
THE URBAN POLITICAL ECOLOGY OF WATER IN CAPE TOWN

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INTRODUCTION

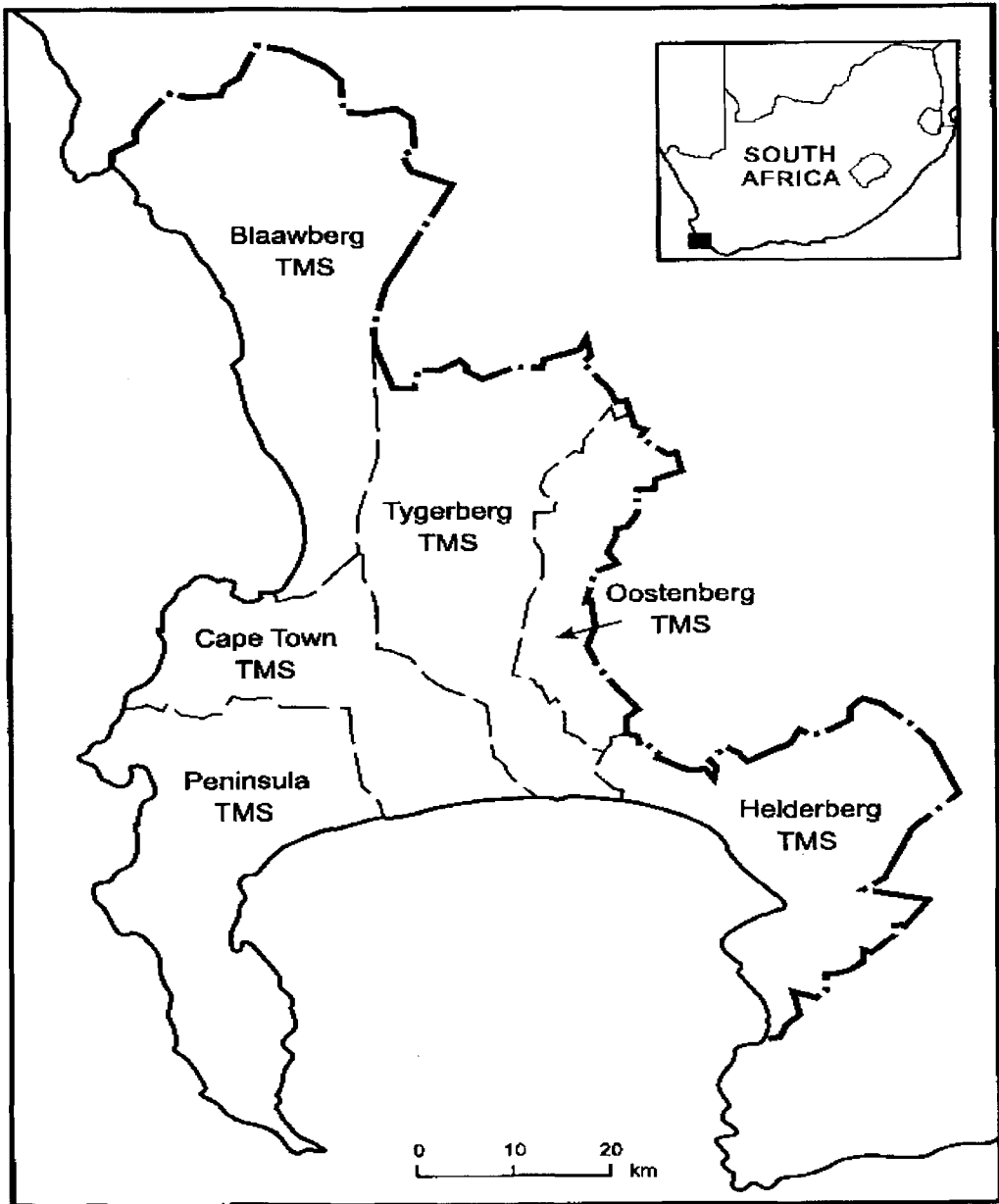
One of the goals of the new South African government is to redress the legacy of apartheid through more equitable distribution of public services. The South African Constitution, adopted in 1996, is unique in stating that access to clean water is a basic right. Since 1994, the government has begun developing partnerships with the private sector with the aim of managing public services more efficiently. A vigorous debate in the development literature as to the strengths and weaknesses of moving in this policy direction has been under way for more than a decade (Batley 1996; Lee 1996; Marvin and Laurie 1999). The literature is mute, however, on whether public/private partnerships in the provision of water lead in fact to greater equity in access to water.

Any effort to create more equitable service distribution in South African cities must overcome the legacy of apartheid. A five-year restructuring phase has recently culminated to the final amalgamation of Cape Town and six other substructures into a Unicity¹. This provides an opportune moment for evaluating the decision-making structures of the Cape Metropolitan Area (CMA) during the restructuring phase (1996–2000). The question is whether these decision-making structures have moved towards greater equity in the distribution of potable water, specifically to low-income communities living in the townships, or whether they are reproducing long-term patterns of urban inequality.

