

URBAN FINANCE

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Economic reform has allowed the People's Republic of China (PRC) to achieve one of the world's fastest rates of economic growth. Gross domestic product (GDP) at constant prices increased more than five-fold from Y362 billion in 1978 to Y7,955 billion in 1998. The urban population more than doubled from 172 million in 1978 to 379 million in 1998, and now makes up over 30 percent of the total population. The number of cities increased from 193 to 668 in the same period.

The growth of the urban economy and population has rapidly increased the demand for urban public utility services. Water supply, housing, roads, and bridges have significantly improved since 1978. However, urban infrastructure development has not kept pace with growth. Most municipalities are still unable to deliver adequate services. The environment also suffers severe degradation.

The reason is insufficient government investment in urban infrastructure development due to decentralization of infrastructure financing responsibilities to local governments, which can raise only limited funds from taxation and receive little from the central Government.

Domestic savings, however, are extremely high for a developing country. In 1998, for example, they amounted to Y5,341 billion, about 67 percent of GDP, outstripping capital investments and representing great potential for funding projects with large local cost elements. Since 1996, however, domestic banks' lending rate has been lower than the savings rate.

Urban infrastructure development is the great challenge the cities face in the 21st century. Mobilizing available funds is essential to overcoming the capital shortage. This paper focuses on (i) the importance of urban infrastructure investment, (ii) priority sectors and cities, (iii) fund mobilization and solutions to key problems, and (iv) use of funds from international financial institutions.

URBAN FINANCE OVERVIEW

Urban Infrastructure Investment

Economic growth occurs mainly in urban centers, which occupy over 20,000 km², or about 0.2 percent of the PRC's total land area. Urban areas produced over two thirds of GDP and accounted for 80 percent of industrial profit and taxes in 1996. Large cities produce more nonagricultural output per unit area than small cities. Megacities produced nonagricultural output worth Y195 million per km², which was higher than the national average of Y143 million per km² and small cities' average of Y121 million per km².

Although it has been increasing since 1953, the PRC's investment in urban infrastructure has been lower than the international average as a portion of total fixed-asset investment and GDP. It is also unevenly distributed. In 1953-1996, most investment was in road and bridge construction, and a considerable amount in water supply and gas. Flood control, which remains inadequate, received the least amount. Investment in solid waste management received slightly more. Wastewater management received only about half the investment in water supply; a large portion went to sewer construction.

Investment in infrastructure varies with city size. In the 64 cities that had urban infrastructure investment of more than Y200 million in 1996, loans represented 26 percent of the total. Eleven cities, each with a population of over 2 million, took 63 percent of total investment and 68 percent of total loans. Of these cities, Shanghai took 28.6 percent and Beijing took 16.4 percent of total investment. Thirty-five cities, each with a population ranging from 200,000 to 1 million, received 22 percent of total investment and 20 percent

of total loans. To give an idea of the disparities, investment in the city of Hohhot was a mere 1 percent that of Shanghai.

In 1998, the Government issued Y100 billion worth of bonds to State-owned commercial banks and used the funds raised to expand internal demand by increasing fixed-asset investment. The policy aimed to (i) soften the impact of the Asian financial crisis, (ii) arrest the downtrend of economic growth during the last five years, (iii) activate the domestic market, (iv) improve investment return, and (v) repair the damage done by severe flooding. The Government lent local governments Y50 billion.

Borrowers must ensure the following:

- Funds should be used for infrastructure projects only, not for general industrial projects.
- Priority should be given to projects already under construction or that have undergone complete feasibility study or preparatory work.
- Projects should promote economic growth.
- New projects should be approved by the Government; preference must be given to projects located in the central and western regions.
- Projects should be of high quality.

Urban environmental protection and municipal infrastructure are major investment areas taking up the largest portion (35 percent) of special funds, half of which are invested in road construction and half in water supply, wastewater treatment, gas supply, and solid waste treatment. The PRC has 284 environmental protection projects, 166 wastewater treatment projects, and 136 road projects.

FUNDING SOURCES FOR THE URBAN SECTOR

Governments

Municipal government funds are generally raised from taxes, charges, and fees, and from grants and loans from the central and pro-

vincial governments. Municipal governments collect an urban maintenance and construction tax, public utility surcharge, and sales tax.

