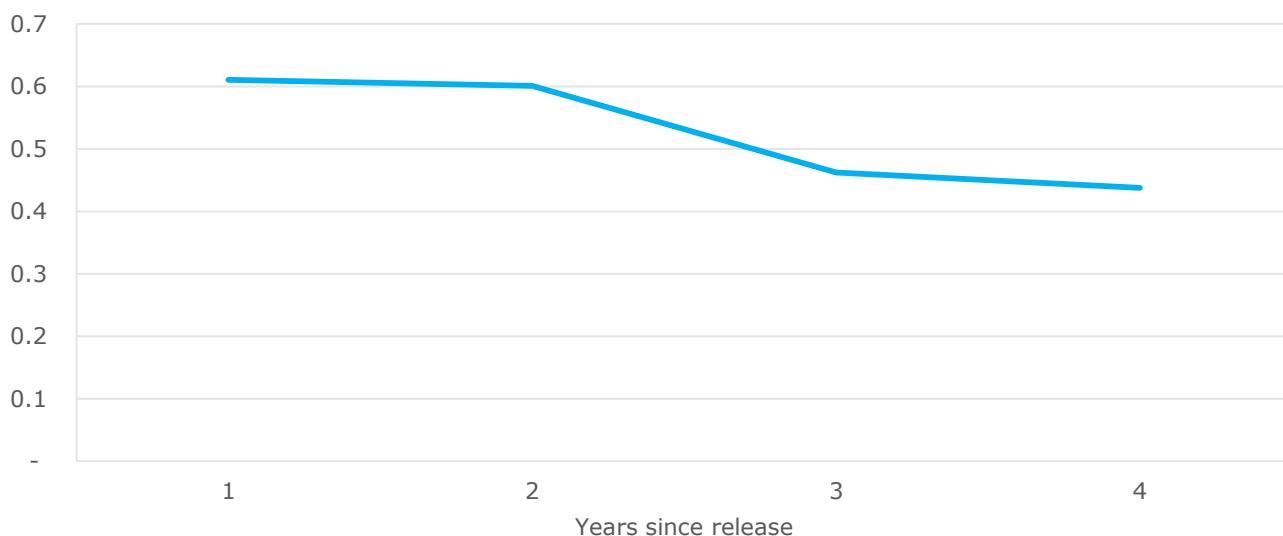
	Regular	Restorative	Ratio	Source
Youth recommitted or probation for new offence within one year	28%	17%	0.61	Mendel (2010)
Recommitted to custody within two years	37%	15%	0.40	Mendel (2010)
Recommitted within two years	19%	14%	0.74	Latessa et al (2014)
Adult prison within two years, for new offense	10%	7%	0.70	Mendel (2010)
Re-incarcerated for new offense within two years	18%	15%	0.83	Mendel (2010)
Re-incarcerated within three years	57%	24%	0.43	Jara (2013)
Re-incarcerated within three years	48%	24%	0.51	Mendel (2010)
Youth sentenced to adult prison within three years	23%	9%	0.36	Mendel (2010)
Sentences within four and a half years	2.49	1.09	0.44	Caldwell (2006)
Average			0.57	

Note: Mendel references compare Missouri with other US States, Jara compares California with Washington DC, Latessa et al and Caldwell compare institutions within the same state (Ohio and Wisconsin, respectively).

Sources: as itemised in table.

⁵⁵ United Nations Development Program <http://hdr.undp.org/en/content/prison-population-100000-people>

Chart 3.2: Ratios of recidivism after restorative detention to recidivism after regular detention, by years since release (US)



Source: Table 3.16.

As shown in Chart 3.2, the reduction in recidivism rates between those released from regular detention and those released from restorative detention appears to increase with successive years after release. In the interests of conservatism, reductions in recidivism within twelve months is preferred in this report, as they are the smallest. Similarly while time series data might be preferred on theoretical grounds, cross sectional data are used because they are smaller. Specifically, the cross-sectional reduction in first year recidivism of 39% between restorative and regular detention is used as the basis for modelling in this report. Noting that it is very closely matched with the 41% reduction observed in Youth Rehabilitation Services (2012) time series data.

3.3.2.2 Recidivism rates in the NT

To determine the expected benefits of reduced recidivism under restorative detention, it was necessary to estimate recidivism rates for the NT. As recidivism rates for NT youths are not published, youth recidivism rates from other sources were used for triangulations.

With the exception of the ACT, in every jurisdiction, recidivism rates for youths are equal or higher than recidivism rates for adults. Nationally, youth recidivism rates are 9% higher than adult recidivism rates (Table 3.17).

Table 3.17: Proportion of detainees with prior incarceration, by jurisdiction, 2016

Jurisdiction	Adult	Youth	Ratio
ACT	74%	55%	0.75
NT	72%	not published	-
QLD	64%	63%	0.98
WA	60%	65%	1.09
SA	50%	56%	1.13
NSW	52%	61%	1.19
TAS	61%	76%	1.24
VIC	50%	66%	1.33
Australia	56%	61%	1.09

Source: AIHW (2016), ABS (2016). The recidivism rates in the ACT may not be representative, having simultaneously both the nation's lowest youth recidivism rates and highest adult recidivism rates.

Accordingly, youth recidivism in the NT is assumed to be 9% higher than adult recidivism. As 72% of adult prisoners in the NT are recidivists, this implies that **78% of youth detainees have previously been incarcerated.**

The percentage of sentenced detainees who are recidivists does not directly translate to recidivism rates per year(s). However, the average youth who has come into contact with the justice system is apprehended two to three times a year (Appendix A). Statistically, they are thus likely to re-offend within four to six months after being apprehended. Data from the AIHW (2017) show that youths who spend time in detention are more likely to re-offend than those who are supervised in community within a 12 month period, and they are also more likely to reoffend than youths who are diverted (Cunningham, 2007). As such, the time to next offense for youths released from detention will likely be equal or less than that for the average youth who is apprehended – meaning those youths will return to youth detention in the following year.

The AIHW (2017) reports national data on youths returning to sentenced detention within 12 months of being released from detention. On average, **75% of youths released from sentenced detention return within 12 months** (Table 3.18) – noting that these data do not include the NT.

Given there is a correlation between adult and youth recidivism rates across states, and the NT has the second highest adult recidivism rates, it would be reasonable to assume that it would have higher youth recidivism rates than the national average. However, **given that the national 12 month youth recidivism rate correlates closely with that estimated for the NT using adult and youth ratios (78%), but is also slightly more conservative, the one year recidivism rate was assumed to be 75%** (Table 3.18).

Table 3.18: Number and proportion of youths returning to sentenced detention within 12 months, Australia, 2005-06 to 2014-15

Year released	Return within 12 months	Rate (%)
2005-06	302	73.7
2006-07	361	70.2
2007-08	463	77.4
2008-09	489	75.6
2009-10	526	76.5
2010-11	481	71.8
2011-12	482	75.2
2012-13	474	77.3
2013-14	429	75.5
2014-15	407	73.9
Average		74.7

Source: AIHW (2017).

3.3.2.3 Expected change in recidivism

Based on data from the AIHW (2017), recidivism rates were estimated to be 75% for youths who are sentenced to detention in the NT, meaning the vast majority of youths will return to detention in the following year. In restorative detention facilities in the US, first year recidivism rates are only 61% of those for regular detention based on Mendel (2014) as shown in Table 3.16.⁵⁶ Thus at the end of year one, approximately 46% (=75%*61%) of youths sentenced to restorative detention will return compared with 75% for regular detention.

For the first year following introduction of restorative detention, there would therefore be a large initial reduction in 12 months recidivism, reducing the detention population in the following year. The absolute reductions in recidivist numbers would decrease over time until there are fewer recidivists than first time offenders (assuming no changes to first time offender numbers)⁵⁷, and the system reaches a new equilibrium – approximately half the detention population compared to regular detention. The expected reduction matches the actual time-series outcomes observed by Mendel (2014).

3.3.2.4 Costs and benefits of changed and reduced need for supervision

Given that there are large expected reductions in the recidivism rates due to restorative detention, this section analyses the change in the expected sentenced detention numbers over time. The results presented in this section are inclusive of the changes to diversion and bail accommodation (noting that both will reduce the total sentenced population marginally).

Data from the AIHW (2017) reveals that there were 69 youths sentenced to detention in the NT during 2015-16, and the average daily population was approximately 14.7 youths per day. The base case projected values (derived from the sentenced population and the average length of stay) are shown in Appendix A.

⁵⁶ The comparative reduction increases over subsequent years, but in the interests of conservatism, the lowest figure is used rather than an average.

⁵⁷ It is possible that pre-court diversion, unsentenced detention and breach of justice orders will alter the expected outcomes. However, diversion would primarily prevent first time or less serious offenders from appearing before court, and bail accommodation has not been modelled to substantially change outcomes for unsentenced detainees (except for a small reduction in the number of youth sentenced to detention for breach of justice orders). Bail accommodation was not otherwise modelled to change the sentenced outcome for youth.

