UNIVERSITI TEKNOLOGI MARA

KARIAH BOUNDARY DELINEATION USING GEOGRAPHICAL INFORMATION SYSTEM

NORSHAHRIZAN MOHD HASHIM

Thesis submitted in fulfillment of the requirements
for the degree of
Master of Science

Faculty of Architecture, Planning & Surveying

February 2009

ABSTRACT

Every mosque has its jurisdiction area known as kariah boundary. It is used to define the right and responsibilities of the Muslim community. Presently, the kariah boundaries are normally alienated according to the mosques' capacity, population borders and leader's intuition. As a result, two main problems which are spatial hierarchy and delineation problem occurred. The situation has also created a great deal of confusion and the kariah delineation process has to be determined properly and efficiently since there is a high demand of community efficient management and to suit with the fast changing of land optimization, population management and land value appreciation. This research aims to define more sustainable parameters and investigate more definite procedures in kariah boundaries delineation. However, only the physical geographical factors are considered in kariah boundary delineation since the other criteria considered already covered by previous boundary determination by Islamic religious council. The study takes place in several kariah boundaries in Arau, Perlis. Geographical Information System (GIS) techniques of overlaying, reclassification according to Thiessen principle, Neighborhood, Network analysis and Matching area have been used in the analysis. The Thiessen polygon is suggested to be used as an initial boundary in the delineation process. While, the priority criteria for the boundary establishment which consist of physical barriers, centre of attraction and transportation network were specifically defined. Consequently the standard based map according to the Cassini coordinate system has been used in order to abide to the spatial hierarchy application. The solution enhances data integration and data exchange within the kariah spatial data environment. The final kariah boundaries (maps) highlighted and the benefits are discussed to compare with the existing boundary. In order to produce effective procedure in administrative boundary delineation, the arrangement of techniques of boundary delineation has been made. The arrangement gives the most appropriate procedure that could give the optimum result of boundary design in the future.

ACKNOWLEDGEMENTS

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CHAPTER 1

INTRODUCTION

1.1 Background

Mosque is a well known worship place for Muslim community. Mosque is also an administrative centre as well as the centre for civilization. There are about 101 mosques in Perlis which are directly under the authority of Jabatan Agama Islam Perlis (JAIPs). Every mosque has its own county which is known as kariah. Kariah's boundary means a limitation of an area representing the jurisdiction of a mosque and headed by a respective leader known as "imam" (JAIPs, 1995).

From theoretical point of view, boundaries can be viewed as a hierarchy division of an area. A country is divided into several states and they are divided into several districts or provinces and subsequently divided into smaller area like *Mukim* or municipalities. The division or boundaries can be made through a combination of political, administrative and juridical decisions. Many countries have instituted a set of formal rules, or criteria for their boundaries authorities to consider when drawing and establish administrative boundaries. Prior, the boundaries determination largely followed on the physical division of the countryside along rivers and mountain ranges (Gunnar Thorvaldsen, 2004). Eventually, it becomes more common to use greater range of functional criteria for the creation of boundaries like communications, infrastructure, social and cultural divisions.

However, it is found that in the case of kariah boundary, many areas have been constructed in an uncoordinated manner where individual authority generates his own set of boundaries to meet local needs. This study will discuss a new design approach towards the establishment of a proper and more systematic kariah's