

# **Determination of Locating for Fire Stations Using Response Time Coverage Area Approach: A Case Study of Samsun**

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## **SUMMARY**

Fire and rescue stations play a key role in fire management. An early and aggressive primary attack will save more properties and lives in fire and rescue cases. A critical component in the control and mitigation of a fire incident is response time which includes alarm answering time, alarm processing time, turnout time, travel time and initiating action time. Travel time is one of the most important elements of the response time and it is affected by various factors; such as traffic volume, road networks, the time of day, driver habits, and the location of the incident. The strategic locations of fire stations are of paramount importance in achieving a minimal travel time which is part of an effective and reliable emergency response system. In this study, existing sites of fire stations in Samsun city were evaluated according to the location of emergency calls and the 5, 10, 15 minutes response time coverage area using the Geographic Information System (GIS). In this way, the cluster analysis creates a possibility for determination of locating the fire stations and so responding the emergency management activities. In this paper, it is aimed to design an emergency management system for fire disasters integrated with spatial data infrastructure. For this, Geographical Information Systems (GIS) is a powerful tool which responses all needs related to the emergency management activities as provider spatially enabled basis.