

**IN THE EQUALITY COURT
(HIGH COURT, CAPE TOWN)**

Case number: EC 3/2016

In the matter between:

SOCIAL JUSTICE COALITION	First Applicant
EQUAL EDUCATION	Second Applicant
NYANGA COMMUNITY POLICE FORUM	Third Applicant

and

MINISTER OF POLICE	First Respondent
NATIONAL COMMISSIONER OF POLICE	Second Respondent
WESTERN CAPE POLICE COMMISSIONER	Third Respondent
MINISTER FOR COMMUNITY SAFETY, WESTERN CAPE	Fourth Respondent

EXPERT AFFIDAVIT

I, the undersigned

JEAN FRANÇOISE REDPATH

state as follows under oath:

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I INTRODUCTION

1. I am an adult female researcher currently employed as a researcher at the University of the Western Cape's Dullah Omar Institute (formerly Community Law Centre).
2. The facts contained within this affidavit are, unless otherwise indicated, within my personal knowledge and to the best of my knowledge true and correct. I am qualified to provide expert opinion on the matters dealt with in this affidavit.
3. This affidavit is filed together with the Replying Affidavit of Phumeza Mlungwana. However, this affidavit will only deal with certain responses and averments made in relation to my initial expert affidavit filed together with the founding affidavit.
4. In this affidavit, I address the following issues:
 - 4.1. **Part II** addresses my skills and experience;
 - 4.2. **Part III** provides a summary of my expert evidence;
 - 4.3. **Part IV** responds to the Respondents' criticism of my original evidence;
 - 4.4. **Part V** analyses the most recent allocation of resources in the Western Cape; and
 - 4.5. **Part VI** evaluates the dataset for the national allocation of police resources recently provided by SAPS.

II SKILLS AND EXPERIENCE

5. The answering affidavits of General Rabie (para 18), Brigadier Voskuil (para 178) and General Makgato (para 8) dismiss my evidence because I am not an expert in policing. They allege that my evidence is "*unworkable and unresponsive to the complexities of the proper policing.*"

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6. I deny these allegations that I lack the expertise to give the expert evidence in my original report, and in this report. I attached my curriculum vitae (CV) as annexure **JR1** to my affidavit dated 31 March 2016 (**my First Affidavit**). As that CV was submitted more than a year ago, I attach an updated version of my CV marked **JR5**.
7. However, as there appears to be some misunderstanding about my expertise and the nature of my evidence, I expand on my qualifications to give the expert evidence that I have provided to this Court.
8. I have been working as a researcher in the criminal justice sector since 1999. My particular speciality lies where quantitative analysis informs public policy and legislative reform. During this time I have carried out a large number of quantitative research projects for international clients as well local clients. For example, in 2005 South Africa's Department of Justice and Constitutional Development subcontracted me to carry out a detailed analysis of bail in South Africa, including the impact of bail practices on crime, as part of the Criminal Justice Review.
9. I have written crime prevention strategies for entities of local and provincial government in South Africa. I have also designed research for and analysed the data arising from audits of entire criminal justice systems, in Moldova, Malawi, Zambia, and Kenya. In respect of the latter, this was done under the auspices of the Kenyan National Criminal Justice Steering Committee. I have written on policing and other parts of the criminal justice value chain in both South Africa and in other countries.
10. Because of my particular skills in data analysis, I was the obvious choice of expert to analyse the data made available at the Khayelitsha Commission. I have no doubt that I have the skills to analyse the distribution of police resources and to comment on the method of calculation of resources employed by the SAPS.


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11. I concede that I do not have any particular skill in organisational development nor human resource management, save for that learnt incidentally through work and life experience. However, that was never the nature of the expert evidence I provided. My evidence is limited to demonstrating how SAPS has allocated its resources, and assessing those allocations against race, indicators of poverty, and incidents and rates of crime. The Answering Affidavits, including that of General Sekhukhune, a qualified statistician, never question the accuracy of my statistical analyses of the data.

III SUMMARY OF ARGUMENT

12. In this Part, I summarise the argument and evidence I have submitted. The later parts expand on that argument and evidence. This summary is necessary because the Respondents appear to have misunderstood or mischaracterised the nature and purpose of the expert evidence I presented. I hope this summary will be useful to dispel some of the misunderstandings or mischaracterisations of my evidence.
13. The 2013 Khayelitsha Commission data shows unequivocally that the lowest allocation of police resources on a per 100 000 person basis in the Western Cape occurs in poor, black areas with high levels of serious violent crime. The more recent data contained in Annexure **PLV2** to Brigadier Voskuil's affidavit (analysed in more depth below), shows no significant departure from this finding.
14. My analysis of SAPS' theoretical method of allocating resources (**THRR**) – which underpins the budget-dependent actual allocation – establishes that this perverse outcome is not caused by any overt or deliberate inclusion of factors which are obviously discriminatory in nature. Instead, it is the result of a number of shortcomings in the method that result in an unintentional, but severe, discrimination on the grounds of race and poverty.
15. Primary among these shortcomings is that the THRR fails to take into account that there is wide variation in under-reporting of less serious crime from one area to

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another. In particular, the THRR fails to take into account that poor, black, more informal areas demonstrate low levels of reporting of crime compared to richer, whiter, more formal areas. This has the result that poor, black areas will tend to have artificially low levels of reported crime in comparison to formal areas. To the extent that the allocation of resources is calculated on the basis of reported crime, the allocations will be skewed against areas that suffer from high levels of underreporting.

16. The insidiousness of the primary under-reporting problem lies in the fact that low allocations of police resources in turn tend to inhibit reporting of crime, resulting in areas with low resources continuing to show artificially low levels of total reported crime, which in turn keeps their allocation of resources low. The opposite happens in better resourced areas, where more resourcing encourages high reporting which in turn results in large allocations of resources. Because the THRR functions primarily on reported crime, it creates a vicious spiral where inadequate resource allocation leads to low reporting levels, which in turn leads to fewer resources being allocated.
17. It is possible to account for the problem of under-reporting. The best guide, outside of surveys, as to whether under-reporting of crime is occurring is the number of murders, and to a lesser extent the number of aggravated robberies, compared to the number of all reported crimes. This is effective because murders (and to some extent aggravated robbery) are almost always reported.
18. Two further key problems with the THRR method are:
 - 18.1. The failure sufficiently to weight serious violent crime. To calculate the crime prevention component, currently a murder is equated with an aggravated robbery, as they are both classified as "contact crime". Contact crime is worth 2.5 less serious crimes in terms of posts.¹ This ratio seems to have been

¹ See page 52, Annexure B, Rabie, **LR4**. Posts related to "Contact Crimes": a 4 year weighted average per month divided by 20. This means one post for every 20 contact crimes reported in a month. Contact crimes include murder. The other categories are property, contact-related, all other serious crimes, and less serious crime. I assume "less serious" are those not among the 20 "serious crimes" reported on by

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relatively arbitrarily determined and bears no relation to the relative burden of policing and investigating a murder. More importantly, it bears no relation to the overall cost to society of the violent loss of a life.

- 18.2. The majority of ostensibly neutral weighting which are used tend to skew the allocation toward formal areas. For example, the "environmental, social and economic" factors used in determining the crime prevention component include: number of main roads; number of shopping malls; number of students at schools; number of students at higher education; number of sporting events, festivals, religious events (each a separate factor); number of airports, railways, ports, bus terminals, mines, hospitals, clinics, schools, educational facilities (all separate factors) with a greater number of these all attracting up to 5% weighting (See LR4, Annexure B, pp 53-55). Of the 56 "environmental, social and economic" factors listed here, only 15 are highly likely to be present in informal areas. Thus formal areas potentially have an additional 205% weighting on these factors while informal areas have a potential 75% weighting. So while it is true that factors relating to informal areas are taken into account, factors relating to formal areas are taken into account to a far greater extent.
19. There are a number of problems with measuring whether changes in the allocation of police resources has an impact on crime, particularly when the changes in allocations have been small, as has been the case in South Africa thus far. Allocations in poorly resourced areas would need to increase by very large amounts to reach the median allocation for South Africa, or the empirical standard of 220 per 100 000. It is only at this level that a significant impact is likely to be observed.

SAPS. The allocation for less serious crimes is equal to the number of less serious reported crimes in a month (weighted average) divided by 50. So if there are 240 murders in a (weighed average) year, this means 20 in a month, which equals 1 post, while you would need 600 less serious crimes to get 1 post (600 in a year divided by 12 divided by 50 = 1). 240 times 2.5 is 600. So murder counts 2.5 times as much as "less serious crime" in terms of the primary allocation of posts.

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20. Not only is the THRR fatally flawed, but the actual allocation of resources has not cured the discrimination. That was true based on the data provided to the Khayelitsha Commission in 2013, and is still true despite the recent allocation of resources reflected in **PLV2**. Poor, black areas with high rates of violent crime have fewer police officers than rich white areas with low levels of violent crime. This is both unequal and irrational. Police resources should be distributed where they are most needed. In my opinion, the persistently low allocations to high murder areas are unconscionable.
21. During the course of this case, SAPS provided data on the theoretical allocations as well as the fixed establishment, for the whole country. This data confirmed the trends in the Western Cape highlighted above. It also shows that the fixed establishment figures tend to result in more unequal allocations.

