

A CONCEPTUAL FRAMEWORK
FOR A COMPREHENSIVE REGIONAL STRATEGY:
A CASE STUDY OF THE EASTREN REGION,
KINGDOM OF SAUDI ARABIA

By:

Fahad Al Doussari

A dissertation submitted in partial fulfillment of the requirements for

The degree of

Doctor of Philosophy in Urban Planning

Liverpool John Moores University, School of Built Environment

2001

Supervision:

Prof. Peter Morgan
Dr. Maged El Gammal

TABLE OF CONTENTS

TABLE OF CONTENTS	2
LIST OF FIGURES.....	7
LIST OF TABLES.....	8
LIST OF CHARTS.....	8
ACKNOWLEDGMENT	9
ABSTRACT.....	10
INTRODUCTION.....	11
BACKGROUND.....	11
THE STRUCTURE OF THE STUDY	13
1. Chapter One	14
2. Chapter Two	16
3. Chapter Three.....	16
4. Chapter Four.....	22
5. Chapter Five.....	23
5.1 Proposed Development Procedures:.....	24
5.2 Selected strategy and its time schedule:	24
6. Chapter Six.....	25
CHAPTER ONE.....	26
HISTORICAL BACKGROUND AND RESEARCH STRUCTURE	26
1.1 SAUDI ARABIA HISTORICAL PROFILE.....	26
1.1.1 <i>The Pre-Islamic Arabia</i>	27
1.1.1.1 The Civilizations of Prehistoric Arabia	27
1.1.1.2 The Migrations	27
1.1.1.3 The Settled Areas	28
1.1.2 <i>The Post-Islam Arabia</i>	28
1.1.2.1 The Hejaz on the Eve of the Islamic Spread	28
1.1.2.2 Prophet Muhammad and The Spread of Islam	29
1.1.2.3 The Early Centuries	29
1.1.3 <i>The Modern Era (after the unification of the kingdom)</i>	30
1.1.3.1 The Modern Saudi State	30
1.1.4 <i>The Oil Age</i>	33
1.1.4.1 Discovering Oil Wells:.....	33
1.1.4.1a Early Planned Oil Towns	33
1.1.4.1b Planned Communities in the Eastern Province.....	33
1.1.4.2 The Oil Policy.....	35
1.2 SAUDI GOVERNMENT AND POLICY-MAKING PROCESS.....	35
1.2.1 <i>The Judicial System</i>	36
1.2.2 <i>The Formative Era, 1930s and 1940s</i>	37
1.2.3 <i>The Council of Ministers (Majilis al-Wuzara)</i>	37
1.2.4 <i>The Establishment of the M.O.M.R.A. (1975)</i>	38
1.2.5 <i>Municipalities</i>	39
1.3 PLANNING PROCESS, POLICY MAKING AND URBAN PLANNING	40
1.4 POST GULF WAR ERA. (1990 – To-DATE)	45
1.5 RESEARCH’S CONTRIBUTION TO THE FIELD	47
1.6 PLANNING AND DEVELOPMENT IN THE 20 TH CENTURY (IN THE ARAB WORLD)	48
CHAPTER TWO.....	52
PLANNING DEVELOPMENT STRATEGIES	52
THEORIES, METHODS AND PRACTICE	52