Government grants, which used to be the cities' major funding source, have dwindled. Now local governments generally raise funds by lending to companies and charging interest; 3-5-year loans are the most common and 10 years is the maximum, but they are too short to cover the life of most infrastructure facilities. Loans are easier to get when the project itself yields enough revenue (including taxes) to cover repayments. The use of government loans rather than grants will increase concerns regarding cost recovery and projects' financial feasibility. However, when the loans are eventually repaid, the governments will be able to recirculate the funds.

Domestic Bonds and Loans

Only the Government and local enterprises may issue credit for infrastructure financing. Local corporate bond issue is still on a small scale but shows promise. The Baotou Water Supply Company, for example, issued bonds in 1997 to raise Y100 million for the Huajiangyingzi water supply project. The Government guaranteed the bond to reduce investor risk and offered an interest rate higher than the commercial banks'. The bonds have repayment periods of 1-3 years. They were sold out in three days. Preparations for a second bond series soon followed. Municipal bonds are clearly becoming an important financial option.

Commercial banks often provide short-term loans to urban infrastructure projects. State development banks provide medium-to long-term funding.

Internal Funds

Internal funds are often sourced from user charges and fees, which vary according to sector (capacity development, water conservation, connection, construction, boosters, price adjustment, and water resource). Normally, charges require approval only from local governments.

International Assistance

International assistance is provided by the Asian Development Bank (ADB), World Bank, United Nations Development Programme, Overseas Economic Cooperation Fund, and developed countries. ADB and the Government have the same broad objectives:

- Reduce bottlenecks in the urban infrastructure and services sector.
- Address urban environmental problems.
- Improve people's living standards.

ADB focuses on making market-oriented reforms more efficient by promoting (i) cost recovery through user charges, (ii) greater autonomy of municipal governments to raise revenue and allocate expenditures, (iii) better management and infrastructure planning, and (iv) private sector involvement.

Private Sector Involvement

The private sector offers access to investment capital. The PRC has attracted a large amount of foreign direct investment in recent years, but little flows into the urban infrastructure sector. The great potential of private investment can be tapped to fill the gap, as is being done in the PRC's first urban water supply BOT project, in Chengdu, which involves two publicly traded joint stock companies in Shanghai. Joint venture agreements to purchase, own, and operate water facilities have been reached in a number of other cities.

Funding Sources

In 1996, total investment in urban infrastructure in the PRC's 658 cities amounted to Y84.8 billion, but not from traditional Government sources. In 1990-1996, among the funding sources that decreased most in importance were the urban maintenance and construction tax and public utility surcharge (from 42 percent of

the total to 25 percent), on-budget funds, and State grants (Figure 1). In contrast, international loans increased 22-fold; domestic loans, 10-fold.

In 1996, 68 cities received more than Y200 million each in urban infrastructure funds. Representing just over 10 percent of Chinese cities, they received a total of Y62.4 billion or 73.6 percent of all urban infrastructure funds. The maintenance and construction tax and public utility surcharge accounted for only 21.8 percent of the 68 cities' total funds—lower than the 25.2 percent average for all cities (Table 1). The implication is that large cities raise funds from other sources and have the potential to increase their income by stepping up construction tax and surcharge collection.

In 46 cities with populations ranging from 200,000 to over 2 million, urban infrastructure investment per person varies within 27 percent. Average foreign investment per person ascends steeply from small to large cities, with large cities' average being 83 times higher than small cities'. The data clearly indicate that international assistance is drawn to large rather than small cities.

Figure 1. Urban Infrastructure Funding Sources (1990-1996)