Implementing restorative detention will not alter the number of youths who are sentenced to detention for the first time. While there is no difference in first timers, under restorative detention there would be fewer youths resentenced to detention, and fewer youths will progress to detention as an adult.⁵⁸

- AIHW (2017) showed that around a third (32%) of the NT youth detention population is 17 years old. In the base case, the majority of youths aged 17 and released from sentenced detention (61.5%) will end up in adult detention within a year of being released from youth detention.⁵⁹ Under restorative detention, the same proportional reduction would be applied to this group.

To determine the cost to youth justice and the subsequent benefits of restorative detention, it was necessary to model the pathways for youths sentenced to detention between 2017 and 2027.

Without diversion and bail accommodation, 74 youths were expected to be sentenced to detention in 2017, of whom 22 would be newly sentenced and 52 would be returning from a prior incarceration (noting there were 69 youths sentenced to detention in 2016 and the recidivism rate was estimated to be 75%).

Table 3.19: Unique youths sentenced to detention without diversion and bail accommodation, no restorative detention

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total sentenced	74	79	83	87	91	95	99	102	106	111	117
Returning to detention (r=75%)	52	55	59	62	65	68	71	74	76	79	83
New sentences	22	23	24	25	26	27	28	29	30	31	34
Exit youth justice as youth (r=25%)*	13	14	14	15	16	16	17	18	18	19	20
Exit youth justice as adult (r=32%)	24	25	26	28	29	30	32	33	34	35	37
Returning to adult detention (r=61.5%)	15	15	16	17	18	19	19	20	21	22	23
Net exits from detention	22	23	24	26	27	28	29	30	31	33	34

Source: Deloitte Access Economics calculations. Note: results are for financial years. Total exits calculated as the sum of the number of youths who exit youth justice as a youth plus those who become an adult and do not return to adult detention. * calculated after youth exit as an adult. 'r' represents the relevant rate or proportion – e.g. for return to youth detention it is the recidivism rate, while for exit youth justice as adult, it represents the proportion of youths who become an adult in each year.

With restorative detention (still no diversion or bail accommodation), 74 youths were still expected to be sentenced to detention in 2017. However, the pathways from there are substantially lower due to decreased recidivism rates.

In the base case (i.e. no diversion and bail accommodation), there were estimated to be 1,043 youths sentenced to detention (Table 3.19). With restorative detention, the recidivism rates are lower for both those exiting as youths and for those who become adults and progress to adult detention. Table 3.20 shows the expected pathway results under restorative detention. **Over the entire period, there were expected to be 596 youths sentenced to detention – 447 fewer than in the base case without any diversion or bail accommodation, which represents 43% of the total expected sentences.**

⁵⁸ Given recidivism rates, in most cases releases that have no further contact with youth justice will be because they are adults. For modelling purposes, it was assumed that youths released from detention who are less than 17 years old would also avoid further contact with the youth justice system.

⁵⁹ Recidivism (return to detention) rates peak at age 13 at 88% and then declines to 69% at 16 years old.

Table 3.20: Unique youths sentenced to detention after diversion and bail accommodation, with restorative detention

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total sentenced	74	57	50	48	48	49	50	51	53	56	59
Returning to detention (r=46%)	52	34	26	23	22	22	22	23	23	24	25
New sentences	22	23	24	25	26	27	28	29	30	31	34
Exit youth justice as youth (54%)	27	21	19	18	18	18	19	19	20	21	22
Exit youth justice as adult (r=32%)	24	18	16	15	15	16	16	16	17	18	19
Returning to adult detention (r=38%)	9	7	6	6	6	6	6	6	6	7	7
Net exits from detention	42	33	29	27	27	28	29	29	30	32	34

Source: Deloitte Access Economics calculations. Note: results are for financial years. Total exits calculated as the sum of the number of youths who exit youth justice as a youth plus those who become an adult and do not return to adult detention. 'r' represents the relevant rate or proportion – e.g. for return to youth detention it is the recidivism rate, while for exit youth justice as adult, it represents the proportion of youths who become an adult in each year.

To estimate the benefits (cost savings) of restorative detention, the total sentences were multiplied by the average daily cost per detainee for regular detention (\$1,605 in 2015-16 dollars) and restorative detention (\$682 in 2016-17 dollars), which were both grown at 6.93% per annum in real terms.⁶⁰

The average length of stay was assumed to be the same for regular detention and restorative detention (i.e. approximately 85 days per person). As such, the average daily population was determined by applying the average length of stay to the total number of unique youths sentenced to detention in each year and then dividing by the number of days in a year.

In the base case (no diversion or bail accommodation), the average daily population for sentenced youths was projected to grow from 17.1 in 2017 to 27.1 by 2027. Under restorative detention alone the average daily population was projected to fall from 17.1 in 2017 to 13.8 by 2027. Noting that the average daily cost of restorative detention was estimated to be lower than regular detention, the total savings to corrective services were estimated to be \$157.1 million between 2017 and 2027 (in real undiscounted 2016-17 dollars).

⁶⁰ As it is not known what is driving these increases, it cannot be assumed that costs under restorative detention would not grow at the same rate. Accordingly, restorative detention variable costs are assumed to increase at the same rate as under the base case. It is possible that the main reason for the increasing costs at Don Dale are maintenance and repairs for a facility that has reached the end of its economic life and may have high operational and staffing costs as a result.

Table 3.21: Change in detention population and associated reduction in days of supervision

Supervision type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Base case											
Average daily population	17.1	18.2	19.2	20.2	21.0	22.0	22.9	23.7	24.7	25.7	27.1
Days of supervision ('000s)	6.3	6.7	7.0	7.4	7.7	8.0	8.4	8.7	9.0	9.4	9.9
Costs of supervision (\$m), real undiscounted 2016-17 dollars	10.6	12.7	14.7	16.7	18.7	20.9	22.9	25.0	27.1	29.4	32.2
Restorative detention											
Average daily population	17.1	13.3	11.6	11.1	11.0	11.3	11.6	11.9	12.4	12.9	13.8
Days of supervision ('000s)	6.3	4.8	4.2	4.1	4.0	4.1	4.2	4.4	4.5	4.7	5.0
Costs of supervision (\$m), real undiscounted 2016-17 dollars	4.5	3.9	3.8	3.9	4.2	4.6	4.9	5.3	5.8	6.3	6.9

Source: Deloitte Access Economics calculations. Note: results are for financial years.

3.3.2.5 Benefits of reduced crime costs and adult incarceration

The savings from reduced future adult incarceration are also substantial. As noted in section 2.3.3, costs of adult incarceration (including recidivism) were estimated to be \$345,256.

Moreover, there would be less crime in the NT. To determine the benefits of restorative detention on crime costs, apprehensions were assumed to have a one-to-one relationship with the number of youths sentenced to detention.

Table 3.22 presents the change in adult incarcerations and apprehensions due to providing restorative detention today. Table 3.22 also shows the associated reduction in costs of incarceration and costs of crime for the NT community.

Restorative detention was estimated to result in 345 fewer apprehensions between 2017 and 2027, which when combined with the average cost of crime, represents an additional saving of \$12.6 million (undiscounted, real 2016-17 dollars). Restorative detention was expected to result in 134 fewer youths progressing to adult detention between 2017 and 2027, which represents an additional saving of \$46.1 million (undiscounted, real 2016-17 dollars).

Table 3.22: Change in adult incarcerations and costs of crime and incarcerations due to restorative detention, real 2016-17 dollars, undiscounted

Benefit type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Reduction in adult incarcerations (people)	5.7	8.6	10.3	11.3	12.1	12.8	13.4	13.9	14.5	15.1	15.8
Reduction in apprehensions (people)	15	22	27	29	31	33	35	36	37	39	41
Reduced costs of incarcerations (\$m)	1.95	2.97	3.54	3.91	4.18	4.41	4.62	4.81	5.01	5.21	5.46
Reduced costs of crime (\$m)	0.53	0.81	0.97	1.07	1.14	1.20	1.26	1.31	1.36	1.42	1.49
Total benefits (\$m)	2.49	3.78	4.51	4.98	5.32	5.62	5.88	6.13	6.37	6.63	6.95

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

3.3.3 Summary of restorative detention costs and benefits

Restorative detention primarily reduces the need for sentenced supervision, and has lower associated costs for youths who remain in sentenced detention. In addition, there are reductions in the number of adults sentenced to detention, and lower associated crime costs for avoided future apprehensions.

The upfront capital costs to implement restorative detention were estimated to be \$17.4 million (in the presence of bail accommodation and greater diversion), which would result in total benefits of approximately \$159.7 million (real discounted 2016-17 dollars). The benefits far outweigh the capital costs of building the new facilities.

Overall, it was estimated that benefits between 2017 and 2027 would increase from approximately \$8.6 million to \$16.4 million (in real discounted 2016-17 dollars), respectively. The total net benefits of restorative detention were estimated to be \$142.3 million (in the absence of diversion and restorative detention).