This paper illustrates how South Africa moved from a notion of distributive justice—the Reconstruction and Development Program (RDP) of 1994 promised universal delivery of social welfare provision—to a skewed version of procedural justice through the Growth Employment and Redistri-

Figure 1

The Structure of the Cape Town Metropolitan Area



bution (GEAR) strategy, which specifies the market as the main social and environmental mechanism for service distribution. This shift from equity concerns to efficiency gains threatens to create an institutional framework that prevents historically marginalized groups from amending the structural inequities in the distribution of public services, such as water provision. I argue that local economic development policies aimed at meeting the broader South African goal of twinning 'growth with equity' actually serve to reinforce structural urban inequalities. First, I outline the debate on supply-side and demand-side water management approaches. Second, I show how the procedural shift from supply-side to demand-side management has neglected equity concerns. In the Cape Town context, unequal access to water is a reflection of the way urban planning policies structured residential patterns stemming from rapid urban growth. I conclude by pointing out how power relations embedded in the urbanization of Cape Town and its resulting inequalities in the distribution of water create a logic of an economic "growth" paradigm that promotes efficiency at the expense of equity.

CONCEPTUAL FRAMEWORK

This paper approaches the issue of equity in access to water to township dwellers in the CMA via an urban political ecology approach. The framework tries to bridge the divide between human development issues and environmental concerns found in the "sustainable city" literature (White, 1994; Hardoy and Satterthwaite, 1997). This burgeoning literature combines growing concern over urban environmental degradation with equal concern over the declining quality of life of the urban poor. The poor are most often exposed to the dysfunctional environmental features of urban processes, or what has been termed the 'brown' agenda' (Hardoy and Satterthwaite, 1997). Yet rather than integrating environment and development issues, the existing literature perpetuates the discrete approaches to these topics by focusing either on development issues associated with the problems of the poor, or the unsustainable patterns associated with negative human impacts on the environment (McGranahan and Songsoe, 1994: 3).

In particular, the development-focused literature takes an instrumental view by treating the environment solely as a resource for human well-being, while neglecting the resilience of urban and peri-urban landscapes in supporting such activities (Choguill and Choguill 1997, Pugh 1997). Furthermore, the development-focused literature ignores the spatial situatedness of resource flows as these are socially embedded in the power relations that accompany the uneven development of cities. By comparison, the literature on the environmental aspects of cities (Douglas, 1983;

Hough, 1995; Warren, 1997) largely views the city as an ecosystem. It takes a process-oriented approach in examining how biophysical processes within the urban system may be integrated. The urban ecology stream of this "sustainable cities" literature is, however, a-political and a-spatial. It fails to consider the distributional aspect of environmental services, such as the location of those who benefit from nature's virtues like access to clean water supply, and the location of those who are exposed to nature's vices as evidenced by people who suffer from proximity to poorly managed waste.

The differences between these approaches to urban sustainability can perhaps be attributed to the fact that the development-oriented stream in the literature has focused predominantly on "Third" World cities, where urban management prescriptions have dominated the discourse. In contrast, the urban ecology literature has historically focused on cities in the "First" World, where concerns over consumption practices have superseded critiques of production.

Urban political ecology provides a theoretical framework that can address the problematic ways in which urban landscapes have been treated in the "sustainable cities" literature, while also addressing the power relations that determine the distribution of environmental services that are vital to life. Urban political ecology draws from social geography and political ecology. Social geography draws on a combination of welfare geography, using a territorial notion of justice to examine the distribution of benefits such as public services (Smith, 1975, 1977), and a political economy approach that examines structural explanations of unequal power relations (Harvey 1973, 1996). Beginning with a political economy framework, political ecology examines agency within the context of the opportunities and constraints that structure human-environment relations (Peet and Watts, 1996). In light of these intellectual traditions, urban political ecology tries to weave the politics of production within the socio-economics of consumption through the medium of the ecological landscape of the city. The recognition of the social production of nature in the city, as well as ideas about the threshold of nature's capacity to replenish, are vital if issues of ecological sustainability are to be combined with a just and empowering urban development (Swyngedouw, 1997).

THE DEBATE

Water-Supply Management

A significant proportion of the literature on sustainable cities discusses the health implications of poor urban water supply and inadequate sanitation

(Cairncross, 1990, Harpham and Werna, 1997; WHO 1993, 1995). Exploring water-management debates at the state level, in terms of regional administration, is an important first step in understanding how power relations shape the production and consumption of water at the city level. Accelerated urbanization creates serious challenges for many developing countries in keeping pace with increasing demands for water (Gilbert, 1992). In depending on grant financing for capital expenditures, the long tradition of supply-based orientation of public services has been criticized for failing to recover costs, resulting in lack of finance for operations and maintenance. Finally, the state's incapacity to expand services to meet growing demands for the provision of water disproportionately and adversely affects the urban poor.

