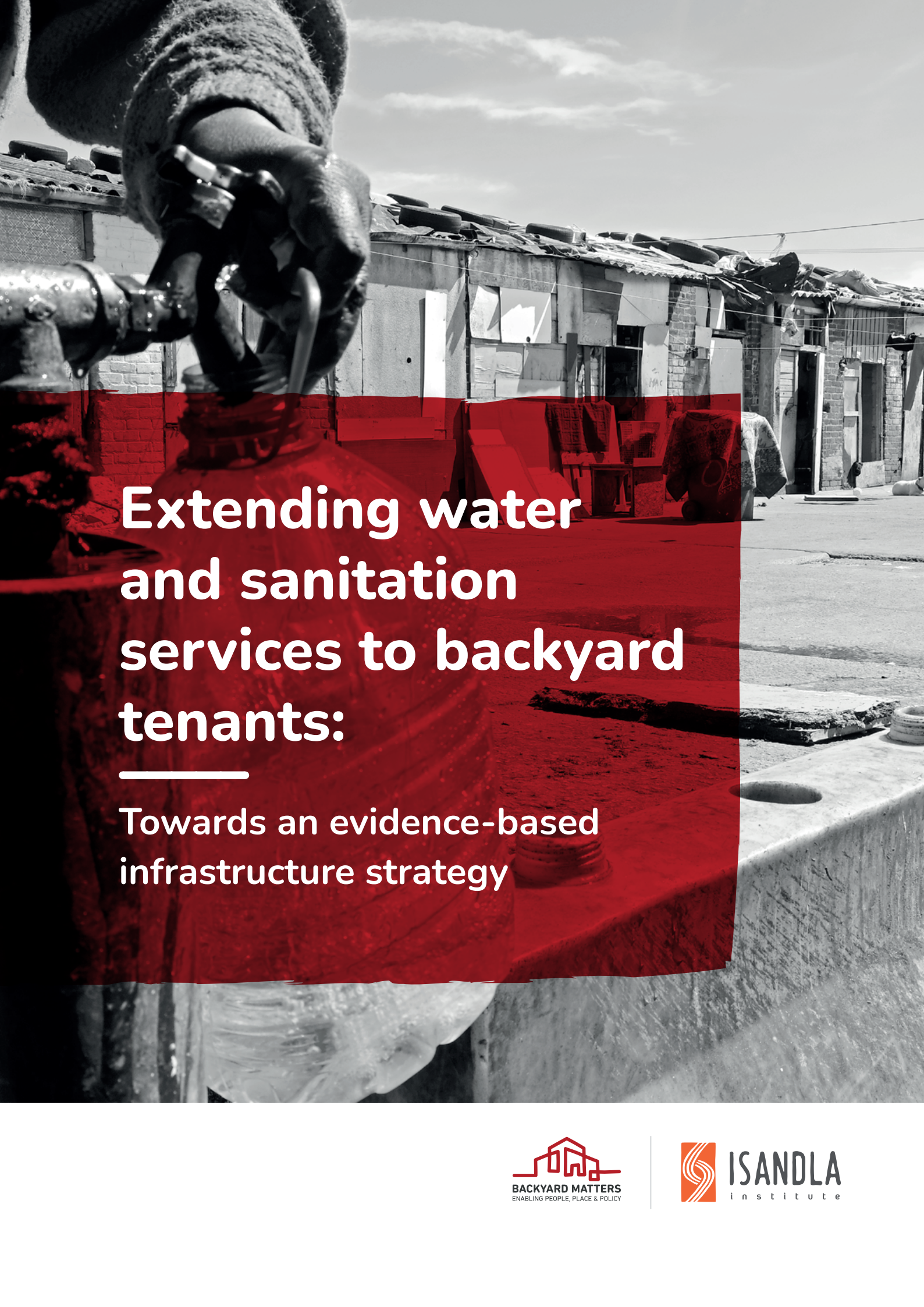




Extending water and sanitation services to backyard tenants:

Towards an evidence-based
infrastructure strategy

Acknowledgements

Backyard Matters is a partnership initiative between Development Action Group (DAG) and Isandla Institute. The project is aimed at strengthening the backyard rental market and contributing towards well-managed, quality rental stock that provides affordable, dignified and safe housing solutions. Backyard Matters is funded by Comic Relief.

Words: Lee Middleton

Cover image: Isandla Institute/Eric Miller: Salt River.

Isandla Institute

Email: admin@isandla.org.za

www.isandla.org.za

The problem

“I conducted my first site visit as Mayor in Khayelitsha today,” tweeted the City of Cape Town’s new mayor, Geordin Hill-Lewis, pictured on day one on the job, acquainting himself with sewerage faults in the Cape Flats.

From communities assaulted by [ever-present sewage spillages](#), to disturbing [e-coli readings](#) in Cape Town vleis to the [closure of beloved beaches](#), the systemic failures of the City’s water and sanitation infrastructure are becoming increasingly visible¹. The problems stem from [years of underinvestment](#)² in [capital infrastructure](#) upgrades and maintenance³, coupled with explosive population growth. While the former is not unique to Cape Town, the city’s growth rate is the country’s second highest⁴. Within that [demographic swell](#)⁵, so-called informal households constitute a largely unquantified but incontrovertibly significant proportion⁶.

Although reliable statistics are elusive, 18.6%⁷ of Cape Town’s households are estimated to live in “informal housing”, a label whose seeming simplicity obscures the tremendous diversity of typologies and locations it encompasses. Included in this broad category is “backyard housing”.

Simply put, a backyard dwelling is one constructed in the space available around an existing dwelling. Given its flexibility and scope, backyard housing is both a critical source of affordable housing in urban South Africa and one of the country’s purportedly fastest-growing⁸ yet least understood housing markets (See Text Box 1: What is backyard housing?).

Backyard housing is both a critical source of affordable housing in urban South Africa and one of the country’s purportedly fastest-growing yet least understood housing markets.



Isandla Institute/Shawn Swingler: Khayelitsha.