Table 3.23: Overall costs and benefits of restorative detention, real discounted 2016-17 dollars (rate = 7%)

Cost or benefit (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Costs of restorative detention*	17.44	-	-	-	-	-	-	-	-	-	-
Benefits of restorative detention	8.58	11.71	13.46	14.53	15.16	15.63	15.91	16.05	16.13	16.20	16.35
Net benefit or cost	-8.86	11.71	13.46	14.53	15.16	15.63	15.91	16.05	16.13	16.20	16.35

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

* operating costs of restorative detention have been included within benefits (i.e. the cost differential is a benefit).

4 Cost benefit analysis

All of the interventions (diversion, bail accommodation and restorative detention) were modelled as if they were implemented separately. This chapter presents the summarised results if the NT Government were to undertake to implement all of the interventions as a holistic approach to address youth justice issues in the NT.

4.1 Summary of intervention and results

There are a number of inputs used to model the impact of the intervention for the youth justice system. Table 4.1 shows a list of key inputs and how they differ between the base case and the intervention.

Table 4.1: Modelling inputs and assumptions

Assumption or input	Base case	Intervention
Diversion		
Diversion participants as a proportion of apprehensions	34%	38%
Average cost of expanded diversion programs	-	\$12,053
Reoffending rates (apprehended) within 12 months for those proceeding directly to court (base case) versus those sent to diversion programs (intervention)	46.5%	32.0%
Bail accommodation		
Participants as a proportion of apprehensions	-	7.6%
Upfront capital costs, \$ million	-	15.3
Average daily cost of detention (remand vs bail accommodation) in 2017, \$	1,691	797
Average daily cost of detention (remand vs bail accommodation) in 2027, \$ (real 2016-17 dollars)	3,256	1,534
Restorative detention		
Average daily cost of detention per detainee in 2017, \$	1,691	682
Average daily cost of detention per detainee in 2027, \$ (real 2016-17 dollars)	3,256	1,312
Upfront capital costs, \$ million	-	17.4
Recidivism rates (return to sentenced detention) within 12 months	75%	46%
Recidivism rates for youth who progress to adult detention	61%	38%

Source: Deloitte Access Economics estimates.

The benefits of increased diversion represented additional participants being directed to appropriate programs such as conferencing, cautions, drug and alcohol programs and other new programs. The primary financial benefits are on reduced supervision costs in the current year – i.e. it is much cheaper to provide a diversion program than it is to remand a youth in custody, or to sentence them to detention. Not only that, there are benefits of reduced recidivism – modelled as lower apprehensions in the subsequent year.

In chapter 3, **it was estimated that benefits between 2017 and 2027 would increase from approximately \$4.2 million to \$6.9 million** (in real discounted 2016-17 dollars), respectively. Over the same period, costs were expected to increase from \$1.0 million to \$1.5 million (in real discounted 2016-17 dollars). The total net benefits of diversion were estimated to be \$52.2 million. Table 4.2 presents the summarised results for greater diversion.

Table 4.2: Overall costs and benefits of diversion intervention, real discounted 2016-17 dollars (rate = 7%)

Cost or benefit	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Benefits of diversion programs	4.19	5.02	5.53	5.90	6.15	6.37	6.51	6.60	6.68	6.74	6.86
Costs of diversion programs	1.01	1.09	1.17	1.24	1.30	1.36	1.39	1.42	1.44	1.46	1.50
Net benefit	3.18	3.93	4.36	4.65	4.85	5.01	5.12	5.18	5.23	5.28	5.36

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

The primary financial benefits of bail accommodation are reduced supervision costs in the current year – i.e. based on the costs of bail accommodation provided by the NT Government (Kerr, 2017), it is much cheaper to provide bail accommodation to youths than it is to remand them in custody, or to sentence them to detention. Not only that, there are benefits of reduced recidivism – modelled as lower apprehensions in the subsequent year.

In chapter 3, **it was estimated that benefits between 2017 and 2027 would increase from approximately \$20.7 million to \$31.6 million** (in real discounted 2016-17 dollars), respectively. Over the same period, operational costs were expected to increase from \$7.2 million to \$11.1 million (in real discounted 2016-17 dollars), and there would be associated upfront capital costs of \$15.3 million – a total of \$22.5 million in 2016-17. The total net benefits of bail accommodation were estimated to be \$183.3 million (in the absence of diversion and restorative detention). Table 4.3 presents the summarised results for bail accommodation.

Table 4.3: Overall costs and benefits of bail accommodation, real discounted 2016-17 dollars (rate = 7%)

Cost or benefit (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Benefits of bail accommodation	20.71	23.08	24.96	26.56	27.74	28.85	29.62	30.13	30.57	30.97	31.62
Costs of bail accommodation	22.46	8.00	8.67	9.24	9.66	10.06	10.34	10.52	10.68	10.83	11.06
Net benefit or cost	-1.75	15.08	16.29	17.32	18.07	18.79	19.28	19.61	19.88	20.14	20.56

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

Restorative detention primarily reduces the need for sentenced supervision, and has lower associated costs for youths who remain in sentenced detention. In addition, there are reductions in the number of adults sentenced to detention, and lower associated crime costs for avoided future apprehensions.

In chapter 3, **the upfront capital costs to implement restorative detention were estimated to be \$17.4 million (in the presence of bail accommodation and greater diversion)**, which would result in total benefits of approximately \$170.3 million (real discounted 2016-17 dollars). The benefits far outweigh the capital costs of building the new facilities.

The benefits were estimated to increase from approximately \$9.8 million to \$17.3 million between 2017 and 2027 (in real discounted 2016-17 dollars), respectively. The total net benefits of restorative detention were estimated to be \$142.3 million (in the absence of diversion and restorative detention). Table 4.4 presents the summarised results for restorative detention.

Table 4.4: Overall costs and benefits of restorative detention, real discounted 2016-17 dollars (rate = 7%)

Cost or benefit (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Costs of restorative detention*	17.44	-	-	-	-	-	-	-	-	-	-
Benefits of restorative detention	8.58	11.71	13.46	14.53	15.16	15.63	15.91	16.05	16.13	16.20	16.35
Net benefit or cost	-8.86	11.71	13.46	14.53	15.16	15.63	15.91	16.05	16.13	16.20	16.35

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding. * operating costs of restorative detention have been included within benefits (i.e. the cost differential is a benefit). Costs have been modelled in the presence of diversion and bail accommodation for simplicity.

4.2 Combined costs and benefit analysis

Combined, the interventions have a greater impact on the total costs and benefits for the NT community, due to their combined reduction on apprehensions and subsequent supervision costs, adult incarceration costs and the costs of crime.

4.2.1 Costs of intervention

The costs of the interventions will be marginally lower than estimated, due to the benefits of bail accommodation and restorative detention on future year apprehensions. The effect of reduced apprehensions means there will be slightly fewer diversion participants as participants were modelled as 4% of total apprehensions.

Table 4.5: Overall costs of intervention, real 2016-17 dollars

Cost (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Bail accommodation capital costs	15.3	-	-	-	-	-	-	-	-	-	-
Restorative detention capital costs*	17.4	-	-	-	-	-	-	-	-	-	-
Bail accommodation ongoing costs	6.2	7.3	8.5	9.6	10.8	12.0	13.2	14.4	15.6	17.0	18.5
Diversion	1.0	1.2	1.3	1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9
Total undiscounted	39.9	8.5	9.8	11.2	12.5	13.9	15.3	16.7	18.1	19.7	21.5
Total discounted (r=7%)	39.9	7.9	8.6	9.1	9.5	9.9	10.2	10.4	10.5	10.7	10.9

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding. * ongoing costs of restorative detention have been modelled using the cost differential (i.e. they are a benefit).

4.2.2 Benefits of intervention

In the model, a change in apprehensions predicted the subsequent decrease in supervised populations, while restorative detention had an effect on those returning to sentenced detention. All current diversion participants were assumed to be removed from unsentenced detention and community, and sentenced community supervision orders. Finally, bail accommodation was assumed to be used for both remand detention and for bail supervision. The benefits of the intervention on average daily supervision numbers, the total days of supervision and the change in the cost of supervision between 2017 and 2027 are shown in Table 4.6.

