Water Metro – Kochi, India

Integrated Urban Water Transport system

Kochi, often known as Kerala's commercial hub, is one of the state's most densely inhabited districts. The Kerala backwaters are a network of brackish lagoons and lakes that run parallel to Kerala's Arabian Sea coast in southern India. Water transport has played a pivotal role in development of Kochi city where in the beginning of 20th century, 90% of inhabitants used small boats. However, when new roads and bridges were constructed, they gradually began switching to road-based transportation. This modal shift in Kochi has increased traffic congestion and air pollution, which are made worse by unplanned urban growth, a sparse road network, and the city's almost double private car ownership rate.

Photograph 1: Kochi Water Metro

Kochi water metro, India's first water metro is a game changer for urban mobility with innovative, inclusive and sustainable approach. The Kochi water metro project is anticipated to alleviate pollution and traffic congestion in the Kochi Metropolitan Area, as well as provide urban homes along the Kochi lakefront with easier access to business centres on the mainland. The water metro project envisions the establishment of 15 specified routes linking 10 islands over a 76-kilometer network of routes with a fleet of 78 fast, electrically driven hybrid boats serving 38 jetties. The water metro is anticipated to help about 33,000 islanders. The project built scalable technology throughout execution, which has a significant effect and the potential for large-scale integration and inclusion.

Objectives

- Provide energy-efficient electric ferries to replace existing diesel ferries that massively contribute to pollution of both air and water;
- Convert traditional Water Passenger Ferries into a formal mass public transportation system with modern technology integration for ticketing, navigation, passenger information, and so on;
- Connect islands via a sustainable system in order to postpone and avoid provisions that support more and more private vehicles in the short and long term.

Responsible Public Transport

This city scale project involves 15 designated routes linking 38 boat piers/jetties over a 76 km route network that spans 10 island settlements with 500,000 residents. With the addition of 78 new hybrid boats that will operate every 10 to 20 minutes along with a planned, dependable, and significantly expanded system of operation, the routes are estimated to meet a demand of roughly 100,000 people per day ridership by the project's completion in 2035.

There are also plans for solar component, GPS tracking, last-mile connection, and intelligent navigation for supplementary services aboard ferries. The goal is for the complete water transportation project to be fully operational by 2024.

Implementation: The project costs INR 8.28 billion (EUR 112 million) and the agencies involved were Kochi Metro Rail Limited, Local bodies at town and village level along with alliance partner KfW. The

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Replacing the now in use inefficient ferry boats with contemporary, cleaner hybrid ones, with a reduction in oil consumption of roughly 45 percent, it is predicted that about 158,000 tonnes of greenhouse gas (GHG) emissions will be saved in 20 years, which is about 7900 tonnes every year.

Positive impacts

Time savings: The introduction of new technological spaces results in time savings and inclusion. Compared to Kochi's traffic, time savings of about 30% are anticipated.

Monetary savings: Along with the positive effects that energy-efficient ferries will have on the environment and natural resources, estimated indirect savings from modal shift impacts are anticipated, which will make it easier for islanders to access jobs, schools, and healthcare facilities.

Economic growth was fuelled by seamless mobility.

Climate Impact: A decrease in Green House Gas (GHG) emissions and a decrease in diesel usage have a major beneficial climatic impact.

Conclusion

The Water Metro Project epitomizes a promising and sustainable response to the urban transportation challenges faced by coastal cities. By harnessing waterways, it offers an eco-friendly, efficient, and congestion-reducing alternative to conventional transportation systems. As cities continue to grow, embracing innovative projects like the Water Metro not only enhances connectivity but also mitigates environmental impacts, fostering a more resilient and liveable urban future.

Furthermore, the Water Metro Project not only enhances transportation efficiency but also stimulates economic development and tourism opportunities along its routes, bolstering local economies. Its holistic approach to urban mobility underscores the importance of integrating sustainable solutions into the fabric of modern cities, ultimately paving the way for a sustainable future.

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