- ¹ See: <https://www.groundup.org.za/article/victoria-mxenge-residents-dream-christmas-without-stench-raw-sewage/> & <https://www.groundup.org.za/article/pollution-cape-towns-vleis-remains-high/> & <https://www.iol.co.za/capeargus/news/camps-bay-beaches-reopen-after-sewage-problem-370f91ad-4e0d-40c9-8ce3-bcdda1aa70ee>
- ² <https://www.groundup.org.za/article/cape-town-sewage-woes-massive-infrastructure-spend-alone-wont-fix-problem/>
- ³ https://www.fcc.co.za/_files/ugd/b8806a_3dc9f789d2eb40b09f8b96e532f14bc1.pdf
- ⁴ From 1996 to 2016 Cape Town’s population increased by 56%, with an increase of 94% of households (Stats SA Census 1996, and Stats SA Community Survey 2016).
- ⁵ <http://www.statssa.gov.za/publications/P0302/P03022021.pdf>
- ⁶ The 2020 Human Settlements Strategy provides the most recent figures, estimating the number of households in informal dwellings in Cape Town at “over 270 000”, and indicating that by 2028 over 500 000 households in Cape Town will require additional housing (CoCT 2021b).
- ⁷ (Stats SA, 2020 General Household Survey). This percentage is not accompanied by a total number, pointing to the larger problem of data accuracy, which plagues meaningful analyses of informality and housing needs. Also, this figure—already probably on the low side—has also almost certainly increased in the pandemic.
- ⁸ While limited reliable data exist as to how many of the informal dwellings are comprised of backyard dwellings, Stats SA’s Community Survey 2016 suggests that at least 33% of informal dwellings could be located in backyards.

What is backyard housing?

Originating in response to apartheid-era laws intended to restrict the number of black people in South Africa's cities, so-called “backyarding” began as an individual household response to the need for accommodation under a repressive state. Informal shacks used to constitute its main typology, imbuing the practice with connotations of the informal and illegal.

Over the years, the practice split into what can now be categorized as three forms:

- **Subsistence landlord:** usually RDP/ BNG beneficiaries, these landlords rent the space around their home for informal structures, with income generated going to basic household needs.
- **Homeowner landlord:** diversifying and upgrading the backyard market, these landlords are building brick and mortar units that generally offer safer and more dignified accommodation to tenants, with income supplementing basic requirements.
- **Entrepreneurial or micro-developer landlord:** the newest typology, these are developers, buying plots and demolishing the existing structure to build a block of units, increasingly with their own bathrooms and kitchenettes.

Despite the fact that the backyard housing market has evolved to encompass numerous types and forms—according to a recent CoCT study, some 40% of backyard additions are believed to be formal brick and mortar structures—perceptions of backyard housing, especially outside of townships, remain largely negative.

(Sources: Scheba, A. & Turok, I. 2020; DAG 2021a, 2021b, 2021c; CoCT 2020)

A general lack of data hinders rational assessments of—and therefore interventions to address—the sector’s impact on existing or future infrastructural capacity.

In September 2020, the City of Cape Town (CoCT) [acknowledged the sector’s importance](#)⁹ in filling the affordable housing gap, pledging support through various proposals that share the objective of easing the cost and complexities of building and land-use regulatory compliance, in the hopes of incentivizing backyard developers to register their activities.

However, a long history of ignoring (or aiming to eradicate) backyard housing—and a concomitant lack of policies that speak to its realities or government grants that could assist its growth—leave municipal officials ill-equipped to understand much less reshape enabling regulations.

Underlying efforts to entice backyard developers into complying with the City’s formal regulatory systems is concern over the pressure that backyard residents are perceived to be putting on the City’s already overburdened infrastructure, particularly its water and sanitation systems¹⁰. But a general lack of data hinders rational assessments of—and therefore interventions to address—the sector’s impact on existing or future infrastructural capacity.

Attempting to move this matter forward, the Backyard Matters Project (a collaboration between Isandla Institute and the Development Action Group) commissioned a strategic assessment of the impact of backyard housing on water and sanitation infrastructure in the City of Cape Town (see Text Box 2: Key findings from the engineering assessment of backyard housing impact on infrastructure). Having presented the assessment’s baseline findings to local government officials, urban planners, and engineers, this report synthesizes key challenges and recommendations raised by those experts in an effort to facilitate a more nuanced dialogue around the infrastructure and backyard housing nexus.

⁹ <https://www.dailymaverick.co.za/article/2020-10-29-cape-town-city-council-approves-game-changer-report-that-could-help-solve-housing-backlog/>

¹⁰ The efforts to encourage regulatory compliance are not only due to pressures (real and perceived) on infrastructure, but also relate to valid concerns around building and fire safety, infringement on surrounding properties (e.g., property boundaries), and land uses that may negatively affect surrounding properties (e.g., shebeens or car repair in residential areas).

Key findings from the engineering assessment of backyard housing impact on infrastructure

Seeking insight into how the sector functions, and how its provision of affordable, dignified housing for working class and poor households could be strengthened, the Backyard Matters project team highlighted the need to better understand the connection between backyard housing and water and sanitation infrastructure capacity. In response, Isandla Institute commissioned an engineering report to provide evidence of how multiple dwellings on one erf may affect infrastructure capacity, and, ideally, to estimate rough costs around capacity upgrades if deemed necessary. The engineering report focused on the eight Cape Town neighbourhoods (Eersterivier, Lost City, Freedom Park, Ilitha Park, Manenberg, Lotus Park, Maitland Garden Village, and Kensington) where the Backyard Matters project conducted fieldwork in 2020.

The report's key findings include:

1. Water and sanitation infrastructure services cannot be viewed in isolation in their micro suburb context. The infrastructure in a suburb is a mini system within larger systems of ever-increasing scale, affecting infrastructure upstream of the suburb (as in the case of water), or downstream (as in the case of sanitation) (See Figures 1 and 2)
2. Accurately estimating the current capacities of water and sanitation systems within the teight sample areas with any degree of certainty is not feasible without engaging in a comprehensive engineering analysis with the City.
3. However, using the 2018 Medium Term Infrastructure Investment Framework's (MTIIF) graphic representations as a proxy, the study found only one area (Eersterivier) associated with spare/adequate water *and* sanitation capacity in 2018. The remaining seven areas, while apparently having spare/adequate water capacity, all demonstrated inadequate sanitation capacity, meaning any additional demand would overstress an already stressed sanitation system in these seven areas.
4. While the water network running out of capacity means the system cannot deliver demand, emergency water can be provided (via tankers, etc.), though this comes with financial, social, and health costs. A waterborne sanitation network running out of capacity, however, is a dire scenario, involving untreated sewerage discharging first in the local community and then downstream into the riverine system, affecting all downstream communities and environmental systems. The health, environmental, social, and cost impacts of sanitation systems failing are therefore generally much higher than water system failure, and substantially more difficult to overcome once they occur.
5. Informal backyard dwellings are 10 times more likely to have theoretical access to basic water and sanitation services than other informal dwellings, but actual access, affordability and fairness are not guaranteed.
6. The lack of comprehensive engineering data to determine more accurate capacity constraints made it impossible to arrive at useful costing calculations.