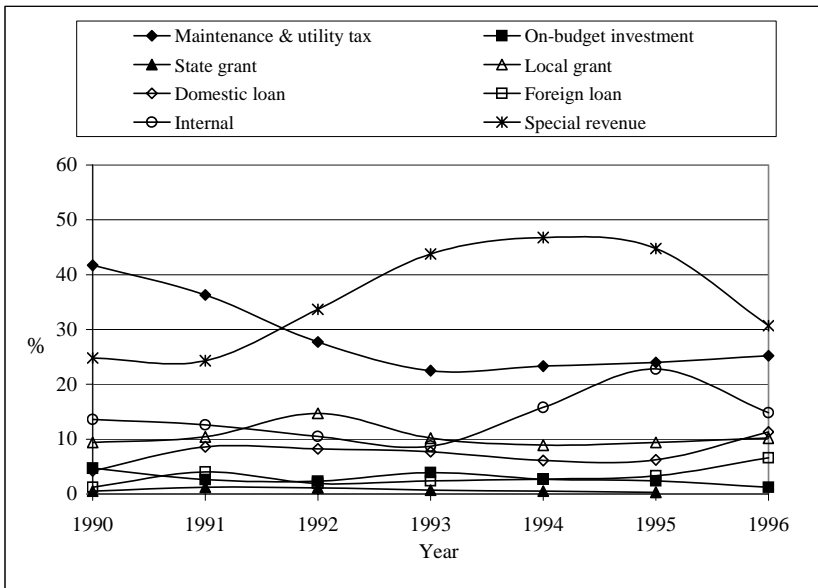


Table 1. Urban Infrastructure Fund Distribution by City Size

Nonagricultural population (million)	>2	1–2	0.5–1	0.2–0.5
Number of cities	11	20	19	18
Percentage of cities	16.2	29.4	27.9	26.5
Percentage of total funds	52	23	14	11
Percentage of total maintenance and construction tax and public utility surcharge	45	32	14	9

Table 2. Average Urban Infrastructure Fund Distribution by City Size, 1996

Nonagricultural population (million)	>2	1–2	0.5–1	0.2–0.5
Number of cities	11	15	8	12
Percentage of cities	23.9	32.6	17.4	26.1
Average urban maintenance and construction investment (Y/person)	724	571	621	668
Average foreign investment (Y/person)	223	48	17	3

Even among the largest cities, the difference between the highest and the lowest investment per person can vary up to 8.7 times. Guangzhou has the highest with Y1,852 per person, Shanghai came second with Y1,325 per person, while Wuhan had the lowest—Y212 per person. The interior cities have the greatest needs.

KEY ISSUES

Key issues and problems are the following:

- backlogs in urban infrastructure and increased investment requirement for future projects;

- fund shortage as the main constraint in infrastructure development, resulting in inadequate services and environmental deterioration;
- uneven distribution of investment among sectors, with some sectors such as flood and pollution control facing serious backlogs;
- uneven distribution of investment among cities;
- low return on investment due to factors such as long implementation periods and overspending;
- inefficient pricing structures, which cause poor cost recovery from end users, and continuing subsidy of almost all sectors, including water supply, and wastewater and solid waste treatment; and
- limited funding sources.

STRATEGIES FOR URBAN FINANCE

Priority Investment in Urban Infrastructure

After 20 years of rapid development, infrastructure needs drastic improvement if it is to sustain such development and to accelerate economic development, especially in the central and western regions. The Government is focusing its financial resources on urban infrastructure development. The following are some policy recommendations:

- Bring down interest rates to encourage investment. Urban infrastructure is emerging as a worthwhile investment.
- While maintaining the same rate of investment in water supply, increase investment in flood control and in wastewater and solid waste treatment, especially in the central and western regions and in medium-sized and large cities.

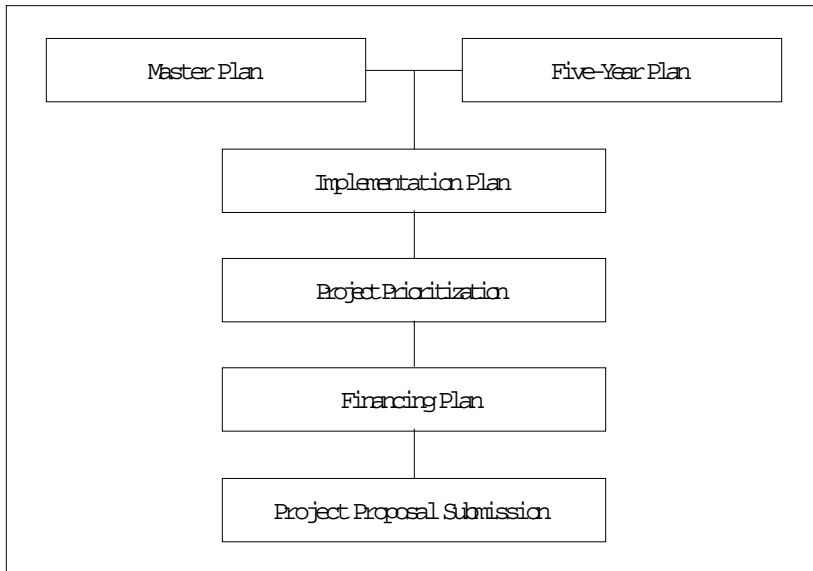
Financial Planning

STRATEGIC IMPLEMENTATION PLAN

Urban master plans and five-year plans are the most important long-term plans. Urban master plans cover overall urban development and emphasize urban structure. Five-year plans focus on economic and social development. Both often have planning periods of up to 15 years.

