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Traffic Analysis and sustainable Design of Anabta Main Street

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Abstract

This project focuses on the engineering redesign and traffic analysis of Anabta's main corridor, which connects Tulkarm and Nablus and passes through the town center. The study covers the segment from the Police Center roundabout to Kafr Al-Labad intersection. The primary goals are to ensure smoother traffic flow, enhance safety, apply sustainable design, and reduce environmental impact while promoting social cohesion.

The methodology includes traffic data collection, evaluation of existing conditions, traffic simulations using four scenarios: the current state, partial improvements, future projections (2030), and the final proposed design. Key modifications involve converting the Police roundabout into a four-leg intersection and installing a traffic signal at Murad Abu Asal intersection.

Engineering plans are developed using AutoCAD Civil 3D, addressing lane configurations, sidewalks, pedestrian and bicycle paths, parking areas, and medians. A solar-powered lighting system is incorporated to enhance sustainability. The pavement structure is designed following AASHTO standards. The design also integrates green spaces, inclusive facilities for people with disabilities, and environmentally friendly solutions.

The project outcomes aim to support decision-making for municipalities, urban planners, and transportation agencies by providing a comprehensive and sustainable road improvement plan based on local data and field investigations.

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