IV RESPONSE TO RESPONDENTS' CRITICISM

22. In this Part, I address specific criticisms of the expert evidence I presented in my First Affidavit. I address the following issues:
- 22.1. The validity of using police per 100 000 as an indicator;
 - 22.2. The error of relying on total crime in the THRR;
 - 22.3. Several problems related to under-reporting;
 - 22.3.1. How accounting for under-reporting results in a more equal distribution of resources;
 - 22.3.2. Under-reporting is related to police trust and shows racial trends;
 - 22.3.3. Murder provides an indication of under-reporting;
 - 22.3.4. Reported serious violent crime is high in under-resourced areas; and
 - 22.3.5. Property crime drives total crime;
 - 22.4. The failure to adequately weight violent crime;
 - 22.5. The weighting factors employed tend to favour formal areas;
 - 22.6. The impact of policing and police resources on crime;

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- 22.7. Violent crime primarily occurs in policeable spaces;
- 22.8. The "Redpath method"; and
- 22.9. Summary of flaws in the THRR.

Police Per 100 000 as an Indicator of Unequal Provision

- 23. Rabie maintains that the number of police per 100 000 measure is not an appropriate method to determine the allocation of police resources (paragraph 24 inter alia).
- 24. I have not argued that it is. My contention is very different. The number of police per 100 000 is the best method of showing whether there is an equitable allocation of police resources per person. It is the only way in which a large area of 200 000 people can be compared to an area with 5 000 people.
- 25. An unequal allocation per 100 000 persons requires reasons which are reasonable and justifiable. For example, SAPS could show that the areas with the lowest number of police per 100 000 do indeed have the lowest burden of policing per 100 000.
- 26. The need to provide an explanation for the apparent inequality is particularly important when the deviation from equal provision per person appears to have a discriminatory effect on protected grounds such as race and poverty, as is the case here.

Using Total Crime Underpins the Anomaly

- 27. SAPS contend that the THRR formula justifies the observed inequality because it provides a rational basis for unequal provision. The THRR underpins the actual allocations, with stations on average receiving 67% of their THRR allocation, according to Rabie. One of the key factors in the THRR calculation of the allocation of resources is the total number of crimes recorded by the SAPS per area. The theory appears to be that SAPS should allocate its resources primarily based on where crime is reported, not based on where it occurs.

28. The impact of this approach is obvious and tragic. The four highest murder rate areas in the Western Cape (Nyanga, Harare, Gugulethu and Khayelitsha) accounted for only 6% of all reported crimes. As the four areas comprise 11% of the population, one would expect the four areas to at least account for 11% of the total crime, instead of only 6%. But largely because the THRR allocates resources based mainly on who reports crime, these areas receive only 6% of the resources. This is the major reason underpinning their under-resourcing: the fact that they have a *lower* total reported crime rate than other areas.

Accounting for Under-Reporting Equalises the Distribution

29. The reason for this unexpectedly low number of total reported crimes is simple: under-reporting. Nyanga, for example, recorded only 4 shoplifting offences in 2015/16. It is inconceivable that this correctly represents the true number of actual losses to shoplifting from the many spaza and other shops in Nyanga. The Community Barometer Surveys undertaken for the Western Cape Department of Community Safety (DOCS) during 2011 show township areas have lower crime reporting rates. In Gugulethu the rate at which residents report (all or most of the time) was estimated by respondents at 31%, compared to 84% in Cape Town (Table 7 p 57, Summative Report). I attach a copy of the title page and relevant page of the 2011 Summative Barometer Survey Report marked **JR6**.
30. This means that under-reporting is not a consistent factor across areas. If under-reporting were to be taken adequately into account in the allocation, large adjustments would have to occur. By way of illustration, we can estimate a correction for under-reporting with regard to the four high-murder township areas (Nyanga, Harare, Gugulethu and Khayelitsha). These areas account for only 6% of reported crime in the Western Cape. But if the DOCS survey under-reporting rates are used to adjust

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for under-reporting, and total crime is corrected for under-reporting,² then the four areas would contain approximately 22% of the calculated total crime. It is also much closer to those areas' share of actual murders (24%). As I explain below, that makes it a far more likely predictor of actual crime. If those figures were used to allocate resources in the THRR, it would require a nearly four-fold increase in the number of police officers allocated to Khayelitsha, Harare, Nyanga and Gugulethu.

31. Under-reporting is a real phenomenon varying by socio-economic area. The THRR does not take under-reporting into account.

Under-Reporting is Related to Police Trust and Shows Racial Trends

32. The Victims of Crime Survey 2015/16, prepared by Statistics South Africa, reports that on average in South Africa 66% of house-robberies are reported by households (Figure 53) compared to 33% of thefts of personal property by individuals in South Africa (Figure 54). Crimes which only affect those with motor vehicles (car theft and hijacking) also have high reporting rates. The Survey also found that the majority of victims across all crime types cited the reasons for not reporting as being that "*police could do nothing*" and "*police won't do anything about it*" (Figure 55). I attach a copy of the title page and relevant pages of the Victim of Crimes Survey marked **JR7**.
33. This provides evidence that lack of satisfaction in the ability of the police to address crime underlies the failure to report crime. This gives rise to the inference that those geographical areas in which there is less faith in the police will tend to have lower reporting rates.
34. According to the Victims of Crime Survey 2015/16, satisfaction with the police is lowest among the black and Coloured population groups (Figure 31). The reporting of crime will therefore be lower in areas where these population groups are majority. That

² The number of crime in those three areas is multiplied by 3.2, and the rest of the Western Cape is adjusted as if reporting levels were the same as Cape Town (multiply by 1.1)

inference is confirmed in the DOCS Barometer Surveys previously referenced. By failing to properly take account of under-reporting, the THRR is systemically biased against black and coloured populations.

Murder Provides an Indication of Under-Reporting

35. It is because of varying rates of under-reporting that analysts recommend that the murder rate be used to identify areas of under-reporting and to give an indication of the true crime rate in an area, as opposed to the reported crime rate. As I noted in my First Affidavit, the murder rate is particularly accurate as a proxy for serious violent crime.
36. Rabie contends that the murder rate is not an appropriate indicator of crime (paragraph 54.1 inter alia). Yet using murder or homicide as a proxy for violent crime is commonly done by such august bodies as the United Nations (UN). The UN Global Study on Homicide says: "*as the most readily measurable, clearly defined and most comparable indicator for measuring violent deaths around the world, homicide is, in certain circumstances, both a reasonable proxy for violent crime as well as a robust indicator of levels of security within States*" (p 9). I attach a copy of the relevant pages marked **JR8**. This is echoed by the Inter-American Development Bank's Technical Note on measuring violence: "*Although homicide is not the only indicator of violence, the homicide rate is the measure that is used most often to determine overall levels of violence in a city or country. This is because homicide constitutes the most serious and publicly visible of all violent acts and is usually reported more accurately in statistics on violent crime*". I attach a copy of the title page and relevant page marked **JR 9**.
37. Empirical data in more developed contexts where reporting rates are better, demonstrate a close correlation between murder rates and violent crime rates. This is evident from Figure 1 in a paper prepared for the United States Congress. I attach the

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relevant pages marked **JR10**. Indeed many academic papers do not discuss the issue and simply proceed to use homicide or murder rates as a measure of violent crime.

38. By using murder as a proxy for actual levels of violent crime, I certainly do not suggest that it is only murder that must be policed. The point is only that, in a context of variable underreporting, murder provides some guide as to the true incidence of serious violent crime. The THRR fails adequately to take into account variation in the underreporting of crime, particularly less serious crime and property crime.
39. SAPS are clearly aware of the challenge of under-reporting. Both annexure **LR1** and **LR5** to Rabie's affidavit refer to the "dark figure" of crime and the difficulties created by unreported crime in determining the allocation of resources to visible policing. In **LR5**, dated 2002, at paragraph 3.2: *"Police also have to deal with the dark figure of crime – crimes that are committed but have not been reported. The SAPS is at present unable to determine the "dark figure of crime" at local/station level on regular (monthly) intervals. The police at local level must, therefore, rely exclusively on crime reported by the community."*
40. Yet, despite being aware of the problem, SAPS have failed to address it. Indeed, in annexure **LR5** it is stated that "no method" exists for measuring under-reporting. That is simply not true. We have both surveys and murder figures to provide some guide as to the true crime rate. Methods do exist. SAPS have merely chosen not to use them.

Reported Serious Violent Crime is High in Under-Resourced Areas

41. It is not necessary to rely on the murder rate to support the contention that areas with the lowest allocations have a high level of serious violent crime. Reported violent crime is also high in these areas compared to well-resourced areas. One of the most feared violent crimes is aggravated robbery, which includes hijacking, robbery at business premises and robbery at residential premises. These are the so-called trio-crimes

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which are "prioritised" by the SAPS. Areas with high levels of this crime are generally feared and commonly judged to be violent.

42. Reported aggravated robbery recorded in the four high murder areas (Nyanga, Gugulethu, Harare and Khayelitsha) accounted for 19% (4469) of the 23732 incidents of aggravated robbery recorded in the entire province in 2015/16. Recall that their population only accounts for 11% of the province. Therefore, even if we ignore the reality of under-reporting, these areas are exceptionally violent, as measured by *reported* aggravated robbery. It is difficult to imagine what evidence could be tendered to suggest otherwise.
43. Tellingly, the share of aggravated robbery is close to the murder share as well as the "corrected" true crime share calculated above. This suggests that these crimes more accurately reflect the actual burden of crime in an area. Given that they also impose the greatest human and social cost, one would expect they would be appropriately weighted in the allocation of police resources. Unfortunately, they are not, leading to the current irrational and racially discriminatory allocation of resources.

