The Hyderabad Metropolitan Water Supply and Sewerage Board

Introduction

With more than four million residents, the city of Hyderabad is the capital of the southern Indian state of Andhra Pradesh (Figure 1). It is India's seventh largest city and one of its fastest growing. Over the last two decades, the city's population has expanded at an average rate of over three percent per annum; more recently, this rate has increased to 5.6% per year. Now, every ten years, 2.2 million more people come to reside in Hyderabad. By 2020, it is expected that its population will reach 11 million.[1]

Andhra Pradesh's dynamic young Chief Minister, Chandrababu Naidu, likes to take credit for both the growth and the increasing productivity of Hyderabad. Ever since he took power in 1995, Naidu pursued an aggressive strategy of modernization and technology-based development. He hoped to steal the mantle of "Software Capital of India" away from the city of Bangalore, capital of neighboring Karnataka. Recognizing that Hyderabad lacks Bangalore's numerous universities and defense research centers, Naidu aggressively targeted technology-based businesses to locate in his state's capital by promising to provide them world-class infrastructure. Among Naidu's major successes were luring Microsoft to establish its Indian headquarters in Hyderabad in 1998 and hosting US President Bill Clinton during his whirlwind visit to India in 2000.

Naidu is proud of his achievements, but he is also worried about the ability of his city to cope with the roughly 250,000 new people that relocate to Hyderabad each year. He is particularly concerned about fulfilling his promise of providing high-quality infrastructure to firms and households. A combination of heavily subsidized pricing for public services and a lack of adequate investment funds has put tremendous pressure on Hyderabad's public agencies. For several years, Naidu has led a reform effort in Hyderabad's public service agencies, encouraging government employees to become more customer-oriented and professional in their performance. In his re-election campaign of 1999, Naidu pursued a strategy novel in Indian politics by openly promising better public services in exchange for higher tariffs—a pledge that won him re-election.

Although many of Naidu's reforms have improved performance in Hyderabad's public agencies, they have not fully addressed the key challenge of expanding infrastructure to keep pace with the rapidly growing city. With encouragement from the World Bank, Naidu has become convinced that privatization of key utilities is the most expedient solution to Hyderabad's impending infrastructure crisis. He hopes to make the Hyderabad Metropolitan

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[1] The designation "Hyderabad" is used to refer to the adjoining cities of Hyderabad and Secunderabad, located on opposite banks of the Musi River. The Hyderabad Water Board serves the entire Hyderabad-Secunderabad area. Unless otherwise noted, all figures (*e.g.*, area, population) refer to this entire metropolitan area. The 2001 Census of India states the population of Hyderabad as 3,449,878.

Water Supply and Sewerage Board ("the Board," or HMWSSB)[2] the first major utility in the state to be privatized. The Government of Andhra Pradesh and the HMWSSB have sought the support of the World Bank in moving forward with a concession for the Board's operations.

Whereas the World Bank is supportive of Naidu's privatization plan, Bank officials are concerned that benefits of this reform be shared by Hyderabad's roughly 1.7 million slum-dwellers.[3] Experience with other privatizations has made the World Bank increasingly sensitive to the facts that (1) water supply and sanitation are viewed as having more public benefits than any other infrastructure sector, and (2) given the high cost of service and the pressure to supply low-income households at very low prices, private operators will understandably resist extending service into slum areas. In order to receive technical and financial assistance in the privatization process, the Bank—along with many local NGOs and consumer rights organizations—is insistent that Naidu's team devise a strategy for privatizing HMWSSB that addresses service to Hyderabad's poor.

Naidu has appointed M.G. Gopal, an industrious civil servant known for his successful management of the Andhra Pradesh Tourism Development Corporation hotels privatization, as Managing Director of HMWSSB. Gopal understands that, to prepare the organization for privatization, he must balance the competing demands of making the HMWSSB attractive to private investors while ensuring that the interests of the poorer residents of Hyderabad are protected. He has identified three alternative approaches, none of which appears completely satisfactory.

First, the private concessionaire could be made responsible for extending service to the poor at a controlled price, with a regulator ensuring strict investment and network expansion schedules. A second option is to allow the concessionaire to choose the neighborhoods in which it will meet expansion targets; under this arrangement, poor communities will likely be served only when they are willing and able to pay for service improvements. A final option is to give principal financial responsibility for water and sanitation services for poor households to the Municipal Corporation of Hyderabad, which already plays a role in providing infrastructure services to the city's slums. The Corporation could fund expansion of water and sewerage services to poor neighborhoods through tax revenues and foreign aid. This strategy would formalize an arrangement that already exists in practice in many slums, and would also spare the concessionaire the responsibility of servicing a large and commercially unviable population.

Which strategy should Gopal recommend in order to satisfy World Bank officials and execute a successful privatization of HMWSSB? Is there a way to balance both commercial and social objectives in the privatization of essential services, such as water supply and sanitation?

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[2] The two terms are used interchangeably in this text.

[3] In Hyderabad—as in most Indian cities—the term *slum* is an administrative designation used to refer to a wide variety of informal housing settlements comprising "poorly built congested tenements, an unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities" (Census of India, 2001). Communities designated as slums (a classification known as being "notified") are entitled to an array of public assistance, such as subsidized water supply connections. In addition to designated slums, there are a number of illegal squatter settlements in Hyderabad that are not entitled to public assistance; indeed, it is unclear whether public agencies are legally permitted to provide services to these communities. In Hyderabad, estimates of the number of slum dwellers range between 1.2 and 2 million (the case uses the figure 1.7 million).

Background

The HMWSSB is a relatively young institution. The state government had hoped that it would defy the stereotype of a South Asian bureaucracy by operating as an autonomous agency but under commercial principals. The Board was created in 1989 by consolidating two existing government departments. Previously, the state-level Public Health Engineering Department had been in charge of water services for the city, while the Municipal Corporation of Hyderabad (MCH) was responsible for sewerage services.