Table 4.6: Change in intervention participants and associated reduction in apprehensions and days of supervision

Supervision type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Average daily supervised population											
Sentenced detention	-1.8	-6.5	-8.9	-10.3	-11.2	-11.9	-12.6	-13.1	-13.7	-14.2	-14.8
Sentenced community	-12.3	-13.6	-14.6	-15.4	-16.1	-16.9	-17.6	-18.2	-18.9	-19.7	-20.8
Unsentenced detention	-26.3	-28.1	-29.6	-31.1	-32.4	-33.9	-35.3	-36.6	-38.0	-39.6	-41.7
Unsentenced community	-1.0	-1.1	-1.1	-1.2	-1.3	-1.3	-1.4	-1.4	-1.5	-1.5	-1.6
Days of supervision ('000s)											
Sentenced detention	-0.6	-2.4	-3.2	-3.8	-4.1	-4.4	-4.6	-4.8	-5.0	-5.2	-5.4
Sentenced community	-4.5	-5.0	-5.3	-5.6	-5.9	-6.2	-6.4	-6.7	-6.9	-7.2	-7.6
Unsentenced detention	-9.6	-10.2	-10.8	-11.3	-11.8	-12.4	-12.9	-13.4	-13.9	-14.5	-15.2
Unsentenced community	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6
<i>Total</i>	<i>-15.1</i>	<i>-18.0</i>	<i>-19.8</i>	<i>-21.2</i>	<i>-22.3</i>	<i>-23.4</i>	<i>-24.4</i>	<i>-25.3</i>	<i>-26.3</i>	<i>-27.4</i>	<i>-28.8</i>
Cost of supervision (\$m)											
Sentenced detention*	-6.8	-9.4	-11.5	-13.4	-15.2	-17.0	-18.8	-20.5	-22.3	-24.1	-26.3
Sentenced community	-0.4	-0.5	-0.6	-0.7	-0.8	-0.9	-1.0	-1.1	-1.1	-1.2	-1.4
Unsentenced detention	-19.7	-23.6	-27.4	-31.2	-34.9	-38.9	-42.8	-46.6	-50.6	-54.9	-60.0
Unsentenced community	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
<i>Total</i>	<i>-26.9</i>	<i>-33.5</i>	<i>-39.5</i>	<i>-45.4</i>	<i>-51.0</i>	<i>-56.9</i>	<i>-62.6</i>	<i>-68.2</i>	<i>-74.1</i>	<i>-80.4</i>	<i>-87.8</i>

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding. * includes benefits of lower cost of sentenced detention in restorative detention compared to regular detention.

Each adult sentence was assumed to have associated benefits of \$345,256 in future pathways (no real growth applied)⁶¹ as per section 2.3.3. For every apprehension avoided, there were expected to be \$36,391 of benefits in reduced crime costs including reduced costs of crime to victims, offenders and the community as per section 2.3.1. As with adult incarceration costs, no real growth was applied to the cost of crimes avoided to be conservative and capture the uncertain nature of the type of crimes avoided.

Table 4.7 presents the change in adult incarcerations due to the combined intervention, and the associated reduction in costs of incarceration.

⁶¹ Data from the 2017 Report on Government Services reveal that the cost of detention per adult detainee has been stable in real terms over the last five years.

Table 4.7: Change in adult incarcerations and costs of crime and incarcerations due to intervention, real 2016-17 dollars, undiscounted

Benefit type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Reduction in adult incarcerations (n)	6.6	9.4	10.9	12.0	12.7	13.4	14.1	14.6	15.2	15.8	16.6
Reduction in apprehensions (n)	25	37	44	48	51	54	56	59	61	64	67
Reduced costs of incarcerations (\$m)	2.3	3.2	3.8	4.1	4.4	4.6	4.9	5.1	5.3	5.5	5.7
Reduced costs of crime (\$m)	0.9	1.4	1.6	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.4
Total benefits (\$m)	3.2	4.6	5.4	5.9	6.3	6.6	6.9	7.2	7.5	7.8	8.2

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding.

For future crime costs and adult incarceration, the intervention was expected to result in \$3.2 million of additional benefits in 2017, increasing to around \$8.2 million annually by 2027.

4.3 Summary of results

Combined, the modelled interventions would result in total discounted benefits of \$473.2 million (discounted, real 2016-17 dollars) between 2017 and 2027. The total cost of the intervention was estimated to be \$137.7 million (discounted, real 2016-17 dollars) between 2017 and 2027.

Table 4.8: Overall costs and benefits of intervention, real 2016-17 dollars

Cost or benefit (\$m)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Costs of intervention (undiscounted)	39.9	8.5	9.8	11.2	12.5	13.9	15.3	16.7	18.1	19.7	21.5
Benefits of intervention (undiscounted)	30.1	38.1	44.9	51.3	57.2	63.5	69.5	75.4	81.6	88.2	95.9
Costs of intervention (discounted, r = 7%)	39.9	7.9	8.6	9.1	9.5	9.9	10.2	10.4	10.5	10.7	10.9
Benefits of intervention (discounted, r = 7%)	30.1	35.6	39.2	41.9	43.7	45.3	46.3	47.0	47.5	48.0	48.8
Net benefit or cost	-9.8	27.7	30.6	32.7	34.1	35.3	36.1	36.6	36.9	37.3	37.8

Source: Deloitte Access Economics calculations. Note: results are for financial years. Components may not sum to totals due to rounding. * operating costs of restorative detention have been included within benefits (i.e. the cost differential is a benefit).

The total net benefits were estimated to be \$335.5 million, and the BCR was estimated to be 3.4 – meaning for every \$1 the NT Government spends on the interventions, the return to the NT community will be \$3.40 on average.

4.4 Sensitivity analysis

Sensitivity analysis was undertaken on a number of parameters that were perceived to strongly influence the modelling outcomes, including:

- expected growth in detention supervision costs;
- number of apprehensions potentially eligible for diversion;
- mix of incremental diversion programs, and thus the average cost of incremental diversion programs;
- reoffending rates for the incremental diversion programs;
- bail accommodation costs;

- construction costs;
- recidivism rates for existing and restorative detention; and
- discount rates.

The results of the sensitivity analysis are outlined in the following sections.

4.4.1 Detention cost growth

Australia has been experiencing high growth in youth justice system costs with average growth of 6.9% over the last 4 years. At the same time, there are a number of reforms occurring across the country, and it may be possible that youth justice system costs will grow more slowly to 2027. As such, sensitivity was conducted on the real growth in detention costs. So, detention costs were grown at 3.0% per annum rather than 6.9% per annum to assess the impact on the costs and benefits of the intervention.

By 2027, the average daily cost of detention per youth would be \$2,320 rather than \$3,256 (real 2016-17 dollars). Under this growth, costs of detention in the base case were expected to grow to \$72.3 million (in real 2016-17 dollars), and the overall cost of youth supervision in the NT would be approximately \$80.8 million. The discounted net benefits of the proposed intervention were estimated to be \$234.3 million, and the BCR was estimated to be 2.8 instead of 3.4.

Table 4.9: Net benefit of intervention with lower detention cost growth, real 2016-17 dollars

Cost or benefit (\$m)	Base parameters	Sensitivity	Difference
Benefits of intervention 2017-2027 (discounted, r = 7%)	473.2	361.4	-111.8
Costs of intervention 2017-2027 (discounted, r = 7%)	137.7	127.1	-10.6
Net benefit or cost	335.5	234.3	-101.2
BCR	3.4	2.8	-0.6

Source: Deloitte Access Economics calculations.

4.4.2 Eligibility for diversion

In NSW, 54% of young people who are apprehended are diverted from the youth justice system through a range of measures (SCRGSP, 2016), which is 20% higher than current diversion rates in the NT. Sensitivity was conducted on the proportion of young people diverted to assess the impact on the system if such a rate was achieved in the NT, noting that impacts on community safety and other considerations have not been taken into account. Sensitivity was also conducted on rates at 12%, which was similar to WA where the rate of youth diversion was reported to be 46% (SCRGSP, 2016).

If it were possible to divert more young people who are apprehended, the BCRs were estimated to be 3.8 and 4.2 compared with 3.4 with 4% additional diversion. Total discounted net benefits over the period were estimated to be \$383.6 million and \$430.4 million compared with \$335.5 million.

Table 4.10: Net benefit of intervention with varying levels of diversion, real 2016-17 dollars

Cost or benefit (\$m)	4% additional diversion	12% additional diversion	20% additional diversion
Benefits of intervention 2017-2027 (discounted, r = 7%)	473.2	519.0	563.4
Costs of intervention 2017-2027 (discounted, r = 7%)	137.7	135.3	133.0
Net benefit or cost	335.5	383.6	430.4
BCR	3.4	3.8	4.2

Source: Deloitte Access Economics calculations.

4.4.3 Average cost of incremental diversion programs

The mix of new or expanded diversion programs provided to youths in the NT were assumed to be equally split across drug diversion, family and victim or offender conferences, and youth camps, with 25% of additional participants going to each diversion program. Sensitivity analysis was conducted to determine the impact of providing more intensive, structured diversion programs such as youth camps alone (100% of additional participants).

For the sensitivity, the average cost of a diversion program was modelled to be \$20,342 per participant instead of \$12,053 per participant. The BCR was estimated to be 3.2 compared with 3.4, and the discounted net benefits were estimated to be \$325.1 million compared with \$335.5 million.

Table 4.11: Net benefit of intervention with higher average cost of diversion programs, real 2016-17 dollars

Cost or benefit (\$m)	Base parameters	Sensitivity	Difference
Benefits of intervention 2017-2027 (discounted, r = 7%)	473.2	473.2	0.0
Costs of intervention 2017-2027 (discounted, r = 7%)	137.7	148.1	10.3
Net benefit or cost	335.5	325.1	-10.3
BCR	3.4	3.2	-0.2

Source: Deloitte Access Economics calculations.