Studies of water resource management in cities in developing countries point to the productionist logic of dual circuits of supply (Marvin and Laurie, 1999). The primary circuit is served by the state through a public utility; water vendors run the secondary circuit. Each circuit operates within a distinct social geography higher-income users are frequently located in parts of the city connected to formal water distribution networks. These water-users tend to be supplied with water that is underpriced considering the infrastructural and labor expenses associated with maintenance. The underpricing for generally high quality and unlimited supplies of water operates as a form of state subsidy to formal water network users, traditionally the elite of a city. As the formal circuit usually operates at a single rate, the low rates charged by the public utility are rarely high enough to pay for the expansion of existing infrastructure to accommodate new users. New low-income users have little option but to turn to the secondary circuit (Marvin and Laurie, 1999: 344).

The secondary circuit of water-supply management operates in opposition to the patterns of the primary circuit described above. Run by private water traders, the secondary circuit provides water distribution to low-income communities, particularly in rapidly urbanizing areas most often located at the fringe of the city and not connected to primary circuits of water provision. Public utilities are often unable to invest in the infrastructure costs necessary for the expansion of the formal network. They have tended to subsidize the unconnected poor by proxy through providing reduced tariffs to water vendors. Vendors operate on a logic of cost-recovery and profit, and charge much higher prices to informal water users. Black (1996: 6) notes that some urban users pay from 10 to 400 times as much for water through the informal sector than the prices paid by domestic users accessing a public utility. The social and environmental costs of irregular, poor-quality and expensive water supply to marginalized communities have been well documented in the "sustainable cities" literature (McGranahan and Songsore, 1994; Black, 1995; Bennett, 1995).

The spatial mismatch of these dual circuits is a product of the interdependence of each circuit. Low-income households without access to formal infrastructure rely on informal water markets for the provision of water and pay higher prices than their high income counterparts, who by virtue of their land rents, have access to highly subsidized public sector infrastructure. Although each circuit operates under vastly different technologies, the interrelationship between primary and secondary circuits is dependent on social relations that institutionalize unequal access to water resources (Swyngedouw, 1997). For example, the enormous costs associated with extending bulk infrastructure force the state/public utility to depend on the informal sector to service areas that the state could not reach. In return for providing a service to the state, informal water traders get subsidized rates when purchasing water. This subsidy is, however, rarely reflected in prices water vendors charge to the poor.

The contradictions of supply-side management during the post-war period are well articulated by Marvin and Laurie (1999). First, formal water suppliers ran structural deficits as the price charged for water was a fraction of the cost of supplying it, while the absence of measures for pricing consumption patterns prevented accounting of water use. World Bank estimates on cost recovery for developing countries indicate that water prices charged by the formal circuit cover only a third of the average cost of supply (World Bank, 1992). The high engineering costs entailed in bulk infrastructure often require international financing to meet consumption demands. Yet the largest users—industry, agribusiness and high-income households—demand low prices, and have the power to get them. The result is a perpetual loss of state revenues, which threatens the maintenance of the primary circuit and the financial resources necessary for extending existing water networks to the disenfranchised. Second, poor urban planning increases the costs of formal provision as water networks follow the development of sprawling settlements where the cost of installing bulk linear infrastructure is much higher than operating within a compact spatial form. This point is important in understanding the Cape Town context, discussed later. Third, the historical dependency of state governments on external financing has led to water management approaches that favor large-scale rather than small technologies, and more flexible alternatives (Marvin and Laurie, 1999: 345). Fourth, in the supply-side approach physical losses and illegal connections are rarely accounted for in trying to make the system more efficient. This is an area where an urban ecology theoretical framework could help ensure greater re-use of lost resources through the better design of formal waterworks system (Hough, 1995). Yet this approach often fails to look at the larger political economy structures that influence not only the supply of water but also the geographically uneven maintenance of water networks. Alas the divide between

social and ecological approaches to urban water management remains as wide as ever.

Shifting to a water-demand approach.

Growing criticisms from international financial institutions, NGOs and environmentalists regarding the contradictions of the supply-side approach, which dominated policy-making in the post-war era, led to a paradigmatic shift in thinking about water resource management in the 1980's and 1990's. After a series of micro-level studies examined the weaknesses of the productionist logic of supply-side management in the 1980's, the World Bank became a leading agent in shifting the discourse to water demand-management. By contrast with the supply-side approach, a demand-oriented logic focuses on variations in the volume and pattern of water use by individuals, households, farmers and industry and aims to change the behavior of consumers through measures ranging from pricing through education to regulation.

Another source of criticism of the supply-side approach was the voluntary organizations. NGOs increasingly argued that users should be involved in the management of water and sanitation networks. A series of projects revealed that NGOs were capable of intermediating between formal water networks and community-based organizations by facilitating the legal and institutional context of self-help schemes (Marvin and Laurie, 1999: 345). Finally, environmentalists pointed to the environmental impacts of large-scale water projects, as well as the tremendous waste of water due to leaks in poorly maintained urban infrastructure. Urban ecologists in particular have developed numerous methods of making water systems more resource-efficient through design techniques that reuse waste water by reintegrating it back into the energy cycle of the city (see Hough, 1995).

