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THE IMPACTS OF PLANNING CRITERIA'S ON GROUNDWATER SOURCES: CASE OF IZMIR NEW CITY CENTER

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Abstract: Cities with historical background, according to their geographic or economic alteration generally possess different town centers. Mostly for better protection against human or non-human factors the center of cities are relocated. The city of İzmir is one the magnificent case of city center resettlements. The premier location of city that is estimated to be 5000-8000 years before was in Bornova reeds in the north. Far from the sea and as results of serious disease the settlement relocated to Smyrna in Bayraklı. Smyrna was then abounded after massive earthquakes. Pagos hills (Kadifekale) with its great defending potential become the next city of Smyrna. Then, the economic value of harbor and rail-way moved the city to the cost. In all this location selection, geographic characters present crucial role in optimizing the decision. However, the most recent planning projection for new city center seems to completely dismiss this fact. Izmir new city center, planned to be settled in Bayraklı where soil, land properties and groundwater resources do not support the planned ideas. Not only the location of new city center is arguable but the character of development is also critically stressed on nature. For example, Halkapınar, located near new center of Izmir, is one of the important groundwater resources in the area. This region is providing 16% of İzmir drinking water. The groundwater levels range from 1 m to 10 m in Bayraklı Region. Geographical Information Systems (GIS) utilizing in urban-nature interaction assessments, present clear and easy to understand picture of the problem. Especially, when comprehensive data is not available and precise examination is impossible, the GIS could be applied for data creation and geoprocessing analysis. The results could be unique and it can provide valuable information for decision supports. While the aim is to provide a threshold for site selecting the data is more likely to be comprehensive then precise. Accordingly, evaluating the planning criteria impacts on groundwater resources in scale of a city center, with the help of GIS could limit to what this study aims to reveal. The study examines the stress that buildings had on land in 2001 and 2016 by using GIS geo- statistical analysis. The changes argue the planning decisions and also warn for future crises. Although plans have been implied in the case but the study results may lead to sets of further studies and prevention actions in case.

Keywords: groundwater, planning decision, water resources, GIS, Izmir