4.4.4 Higher reoffending rates of diversion programs

There is uncertainty around what the reoffending rates will be for expanded diversion programs. It was modelled that 32% of youths who participate in new diversion programs would reoffend compared with 46.5% of youths who go to court. The reoffending rates for diversion programs were altered to assess the impact if new diversion programs are less effective than existing programs.

Under this sensitivity, reoffending rates were assumed to be 40% compared with 46.5%. The BCR was estimated to be 3.4, and the discounted net benefits were estimated to be \$330.4 million.

Table 4.12: Net benefit of intervention with higher reoffending rates for diversion programs, real 2016-17 dollars

Cost or benefit (\$m)	Base parameters	Sensitivity	Difference
Benefits of intervention 2017-2027 (discounted, $r = 7\%$)	473.2	469.0	-4.2
Costs of intervention 2017-2027 (discounted, $r = 7\%$)	137.7	138.5	0.8
Net benefit or cost	335.5	330.4	-5.0
BCR	3.4	3.4	-0.1

Source: Deloitte Access Economics calculations.

4.4.5 Bail accommodation costs higher

For the bail accommodation intervention, the average daily cost per youth was estimated to be \$797 based on estimates from the NT Government (Kerr, 2017). It was also proposed that there would need to be a secure element to the bail accommodation model to serve as a replacement for remand, and so sensitivity was conducted on the average daily cost of bail accommodation to account for the uncertainty.

The average daily cost was modelled as \$996 instead of \$797 (25% higher). The BCR was estimated to be 2.9 instead of 3.4, and the discounted net benefits were estimated to be \$301.5 million compared with \$335.5 million.

Table 4.13: Net benefit of intervention with higher average daily costs of bail accommodation, real 2016-17 dollars

Cost or benefit (\$m)	Base parameters	Sensitivity	Difference
Benefits of intervention 2017-2027 (discounted, $r = 7\%$)	473.2	461.9	-11.3
Costs of intervention 2017-2027 (discounted, $r = 7\%$)	137.7	160.4	22.7
Net benefit or cost	335.5	301.5	-34.0
BCR	3.4	2.9	-0.6

Source: Deloitte Access Economics calculations.

4.4.6 Restorative detention costs higher

For restorative detention, the average daily cost was estimated to be \$682 in 2016-17, which was grown at 6.9% per annum (section 2.3.2). There is a high degree of uncertainty for this cost, and given that the average daily cost of youth detention is higher in all states and territories (Productivity Commission, 2017), a considerably more expensive restorative detention model was also considered.

For the sensitivity, the average daily cost of restorative detention per youth was increased to \$1,363 (100% increase). The BCR was estimated to be 3.2 instead of 3.4 and the discounted net benefits were estimated to be \$303.4 million compared with \$335.5 million.

Table 4.14: Net benefit of intervention with higher average daily costs of restorative detention, real 2016-17 dollars

Cost or benefit (\$m)	Base parameters	Sensitivity	Difference
Benefits of intervention 2017-2027 (discounted, r = 7%)	473.2	441.2	-32.1
Costs of intervention 2017-2027 (discounted, r = 7%)	137.7	137.7	0.0
Net benefit or cost	335.5	303.4	-32.1
BCR	3.4	3.2	-0.2

Source: Deloitte Access Economics calculations. Note: while this is a change in the average daily cost, the cost differential was modelled as a benefit. Components may not sum to totals due to rounding.

4.4.7 Construction costs

For restorative detention, the average construction cost per bed was estimated to be \$630,228 in 2016-17 (section 3.3). There is a moderate degree of uncertainty for this cost as no comparable Australian evidence was identified. As such, the construction costs were also modelled so that each bed costs \$1 million.

The BCR was estimated to be 3.2 instead of 3.4 and the discounted net benefits were estimated to be \$323.1 million compared with \$335.5 million.

Table 4.15: Net benefit of intervention with higher average daily costs of restorative detention, real 2016-17 dollars

Cost or benefit (\$m)	Base parameters	Sensitivity	Difference
Benefits of intervention 2017-2027 (discounted, r = 7%)	473.2	469.4	-3.9
Costs of intervention 2017-2027 (discounted, r = 7%)	137.7	146.2	8.5
Net benefit or cost	335.5	323.1	-12.4
BCR	3.4	3.2	-0.2

Source: Deloitte Access Economics calculations. Note: while this is a change in the average daily cost, the cost differential was modelled as a benefit. Components may not sum to totals due to rounding.

4.4.8 Recidivism rates of restorative detention

It is not clear how recidivism rates will change under a restorative detention model in the NT. Evidence from the US suggests that recidivism rates may be around 45.6%, however the rate was estimated using the most conservative outcome from the literature. Sensitivity was conducted to estimate the benefits if a better outcome from the literature was realised (recidivism rate of 25%), and if the restorative detention model does not work as well in the NT as it does in the US (recidivism rate of 65%). In each case, the rate was compared against regular detention where the recidivism rate was estimated to be 74.7% based on evidence from the rest of Australia.

The same average benefits were assumed to flow on to the recidivism rates estimated for adults. In the base case, recidivism rates for youths exiting regular detention and going to adult detention were estimated to be 61.5%. Applying the same relative change, sensitivity was conducted at 22.6% and 59.7%.

Under the higher recidivism rate scenario, the BCR was estimated to be 3.1, and the discounted net benefits were estimated to be \$294.3 million. Using lower recidivism rates, the BCR was estimated to be 3.6 and the discounted net benefits were estimated to be \$354.4 million.

Table 4.16: Net benefit of intervention with varying recidivism rates, real 2016-17 dollars

Cost or benefit (\$m)	Recidivism rate of 45.6% and 61.5%	Recidivism rate of 25.0% and 22.6%	Recidivism rate of 65.0% and 59.7%
Benefits of intervention 2017-2027 (discounted, $r = 7\%$)	473.2	492.1	435.1
Costs of intervention 2017-2027 (discounted, $r = 7\%$)	137.7	137.7	140.8
Net benefit or cost	335.5	354.4	294.3
BCR	3.4	3.6	3.1

Source: Deloitte Access Economics calculations.

4.4.9 Discount rates

Standard cost benefit analysis methodology suggests using a real discount rate of 3% and 10% as sensitivity, with a default rate of 7%. Using a discount rate of 3%, the BCR was estimated to be 3.6 and the discounted net benefits were estimated to be \$422.4 million. Using a discount rate of 10%, the BCR as estimated to be 3.3 and the net benefits were estimated to be \$285.7 million.

Table 4.17: Net benefit of intervention with varying discount rates, real 2016-17 dollars

Cost or benefit (\$m)	Discounted at 7%	Discounted at 3%	Discounted at 10%
Benefits of intervention 2017-2027 (discounted, $r = 7\%$)	473.2	584.9	409.3
Costs of intervention 2017-2027 (discounted, $r = 7\%$)	137.7	162.5	123.6
Net benefit or cost	335.5	422.4	285.7
BCR	3.4	3.6	3.3

Source: Deloitte Access Economics calculations.

4.4.10 Summary of sensitivity

One-way sensitivity testing revealed the BCR of the proposed intervention was likely to range between 2.8 and 4.2, and the net benefits of the proposed intervention are likely to range between \$234.3 million and \$430.4 million (Table 4.18).

Table 4.18: One-way sensitivity analysis results, real discounted 2016-17 dollars, \$ millions

Sensitivity	Benefits	Costs	Net benefit	BCR
Default values	473.2	137.7	335.5	3.4
Detention costs grow at 3.0% instead of 6.9%	361.4	127.1	234.3	2.8
Additional 12% diversion instead of 4%	519.0	135.3	383.6	3.8
Additional 20% diversion instead of 4%	563.4	133.0	430.4	4.2
Average cost of diversion programs \$20,342 instead of \$12,053 in 2017	473.2	148.1	325.1	3.2
Reoffending rates for expanded diversion programs 40% instead of 32%	469.0	138.5	330.4	3.4
Average daily cost of bail accommodation \$996 instead of \$797 in 2017	461.9	160.4	301.5	2.9
Average daily cost of restorative detention \$1,363 instead of \$682 in 2017	441.2	137.7	303.4	3.2
Construction cost of restorative detention \$1m instead of \$630K per bed	469.4	146.2	323.1	3.2
Recidivism rates of restorative detention 25.0% for youths, 22.6% for youths becoming adults	492.1	137.7	354.4	3.6
Recidivism rates of restorative detention 65.0% for youths, 59.7% for youths becoming adults	435.1	140.8	294.3	3.1
Discount rate of 3%	584.9	162.5	422.4	3.6
Discount rate of 10%	409.3	123.6	285.7	3.3
Summary of one-way sensitivity analysis	361.4 - 584.9	123.6 - 162.5	234.3 - 430.4	2.8 - 4.2

Source: Deloitte Access Economics calculations.

