DEVELOPMENT CHARGES IN SOUTH AFRICA: CURRENT THINKING AND AREAS OF CONTESTATION

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ABSTRACT

Development Charges (DCs) have always been a contentious topic for municipal engineers, and are inconsistently applied. National Treasury introduced a Draft Policy Framework for Municipal Development Charges in 2011, but this has never been finalised. With the enactment of the Spatial Planning and Land Use Management Act in 2013, there is a need for standardisation in the calculation and application of DCs. While National Treasury is in the process of drafting legislation to introduce some standardisation, there is still much debate and confusion around what DCs are for, their legal basis, how they should be calculated and how they should be implemented. This paper draws on the authors' experience in drafting DC policies at national, provincial and municipal levels to provide the rationale and legal basis for DCs. The paper will identify and discuss the contentious issues surrounding DCs: Who should cover which costs? How should they be calculated? Should developers of socially beneficial land uses pay the same as commercial developers? Should there be different methods for different sized developments? When and why should exemptions be granted? The paper concludes with a motivation for municipalities to adopt simple, clear and coherent policies to ensure municipal financial sustainability.

INTRODUCTION

A Development Charge (DC), otherwise known as a Capital Contribution, Engineering Service Contribution, Bulk Infrastructure Contribution Levy or an Impact Fee (internationally), is a once-off capital charge to recover the actual cost of external infrastructure required to accommodate the additional impact of a new development on engineering services. In theory the fee is calculated on a pro rata basis according to the total cost of the infrastructure and the amount of service that will be provided to the development. This is an apparently simple concept, but is not straightforward to implement in the South African municipal context, or indeed anywhere else in the world. This paper unpacks some of the rationale, principles and assumptions underlying DCs and explores the reasons for the current contestation.

The paper draws on the authors' experience in drafting DC policies at national, provincial and municipal levels to provide the rationale and legal basis for DCs. Its purpose is not to try and provide answers or to resolve the existing contention, but rather to raise awareness around the complexity of the DC debate and to present the arguments from a number of points of view.

The paper begins by providing an overview of the shifting legislative environment that governs DCs, before giving a synopsis of the National Treasury Draft Framework on Municipal Development Charges (National Treasury, 2011). These two chapters set the scene for a description of the main areas of contestation around DCs which make up the main body of the paper. The key implications for municipal engineers, and the issues that need resolution, are then summarised in the conclusion before recommendations are proposed.

CURRENT LEGISLATIVE ENVIRONMENT

Existing legislation

Currently municipalities are able to require the payment of DCs in terms of the various applicable provincial Ordinances, all developed prior to 1994, for each of the four old South African provinces. These laws empower the authority, when approving a land use change application, to impose conditions. These conditions may include the payment of money, the contribution of land or the construction of infrastructure. Each of the laws has a slightly different wording to describe the causal nexus that must exist between the

scale and impact of the approved land use change and the amount of contribution that can be demanded. In addition, different municipalities have interpreted these provisions differently. Developers have had considerable success in challenging the calculation of mandatory contributions by municipalities and the overall outcome has been one of uncertainty, frequent litigation and ultimately an under-recovery by municipalities of the costs of infrastructure required to provide services to new developments.

Local Government: Municipal Systems Act

The Municipal Systems Act provides the underlying legal basis for a municipality to require a DC. Section 75A provides that a 'municipality may … levy and recover fees, charges or tariffs in respect of any function or service of the municipality'. Section 76 goes on to allow a municipality to provide its services through 'an external mechanism', which is defined to include 'any … institution, entity or person legally competent to operate a business activity'. This thus enables the municipality to enter into an agreement with a developer to require the developer to install infrastructure to provide or contribute towards providing a service in lieu of having to pay a DC.

Spatial Planning and Land Use Management Act (SPLUMA)

The SPLUMA was enacted in 2013 and is set to come into operation on 1 July 2015. The act sets out to provide an overarching legislative umbrella under which provincial land use planning laws will continue to be used to regulate land use change and land development. Increasingly however, and especially in cities, this area of regulation is likely to include municipal planning bylaws that will cover much of the same ground that the 'old' provincial land use planning and townships Ordinances used to cover. The SPLUMA, however, introduces some new rules and definitions that will be binding on all land development decisions, regardless of which provincial or municipal law is used to regulate a particular decision. There are two main areas of concern in relation to the SPLUMA and the development of an efficient and equitable system of DCs:

a. **Section 49** determines that:
    i. 'An applicant is responsible for the provision and installation of internal engineering services'; and
    ii. 'A municipality is responsible for the provision of external engineering services'.
b. **Section 10(1)** empowers provinces to 'provide for matter contained in Schedule 1' in provincial legislation. The matters contained in Schedule 1 include the regulation of 'engineering services and the imposition of development charges'.

Each of these is discussed in more detail below.