2.1 LITERATURE REVIEW	52
2.1.1 <i>What is Planning?</i>	53
2.1.2 <i>The Planner's Triangle: Three Priorities, Three Conflicts</i>	56
2.1.3 <i>Review of Planning Theories</i>	58
2.1.4 <i>Planning Historic Background</i>	61
2.1.5 <i>Dilemmas and Approaches to Planning</i>	62
2.2 REGIONAL PLANNING	66
2.2.1 <i>Why Regional Planning?</i>	66
2.3 PLANNING IN ISLAM.....	67
2.3.1 <i>Law in Islamic Context</i>	68
2.3.1.1 <i>The Sources of Law The "Sharia'h"</i>	68
2.4 URBANIZATION IN DEVELOPMENT	69
2.5 THE SUSTAINABILITY DEBATE AND GOOD URBAN AND REGIONAL FORM	71
2.6 PLANNING MODELS FOR THE REAL WORLD	72
2.7 CRITICISM AND APPROACHES	73
2.8 SUBSTANTIVE CRITIQUE	75
2.9 PLANNING, THE OTHER DEFINITION	77
2.10 DECENTRALIZATION PHILOSOPHY	78
2.11 CONCLUSION	80
CHAPTER THREE.....	82
REGIONAL AND LOCAL DATA	82
SURVEY METHODOLOGY, DATA COLLECTION, COMPILATION AND ANALYSIS.....	82
3.1 INTRODUCTION.....	82
3.2 REGIONAL PLAN LEVEL	82
3.3 STRATEGIC DIRECTIVE PLAN LEVEL.....	83
3.4 LAND USE SURVEY FOR THE <i>AL KHAFJI</i> REGION SETTLEMENTS	84
3.5 URBAN LAND & BUILDING USE CLASSIFICATION	84
3.6 SURVEY METHODOLOGY	89
3.6.1 <i>Scale of the Random Sample Surveys</i>	89
3.6.2 <i>Delineation of Random Sample Survey Zones</i>	89
3.6.3 <i>Field Listing</i>	90
3.6.4 <i>Checking by the Researcher</i>	90
3.6.5 <i>Output and Results</i>	90
3.6.6 <i>Survey Team</i>	90
3.6.7 <i>Time schedule</i>	91
3.6.8 <i>Unmapped Settlements</i>	91
3.6.8.1 <i>Building Condition</i>	91
3.6.8.2 <i>Structural Condition</i>	91
3.6.8.3 <i>Buildings life span</i>	92
3.7 THE SURVEY CONTEXT	92
3.7.1 <i>Natural Resources Survey</i>	92
3.7.2 <i>Climatic Data</i>	93
3.7.3 <i>Soil and Land Forms</i>	95
3.7.4 <i>Natural Vegetation (Grazing)</i>	95
3.7.5 <i>Water Resources - Surface Water and Ground Water</i>	95
3.7.6 <i>Economically Exploitable Minerals</i>	95
3.7.7 <i>Agriculture and Ecology</i>	95
3.8 <i>AL KHAFJI</i> REGIONAL LAND USE	95
3.8.1 <i>Presentation of Data</i>	95
3.9 SURVEY ANALYSIS	96
3.9.1 <i>Building and Land Survey</i>	96
3.9.1.1 <i>Building life -span</i>	96
3.9.1.2 <i>Building -Ground Floor Use</i>	98
3.9.1.3 <i>Building- Number of Floors</i>	100
3.9.1.4 <i>Building Condition</i>	101
3.9.1.5 <i>Building Utility Connection</i>	102
3.9.1.6 <i>Building-Mezzanine and Upper Floor Use</i>	103
3.9.1.7 <i>Land Occupancy Survey</i>	104
3.9.1.8 <i>Land Use Survey</i>	105

