

Cuba's Future Development Needs, Funding Models, and Alternatives.

A Perspective of the Operation of a Cuban Water & Sewer Utility.



Water System

- Limited data to fairly evaluate the current Water & Wastewater infrastructure in Cuba.
- Population, about 11.2 million.
- Water demand is about 20 million cu. meters per/day.
- Agriculture is 69%, Industrial is 12% and Domestic is 19%
- Water Service is provided to about 95% of the population.
- 75% have access to direct service connection.
- 15% within 300 meters.
- 5% by truck.
- 5% without potable water service.

Water System

- Domestic Water losses are estimated at 85% of pumped water.
- These losses are attributed to the deteriorated condition of distribution and transmission water main pipes and leaking water services.
- The potable water quality is marginal, at best.
- Fire flow protection is very limited.
- Need to improve water treatment process as well as addition of large doses of Sodium hypochlorite for disinfection.

Wastewater System

- Wastewater system is not as extensive as the water distribution system.
- Wastewater disposal available to about 94% of population.
- 38% of direct sewer system connections.
- 56% on-site sewer disposal systems.
- 6% without any sanitary sewer service.

Wastewater System

- Data from 2007 shows that only 4% of the sanitary sewer flow collections are treated.
- The other 96% is discharged into nearby waterways with minimal to no treatment.
- The most common form of treatment is through the use of stabilization lagoons.
- The sanitary sewer system for the City of Havana was built to serve a population of 600,000. Currently, serves about 945,000 people.

Economic Factors

- The main objective of a Utility Company is to provide efficient and reliable service.
- The Water & Sewer System in Cuba is extremely inefficient.
- Cost-benefit analysis is essential to operate a Water & Wastewater utility company.
- There is an absence of cost-benefit analysis in the water utility system in Cuba.
- Only 3.6% of residential customers have water meters.
- Only 33% of commercial customers have water meters.
- In general, customers without water meters are billed a nominal fee.
- Revenues collected are transferred to the government.
- Infrastructure capital investments are fiscally managed by the government instead of being managed by the utility administrators.

Economic Factors

- There is no independent engineering consultant, such as a Bond Engineer, that analyzes the utility's operation and prepares an Annual Report.
- These annual evaluations are required to provide an opinion of the company engineering and financial feasibility, the adequacy of rates and charges to assure net revenues sufficient to meet debt services. Inspection of facilities to assess the condition of their system and to assist the utility in making recommendations for repair or replacement.

Economic Factors

- More specific, these reports are to evaluate the following:
- Challenges, like aging infrastructure.
- Customers and Sales to analyze the increase in customers as well as the water distribution and wastewater disposal revenues.
- Capital Improvement Program to estimate the funding needed that will support additional infrastructure.
- Renewal and Replacement Fund to repair or replace existing infrastructure.
- Financial and Business Conditions to determine operating revenues, debt services and financial reserves.

Future Development Needs

- Prioritize rehabilitation, renewal or replacement of existing infrastructure to provide the best return on investment.
- Repair pipes to radically reduce leaks and restore capacity lost from tuberculation.
- Substantially improve the quality and delivery of the potable water to meet health standards.
- Considerably improve wastewater treatment to meet environmental regulations.
- Create sustainable financing for a long-term sustainable utility infrastructure to properly serve Cuba's population and their visitors.

Funding Models and Alternatives

- In the USA, municipal bonds are the funding source of choice for utilities to attract capital from markets. Utilities also rely on cash, state revolving loan funds and low-interest loan programs at the state or federal level.
- Cuba's current form of government doesn't offer these options. To the contrary, the government use utility revenues to subsidize their centralized governmental operation.
- Obviously, it is our expectation that in the near future Cuba's form of government will transition to a free market society that will fully open new opportunities for its people as well as for utilities and industry to tap the capital market.

Funding Models and Alternatives

- Loans and grants shall be pursued from large world organizations, such as USAID, World Bank, etc., when the governmental transition occurs.
- Innovative financing models should be pursued to increase efficiency, add value to customers, and lower costs for providers.
- Future industrial customers, large residential and commercial developers can also be partners in financing system improvements.
- The implementation of Private-Public-Partnership (P3s) can be used to efficiently improve the maintenance and operation of large water & wastewater facilities.

QUESTIONS?