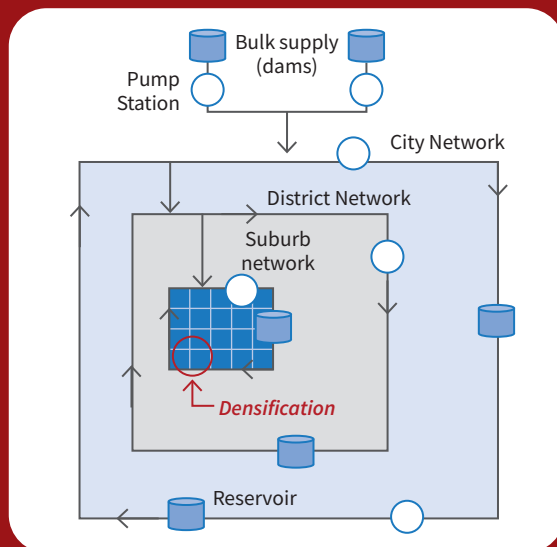


Figure 1: Schematic view of water systems within systems

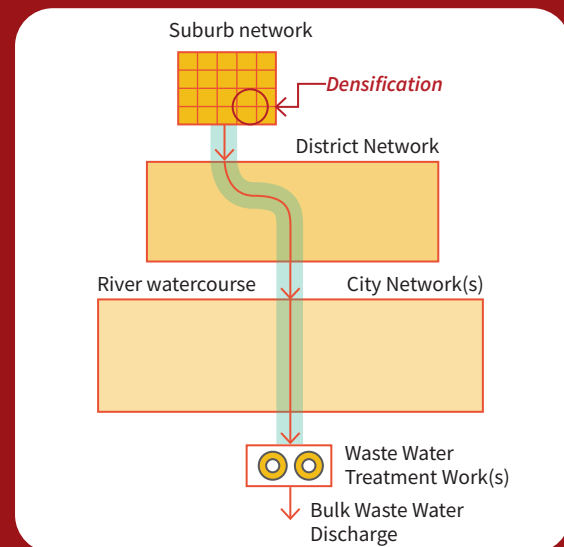


Figure 2: Schematic view of sanitation systems within systems

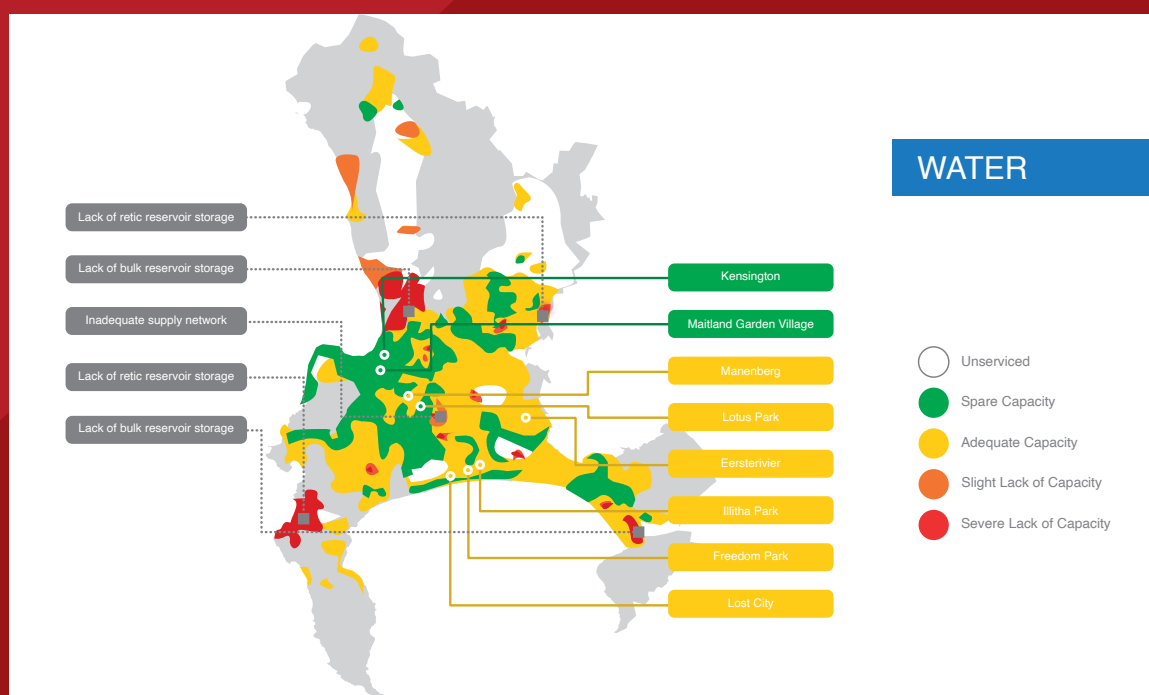


Figure 3: Infrastructure capacities associated with water (2018) and approximate position of the study sample areas (Adapted from City of Cape Town, 2018)

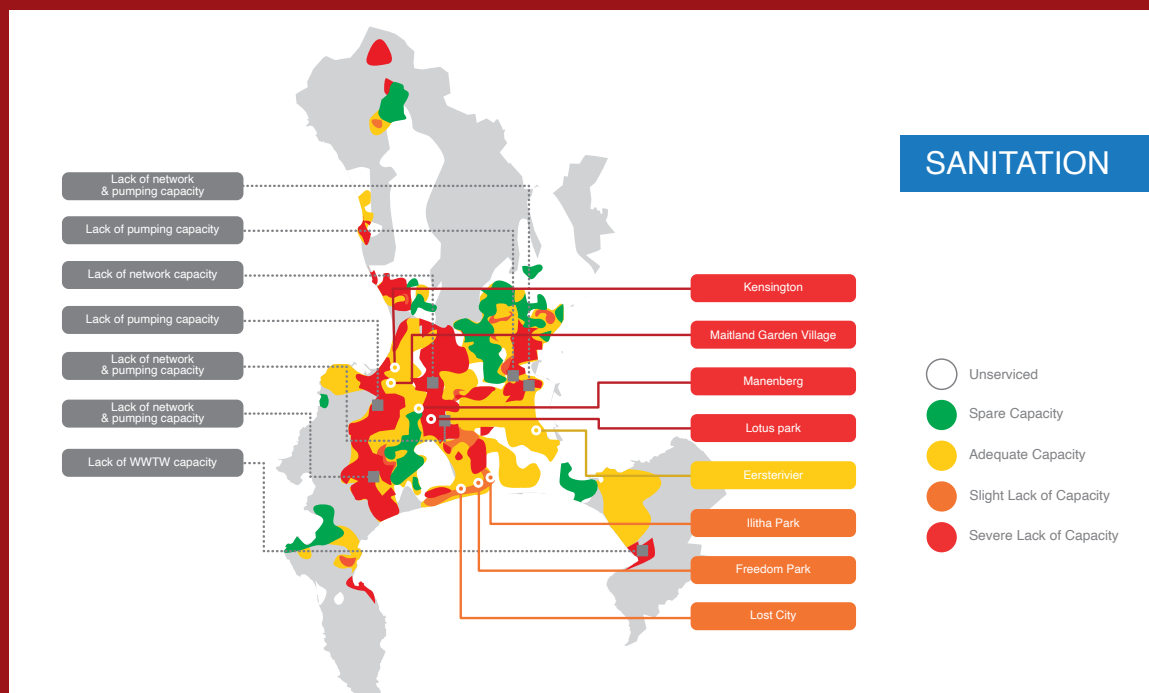


Figure 4: Infrastructure capacities associated with sanitation (2018) and approximate position of the study sample areas (Source: Adapted from City of Cape Town, 2018)