The re-organization was encouraged by the World Bank as a means of establishing a water and sewerage authority with greater financial and operational autonomy, as well as heightened accountability to customers. In turn, it was hoped that the Board would move toward cost recovery through user fees, which would both free it from political interference and generate a substantial proportion of the resources needed to augment bulk water supply. Indeed, the Act creating the Board stipulates that it be financially self-sufficient through user fees. As a first step in this direction, the HMWSSB achieved virtually universal metering of its customers by 1992.

Despite clear mandates in the Board's charter, the HMWSSB enjoys neither budgetary nor personnel management autonomy. When the organization was formed in 1989, the Government of Andhra Pradesh retained ownership of the Board's assets. The Chief Minister of Andhra Pradesh (Naidu) serves as Chairman of the agency's Board of Directors (Figure 2). Virtually all members of the Board of Directors, including the Managing Director of the Board itself, are political appointees. Naidu oversees all important and politically sensitive policy decisions, such as tariff rates, and leaves the operations of the Board to the Managing Director. The Managing Director is a member of the Indian Administrative Service, the elite wing of Indian bureaucracy.[4] In addition, only a minority of staff actually became official employees of the Board; the rest are still staff of the state Public Health Engineering Department and are subject to its personnel management policies for matters of promotion, transfer and benefits.

A review of the Board's balance sheets suggests that the HMWSSB is making slow progress toward financial self-sufficiency (Table 1). In 2001, user fees and new connection charges combined did not cover even operations and maintenance (O&M) and staff costs. In fact, between 1989 and 2002 tariffs were only raised twice, by 17% in 1993 and by 25% in 1997. During this same period, however, inflation in India averaged 8.5% per annum. In early 2002, the Board finally won approval for a sizeable (64%) increase in tariffs. User fees are now expected to cover O&M costs, but not depreciation, system rehabilitation or new investments (Table 2). Each year the government of Andhra Pradesh provides support in terms of grants-in-aid to the Board. For accounting purposes, these grants are treated as contributions either to the HMWSSB's capital base or to operating expenses.

The Board has also recently re-structured its tariffs for water and sewerage service. Differential pricing for industrial, commercial, and residential customers has been eliminated. Instead, an increasing block tariff is designed to allow cross-subsidy of domestic customers by commercial and industrial enterprises that use larger volumes of water. It is unclear how these

[4] The Indian Administrative Service is an elite national-level arm of the Indian Bureaucracy. Admission to the ranks of the IAS occurs through a competitive examination and interview process. IAS officers are protected by the civil service rules of India, and can be dismissed only if convicted of crime while in office. IAS officers are well paid by Indian bureaucratic standards, and enjoy considerable power and fringe benefits associated with their positions. IAS officers also have the potential of being deputized to international organizations such as the United Nations and the World Bank.

tariff revisions will affect the relative burden of cost-recovery among different user groups. Historically, domestic customers have used more than 60% of the water provided by the Board, but generated only about 30% of the Board's revenues (Figure 4).

Tariffs have been kept low in response to pressure from elected officials who view water as a social good that should be provided at low or no cost to residents, particularly the poor. In reality, it is low tariffs that restrict the Board's ability to expand its infrastructure to low-income settlements where poor residents live. Middle- and upper-class households with individual piped water connections benefit from this subsidized service, while poor households are often forced to rely on public standposts or on water vendors.

Another reason that the Managing Director's requests for tariff increases have been rejected by the Chief Minister and the Board of Directors—despite strong World Bank support for tariff reform—is the high level of unaccounted for water in Hyderabad's system. Estimates range from 40-55% of supply, with roughly 40% thought to be physical losses and 60% administrative losses (Figure 5).[5] Before many political officials will support tariff increases and investments in new supply, they insist that the Board improve the management of the resources they already control. "If they reduce the level of non-revenue water, they will automatically get a substantial increase in their revenues," notes one member of the Board of Directors who has repeatedly opposed water tariff increases. "The customer should not have to pay for the HMWSSB's inefficiency."

A former Managing Director noted, however, that the infrastructure the Board inherited from the Public Health Engineering Department in 1989 was in poor condition, especially in the older parts of the city. Rehabilitating the network such that a substantial reduction in unaccounted for water is achieved will require a sizeable investment.[6] Further, Hyderabad's politicians obstruct efforts to dismantle illegal connections and to disconnect households who have not paid their water bills. Board staff who attempt to enforce such penalties often find themselves transferred to a "penalty post" in an undesirable department. In some cases, local leaders have even organized residents to confront and threaten Board staff attempting to enforce disconnection rules. Given the Board's difficulty both in setting reasonable tariffs and enforcing payment from users, it is not surprising that its service levels have been declining over the past several years.

Water & sanitation services in Hyderabad

Like other cities in Southern India, Hyderabad is severely water-constrained. In part, this is the result of water resources management decisions by the Government of Andhra Pradesh; agricultural interests near Hyderabad exert control over a substantial proportion of the region's surface water. In addition, whereas many other parts of India experience heavy regional precipitation during the monsoon months (June-September and December-January), Hyderabad receives comparatively little monsoon rainfall. Average annual precipitation in the city is only about 78 cm., much less than the 163 cm. in Calcutta and the 225 cm. in Bombay.

[5] Administrative losses include all water used by customers for which the Board receives no revenue, including water that is stolen or insufficiently billed, as well as water provided free of charge by the Board such as through public standposts or tankers.

[6] No reliable cost estimates for UFW reduction are available. In one recent project, the Board spent Rs. 270 million (US$5.5 million) to rehabilitate 27 kilometers of transmission line extending from one of its reservoirs into the city.

Hyderabad has become accustomed to living on the brink of thirst. Currently, unrationed water demand (the amount of water that would be demanded if continuous supply were available) in the metro area is estimated at 1,700 MLD and is expected to increase to over 2,000 MLD by 2011 and 2,600 MLD by 2021. In contrast, the current water supply capacity of the Board (755 MLD) is just over half of *rationed* demand—the water needed to provide two hours of supply per connection per day (approximately 250 liters)—a total volume of 1,300 MLD (Figure 2). City residents will experience severe water supply shortages if substantial infrastructure investments are not undertaken soon.