However, neither urban master plans nor five-year plans have financing plans or implementation procedures and schedules. Cities must therefore establish long-range strategic implementation plans incorporating the goals and objectives of master plans and five-year plans as well as the infrastructure demands that are the basis for setting priorities and determining future direction. Strategic implementation plans may cover the same period of a master plan and be updated annually. Figure 2 shows a proposed process for improved project planning.

Figure 2. Proposed Project Planning



Limited financial resources require comprehensive planning. It is important to quickly raise the level of the most deficient sectors to that of other services. Projects must be prioritized according to demand and on financial and economic grounds. Prefeasibility studies must then be conducted for the prioritized projects.

A financing plan for a prioritized project should be prepared before submitting a project proposal. It should consider potential funding sources, cost of financing, available time, and a repayment scheme. It should identify sources of funds and potential sponsors. It should seek to minimize the cost of capital investments. As local counterpart funds, particularly the initial equity funds, are the most important part of a financing plan, providers of local counterpart funds should be ready with their capital and be prepared to raise funds from external sources. When the fund sources are determined and all the involved agencies come to a basic understanding, the project is considered viable and the project proposal can be submitted to the government for approval.

MOBILIZING FUNDING SOURCES

An investigation of the causes of fund shortage will lead to its solution. Logically, the lack of funds, fund flows, and investor interest cause fund shortage.

However, the PRC has an extremely high savings rate that has resulted in large bank deposits, which are increasing rapidly. Domestic banks therefore have funds to lend out, which implies that lack of funds may not be the major cause of the shortage.

Since 1996, domestic interest rates have been lowered seven times in order to encourage expenditure and investment. Since June 1999, one-year term bank deposits have been earning only 2.25 percent interest, while interest on one-year loans is 5.85 percent. Yet, funds have failed to flow into investment or have not been used efficiently and effectively.

Domestic commercial banks claim that few projects are worth investing in. They have become more independent in decision making and, since the lifting of controls on loan size, in policymaking.

Banks have improved their risk regulation. Rather than face an uncertain investment return, banks resort to buying government bonds. They are averse to lending except to projects with a quick investment return.

Developing funding channels and worthwhile investment projects is the key to solving the funding shortage; mobilizing funding sources also helps. Funding channels can be developed by strengthening existing funds such as loans and corporate bonds, and by developing new instruments such as local government bonds and infrastructure investment funds. Funds can be raised through governments, loans, bonds, charges and fees, and international and private assistance, as follows:

Utilizing special Government funds. Special infrastructure funds support infrastructure development. It is important to identify and prepare projects that meet project selection criteria.

Promoting urban infrastructure bonds. Bonds have great potential for raising funds. Although local governments are not yet allowed to issue bonds, corporations can try to expand their bond issues. However, corporate bonds are often restricted by a short repayment period (typically three years, with repayment starting in the first year). Most infrastructure projects are not completed within three years or do not quickly generate income, leading project holders to borrow funds elsewhere to pay back the debt. Corporate bonds should therefore have a longer repayment period—5-10 years, for example. Tax breaks for bond purchasers will also encourage bond sales.

Encouraging domestic commercial loans. It is relatively inexpensive to borrow from banks since the domestic interest rate is low. Domestic banks are looking for investment opportunities under the pressure of increasing savings deposits.

Implementing tariff reforms and user charges. Tariffs are required to achieve full cost recovery. User charges can be a large source of

funds and their approval is often within the power of local governments. Governments are reforming pricing in urban infrastructure. Although tariffs in sectors such as water supply have increased, most are still not high enough to cover costs. With the ongoing tariff reform and the implementation of the National Guidelines on Water Tariffs (NGOWT) issued in 1998, water tariffs will be gradually adjusted to appropriate levels to cover cost. Tariffs for wastewater services are being collected.