The findings

In the hottest February in recent memory, Capetonians seeking relief were met with signs forbidding entrance to several of the City's Atlantic Seaboard beaches. Although the faulty pump responsible was repaired within a day, and pathogen levels deemed safe within five, the resultant outpouring of raw sewage on a Blue Flag beach illustrated a top-line conclusion highlighted by the Backyard Matters research (see Text Box 2: Key findings from the engineering assessment of backyard housing impact on infrastructure). That is, water and sanitation infrastructure is a systems-level issue, and lack of sanitation capacity is resulting in spills everywhere—from wealthier suburbs like Camps Bay, to those where backyard housing is most prevalent. In other words, there is no evidence that backyard housing is the reason for sanitation capacity problems.

Water and sanitation infrastructure is a systems-level issue.

Meanwhile, although water network capacity in all eight areas under investigation was found “adequate/spare”, sanitation capacity in seven of the eight was deemed inadequate. The primary cause for this alarming shortfall was “lack of pumping capacity or lack of network and pumping capacity”¹¹—a deficit that will require “significant infrastructure investment and time” to resolve.

All of this said, the reality is that the City's infrastructure capacities and/or limitations—whether network-wide or in the eight areas under investigation—cannot meaningfully be analysed without the City making available its own comprehensive engineering data. The larger point here is not to pressure the City to release technical infrastructure master plans to the public¹², but rather to underscore the need for cooperation and “broader transparency around service provision budgeting” in solving these issues, as Jens Horber, Urban Land Project Officer at Isandla Institute, said.

Turning to solutions, we arrive at the technical considerations around and barriers to extending infrastructure capacity (i.e., providing connections to the mains infrastructure) in areas undergoing intensive backyard housing development. The first obstructions are very much physical in nature.

“Very often those existing sewers [that would need upgrading to facilitate additional backyard dwellings] are midblock. Physically, you can't get machines in, there's just no space to work,” explained civil engineer, Pierre Storey, speaking to difficulties around retrofitting pipes within populated, developed areas where backyard housing is prevalent. In addition, feeder mains in most areas, including those under investigation, usually lie along road reserves of what are often “very busy roads ... that are fairly cluttered with other services,” Storey added.

These issues came up in 2013/14, when the City launched the pilot of its “[Backyarder Programme](#)”¹³. Still operating today with an annual budget of ZAR 15-20m, the Programme seeks to improve water and sanitation services for backyard tenants [residing on City-owned property](#)¹⁴ (e.g., public housing such as rental units and hostels).

Although initially making a “big impact”¹⁵ in areas with easy access, progress slowed as the Programme entered higher-density areas. There, engineering teams encountered the ‘access problems’ Storey cites, as well as actual structures built literally on top of water and sanitation infrastructure.

¹¹ <https://www.groundup.org.za/article/cape-town-sewage-woes-massive-infrastructure-spend-alone-wont-fix-problem/>

¹² *Infrastructural masterplans are generally not something municipalities make available to the public, although they are sometimes made available to engineers working on private developments. Officials may have concerns around releasing information on locations with additional capacity or where infrastructure upgrades are earmarked as this could stimulate greater demand, land invasions, etc.*

¹³ <https://www.da.org.za/government/undefined/2019/08/city-of-cape-town-first-metro-to-introduce-city-backyarder-services>

¹⁴ <https://www.capetown.gov.za/Media-and-news/Only%20one%20in%20three%20backyarders%20are%20registered%20on%20Housing%20Database>

¹⁵ (Riana Pretorius, 2021 personal communication)

Encroachments must then be understood in relation to a very real housing crisis coupled with the City's historic emphasis on law enforcement versus pro-poor assistance in complying with bylaws.

"It's a physical, urban management issue, where the infrastructure and servitudes were not respected or monitored properly," noted CoCT Director of Informal Settlements, Riana Pretorius, whose mention of "monitoring" speaks to the fact that the precise location of property lines and servitudes is often unknown to residents. Encroachments must then be understood in relation to a very real housing crisis coupled with the City's historic emphasis on law enforcement versus pro-poor assistance in complying with bylaws.

That said, the challenge for engineers who "have to first find the infrastructure before they can maintain or refurbish it", as Pretorius points out, is also all too material.

Given the physical barriers to extending water and sanitation infrastructure in areas undergoing intensive backyard housing development, Storey, like many others, including CoCT Water and Waste: Informal Settlements & Basic Services Branch manager, Ziboneni Godongwana, advocated for serious investigations into alternative technologies that can be implemented at scale.

Also made evident in the City's Backyarder Programme roll-out were various **social** and **legal** challenges. "The areas we work in are very volatile—a lot of gangsterism, shooting, vandalism," said Pretorius, to which catalogue of difficulties she added "poor uptake around post-installation ownership".

This latter point echoes one the City frequently raises in discussions around Cape Town's sewage problems, [placing the blame](#)¹⁶ for blockages on low-income residents dumping objects into drains not built for such purposes. While this may indeed be a real issue, there is no certainty around the degree to which this behaviour contributes to overall strain on the system. Furthermore, it deflects from a more holistic and honest debate about municipal responsibility for providing adequate solid waste removal services in those neighbourhoods.

Returning to the Backyarder Programme's understandable ambivalence around taking responsibility for operations and maintenance of services provided, another paradoxical socio-economic issue has been raised by landlords¹⁷: that of whether the property owner actually wants the services offered.

"The margin on rentals in these places isn't that high, so many landlords are surviving on the income generated from service charges," explained Adi Kumar, former director of the Development Action Group (DAG), about why some backyard landlords might not want services extended to their tenants. "So that's a question that needs to be resolved: if people get direct services from the City, and they pay directly, then what happens to the landlord?"

This question of what the City can and can't do on private property links to the City's larger claim of a "grey area" around the legality of installing services on private property—the reason the City has given for not extending the Backyarder Programme beyond municipal-owned properties.

¹⁶ <https://www.groundup.org.za/article/dont-blame-people-informal-settlements-cape-towns-polluted-vleis-says-expert/>

¹⁷ The City's Backyarders' Programme was halted in 2018 due to challenges related to resistance to the installation of backyarder services because of the impact on rental income (CoCT 2020b).

