

## Investigation of depositional formation of Sareyin tourist town site emphasizing topography, tectonic and climate to develop optimal urban land use

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### Extended abstract

#### 1- Introduction

Usually urban areas with rapid growth and horizontal developing are occupying unsuitable topography lands with high geomorphologic hazards. Recently, most cities due to physical limitations on urban development encountered with in subject of physical developing (Garklou et al, 1390: 99). In other hand, urban development often caused industrial and technological crises and increases vulnerability of the city, due to the building, financial and citizen's density (Asgari et al, 2008:36-37). Therefore, knowledge of the characteristics of urban environment is the important subject in urban planning and urban management. Irregular development of

the urban has a destructive effect on natural landscape and on the fringe agricultural lands (Batisani and Yarnal, 2008:2). So to optimal site urban selection is trying considered effects of various parameters (Zhao, 2010: 246), Sareyin tourist town are located in the eastern mountain slopes at elevations between 1640 to 1740 meters and 16 kilometers east slope of Sabalan on the fault Valley in the city of Ardabil. Due to importance tourist importance in the past two decades has intensified the city's physical development. Therefore the importance of this research in the subjects of geomorphology and environmental hazards are identified for more appropriate land use.

#### 2- Methodology

According to the nature of this research, this study was done as form as, field work such as studying on the surface formation, sampling the surface depositional formation In order

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to determining, granulometry (Texture and structure), Plastic limit, and liquefaction of themes. Moreover, from geologic map of study area, the type of formations, Layer slope, thickness and tectonic situation of them in the city site formation (on the foundation trenches, the local log) are determined. Also, with using ArcGIS, we drowned the map of slop, litology, heights, and faults and derange system. Then with combining these layers, final environmental hazard zonation map is drowned, In addition to the diagrams were drowned in Excel software.

### 3 –Dissuasion

At the current site of the Sareyin city two active faults with the trend of East - West and North -south is detectable. Volcanic Sabalan altitude with hydrothermal stage (which also is active in terms of tectonic) is located in the East of the city. Investigation surface soil formation showed that the soils are shallow area of low gradient areas (in slope range 3 to 5%) of heavy texture (with 45/51 clay texture) is (Table 1). However, most of the city site in the fault valley and partly at deep fine-grained alluvial materials has been stabilized. In the clay formation which indicating plastic point of about 40 to 50 percent (with liquefaction limit of 70 to 90 and the plastic limit 20 to 30%) is, if the soil of outside the building reaching above the moisture of plastic limit (25 to 35%), probably there is the distractive of buildings and asphalt (Asgari and Fagher, 1372: 93).

According to the depositional formations (soils) Sareyin city site also

prone to swelling of the soil physics especially liquefaction in the time of earthquakes occurrence. Unstable or unresistant formation such as marl with marly conglomerate, new fine-grained surface with not consolidate at the city site range (mainly clay and silt with sand) for foundation in architecture and civil engineering structures are considered geomorphic potential hazards zones.

### 4 – Conclusion

Primary core of Sareyin city site are formed at the relatively flat topography. But gradually with the expansion of physical space, the city occupies a larger area and is dealing with a lot of hydro-geomorphic limitation and hazardous zones. Today the site of Sareyin city due to the rapid development of urban land use d are contacted with varied topography and hydro- geomorphology situation problems.

According to the situation of active tectonic and topographic (1640 to 1740 meters), when any of important earthquake is take place in the city site (above scale 5/5 Richter) this city will be suffered huge damage. Ultimately With overlaps of slope, height, lithology, faults, and drainage systems layers or maps in the Arc GIS, the final environmental hazards zonation map was plotted. The role of physical factors such as faults, height, percent slope, and lithology of the river, creating environmental hazards (limitations) in the physical development of the city (especially in

its future physical development) is very effective.

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