A development of hydrogen infrastructure for hydrogen refueling station

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One way to reduce Greenhouse gas emissions in the transportation sector is to increase the number of alternative fuel vehicles. In order to supply hydrogen fuel cell vehicles, it is necessary to build sufficient numbers of hydrogen refueling stations(HRS). However, it is not socially or economically feasible to build multiple hydrogen stations at once to meet all the demands of HRS. For predicting the demand for hydrogen in advance, data such as population, area, population density and GIS were used. Through this, the priority of the location of HRS was determined. Based on estimated hydrogen demand, the number of required HRS for each year was calculated. Data was collected using public data and map APIs for each candidate site's distance and driving time. Using HRS number, p-median, a solution of node-based location problem, was calculated. For evaluating the calculated satisfaction level of the HRS, it was visualized based on the average distance from per HRS and driving time required. As a result, it reaffirmed the importance of planning the location of HRS and emphasized the suitability of proposed model. It is expected to contribute to the supply of eco-friendly vehicles.