The mounting empirical evidence substantiating these criticisms led many governments in developing countries to embrace a new set of conditionalities in order to secure external support for the reform of water utilities. These include: (1) the acceptance of private involvement in the provision of water services; (2) the involvement of CBO's and water users in the extension and management of water networks; and (3) increased consideration given to smaller-scale water projects that cater to demand-oriented technologies (Marvin and Laurie 1999: 347). The demand-management discourse has thus become concurrent with a shift in funding styles that moves away from large infrastructure projects to focusing on administrative streamlining so as to enhance the institutional capacity of urban water providers.

The move from supply-side management to a demand-oriented approach connotes a shift away from the state, using a distributive justice framework synonymous with a welfarist orientation, to a procedural notion of justice,

which adopts a policy of market environmentalism (Bromley, 1995) aimed at ensuring a more 'efficient' allocation of scarce resources. Market environmentalism basically argues that human use of resources is better organized by market prices in the form of charges than by direct government control (Beckerman, 1994). The shift to demand-side management is an attempt to strengthen public sector governance through greater transparency. In practice this goal entails ringfencing all costs associated with running a service, cost recovery (by transforming state services into business units) and greater accountability (reducing "inefficient" public sector workers and strengthening the authority and salary of performance-based managers). In South Africa over the course of the 1990s, demand-side management emerged as a component of resource economics. The approach tried to improve the distribution of infrastructure stemming from supply-side capital projects to meet basic consumption norms as well as ecological goals for greater efficiency in water use. Demand management techniques included repairing leaky pipes, changing water usage patterns through block-tariffs and water conservation education (Bond, 2000: 164). Yet with this move to improving the efficiency of public sector water supply systems, came an increasing reliance on private sector expertise. By promoting a demand-driven approach entailing the removal of cross-subsidies and levying of user fees, the private sector offers the motto that user charges can recover full costs and improve service delivery and reliability, while expanding services to cover a greater number of people, namely the poor.

Over the course of the 1990s, local governments in Queenstown in the Eastern Cape, Nelspruit in Mpumalanga and the Dophin Coast in Kwazulu-Natal bought into the promises of the private sector by privatizing water supply systems through long-term concessions to foreign-owned water companies. Johannesburg tendered a five-year management contract to Suez Lyonnais, a French multinational water company, for its recently created public utility. Unlike its sister cities, Cape Town retained full ownership and management control of its water supply. Municipal bureaucrats and politicians instead opted for a public sector management strategy of corporatization.

The neo-liberal tendencies that underlie improving public-sector governance of water demand management through the incorporation of private-sector principles or direct private-sector involvement depend, however, on several problematic assumptions. Private-sector involvement in water provision is often perceived as inviting by a cash-strapped public sector for its technical capacity to provide demand-led, smaller-scale technologies in service provision. It is believed that this smaller-scale technology can deliver services more quickly and at lower costs. Yet the involvement of the private sector, or adherence to private-sector principles, often leads to the weeding out of state subsidies that enable access to water for low-income

households. The attempt to move towards a more flexible mode of delivery, be it a household tap or a community standpipe, for meeting the diverse demands of unconnected water users rests on a crucial variable, the price people are willing to pay for water. Developing the capacity to meet the variability of consumer demand rests on the assumption of a customer's ability to pay for his/her consumer choice. Associated with this assumption is the exclusionary practice of transforming citizens into customers. Yet the social costs associated with denying basic services to households who cannot afford to pay extend beyond the "individualizing" nature of market-based service provision. As water is vital to life, people will always be willing to pay user fees in order to access such a resource. However, if user fees for water tend to absorb disproportionate amounts of household incomes in previously marginalized communities, the privatization of water will only exacerbate existing inequalities.

A critical element lost in the adoption of demand-side management as a means to achieving this efficiency is the Reconstruction and Development Programme's (RDP) goal of developing local government's capacity to provide affordable universal access to water. The 1996 Constitution guaranteed socio-economic rights whereby municipalities were charged with ensuring that citizens receive access to services that historically had been denied to them. The mandate to municipalities was to achieve equal levels of service delivery standards across residential areas (Bond, 1999: 44). The RDP specified the need for infrastructure-related tariff restructuring, cross-subsidies and lifeline services to the poor with respect to water and electricity. In contrast, the increasing adherence to private-sector principles, or the outright involvement of private-sector suppliers, relies on a narrower financial cost-benefit analysis geared towards cost recovery and maximizing profit in a market setting. This approach neglects the negative externalities linked to excluding access to those who are unable to pay fees for water. The social costs of poor public health resulting from denying low-income communities access to a vital resource, such as clean drinking water, include higher infant mortality rates, increased household illness, reduced worker productivity and so forth. In the context of South Africa in general, and Cape Town in particular, such negative externalities serve to reproduce patterns of segregation. In short, the issue of equity in the distribution of water is absent in the efficiency drive involved with privatizing public services.