For several decades Hyderabad relied on two small reservoirs for its water needs: Osman Sagar, built in 1920, supplies the city 114 millions of liters per day (MLD) and Himayat Sagar, built in 1927, supplies an additional 68 MLD. After years of severe water shortages, the city finally managed to build a series of dams on the Manjira River, which gradually increased the city's water supply by an additional 473 MLD. The city also manages to pump out an additional 100 MLD of groundwater, although the majority of groundwater near Hyderabad is not potable. The total volume withdrawn, 755 MLD, however, is still several hundred MLD short of demand. Indeed, households are supplied water for only about two hours per day when the rains have been abundant; when the rains fail, this two-hour supply is provided only every other day. Larger commercial and industrial users have had to make other arrangements for their water supply. Most rely on private water vendors who deliver water pumped from agricultural lands outside of the city in tankers, charging an average of Rs. 50 (US$1.05) per cubic meter ($m^3$).[7]

The prospects for future investment, given current financing options, are not favorable. The funds that Hyderabad has obtained through loans from national development agencies and banks such as the Life Insurance Corporation of India and the Housing and Urban Development Corporation have been insufficient to finance the kind of large-scale investment in water supply that the city needs. The Krishna Water Project, which is designed to bring in an additional 410 MLD to the city at a cost of Rs. 10 billion (~US$ 208 million), was recently approved by the state government after being delayed for years. This initiative, however, will more than double the average cost of production from Rs. 11.3 (US$0.24) to Rs. 25 (US$0.52) per m^3.

Analysts have also noted two alarming trends regarding water infrastructure investments for Hyderabad.[8] First, the time period between water source development projects is becoming progressively shorter, suggesting that the region's accessible and affordable bulk water sources have already been developed. To keep pace with population growth, the city will need to identify and develop new supply sources almost continually. Second, the distance between bulk water sources and the city has increased with each project, indicating escalating costs per unit volume (as well as increasing transmission losses). Hyderabad is becoming increasingly reliant on water from the Krishna and Godavari rivers, which are at distances of 110 km. and 200 km. (68 and 124 miles), respectively, from the city. Given the pressing need for investment and the supportive position of the World Bank, Chief Minister Naidu is looking to privatization as the solution to Hyderabad's looming water supply crisis.

[7] US$1 = Rs. 48. One cubic meter = 1,000 liters. 3.87 liters = 1 gallon.

[8] Saleth, R.M., and A. Dinar. 1997. *Satisfying urban thirst: Water supply augmentation and pricing policy in Hyderabad, India.* World Bank Technical Paper No. 395. Washington, DC: The World Bank.

Service to the Poor

Among the Hyderabad residents suffering from a lack of water and sanitation services, the city's 1.7 slum dwellers are the most seriously impacted. Most middle- and upper-class households have installed borewells that provide low-quality groundwater for bathing and washing, but slum dwellers typically cannot afford this investment.[9] The official poverty line for the city is Rs. 1500 (US$31). Average daily wages for unskilled labor range between Rs. 60 and 80, which means a laborer with a full-time job would earn roughly Rs. 1400-1750 per month.[10] Other researchers working in Hyderabad have estimated that total monthly income for households in slums is approximately Rs. 3,000-5,000 (US$63-104) on average.

Currently, water supply and sanitation lines (trunk mains) extend into roughly half of the city's slums, principally the result of a project funded by the British Overseas Development Authority. No reliable estimates are available regarding the proportion of slum dwellers in these areas that have individual water and sewer connections, but anecdotal evidence suggests that it is no more than half. Officials at the HMWSSB estimate that another Rs. 540 million-1 billion (US$11-21 million) will be needed to extend services to the city's unserved communities.[11] In the meanwhile, poor households rely on nearby public standposts or borewells, or on water provided through HMWSSB tanker trucks. According to the Board, tankers provide approximately 40 liters *per capita* per day free of charge to slum dwellers lacking network infrastructure. The Board currently leases about 250 tankers, most of which carry 5,000 liters of water, for Rs. 25,000 (US$520) per month. Still other residents in slums without network infrastructure rely on service theft to meet their water supply needs. HMWSSB staff estimate that as many as 10,000 public stand posts have been constructed illegally in slums, and the Board typically turns a blind eye to their existence. One senior official said he would not be surprised if one third of the HMWSSB's unaccounted-for water was stolen by poor households.

HMWSSB does make network connections more affordable for poor households by participating in the National Slum Development Program. The program provides a federal subsidy of 50% of the connection charge (approximately US $115) for households located in the city's approximately 800 designated slum neighborhoods. The charge can also be paid in installments over a five-month period without interest. There are, however, no subsidies available for sewerage connections. Between 1992-1998 the Board also undertook, on the insistence of the World Bank, a large low-cost sanitation initiative that involved building over 20,000 twin-pit pour-flush latrines in outlying slum neighborhoods as part of a larger Bank-funded water and sanitation project. As a result of reported groundwater contamination from the installed latrines, however, the Board has since decided not to construct additional on-site sanitation facilities unless there is virtually no prospect of extending sewer lines to a particular community.

[9] The Board receives no payment for private abstraction of groundwater, nor are residents required to obtain a permit for borewell drilling.

[10] The Government of Andhra Pradesh estimated average *per-capita* monthly income in 2001 for the entire state to be Rs. 800 per month (~US$17). However, reliable income data for Hyderabad's poor are not available, and slum residents have an incentive to understate their earnings to retain eligibility for social services such as food ration cards.

[11] Note that this figure pertains only to official slums; it is believed that another 300,000-400,000 residents live in unregistered slums within the greater metropolitan area. At this time, the Board has no official obligation to serve these unplanned settlements.

