

## Chapter 12

# Designing Sustainable Transport Centers: Comparative Visions From Turkey and the Netherlands

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### **ABSTRACT**

*'Speed' and therefore 'movement', which emerged as one of the important problems of the age, have entered our lives as concepts imposed on urban dwellers, especially by metropolises. Places such as transfer centers and stations constitute the nodes of this movement. As we have witnessed the pandemic era, mobility became a critical topic. We had to think about numerous measures that support rebuilding with green, sustainable approaches to be healthier. From traffic-free zones to pedestrian areas to implementing cycling and walking schemes have become the major concerned issues to allow people to move around urban spaces more safely and sustainably. The study aims to discuss the applications of a UNStudio approach for designing infrastructural projects in Netherlands (Arnhem Central Station, Hardt Hyperloop) and Izmir Metropolitan Municipality's approach for Evka-3 Social Center and Transfer Station Architectural Project Competition and Transportation Master Plan for the city of İzmir.*

### **INTRODUCTION**

In recent years, by the neoliberalism side effects, as cities have spread and grown, travel distances have increased, the transportation system has become dependent on vehicle trips, and the types of transportation operated by the private and public sectors to meet increasing travel demands have led to the current chaos. With the dominance of motorized vehicles on roads, road surfaces in cities become inadequate, traffic congestion increases and air and noise pollution exceed acceptable limits with increasing vehicle traffic. Transportation is a crucial urban need for both the city and its people. However, the harmful gases and fuel waste produced by vehicles and emitted into the air have led to significant environmen-

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tal issues. They pose a serious risk to human health and need to be addressed urgently. It has become evident that public transportation systems need to be more efficient and take up a larger share of total trips in cities worldwide. This is necessary to address the issues that arise from the increasing reliance on automobiles. Especially in large metropolitan areas, transportation between two points can no longer be provided by a single mode of transportation. This necessitates the spatial combination of modes at certain transfer points. Thus, the need for transfer centers that enable the integration of different modes of transportation arises.

From the first cities 7,000-10,000 years ago until the mid-19th century, cities were all pedestrian cities. In later times, with the expansion of living spaces, agricultural activities leaving the city and the subsequent industrial revolution, the concept of “urban transportation system, urban logistics” emerged.

The success of a city’s transportation system depends on its ability to provide accessibility rather than mobility, without creating inequality among urban dwellers, to protect the city’s environmental and historical values while providing fast, safe, and low-cost accessibility, and to use energy efficiently while doing so. Developing public transportation systems, and logistics is crucial for enhancing city dwellers’ quality of life. One of the main strategies to increase transportation efficiency and reduce negative environmental impacts is to decrease reliance on private vehicles. To achieve sustainable transportation, planning should integrate both public and private modes. For this reason, in the public transportation system, for passengers to reach their destinations faster, more easily, and with the preferred mode of transportation, the location of the transfer centers, which will enable passengers to transfer from one system to another, should be selected according to the existing macro form of the city, function areas, main transportation axes and the service efficiency of these points should be increased with their designs.

The economic and environmental impacts of logistics activities started to gain importance towards the end of the 20th century. Initially, studies were carried out on international trade and national-level transportation, and then logistics activities at the urban level were focused on.

In more than 3 or 4 decades, much of the debate was about how transport can be made more sustainable since it has been one of the foremost consumers of the world’s resources (Banister 2005). Using energy to land, from natural and economic resources to technological advances. Investing in innovations in Smart and Green mobility became the most necessary issue that must be driven by the former governments.

To find solutions to the increasing transportation problems in parallel with the increasing population and private vehicle ownership of major cities, many transfer hubs have been planned to ensure the integration of different types of transportation by highlighting the public transportation system in the urban transportation and logistic system.

## **Planning Characteristics of Transfer Centers**

Transportation hubs are the points that provide integration and organization between transportation and logistic modes with different technological features and capacities such as pedestrian, bicycle, automobile, intermediate public transportation modes (taxi, minibus, minibus), bus, rail systems (tram, light rail, metro, suburban train) and ferry. Accordingly, today, as the use of different types of transportation becomes more widespread in public transportation, the need for “transfer centers”, which are the intersection of different types of public transportation, gains importance. If uninterrupted travel is achievable, public transport will attract car owners and enhance city living. However, the inadequacy of public transportation transfers is still the weakest point of many cities’ public transportation systems. Accordingly, the planning and design of transportation hubs is an important parameter for increasing

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