

# **Slope: Restrictive Morphometric Parameter for the location of urban equipment in the average cities. Case Study: Municipality of Jiquilpan, Mich. Mex.**

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The natural and human resources on which this country counts on are fundamental factors for its economic and social development, for this reason its study and evaluation are of extreme importance, even more so when is the necessity to plan so as to be able to take advantage rationally. Because the planning instruments suffer from the lack of tools that contain geospatial information, the average cities project this deficiency in a present tendency of disorderly and disintegrated territorial growth in the system of the rural localities that conform to the Municipality of Jiquilpan.

The target of the analysis of physical features is to know the existing characteristics in this natural environment to define the appropriate zones for the growth of the human settlements, as well as to raise the uses and destinies of the ground according to its aptitudes and potentialities. This way, we can orientate the different human activities rationally and also put them into practice in more favorable conditions, without bringing about alterations to physical environment. The form of the relief also determines the natural processes and the uses that humans can do in different zones, grouping these in different ranks according to the slope of the land to analyze the different representative zones from the ground, being associated to the parameters for urban equipment established by the Mexican federal dependencies like the Social Development Sector (SEDESOL).

The urban equipment works like a system of elements that allows the reproduction of the work force, for this reason the lack of urban equipment in some cities or regions, leads to social and urban problems, that become apparent through delays in economic and social development of the cities and localities which have been studied . In the analysis of urban equipment, it is necessary to evaluate its efficiency and sufficiency, in relation to the existing population in addition it is necessary to take into account the prevention of future growth; on the other hand it intends to assure that the areas and location within the context are adapted to render the best service to the population.

Based on the results of this evaluation we will be able to use the information to form a proposal of general land uses. The intensity of the ground use defines the appropriate zones of growth and the areas to preserve. It is necessary to identify the present ground uses in the zone of study to determine, from the analysis, the incompatible uses of the zones that require modification or change of use. The analysis of these components of the physical environment allows us to project the alternatives for the future urban development in relation to the distribution of the urban equipment established by the normative system of SEDESOL.

For the development of the project a GIS was used (ILWIS 3,0) which captured geospatial information for the analysis and representation of the statistical data. From the Digital Elevation Terrain Model (DETM), we generated the slope map, which we later re-classified with information from the SEDESOL, thus allowing us to identify the most optimal zones to situate the different urban equipment. From the above, maps were generated that show the aptitude of the land to situate this equipment.

The use of the GIS works like a fundamental tool for integration, space analysis and graphical representation. This demonstrates its versatility, and overall the potential advantages for the determination of the optimal areas to situate urban equipment allowing thus the development of the urban functions, which is demonstrated in the quality of life of the population.