



Operations & Maintenance Excellence at

Goa International Airport (MOPA)

Client
Megawide Infrastructure
India Pvt. Ltd.

Location
Goa International Airport
(MOPA)

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Overview

At Goa International Airport (MOPA), maintaining uninterrupted wastewater treatment operations is critical to supporting daily airport activities and environmental compliance.

Our team was entrusted with the Operations & Maintenance (O&M), process optimization, and capacity enhancement support for the airport's Sewage Treatment Plant (STP) infrastructure.

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Engagement Focus

- ◀ Efficient STP operations
- ◀ System modernization support
- ◀ Capacity enhancement integration
- ◀ Continuous compliance monitoring
- ◀ Digital water management initiatives
- ◀ Real-time monitoring and reporting

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Operational Challenges

The airport infrastructure demanded:

- ◀ Continuous STP performance without downtime
- ◀ Management of increasing sewage load
- ◀ Compliance with GSPCB discharge standards
- ◀ Improved operational efficiency
- ◀ Real-time monitoring visibility
- ◀ Reliable maintenance planning
- ◀ Integration of upgraded treatment systems

Operating within an active international airport environment required precision, reliability, and 24x7 operational readiness.

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Our O&M Scope

- ◀ STP Operations & Maintenance
- ◀ Process Monitoring
- ◀ Mechanical & Electrical Maintenance
- ◀ Compliance Management

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STP Operations & Maintenance

- ◀ Operation of existing 625 KLD STP
- ◀ Support for additional 350 KLD stream integration
- ◀ Monitoring process efficiency
- ◀ Preventive and routine maintenance
- ◀ Process troubleshooting and optimization

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Process Monitoring

- ◀ Inlet and outlet parameter monitoring
- ◀ Sludge management supervision
- ◀ Aeration and blower optimization
- ◀ Treatment efficiency monitoring

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Mechanical & Electrical Maintenance

- ◀ Pump and blower maintenance
- ◀ Instrumentation checks
- ◀ Electrical panel monitoring
- ◀ Equipment health inspection
- ◀ SCADA coordination support



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Compliance Management

- ◀ Monitoring discharge quality
- ◀ Maintaining environmental standards
- ◀ Supporting operational documentation
- ◀ Assisting audit and inspection readiness

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STP Infrastructure Overview

Existing STP Capacity: 625 KLD

Additional Stream Supported: 350 KLD

Total Operational Capacity: 975 KLD

Treatment Technologies

- ◀ DAF System
- ◀ MBBR Technology
- ◀ Tube Settler
- ◀ Activated Carbon Filter
- ◀ Ultrafiltration (UF)
- ◀ UV Disinfection

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Digital Paani & Online Monitoring

A major focus of the O&M strategy was enabling smarter and more transparent water management through digital monitoring systems.

- ◀ Smart Monitoring Initiatives
- ◀ Digital Paani Integration Focus

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Smart Monitoring Initiatives

The site incorporated:

- ◀ Online monitoring systems
- ◀ Real-time operational tracking
- ◀ Digital process visibility
- ◀ Continuous parameter monitoring
- ◀ Automated reporting support

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Digital Paani Integration Focus

The operational framework
supported:

- ◀ Data-driven decision-making
- ◀ Improved operational response time
- ◀ Remote monitoring capabilities
- ◀ Enhanced compliance visibility
- ◀ Better treatment process control

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Smart Monitoring Benefits

Key Operational Benefits

- ◀ Real-time plant visibility
- ◀ Faster issue identification
- ◀ Reduced manual dependency
- ◀ Improved reporting accuracy
- ◀ Enhanced operational efficiency
- ◀ Better compliance management

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Operational Excellence Approach

24x7 Operational Readiness

Dedicated manpower planning ensured uninterrupted plant functionality.

Preventive Maintenance Strategy

Routine inspection schedules and equipment monitoring minimized downtime risks.

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Operational Excellence Approach

Process Optimization

Continuous monitoring helped improve:

- ◀ Aeration efficiency
- ◀ Sludge handling
- ◀ Energy optimization
- ◀ Treatment consistency

Safety & Compliance

Strict adherence to:

- ◀ Safety protocols
- ◀ PPE compliance
- ◀ Environmental regulations
- ◀ Operational documentation standards

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Sustainability & Compliance

Sustainability Impact

- ◀ Environmentally compliant operations
- ◀ Efficient wastewater management
- ◀ Future-ready monitoring systems

Compliance Focus

- ◀ Monitoring discharge quality
- ◀ Maintaining environmental standards
- ◀ Supporting operational documentation
- ◀ Assisting audit and inspection readiness

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Key Outcomes Achieved

Operational Impact

- ◀ Reliable STP performance
- ◀ Stable wastewater treatment operations
- ◀ Improved monitoring visibility
- ◀ Reduced operational risks

Sustainability Impact

- ◀ Environmentally compliant operations
- ◀ Efficient wastewater management
- ◀ Future-ready monitoring systems

Digital Impact

- ◀ Smart operational tracking
- ◀ Better reporting and analytics
- ◀ Improved decision-making capability

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CONCLUSION

The Goa International Airport (MOPA) O&M engagement highlights the importance of combining operational expertise with digital monitoring capabilities to manage critical wastewater infrastructure efficiently.

By integrating operational excellence, preventive maintenance, and Digital Paani monitoring initiatives, the facility achieved improved process reliability, compliance visibility, and sustainable wastewater management.

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