I have outlined in the preceding section, the shift to a demand-side approach in order to illustrate how the path towards increased private sector participation in the delivery of public services has entered the discourse of development. The backdrop to this shift in policy can also be attributed to pressures faced by many countries in the South in general, and in South Africa in particular, to develop partnerships with the private sector due to

central government responses to externally imposed structural adjustment programs (Lee, 1996) and to the dominance of neoliberal development strategies (Peet, 2001). A scarcity of government resources used to provide public services, combined with donor pressures for fiscal reform, have had a significant impact on the move to private sector involvement in the delivery of public services.

Neglect of the negative externalities in providing water in a market setting is related to the efficiency of the production of public services superseding considerations of equity in distribution. Overlooking these dimensions of water provision stems in part from failing to consider the importance of space-based processes and how these interact with water-management policies. When looking at water provision in an urban context, the question of how water is distributed is inescapably spatial, given both the materiality of 'nature' and the diverse processes in which it is transformed into infrastructure services at the local level. While space may be a container for social processes, it also constructs social processes. As Gottdiener (1994: 126) notes, spatial relations play a key role in the reproduction of social formations and in the hierarchically structured administrative practices of the nation-state.

The current debate over private-sector principles being incorporated as a management strategy in the provision of water in Cape Town illustrates how spatial dimensions that have historically institutionalized inequality in service delivery are being downplayed. The location of local economic development opportunities that can offer low-income households new employment opportunities tend to concentrate where infrastructure levels are high. These new sites of production are most often situated at far distances from township areas with few and expensive transportation options for low-income households to reach them. As the majority of townships have low to medium levels of infrastructure, business investment for local economic development remains outside the areas that most need an infusion of capital. These spatial dimensions play a central role in impeding the procedural justice claims that the private sector promises through the 'efficient' workings of the market. These dimensions shape who has access to clean water, where they access it and how much they access.

THE CONTEXT

The political and ecological landscape of Cape Town

Contextualizing water management in South Africa must take into consideration the ecology of water supply. In South Africa, the debate on

privatizing water is particularly vociferous. South Africa is an arid country that must regularly contend with water scarcity. In the CMA, water scarcity is most apparent in the Cape flats townships, areas with the highest concentrations of poverty. The townships are also prone to droughts in summer and flooding in winter.

The bulk water supply system in Cape Town is run by the Cape Metropolitan Council (CMC), which undertakes the treatment and bulk distribution of water to six metropolitan local councils that in turn are responsible for reticulated services. The CMC is the owner of the Steenbras, Lewis Gay, Kleinplaas, Land en Zeezicht, Wemmershoek and Table Mountain dams, all of which provide 15 percent of the water supply for the Cape Metropolitan area (CMA). The Department of Water and Forestry (DWAF) owns the Kleinplaas and Theewaterskloof dams, major storage reservoirs from which water is sold to the CMC for further distribution. These DWAF owned dams provide approximately 75 percent of raw water for the CMA (CMC 2000: 12). The remaining water supply comes from groundwater sources within the CMA. The cost per unit for raw water purchased from DWAF is 13.45 (in cents /m³) and is slated to increase to 18.91 per unit over the next decade if a new dam is built. The bulk water supply tariff for the next five years is shown in Table 1.

Since the 1996 amalgamation of 29 racially defined municipalities into six local councils, each of the new councils developed separate water distribution and pricing systems (see Figure 1). A progressive five step-tariff policy was put into place as a way of cross-subsidizing low-income users. The aim was to create a life-line tariff by providing the first six kiloliters at a very low rate (1.85) to facilitate access for low-income households.² As households consume greater quantities of water, they are charged a higher rate per liter. With the December 2000 elections, the above six municipali-

Table 1

Cape Town: Bulk Water Tariffs 1999–2004

Year	Envisaged Bulk Water Tariff (c/kl)	% increase
1999/2000	1,0375	
2000/01	1,1205	7,9%
2001/02	1,2213	9%
2002/03	1,3435	10%
2003/04	1,4913	11%

Source: CMC, 2000. "Advanced Water Services Development Plan", p. 42.

ties were amalgamated into one Unicity. Steps are under way to implement a more uniform five-step tariff policy across the metropolitan area.

Constraints on achieving greater efficiency through tariff structures begin with four significant problems facing the ecological management of water in the CMA. First, poor management of sewage disposal and stormwater runoff has led to over 70 percent of water brought into the CMA exiting the area as run-off (Dewar, 1991: 95). The absence of storage spaces for rainwater results in minimal recycling to serve the water purposes of industry or household sanitation. Rather, these demands all rely on pristine drinking water. Second, the CMA imports water from four rivers well beyond its boundaries. Water from these systems is tapped and stored in reservoirs and diverted through tunnels and pipelines to CMA consumers. Industrial dumping of waste products into rivers threatens the supply lines of water to the city. Third, and perhaps most importantly, poor urban land management has led to sprawling low-density human settlements where water consumption is highest (mostly wealthy white suburbs), while many rapidly urbanizing and high-density townships have limited access to adequate water (Davies and Day, 1998: 248).