3.9.2 Road Network Survey	106
3.9.2.1 Street Width	106
3.9.2.2 Road Network Street Number of Lanes	106
3.9.2.3 Road Network - Street Plantation	108
3.9.2.4 Road Network Street Lighting	108
3.9.2.5 Road Network Utility Lines	108
3.9.2.6 Road Network Base Condition	109
3.9.2.7 Road Network Overall Condition	109
CHAPTER FOUR	111
GENERAL DEVELOPMENT CONCEPTS	111
4.1 INTRODUCTION	111
4.2 SYNOPSIS OF EXISTING CONDITIONS	111
4.2.1 Physical Features, Natural Resources and Environment	111
4.2.2 Climate	111
4.2.3 Physical Features	114
4.2.4 Soils	114
4.2.5 Agricultural Resources, Crop Production & Livestock	114
4.2.5.1 The Saudi Agricultural Bank (SAB)	115
4.2.6 Water Resources	115
4.2.7 Marine Resources	115
4.2.8 Oil and Minerals	115
4.2.9 Environment	116
4.2.10 Population and Human Resources	116
4.3 CITIZEN POPULATION AND LABOR FORCE CHARACTERISTICS	116
4.3.1 Citizen Population	116
4.3.2 Citizen Labor Force	117
4.3.3 Non-Citizen Population and Labor Force	117
4.4 THE ECONOMY	118
4.4.1 General Characteristics, and Trade	118
4.4.2 Role of Public and Private Sectors	118
4.4.3 Employment Structure	118
4.5 SETTLEMENT PATTERNS, RURAL DEVELOPMENT AND REGIONAL LAND USE	119
4.5.1 Settlement Patterns	119
4.5.2 Rural Development	119
4.5.3 Regional Land Use Pattern	120
4.6 HOUSING AND COMMUNITY FACILITIES	121
4.6.1 Housing	121
4.6.1.1 Types of Housing	121
4.6.1.2 Housing Supply	121
4.6.1.3 The Real Estate Development Fund (REDF)	122
4.6.2 Social Services and Public Facilities	122
4.6.3 Education	122
4.6.4 Health	124
4.6.5 Religion, Culture and Welfare	124
4.6.6 Recreation and Sport	124
4.6.7 Other Public Facilities	124
4.7 TRANSPORTATION, COMMUNICATIONS AND PUBLIC UTILITIES	124
4.7.1 Utilities	125
4.7.1.1 Water Supply	125
4.7.1.2 Electricity	125
4.7.1.3 Sewerage	125
4.7.1.4 Drainage	125
4.7.1.5 Solid Waste	126
4.8 EXISTING CONDITION FACT FINDING AND REASONING	126
4.9 DEVELOPMENT CONCEPTS AND IDEAS	131
4.10 THE INFLUENCE OF MASTER PLANS	134
4.10.1 Land Ownership and Distribution	135
4.10.2 Sustainability	135
4.10.3 Prevention	136
4.10.4 Safeguarding	137

4.10.5 Enabling	137
4.10.6 Integration	137
4.11 STRATEGY, POLICIES, PROGRAMS AND PROJECTS	138
4.11.1 Strategy.....	138
4.11.2 Subsidiary in Spatial Planning and Development	139
4.11.3 Time Scales	139
4.12 THE NEED FOR TECHNICAL CAPABILITY	140
CHAPTER FIVE.....	141
STRATEGY FORMATION.....	141
5.1 INTRODUCTION	141
5.2 LEVELS OF PLANNING	141
5.3 PLANNING PHASES.....	143
5.4 IMPLEMENTATION POSSIBILITIES	143
5.5 MAJOR ISSUES	144
5.6 NATIONAL POLICIES	144
5.7 MAIN CONCERNS AT THE REGIONAL LEVEL.....	145
5.8 THE PHILOSOPHICAL AND IMPERATIVE PERSPECTIVE FOR THE STRATEGY	145
5.8.1 Empirical perspective	145
5.8.1.1 Land.....	145
5.8.1.2 People	146
5.8.1.3 Resources	147
5.8.1.4 Development	147
5.9 MAIN REGIONAL ISSUES	148
5.10 REGIONAL GOALS AND OBJECTIVES	148
5.10.1 Social Goals and Objectives	148
5.10.2 Economic Goals and Objectives.....	149
5.10.3 Urban Goals and Objectives.....	149
5.10.4 Environment and natural Resources Goals and Objectives.....	149
5.10.5 Housing Goals and Objectives.....	150
5.10.6 Infrastructure Goals and Objectives.....	150
5.10.7 Organizational Goals and Objectives.....	150
5.11 DEVELOPMENT STRATEGIES THAT BRIDGES THE GAP BETWEEN ECONOMIC EFFICIENCY AND SOCIAL EQUIVALENCE.....	151
5.12 PLANNING THE NEW PERSPECTIVE	151
5.13 STRATEGY FORMATION.....	152
5.14 EVALUATION PROCESS.....	153
5.15 URBAN PLANNING	156
5.16 URBAN STRUCTURE	156
5.17 DEVELOPMENT PRESSURES FOR CHANGE OF USE	156
5.18 SITE SELECTION OBJECTIVE	157
5.19 EMPLOYEE ACCOMMODATION.....	157
5.20 MANPOWER DEVELOPMENT	157
5.21 OPERATIONAL CONSTRAINTS	158
5.22 DEVELOPMENT OPPORTUNITIES	158
5.23 SITE SELECTION CRITERIA	158
5.24 SITE DEVELOPMENT POTENTIAL.....	158
5.25 ZONING GUIDELINES.....	159
5.25.1 New Industrial Areas.....	159
5.25.2 New Business Parks.....	159
5.25.3 Shopping and Recreation.....	160
5.26 DEVELOPMENT ISSUES	160
5.27 PLANNING PRODUCTION	161
5.27.1 Planning Product Specification and Evaluation	161
5.27.1.1 Comprehensive Plan:.....	161
5.27.1.2 Master Development Plan.....	162
5.27.1.3 Master Directive Plan:.....	162
5.27.2 Al Khafji Master Directive Plan.....	163
5.27.3 The Regional Level (Al Khafji Governorate):	163
5.27.3.1 The Ultimate Conceived Plan:	163
5.27.3.2 The Optimized Realistic Plan:.....	163

