

An Investigation on the Effect of Railway Track Elevation Project in Taichung Based on the Carbon Emissions

Authors : Kuo-Wei Hsu, Jen-Chih, Chao, Pei-Chen, Wu

Abstract : With the rapid development of global economy, the increasing population, the highly industrialization, greenhouse gas emission and the ozone layer damage, the Global Warming happens. Facing the impact of global warming, the issue of "green transportation" began to be valued and promoted in each city. Taichung has been elected as the model of low-carbon city in Taiwan. To comply with international trends and the government policy, we tried to promote the energy saving and carbon reduction to create a "low-carbon Taichung with green life and eco-friendly economy". To cooperate with the "green transportation" project, Taichung has promoted a number of public transports constructions and traffic policy in recent years like BRT, MRT, etc. The elevated railway is one of those important constructions. Cooperating with the green transport policy, elevated railway could help to achieve the carbon reduction for this low-carbon city. The current studies of the carbon emissions associated with railways and roads are focusing on the assessment on paving material, institutional policy and economic benefit. Except for changing the mode of transportation, elevated railways/roads also create space under the bridge. However, there is no research about the carbon emissions of the space underneath the elevated section up until now. This study investigated the effect of railway track elevation project in Taichung based on the carbon emissions and the factors that affect carbon emissions by research related theory and literature analysis. This study concluded that : railway track elevation increased the public transit, the bike lanes, the green areas and walking spaces. In the other hand it reduced the traffic congestions, the use of motorcycles as well as automobiles for carbon emissions.

Keywords : low-carbon city, green transportation, carbon emissions, Taichung, Taiwan

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