As municipalities are legally mandated to provide basic services to all citizens, the Backyard Matters project sought a legal opinion¹⁸ to clarify “the power, authority, and obligations of municipalities to provide services to backyard residents living on private land”. While the opinion clearly stated that there was no legal impediment to the City fulfilling this responsibility (See Text Box 3: Legal opinion on service provision to backyard residents living on private land & Text Box 4: Delineation of responsibility), the administrative practicalities and cost of rolling out this level of support are significant.

“It’s not easy to implement,” acknowledged Kumar, who added that the solution should be one of cooperation rather than litigation; that is, engaging in conversations with the City to determine what the enabling factors are that would allow people to have better services in backyard structures. “That’s the real point.”

Legal opinion on service provision to backyard residents living on private land

The CoCT’s Backyarder Programme has so far been rolled out on city-owned properties, where, as per its constitutional mandate, it is legally obliged to provide access to water and sanitation and other key municipal services. However, the Programme was not undertaken on private property, a decision largely explained by lack of clarity around whether or not it was legally allowed to “enter a private property and provide that same access to taps and toilets,” as Riana Pretorius noted. There is also the perennial concern about whether providing services and thus ‘enhancing the value’ of private property goes against the strict financial regulation that municipalities must abide by.

In response to this, Isandla Institute commissioned a legal opinion on the matter, which concluded there was no legal impediment and that municipalities have a constitutional duty to provide basic services such as water and sanitation to all members of the municipal community, including and emphasising the most vulnerable.

While the legal basis for action may exist, the scope of the opinion was not to explore the detailed intricacies of responsibility for the operations and maintenance of that infrastructure, or other associated risks and liability. Here, too, questions around landlords’ desire to have services installed are raised.

Although such questions do not detract from the clear constitutional obligations to ensure that these services are accessible to all occupiers including backyard residents, exploring solutions to the issues raised, and their implications, represents a future area of work.

(Source: Isandla Institute, 2021a)

¹⁸ Isandla Institute (2021a). *Legal opinion on service provision to backyard residents living on private land* – provided by Adv. Geoff Budlender SC. Available at: https://isandla.org.za/en/resources/item/download/244_4e9c0176c8666ba24fd88d2386d4f7f0

There's a mindset around urbanization and informal growth as a burden, something cities grudgingly deal with.

A moving target: Densification

Having discussed area-specific challenges to infrastructure expansion, we turn to the systems-level limitation: pumping and network capacity at the City's various wastewater treatment works (WWTWs). The subject of numerous [recent media articles](#)¹⁹, the City is taking action on its failing WWTWs.

While its September 2021 announcement of major investment²⁰ is encouraging, questions remain around how the City will handle capacity shortfalls in the meantime, and how to ensure that investments will better align with where densification—especially in the form of backyard housing—is happening.

Although the CoCT's spatial planning and development frameworks²¹ have employed various strategies to prioritize densification since 2012²², broader inadequacies around national census data²³, provincial and local government data-gathering, and the City's historic reluctance to respond appropriately to informal growth (including backyard housing) have limited its ability to take an evidence-based approach to strategically plan for and around real-time densification. This is evident in that the City's current Municipal Spatial Development Framework and District Plans do not explicitly acknowledge or respond to the organic densification that has been happening in many lower income areas of the city.

"In my opinion, nowhere in the country is there an accurate understanding of urbanization or household growth," noted Isandla Institute's Horber, explaining that this deficiency is partly one of data shortfalls, but also is connected to the lack of an integrated national-scale approach to spatial planning, migration, and the issues driving urbanization.

"There's a mindset around urbanization and informal growth as a burden, something cities grudgingly deal with," added Horber, who connects infrastructure shortfalls with the need for a proactive, holistic, and evidence-based approach to questions of migration, urbanization, and informality from all levels of government.

¹⁹ <https://ccij.io/article/cpt-effluent-crisis/> & <https://www.iol.co.za/weekend-argus/news/the-big-stink-around-cape-towns-waterways-a05e92ec-b5d7-4f9a-8269-06169d4d4604> & <https://www.groundup.org.za/article/a-challenge-to-cape-towns-new-administration-please-fix-the-sewerage-system/>

²⁰ "Over the next three years, almost 50% of [CoCT's] R25 billion capital expenditure plan will be invested in water and sanitation infrastructure," with "a minimum R8bn investment for major Waste Water Treatment Works (WWTWs) upgrades over the next 10 years" (CoCT, 2021a)

²¹ There is a strong alignment between water/sanitation master planning and Cape Town's IDP (and SDF) which guide development [e.g., the Water Services Development Plan (WSDP) and other infrastructure services planning mechanisms inform and are informed by the IDP, SDF, Capital Expenditure Framework (CEF), MTIF and Medium Term Expenditure Framework (MTEF)]. The broader issues are that the City has faced severe backlogs in upgrading infrastructure (with various causes thereof), as well the City's lack of/difficulty in forecasting rates of urbanisation and densification (and accurate current figures) to inform more evidence-based water & sanitation master planning. It is ultimately a failure (shared with all other cities and towns in SA) to effectively plan for increased urbanisation and densification. (Jens Horber, 2022 personal communication)

²² See CoCT 2012 and CoCT 2015b

²³ Large gaps between censuses and a lack of more granular focus on the types of informal and backyard housing arrangements that residents are living in have led experts to question some figures such as those claiming that over 90% of informal dwellings in backyards have access to a flush toilet, piped water, refuse removal, and electricity (Stats SA General Household Survey 2017). While it may be broadly the case that access "exists", these figures almost certainly do not reflect quality and consistency of service, which may effectively amount to non-existence (Adi Kumar, 2021 personal communication).

While Horber acknowledges that the CoCT is making progress in terms of employing an evidence-based approach to strategic spatial planning, the evidence still remains limited to more easily quantifiable formal sectors and systems. For example, detailed modelling work has gone into the City's Transit-Oriented Development (TOD) framework, evaluating existing infrastructure capacity in corridors targeted for public transportation investment and incentivised densification, calculating future capacity requirements in terms of the maximum allowable development permitted by current zoning for those areas, and then targeting the infrastructure upgrades and use of regulatory and land-use tools to support and incentivize that growth. While vital to long-term planning, that kind of analysis presumes a formal city growing through mainstream forms of development. In other words, it continues to speak to the "city we want" versus "the city we have", as Isandla Institute's director, Mirjam van Donk, put it.

What is missing is that effort and time and attention on planning for the densification of low-income areas that are more likely to densify on their own, or reacting to what is actually already happening in those areas at a much faster rate.

"What is missing is that effort and time and attention on planning for the densification of low-income areas that are more likely to densify on their own, or reacting to what is actually already happening in those areas at a much faster rate," Horber agreed.