5.27.4 <i>The local level (Al Khafji City)</i>	164
5.27.4.1 <i>The Ultimate Conceived Plan (20 years):</i>	164
5.27.4.2 <i>The Optimized Realistic Plan:</i>	164
5.28 CONCLUSION:	165
5.28.1 <i>Elements of Strategies for Popular Participation</i>	165
5.28.2 <i>Spatial Development Alternatives</i>	166
5.28.2.1 <i>First Alternative: Equivalent Spatial Distribution on the Region</i>	166
5.28.2.2 <i>Second Alternative: Concentration of Development and its benefits on the Region</i>	166
5.28.3 <i>Comprehensive Development Alternatives</i>	167
5.28.3.1 <i>First Alternative: Enhancing the current economic and social development</i>	167
5.28.3.2 <i>Second Alternative: Economic Sectoral Specialization as a start for Diversification of Production</i>	167
5.28.3.3 <i>Third Alternative: Maximizing Diversification of Production as the Main Foundation for Development</i>	167
CHAPTER SIX	169
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	169
6.1 INTRODUCTION	169
6.2 SUMMARY	169
6.2.1 <i>Research Rationale</i>	169
6.2.2 <i>Literature Search & Review</i>	171
6.3 METHODOLOGY PROCEDURES	173
6.3.1 <i>Survey Methodology</i>	173
6.3.2 <i>Al Khafji Regional Land Use and Data Presentation</i>	174
6.4 AL KHAFJI REGIONAL PLANNING MODEL	174
6.5 RESEARCH COMPOSITION	175
6.6 CONCLUSIONS	177
6.6.1 <i>Natural Resources</i>	179
6.6.2 <i>Socio-Economic Context</i>	180
6.6.3 <i>Rural Development</i>	181
6.6.4 <i>The Settlement Pattern and Intra-regional Linkages</i>	182
6.6.5 <i>Housing</i>	183
6.6.6 <i>Social Services and Cultural Facilities</i>	184
6.6.7 <i>Transport and Communications</i>	185
6.6.8 <i>Public Utilities</i>	186
6.6.8.1 <i>Water Supply</i>	186
6.6.8.2 <i>Sewerage and Drainage</i>	187
6.6.8.3 <i>Power</i>	187
6.6.8.4 <i>Waste Disposal</i>	187
6.6.9 <i>Urban Land and Land Use</i>	188
6.6.10 <i>Urban and Rural Structure, Design and Development Control</i>	189
6.6.10.1 <i>Al Khafji City</i>	189
6.6.10.2 <i>Rural Settlement Structure</i>	189
6.6.11 <i>Environment and Coastal Zone Management</i>	189
6.6.12 <i>Concluding Statements</i>	190
6.7 FINDINGS AND RECOMMENDATIONS	193
6.7.1 <i>Land Control</i>	193
6.7.1.1 <i>Land Entitlement</i>	193
6.7.1.2 <i>Land Allocation</i>	193
6.7.1.3 <i>Land Supply and Strategic Infrastructure Planning</i>	194
6.7.1.4 <i>Improving Supply Demand Relationships in the Short Term</i>	194
6.7.1.5 <i>Strategic Planning Issues</i>	195
6.7.1.6 <i>Local Planning Issues</i>	195
6.7.2 <i>Implications and Recommendations for Future Research</i>	196
BIBLIOGRAPHY	198
INDEX	204
APPENDIX 1	207
APPENDIX 2	211