Fourth, with the current rate of water consumption, the existing system of water supply is predicted to run-out within the next five to 10 years.³ As such, the CMC has been negotiating with DWAF over the building of the Skiifrom dam in the northwest area of the Western Cape.⁴ While building new dams might be a short-term solution to the growing threat of water scarcity, the increasing costs associated with the infrastructure required for building these dams will inevitably be transferred to the end-user, thus leading to significant hikes in water prices.

The ever-present dilemma of water scarcity combined with the growing corporatization of such an essential public good creates rigidities in billing practices that disadvantage low-income communities. An inevitable outcome of the marketization of water provision is cutting people off from a service they cannot afford. Since the first round of post-apartheid local government restructuring in Cape Town in 1996, this has indeed been the case, with 35 587 households having had their water supply cut for varying lengths of time⁵. Based on standard survey assumptions of five people per household in South Africa, simple arithmetic points to 177 935 individuals being denied a basic right as a result of these cost-recovery mechanisms. Considering that at least one-third of the population in Cape Town is below the poverty line, dramatic increases in costs for water will augment the public management dilemma of high non-payment rates by a large segment of the city's residents.

A longer-term approach to a more efficient delivery of water must certainly begin with improving the ecological management of the CMA by integrating industrial resource use, urban engineering and design practices

in how water is stored, as well as creating more compact land-use policies. Addressing the equity issue by widening and deepening access will require local government to invest in a level of infrastructure that supports household health and individual productivity. Reforming public policies in each of these areas is intensely political as the existing policies reflect the priorities of vested interests that have historically shaped the urban form.

But water scarcity is also socially constructed. From the national perspective, whereas white South Africans are profligate consumers, roughly 14 million black South Africans still do not have access to running water (Goldblatt, 1996). In the context of Cape Town, the majority of the population has basic access to water, but discrepancies in service delivery are reminiscent of apartheid days. Unraveling the historical process of urbanization in Cape Town reveals how a move towards greater efficiency through the incorporation of private sector principles for the distribution of water overlooks the inequity stemming from the spatial legacy of inequality in access to water.

The Urbanization of Cape Town

The modernist approach to infrastructure networks inherited from colonial powers influenced South Africa's urban planning policies for nearly a century. The disorder and public health issues associated with urbanization in South Africa at the turn of the century led to an urban management approach based on curtailing growth by controlling city life. These ideas facilitated the implementation of planning controls on the city as a means of enforcing apartheid laws, i.e., the division of races was used as a strategy for minimizing urbanization. Municipalities and local government structures played a significant role in implementing and maintaining planning policies for a 'controlled order' (Parnell and Mabin, 1995: 42).

The dynamics of service delivery in Cape Town reflect both the demographic makeup and the specific spatial layout of apartheid policies. Briefly, during pre-apartheid years, most 'white'⁶ local government revenue was self-generated through property taxes and charges levied in return for services to residents and businesses. These 'white' areas, largely consisting of middle-class residents, offered local government a large concentration of economic resources and property investment to tax. Residents 'willing to pay' for highly subsidized prices for public amenities received exceptionally high standards of service delivery. The social spending pressure for local authorities to service coloured working class communities was absorbed by the taxes of nearby commercial and business areas and a residential rebate system. In contrast, the former Black Local Authority Areas were poorly serviced by illegitimate administrations operating with revenues raised through Regional Services Council levies (Parker, 2000: 3). The collapse of

this three-tiered system in the 1980s led to enormous service backlogs and became the responsibility of newly elected local authorities in 1996.

In light of these policies, three dimensions of the land-use patterns of Cape Town helped to construct and reinforce social and spatial inequalities. First, *low-density urban sprawl* has resulted from local government accommodating the expansion of white households into peri-urban areas while trying to ensure that informal settlements remain located beyond the urban fringe. The apartheid laws displacing Coloured and African residents to the townships on the urban periphery continue to structure the socio-spatial marginalization of low-income migrants to the city, as the townships are the fastest growing areas and the prime locus of in-migration while being located farthest away from urban employment opportunities. Second, *fragmentation* shaped urban growth as development occurred in discrete pockets bound by freeways or open space; town planning practices, such as zoning and housing policies, were designed to reduce contact between racial groups. Third, urban management philosophy dictated the *separation* of land uses (e.g., work places from residences), races, and income groups (Dewar, 1991). This was particularly emphasized in the separation of places of work and residence (Dewar, 1991: 94). Together, these land-use patterns provide the spatial framework from which structural inequities in service delivery are perpetuated.

Cape Town's history of urban fragmentation in land-use policies and service provision, along with current processes of rapid urbanization, serve to intensify the concentration of poverty. At least 80 percent of the population growth (at a rate of 3 percent per annum for the CMA) is occurring in the townships. The Social and Economic Directorate of the CMC reports that 32 percent of the African population in the CMA live below the poverty line. This translates into a 36 percent unemployment rate for Africans compared to a 7 percent unemployment rate for whites (CMC, 1999). Table 2 highlights the poverty profile of the CMA regarding access to infrastructure.