Property Crime Drives Total Crime

44. Despite it being drawn to the SAPS' attention that their THRR formula for the allocation of police resources irrationally prejudices areas with high murder and violent crime rates in the Western Cape, the SAPS have refused to acknowledge there may be problems with the outcomes of the THRR formula in the Western Cape.
45. Rabie contends that total reported crime is insufficiently high in township areas to justify a higher allocation of resources, and that policing would be compromised if resources were transferred from areas with high total reported crime because township areas do not record the highest total crime figures (see paragraph 54). In essence, his argument is that SAPS have no choice but to deploy resources solely based on where crimes are reported, and in this he alludes to total crime. Rabie provides a table

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comparing Cape Town to a range of more deprived areas to buttress his point (paragraph 54.2). He points to the much higher total serious crime rate in Cape Town compared to these areas to justify differences in allocation. However:

- 45.1. It is not disputed that CBD areas such as Cape Town and Table Bay, which have low residential populations but high daily influxes and high total crime, will require much higher than average allocations per 100 000 people.
- 45.2. However the approach of using "total crime" for all areas fails to take into account both underreporting as discussed above, as well as the relative seriousness of the crimes occurring in these areas. These factors intersect with each other. Total reported serious crime figures include a range of less severe crimes such as shoplifting and theft. These offences are reported at disproportionately high rates in wealthy, white, well-resourced areas, and at disproportionately low rates in poor, black, under-resourced areas.
- 45.3. One of the reasons property crimes are relatively underreported in these areas is because insurance provides an incentive to report property crime, which is absent in poor areas where insurance coverage is low.
- 45.4. To give examples of the disparity in types of crime reported, property and commercial crimes³ comprise 85% of total reported crime in Claremont, 88% in Sea Point and 87% in Camps Bay. In Nyanga, however, they comprise only 28%, Gugulethu 32%, Harare 36%, and Khayelitsha 33%. This is not entirely due to the real incidence being much lower, but because less serious crimes without an element of violence tend to have lower reporting rates, as evidenced in the Victims of Crime Survey referred to above. The actual rates of property crime in Nyanga, Khayelitsha and Gugulethu are almost certainly much higher than reported, but people do not report those crimes. The relative victimisation

³ Burglary at non-residential premises, Burglary at residential premises, Theft of motor vehicle and motorcycle, Theft out of or from motor vehicle, Stock-theft, all theft not mentioned elsewhere, Commercial crime, Shoplifting

rates reported in amongst others the Barometer Survey attest to the variable rates of reporting by geographical area (Table 6, p 54, JR6).

45.5. To use the two areas alluded to in Rabies' own example in paragraph 54.2, if one excludes "all theft not mentioned elsewhere" and "shoplifting" from total serious crime, it is apparent that the relative "total crime" burden between Cape Town and Nyanga becomes much more similar than he seeks to demonstrate. Comparing non-property crimes produces a situation where Nyanga is worse off. It is not my intention to argue the exact relative resourcing which should be applicable to Cape Town versus Nyanga, but rather to illustrate the point regarding the nature of "total" crime, and how total crime should not be the entire justification for the observed inequalities in relative resourcing. The relative seriousness of crimes should be taken into account. This is discussed in more detail below.

	Cape Town	Nyanga
Murder	10	250
Serious crime (Rabie)	13129	6941
SAPS 17 crimes 2015/16⁴	14754	8002
SAPS Serious crime excluding "other theft" and shoplifting⁵	7403	7102

⁴ "17 Community-Reported Serious Crimes" i.e. Murder, Sexual Offences, Attempted murder, Assault with the intent to inflict grievous bodily harm, Common assault, Common robbery, Robbery with aggravating circumstances, Arson, Malicious damage to property, Burglary at non-residential premises, Burglary at Residential premises, Theft of motor vehicle and motorcycle, Theft out of or from motor vehicle, Stock-theft, All theft not mentioned elsewhere ("other theft"), Commercial crime, Shoplifting.

⁵ Murder, Sexual Offences, Attempted murder, Assault with the intent to inflict grievous bodily harm, Common assault, Common robbery, Robbery with aggravating circumstances, Arson, Malicious damage to property, Burglary at non-residential premises, Burglary at Residential premises, Theft of motor vehicle and motorcycle, Theft out of or from motor vehicle, Stock-theft, Commercial crime.

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SAPS Serious crime excluding property and commercial crime⁶	2737	5379
Actual posts (Rabie)	559	308
Fixed establishment (January 2017 national figures)	598	325
Population (Rabie)	39078	224059

The Relative Seriousness of Violent Crime is not Adequately Weighted

46. Any just and reasonable allocation formula must furthermore take into account the relative seriousness and burden on policing of a murder compared to by-law or petty offences. Unless a police force has unlimited resources, it must identify the crimes to which it wishes to devote more resources.
47. Other countries have weighted the seriousness of various crimes, including murder. In Canada, Statistics Canada determined in 2009 that a 1st or 2nd degree murder carries a weight of 7042, while cannabis possession carries a weight of 7, a ratio of 1000 to 1, in measuring relative crime severity. The relevant page of their report is attached as **JR11**. In the UK, the Office for National Statistics' relative scores for the Crime Severity Data Score weights murder at 7979 and possession of cannabis at 3, a ratio of close to 2700 to 1.⁷ The relevant page of their spreadsheet⁸ is attached as **JR12**. This

⁶ Murder, Sexual Offences, Attempted murder, Assault with the intent to inflict grievous bodily harm, Common assault, Common robbery, Robbery with aggravating circumstances, Arson, Malicious damage to property.

⁷ See the spreadsheet available on <https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/datasets/crimeseverityscore/datatool/november2016>

⁸ Available at <https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/datasets/crimeseverityscore/datatool>

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measure was explicitly developed to help measure demand on police resources: *"While previously there has not been great demand for such a weighted crime measure, more recently in the context of a move away from simple numerical targets there has been growing interest in understanding and responding to demand on police resources."*⁹

48. The THRR seeks to weight crimes, but it provides an entirely unrealistic weighting for serious violent crime compared to petty property crime. The Detective Services comprises about one fifth of total police personnel. In the THRR detective service calculations, 240 murders per year are required for the allocation of a single detective, and 600 petty offences per year for a single detective (Rabie paragraph 35.1.2).¹⁰ While it is feasible for a single detective to investigate 600 petty offences in a year, 240 murders is entirely unrealistic. In the visible policing component, the ratio of 2.5 to 1, for murder compared to the least serious crimes, also applies. That means that a station receives 2.5 times more officers per murder, than it would for a minor crime. That bears absolutely no relation to the actual cost or seriousness of crime. The same ratios appear to apply to the crime prevention component.
49. The right to life and the right to freedom and security of the person support the notion that the SAPS should prioritise the protection of life and bodily integrity to a far greater degree. The current approach is inadequate on any measure.

The Weighting Factors Employed Tend to Favour Formal Areas

- 49.1. Rabie contends that the weighting factors used to adjust the crime-based calculations, include a range of factors which relate to township areas

⁹ Research outputs: developing a Crime Severity Score for England and Wales using data on crimes recorded by the police" available on <https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/researchoutputsdevelopingacrimeseverityscoreforenglandandwalesusingdataoncrimesrecordedbythepolice/2016-11-29>.

¹⁰ See footnote to paragraph 18.1

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(paragraph 35.1.3.2). In this paragraph, he refers only to those factors relevant to deprived areas. However, as discussed in paragraph 18 above, closer perusal of all the factors shows that the vast majority of the factors relating to determining the crime prevention component (41 of 56 environmental, social and economic factors affecting crime prevention listed on page 27 of **LR3** which is a reproduction of 53 of **LR4**) are likely only to be present in formal areas, so while it is true that factors relating to informal areas are taken into account, factors relating to formal areas are taken into account to a far greater extent.

50. Furthermore, the relationship of these factors to crime or the burden of policing is by no means clear, while many amount to double-counting; for example, the number of learners and number of schools are counted as separate factors each attracting a potential 5% load.
51. A further problem is that the maximum weighting applied for each factor is 5%. This means that, for example, a maximum weight of 5% is added to an area which has at least 10% of its population in an informal settlement. As this weight is the maximum, an area which comprises 40% or 60% or even 90% informal settlement will still only attract a load of 5%.
52. The weightings equate the impact of vastly disparate factors. Thus the presence of 3 or more main roads has a load of 5%, as does a greater than 40% unemployment rate, as does 1 or more shopping malls. It is not clear that all of these factors do indeed have the same extent of impact on the crime prevention component.
53. The "Station Input Sheet" (largely illegible in the copy provided to us) are the source for the inputs to the factors. Police stations are required to complete these approximately 550 "inputs". Different inputs are applied as factors to various components of the staffing of police stations. For example, distances to courts are applied as weights for the detective service component (LR3 page 55). Even if the approximately 550 inputs required for the "Station Input Sheet" when combined in the total formula do indeed give some advantage to informal areas, the actual outcome of

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applying that total formula, i.e. the THRR figures, clearly demonstrate that the advantage is insufficient and results in vast inequalities.

54. Rabie (at paras 159-163) also suggests that insofar as poverty is concerned, poor areas "have inadequate policing infrastructure to conduct proper policing". This seems to suggest poor areas are considered a "lost cause" by SAPS and SAPS does not carry out "proper policing" there. If poor areas have inadequate policing infrastructure should that not be improved in tandem with the allocation of adequate resources?
55. Rabie also contends poor areas pose "unique problems" which cannot only be solved only by allocating high numbers of police officers. It is not suggested that additional police are the only solution. It is certainly contended that inadequate police resources is part of the problem. Nor am I necessarily arguing for high numbers of police officers. Rather it is a more equitable distribution which is required. Indeed, even if such areas were to receive only the median allocation per 100 000, a very large upward adjustment would be required. A great deal of evidence, not least in the Khayelitsha Commission, has demonstrated that insufficient resources are a significant part of the problem of poor policing in these areas.