In addition, although more than 6,600 public standposts are located in the city's slum areas, senior staff of the HMWSSB have made an informal commitment to "phase out" their servicing.[12] This decision stems primarily from the fact that each standpost, which supplies water free of charge to residents, is a loss-making venture for a Board scrambling to improve its financial standing.[13] Representatives from some of the city's major NGOs active in health and slum upgrading were virtually unanimous during interviews that "the Board is not working in slums in any sincere way." Indeed, in 1997 estimates were that the Board provided an average of approximately 135 liters per capita per day (LPCD) to non-slum households, but only 20 LPCD to slum households served by public standposts.[14]

Some of the Board's policies are actually detrimental to low-income customers. For example, only individual water and sewer connections are available. Households that want to share a connection pay a higher fee. [15]

The rationale for this sharing penalty is that connections serving multiple households will suffer greater wear and tear, requiring more frequent servicing by the Board and thus justifying a higher initial fee. For industrialized country settings, this rationale might be sound; however, in Hyderabad, where water supply through the Board's network is available only a couple of hours per day at most, the argument is less convincing. In fact, a senior Board officer remarked, "When people tell me that they want to apply for a shared connection, I tell them just to put it in one person's name and work out the sharing among themselves." Although no reliable figures are available regarding the number of households that use this arrangement, one staff member working in the new connections office estimated that he receives two to three queries about shared connections each week.

The fact that the HMWSSB is not giving concerted attention to facilitating new connections for poor households is not particularly surprising. Section 8 of the Act creating the Board stipulates that it be financially self-sufficient through user fees; given the restrictions on domestic tariff increases and the perception of non-payment problems in low-income neighborhoods, slums do not hold substantial revenue potential. Nor do slum dwellers have the degree of political "pull" of more affluent residents in Hyderabad. At the same time, a variety of slum development programs in Hyderabad, implemented primarily through the Municipal

[12] Previously, the Board established a program of public standpost conversion in the city's slums whereby a group of households was required to organize and assign a leader to collect monthly payments from all users. This system was shut down by agitation from Members of the State Legislative Assembly (MLAs), who said that poor households receiving such a low level of service should not be charged at all.

[13] There is tension between the HMWSSB and the Municipal Corporation of Hyderabad (MCH) regarding which institution has responsibility for O&M of public standposts, and over fees owed for the supply of water to the PSPs. Reportedly, both organizations signed an agreement in 1989 by which the MCH would reimburse the HMWSSB for all water supplied free of charge to city residents. After several years, however, the Corporation ceased its payments for this service.

[14] The World Health Organization uses a norm of 50 LPCD for "basic needs," including drinking, cooking, and hygiene.

[15] This is the result of the Board's use of plot area to determine the price it will charge customers for new water and sewer connections. For example, a household with a plot area of 101-200 m^2 pays Rs. 5,250 (~US$115) for a half-inch water/sanitation connection. If the household wants to collaborate with its neighbor on a shared connection, and if the neighbor has a similar plot size, the cost of this same connection would increase to at least 1.5 times the price, Rs. 8,250-16,500, (US$180-365).

Corporation, provide alternative mechanisms for low-income households to receive improved services.[16]

One of the Municipal Corporation's key subsidiaries, the Urban Community Development (UCD) department, is the lead agency for most slum upgrading programs in Hyderabad. The department implements a range of activities for poor neighborhoods, including micro-credit and employment schemes, women's and children's health programs, and infrastructure improvement initiatives. The UCD has been the primary partner in several large slum upgrading projects, and has implemented partnerships between the UCD and several community-based organizations that help residents establish and implement development priorities. Because it is short of staff, resources, and political influence, the UCD has largely employed a project orientation in its activities, taking advantage of opportunities to partner with city NGOs and bi- and multilateral organizations. Whereas these efforts reach only a fraction of the city's poor, they have arguably helped the Board to shift responsibility for water and sewerage planning in Hyderabad's slums onto other organizations, thereby freeing it to focus on commercially viable customers.

Reforms at the Board

The emphasis on corporatizing the HMWSSB's operations is, in part, linked to the political infeasibility of tariff increases. In 1997, the Board launched a series of initiatives designed to improve operational efficiencies and customer service. The Chief Minister felt that the Board would need to make some initial efforts to improve its performance if it was to generate public acceptance for higher tariffs. Of course, given the Board's financial position, the Managing Director (MD) knew that he could not address customers' principal source of dissatisfaction—the inadequate supply of water. Thus he began to look for strategies to improve the Board's image that did not require large expenditures.

To engender an attitude of customer service, the roughly 120 engineers heading the Board's section offices—the critical point of interface between the Board and its customers—had their titles changed from Assistant Engineer to Manager, although their responsibilities remained essentially the same. All Board staff at this and higher levels underwent training on topics such as complaint resolution and customer satisfaction. Many were sent on training visits to water utilities in Australia, England and Singapore. Next, a series of customer-service programs, many of which were adopted from agencies in these countries, was implemented at the Board.

One of these programs, the *Metro Customer Care Initiative* (MCC), centralized and computerized customer complaints to the Board. Previously customers had filed complaints in-person at the local sector office. The MCC initiated a "hotline" that allows customers to call a toll-free number to lodge their complaints. Trained operators in the MCC office at Board headquarters log each complaint into a computer and relay it directly to the area manager in whose jurisdiction the customer lives. Once the area manager addresses the complaint, his customer signs a compliance report and the matter is coded as "resolved" in the MCC system.

[16] The Municipal Corporation of Hyderabad (MCH) is a local body, established in 1955, that is responsible for installing and maintaining public infrastructure such as roads, bridges, water and sewer networks, and street lighting; for managing several hundred parks and playgrounds; and for operating many other public facilities, such as stadiums, urban health posts, and slaughterhouses. The MCH has more than 10,000 employees and is headed by a Commissioner. The Commissioner is an officer of the Indian Administrative Service (see footnote 3) and is appointed by the Chief Minister, typically for a two- to three-year term. The MCH also has a Standing Committee comprised of elected officials from the city's 100 wards, which, along with the city's mayor, oversees the budget and activities of the Corporation.

Information from the MCC database is used to generate an "efficiency rating" for each area manager, which is computed by dividing the number of complaints s/he received in a given month that were resolved within the target time frame by the total number of complaints s/he received during the period (Table 3). Efficiency ratings are reported monthly to the Managing Director, and are also displayed publicly on computer terminals in various Board offices (Figure 6). General Managers and the Managing Director have been very active in monitoring these ratings and managers are keenly aware that their performance is being monitored in this manner.

