#SmartNationIB #GovTechSG

Geospatial Data Powering Smart City Operations

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Will the Smart City
we are engineering also
be the foundation for a
Smarter City?

Smart City is a concept that has gained significant attention in recent years due to rapid **urbanisation** and the increasing importance of technology in our daily lives. It involves the use of various **technologies** and **data** to improve the quality of life of its citizens, enhance **sustainability**, and promote economic growth.

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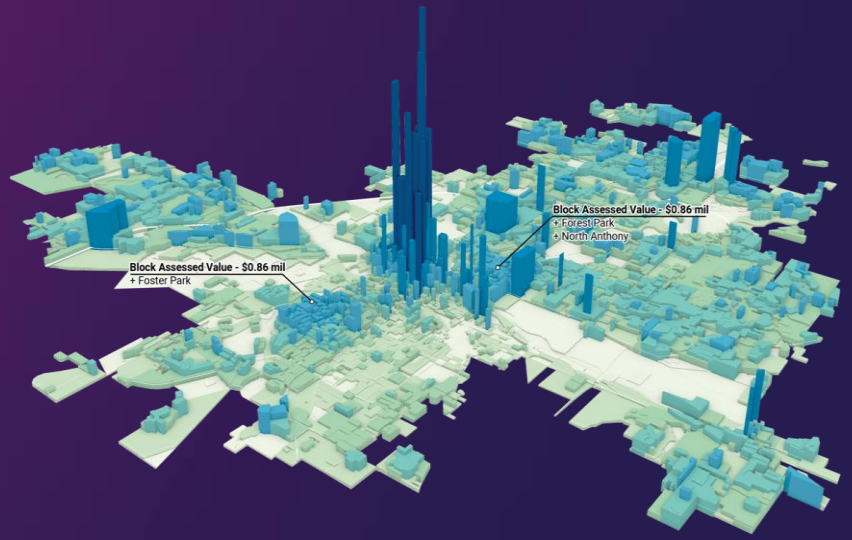
Smart City Operations

Smart City Operations use technology and data to improve the quality of life for its residents, enhance sustainability, and streamline city operations.

By leveraging technology and data, a smart city can optimise the use of resources, reduce waste, and promote efficient and sustainable practices

In Singapore, we have been at the forefront of smart city development, with initiatives such as the Smart Nation programme, which seeks to use technology and data to create a more connected, efficient, and sustainable city.