This points to the far larger national (and global South) urbanization challenge, which is the apparent oxymoron of planning for the informal. That is, both anticipating informal growth in the future, but also responding supportively and appropriately—including retrofitting urban infrastructure (and governance) systems—to the perceived "messiness" of informal realities on the ground.

"One of the challenges we have as engineers is we're not good with messiness. We like to see a thing start and finish in an orderly way. So messiness is very difficult for us to work with," Storey acknowledged.

It is not just engineers who yearn for order. A large part of the appeal of "smart" or "new" cities is the proposition that complex urban problems can be solved from a blank slate. Seductive as this notion may be, many researchers and planners say that South African cities should rather focus on precinct-level as well as broader city-wide renewal of the cities we have, which means accommodating informal realities.

"Our entire local governance system, including municipal planning bylaw, is geared towards the formal environment," noted Peter Ahmad, the CoCT's former Manager of Metropolitan Spatial Planning & Growth Management. "So how do you eat an elephant? You start, piece by piece," he said of the challenge of rethinking those systems.

Returning to the question of the impact of backyard households on water and sanitation infrastructure, an element of that rethink is improving mechanisms for urban planners and engineers (and other public and civil society stakeholders) to work together on strategic infrastructure master plans that speak to the city we have.

For such mechanisms to function meaningfully, improved data (and data collection methods, possibly with the help of civil society) on the sector would need to be available so that interdisciplinary teams can take an evidence-based approach to planning "designed-in capacity" in areas where increased backyard housing is occurring or anticipated to occur²⁴.

²⁴ The City's Human Settlements Strategy (CoCT 2021b) includes many encouraging points vis-a-vis its draft Infrastructure Strategy. Notably: aligning infrastructure planning and human settlements (p39); using infrastructure prioritisation areas over the medium to long term as a guide for future densification of precincts (p76); installing all new infrastructure with the assumption of densification (p94); transparent allocation of long-term bulk provision (p97).

The rationale of the existing system—which tracks formal development through formal channels (e.g., building plan applications)—only functions if all development is formal and registered.

Additionally, innovative ways of capturing real-time densification data for informal areas are needed. The rationale of the existing system—which tracks formal development through formal channels (e.g., building plan applications)—only functions if all development is formal and registered. But the reality is that a significant amount of development occurs outside of this system and has for a long time, which is partly why the City's network capacity calculations may be inaccurate.

The City attempted to redress this disconnect through a Land Use Planning Bylaw amendment in 2019, which permits second and third dwellings on all residential-zoned properties, including Single Residential Zone 2: Incremental Housing (SR2)²⁵ zoned properties (the dominant zoning typology in lower income areas of Cape Town). In fact, the intention of SR2 zoning is to "... to facilitate upgrading and incremental housing from an informal settlement to a formal settlement"²⁶, and where development rules are less restrictive. The City's 2020 pledge of support for small-scale rental and backyard rental housing developers²⁷ has suggested further proposals—pre-approved building plans, simpler and cheaper application processes, overlay zones²⁸ that allow more lenient development parameters—that could also facilitate registration, and thus quantification and governance of backyard development.

But balancing land-use and building control systems such that they are not overly onerous or costly, but still fulfil their regulatory functions around safeguarding human health and safety—a state predicated on adequate water and sanitation capacity—is no easy task, and will likely require a cooperative sense of shared responsibility between the City's human settlements officials, planners, and engineers.



Isandla Institute/Eric Miller: Dunoon.

²⁵ Most township plots are zoned Single Residential (SR2), a relatively liberal category that allows for a primary dwelling, second and third dwellings, domestic staff quarters, and additional outside bedrooms (DAG 2021a).

²⁶ CoCT 2015a (as amended), Schedule 3 Chapter 5 Part 2

²⁷ <https://saaffordablehousing.co.za/interventions-to-boost-provision-of-affordable-rental-units-local-economy/>

²⁸ An overlay zone is a regulatory tool that create a special zoning district over existing base zone(s), identifying special provisions in addition to those in the underlying base zone(s).

Conclusions, recommendations and areas for future research

Arising with neither public support nor funding, the backyard housing market is increasingly acknowledged as a critical source of affordable housing in South African cities like Cape Town. Although the CoCT has made clear its interest in strengthening the formal growth of the sector, concerns around its impact on infrastructure remain both acute and poorly understood. Related to this anxiety is insufficient collaboration between human settlements officials, planners, and water and sanitation departments whose smooth coordination is fundamental to addressing the complex task of providing basic services to all Capetonians, especially in low-income areas.

While local government has a clear constitutional responsibility to supply all backyard residents with basic services, the question of the *how* burns. This report's conclusion is that the servicing of backyard units is about changing mindsets and institutional processes, and moving towards more evidence-based strategic infrastructure planning to address the increased densification and urbanization that are at the heart of the infrastructural shortfalls in low-income areas. More specifically, the following work areas are proposed:

Servicing of backyard units is about changing mindsets and institutional processes, and moving towards more evidence-based strategic infrastructure planning to address the increased densification and urbanization that are at the heart of the infrastructural shortfalls in low-income areas.

1. Changing mindsets: Institutional coordination and collaboration

Although co-operative government and transversal CoCT departmental mechanisms for integrated strategic planning do exist, they need to be strengthened.

- A shift in focus to outcomes (rather than rules, regulations, and outputs) is needed. Enabling guidelines and frameworks should not obscure focus on the outcome of ensuring that people have access to adequate services.
 - Explore where Red Book²⁹ guidelines could be simplified or amended to ease implementation in backyard contexts.
- Institutional leadership needs to ensure that water and sanitation bulk infrastructure plans clearly align with strategies and plans for densification and vice versa.
 - Evidence-based approaches need to be used to better align infrastructure investments (which, apart from planned upgrades, are often triggered by large development applications³⁰) with densification (whether informal settlement upgrading, backyard-related, or planned around TOD corridors).
 - Promote multidisciplinary and creative thinking:
 - Engineers should be encouraged to explore alternative technologies, and educated around backyard and informal contexts: the problems of supply to these areas are complex and multidisciplinary, and an understanding beyond numbers is required.

²⁹ Developed in partnership between the national Department of Human Settlements and the Council for Scientific and Industrial Research (CSIR), the Red Book provides comprehensive and practical information related to the planning and design of the services and infrastructure typically included in neighbourhood development projects.

³⁰ Infrastructure master-planning takes into account planned upgrades to maintain good functioning of the system, but also allows for the theoretical maximum allowable development on land according to current land use rights. When a large development requiring rezoning to change the land use is approved (where significant intensification of land use/densification will happen), the municipality levies "development charges" (DCs) to pay for required upgrades/installations to service the development and maintain the quality of service in the surrounding area. The developer remains responsible for constructing the infrastructure services within the property, which may be substantial for a large development.