Another initiative of the Board was to consolidate the procedures involved in applying for new water supply and sewerage connections with its *Single Window Cell* and *Green Brigade* initiatives, launched in 1998. Previously, a customer was required to visit at least five different offices to obtain the necessary sanctions and permits for a new water and sanitation connection. The customer was also responsible for hiring a plumber to complete the in-house plumbing for the connection. The Single Window Cell centralized the application procedure at the Board's headquarters, where customers must now come to file an initial application and deposit, and return to pay the balance of their accounts once their connection is installed. The Board handles all other functions, such as land surveying and obtaining road-cutting permits. The Green Brigade is a specialized corps of technical employees charged with installing new water and sanitation connections for the Board.

The Single Window Cell and Green Brigade have improved the Board's processing of new connections in many ways. All information about new connections is now computerized, allowing senior Board officials to access data regarding areas of increasing demand quickly and easily. Time demands on customers have been reduced substantially. Requiring the use of the Green Brigade for connection installation ensures high quality work and helps in the detection of illegal connections. The Single Window Cell has received favorable press coverage in Hyderabad, and customers appear to appreciate this new convenience. In a survey of 50 customers who obtained connections through the Cell in past six months, 70% said they were "very satisfied" with their experience. Still, it is paradoxical that the Board has made obtaining a new connection simpler at the same time that *per capita* water supply is dwindling. As one senior engineer said when explaining why the Board does not ration new connections given the city's water scarcity problem:

> Of course we will give them the connection. Let them pay the fee and we will give them a connection, quickly. But we cannot guarantee that there will be water in that connection! We want to supply the service, and we do not want to wait until [the new water source development project] to give people their connections…Maybe these customers will help us to apply pressure for new projects.

The Board has also tried to combat the public's lack of trust in government agencies with a proactive communications strategy and a *Citizen's Charter*. The Charter, developed in 1999 by the Board's management, is distributed to all customers and outlines the rights and responsibilities of the Board and its customers. The Charter specifies service standards for Board customers, including the provision of at least 250 liters of water per connection per day,[17] advance notification of any changes in water supply schedules and amounts, and timeframes within which the Board is required to redress customer complaints (Table 3).

[17] This volume is a little less than the average Indian water utility supplies. By way of comparison, in Buenos Aires, Argentina water use is approximately 600 liters per person per day.

The idea behind all these initiatives was to build public support for the Board that could be translated into acceptance of tariff increases. "We must move first," explained an official at the Board. "We have to re-gain the trust of the public. They must understand the problems we face. When they know how we are trying, and what is required [to improve service], they will support our proposals [to increase user fees]." It is also true, of course, that such measures will make the Board more attractive to potential bidders for a concession contract. "These are the kinds of reforms that a private operator would undertake as soon as [it] took over a utility," one World Bank staff member noted. "It's even better for the privatization if they are done in advance. … Comparatively, Hyderabad looks very attractive to bidders."

Impacts on poor customers

The World Bank's support for the Board's institutional reforms might wane if Bank officials recognize the detrimental effects that some of these measures appear to have had on low-income households. The Board's increased reliance on information technology in the processing of new connection applications, for example, has reaped impressive results for the HMWSSB overall. At the same time, whereas roughly a third of the Board's customers reside in slum neighborhoods, fewer than 10% of calls to the Board's hotline are made by slum residents. Clearly this finding is not the result of slum residents' having better water supply and sanitation services than non-slum areas. It is likely a result of the relative prevalence of telephones in the two neighborhood types. The Board staff point out that the hotline is a toll-free call; households without telephone service can theoretically make this call free of charge at any commercial Public Call Office in the city. Anecdotal evidence, however, suggests that booth attendants regularly refuse to place such calls without payment. Moreover, many observers have noted that slum dwellers have little experience lodging telephone complaints, and usually no experience with the type of automated touch-tone system used by the Board.

These findings would not be so troubling if the HMWSSB operated a mixed system of complaints registration that allows poor households a different but equally effective means of reporting service problems to the Board. Residents do still have the option of filing complaints in person at one of the city's approximately 120 section offices, and anecdotal evidence suggests that this is the route taken by lower-income customers. However, section office managers are faced with strong incentives to give priority to complaints submitted through the telephone hotline. The monthly "efficiency ratings" by which managers' performance is evaluated are calculated using only data from hotline complaints—in-person complaints are ignored. In fact, section managers have been instructed to use the hotline themselves, *i.e.*, to phone in any complaints they receive from customers who arrive in person at their offices. More than one third of managers admitted during a recent survey that they never register these complaints with the hotline.

Managers thus have no incentive to log complaints on behalf of customers who lodge them in person at the section office; if anything, they have a significant incentive *not* to log them. All else held equal, the fewer complaints a manager has logged with the hotline, the easier it is to earn a good efficiency rating. To the extent that in-person filers are lower-income consumers, the Board's increasing reliance on information technology for complaints management and staff performance evaluation is exacerbating the gap in responsiveness to O&M problems between poor and non-poor households.

Looking Toward Privatization

Chief Minister Naidu appreciates his Managing Director's efforts and has supported him with a recent (but vociferously opposed) tariff hike. However, Naidu recognizes that it will be some time before additional tariff increases can bring revenues in line with the Board's expenditures. Continued subsidies to the Board are eating into Naidu's scarce state development resources, and progress toward his goal of world-class infrastructure in Hyderabad is slow. Several international water and sanitation (W&S) companies, especially the several firms from France, are particularly interested in breaking into the Indian market. When efforts to privatize Bangalore's water utility were stalled, Naidu began to consider becoming the pioneer in India with W&S privatization. Hyderabad could become the first Indian city to have a privately operated water and sanitation system.

For Naidu, privatization would solve a lot of problems. While the internal reforms at the Board have improved performance, they also seem to have reached their full potential. More importantly, the shortage of investment capital for W&S infrastructure persists. A successful businessman himself before entering politics, Naidu is confident in the private sector's ability to raise investment and service levels for the benefit of customers. He also feels that the tariff issue could be more easily handled once a regulatory commission is established. Naidu's concern now is that the Board's privatization generates enough interest from investors to secure financial terms sufficient to have the effort considered a success. This responsibility has been placed on the shoulders of M.G. Gopal, the Board's new Managing Director.