Promoting private investment. The Government promotes private involvement in infrastructure financing. Corporate reform encourages institutional restructuring as well as mergers and acquisitions. The use of Government grants has generated private sector interest in infrastructure and environmental projects. Service contracts, leasing and franchise, public-private partnerships, and full privatization can encourage private investors. Although build-operate-transfer arrangements are often more expensive, they bring in the necessary funds and also help develop the local economy, as about 40 percent of capital investment is converted into salary and consumer goods. The ability to attract private sector partners depends on future prospects for cost recovery, including return on capital investment. Local governments should make their own policies to attract overseas and domestic private investors.

Establishing special infrastructure funds for specific sectors. Continuously low bank interest rates induce people to look for other investment opportunities. The stock market is considered too risky (88 percent of all players lost money in 1998). However, infrastructure projects that can guarantee a minimum return rate and a higher return if the investment performs well will be attractive to domestic investors.

Strengthening local revenue generation. Governments need to consider restructuring taxes and using revenue for infrastructure.

Utilizing international financial institutional funds.

PROJECT FINANCING

Many projects are unattractive to domestic investors, even though municipal services such as water utilities have a relatively constant income. This implies that the projects may not be good investments because of their poor financial performance or inability to qualify for loans.

An infrastructure project may fail to reach its financial-return goal for the following reasons:

- overestimated demand and capacity, resulting in sales income below the proposed target;
- overestimated required capital, causing cost increase, difficulty in raising funds, and a protracted implementation period;
- ineffective cost control; and
- inappropriate service pricing.

A project that achieves its goals, including financial return, is attractive to investors such as domestic banks. A project must conduct a careful demand analysis. A large project requiring large amounts of money and time before it generates income should have the capability to meet short-term demand and to increase its capacity in phases to attract investors. Insufficient local equity funds, particularly initial equity funds, are another major problem. A project that acquires sufficient initial equity from the government should use it to raise other funds such as bank loans. A project holder should avoid waiting for complete government financing. Although government funds are usually interest-free, governments take a long time to complete project funding, which not only delays the project's ability to meet demand, but slows down investment return and may even require scaling down the project.

Project holders should resort to a combination of funding sources to avoid risk. It is easier to control cost increases when a variety of funding sources is available. In open financial markets, competition establishes the rational differentials between the costs

of different sources of investment funds. However, management of multiple funds can be complicated and requires coordination.

International Financing

Availability of special infrastructure funds from the Government, domestic banks' low interest rates, and foreign-exchange risk make some local governments reluctant to use international loans. It is necessary to compare international loans with domestic funds and identify areas to which international loans are best suited.

DURATION OF LOANS

The duration of loans varies according to funding sources. International financial institutions generally provide long-term loans. State development banks offer medium- to long-term loans, while short-term loans are readily available from domestic commercial banks. A combination of long- and short-term loans will soften the impact of repayment.

RISK

The cost of finance from banks is directly related to their perception of risk. A funding package made up mainly or only of international loan financing may not be the best or cheapest solution, especially when cost recovery and foreign exchange liabilities are taken into account. However, the yuan has been stable and the Southeast Asian economies are showing signs of recovery. The Government has reaffirmed that the yuan will not be devalued. Foreign exchange risk is therefore minimal.

INTEREST RATES

The special infrastructure funds from the Government contain grants and low-interest loans. Since domestic interest rates are lower than some international financial institutions', some project

holders would rather wait for the special funds than borrow abroad. However, local governments should reconsider their positions for a number of reasons:

- Since fund requirements are far greater than can be supplied by special funds, international loans can help fill the gaps.
- Urban infrastructure projects usually need large amounts of capital. Long-term loans with stable interest rates may be low-cost in the long term. While the maximum repayment period of domestic loans is 10 years with variable interest rates, that of international loans is usually over 20 years with relatively stable interest rates.
- Since domestic lenders seek short-term returns, they find long-term investment in urban infrastructure unattractive.
- Investment in urban infrastructure promotes the local economy.