Section 49

Two problems arise from the terminology of section 49. Firstly, the current wording does not accommodate the category of services known as *link services*. Nor does it accommodate the commonly used term of bulk services. While it is assumed that the term *external services* is meant to be similar in meaning to *bulk services*, in fact the definition of *external services* in section 1 does not support this assumption. By only covering internal and external engineering services and not considering the services that are often needed to link the internal to the external, the SPLUMA necessitates a complex, even convoluted, construction in the drafting of national, provincial and municipal legislation dealing with engineering services. This is described in further detail later in the paper. This construction has to provide for the third category of services and does so by accentuating the distinction in section 49 between the provision and the installation of services. Secondly, by not explicitly providing for a category of services similar to the commonly understood term *bulk services*, the Act creates uncertainty as to the extent of a municipality's responsibility for providing these services.

Section 10

Section 10 purports to complement, presumably not to supplant, the Constitutional allocation of legislative powers and functions by dictating what provincial legislation in the spatial planning and land use management field can cover. This is contained in Schedule 1. The Schedule provides a fairly comprehensive compilation of the matters regulated by the Ordinances, but this does not mean it is consistent with the current Constitution. This creates particular problems for the envisaged national legislation governing municipal development charges, which is regarded as an aspect of municipal finance but which is

included in Schedule 1 of the SPLUMA as a matter for provincial legislation dealing with land use management and spatial planning.

Schedule 1 obviously does not exclude national legislation from covering matters listed in the schedule but it creates the impression that a province may also legislate in this area, leading to a scenario in which conflicts are inevitable especially in the highly litigious context of municipal DCs.

Municipal Financial Management Act (MFMA)
The MFMA, in chapter 11 and associated regulations, makes it clear that whenever a municipality procures services from an outside body it must do so through the prescribed supply chain management system. Where a developer is providing services for the municipality in lieu of paying a DC, this will, strictly speaking, constitute the provision of a service and so should, in terms of the MFMA, comply with the applicable supply change management and procurement regulations. However, sub-section 49(5) of the SPLUMA specifically excludes the provision of services in lieu of payment of a DC from these MFMA requirements in order to circumvent a difficult set of procedural steps that would be costly in terms of time and money.

Proposed new legislation
The National Treasury intends addressing a number of legal and procedural uncertainties pertaining to DCs through new national legislation: a new chapter to be included in the Municipal Fiscal Powers and Functions Act (MFPFA) dedicated solely to DCs. This is deemed to be necessary as a DC is neither a conventional tariff as set out in the Municipal Systems Act, nor a municipal tax as set out in the MFPFA. A draft national policy framework has been developed and draft legislation is being designed. This new legislation will have to address these areas of difficulty created both by the wording of sections 49 and 10 of the SPLUMA and the potential inconsistencies between section 49 of the SPLUMA and the MFMA. Whether the new legislation will be able to address these challenges satisfactorily on its own, or if it will need the SPLUMA to be amended as well, are questions that will have to be answered as the National Treasury's policy and law-making processes reach their conclusion.

RATIONALE FOR DCS

The rationale for DCs needs to be understood in relation to how this particular funding mechanism fits within the South African municipal fiscal framework. In general terms, there are four means of financing bulk infrastructure: grants (mainly from national government); Capital Replacement Reserves (CRRs); loans; and DCs.

An important distinction to make here is between 'social' infrastructure, defined as infrastructure to serve poor households, and 'economic' infrastructure, which serves non-poor households and non-residential consumers. In South Africa, national government generally only provides transfers (grants) to municipalities to fund social infrastructure[1]. As a result, municipalities have to cover the costs of bulk infrastructure for non-poor households and non-residential land uses through one of the three 'own sources' of finance: CRRs, loans and DCs.

The decision as to whether to finance infrastructure up-front through loans or the CRR is essentially a cash flow issue and depends on the size of the municipal CRR and the capital financing policy of the municipality. In both cases, the capital cost is paid by consumers through rates and tariffs: in the case of the CRR it is paid for in advance, and in the case of a loan it is recovered over time. If municipalities had large CRRs or ready access to credit and strong revenue streams then they may be in a position to finance infrastructure up-front. However, this is not the norm in South African municipalities. The Municipal Infrastructure Investment Framework (DBSA, 2011) found that municipalities had a capital funding gap of R24 billion in 2009/10. Municipalities with good credit ratings are heavily borrowed and those with poor credit ratings are unable to access credit at all. This structural shortage of capital is the fundamental rationale

[1] Public transport is a possible exception, although much public transport infrastructure is intended to benefit poor households. Other exceptions include grants (mainly to metros) that focus on spatial restructuring and efficiency, such as the Urban Settlements Development Grant, the Integrated City Development Grant and the Neighbourhood Partnership Development Grant.

for charging DCs. This motivation for DCs is therefore a conscious policy decision to draw on capital reserves in the private sector to ensure that municipalities can continue to provide infrastructure to support economic growth. A further motivation for DCs is that the incidence of the cost is more accurately and equitably assigned to those who directly benefit from the infrastructure, rather than being spread amongst all ratepayers.