A multivariate sensitivity analysis was conducted to identify the likely “worst case” given the available range of evidence presented throughout the report. Specifically, the following parameters were modified:

- detention costs were grown at 3.0% per annum rather than 6.9% per annum;
- the cost of diversion programs was \$20,342 instead of \$12,053 in 2016-17;
- reoffending rates for the expanded diversion programs were modelled to be 40% rather than 32% in the base case, and reoffending rates for youths who proceed through court were maintained at 46.5%;
- bail accommodation costs were modelled as \$996 instead of \$797 per person per day;
- restorative detention costs were modelled as \$1,571 instead of \$682 per person per day;
- construction costs for restorative detention were assumed to be \$1 million per bed instead of approximately \$630,000 per bed;
- youth recidivism rates and youth returning to adult detention rates were modelled to be 65.0% and 59.7% respectively, rather than 45.6% and 61.5%; and
- bail capital costs were modelled as \$22.95 million instead of \$15.3 million.

In the multivariate sensitivity analysis, the BCR was estimated to be 1.4 and the discounted net benefits were estimated to be \$79.6 million. The total discounted benefits were estimated to be \$259.1 million and the total discounted costs were estimated to be \$179.4 million.

4.5 Conclusion

The modelled interventions would result in total discounted benefits of \$473.2 million between 2017 and 2027 and the total discounted cost of the intervention was estimated to be \$137.7 million. The net benefits were estimated to be \$335.5 million, with a BCR of 3.4.

Because in many cases, evidence has had to be drawn from outside the NT, conservative parameters have been employed wherever there was a range to choose from. For example, the smallest observed impact of restorative detention on recidivism rates has been used, new fixed capital costs have been treated as an upfront lump sum rather than being amortised and discounted over future years, and costs of detention have been assumed to grow at considerably less than historical rates.

Importantly the benefits of the intervention were estimated to be relatively stable regardless of the set of assumptions used. Any relaxation of these assumptions would only further strengthen what is already a strong case for implementing the proposed reforms. Moreover, even under the worst case scenario where the proposed interventions do not meet expectations, the BCR was still estimated to be 1.4 to 1.

Implementation of the proposed model would help create life changing opportunities for young people at risk of entering the justice system, benefits which have not been quantified in this report. By activating interventions that work to address the root cause of offending in young people in a holistic manner, these youths will likely be given the opportunity live a more full and productive life in the community.

References

- Allard, T., Stewart, A., Smith, C., Dennison, S., Chrzanowski, A., & Thompson, C. (2014). The monetary cost of offender trajectories: Findings from Queensland (Australia). *Australian & New Zealand Journal of Criminology*, 47(1), 81-101.
- Allard, T., Stewart, A., Chrzanowski, A., Ogilvie, J., Birks, D., & Little, S. (2010). Police diversion of young offenders and Indigenous over-representation, *Trends and issues in crime and criminal justice*, Australian Institute of Criminology no. 390.
- Alberti, S., King, J., Hales, J., & Swan, A. (2004). *Court Diversion Program evaluation: Overview report*, available at:
http://www.justice.vic.gov.au/wps/wcm/connect/DOJ+Internet/resources/file/eb60a10448187ad/Court_Diversion_Program_Evaluation_Overview_Report_Final_Report_366KB.pdf
- Attorney-General's Department. (2013). *Evaluation of Indigenous Justice Program Project B: Offender Support and Reintegration Final Report*, Commonwealth Government, Canberra.
- Australian Bureau of Statistics. (2017). *Consumer Price Index*, Cat.No.6401.0.
- Australian Bureau of Statistics. (2017a). *Recorded Crime – Offenders, Australia, 2015-16*, Cat.No.4519.0.
- Australian Bureau of Statistics. (2016). *Prisoners in Australia*, Cat.No.4517.0.
- Australian Institute of Health and Welfare (2017). *Youth justice in Australia 2015-16*. Bulletin 139. Cat.no.AUS 211. Canberra: AIHW.
- Australian Institute of Health and Welfare. (2017a). *Young people returning to sentenced youth justice supervision 2015–16*. Juvenile justice series no. 21. Cat. no. JUV 104. Canberra: AIHW. Australian Institute of Health and Welfare. (2016). *Youth Justice in Australia, 2015-16*.
- Australian Institute of Health and Welfare. (2014). *Pathways through youth justice supervision*, Canberra: AIHW.
- BushMob Aboriginal Corporation. (2016). *Annual report 2015-16*, available at
<http://www.bushmob.com.au/wp-content/uploads/2016/11/agm2016.pdf>, accessed July 2017.
- Caldwell, M., Vitacco, M., Van Rybroek, G. (2006). Are violent delinquents worth treating? A cost-benefit analysis. *Journal of Research in Crime and Delinquency*. 43(2):148-68.
- Campbell, M. (2017). *Statement to the Royal Commission into the Protection and Detention of Children in the Northern Territory – Request for Statement 16, and Annexures thereto*.
- Chatham County Government (2013) *Jail Cost Information*,
www.chathamnc.org/Modules>ShowDocument.aspx?documentid=11795
- Crime and Justice Research Centre. (2016). *Young people and custodial remand in Queensland*, available at
<https://blogs.qut.edu.au/crime-and-justice-research-centre/2015/05/22/young-people-and-custodial-remand-in-queensland/>.
- Cunningham, T. (2007). *Pre-court diversion in the Northern Territory: impact on juvenile reoffending*. Trends and issues in crime and criminal justice, Australian Institute of Criminology.

Deloitte Access Economics. (2015). *Cost-benefit analysis of youth justice diversion strategic initiatives*, prepared for the Department of Justice and Regulation, unpublished.

Deloitte Access Economics. (2013). *Indigenous Safe Communities Strategy – Indigenous Community Safety Initiatives*, prepared for the Department of Families, Housing, Community Services and Indigenous Affairs.

Deloitte UK. (2006). *Evaluation of the Bail Supervision and Support Scheme*, Report for the Northern Ireland Office.

Dennison, S., Stewart, A., & Hurren, E. (2006). 'Police cautioning in Queensland: the impact on juvenile offending pathways', *Trends and issues in crime and criminal justice*, Australian Institute of Criminology no. 306.

Department of the Prime Minister and Cabinet. (2016). *Cost-benefit analysis*, Australian Government, Canberra.

Department of Correctional Services. (2016). *Annual Report 2015-16*, Northern Territory Government, Darwin.

Department of Correctional Services. (2015). *Annual Report 2014-15*, Northern Territory Government, Darwin.

Department of Correctional Services. (2014). *Annual Report 2013-14*, Northern Territory Government, Darwin.

Department of Youth Rehabilitation Services, District of Columbia (2012) *Annual Performance Report 2011*,

Freeman, S. (2008). The experience of young people remanded in custody: a case for bail support and supervision schemes. *Irish Probation Journal*, 5, 91-102.

Hayes, H., & Daly, K. (2003). 'Youth justice conferencing and reoffending', *Justice Quarterly*, 20 (4).

Henderson, P. (2008). *Bail Support Program Evaluation*, Report to Corrections Victoria.

Hughes, C., Shanahan, M., Ritter, A., McDonald, D. and Gray-Weale, F. (2013). *Evaluation of the Australian Capital Territory Drug Diversion Programs*, ACT Health.

Jara, A. (2013). Multi-Systemic Model of Juvenile Justice Reform: Adopting the Missouri Model in California. *Policy Perspectives*, 20, 68-84.

Joudo, J., & Joudo, J. (2008). *Responding to substance abuse and offending in Indigenous communities: review of diversion programs*. Australian Institute of Criminology.

Justice Policy Institute (2009) Cost effective youth corrections: rationalizing the fiscal architecture of juvenile justice systems.

Kerr, J. (2017). *Response to request for statement 18, and Annexures thereto*, Royal Commission into the Protection and Detention of Children in the Northern Territory.

Klein McCarthy Architects 2017, *Northern Cheyenne Youth Services Center*, <http://www.kleinmccarthy.com/projects-northern-cheyenne-juvenile-detention.php>, accessed July 2017.

KPMG. (2010). *Review of the Youth Justice Group Conferencing Program*, prepared for the Department of Human Services.

KPMG. (2015). *Final report for the evaluation of Queensland's Youth Boot Camps*, prepared for the Department of Justice and Attorney-General.