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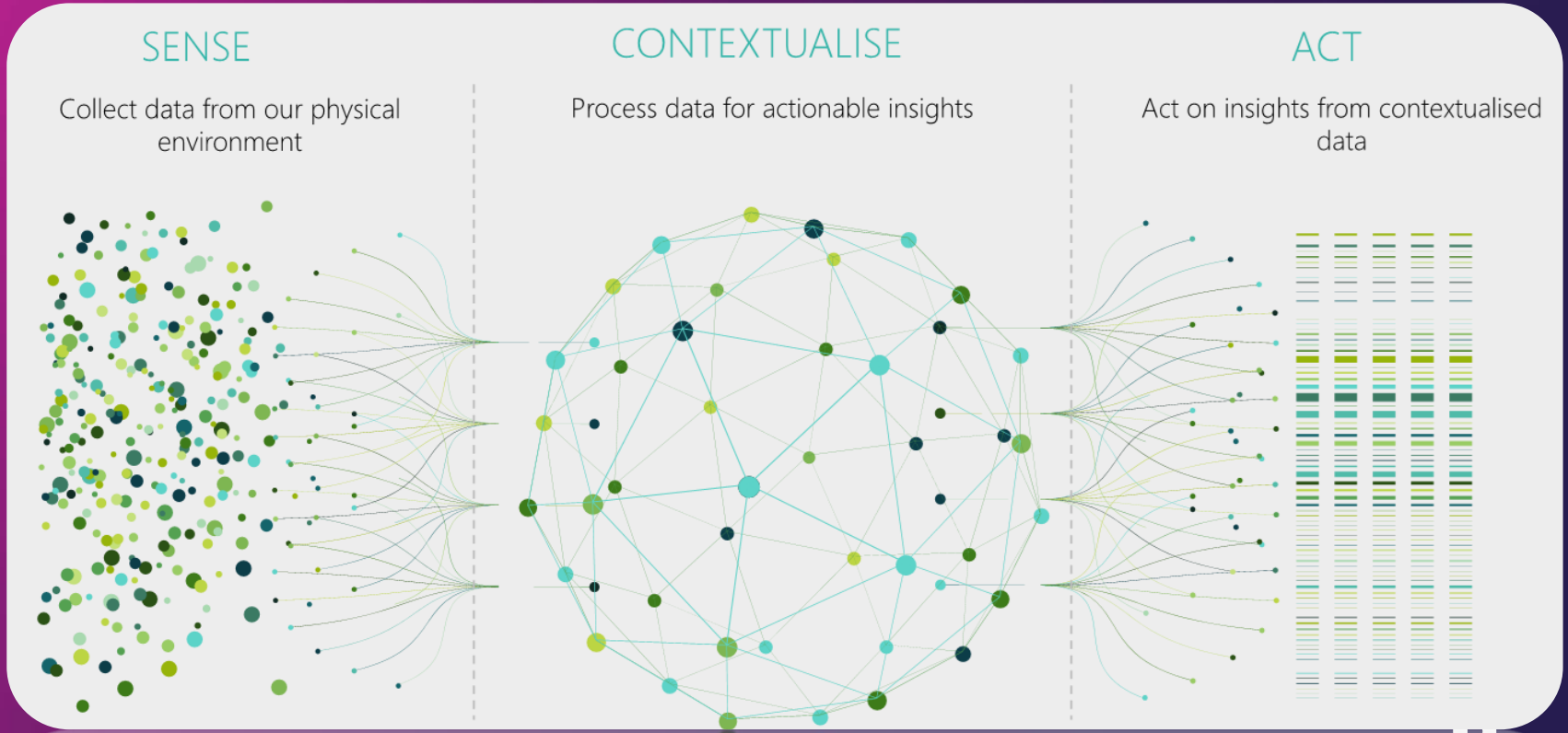
IoT Data: The Key to Smart City



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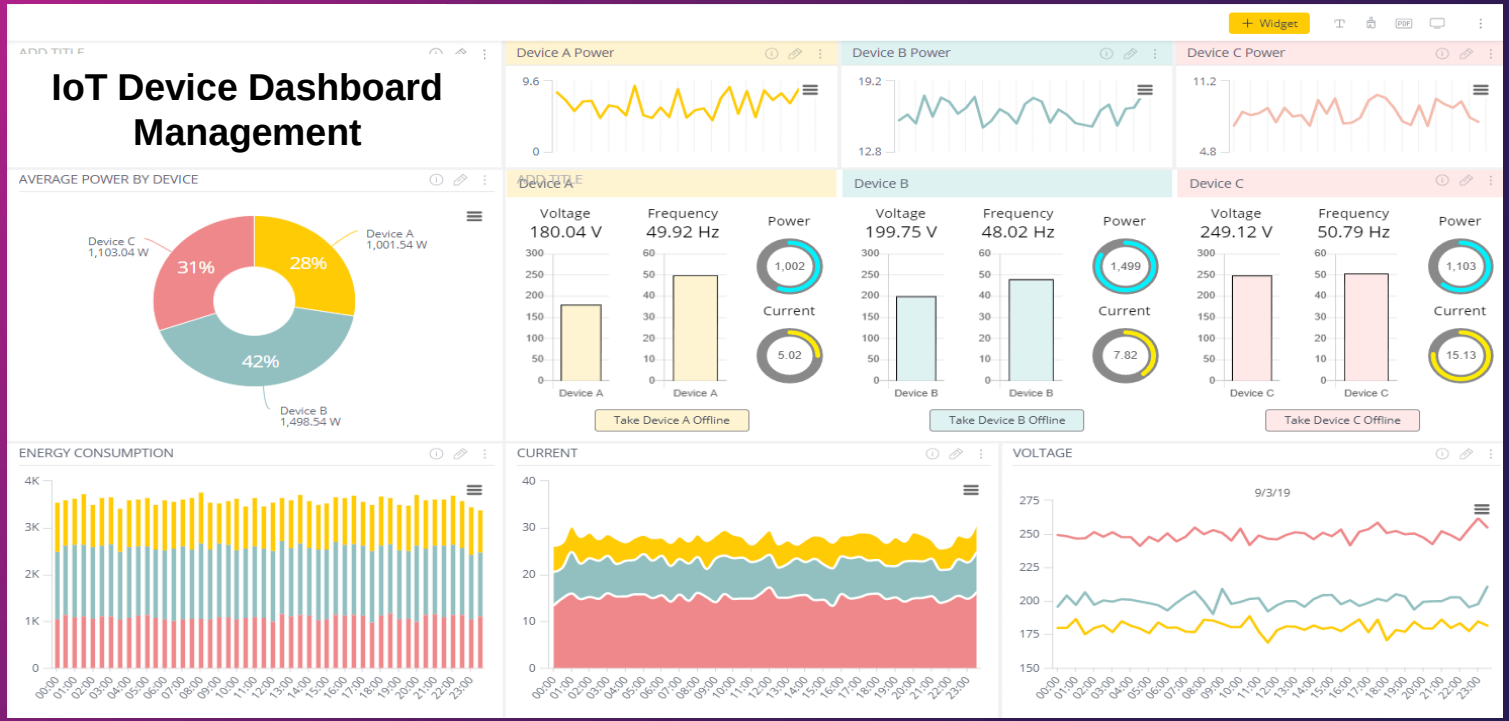
IoT Device Dashboard Management