NATIONAL TREASURY DRAFT FRAMEWORK

National Treasury produced a Draft Policy Framework for Municipal Development Charges in December 2011 ('Draft Policy Framework') (National Treasury, 2011) which has been fairly widely circulated for comment. Although only in draft form, this document remains the only current national guideline document on DCs. It has been influential in informing municipal DC policies that have been produced subsequent to its publication, with Nelson Mandela Bay and City of Cape Town being examples. The document provides a comprehensive explanatory memorandum setting out the rationale for DCs and is underlain by four key principles (pg 2-3) :

"a) *Equity and Fairness:* Development charges should be reasonable, balanced and practical so as to be equitable to all stakeholders. The key function of a system of development charges is to ensure that those who benefit from new infrastructure investment, or who cause off-site impacts, pay their fair share of the associated costs. This implies that:

i. Municipalities should recover from as land owner the full and actual costs of infrastructure that results from urban development, such as storm water drainage, or which is necessary for urban growth (e.g. water, electricity, roads);

ii. Development charges should be closely related to the costs imposed by a development, and are thus not a form of taxation;

iii. Costs imposed by new developments can be related both to pre-installed infrastructure resulting from historical investments in excess capacity, and the provision of new infrastructure to meet additional capacity requirements.

iv. They are not an additional revenue source that should be used to deal with historical backlogs in access to services, such as exist in some historically disadvantaged areas.

"b) *Predictability:* Development charges should be a predictable, legally certain and reliable source of revenue to the municipality for providing the necessary infrastructure. These revenues should thus be treated as a formal commitment by the municipality to provide or upgrade the associated services, and should be clearly and transparently accounted for. It would, however, be unreasonable for poor households to bear these costs, which in any event are already subsidised by national transfers. In order to promote predictability and coordination, particularly in low cost housing developments, the costs associated with municipal infrastructure (i.e. the development charge) should still be established before subsidies are applied in a transparent manner to fund the liability.

"c) Spatial and Economic Neutrality: A primary role of a system of development charges is to ensure the timely, sustainable financing of required urban infrastructure. This implies that:

i. They should be determined on identifiable and measurable costs to avoid distortions in the economy and in patterns of spatial development;

ii. They should not be used as a spatial planning policy instrument. Inevitably, however, removing the current, implicit subsidies for urban sprawl arising from the under-recovery of development charges would lead to less sprawl;

iii. Costs recovered should be dedicated only to the purpose for which they were raised; and

iv. Where appropriate, charges should be levied on a sectoral or geographic scale to more accurately approximate costs within a specific impact zone.

"c) *Administrative Ease and Uniformity:* The determination, calculation and operation of development charges should be administratively simple and transparent. This will necessarily detract from the accuracy of individual charges but this is a trade-off worth making. Development charges should thus only approximate actual costs. Greater national uniformity in the system of development charges will provide greater certainty to land owners, developers and investors, while improving

administrative efficiencies, without compromising the ability of municipalities to respond to specific local conditions and needs. "

The above key principles are important in setting the overall 'ground rules' for DCs and provide municipalities with important direction when trying to resolve some of the more practical issues related to implementing DCs. The remainder of the Draft Policy Framework provides guidance on the application of DCs in considerable detail and in the language of regulation. The provisions therein have generated substantial debate and are currently being reviewed. Those areas that are either contested or are not adequately covered in the Draft Policy Framework are discussed in more detail below.

KEY AREAS OF CONTESTATION IN PRACTICE

What type of development should attract DCs?

The theory behind DCs is that any change in land use that results in intensification of infrastructure use, will attract a DC. Because DCs are linked to the municipal development application and approval process, they are triggered by applications for land use change or land development[2]. However, some re-zonings, sub-divisions or consent uses could have a similar or lesser impact on infrastructure utilisation, and therefore would not be charged a DC. The point to note is that the application triggers a calculation of a DC, which may then return a zero value if the infrastructure demand is not intensified. Some development applications may be deemed to automatically not trigger a DC calculation, such as consolidations not accompanied by re-zoning or additional rights, or temporary departure applications. A question has been raised as to whether land use changes that reduce the impact on infrastructure networks should result in payment from the municipality to the developer. This is a moot point that may have merits in theory, but is unlikely to be applied in in practice because it would be difficult for municipalities to administer and would require alternative users to utilise freed up infrastructure capacity.

It is important to note that the Draft Policy Framework is not overly concerned with the type of applicant or the envisaged land use. Instead the focus is on the impact on infrastructure, and the cost incurred by the municipality in addressing that impact, not on whether the developer can or should pay for the particular type of land use. The principle is that the DC liability should be calculated in all cases, and the appropriate source of funding is then determined. If the municipality does not wish to levy a DC, then an alternative source of funding should be identified in a transparent and consistent manner.