LIST OF FIGURES

FIG. 1-1 – MIDDLE EAST SATELLITE IMAGE	12
FIG. 1-2 – SAUDI ARABIA GENERAL LOCATION MAP	13
FIG. 1-3 – SOUTHWEST ASIA CRUDE PETROLEUM	14
FIG. 1-4 – KINGDOM OF SAUDI ARABIA BORDER MAP	15
FIG. 1-5 – KINGDOM OF SAUDI ARABIA MAIN FEATURES MAP	17
FIG. 1-6 – <i>AL KHAFJI</i> GOVERNORATE REGIONAL MAP	18
FIG. 1-7 – SOUTHWEST ASIA TOTAL GNP	19
FIG. 1-8 – SOUTHWEST ASIA GNP PER CAPITA	19
FIG. 1-9 – SOUTHWEST ASIA GNP GROWTH RATE	20
FIG. 1-10 – SOUTHWEST ASIA POPULATION GROWTH RATE	20
FIG. 1-11 – SOUTHWEST ASIA TOTAL POPULATION GROWTH	21
FIG. 1-12 – SOUTHWEST ASIA POPULATION PROJECTION YEAR 2025	21
FIG. 1-13 – SOUTHWEST ASIA BIRTH RATE	22
FIG. 1-14 – TOPOGRAPHY OF SOUTHWEST ASIA	23
FIG. 1-15 – SAUDI ARABIA MAIN CITIES	24
FIG. 3-4 – <i>AL KHAFJI</i> CITY - BUILDING AGE	97
FIG. 3-5 – <i>AL KHAFJI</i> CITY - BUILDING GROUND FLOOR USE	99
FIG. 3-6 – <i>AL KHAFJI</i> CITY - BUILDING NUMBER OF FLOOR	100
FIG. 3-7 – <i>AL KHAFJI</i> CITY - BUILDING CONDITION	101
FIG. 3-8 – <i>AL KHAFJI</i> CITY - BUILDING UTILITY CONNECTION	102
FIG. 3-9 – <i>AL KHAFJI</i> CITY - BUILDING MEZZANINE FLOOR USE	103
FIG. 3-10 – <i>AL KHAFJI</i> CITY - BUILDING UPPER FLOOR USE.....	103
FIG. 3-11 – <i>AL KHAFJI</i> CITY - LAND OCCUPANCY.....	104
FIG. 3-12 – <i>AL KHAFJI</i> CITY - PLOTS LANDUSE.....	105
FIG. 3-13 – <i>AL KHAFJI</i> CITY - ROAD NETWORK (STREET WIDTH).....	106
FIG. 3-14 – <i>AL KHAFJI</i> CITY - ROAD NETWORK (STREET NO. OF LANES)	107
FIG. 3-15 – <i>AL KHAFJI</i> CITY - ROAD NETWORK (STREET PLANTATION).....	107
FIG. 3-16 – <i>AL KHAFJI</i> CITY - ROAD NETWORK (STREET LIGHTING).....	108
FIG. 3-17 – <i>AL KHAFJI</i> CITY - ROAD NETWORK (BASE CONDITION)	109
FIG. 3-18 – <i>AL KHAFJI</i> CITY ROAD NETWORK (OVERALL CONDITION)	110
FIG. 4-1 – <i>AL KHAFJI</i> REGION - REGIONAL LOCATION	112
