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Case study

CitiME helps Abu Dhabi incorporate micromobility into strategic transport model

Leveraging OpenPaths® CUBE™ improves decision-making and planning for short trips using soft transport modes

Integrating micromobility solutions into urban planning

To support their urban planning initiatives, Abu Dhabi's transport department, Abu Dhabi Mobility (ADM), developed a strategic transport model called STEAM. They use STEAM to evaluate and make decisions on infrastructure projects and transport policies. With bike sharing and scootering becoming increasingly popular transportation modes in cities globally, ADM is investing in developing appropriate infrastructure and new policies to promote and support their use. As part of their investment, they appointed CitiME, a Bentley Systems channel partner offering mobility software solutions.

CitiME was tasked with helping ADM adapt their strategic STEAM model, integrating these soft modes of transportation to digitally evaluate and test different transport scenarios and determine the best infrastructure solutions and policies to accommodate micromobility within their city.

"The business outcome for the customer is that they can evaluate more accurately the results from testing different scenarios [that are] more reflective of how people are moving, specifically using micromobility modes," explained Laura Marshall, senior consultant at CitiME. Using the integrated model allows ADM to test infrastructure changes like bike lanes before implementation, supporting sustainable and efficient urban mobility.

Digitally capturing shorter journeys and soft transport modes

Originally, ADM's strategic model was divided into 3,500 strategic transport zones covering the city. "The zones were typically around 500 meters by 500 meters, sometimes bigger, which is quite a large area coverage, and short trips may stay within such zones or go between the immediate neighbor[ing] zones," explained Marshall. ADM wanted to enhance their STEAM model to be able to focus on more localized trips and capture those shorter journeys. They recognized that they needed more detailed digital insight for journeys by foot, bike, or scooter.

"In the model, there is the possibility to accommodate new transport modes," said Marshall. However, ADM needed a team of experts dedicated to developing and refining the STEAM transport models who were familiar with advanced predictive transport modeling software in a Middle East context. With extensive experience in projects

Project summary

Organization
CitiME

Solution
Surveying and Monitoring

Location
Abu Dhabi, United Arab Emirates

Project playbook
OpenPaths CUBE

Project overview

- CitiME is transforming transport modeling in the Middle East by integrating micromobility solutions such as bikes and scooters into digital urban planning.
- ADM wanted to adapt their strategic transport model, STEAM, to incorporate shorter trips using micromobility modes.
- Through their collaboration with Bentley, using OpenPaths CUBE, CitiME enhanced ADM's model, disaggregating zones to support localized, sustainable transport.

across the Middle East, CitiME understands the unique challenges of urban mobility and micromobility in these diverse environments.

Leveraging OpenPaths CUBE to adapt strategic model

CitiME used OpenPaths CUBE to update the STEAM strategic model, incorporating the coding of soft mode-specific infrastructure, such as zebra crossings, pavements, cycle tracks, and park paths into the network, increasing the original 150,000 links to over 1 million. "The network [model] now includes all the possible links that can be used for short trips," stated Marshall.

Leveraging Bentley's multimodal transport planning software, CitiME also developed a new mechanism to disaggregate the model's zoning system within a local area based on the available information—including very disaggregated data, such as utilities consumption at building level. They created a new set of rules that define how people using both cars and soft transport modes choose their routes between the origin and destination of their trip and integrated these algorithms, adapting the strategic model to address localized trips. "We built the new localized model with OpenPaths CUBE," said Marshall. "Without this software, we wouldn't have been able to do that," she added.

Supporting sustainable transport

With the disaggregated zoning system and the added links for the local area incorporated into the model, CitiME has enabled ADM to perform digital detailed assessments of very short trips, which could not be done from a strategic level. "Abu Dhabi Mobility can now evaluate and test new infrastructure and policies that support the use of soft modes for short trips," said Marshall.

The team uses OpenPaths CUBE to simulate, visualize, and evaluate how changing the infrastructure will impact local movement and accessibility to provide better local network systems for bikes, scooters, and pedestrians. The user-friendly and automated features of Bentley's application make modeling and planning more efficient, expecting to yield a significant return on investment. "The new local area model will ultimately help Abu Dhabi Mobility make more informed decisions about how best to plan for these kinds of sustainable modes," concluded Marshall.

> "We wanted to adapt the strategic model, using OpenPaths CUBE to develop a localized model that allows Abu Dhabi Mobility to get a more accurate representation of how people are travelling in a local area. "
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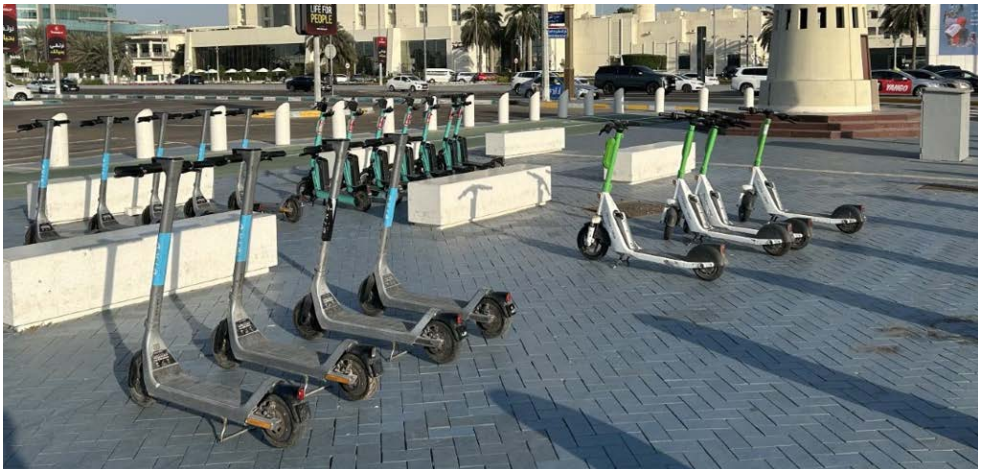
> -Laura Marshall, Senior Consultant, CitiME



Using the OpenPaths model, ADM can simulate and visualize how changes will impact movement and accessibility, providing better local network systems for bikes, scooters, and pedestrians.

The updated localized model helps ADM make more informed decisions about how best to plan for softer, sustainable transport modes.

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