Gopal views the potential privatization of the Board as an opportunity to energize his career. If he succeeds, more prestigious postings will come to him, perhaps even a deputation to an international organization like the World Bank. However, if he fails or the process gets mired in political controversy, he might easily find himself sidelined with an unfavorable transfer. Gopal's initial meetings with the Chief Minister have been encouraging. Naidu wants him to consolidate the reforms that the Board's previous Managing Directors instituted with the goal of making the organization as attractive as possible to foreign investment. He conveyed his desire to privatize the Board and promised Gopal all the necessary support. However, Gopal realizes that, despite the Naidu's assurances, privatizing the Board will not be an easy task.

First, the Board's un- and semi-skilled workers are organized.[18] India has a history of strong labor movements, enmeshed with political parties, which have often stymied reform efforts. Given the country's highly protective civil service rules governing hiring and firing and the powerful labor unions that have demonstrated their willingness to strike at the slightest provocation, public sector managers have to tread delicately when disciplining errant employees or even in trying to reward outstanding performance.[19] At the Board, labor relations are best described as cordial but strained. For several years, the state government has maintained a hiring freeze at the Board, which has reduced staff numbers through attrition by retirement.[20] However, the union that represents the Board employees has been strenuously protesting this attrition. The prospect of layoffs following privatization is sure to galvanize stronger protests.

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[18] Among the HMWSSB's 5,500 employees, 350 are professional engineering staff.

[19] For example, in 1998, the Board's Managing Director tried to reward a few of his best performing managers with cash bonuses. Other managers challenged this move in court, however, and successfully prevented the MD from paying out the bonuses.

[20] The HMWSSB has approximately 5,500 employees, with 500 vacant posts, for roughly 380,000 connections. The connection/staff ratio is thus not particularly impressive, even as compared against other water boards in India. The HMWSSB has roughly 1.8 times the staff of the Chennai or Bangalore water boards for roughly equivalent services (Franceys and Sansom, 1999). With a current hiring freeze on most posts, however, the ratio is improving as roughly 200 staff members retire each year.

Second, Naidu's political opponents have already demonstrated significant power in fighting rate hikes for public services. For example, Naidu backed the creation of a Regulatory Committee on Power Tariffs for the state electricity board, which approved a tariff increase in the summer of 2000. The rate hike was met with swift and vocal demonstrations mobilized by Naidu's political opponents. After weeks of protests that occasionally erupted into violence, Naidu prevailed upon the regulator to roll back the increases. Privatization of the Board will clearly prompt a strong response from the opposition.

Finally, and perhaps most difficult, Gopal's need to respond to the insistence of the World Bank and locally based organizations that the Board cannot continue to ignore access to basic water and sanitation services by Hyderabad's 1.7 million poor. Among all the challenges before him, Gopal feels reasonably confident that he can manage labor and political opposition and deal effectively with potential investors. He is worried, however, about improving services to the poor. Without sincere efforts in this area, Gopal is convinced that the World Bank will not provide the support for privatization that the Board needs—and civic organizations will bring their discontent to the media. In this area Gopal has more concerns than ideas: improving services for poor households is a challenge that he feels ill-equipped to tackle.

Conclusions

For M.G. Gopal there are difficult choices to make in balancing the needs of making the concession attractive to the private investors and ensuring that he does not lose World Bank and popular support in the process. Ideally, there should be a universal service obligation imposed upon the concessionaire. However, these requirements could make the venture unattractive to potential bidders; the concessionaire would also have to be allowed a significant tariff increase so as to make the expansion commercially viable. Poor households might simply refuse to pay higher prices for service, which would lead to high disconnection rates by the private operator. Gopal is well aware of the potential for political and civil opposition under this scenario.

Less ideal but more practical would be to fix a coverage expansion schedule while allowing the concessionaire flexibility to choose where such expansion will occur. This approach would be most attractive to potential bidders, but it would likely result in a large number of the poor continuing to be excluded from the Board's W&S network for quite some time. Would the city's political leaders, who have tolerated this situation for many years, now have an incentive to mobilize active resistance when a private operator takes over the Board?

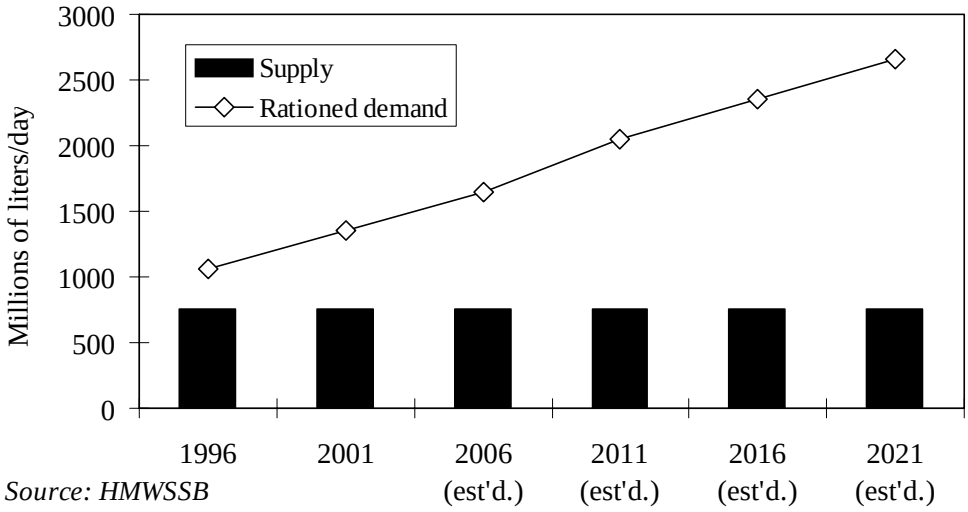
Finally, Gopal could recommend that service to the slums be the responsibility of the Municipal Corporation of Hyderabad (MCH), and that the Corporation fund expansion of water and sewerage services to slums through its tax revenues and its foreign aid programs. Gopal could argue that it is the MCH, not the Board, that reaps the majority of benefits from water and sanitation infrastructure improvements (*e.g.*, increased revenue from escalating property taxes). Nevertheless, this proposal would likely garner resistance from a number of stakeholders, particularly the Corporation itself.