The Impact of Police Resources on Crime

56. Rabie appears to contend that allocating additional police resources to township areas would in any event have no impact on crime. This may be partly related to the outdated notion "*that crime is structural and can only be reduced through increased social justice*".¹¹
57. On the contrary, there exists a great deal of evidence that policing and the criminal justice systems do have an impact on crime. Various models and studies providing

¹¹ Cullen, F.T. & Gendreau, P. "From Nothing Works to What Works: Changing Professional Ideology in the 21st Century" *The Prison Journal* September 2001 vol. 81 no. 3 313-338

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evidence of the nature and extent of impact.¹² There is little doubt that effective policing can reduce crime.

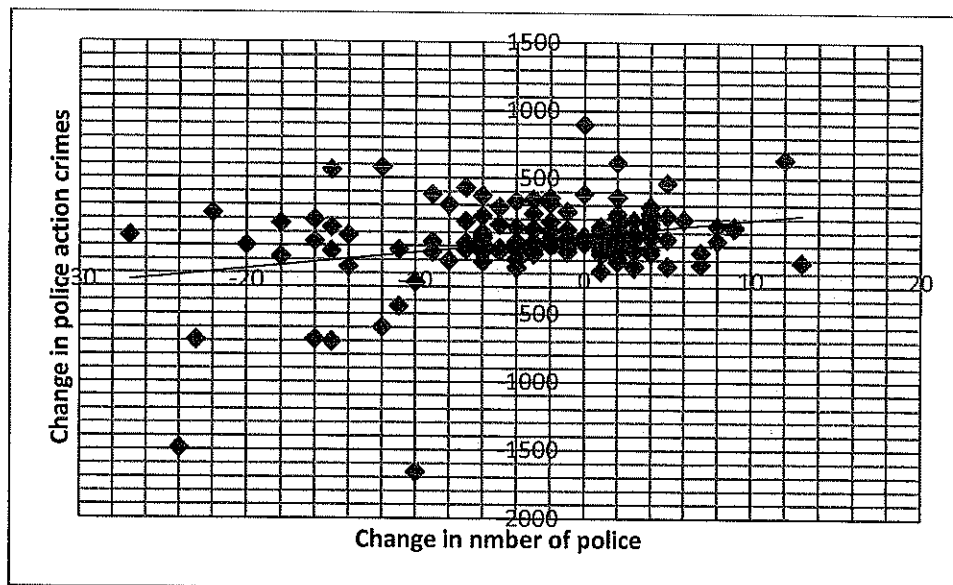
58. One of the complicating factors relating to measuring the impact of additional resources is that additional resources may tend to increase the reporting of crime. A 1998 paper by respected US criminologist Stephen Levitt estimated that in the US every 1 additional police officer results in 5 additional crimes being reported, which would otherwise have gone unreported.¹³
59. The mechanism by which more reporting occurs can be theorised as follows: more police are available for proactive policing which uncovers more crimes, more police are available to witness crime in progress, more police make the reporting of crime more accessible, and more visible policing increase faith in the police, which in turn encourages more reporting. Thus this tendency of additional police to result in reporting of more crime complicates the analysis when analysing the impact of adding or subtracting police to a policing area.
60. I conducted a statistical analysis of 2013 and 2015 allocations (including civilian personnel) and the crimes recorded in the Western Cape and found the following:
- 60.1. That there have been small changes in the allocations comparing 2013 and 2015. Just over half of areas (53%) have recorded a slight reduction in resources. The changes have been very slight as outlined above. Thus it is to be expected that any impacts will be difficult to detect.
- 60.2. No relationship is observed between the change in number of police and the change in number of total crimes reported. Competing trends could result in this finding: increased reporting counterbalanced by reduced actual crime.

¹² See Weisburd, D, Farrington, D.P., & Gill, C (Eds.) *What Works in Crime Prevention and Rehabilitation Lessons from Systematic Reviews* Springer, Cambridge, 2016

¹³ S Levitt 'The Relationship Between Crime Reporting and Police: Implications for the Use of Uniform Crime Reports' (1998) 14(1) *Journal of Quantitative Criminology* 61.

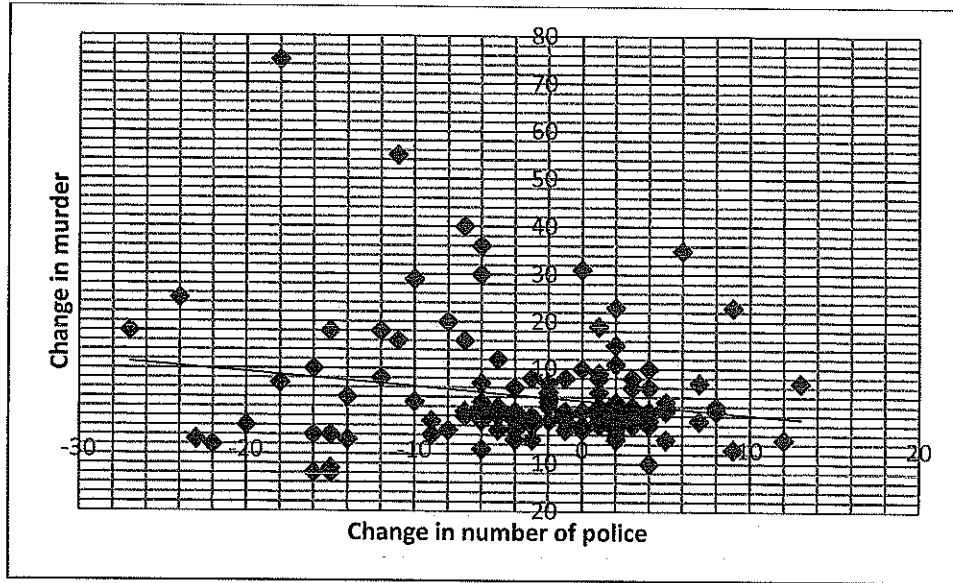
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- 60.3. A significant relationship (>95% probability) is observed between the change in number of police and police action crimes reported. These are crimes which are reported through police action. They are: Illegal possession of firearms and ammunition; drug-related crimes; driving under the influence of alcohol or drugs; and since 2011, "sexual offences detected as result of police action". Each additional police officer is associated on average with five additional police action crimes. However, the predictive value is low with only 3% of the variation in the change in police action crimes predicted by the change in police.



- 60.4. A significant relationship (>93% probability) is observed between the change in number of police and murder. Note the lower standard of probability. Every 6 additional police allocated comparing 2013 with 2015 is associated on average with one fewer additional murders. However, the predictive value is low with only 2% of the variation in the change in murder predicted by the change in police allocation.

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61. There are two particular statistical limits with this data:
- 61.1. The variables concerned in all the analyses above suffer from a degree of "collinearity". That is, the variables tend to increase in size with each other. Using the "change in" variables rather than total figures reduces but does not eliminate the collinearity.
- 61.2. Furthermore, the number of police allocated to an area is partly determined by reported crime levels, resulting in more police tending to be associated with more crime, a trend which competes with any impact in terms of reducing crime being measured by adding police resources. This problem is known as "endogeneity" and makes it very difficult to measure impact.
62. Furthermore, this analysis deals only with the small adjustments which have actually occurred in 2013-2015. An area such as Nyanga on 2015 figures would need an additional 206 police officers to reach the empirical standard of 220 per 100 000. Yet between 2013 and 2016 Nyanga lost 27 police – the largest adjustment of any area. There is no data which is available to predict the changes which would occur with large adjustments such as an additional 206 police, because SAPS have never made such large adjustments.

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63. There are good reasons to expect that there would be a reduction in actual crime, even if reported crime increased or remained stable, if such resources were deployed effectively. Put differently, without sufficient resources reductions in crime are highly unlikely. To give one example, Sea Point has benefitted from the existence of a Community Improvement District, access to a Community Court, provision of private security, and current police resourcing of 648 per 100 000. Unsurprisingly, total crime¹⁴ over 10 years has dropped 21% since 2005/6. Such reductions would have been highly unlikely with police resourcing of 110 per 100 000 such as is present in Harare.
64. In an attempt to support his theory that additional officers will not affect crime, Rabie provided evidence from four areas in which additional police were deployed and in which there was subsequently no impact on reported crime to support his contention that resources have no impact on crime (paras 102 and also repeated by Voskuil in Para 134). This is an insufficient sample to support the notion that there is no impact, and does not take into account reporting effects. More comprehensive evidence is necessary and available. Furthermore, the additional resources allocated were negligible.
65. While measuring the impact is complicated, there is no reason to accept Rabie's position. The international literature, and the statistical analysis I conducted strongly suggests that there is a positive relationship between intelligence-lead appropriately deployed increased police resources, and reduction in crime.
66. Apart from crime prevention, there is the issue of police being available to respond to, address, investigate and bring to justice crime which is occurring or which has occurred. This is clearly compromised with insufficient police. Furthermore, SAPS is the only constitutionally mandated entity which may investigate crime.

¹⁴ 17 serious community-reported crimes

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Violent Crime Primarily Occurs in Policeable Spaces

67. Rabie's reasoning that additional resources would not impact on crime in these areas appears to be buttressed by his contention that most violent crime occurs in private places which cannot be policed (for example, at para 99). He provides no evidence to support this notion.
68. Evidence exists that is not the case in South Africa. Available evidence from the National Victims of Crime Survey 2015/16 estimates that only 28% of assaults in South Africa take place at home. Some 55% take place either on the street or in a public bar or tavern. In relation to robbery, some 60% of individuals said that they were robbed in the street in a residential area while about 10% were robbed in the street outside offices /shops. In other words, the vast majority of robbery (70%) and assaults (55%) in South Africa occur in areas which are susceptible to policing, and in which people live. I attach copies of the relevant parts of the Victims of Crime Survey marked JR13.