- Provincial and national government have important roles to play (see Text Box 4: Delineation of responsibility).³¹
 - Coherent leadership needs to set clear channels for intra-governmental relations between relevant sector departments and inter-governmental relations, to ensure clarity of roles and responsibilities. Each sphere of government has a responsibility in terms of the potential interventions that can be taken in support of backyard rental housing, and the servicing thereof.
 - Some interviewees expressed the concern that a national policy would “kill the flexibility” that is one of the sector’s great strengths. To that end, any policy/national framework that might be developed should focus on maintaining that flexibility.

Delineation of responsibility

The three spheres of government have important mandated responsibilities and can all enable and support backyard rental housing through the following:

National government:

- Provide formalised lease agreement templates in all official languages;
- Improve tenure security for landlords through provision of title deeds;
- Relax stringent building regulations and regulate access to affordable, durable, and sustainable building materials;
- Enable a grant funding environment that helps to unlock the potential of the sector;
- Improve access to and create enabling conditions for finance; and
- Play a role in supporting provincial and local government efforts, and potentially share some of their roles.

Provincial government

- Provide conflict resolution mechanisms/referrals (e.g., through Rental Housing Tribunals);
- Support (along with municipalities) the creation of associations of backyard rental landlords and developers; and
- Support and share some of the responsibilities of national and local government.

Local government

- Provide access to services at household/erven level;
- Popularise the role and functioning of Rental Housing Tribunals, provide rights-based education for landlords and tenants, and access to legal recourse through Rental Housing Information Offices;
- Provide prototype housing design templates and pre-approved development plans, building support (e.g., a database of qualified local contractors), and capacity building targeted at both construction and property management skills, through Housing Support Centres;
- Raise awareness and build capacity around planning and building regulations;
- Simplify planning approval processes; and
- Ensure zoning schemes allow for multiple dwellings and match bulk infrastructure capacity.

All three spheres can create an enabling policy environment that guides the approach to backyard housing. While some responsibilities can be shared, the most appropriate sphere of government should always take the lead.

(Source: Isandla Institute, 2021b)

³¹ See Isandla Institute (2021b). *Informal Backyard rental housing: Policy options and a delineation of responsibility*.

2. Evidence-based solutions

A collaborative process bringing together (more and better) data on growth rates across the city, overlaid with City infrastructural capacity would be a powerful tool in addressing the densification-infrastructure disconnect. A comprehensive engineering analysis using City data would also allow more accurate costing models to be developed, and therefore help inform questions around financing (see below). Areas where data needs to be collected/interrogated/improved/analysed:

- More regular and accurate demographic data and finer-grained data on basic service access in informal areas, but particularly in backyard contexts.
- Overlay zones specific to densification and infrastructure should be developed using updated evidence on densification where it is actually happening.
 - Current designated overlay zones relate to heritage, visual impact, or safety.³² But in conjunction with SR2 zoning, a well-considered overlay zone could be a strong tool in lower income areas, allowing for more land uses (with no or minimal land use applications), and less onerous development rules (e.g., denser development in terms of reduced setbacks from property boundary lines and the street boundary, etc.).

3. Alternative technologies & support

- Look to examples of infrastructure service roll-out of in other low-income/global South contexts:
 - Pakistan's Orangi Pilot Project involved residents, with the support and help of NGOs and sympathetic private engineers, connecting their houses and lanes to city infrastructure, installing 72,000 household toilets themselves. In SA, while some informal settlement residents and backyard landlords do connect themselves (illegally) to city infrastructure, this is rare, and the governance context is very different. State-led infrastructure provision, with greater involvement of local residents in infrastructure planning through co-production, is a more suitable socio-technical alternative to the current mode. Despite contextual differences, the rethinking around technical standards and minimum service levels by engineers on the Orangi Pilot Project is useful.
- Explore **alternative technologies** that reduce pressure on the network and/or add capacity:
 - The significant upgrades currently underway for CoCT's WWTWs offer an opportunity to rethink how the system might be re-engineered to accommodate alternative technologies:
 - Pilot technologies to reduce base load (reduced water use, greywater capture and reuse, rainwater capture, mini-wastewater treatment plants, ceasing to use potable water in sanitation systems, etc.), but with an eye to scale and linkages to the network.
 - Review the Red Book guidelines and national regulations to support use of alternative technologies.

³² <https://resource.capetown.gov.za/documentcentre/Documents/Maps%20and%20statistics/Designated%20overlays%20%28English%29.pdf>

