

# DECENTRALIZED SEWERAGE SYSTEM AT MIRA BHAYANDAR

*By SPML Infra Limited*



STP at Mira Bhayandar

BEST GLOBAL SAFETY MEASURES HAVE BEEN FOLLOWED IN PROJECT EXECUTION DUE TO SHALLOW SOIL CONDITIONS.



Decentralized Sewage Treatment Plant, Mira Bhayander, Maharashtra

Mira-Bhayandar which is part of Thane district is located at the northern threshold of Greater Mumbai. Being a satellite town of Mumbai, this area has been identified as one of the growth centers around Mumbai which is well connected with the metropolis by suburban railway and Mumbai Ahmadabad national highway. Due to close proximity to Mumbai, the Mira Bhayandar Municipal Corporation is experiencing very rapid urban growth with low and middle income households are shifting to the Mira Bhayandar due to high property cost and rent in Mumbai.

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### Conditions Prior to Project Execution

The septic tank toilets were used throughout the city. The main roads of the city had open gutters of almost 165 kilometers long for collecting and carrying sullage water from individual houses and there were no sewerage scheme or sewerage collection and treatment plants for over a million populations.

The existing system of disposal comprised of septic tanks and effluent disposal in surface gutters and nallas leading to pollution and unhealthy conditions. The direct discharge into inland water bodies led to wide spread water pollution and also destroyed the aquatic flora and fauna of the area.

### The Decentralized Sewerage Project

Mira Bahayandar Municipal Corporation (MBMC) has awarded the contract for Design-Build, Operate and Maintain of Underground Sewerage Scheme for the entire city to SPML Infra Ltd. The project is designed completely as decentralized system having 10 zones across Mira Bahayandar. The new sewerage system implies closure of existing septic tanks and drainage through storm water drains improving overall hygiene and living standards.

### Scope of Project

The comprehensive underground sewerage facilities in the 24 sq km area comprises of design, supply, laying, and commissioning of 113 km Sewer lines, 10 Pumping Stations and 10 Sewerage Treatment Plants one each of 8, 11, 14 and 17 mld and two each of 7,12 and 13 mld with total capacity of 115 mld with latest MBBR technology. SPML also provided necessary pressurized rising mains for distribution and disposal of recycled water. The best global

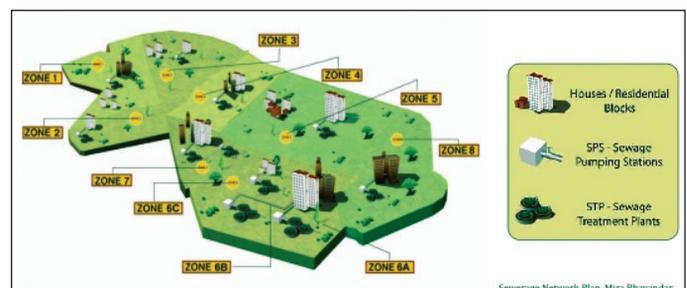
safety measures have been followed in project execution due to shallow soil conditions.

### Social Benefits

- ▶▶ Environmental pollution will be under control
- ▶▶ Planned disposal of treated wastewater has reduced stagnation of water in storm water drains
- ▶▶ Septic tank system are completely eliminated which will in turn reduced soil and sub soil water pollution
- ▶▶ Breeding of mosquitoes and other insects has reduced drastically
- ▶▶ Outbreak of epidemics and viral diseases reduced effectively
- ▶▶ Better sanitation and cleanliness in the streets and roads
- ▶▶ Better health and overall clean environment

### Technical Benefits of Project (Using MBBR Technology) Requires no back washing

- ▶▶ Has low head loss
- ▶▶ Has high specific bio film surface area
- ▶▶ It makes the plant compact
- ▶▶ Sludge recycle is not required
- ▶▶ Shock load acceptance is better than for plants with suspended growth process



Sewerage Network Plan



Sewerage Network at Mira Bhayander

## Salient Features of Project

- ▶▶ 1st time in India, a decentralized sewerage scheme is executed, sewage is being treated at the point of generation
- ▶▶ All the sewage treatment plant are in residential areas with MBBR technology
- ▶▶ The advanced MBBR technology requires less power consumption and lesser space than any conventional sewage treatment plants
- ▶▶ All the STPs are SCADA based with operation and control from a

master control room.

- ▶▶ The treated sewage will be reused for gardening, construction and industrial purposes by the municipal corporation
- ▶▶ The project is executed with specialized shoring with higher safety precautions.



MBBR Tank at Mira Bhayandar

Parameters	pH	TSS	BOD5 at 20°C	COD	Oil & Grease	Fecal Coliform
Unit		mg/l	mg/l	mg/l	mg/l	MPN/100 ml
Influent	6 to 8	300–500	200–250	400–450	10–20	2x107
Effluent	6 to 8	<20.00	<10.00	<100.00	<10.00	<500.00

## About the Contributor

**SPML Infra Limited** was established in 1981. It is a leading publicly listed infrastructure development company that has managed and implemented over 600 projects across India on an EPC, PPP and BOOT basis. SPML has over three decades of multidisciplinary experience in executing world class infrastructure for water treatment and transmission, waste water handling, treatment & recycling, solid waste management, power transmission & distribution & civil infrastructure development.

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