# VeloHaven: Smart Beachfront Trail & Cabana Network

Deep Innovation Report

# Executive Summary

VeloHaven transforms the coastal transit experience across Bournemouth, Christchurch, and Poole through a sustainable, modular beachfront bike track connected to solar-powered smart rest cabanas.

The initiative addresses the critical need for safe, year-round micromobility infrastructure, providing residents and visitors with secure bike storage, device charging, and shaded rest areas managed through an intuitive reservation platform.

# The Better Everyday

*What if a journey along our coast became a seamless active-travel experience, supported by intelligent rest hubs and secure infrastructure?*

- VeloHaven combines a modular, eco-friendly beachfront bike track with smart-enabled rest cabanas ('kabanas') that users can reserve via an app, providing a premium active recreation experience. Each modular kabana offers solar-powered device charging, secure smart-lock bike storage, automated hydration stations, and cooled shaded seating.
- In 2030, a family cycling from Boscombe to Bournemouth Pier glides smoothly along a dedicated modular bike trail, completely separated from pedestrian footpaths. They reserve a smart kabana via their phone, park their e-bikes securely in smart-lock docks, charge their devices with integrated solar power, and rest in the cool shade without having to carry heavy locks or worry about theft.
- People want to enjoy long coastal rides without the constant anxiety of a flat battery, lack of secure bike parking, or overcrowded seaside cafes. Currently, cyclists resort to padlocking expensive bikes to rusty promenade railings and sitting on hot sand, worrying about theft while trying to buy refreshments.
- This experience could shift public expectations from seeing beachfronts as mere scenic walkways to viewing them as active, smart-enabled transit corridors. This expectation could influence how other public spaces, like town parks or business districts, integrate secure micromobility and rest spaces.

# Who It Could Matter To

*From daily commuters to leisure-seeking families, coastal infrastructure can unlock new ways to experience the shore.*

**The Active E-Bike Commuter**

- A professional living in Poole Quay who works at a finance firm in Bournemouth town centre and prefers active travel over driving.
- They need a safe, direct path to commute year-round without navigating heavy car traffic or pedestrian-congested promenades.
- A dedicated track lets them maintain speed, while a quick kabana stop allows them to charge their phone and freshen up before entering the office.

**The Family Beach Explorer**

- Local parents with young children who want to spend weekend afternoons cycling along the coastline.
- They look for a convenient, secure base to park their cargo bike, refill water bottles, and take a shaded break away from the direct sun.
- Automated hydration and secure smart locks provide peace of mind and convenience, allowing them to extend their outing without stress.

**The Freelance Creative Practitioner**

- A freelance designer based in Boscombe who works remotely and seeks inspiring outdoor spaces to spark creativity.
- They want to cycle to the beach and work from a shaded, solar-powered workspace with reliable connectivity.
- A smart kabana with cooled seating and integrated USB power docks offers a distraction-free outdoor office overlooking the sea.

# What This Could Change for BCP

*Connecting our distinct coastal towns with sustainable infrastructure could redefine year-round mobility.*

- This network directly aligns with BCP Council's sustainable regeneration ambition by connecting distinct coastal communities like Poole Quay, Boscombe, and Christchurch Harbour through active transit.
- It creates a highly visible, continuous active-travel corridor that shifts tourist and resident transit away from cars, reducing local traffic congestion.
- As cycling along the beach becomes safer and more organized, local micromobility hire businesses could see a significant increase in year-round demand.
- While cyclists and active commuters benefit, some beachgoers might object to the physical presence of modular structures on the promenade, fearing it clutters the natural coastal landscape.

# Who Must Connect

*Creating a cohesive beachfront network requires a combination of local government foresight, technology integration, and community trust.*

- Delivery: A specialized modular infrastructure operator would lead the project, partnering with a local digital platform developer to build the reservation system and smart lock integrations.
- Participation: Local cycling groups, running clubs, and beach accessibility campaigners would collaborate to co-design the route and kabana placements, ensuring the path accommodates all abilities.
- Enabling: BCP Council would grant permissions for path placement along the promenade, ensuring compliance with environmental regulations while providing access to municipal electrical backups if solar power runs low.
- Sustaining: Corporate sponsors from the regional finance and insurance sector could fund the initial modular installations as part of active lifestyle initiatives, while user reservation fees sustain maintenance costs.
- The missing link: The relationship between coastal rangers who manage the beach environment and smart-infrastructure engineers requires a joint steering group to align on wildlife protection and safety.

# Why This Fails

*Even the most innovative coastal solutions can drift off course if they ignore physical elements, upkeep, and user trust.*

- **Rust and salt decay** Marine air, salt spray, and winter storms could rapidly degrade the solar panels, smart locks, and electronic systems of the beachfront kabanas. The early warning sign would be a rising number of user complaints about unresponsive digital locks or failed charging ports.
- **Siloed promenade politics** Pedestrians, dog walkers, and cyclists might clash over shared space, leading to community resistance or regulatory restrictions that render the modular track unusable. The early warning sign would be a high frequency of near-miss incidents reported near key beach choke points.
- **Seasonal ghost hubs** While the network is heavily used during peak summer, a lack of heating or lighting could leave the kabanas abandoned and vulnerable to vandalism during winter. The early warning sign would be a sharp drop in off-season app bookings combined with graffiti on the modular structures.

# One Experiment to Start

*Testing the core human demand for smart coastal resting spaces requires physical validation before building permanent structures.*

- The single most important uncertainty to resolve is whether people will actually trust and pay to use smart-locked cabanas for secure storage and charging, or if they prefer traditional, unmanaged spaces.
- Set up a single non-permanent, solar-powered pop-up kabana near Bournemouth Pier for a fortnight during late autumn to test off-season appeal. The test would offer free secure e-bike docking, phone charging, and shelter to passing cyclists who sign up on a basic landing page.
- Keep going if cyclists actively park their bikes, use the chargers, and leave positive feedback about feeling their belongings are secure. Stop or rethink if passersby ignore the structure, express confusion about how to use the app-free prototype, or prefer to keep their bikes in sight.
- **Next step:** A local team of engineering students from Bournemouth University could build a low-cost, timber-framed prototype kabana within 90 days to test user interaction on the seafront.