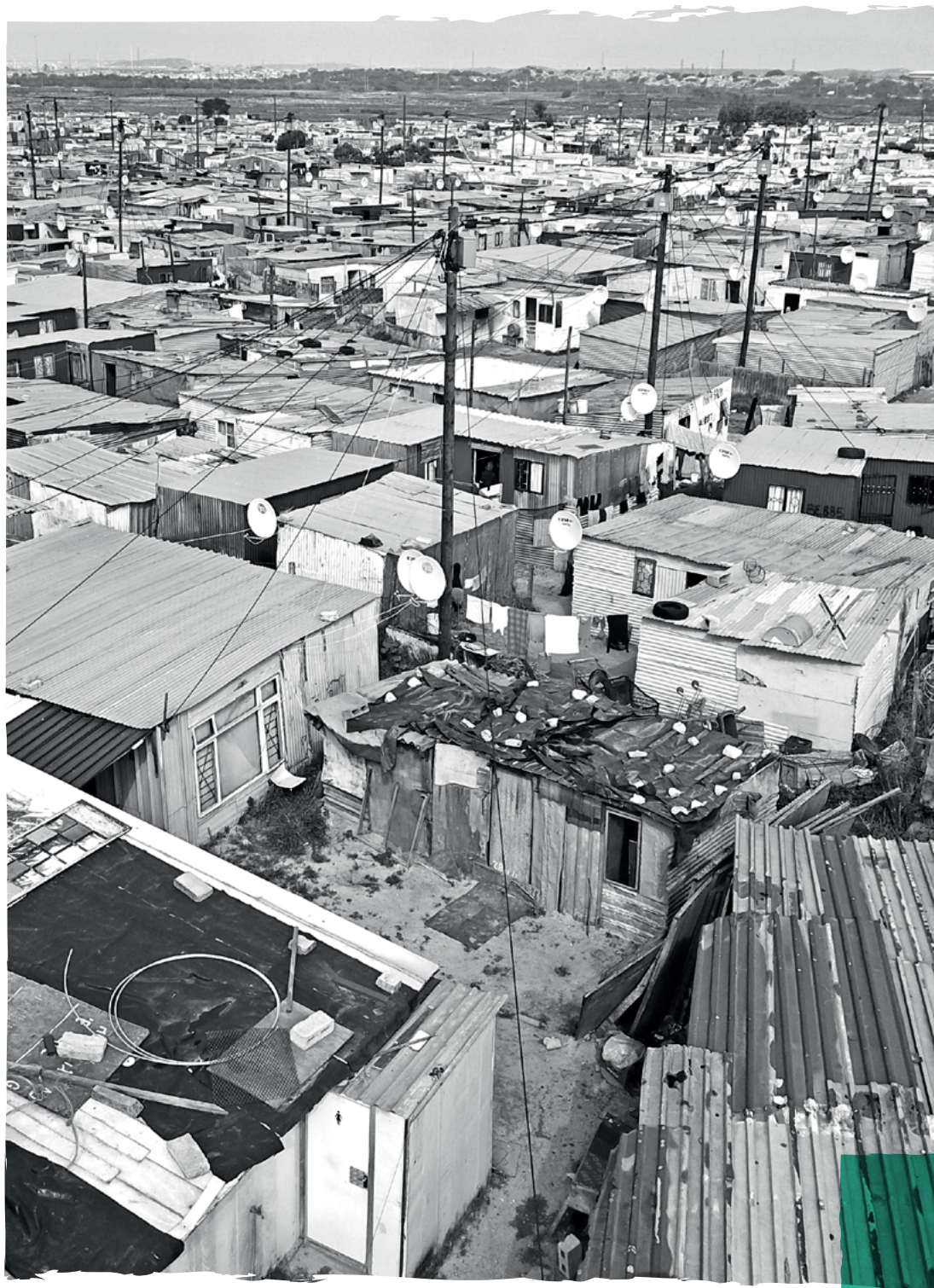
- Beware of providing second-class services: “alternative” should not mean less or undignified.
 - Normalize the use of composting toilets and similar technologies by promoting these technologies in middle class/wealthy areas. The broader the uptake, the cheaper and more socially acceptable they become.
 - Ensure that decision-making around alternate services are informed by robust community engagement³³.
- Investigate forms of **technical support and the resources** needed to provide minimum standards of infrastructure servicing to backyard tenants:
 - Resource local/satellite district planning support offices to assist backyard developers to get services in place and to comply with regulations through strategic services planning, design guidance, access to tenant/landlord rights information and standard agreement forms, etc.
 - Explore and use social engagement tools:
 - To understand backyard landlords’ concerns and needs around service provision to their tenants, and to develop fair, pro-forma tenant-landlord agreements around service provision (which may be context-specific).
 - To ensure that citizens know their rights but also their responsibilities: a supportive, incremental, and rights-based approach with a focus on co-production should be established and maintained.

4. Explore and advocate for creative financing mechanisms

- Cape Town’s Backyarder Programme used Urban Settlements Development Grant (USDG) funding to supply services to backyard dwellers on city-owned land, and the new DORA (Division of Revenue Act) now makes explicit provision for cities to use the USDG for providing water and sanitation services to backyard residents. Further exploration on expanding that use should be investigated with National Treasury.³⁴
- Explore grants around climate finance, green building, and alternative service delivery at the precinct scale (finance could come through the municipality or private sector).
- The City should advocate for the traditional banks to get involved (and thus also deliver on the Financial Charter).

³³ Isandla Institute (2016). *Sanitation Game Changer Lab: Community work stream*.

³⁴ [http://www.treasury.gov.za/legislation/bills/2022/\[B6%20-%202022\]%20\(DoRB\).pdf](http://www.treasury.gov.za/legislation/bills/2022/[B6%20-%202022]%20(DoRB).pdf)



Isandla Institute/Eric Miller: Mfuleni.

Bibliography

- City of Cape Town (CoCT) (2012). *Densification Strategy*.
- City of Cape Town (CoCT) (2015). *Municipal Planning By-Law*.
- City of Cape Town (CoCT) (2016). *Transit Oriented Development (TOD) Strategic Framework*.
- City of Cape Town (CoCT) (2020a). *Facilitating Small Scale Rental Units in Khayelitsha: Smart Citizen Action Adding Public Value in the Provision of Affordable Rental Units*. August 2020.
- City of Cape Town (CoCT) (2020b). IDP Review 2019/2020. Available at: <http://resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2C%20plans%20and%20frameworks/2017-22%20IDP%20Amendments-2019-20%20Review.pdf>
- City of Cape Town (CoCT) (2021a). *City to ensure sustainable development while Waste Water Treatment capacity upgrades are under way*. <https://www.capetown.gov.za/Media-and-news/City%20to%20ensure%20sustainable%20development%20while%20Waste%20Water%20Treatment%20capacity%20upgrades%20are%20under%20way>
- City of Cape Town (CoCT) (2021b). *Human Settlements Strategy 2020*. May 2021.
- Development Action Group (DAG) (2021a). *Charting the Uncharted: The Entrepreneurs Remodelling Township Property Markets*.
- Development Action Group (DAG) (2021b). *Pushing the Boundaries: Entrepreneurial Micro-Developers and the Growth of Sustainable Human Settlements*.
- Development Action Group (DAG) (2021c). *Building a Legacy: A Single Mother's Journey to Becoming a Homeowner Micro-Developer*.
- Isandla Institute (2016). *Sanitation Game Changer Lab: Community work stream*.
- Isandla Institute (2021a). *Legal opinion on service provision to backyard residents living on private land* – provided by Adv. Geoff Budlender SC. Available at: https://isandla.org.za/en/resources/item/download/244_4e9c0176c8666ba24fd88d2386d4f7f0
- Isandla Institute (2021b). *Informal Backyard rental housing: Policy options and a delineation of responsibility*. Available at: https://isandla.org.za/en/resources/item/download/203_586ff2d6d3c002152e2078fe321ff023
- Scheba, A. & Turok, I. (2020). *Informal rental housing in the South: dynamic but neglected*. Environment and Urbanization.
- Statistics SA (1996). *Census 1996*.
- Statistics SA (2016). *Community Survey 2016*.
- Statistics SA (2017). *General Household Survey 2017*.
- Statistics SA (2020). *General Household Survey 2020*.

Many thanks to the following people interviewed for this report in late 2021:

- Peter Ahmad, former City of Cape Town: Manager of Metropolitan Spatial Planning & Growth Management (2014-2021) (and Acting Director of Urban Planning & Design at the time of the interview)
- Jodi Allemeier, City Strategist
- Ziboneni Godongwana, City of Cape Town: Water and Waste: Informal Settlements & Basic Services Branch manager
- Aditya Kumar, former Director at Development Action Group (DAG)
- Riana Pretorius, City of Cape Town: Director of Informal Settlements
- Pierre Storey, Civil Engineer at Storey ENG (specialising in water)