The "Redpath Method"

69. Much of the criticism of my report in the answering affidavits focuses on what the deponents call the "Redpath method". This is the method I proposed before the Khayelitsha Commission at the request of Justice O'Regan. The aim was to demonstrate that a rational method exists which while allocating areas such as Cape Town, with extremely high daytime populations and associated higher crime rates, with a higher than average number of police per 100 000 due to their high total reported crime burden, does not place poor black township areas, which have a high reported and actual violent crime burden, amongst those areas with the lowest per capita allocation.
70. I do not contend that the "Redpath method" is the best method of determining the allocation of police resources. It is not for me, or this Court, to impose a method on

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the SAPS. The method was merely developed during the Khayelitsha Commission to demonstrate an alternative model and show how that would affect allocations.

Summary of Flaws with THRR

71. Even if my proposal to the Commission may not be the ideal approach, that does not detract from the flaws in the existing THRR. This analysis has identified why the THRR results in an apparent absurdity:
- 71.1. It fails to account for variable under-reporting.
 - 71.2. It fails to provide an adequate weight to murder in the visible policing allocation calculation. Murder is only weighted at 2.5 times petty crimes. This suggests it is regarded as 2.5 times as severe as petty crimes. The same applies in respect of the detective component.
 - 71.3. While it applies weightings for crime prevention of up to 5% each for "disadvantaged" areas, many more weightings are available for built-up areas. Built-up areas are therefore likely to accumulate many more additional weights than disadvantaged areas.
72. In addition to the shortcomings already identified, the THRR is defective because it is inherently irrational to employ a method of allocation of resources which does not at the outset take into account the available budget. This is particularly so when the method employed appears to be based on pre-determined structure, rank and personnel architecture requiring certain minimum staffing levels to function. As the budget inevitably fails to provide the required number of people to staff this structure, this implies that the various units within police stations will never be able to operate as planned. While the THRR seeks to determine the ideal number of police officers, it results in a skewed allocation because it does not consider how to weight priorities given limited resources.

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73. Nor does that task of allocating limited resources seem to be performed by the Provincial Commissioners. The fixed establishment results in varying and seemingly arbitrary reductions based on budget, and it is unclear to what extent the Provincial Commissioners in fact engage in adjustments. As my analysis of the Western Cape and national figures demonstrate, there is not much variation between the actual allocation and the theoretical allocation. Both are almost equally discriminatory in their impact.
74. Moreover, the THRR formula used by the SAPS to determine the theoretical allocation appears to have remained unchanged since 2002. This is apparent from a comparison of annexure **LR5** dated 2002, and annexure **LR 3** dated 2012, both from the Khayelitsha Commission, and annexure **LR 4 Annexure B** to Rabies' 2016 affidavit. This is despite the documentation itself repeatedly calling for a dynamic and changing approach to the issue of the allocation of resources. I do not attach the two documents submitted to the Commission as they would unnecessarily burden the papers. However, they can be made available if the Court or the Respondents require them. If there are any differences, they are not substantial.
75. Indeed the actual figures provided in **PLV2** demonstrate that the overall trends in the actual allocations remain the same. Allocations seem to be persistent over time: some areas of KwaZulu-Natal, which were formerly part of KwaZulu, have the same per 100 000 allocations as applied when they were policed by the KwaZulu Police before 1994. According to the SAPS history webpage, in 1994 KwaZulu had only 94 sworn police officers per 100 000 people at the time of amalgamation. Police personnel figures made available to *The Natal Witness* via a PAIA application some 20 years later, show 16 areas with 94 or fewer per 100 000, the majority of which were formerly in KwaZulu: uMzimkhulu, Ntabamhlophe, Esikhawini, KwaMakhutha, Ematimatolo, Bhekithemba, Ematsheni, Ingwavuma, Nongoma, Melmoth, Ndumo, Emanguzi, Ndwedwe, Nsuze, Mondlo, Intsikeni.

V THE 2016/17 ADJUSTMENTS

76. It is clear from the evidence previously tendered that the township areas with the lowest police allocation per 100 000 in the Western Cape at the time of the Khayelitsha Commission were areas largely populated by black and poor people.
77. Brigadier Voskuil attaches a new set of data to his affidavit. It provides the allocation of resources at three different times:
- 77.1. June 2016;
 - 77.2. August 2016; and
 - 77.3. January 2017.
78. I consider the changes in the allocation at each of these times. I then consider the persistently high murder rates, and how these relate to the new allocations.
79. In short, the new adjustments in allocation do not substantially alter the irrational and discriminatory allocation of police resources in the Western Cape.

June 2016

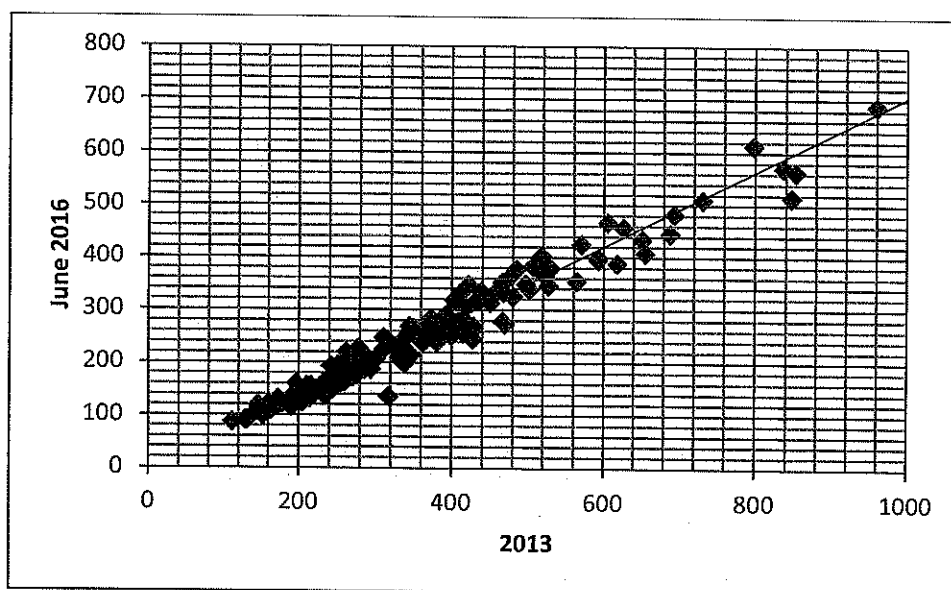
80. The data on police allocation contained in **PLV2** for June 2016 demonstrate a 29% downward adjustment from the Lamoer 2013 figures. I assume this is because the figures in **PLV2** do not include civilian personnel while the 2013 Lamoer figures do include civilian personnel. (If my assumption is incorrect it would mean a massive reduction in resources.) Excluding civilian personnel for all areas does not affect the relative distribution between areas; areas with low allocations will still reflect as areas with low allocations, relative to other areas, but all areas will have fewer personnel.
81. The data on allocations for June 2016 do not show any new trends. Areas with among the lowest allocations per 100 000 are areas in which poor, black people live or areas which contain large informal settlements (such as Muizenberg, which includes the

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Vrygrond and Capricorn informal settlements, and Franschoek, which includes Langrug informal settlement).

82. The 20 areas with the lowest allocations per 100 000, in June 2016, almost two years after the Commission, were Harare, Lwandle, Belhar, Cloeteville, Delft, Nyanga, Strandfontein, Table View, Kleinvlei, Kraaifontein, Ocean View, Muizenberg, Mfuleni, Grassy Park, Franschoek, De Doorns, Gugulethu, Diep River, Khayelitsha, Klawer. In 2013 at the time of the Commission, the 20 areas with the lowest allocations were Harare, Lwandle, Belhar, Nyanga, Ocean View, Delft, Cloeteville, Kraaifontein, Mfuleni, Strandfontein, Kleinvlei, Gugulethu, De Doorns, Grassy Park, Table View, Khayelitsha, Muizenberg, Paarl East, Macassar, Prince Alfred Hamlet. Substantially the same places continue to occupy this list of the least resourced.
83. Plotting the 2013 per 100 000 figures against the June 2016 per 100 000 figures shows that they are almost exactly correlated. Put differently, the allocation in 2013 determines the allocation in June 2016. This means that the SAPS made no substantial changes to the relative allocation between 2013 and 2016.¹⁵

Figure 1: Police per 100 000 allocations for 2013 and June 2016

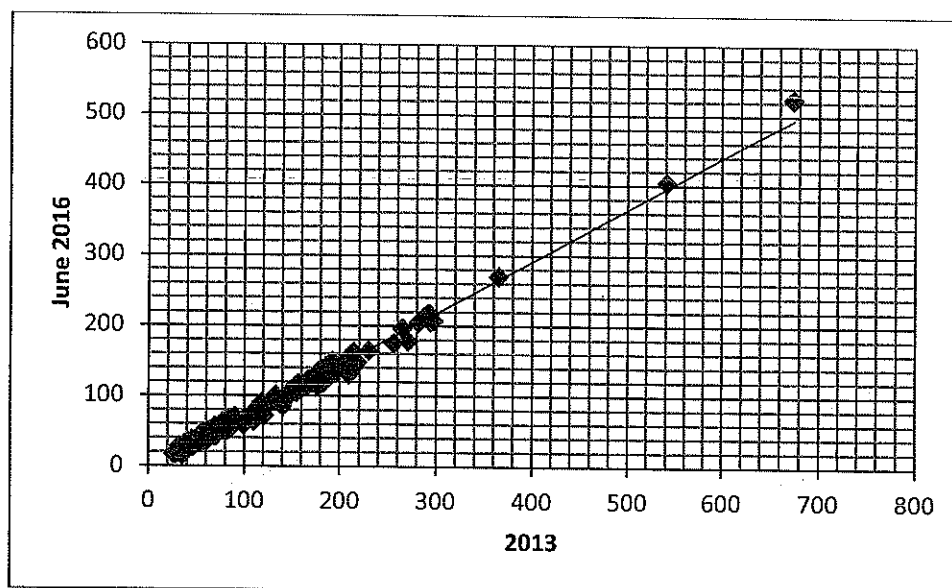


¹⁵ All of the graphs exclude the 5 stations in 2013 with more than 1000 per 100 000, in order to assist with visibility of the lower allocation areas on the graph.