Thresholds and exemptions

It is perhaps human nature that as soon as there is a loophole for the payment of a charge, that loophole will be exploited. This is certainly true for DCs, and municipalities' ability to grant exemptions on an ad hoc basis is the reason for the inconsistent application of DCs and the present low rates of collection. There may be any number of justifications for granting exemptions, ranging from social investment and economic development to blatant corruption. The opportunity for abuse of exemptions has led National Treasury to take a hard line in the Draft Policy Framework and minimise (but not exclude) the opportunities for municipalities to grant exemptions.

A distinction needs to be made between *thresholds* and *exemptions*. A threshold is the level up to which a new land use is deemed to have the same infrastructure impact as the existing use (e.g. certain sizes of home business, Bed and Breakfasts, crèches, etc. may have the same impact as the land use from which they were converted) and is determined based on a technical assessment. An exemption on the other hand is where there is an impact, but the municipality consciously chooses to not charge the applicant. If DCs are not charged, then the cost of the infrastructure must be covered either through grants or municipal reserves. In this case, without a transparent calculation of a DC and allocation of the resulting cost, it is not possible to definitively say which source is being used. This is a cause for concern.

Where the municipality would like to forgo charging a DC for social infrastructure, the appropriate funding source is a grant. However, it is not clear how this is done in practice. A good example of this situation is the

[2] Such as: rezoning applications (including Scheme amendments); sub-division applications; permanent departure applications (in the Western and Eastern Cape provinces); consent use applications; and amendment of conditions of approval.

case of low-income housing, and there has been some debate on this issue between municipalities and National Treasury. Is it necessary for a municipality to calculate the DC liability and then transfer this amount from the grant allocation into the DC fund? If this were the case, would the grant conditions allow this? Municipal infrastructure grants have associated conditions, and many of these grants have to be spent on bulk infrastructure to serve poor households. Why then should municipalities undergo complex accounting entries to allocate portions of specific grants to a DC fund (possibly for a specific service in a specific area) and then use the DC fund to pay for an infrastructure project, instead of just allocating the grant to the project as is currently done? One possible solution to this issue is that DC exemptions that are to be funded by grants be dealt with at an aggregate level on an annual basis. What this means in practice is that municipalities would tally up all the 'grant-funded' exemptions and compare this to the value of the grants used for bulk infrastructure in that financial year. In any event, the principle that the DC liability be calculated regardless of the source of the funding, as proposed by National Treasury, should be maintained as good practice to transparently account for the infrastructure costs of any development.

What services can be charged for?

DCs are generally applied to engineering services, specifically roads and stormwater (most commonly), water, sanitation, electricity and solid waste. In addition, DCs have been proposed for public transport and community facility infrastructure and the SPLUMA also mentions gas as an external engineering service. Schedule A of the Draft Policy Framework, which covers the cost components of DCs, lists only the conventional engineering services, but has a catch-all section at the end of the table titled 'all services' which could be interpreted to include any other municipal service. Internationally DCs are used to cover public transport and community facility infrastructure, but this is not common in South Africa. There does not appear to be a legal impediment to charging DCs for any municipal infrastructure, but this may result in further resistance from developers to the expansion of the scope of the charge. The National Land Transport Act permits municipalities to raise a 'user charge' on buildings and land that give rise to the need for public transport, which could be equated to a DC. However, much public transport infrastructure in South Africa is funded through national grants; municipalities would have to explicitly exclude any grant funded infrastructure to avoid double charging for this infrastructure.

The Draft Policy Framework is clear that DCs can only be charged for municipal infrastructure. While this makes sense, there is some contention around the funding of upgrades to provincial roads that may be required as a result of a development. In theory this cost should be covered by the provincial government, but provincial governments are currently not themselves able to levy DCs linked to development applications. Provincial governments are limited to requesting the municipalities to impose a requirement to pay to the province the required funds. The situation is further complicated where municipalities undertake improvement to provincial roads (usually because it is expedient to do so), but cannot recover the cost from the developer. Where bulk water is provided by a party other than the municipality (usually a Water Board), the cost of this infrastructure should not be included in the DC as this is not municipal infrastructure and it is included in the bulk water tariff. Electricity is a special case where Eskom is the bulk service provider, but also retailer in parts of some municipalities. If municipalities charge a DC for electricity in the areas that they supply, there is a risk of inconsistency with Eskom-supplied areas. However, to avoid this issue, Eskom produces a *Code of Practice for the Recovery of Capital Costs for Distribution Network Assets* which can form the uniform basis for electricity DCs. While municipalities should not charge DCs for electricity in Eskom-supplied areas, this may be unclear if the electricity supply zone is not defined for the development area.

What components of the system are included in the DC calculation?