- Latessa, E., Lovins, B., & Lux, J. (2014). *Evaluation of Ohio's RECLAIM programs*, Center for Criminal Justice Research: Cincinnati.
- Luke, G., & Lind, B. (2002). Reducing Juvenile Crime: Conferencing versus Court, *NSW Bureau of Crimes and Statistics and Research*, no.69.
- Mendel, R. (2014). *Juvenile Detention Alternatives Initiative, Progress Report 2014*. Report for the Annie E. Casey Foundation.
- Mendel, R. (2010). *The Missouri Model: Reinventing the practice of rehabilitating youthful offenders*. Report for the Annie E Casey Foundation.
- Myers, W., Burton, P., Sanders, P., Donat, K., Cheney, J., Fitzpatrick, T., & Monaco, L. (2000). 'Project Back-on-Track at 1 year: A delinquency treatment program for early-career juvenile offenders' *Journal of the American Academy of Child & Adolescent Psychiatry*, 39(9):1127-1134.
- Northern Territory Government. (2017). *Budget 2017-18*.
- Northern Territory Government. (2016). *Young people: diversion programs*, <https://nt.gov.au/law/young-people/young-people-diversion-programs>, accessed June 2017.
- Northern Territory Government. (2011). *Review of the Northern Territory Youth Justice System: Report*, https://www.nt.gov.au/_data/assets/pdf_file/0017/238211/youth-justice-review-report.pdf, accessed June 2017.
- NT Treasury. (2016). *Population Projections*, Department of Treasury and Finance.
- Office of Crime Statistics and Research. (2012). *Ten years of the South Australian police drug diversion initiative: data analysis report*. Government of South Australia Attorney General's Department.
- Office of Strategic Planning and Performance Management (2011). *Aboriginal Justice Strategy Evaluation: Final Report*, Department of Justice, Canada.
- Petrosino, A., Trupin-Petrosino, C., Hollis-Peel, M., and Lavenberg, J. (2013). 'Scared Straight' and other juvenile awareness programs for preventing juvenile delinquency, *Cochrane Database of Systematic Reviews*, 4: CD002796.
- Productivity Commission. (2017). *Report on Government Services – Volume F (Community Services)*.
- PWC. (2017). *Indigenous incarceration: unlock the facts*.
- Renfree, J. (2017). *Statement – Response to Request for Statement 19 Annexure A and Items 9, 10 and 13 of Annexure B*.
- Richards, K., & Renshaw, L. (2013). *Bail and remand for young people in Australia: A national research project*.
- Royal Commission into the Protection and Detention of Children in the Northern Territory. (2017). *Interim Report*, Commonwealth of Australia, ISBN: 978-1-920838-04-1.
- Rysavy, P., Cunningham, T., & O'Reilly-Martinez, R. (2011). Preliminary analysis of the Northern Territory illicit drug court diversion program highlights the need to examine lower program completion rates for Indigenous clients, *Drug and Alcohol Review*, 30 (6): 671-676.
- Schiraldi, V. (2017) *Precis of evidence: Expert Witness to the Royal Commission into the Protection and Detention of Children in the Northern Territory*.

Seigle, E., Nastassia, W., Weber, J. (2014). *Core principles for reducing recidivism and improving other outcomes for youth in the juvenile justice system.*

Steering Committee for the Review of Government Service Provision (SGRGSP). (2016). *Overcoming Indigenous Disadvantage: Key Indicators 2016*. Productivity Commission. Canberra.

Taylor, N. (2009). *Juveniles in detention in Australia, 1981-2007*. Canberra, Australia: Australian Institute of Criminology.

Thomas, S. (2005). *National Evaluation of the Bail Supervision and Support Schemes Funded by the Youth Justice Board for England and Wales from April 1999 to March 2002*.

United States Department of Justice (2001) *Staffing Analysis: Workbook for jails*. National Institute for Corrections.

Venables, P., & Rutledge, R. (2003). *The conditional bail program: early intervention without net widening*.

Wilson, H., & Hoge, R. (2012). The effect of youth diversion programs on recidivism: a meta-analytic review, *Criminal Justice and Behaviour*, 40(5): 497-518.

Yick, J. (2016). *Statement to the Royal Commission into the Protection and Detention of Children in the Northern Territory, and Annexures thereto*.

YMCA. (2008). *The Bridge Project Cost Benefit Analysis*.

Appendix A: Detailed tables

A.1 Demographics and apprehensions

Table A.1: Youth population by year, age, gender and Indigenous status ('000s)

Indigenous, gender, age	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
NI, M, 10-14	4.9	4.9	5.0	4.9	4.9	4.9	4.9	4.8	4.8	4.8	4.9	5.0	5.2	5.3	5.4	5.4	5.5	5.6	5.7	5.8	5.9
NI, M, 15-16	2.0	2.0	2.0	2.1	2.0	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.3
NI, M, 17	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.0	1.1
NI, F, 10-14	4.4	4.4	4.4	4.4	4.4	4.5	4.6	4.6	4.6	4.6	4.7	4.9	5.0	5.2	5.2	5.3	5.4	5.6	5.7	5.8	5.9
NI, F, 15-16	1.7	1.7	1.7	1.7	1.7	1.6	1.7	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.9	2.0	2.0	2.1	2.1	2.1	2.1
NI, F, 17	0.9	0.9	0.8	0.9	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0
I, M, 10-14	3.7	3.8	3.8	3.8	3.8	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.7	3.7	3.7	3.8	3.9	4.0	
I, M, 15-16	1.4	1.4	1.4	1.5	1.5	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.6	1.6	1.5	1.5	1.5
I, M, 17	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7
I, F, 10-14	3.5	3.5	3.5	3.5	3.5	3.6	3.7	3.7	3.7	3.7	3.7	3.6	3.6	3.6	3.4	3.4	3.5	3.5	3.6	3.7	3.8
I, F, 15-16	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4
I, F, 17	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.7
Overall	26.3	26.3	26.3	26.3	26.3	26.5	26.8	26.5	26.6	26.7	27.1	27.5	27.7	28.0	28.1	28.5	28.9	29.2	29.5	29.9	30.3

Source: Deloitte Access Economics calculations. Note: NI = non-Indigenous, I = Indigenous, M = male, F = female. Results are for financial years.

Table A.2: Ratio of distinct youths apprehended to population by year, age, gender and Indigenous status (%)

Indigenous, gender, age	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
NI, M, 10-14	0.4	0.4	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
NI, M, 15-16	2.7	2.2	2.9	3.0	2.9	2.9	2.1	1.8	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0
NI, M, 17	4.0	3.5	4.2	4.9	4.5	3.6	3.0	2.5	1.5	1.3	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9
NI, F, 10-14	0.1	0.1	0.2	0.1	0.1	0.3	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NI, F, 15-16	0.7	0.9	0.9	0.7	0.6	1.1	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NI, F, 17	1.1	1.4	1.2	1.1	0.9	1.5	0.8	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
I, M, 10-14	1.7	1.7	2.8	2.8	2.5	3.2	3.7	4.5	4.6	4.8	5.1	5.5	5.9	6.2	6.6	6.9	7.3	7.6	8.0	8.4	8.7
I, M, 15-16	11.1	10.9	12.8	13.6	11.1	13.0	14.1	14.2	13.2	13.0	13.3	13.5	13.8	14.0	14.3	14.5	14.8	15.0	15.3	15.5	15.8
I, M, 17	16.6	17.2	18.8	22.5	17.6	17.6	20.3	19.2	16.5	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
I, F, 10-14	0.3	0.5	0.8	0.8	0.6	1.0	1.0	1.3	1.3	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.5	2.6	2.7	2.9	3.0
I, F, 15-16	1.7	2.9	3.5	3.7	2.8	4.2	3.9	4.0	3.7	4.3	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5
I, F, 17	2.6	4.6	5.2	5.8	4.4	5.5	6.1	5.6	4.9	4.8	4.9	5.0	5.1	5.3	5.4	5.5	5.7	5.8	5.9	6.1	6.2
Overall	2.0	2.1	2.6	2.8	2.4	2.8	2.8	2.9	2.7	2.7	2.8	2.8	2.9	3.0	3.0	3.1	3.2	3.2	3.3	3.4	3.4

Source: Deloitte Access Economics calculations. Note: NI = non-Indigenous, I = Indigenous, M = male, F = female. Results are for financial years.

Table A.3: Apprehensions by year, age, gender and Indigenous status

Indigenous, gender, age	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
NI, M, 10-14	37	32	64	61	74	86	81	80	66	69	73	76	80	83	86	88	91	94	97	100	102
NI, M, 15-16	85	67	89	101	91	120	94	82	58	58	57	57	57	58	60	61	62	61	61	61	62
NI, M, 17	64	53	59	70	63	68	58	48	32	26	25	25	24	24	23	23	24	24	24	23	23
NI, F, 10-14	9	11	16	12	12	28	17	17	20	20	21	22	23	24	25	26	26	27	28	29	30
NI, F, 15-16	21	24	23	19	15	39	20	18	18	17	17	17	17	17	18	18	18	18	18	18	18
NI, F, 17	15	19	15	13	11	22	13	10	10	7	7	7	7	7	7	7	7	7	7	7	7
I, M, 10-14	108	110	201	197	203	284	398	457	525	606	671	733	791	838	870	923	986	1,057	1,140	1,249	1,337
I, M, 15-16	251	234	276	326	252	395	466	472	464	508	533	550	574	603	634	653	658	659	659	639	673
I, M, 17	186	184	184	225	175	225	285	275	252	228	237	251	249	253	258	267	273	272	266	263	256
I, F, 10-14	17	29	55	51	48	83	102	122	141	187	208	228	247	262	274	293	315	340	369	405	435
I, F, 15-16	39	62	76	84	59	115	119	126	125	157	170	181	192	206	222	232	236	239	243	243	261
I, F, 17	29	49	50	58	41	66	73	73	68	70	74	80	82	86	89	95	99	100	99	100	100
Overall	861	874	1,108	1,217	1,044	1,531	1,726	1,780	1,779	1,953	2,093	2,227	2,343	2,461	2,565	2,686	2,795	2,898	3,011	3,137	3,304

Source: Deloitte Access Economics calculations. Note: NI = non-Indigenous, I = Indigenous, M = male, F = female. Results are for financial years.