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84. The same close correlation emerges when the raw numbers of police officers for 2013 are compared to the raw numbers for 2016. It is evident that there is very little change to the numbers allocated.

Figure 2: Number of police allocated for 2013 and June 2016



August 2016

85. According to Brigadier Voskuil, in August 2016 and January 2017 "stabilisation" adjustments were made to a selected number of policing areas.¹⁶ The term stabilisation suggests these adjustments are temporary, not permanent. SAPS has not suggested that any change was made to the THRR.
86. The allocations per 100 000 in August 2016 do not demonstrate any substantially new trends. The 20 stations with the lowest allocation per 100 000 in January 2017

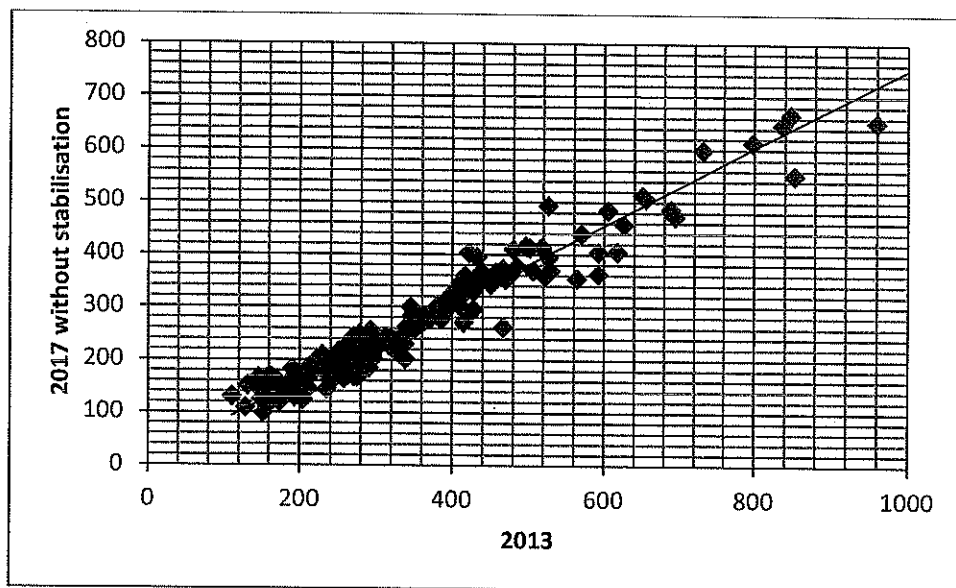
¹⁶ I have interpreted the data in PLV2 to mean that number indicated as "January 2017 minus stabilisation" must be added to the two sets of stabilisation figures (in August 2016 and January 2017) to obtain the adjusted figures for 2017.

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excluding stabilisation are as follows: Cloetesville, Lwandle, De Doorns, Strandfontein, Franschhoek, Delft, Muizenberg, Harare, Durbanville, Macassar, Grassy Park, Kensington, Great Brak River, Prince Alfred Hamlet, Nyanga, Belhar, Kraaifontein, Malmesbury, Gugulethu, Paarl East. Many of the same areas appear on the 2013 and 2016 list.

87. Plotting the August 2016 per 100 000 figures against 2013 figures shows some adjustments, but the overall trend remains the same. In particular, most areas with very low relative allocations still have very low relative allocations. Large changes mostly appear from 400 per 100 000 upward.

Figure 3: Police per 100 000 allocations for 2013 and 2017 (without stabilisation numbers)



January 2017

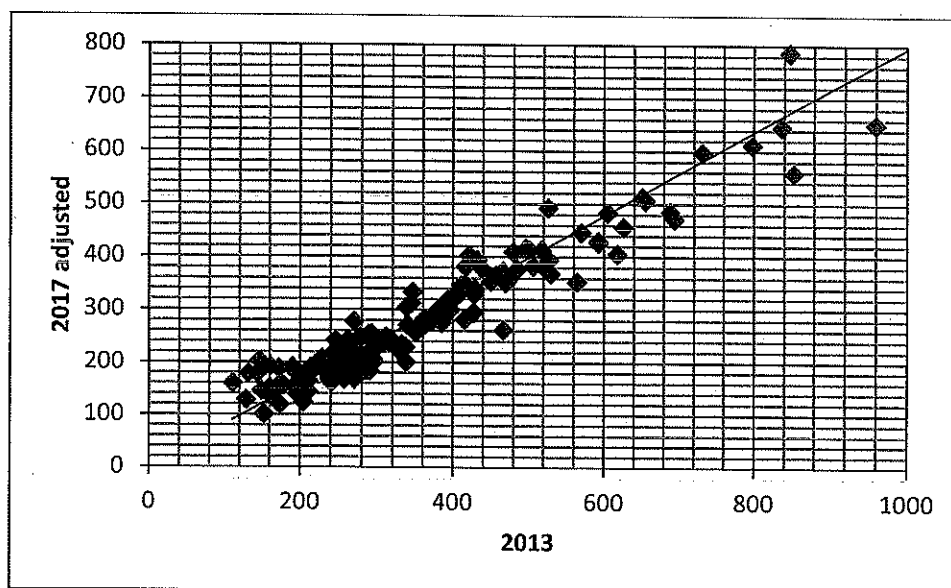
88. Using the adjusted figures for January 2017, the 20 areas with the lowest allocations are as follows: Cloetesville, De Doorns, Franschhoek, Lwandle, Strandfontein, Macassar, Durbanville, Great Brak River, Delft, Prince Alfred Hamlet, Kraaifontein, Muizenberg, Gugulethu, Grassy Park, Paarl East, Harare, Malmesbury, Brackenfell,

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Saldanha, Wellington. Both Nyanga and Khayelitsha moved out of the bottom 20; Nyanga moves up to 26th lowest and Khayelitsha to 33rd lowest. Their allocation remains at under 200 per 100 000 (albeit that these figures exclude civilian personnel).

89. Plotting the *adjusted* January 2017 per 100 000 figures against 2013 figures shows some adjustments, but the overall trend remains the same. In particular, most areas with very low relative allocations still have very low relative allocations, although there are some slight improvements. The bottom 20 areas in 2013 all had allocations under 200 per 100 000. In 2017, including the stabilisation figures, these 20 all remain under 200 per 100 000. The lowest 16 areas all have less than half the average allocation. Thus the complaint of inequality persists to date with no substantial change evident, although the marginal belated changes are welcome.

Figure 4: Police per 100 000 allocations for 2013 and 2017 (including stabilisation numbers)



Unequal Provision Exacerbated by Consistently High Murder Rates

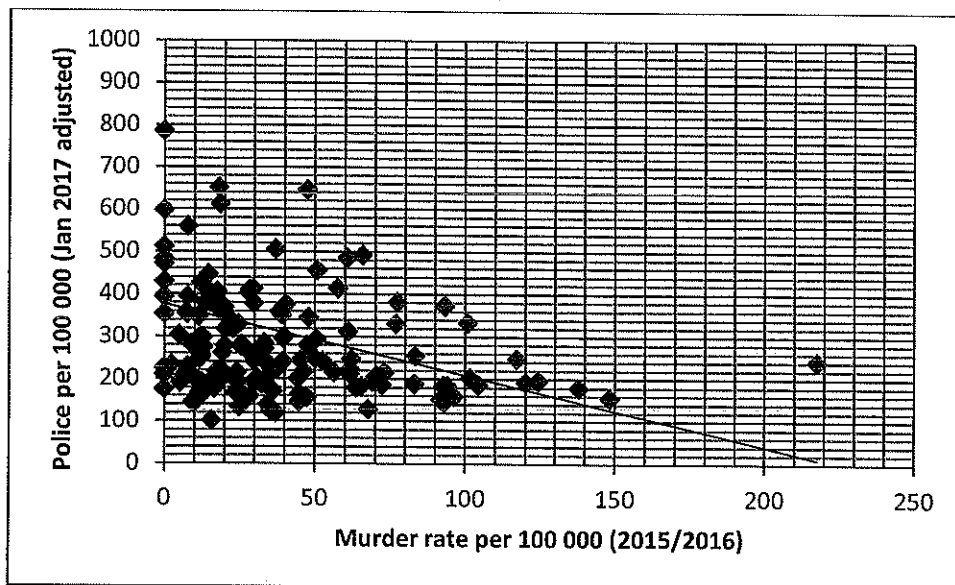
90. The four areas of Nyanga, Harare, Gugulethu and Khayelitsha accounted for 24% (790) of the 3224 murders recorded in the province in 2015/2016, according to SAPS

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data, despite the fact that only approximately 11% of the Western Cape population lives in these four areas. This means that the murder rate in these four areas is 2.5 times higher than the rest of the Western Cape. These areas consistently have low levels of police resources.

91. The overall trend does not change even with the adjusted 2017 figures. In the graph below, the murder rate per 100 000 for 2015 is plotted against the 2017 *adjusted* allocations per 100 000. As with the previous analyses, and despite the inclusion of stabilisation numbers, an inverse relationship is observed. Areas with high murder rates in 2015/2016 were allocated relatively low levels of police resources during the following year. Despite the “stabilisation” allocations, it remains the fact that higher murder rates are associated with lower rates of allocation. Indeed, all the areas with more than 120 murders per 100 000 people have allocations of fewer than 300 operational members per 100 000, despite the inclusion of stabilisation figures.