Historically DCs have applied to 'bulk' infrastructure, and municipal engineers seem to understand which part of their systems are 'bulk'. However, this is often not clear to others, and the issue has been further complicated by the SPLUMA definition of 'external' infrastructure. Internal and external services are defined in section 1 of the SPLUMA in terms of whether or not the services lie within or outside of a property boundary. The Draft Policy Framework adopts the SPLUMA definition of external services, and interprets this as including bulk and connector infrastructure. The diagram below, which uses water and

sanitation infrastructure as an example, to illustrate the part of the network is considered external, which is then further broken down into bulk and connector (sometimes referred to as reticulation) infrastructure.

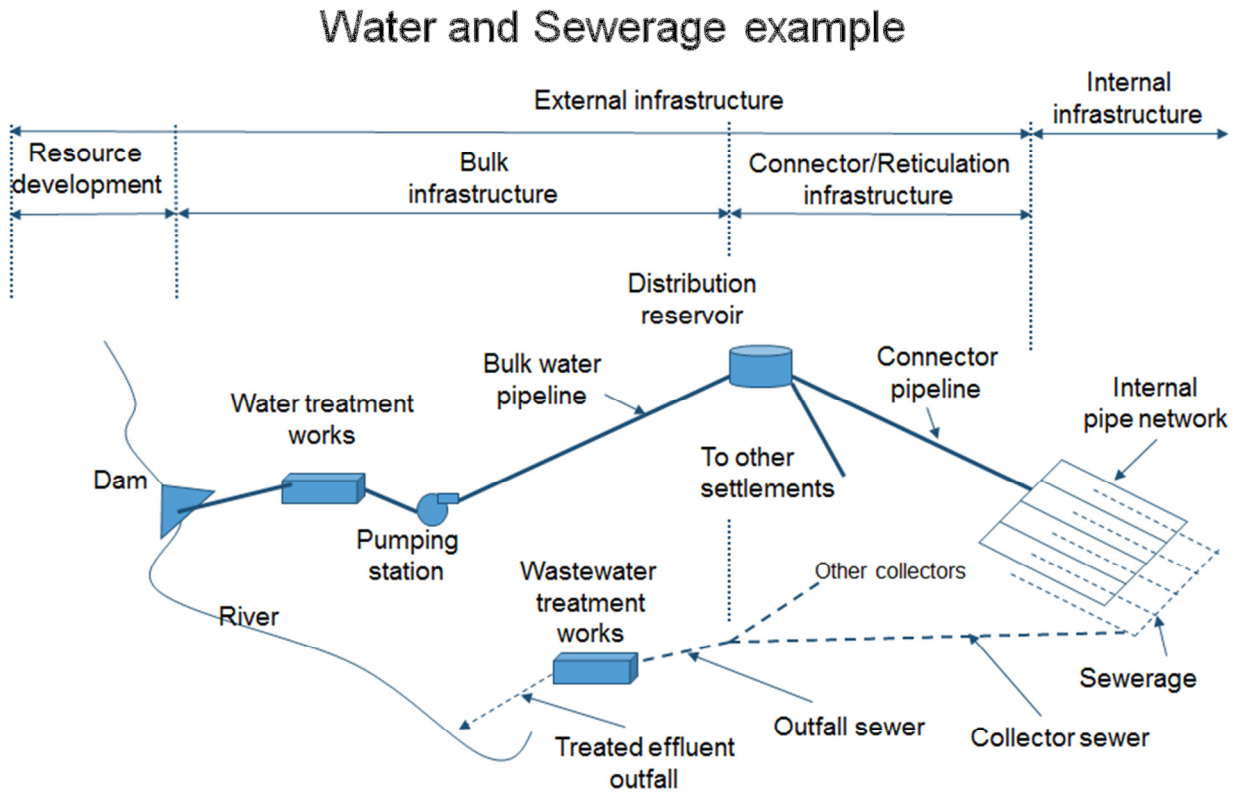

Figure 1: Components of a networked infrastructure system (Source: authors)

However, in practice, the situation is often not so clearly defined. For example, it is fairly common to find that new external services have to be installed within the boundaries of a land area[3]. The SPLUMA thus makes it difficult to allocate responsibilities for the installation of external services, vis-à-vis a development, where the bulk component of the services has to run across the site – so-called 'internal bulk'. One possible means of dealing with this inconsistency is to take the approach outlined in the Guideline 3 of Annexure A of the Regulations promulgated in terms of the Development Facilitation Act (DFA)[4] (Government Gazette R1 (GG20775) of 7 January 2000), which states that: "such service and the costs of provision thereof should be treated as an internal engineering service to the extent that it serves the land development area and as an external engineering service to the extent that it serves any other development." Whether this treatment is possible within the prescriptions of the SPLUMA has not yet been tested.

A further complication is that Schedule A of the Draft Policy Framework, which defines the individual cost components of the DC for each service, introduces the concept of 'link' infrastructure "to connect the new development to the existing municipal network". It is not clear what the relationship is between 'link' and 'connector' infrastructure, or whether these are the same things. The DFA Regulations, referred to above, suggest that link infrastructure is a definition that only applies in relation to a development application and falls away thereafter.