A.2 Supervised youths in the base case

Table A.4: Average daily population sentenced to detention by year, age, gender and Indigenous status, base case

Indigenous, gender, age	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
NI, M, 10-14	0.0	0.0	0.1	0.1	0.1	0.0	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
NI, M, 15-16	0.2	0.2	0.2	0.2	0.1	0.1	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
NI, M, 17	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NI, F, 10-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NI, F, 15-16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NI, F, 17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
I, M, 10-14	1.1	0.7	1.8	1.9	1.9	3.1	3.3	4.0	2.4	4.3	5.1	5.6	6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.9	9.5
I, M, 15-16	4.3	4.2	4.5	5.9	3.6	5.8	8.6	7.2	4.3	4.7	5.4	5.7	6.0	6.3	6.5	6.8	7.0	7.2	7.5	7.8	8.1
I, M, 17	4.1	4.3	3.7	3.8	3.0	3.6	4.7	4.7	2.2	2.9	3.2	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.4	3.5
I, F, 10-14	0.0	0.1	0.3	0.1	0.2	0.5	0.3	0.4	0.3	0.8	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.7	1.9	2.0
I, F, 15-16	0.2	0.4	0.7	0.3	0.4	0.9	0.9	0.8	0.5	0.9	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.6	1.7	1.8	1.9
I, F, 17	0.2	0.4	0.6	0.2	0.3	0.6	0.5	0.5	0.2	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	1.0	1.0	1.0
Overall	10.4	10.2	12.1	12.7	9.9	14.8	19.6	17.9	10.4	14.7	17.1	18.2	19.2	20.2	21.0	22.0	22.9	23.7	24.7	25.7	27.1

Source: Deloitte Access Economics calculations. Note: NI = non-Indigenous, I = Indigenous, M = male, F = female. Historical data were not complete for all periods so some periods have been filled with ratios from known years. Projections for 2017 to 2027 were based on the ratios available for 2016. Results are for financial years.

Table A.5: Average daily population remanded in custody by year, age, gender and Indigenous status, base case

Indigenous, gender, age	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
NI, M, 10-14	0.1	0.1	0.2	0.2	0.3	0.1	0.3	0.6	0.5	0.7	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.9
NI, M, 15-16	0.3	0.3	0.3	0.4	0.3	0.2	0.4	0.6	0.5	0.6	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
NI, M, 17	0.3	0.2	0.2	0.2	0.1	0.2	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NI, F, 10-14	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
NI, F, 15-16	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
NI, F, 17	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
I, M, 10-14	2.7	2.7	4.7	4.4	4.3	5.9	8.4	9.8	10.2	11.4	12.5	13.5	14.4	15.4	16.3	17.3	18.2	19.0	20.0	21.0	22.3
I, M, 15-16	6.4	5.7	6.4	7.3	5.4	8.3	9.8	10.1	9.0	9.6	10.1	10.6	11.0	11.4	11.8	12.2	12.6	12.9	13.3	13.8	14.4
I, M, 17	4.7	4.5	4.3	5.0	3.7	4.7	6.0	5.9	4.9	4.3	4.4	4.5	4.6	4.6	4.7	4.7	4.8	4.8	4.9	4.9	5.0
I, F, 10-14	0.4	0.7	1.3	1.1	1.0	1.7	2.1	2.6	2.7	3.5	3.9	4.2	4.5	4.9	5.2	5.5	5.8	6.1	6.4	6.8	7.2
I, F, 15-16	1.0	1.5	1.8	1.9	1.3	2.4	2.5	2.7	2.4	3.0	3.2	3.4	3.6	3.8	3.9	4.1	4.3	4.5	4.7	4.9	5.1
I, F, 17	0.7	1.2	1.2	1.3	0.9	1.4	1.5	1.6	1.3	1.3	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	2.0
Overall	17.0	17.1	20.6	22.0	17.6	24.9	31.6	34.6	32.2	35.0	36.9	39.3	41.3	43.4	45.2	47.4	49.3	51.1	53.1	55.4	58.3

Source: Deloitte Access Economics calculations. Note: NI = non-Indigenous, I = Indigenous, M = male, F = female. Historical data were not complete for all periods so some periods have been filled with ratios from known years. Projections for 2017 to 2027 were based on the ratios available for 2016. Results are for financial years.

Table A.6: Average daily population sentenced to community supervision by year, age, gender and Indigenous status, base case

Indigenous, gender, age	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
NI, M, 10-14	0.8	0.6	1.3	1.2	1.5	1.7	1.6	1.6	1.3	1.4	1.5	1.5	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0
NI, M, 15-16	1.7	1.4	1.8	2.1	1.8	2.4	1.9	1.7	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
NI, M, 17	1.3	1.1	1.2	1.4	1.3	1.4	1.2	1.0	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NI, F, 10-14	0.2	0.2	0.3	0.2	0.2	0.6	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
NI, F, 15-16	0.4	0.5	0.5	0.4	0.3	0.8	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
NI, F, 17	0.3	0.4	0.3	0.3	0.2	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
I, M, 10-14	6.1	6.2	11.3	11.1	11.4	16.0	22.4	25.8	29.6	34.2	37.7	41.1	44.3	46.9	48.6	51.6	55.0	58.9	63.5	69.5	74.3
I, M, 15-16	14.2	13.2	15.6	18.4	14.2	22.3	26.3	26.6	26.2	28.6	30.0	30.9	32.2	33.7	35.4	36.5	36.7	36.7	36.7	35.6	37.4
I, M, 17	10.5	10.4	10.4	12.7	9.9	12.7	16.1	15.5	14.2	12.9	13.3	14.1	13.9	14.2	14.4	14.9	15.2	15.2	14.8	14.6	14.2
I, F, 10-14	1.0	1.6	3.1	2.9	2.7	4.7	5.8	6.9	7.9	10.5	11.7	12.8	13.8	14.7	15.3	16.4	17.6	19.0	20.6	22.5	24.2
I, F, 15-16	2.2	3.5	4.3	4.7	3.3	6.5	6.7	7.1	7.0	8.9	9.6	10.2	10.8	11.5	12.4	13.0	13.2	13.3	13.5	13.5	14.5
I, F, 17	1.6	2.8	2.8	3.3	2.3	3.7	4.1	4.1	3.8	3.9	4.2	4.5	4.6	4.8	5.0	5.3	5.5	5.6	5.5	5.6	5.6
Overall	40.2	41.8	52.9	58.7	49.3	73.2	87.1	91.2	92.9	103.0	110.5	117.6	123.8	130.1	135.6	142.1	147.8	153.3	159.4	166.1	175.0

Source: Deloitte Access Economics calculations. Note: NI = non-Indigenous, I = Indigenous, M = male, F = female. Historical data were not complete for all periods so some periods have been filled with ratios from known years. Projections for 2017 to 2027 were based on the ratios available for 2016. Results are for financial years.

Table A.7: Average daily population in unsentenced community-based supervision, age, gender and Indigenous status, base case

Indigenous, gender, age	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
NI, M, 10-14	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NI, M, 15-16	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NI, M, 17	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NI, F, 10-14	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NI, F, 15-16	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NI, F, 17	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, M, 10-14	0.4	0.4	0.7	0.7	0.7	1.0	1.4	1.6	1.8	2.1	2.3	2.5	2.7	2.9	3.0	3.1	3.4	3.6	3.9	4.2	4.5
I, M, 15-16	0.9	0.8	0.9	1.1	0.9	1.3	1.6	1.6	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3
I, M, 17	0.6	0.6	0.6	0.8	0.6	0.8	1.0	0.9	0.9	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
I, F, 10-14	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.4	1.5
I, F, 15-16	0.1	0.2	0.3	0.3	0.2	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.9
I, F, 17	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Overall	2.7	2.8	3.5	3.8	3.3	4.8	5.6	5.8	5.9	6.5	6.9	7.4	7.7	8.1	8.5	8.9	9.2	9.6	10.0	10.4	10.9

Source: Deloitte Access Economics calculations and NT Government. Note: NI = non-Indigenous, I = Indigenous, M = male, F = female. Historical data were not complete for all periods so some periods have been filled with ratios from known years. Projections for 2017 to 2027 were based on the ratios available for 2016. Results are for financial years.

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