بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

MONA MAGHRABY

PREDICTION OF URBAN GROWTH BASED ON ACCESSIBILITY USING GIS \ CA INTEGRATED APPROACH

By

Ahmed Rabie Mohamed Hamed

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Architectural Engineering

FACULTY OF ENGINEERING , CAIRO UNIVERSITY
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Title of Thesis:

Prediction Of Urban Growth Based On Accessibility Using GIS \ CA Integrated Approach

Key Words:

Urban Growth; Urban Simulation; Roads/Transportation Network; Geographic Information Systems (*GIS*); Cellular Automata (*CA*).

Summary:

Recently, less developed countries (*LDC*s) witnessed unprecedented rapid spontaneous urban growth rate coupled with fast population growth, leading to: distort the national strategic plans, more fiscal burden, inadequate urban planning intervenes, irrelevant urban policies, threaten the sate-strategic crops, pollution, traffic congestion, informality notion, high population densities...*etc.*

Although, developed countries (*DC*s) face similar issues but handle differently, as modern technologies of computing are heavily integrated into urban planning process. Thus, the thesis suggests integrated approach using *IDRISI: Land Change Modeler (LCM)* with *Geographic Information System (GIS)* to simulate the current urban growth status and hence predict its future growth (2050) with emphases on accessibility to existing urban areas and\or accessibility to roads network as two driving variables of urban growth in the case study.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Date: / /

Signature:

Dedication

Dedicate more than 7500 hours (= about 313 days distributed over five years) of continued dedicated hard work in preparing this thesis to every science seeker, to all my family members particularly to my mother "*Ragaa Mahran*" and the two older siblings ”*Mohamed*” and ”*Asmaa*”, these persons who believed in me, and always supports my back since the childhood so far, beside my beloved sister ”*Hoda*” and my father.

To all my everywhere teachers since *KG* to the master degree, as i am a humble result of your great work.

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