The issue of link services is a critical one and is the area where conflict is most likely to occur. One of the main arguments for introducing the concept of 'link services' is that this infrastructure is determined by the location of a development in relation to existing infrastructure networks. The costs therefore cannot be determined prior to the development application and cannot be included in an average unit costing exercise.

[3] A further difficulty that arises from the SPLUMA is that *land area* is not defined. This is especially problematic in the context of major developments that occur in a phased manner, incorporating many individual erven. Which erven constitute a part of the *land area* at any given moment in the land development process?

[4] This Act was repealed in the SPLUMA, and the regulations have no legal status, but are informative nonetheless.

If link services are accurately defined and costed per development application, they can be a means through which municipalities can disincentivise 'leapfrog' development through the charging of actual cost of the additional 'links' that are required. The approach that the City of Cape Town is to separate out the link portion of the DC, which is calculated and paid for separately, and a bulk portion of the DC that is calculated using average unit costs. Who gets to decide what infrastructure is link and what is bulk is likely to be the key point of contention. The City of Cape Town DC Policy defines link as that infrastructure to connect the development's internal infrastructure to existing or planned bulk infrastructure. However, in the absence of complete and documented infrastructure master planning, municipalities will struggle to defend any determination of link services. A simplified approach would be to ignore the distinction between bulk and link services and charge a global DC that covers all external infrastructure. However, this would deviate from the principle of full and actual cost recovery.

The infrastructure components that can or cannot be included in the DC calculation will vary from service to service. A general principle is that any infrastructure cost that is included in the tariff (such as bulk charges or any capital redemption portion) should either be omitted from the DC calculation or removed from the tariff and included in the DC calculation to avoid double counting..

How should DCs be calculated?

The principles of equity and fairness contained in the Draft Policy Framework require that the DCs recover the the full and actual costs of infrastructure from the developer. However, this principle is in tension with the fourth principle of administrative ease and uniformity. The full and actual costs are almost always impossible to know, and even if they were, would be too burdensome to calculate in every case. The costs therefore need to be estimated through some form of calculation. There are a variety of calculation methods that sit on a spectrum from site-specific studies to city-wide average-cost formulas. The tension relates to the need for a defensible 'rational nexus' between the development, its impact and its cost on the one hand, and the administrative burden of calculating this on a case-by case basis on the other. DC calculations are usually based on a simple formula, which multiplies a standard 'unit of impact[5]' of a specific land use with a unit cost to produce an amount per service, which are summed together to obtain a DC. This can be expressed by the following formula:

$$Development\ Charge\ = \sum_{i=1}^{N} (Wi \times Mi)$$

Where: W = unit capital cost per unit of impact for the municipal infrastructure service
M = unit of impact for the municipal infrastructure service
N = number of municipal infrastructure services being considered

There are therefore two critical factors to determine for each service for a particular development: the unit of impact and the unit capital cost per unit of impact. Both are equally important and will be specific o a municipality. A constraint in determining these factors is that any calculation can only use the information that is available at the stage of development application. In many cases this is just the zoning that is being applied for, the erf size and the number of units permissible on the site. Although there is no universally agreed method to determine either of these factors, certain sectors have detailed guidance on the methodologies to be followed for that service. For example, the Committee of Transport Officials (COTO) have produced *TMH 15: South African Engineering Service Contribution Manual for Municipal Road Infrastructure*, to be read in conjunction with *TMH 17: South African Trip Data Manual*. These two documents provide a very detailed methodology for calculating the total DC applicable for municipal roads infrastructure. While these documents have been criticised for being overly complicated, other services do not have the advantage of such detailed guidance.

The calculation of unit of impact factors is usually based on analysis of historical demands and their impacts. However, these units of impact are a function of income level for many services (e.g. water consumption or car ownership), but target income is not reflected on development applications. While density or geographic

[5] It is noted that a particular service may have multiple units of impact, such as the capacity and strength units applied to roads in TMH15.

location could be used as a proxy, neither of these have proved to be adequate. If municipalities are going to undertake their own studies to determine units of impact, it is important that the 'impact' that is being referred to is on the design capacity of a network and therefore relates to what impact a particular land use will have on the peak loading on an infrastructure network.