In sum, the demographic and geographic realities of the townships pose a serious challenge for local governments in addressing an historic backlog of services and improving and expanding service delivery. The constraints to strengthening the public sector's capacity to widen access to services for low-income communities stems from several factors. These range from the structural forces of macro-economic policies emerging from central government that have significantly reduced the financial support to local government for infrastructure investment, to the agency of municipal bureaucrats in espousing the marketization of public services. A brief review of these macro-economic policies can help explain why municipal bureaucrats have adopted a particular form of local economic development that may promise to make Cape Town more globally competitive, but may also yield weak results in alleviating poverty.

Table 2

Poverty Profile of the Cape Town Metropolitan Area

CMA poverty Profile: CMA Infrastructure					
	African	Coloured	Indian	White	CMA-All Races
Shack housing	51%	4%	0%	0%	12%
Hostels	15%	2%	0%	0%	4%
Drinkable water in the house	34%	89%	100%	99%	82%
Flush toilet in the house	24%	87%	96%	95%	78%

Source: 1995 October Household Survey (weighted) in CMC Poverty Reduction Document Series: Technical Document.

Economic Development Policies

The 1996 implementation of GEAR as the ANC's guiding macroeconomic framework led to a development strategy based on export-led growth and the deregulation of labor markets and financial markets to make South Africa more 'competitive' and open to foreign investment. The shift to this neo-liberal economic policy spurred the Department of Constitutional Development (DCD) to launch the Municipal Infrastructure Investment Unit (MIIU) to assist local governments in implementing municipal partnerships. The DCD set up the MIIU to ensure the maximum number of municipal infrastructure projects by inviting private sector firms to identify projects and present them to municipal authorities. As the MIIU was set up to promote public/private partnerships for the delivery of municipal services, the level of subsidies made available to municipalities as service providers was significantly reduced. There have been cuts in intergovernmental transfers by 85 percent in real terms across the country since 1991.

These cuts in inter-governmental transfers helped define the 1997 Municipal Infrastructure Investment Framework's (MIIF) release of a 10-year plan for infrastructure and service delivery (Bond, 1999). The MIIF set out guidelines for municipal investment for meeting the "basic needs" of an urban poor defined as those with incomes below R 800 (As of January 2001 1 US\$ = R7,80) (Bond, 1999: 126)⁷. The substandard infrastructure packages for 'assisting' the poor includes pit latrines, yard taps, 5-8 Amp electricity supply, gravel roads and an absence of stormwater drainage. The combination of this new policy shift and cuts in intergovernmental grants, by 1997, led to massive cutoffs of services to thousands of residential users

due to non-payment of municipal service charges (Bond, 1998). As Bond (1999:45) notes, "Clearly, the spatial dimensions of neo-apartheid geography have not been factored into the MIIU plan. The basic levels outlined by the MIIU represent a development policy that will be in place for a decade".

Considering the extent of cuts in central government subsidies to local authorities for infrastructure development, the national government put in place the equitable share grant. The purpose of this grant is to assist local governments in financing the provision of basic infrastructure to households under the 'indigence'⁸ category. In reality, most local authorities see the concept of the equitable share as an absent mandate. Furthermore, the administrative loopholes for low-income households to access this form of subsidy are so complex that few have the resources to take advantage of it.

The consequences of declining levels of funding for municipal investment in infrastructure are particularly significant when examining the gradual move within South Africa to partner with the private sector in the provision of water services⁹. The most critical feature of private sector involvement has been that cross-subsidies are rooted out and replaced with cost-reflective pricing. Bond's research on the privatization of water in Southern Africa notes greater rigidity towards low-income water users once public utilities enter into partnership with the private sector (Bond, 1999). The private sector will only operate where there is a promise of return for its investment. Without adequate built infrastructure for water delivery, low-income communities will hardly be able to attract private-sector operators to supply them with water at a level that ensures cost recovery.

CONCLUSION: CONTRADICTIONS OF LOCAL ECONOMIC DEVELOPMENT POLICIES

These macro-economic policies have had a distinct effect on local government's efforts in extending and maintaining basic infrastructure to low-income communities. While most rural areas are far worse off than large urban centers in South Africa, this paper has focused on the urban political ecology of Cape Town, one of the wealthiest cities in the country, yet an area that still has enormous discrepancies in service delivery.

Since the first round of local government restructuring began in 1996, Cape Town has experienced an enormous transformation in thinking about service delivery. The identity formation of newly elected municipal administrations was largely shaped through distinctive approaches to service provision. The 1997 round of amalgamation gave local authorities the task of adapting to significant changes in personnel and budgetary resources while

addressing the specific needs of newly formed constituencies previously excluded from such considerations. Shortly after this process of restructuring began, local authorities entered a new transitioning process that forced them to deliberate on how to deliver services in a more integrated manner in preparation for the final amalgamation into one Unicity in December 2000.