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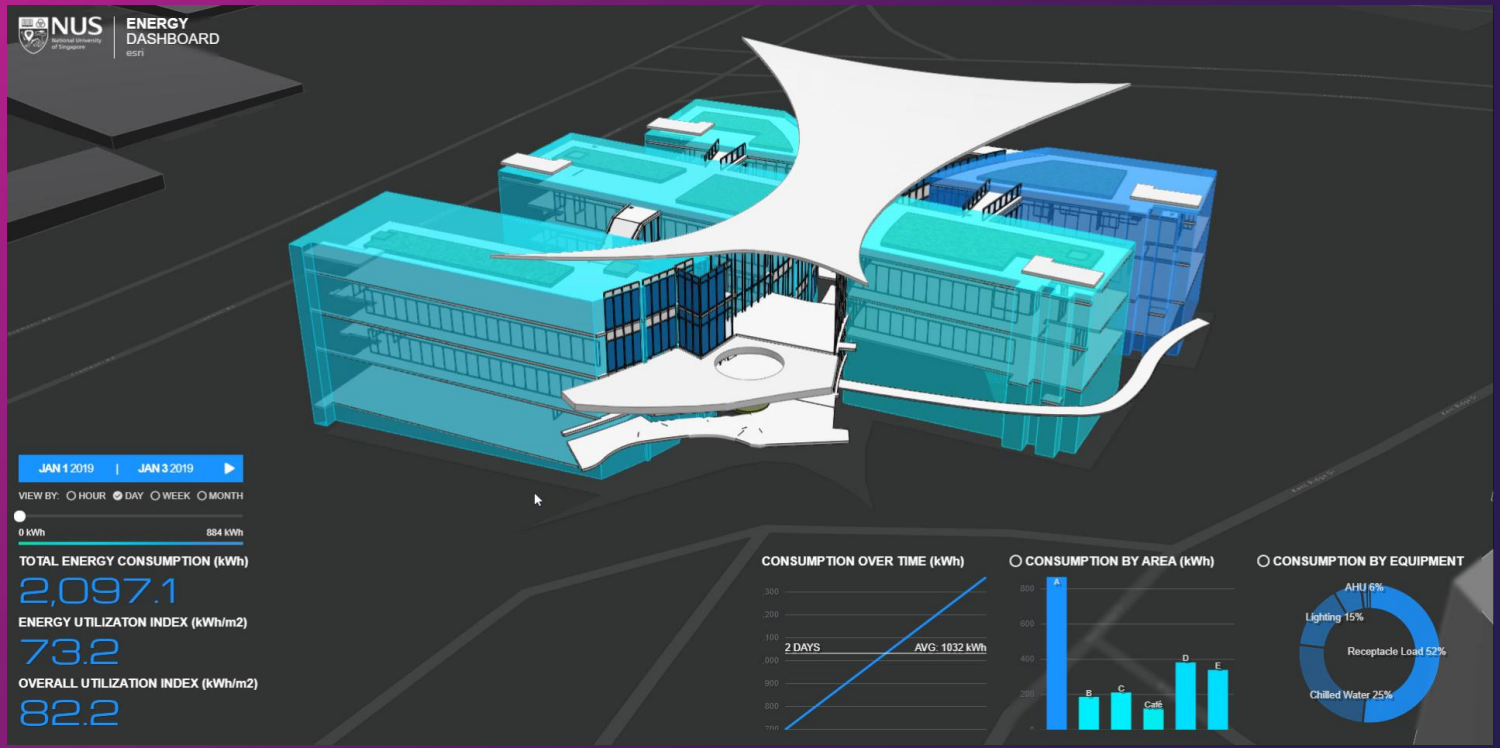
Digital Twin Energy Dashboard