Figure 5: Murder rate in 2015/2016 compared to adjusted 2017 allocations



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92. Thus not only is there inequality on the police per 100 000 people measure (i.e. on the basis of population), but there also continues to be under-allocation in relation to the most serious of violent crimes, despite the adjustments which have occurred.

V ANALYSIS OF NATIONAL ALLOCATIONS

93. The analysis in my initial expert affidavit, and in the prior Parts of this affidavit, was based on data on the allocations made in the Western Cape. As a result of this litigation, SAPS provided the Applicants with the data on the theoretical allocations and fixed establishments for the whole country for the years 2013-2014 to 2015/16 (**SAPS resource dataset**). To the best of my knowledge, this data was not previously publicly available. This Part analyses this data.
94. I assess it under the following headings:
- 94.1. The relevant data;
 - 94.2. A national analysis; and
 - 94.3. An analysis of the data for Gauteng.

The Relevant Data

95. In order to analyse the data, the areas listed in the SAPS resource dataset were matched to police population estimates for policing areas (**police station population estimates**) and to police stations contained in the SAPS crime statistics (**SAPS crime dataset**). The dataset arising has 1141 "observations", or stations where I was able to match the human resources allocated to a station to both the population of the area, and the number of crimes committed in the area.
96. Some police stations which are reflected in the SAPS crime dataset or the police station population estimates are not reflected in the SAPS resource dataset provided by SAPS. The missing areas are:
- 96.1. Alexander Bay (NC)

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- 96.2. Augrabies (NC)
 - 96.3. Barkly West (NC)
 - 96.4. Batlharos (NC)
 - 96.5. International Airport King Shaka (KZN)
 - 96.6. Maydon Wharf (KZN)
 - 96.7. OR Tambo International Airport (G)
97. The names of 5 police station areas appeared twice in the SAPS resource dataset, the second time with the province being indicated as "NC". As these areas are manifestly not in the Northern Cape and the data for these areas is the same for both mentions of the areas (except for the "eval." columns), the second mention of the areas is omitted from the analysis. The second mentions omitted are:
- 97.1. Vosman (NC)
 - 97.2. Wakkerstroom (NC)
 - 97.3. Waterval Boven (NC)
 - 97.4. Witbank (NC)
 - 97.5. Witrivier (NC)
98. The following areas contained in the SAPS resource dataset, did not have any useful data in the SAPS resource dataset (i.e. all values were 0), could not be matched to a known policing areas in the population or crime dataset, and were therefore omitted from the analysis:
- 98.1. Vhuluadzi (L)
 - 98.2. Matlelerekeng (L)
 - 98.3. Rakgoadi (L)
 - 98.4. Phola (M)
99. One area (Scenery Park) contained in the SAPS resource dataset, could be matched in the SAPS crime dataset, but not in the police station population estimates. It was assumed that the area was previously under East London, prior to 2015, and created

out of the East London area. Therefore the figures for resources and for crime were added to those for East London.

100. One area (Muswodi) had resource data contained in the SAPS resource dataset, but could not be matched to the SAPS crime dataset, nor to the SAPS police station population estimates. It was assumed that that the area was previously under the Mutale police station, and the resource figures were added to those of Mutale.
101. The remainder of the stations referred to in the SAPS national dataset could be matched to both the police station population estimates and the SAPS crime dataset by station name, with some adjustments for spelling variation and name changes. For example, Bizana and Mbizana; Engcobo and Ngcobo; Nqamakwe (EC) Ngqamakhwe (EC).

National Analysis

102. In this section, I analyse the data nationally. I look at the following issues:
 - 102.1. The relationship between the THRR and the actual allocation;
 - 102.2. The minimum, maximum, median and 25th and 75th percentile in relation to resources;
 - 102.3. The 20 stations with the most resources, and those with the fewest resources;
 - 102.4. A comparison of under-resourced stations and murder; and
 - 102.5. A look at the stations policing the largest populations.

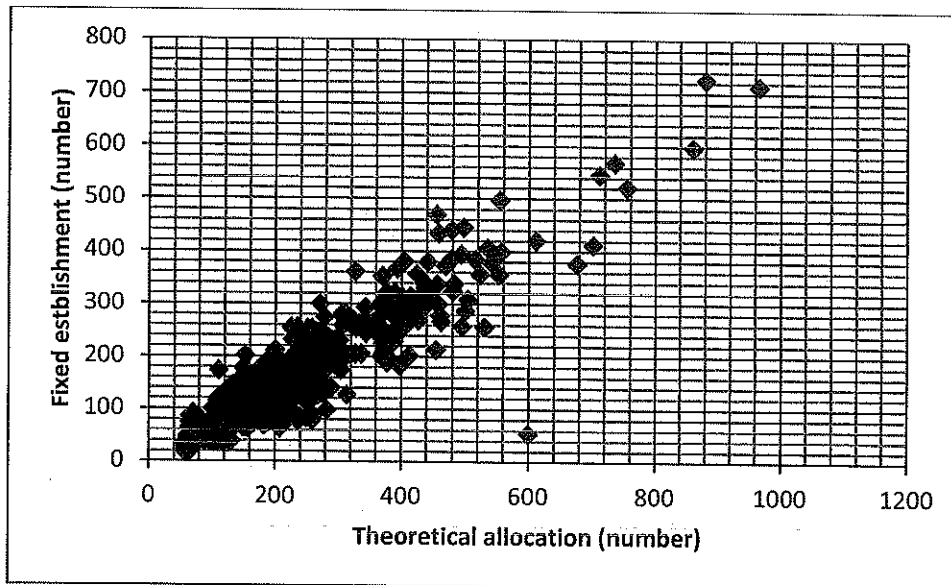
Relationship between THRR and Actual Allocation

103. The SAPS resource dataset of 1134 areas with data shows that for the country as a whole for 2015/16, the fixed establishments are on average 67.86% of the theoretical establishment.

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104. However, there is a great deal of variation in this percentage, from 158% of theoretical to 9%, with a median of 63%. Only 45 areas had 100% or more of their theoretical allocation reflected in the fixed establishment. In other words, the vast majority of police stations (96%) can claim to be under-resourced compared to the theoretical allocation. The relationship between the theoretical and fixed establishment appears below:

Figure 6: National: Theoretical compared to Fixed Establishment



105. It is unclear on what basis deviations from the theoretical allocation are made to arrive at the fixed establishment. Analysis revealed that population size is more closely related to the theoretical numbers, than to the fixed establishment. This means that the fixed establishment adjustments to the theoretical worsen inequality on a per capita basis.

Medians and other measures

106. When using figures such as these which are not "normally distributed" i.e. the upper values are very large, the average is not an appropriate statistical measure. To

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illustrate, if 9 stations have 50 people and one station has 5000, then the average is 545. This is misleading. To summarise large datasets it is preferable to order the data from smallest to largest and present the minimum, the maximum, the median (the middle figure), the 25th percentile (25% are equal to or below this number) and 75th percentile (75% are equal to or below this number), and sometimes also the 90th percentile, when the maximum is an outlier. The statistical summaries for the allocations per 100 000 for theoretical allocations and fixed establishment in 2015/16 appear below:

	Minimum	25 th	Median	75 th	90 th	Maximum
Theoretical	110	277	437	748	1283	16607
Fixed	55	177	288	495	908	7153

107. It is evident from this table that there is a great deal of variation across the county. The inequality is present for the country as a whole. Areas within the 25th percentile have at least *five times* fewer police per 100 000 than do areas in the 90+ percentile. This inequality is exacerbated by the fact that – as I show below – the least resourced areas are poor and black.

20 Worst Areas

108. Because data on poverty and race is not available at geographical levels useful for this analysis, it is necessary to rely on qualitative knowledge of the areas to determine the nature of the areas suffering from lowest level of resourcing nationally.
109. The 20 areas with the lowest allocation per 100 000 in terms of fixed establishment allocation in the country in 2015/16 appear below, ranging from 56 per 100 000 in Flagstaff, are:

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Station	Allocation per 100 000	Murder rate per 100 000	Murder expressed as % of total crime
Flagstaff (EC)	56	49	5.02%
Mbizana (EC)	65	52	3.71%
Mondlo (KZN)	70	29	1.85%
Gilead	71	13	1.46%
Kwamakhutha	72	50	2.87%
Mashashane (L)	73	7	1.44%
Ndwedwe (KZN)	74	22	2.35%
Libode	76	57	4.91%
Lusikisiki (EC)	76	50	4.48%
Senwabarwana (L)	77	8	1.07%
Ngqeleni (EC)	78	39	4.05%
Emanguzi (KZN)	78	15	1.84%
Kwaaiman (EC)	79	28	4.36%
Diepsloot (G)	80	43	1.96%
Nsuze (KZN)	80	31	4.19%
Matlala	82	12	1.18%
Taylor's Halt (KZN)	82	25	2.29%
Mamelodi East (G)	84	23	1.42%
Nebo (L)	85	16	1.59%
Sebayeng (L)	85	6	0.75%

110. The lowest allocations are however clearly made to areas in which people who are poor and black live. In addition, 7 have higher than average murder rates. The average national murder rate is 34 per 100 000 in 2015/16.