Recent local economic development policies have involved drawing up plans for creating activity corridors and network nodes focusing on access to multiple transportation sites. These planning initiatives aim to spur new local economic development opportunities among wealthy suburbs, city centers and the townships. The aim of such integrated sites is to increase densification of residential development and concentrate public investment in these areas (Harrison, *et al.*, 1997: 49). The intended long-term impacts of these economic development strategies are to minimize the long distances township dwellers must travel in order to reach sites of employment and services. Local government sees improving infrastructure services in the townships as a critical step for attracting business investment. Harrison *et al.* (1997) argue, however, that improving services is more than merely increasing access to social benefits; it also requires economic spin-offs. Without adequate provision of infrastructure, such as electricity and water, economic development will be severely constrained for people living in previously disadvantaged areas. In many township areas, lack of basic infrastructure or reliable services makes economic activities in the formal sector enormously difficult.

There are several problems with the design of these economic development policies. First, local governments hope to attract public infrastructure to the townships for the purposes of production without first ensuring adequate levels of infrastructure to support household consumption. Second, the siting of new industries in areas where there is easy access to reliable infrastructure disadvantages the townships from attracting capital investment. The CMA has concentrated its hopes for economic growth in information technology industry and tourism. Consequentially, most formal growth is occurring in light and high technology industries and is oriented towards servicing the northwestern area of the CMA. The skilled workers in these growth areas are drawn from proximate Coloured and White communities. Businesses are unlikely to locate in and around townships (southeastern part of the CMA), as these areas cannot offer the level of infrastructure needed to attract investment (Harrison, *et al.*, 1997: 47). Furthermore, the surplus drawn from capital investment in the tourism industry is channeled into building the infrastructure for more five star hotels, entertainment plazas, and waterfront activities for the benefit of an elite traveler. The question is how much of the surplus stemming from this foreign and domestic investment is relocated to strengthening the infrastruc-

ture required to enhance basic needs, let alone aid in local economic development of township areas. While the tourism industry can certainly be promoted as a job-creation sector, such new employment opportunities fail to extend to township dwellers who cannot afford to pay more of their household incomes to finance the transportation costs of getting to and from these new sites of consumption. Third, local government policies are aimed at providing services for economic investment in a more labor-intensive way so as to provide greater employment opportunities for nearby township residents. One of the strategies for meeting this objective has been through increased outsourcing of public sector responsibilities to a growing array of entrepreneurs. Yet the poor salaries, tenuous conditions of employment and lack of benefits involved with these new job-creation schemes puts into question whether this strategy is addressing the goal of poverty alleviation or merely exploiting it.

The tensions in these policies begin with the contradictory role of local government. On the one hand, local government is trying to make Cape Town into a globally competitive city through local economic development policies that promote growth to ensure greater equity. On the other hand, local government is maintaining the spatial form of segregation through the continuation of its traditional approaches to urban development, i.e., uneven distribution of urban infrastructure for development. When a "growth with equity" model is placed onto a terrain of unequal distribution in urban infrastructure, local government policies serve to consolidate existing power relations. These power relations determine where capital will invest to produce the 'growth' that is rhetorically supposed to harness equity in distribution. However, in light of the Cape Town's segregated residential patterns, rights to social, economic and environmental health will continue to reflect the socio-spatial patterns embedded in the city.

NOTES

1. Tygerberg, Blaauberg, Helderberg, South Peninsula Municipality, Oostenberg, Cape Town and the Cape Metropolitan Council were amalgamated into a Unicity on December 5, 2000, the eve of the second democratic local government elections.
2. It can be argued that this lifeline tariff policy is sufficient for a small nuclear family but fails to take into consideration the water-consumption realities of households that have on average five people, which is the case in most township dwellings.
3. Figures cited from interviews with senior water managers across the Metropolitan area.

4. DWAF agreed to permit the building of the dam and assist in financing it if the CMC could prove it had implemented demand-management strategies to better conserve and reduce water use.
5. Figures cited from research conducted by the author over the summer (2000), based on detailed questionnaires sent to every water depot in the metropolitan area. Figures given for the number of households that experienced water cutoffs since 1996 for each water depot are: Cape Town (9000), Tygerberg (8200), Helderberg (6000), Blaauwberg (4472), Oostenberg (6000), Southern Penninsula Municipality (900).
6. In the South African context, the politically correct terminology for racial classification is African, referring to the Black population; Coloureds, who are of mixed-race origin, and Whites, referring to Caucasians.
7. This is approximately one-third of the CMA population, most of whom are living in the townships
8. People under the indigence category are living below the poverty line (earning less than R1500 per month).
9. Private-sector involvement in the provision of public infrastructure can take form in a variety of service contracts, such as 1) management contracts (between 2 and 20 years); 2) renting or leasing of assets (between 10 and 20 years) and; 3) investment-linked contracts or concessions. Outright privatization (complete private ownership) of water supply is not yet under serious consideration in South Africa.

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