A meeting with the World Bank team that will assist the Board in preparing its privatization strategy is looming, and Gopal must evaluate the three strategies quickly. The Bank team insists that the Board enunciate a clear strategy for service delivery to the poor as part of its privatization effort. It has not been happy with the Board's record on this issue so far. Gopal realizes that without a credible strategy, the Bank will withdraw its support for the privatization

program, and the initiative will almost certainly fold. Gopal must therefore draft a “pro-poor” proposal that thoroughly addresses the Bank’s concerns.

Figure 1: Location of Hyderabad, Andhra Pradesh, India

Figure 2: Water supply and demand in Hyderabad, 1996-2021



Source: HMWSSB

Figure 3: HMWSSB Organizational chart

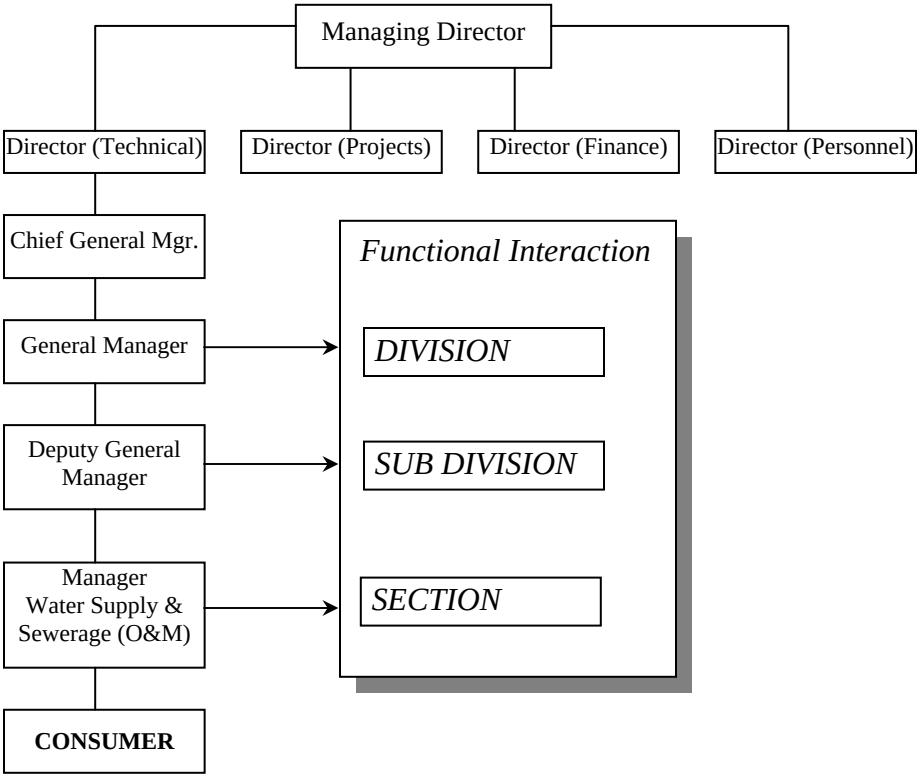
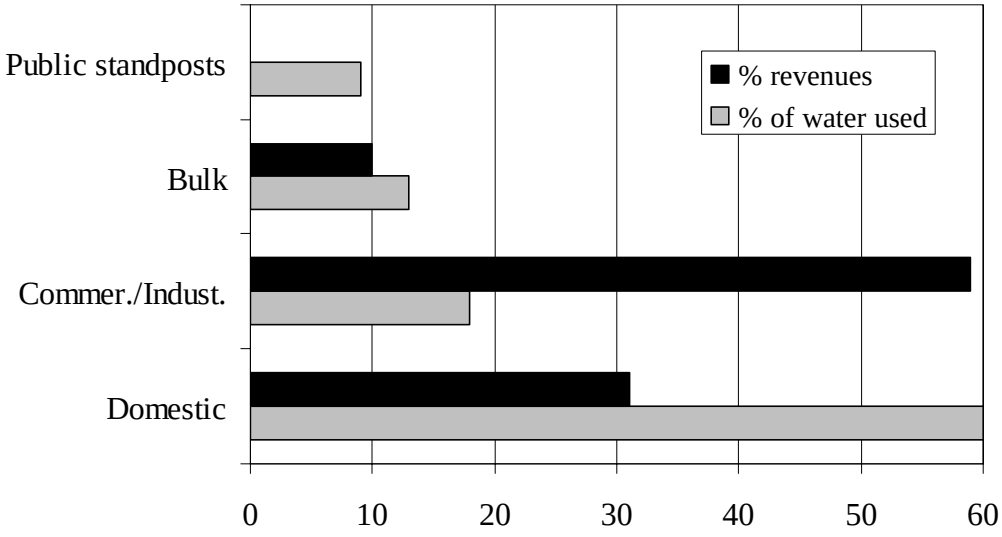
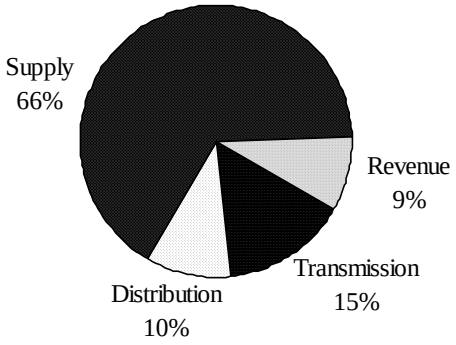