The calculation of unit cost is the subject of much debate. Most approaches, including the one described in the Draft Policy Framework, are based on a formula contained in the Venter Commission Report (RSA, 1984). This formula expresses the unit cost attributable to a development to be calculated based on the capital cost divided by the number of units (the first term), and then subtracting the value of outstanding loans normalised per consumer unit (the second term). The purpose of the second term is to avoid double charging developers for infrastructure that is funded through loans and recovered through tariffs. The Venter Commission Report expresses the formula as:

$$W = \frac{K}{E_2} - \frac{L}{E_1}$$

Where:
W = capital amount per unit the township establisher has to contribute for a particular service in his new township;
K = the total capital cost of providing the service within the new township;
E2 = the number of consumer units (usually erven) in the new township;
L = the net outstanding loan debt of the local authority in respect of the service in the established municipal area; and
E1 = the number of consumer units within the established municipal area

However, the Venter Commission formula was intended to be applied for new township developments where the total capital cost of the services to be developed was easily calculated and the number of units to be developed was clearly defined. It therefore uses a 'future cost' method, which takes future costs and divides these by future consumer units. The application of this formula to individual development applications in a municipality is more difficult because the capital cost of the external infrastructure is difficult to determine, and the impact of the development on different services varies. A variation on the 'future cost' method is to calculate the anticipated future capital cost of all services using engineering master planning for an area or a municipality to allocate this cost back to the different land uses contained within that development plan. In theory, this approach seems logical, but it would be difficult for small municipalities to apply because many of these municipalities do not have detailed future engineering master plans, or future land use plans, and the development and costing of these plans would require external consultants to be appointed at significant cost. A simpler alternative method is the 'existing cost' method that calculates unit costs to be calculated based on the Current Replacement Cost of the existing infrastructure networks and the current network capacity, instead of the future cost and capacity. This alternative method would be less complex to apply and is better suited to smaller municipalities, but assumes that Current Replacement Cost scan be accurately calculated and that future costs will be similar to existing costs. A final alternative method is the 'average marginal cost' method that estimates the infrastructure required for a particular development based on industry norms, and then applies current industry-defined unit costs for the service, or for each component of the service, to build a 'bottom up' unit cost. The advantage of this method is that it can be applied uniformly in almost any circumstance and uses current cost data, but runs the risk of ignoring any specificities relating to the development location or municipal context.

The issue of the DC formula is a complex one. One view is that a standard formula is required to make the DCs consistent and to avoid contestation of the charge. Another view is that, given the heterogeneity of municipalities, any regulations should not be prescriptive and the municipality needs to have some flexibility on what approach to use to calculate unit costs.

Should DCs calculation and application be spatially differentiated within a municipality?
The Draft Policy Framework states that: "Where appropriate, charges should be levied on a sectoral or geographic scale to more accurately approximate costs within a specific impact zone. For networked infrastructure (water, roads, electricity, and, to some extent, wastewater), it is possible to argue that the development impacts on all infrastructure that plays a part in servicing the development, i.e. the network as a

whole. For gravity systems (stormwater and, generally, wastewater), an impact zone is easier to define. For solid waste, the infrastructure is centralised and can be used from any part of the city, so a clear impact zone cannot be defined.

Even if infrastructure impact and cost cannot be calculated for a specific area, there is an argument that the money collected should be 'ring-fenced' to be used in an area. Developers need to be able to see their contributions being used as intended. While this makes sense in theory, it may be difficult for municipalities to apply geographic ring-fencing in practice, partly because of the issue of integrated networks described above. In addition, where surplus capacity has been provided in the past, the DCs offset that historic investment and therefore should be able to be used anywhere.

There is a trade-off between the fairness and accurateness of allocating specific money to specific infrastructure, and the pragmatic need to aggregate money to fund larger projects, or the administrative burden of having to administer too many discreet funds. It is suggested that however this issue is handled, that there is a defensible link between the costing methodology employed, and the scale at which the funds are re-invested.

Provision of infrastructure in lieu of DC payment and reimbursement for excess capacity

There are a number of reasons why both municipal officials and developers may prefer for the developer to install external infrastructure in lieu of paying a DC, but the dominant reason is to avoid time consuming municipal procurement processes. This arrangement is expedient and a significant amount of municipal infrastructure is delivered in this way. However, the fact that the SPLUMA now explicitly exempts this circumstance form the need to comply with supply chain management regulations raises the spectre of unscrupulous developers inflating the costs of the infrastructure that they have installed in order to set off a greater amount against their overall development charges liability. They are able to do this because there is effectively no constraint on, nor monitoring of their procurement of, providers to install the various elements of infrastructure. It also provides a potential opportunity for corruption amongst municipal officials. There is a clear (but deliberate) gap in the legislation created by the SPLUMA on this issue.

The principle that should be applied to the provision of infrastructure in lieu of DCs is that municipality is entitled to ensure quality, standards and correct valuation, and the developer is entitled to a reasonable scope of work and a proportional offset of the DC liability. The new National Treasury legislation will need to fill this gap to ensure the correct checks and balances are in place, but without eliminating the advantages of this rapid infrastructure delivery mechanism.