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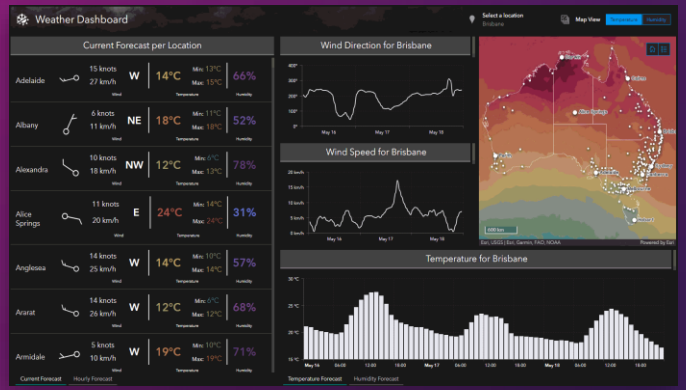
Why Geospatial Data?

Geospatial data refers to any information that has a geographic or spatial component. It represents objects as they are in the real world; objects can be fixed in location or moving, objects have textual characteristics, objects have time-stamped information

In Singapore, geospatial data is particularly relevant for smart city planning, as it can provide valuable insights into the city's physical landscape and infrastructure.

Real-Time Weather Dashboard



Australia

Work Order Management

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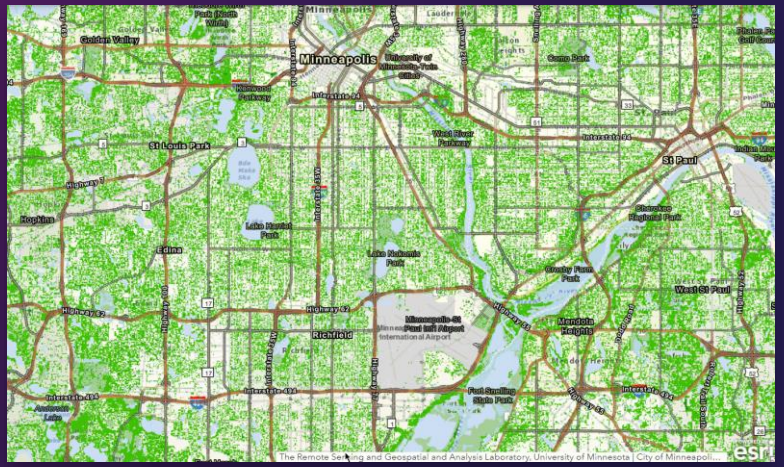
Benefits of Geospatial Technology