Figure 4: HMWSSB customer data, 2000



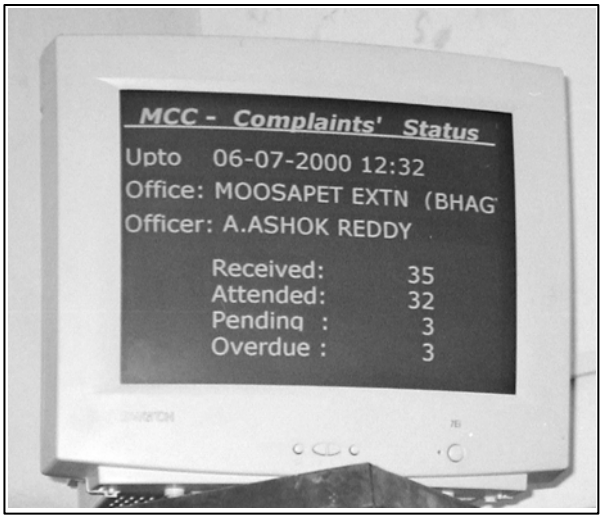
Source: HMWSSB

Figure 5: Unaccounted for water, HMWSSB



Source: HMWSSB

Figure 6: Public terminals display HMWSSB manager efficiency ratings



Source: Davis et al., 2001

Figure 7: Breakdown of expenses, HMWSSB

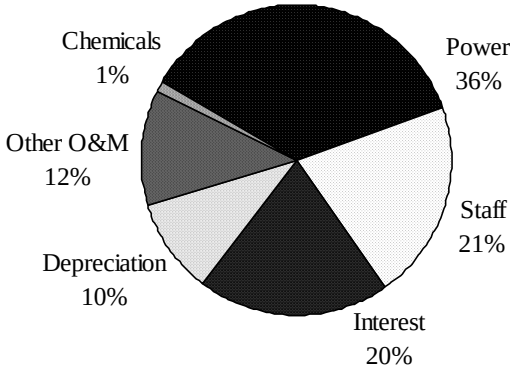


Table 1: Revenues and expenditures, HMWSSB (FY 2001)

Income (Rs. 100,000s)	
Water charges	9201.95
Sewerage charges	2020.14
New connection charges	1326.70
Interest	10.38
Other income	382.00
Total	12,941.17
Expenditures (Rs. 100,000s)	
Operations	7000.24
Staff	5616.94
Administration	1348.00
Depreciation	1367.00
Finance charges	1047.00
Total	16,379.18
Less: Expenses capitalized	1450.00
Less: GOAP grants	424.00
Total	14,505.18
Net worth	
Contributions from GOAP:	
Toward net value of assets	14,439.92
In cash by way of grants-in-aid	44,220.65
Toward improvement reserve	3.13
Less: (Expenditures-Income)	(3,381.19)
Total	55,282.51
Breakdown:	
Fixed assets	57,531.86
Investments	225.00
Cash, debts owed	3,516.43
Liabilities (LIC, HUDCO loans)	(5,990.78)

Source: HMWSSB, 2002

Table 2:Water supply and sewerage service and connection charges, HMWSSB (2002)
(All fees in Rs.; US$1=Rs. 48)

Monthly service charges	
For monthly usage ≤500 m^3	*Prices for tankers*
Rs. 6 / m^3 for ≤ 30 m^3	5,000 ≤ m^3: Rs. 250
Rs. 10 / m^3 for 31≤ 200 m^3	9,000 ≤ m^3: Rs. 360
Rs. 25 / m^3 for > 200 m^3	
	Monthly meter charge
For monthly >500 m^3	For 15 mm (1/2") diameter connections: Rs. 15
Rs. 25 / m^3 for all consumption	For 20 mm (3/4") diameter connections: Rs. 30
	For 25 mm (1") diameter connections: Rs. 50
Minimum monthly service charges[21]	For larger connections: Rs. 15 for each 5 mm of diam.
For 15 mm (1/2") diameter connections: Rs. 90	
For 20 mm (3/4") diameter connections: Rs. 270	*Monthly service charge (billing, collections, etc.)*
For 25 mm (1") diameter connections: Rs. 600	Rs. 6 per inch diameter of connection
For 40 mm (1.5") diameter connections: Rs. 1,500	
For 50+ mm (2"+) diameter connections: Rs. 3,200	

Size of connection	Plot area (meters^2)	Connection charge			
1	2	3	4	5	6
		Areas with HMWSSB sewerage		Other areas	
		Fixed amount	Additional charge per m^2 in excess of minimum plot area in column 2	Fixed amount	Additional charge per m^2 in excess of minimum plot area in column 2
15 mm	0<80	2500	0	1,250	0
(.5 in)	80<200	8250	0	5,500	0
	200<300	8250	82.50	5,000	55.00
	300<400	16,500	75.00	11,000	50.00
	400+	24,000	60.00	16,000	40.00
		max. 48,000		*max. 32,000*	
20 mm	0<200	15,000	0	10,000	0
(3/4 in)	200<400	15,000	150.00	15,000	100.00
	400+	45,000	75.00	30,000	75.00
		max. 72,000		*max. 48,000*	
25 mm	0<400	90,000	0	60,000	0
(1 in)	400+	90,000	90.00	60,000	60.00
		max. 180,000		*max. 120,000*	

Source: Adapted from HMWSSB, 2001

[21] Minimum monthly service charge is the charge for customers without a functional meter.

Table 3: Customer service standards at HMWSSB

Nature of Complaint	Redressal time (days)	
	Standard	Maximum
WATER SUPPLY		
No water for X days	3*	4
Low water pressure	3*	4
Polluted water supply	3*	4
Water leakage	2	3
Erratic timings of water supply	2	3
Change in category of consumption	7	10
Change of line requested	7	15
SEWERAGE		
Sewerage overflow on the road	2	3
Chokage at the customer premises	.3	1
Replacement of missing manhole cover	1	2
Private septic tank cleaning	7	15
METERING & BILLING		
Excess bill and verification	7	10
Non-receipt of water bill	7	10
Cleaning and maintenance of meters	7	10
Domestic meter repairs and replacement	7	15
Meter repairs other than domestic	1.5	7
REQUEST SERVICES		
Tanker required for additional supply in Board's supply area	1	2
OTHERS		
Complaints relating to borewells, PSPs, illegal connections, etc.	1	7

* The customer will be supplied 250 liters per connection per day if the supply is not restored in two consecutive supply days.

Source: HMWSSB Citizen's Charter