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111. Flagstaff in the Eastern Cape has the lowest fixed establishment allocation in the country in 2015/2016. It has an allocation of only 55 police per 100 000 people. Over the last four years, the average number of murders recorded in Flagstaff was 57, while only 75 police were allocated to the area, despite the theoretical allocation calling for 215 posts. To have the median allocation of 288 per 100 000, Flagstaff would need 389 posts, and increase of 425% from the fixed establishment.
112. The area with the second lowest fixed establishment allocation with only 65 per 100 000 fixed establishment is Mbizana (Bizana), also in the Eastern Cape. Over the last four years, there has been an average of 63 murders per year. Yet only 75 police were allocated to the area, despite the theoretical allocation calling for 209 posts. To have the median allocation, Bizana would need 331 posts, an increase of 409% from the fixed establishment.
113. The 20 areas with the highest allocations per 100 000 are all areas with an estimated population of fewer than 2 500 people. This means that even with a fixed establishment of only 25 people, such areas would have a ratio of 1000 per 100 000. This is presumably attributable to the fact that a minimum number of police is necessary to provide a 24-hour service.

Under-resourcing and murder

114. Some but not all of these areas have high murder rates. Counted together, these 20 areas account for 4% (733) of all murders in the country, and account for 4% of the population in the country. But in terms of the fixed establishment, those stations were allocated only 1.3% of the police in the country. In other words, they would need on average three times as many police officers to equal the fixed establishment allocation suggested by both their population and the number of murders. All of these areas have populations which are mostly comprised of people who are poor and black.
115. As discussed earlier, a high murder to total crime ratio, is suggestive of under-reported crime. The greater the number of murders compared to the total number of crimes,

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the higher the extent of under-reporting. Across the whole country, the murder-to-total crime ratio (averaged over 4 years) ranges from 10% (1 in every 10 reported crimes is a murder) to some 16 areas with no murders. The median is 0.96%. In other words, in half the police stations almost 1 of every 100 crimes is a murder. The 75th percentile is 1.69% – which means that one quarter of the police stations experience at least 1.69 murders for every 100 crimes. Thus areas with 2% or more of their crime being murders (i.e. 1 in every 50 reported crimes is a murder) may be considered to have high murder percentages and, therefore, probably a high degree of under-reporting.

116. More than half of the 20 least-resourced areas listed above have more than 2% murder-to-total crime ratio. Indeed 6 of the 20 areas have more than 4% (more than 1 in 25 crimes is a murder). They are in the 96th percentile. Despite having some of the highest murder rates, they are the least resourced. This demonstrates again that the national allocations fail adequately to take into account the seriousness of murder, and to take into account under-reporting.
117. If we look at the areas nationally with the highest total number of murders (average over the last four years), the pattern is the same. There are 19 areas with 80 or more murders per year. These areas combined have 14% of murders but only 5% of resources. Indeed, they only have on average 2.5 police for every murder committed in a year.

Area	Number of Murders	Number of Police
Nyanga	275	325
Inanda	168	421
Khayelitsha	155	318
Harare	148	239
Umlazi	142	413

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Gugulethu	141	226
Delft	127	258
Kwamashu E	117	255
Kraaifontein	117	288
Mitchells Plain	113	569
Mfuleni	110	265
Mthatha	107	270
Lusikisiki	101	154
New Brighton	96	215
Plessislaer	94	278
Ivory Park	83	300
Roodepoort	83	367
Tembisa	81	400
Kwazakele	80	281
TOTAL	2338	5842

118. 14% of all murders are committed in these areas, yet only 6.4% of the total reported crimes. That suggests significant under-reporting of crime. More importantly, these areas together serve 7% of the population but they have been allocated only 4.9% of the total police resources (5842 police). To have the median national allocation of resources of 288 per 100 000, they would need 10 426 police, an additional 78%.
119. Again, these areas tend to be large, poor and it is mostly black people who live in these areas.

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Stations with largest populations

120. Another way to think about the problem is to look at the stations that police the biggest populations. There are 21 policing areas serving populations of 200 000 or more people. All of those stations have low allocations per 100 000. The highest allocation amongst these areas is 188 per 100 000 in Orange Farm (which is amongst the lowest in Gauteng), and the lowest 76 per 100 000 in Lusikisiki. The vast majority of these areas are either large urban townships, or large rural areas where black people live. All are characterised by poverty. The stations are:

Station	Population	Allocation (Number of police)	Allocation per 100 000
Inanda	325 565	421	129
Thohoyandou	299 410	470	157
Umlazi	294 451	413	140
Ivory Park	277 053	300	108
Tembisa	276 367	400	145
Plessislaer	260 995	278	107
Mamelodi East	260 784	219	84
Temba	240 228	373	155
Moroka	238 354	441	185
Tonga	236 740	267	113
Dobsonville	234 877	304	129
Giyani	229 602	353	154
Honeydew	220 840	356	161
Rietgat	219 571	211	96
Evaton	210 760	273	130

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Tsakane	210 375	235	112
Orange Farms	210 174	299	142
Phoenix	204 430	385	188
Vosman	202 606	226	112
Lusikisiki	202 472	154	76
Nyanga	202 332	325	161

121. Although these stations serve 9.4% (5.06 million) of the country's population, they have been allocated only 5.6% of the fixed establishment (6 703 police officers). To have the median allocation they would need 14 567 police officers, more than double the current number.

Gauteng

122. In addition to the national analysis, I have conducted an analysis of the Gauteng allocations. I chose Gauteng because it has a similar profile to the Western Cape, and particularly to Cape Town. It has large, poor, black, townships and informal settlements.

123. I look first at the theoretical allocation in Gauteng, then the actual allocation in Gauteng,

Theoretical Allocation

124. In Gauteng, the theoretical allocations show that the following **20 stations have the lowest number** of police officers per 100 000 people, ranging from 110 police per 100 000 people in Tembisa South:

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Station	Allocation per 100 000
Tembisa South	110
Akasia	130
Rietgat	133
Tsakane	142
Mamelodi East	144
Zonkizizwe	148
Vosloorus	151
Naledi	155
Mondeor	156
Evaton	162
Rabie Ridge	163
Ivory Park	165
Dobsonville	165
Katlehong North	167
Etwatwa	171
Diepsloot	174
Orange Farms	174
Olievenhoutbosch	192
Protea Glen	194
Temba	195

125. As in the Western Cape, the majority of the areas with the lowest theoretical allocation in Gauteng are township areas, largely populated by persons who are black and poor. This demonstrates that the THRR, which guides the theoretical allocations, has a negative impact on the grounds of both race and class. Put simply, the THRR allocates the fewest number of police officers by population to poor, black areas.

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Fixed Establishment

126. An analysis of the fixed establishment relative allocations shows the following 20 stations in Gauteng have the lowest fixed establishment allocation per 100 000:

Station	Actual Allocation per 100 000
Diepsloot	80
Mamelodi East	84
Rietgat	96
Ivory Park	108
Tsakane	112
Akasia	116
Zonkizizwe	117
Etwatwa	119
Tembisa South	122
Katlehong North	123
Dobsonville	129
Evaton	130
Rabie Ridge	131
Olievenhoutbosch	135
Orange Farms	142
Atteridgeville	144
Tembisa	145
Mondeor	145
Dawn Park	152
Ratanda	153

127. Of these 20 stations, the lowest relative allocation is 80 per 100 000 in Diepsloot. Diepsloot is notorious for its level of both deprivation and crime, yet it had the lowest fixed establishment of any area in Gauteng; with an estimated population of over 143 391, it has a fixed establishment of only 114 people.
128. In a chilling echo of the Western Cape, the lowest four fixed establishment allocations are in the four areas which account for 24% of the murder occurring in Gauteng, even though only 7% of the population lives in these four areas. The four areas have only 3% (368 police) of the police allocated to police stations in Gauteng in terms of the fixed establishment. To have the median fixed establishment, i.e. 288 per 100 000, these areas would need 2 594 police, almost 7 times as many as they currently have.
129. The above analysis demonstrates that Gauteng exhibits similar trends in terms of inequality of police service provision within the province as the Western Cape, with areas which are poor and black, and with high levels of serious violent crime such as murder, being less resourced. The same reasons for this previously theorised are likely to apply.

Conclusion

130. The national analysis therefore affirms what was found for the Western Cape. In urban provinces like Gauteng and the Western Cape, the most under-resourced areas are urban townships in which mostly poor, black people live.
131. When the whole country is considered, it is also deep rural and poor areas, frequently former homeland areas, which are the least resourced. Murder is under-prioritised and under-reporting not taken into account. Indeed, even on the basis of total reported crime, poor black areas do not receive a commensurate allocation with other areas.

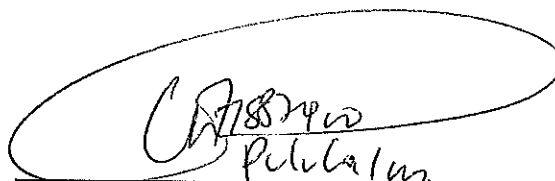
- 132. The analysis shows that there are serious concerns with the outcomes of the resource allocation process. While the THRR is flawed, the actual allocations in terms of the fixed establishment seem to be even more flawed. No explanation is offered for the adjustments.
- 133. What is of further concern is that the fixed establishment deals only with the approximately 119 000 police officers allocated to police stations. SAPS employs close to 195 000 people. Given the concerns evident in the allocations to police stations, the question of whether that primary distribution is unjust, also arises.


JEAN FRANÇOISE REDPATH

Claremont

THUS SIGNED AND SWORN TO at ~~CAPE TOWN~~ on this 18 day of JUNE 2017 the deponent having acknowledged that the deponent knows and understands the contents of this affidavit, that the deponent has no objection to taking the prescribed oath, that the oath which the deponent has taken in respect thereof is binding on the deponent's conscience, and that the contents of this affidavit are both true and correct.

SUID-AFRIKAANSE POLISIEDIENERS
STASIEKOMMISSARIS
18 JUN 2017
STATION COMMISSIONER
CLAREMONT K.P/C.P
SOUTH AFRICAN POLICE SERVICE


COMMISSIONER OF OATHS