In some cases the municipality could require the developer to install bulk infrastructure capacity in excess of that required only for his development, if it is logical to do so in terms of overall master planning for the area. If the municipality insists on this condition, then there are three ways of dealing with this excess capacity: 1) that the developer bears this cost as an additional cost of development, without which the development would not be approved; 2) that the developer can offset the over-investment in one service against the cost of DC payment for another service, up to the full value of the DC liability; or 3) that the municipality reimburses the developer for the excess capacity. It is unlikely that option 1) will be seen as administratively fair, while the viability of option 2) depends on the relative value of the investment and the overall DC liability, as well as the value of development approval to the developer. Option 3 is the approach taken in the Draft Policy Framework as it satisfies the principles of equity and fairness. In the application of this option, the municipality may choose to make the reimbursement up front, over a specific period of time (bearing in mind the MFMA Section 30 requirements) or linked to uptake of development rights and the payment of other DCs in future.

Discounts for 'green' infrastructure

An emerging trend in municipal infrastructure provision is the installation of 'off-grid' or decentralised infrastructure. These alternative solutions challenge the current approach to DCs, which assumes that all land uses will be serviced using conventional infrastructure, and developers should therefore contribute to its cost. This is a compelling argument. However, from the perspective of the municipal engineer, in order to provide an 'off-grid' development with a discount or exemption from DCs, there would have to be a guarantee that municipal services would not be required, even with future changes of ownership (assuming these are not

accompanied by changes in land use that would trigger a DC). The municipal mandate to provide services means that if the alternative infrastructure were to fail or be removed, then the municipality would be responsible for providing services instead. Given that the DC is linked to the development application process, there is no opportunity for the municipality to charge a DC in this instance.

With current environmental imperatives it is unacceptable for municipalities to be seen to be disincentivising green infrastructure through refusing to grant discounts on DCs. It is therefore recommended that municipalities make provision for the ability to evaluate such 'exceptional circumstances' on their merits, but place the onus for proving (and guaranteeing) independence from municipal infrastructure onto the applicant.

CONCLUSIONS

In an environment of a chronic shortage capital for municipal infrastructure, DCs represent an important and underutilised funding source. Recent shifts in the legislative complex have begun to raise the importance of DCs, but this shift is not yet complete. There are still a number of fundamental issues around which consensus has not been reached, reflecting a tension between principle and pragmatism. These include:

- How to offset DCs for social infrastructure;
- Which circumstances justify exemption from DCs;
- Which services can be covered by DCs;
- Precise definitions of external, bulk, connector and link infrastructure and how these are charged for;
- Which calculation methodologies are acceptable in which circumstances;
- Whether there needs to be a standard formula or not;
- How to spatially differentiate DC calculation and application;
- How to regulate the provision of infrastructure in lieu of DC payment;
- The mechanism for reimbursement for excess capacity provision; and
- Discounts for 'green infrastructure.

This paper has drawn attention to these issues so that they can be debated amongst municipal engineers and between municipalities and national legislators. Given the complexity of the issues surrounding DCs, it is unlikely that the legislation will resolve all of these issues, and municipalities will have to rely on their own DC policies for some of the more technical points. It is therefore useful for municipal engineers to apply their minds to the potential advantages, disadvantages and implications to the adoption of certain provisions in their DC polices.

While DCs offer municipalities an alternative capital funding source, they also impose certain responsibilities. DCs should only be charged for infrastructure that a municipality has the authority and intention to provide, and the DCs should then be applied for this purpose only. A municipality always has the power to refuse development applications if it is unable to provide the bulk infrastructure. Approving development applications means that the municipality has funding available and fully intends to provide the bulk infrastructure to service the development. A clear and consistently applied policy can provide the municipality with assurance that finances will be covered in the long term.

RECOMMENDATIONS

The Draft Policy Framework seeks to result in DCs that are equitable, fair, predictable, spatially and economically neutral, uniform and easy to administer. The ideal outcome is that developers are willing to pay DCs, municipalities and developers believe the formula is a fair and accurate reflection of the costs, and municipalities ultimately cover their costs of bulk infrastructure provision. In order to achieve this objective of sustainable municipal infrastructure provision, it is recommended that:

- National legislation should address the contentious issues in a way that improves uniformity and consistency, but that will be experienced by municipalities as enabling and not prescriptive.
- The legislation and accompanying regulation must also provide sufficient flexibility to accommodate the heterogeneity amongst South African municipalities.
- Municipalities should engage with National Treasury around the impending legislation to ensure that all cases are catered for;
- Municipalities that currently do not have DC policies at least develop positions on these key issues prior to the enactment of legislation that will require them to have DC policy;
- Municipalities develop a costing methodology that works for them, and then undertakes the necessary research to provide data to inform the unit impact and unit cost factors (or at least to be able to adequately adjust national norms); and
- Municipalities engage with the full spectrum of developers to understand their concerns and to build support for DCs; and
- Municipal officials raise awareness amongst the political leadership around the rationale for DCs and the four key principles that underpin them. This will help to resolve any misunderstandings around what the charge is for, as well as emphasise the importance of consistently applying DCs.

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