Collaboration and communication

Efficiency and cost savings

Sustainability and resilience

Extreme Heat Map



3D Operational Dashboard

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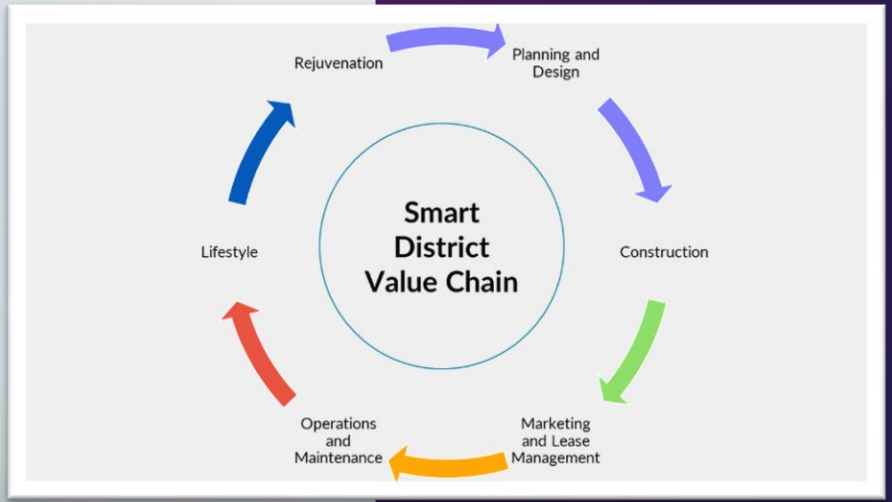
Discovering the impact of geospatial technology in the development and planning of Smart Cities



In the Smart City planning lifecycle value chain, geospatial technology plays a critical role in creating a **holistic** and **data-driven** approach to urban planning.

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How Geospatial data empower?

Geospatial data provides context: surrounding data to assess impact, time-based data to monitor progress, related unstructured data to support business decisions, live data to provide situational awareness, and trending data to identify patterns and resolutions

This helps to ensure that Singapore remains a vibrant, livable and sustainable city for its citizens for many years to come.

Planning & Design → Construction → Market & Lease Management → Operation & Maintenance → Rejuvenation

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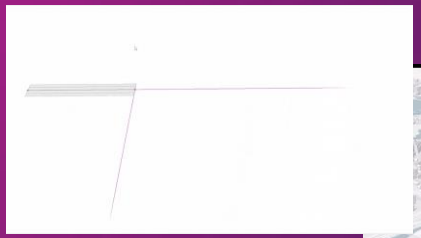
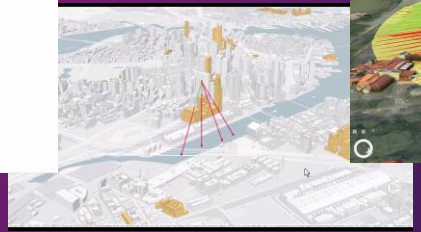
Planning & Design

Geospatial data helps urban planners, designers, architects and engineers to identify areas that require improvement, such as housing, transportation, and public utilities.

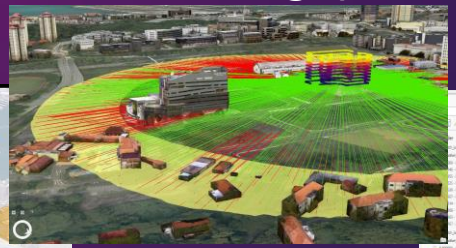
Geospatial data enables planners to make informed decisions and design smart city solutions that are tailored to Singapore's specific needs.



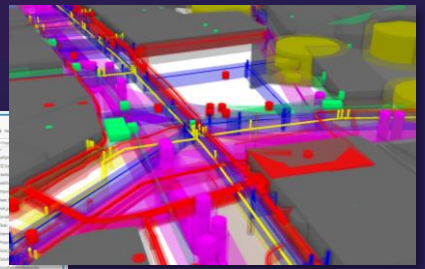
Planning with stated Requirements



Line of Sight Analysis



Solar Radiation Analysis



Infrastructure Planning

Planning & Design | Construction | Market & Lease Management | Operation & Maintenance | Rejuvenation

Construction

Geospatial data helps construction companies to locate underground utilities, such as gas and water lines, and avoid damaging them during construction.

Geospatial data enables builders to optimise the placement of new buildings and public spaces for maximum efficiency and accessibility in Singapore's urban landscape.