INTERNATIONAL FINANCIAL ASSISTANCE

International financial institutions face new challenges resulting from the Government's policy to increase infrastructure investment. Due to the sudden flow of large amounts of Government funds and domestic bank loans into projects, there is a scarcity of well-prepared projects with good returns. Now more than ever, it is important to identify, select, and prepare projects, giving consideration to their sectors and areas. Environment-related infrastructure will improve municipal services. Medium-sized and large cities in the central and western regions have so far received little international financial assistance. Projects for flood control and management of water, wastewater, and solid waste in these areas are therefore recommended as priority investment targets.

Investors must be careful, however, as the proper pricing systems in these sectors have not been completed or even established, and the financial capacity of the cities in these regions is less than that of similar-sized cities in coastal areas. However, implementing

the national tariff reform will offset the impact of low revenue from sale of services. There are also ways to increase the financial capacity for international borrowing by cities in the PRC's interior regions: (i) comprehensive infrastructure development within the cities' geographic boundary; or (ii) investment by the province or region in one or two sectors such as water supply in a number of cities. Coordinating with domestic lenders will reduce preparation time and assure quality of implementation.

At the national level, pricing reform in management of water, wastewater, solid waste, and heat supply will accelerate financial reform in these sectors, promote cost recovery, and raise capital funds. Reform of State-owned enterprises is a major task of the Government. Infrastructure facilities and services are managed by either government agencies or State-owned enterprises. Technical assistance can have a significant impact on infrastructure and pricing reform. Investigation of urban infrastructure needs, funding requirements, and provincial and regional financial capacity, particularly in the interior regions, will help policymakers understand and establish a framework for identifying and developing projects.

INSTITUTIONAL AND REGULATORY MECHANISMS

Strengthening the regulating mechanism of urban infrastructure investment will improve investment performance, reduce risks, and increase funding sources. Although the share of government financing has diminished, governments still often decide on infrastructure investment, and private enterprises and government agencies still depend on government subsidies. The result is that project holders continue to seek large projects and to neglect investment returns.

Project responsibility should be better defined, and government and enterprise should be separated. The newly established project equity fund system is an important component of the project responsibility system. The project equity fund requirement is meant to prevent excessive project size, control investment scale, and require project sponsors to share investment risk. It is expected to

promote effective and efficient investment and reduce the project holder's debt burden. Project equity should also be clearly defined and the investment decision-making system strengthened.

Pricing reform should be accelerated to aid cost recovery. NGOWT is the first national tariff regulation in water supply and municipal services. It challenges the traditional idea that municipal services such as water supply do not require full cost recovery. ADB helped by formulating guidelines and offering technical assistance, and is providing more technical assistance in this area. When NGOWT is implemented nationwide, water tariffs are expected to be adjusted to recover cost. An immediate need is reform in wastewater tariffs, followed by waste tariffs. Other areas such as heat supply also require tariff regulations. Pricing reform for municipal services will be more effective if accompanied by institutional reform. Effective tariff reform also requires an efficient institutional arrangement.

Regulations on international and domestic private sector involvement should be established and improved. Although most public utilities are provided either by government agencies or State-owned enterprises, corporate reform—institutional restructuring, merger and acquisition, and service contracts—also applies to them.

Municipal governments do not usually have an agency to deal with comprehensive infrastructure issues. Instead, they often establish a temporary office for a special project. A permanent agency responsible for preparing an infrastructure improvement program and coordinating implementation should be established.

AFFORDABILITY AND WILLINGNESS TO PAY

Rapid income growth in recent years indicates that urban households can afford to pay increased tariffs and user charges. An ADB-financed TA study reveals that water takes up just 1.2 percent of household income on average, and below 4 percent at most. This study found that, on average, water takes up 0.6 percent of income, much less than the cost of gas, electricity, and telephone services. An ADB TA study of proposed project tariffs in the cen-

tral city of Baotou shows that water and wastewater tariffs are well below the international affordability level (5 percent), suggesting that most urban residents are willing to pay and capable of paying more for water and wastewater services.

THE FUTURE OF URBAN FINANCE

Urban infrastructure needs to be improved greatly in order to sustain rapid economic growth. The Government encourages investment in urban infrastructure by (i) promoting private sector involvement, (ii) mobilizing capital markets, (iii) increasing municipal revenue, (iv) promoting cost recovery, (v) continuing to interact with international financial institutions, and (vi) continuing institutional and pricing reform. The result is that municipal services will be greatly improved in the near future.