Construction Monitoring

Visualisation of underground assets

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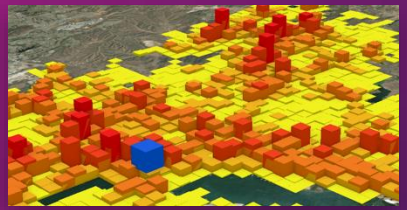
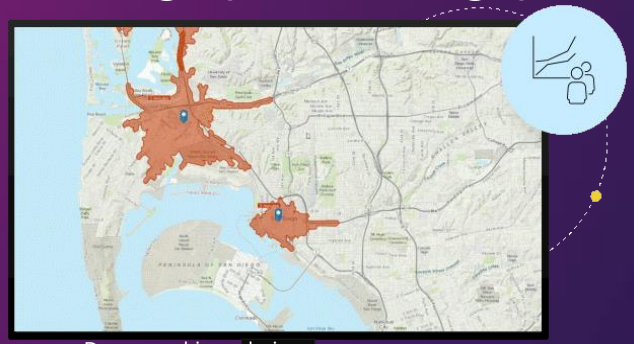
Market & Lease Management

Geospatial data helps to develop marketing strategies that are more effective in attracting visitors and increasing revenue.

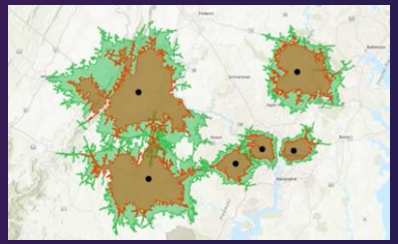
Geospatial data enables businesses to target their marketing efforts to specific locations and demographics in Singapore, increasing their ROI/return on investment.



Footfall analysis



Demographic analysis



Drive time analysis

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Operation & Maintenance

Geospatial data helps city officials to identify areas that require maintenance or repair, such as roads, bridges, and public utilities.

It also helps to optimise public transportation routes and schedules for greater efficiency in Singapore's transport system.

Real-Time Traffic Monitoring

Building Facility Management

Tree Operations and Maintenance

Plant Operations and Maintenance

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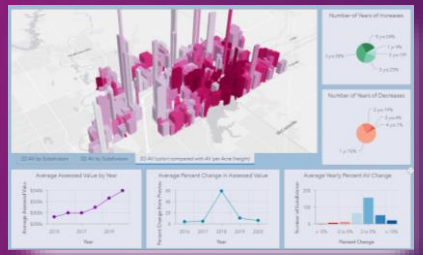
Rejuvenation

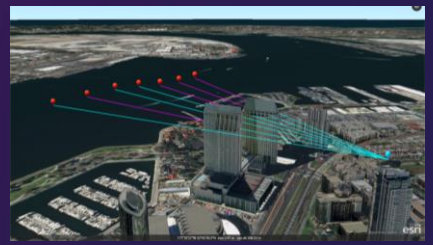
Geospatial data helps city planners to identify areas that are in need of redevelopment and to design solutions that are both functional and aesthetically pleasing. (Green Field, Brown Field)

It helps them to make informed decisions about the preservation of historic landmarks and natural resources, ensuring that Singapore's heritage and environment are preserved for future generations.



Property valuation dashboard

Urban design and scenario planning



Line of sight analysis for preserved buildings, monuments

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Geospatial Technology is Essential Smart City Planning

provides a comprehensive view of the urban landscape. It enables planners to analyse spatial data in real-time and make informed decisions based on the data collected. Here are some key benefits of geospatial technology in smart city planning

IMPROVED URBAN PLANNING

planners to create detailed maps of the city, including physical features, demographics, and land use. This information can be used to develop effective plans for urban development, transportation, and emergency response.

INCREASED EFFICIENCY

using real-time data, planners can identify areas of the city that require attention, such as traffic congestion or waste management. This information can be used to optimise city operations and improve the efficiency of city services.

ENHANCED SUSTAINABILITY

monitor environmental changes, such as air and water quality, and help city officials make decisions that promote sustainable development

IMPROVED CITIZEN ENGAGEMENT

providing access to real-time data, citizens can become more engaged in the decision-making process and provide feedback on city services and operations

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Q&A

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