FIG. 4-2 – SOUTHERN ASIAN REGION INCLUDING <i>AL KHAFJI</i> (TEMPERATURE).....	112
FIG. 4-3 – SOUTHERN ASIAN REGION INCLUDING <i>AL KHAFJI</i> (HEAT INDEX)	113
FIG. 4-4 – SOUTHERN ASIAN REGION INCLUDING <i>AL KHAFJI</i> (RELATIVE HUMIDITY)	113
FIG. 4-5 – SOUTHERN ASIAN REGION INCLUDING <i>AL KHAFJI</i> (WINDS).....	114
FIG. 4-6 – <i>AL KHAFJI</i> GOVERNORATE REGIONAL LAND USE MAP	120
FIG. 4-7 – <i>AL KHAFJI</i> GOVERNORATE BOYS & GIRLS ATTENDING SCHOOL	122
FIG. 4-8 – <i>AL KHAFJI</i> GOVERNORATE SCHOOLS CLASSIFICATION	123
FIG. 4-9 – <i>AL KHAFJI</i> CITY NUMBER OF SCHOOLS (BOYS & GIRLS).....	123
FIG. AP 2-1/ <i>AL KHAFJI</i> CITY & ENVIRONS MAP	212
FIG. AP 2-2/ <i>AL KHAFJI</i> CITY LANDUSE MAP	213
FIG. AP 2-3/ <i>AL KHAFJI</i> CITY BUILDING GROUND FLOOR USES MAP.....	214
FIG. AP 2-4/ <i>AL KHAFJI</i> CITY BUILDING GROUND FLOOR USES MAP (AGGREGATED).....	215
FIG. AP 2-5/ <i>AL KHAFJI</i> CITY BUILDING MEZZANINE FLOOR USES MAP	216
FIG. AP 2-6/ <i>AL KHAFJI</i> CITY BUILDING UPPER FLOOR USES MAP	217
FIG. AP 2-7/ <i>AL KHAFJI</i> CITY BUILDING AGE	218
FIG. AP 2-8/ <i>AL KHAFJI</i> CITY BUILDING CONDITION.....	219
FIG. AP 2-9/ <i>AL KHAFJI</i> CITY BUILDING NUMBER OF FLOORS	220
FIG. AP 2-10/ <i>AL KHAFJI</i> CITY BUILDING UTILITY CONNECTION.....	221
FIG. AP 2-11/ <i>AL KHAFJI</i> CITY LAND OCCUPANCY	222
FIG. AP 2-12/ <i>AL KHAFJI</i> CITY ROAD NETWORK (STREET WIDTH).....	223
FIG. AP 2-13/ <i>AL KHAFJI</i> CITY ROAD NETWORK (STREET NO. OF LANES)	224
FIG. AP 2-14/ <i>AL KHAFJI</i> CITY ROAD NETWORK (STREET PLANTATION)	225
FIG. AP 2-15/ <i>AL KHAFJI</i> CITY ROAD NETWORK (STREET LIGHTING).....	226
FIG. AP 2-16/ <i>AL KHAFJI</i> CITY ROAD NETWORK (UTILITY LINES).....	227
FIG. AP 2-17/ <i>AL KHAFJI</i> CITY ROAD NETWORK (STREET BASE CONDITION)	228
FIG. AP 2-18/ <i>AL KHAFJI</i> CITY ROAD NETWORK (STREET OVERALL CONDITION).....	229
FIG. AP 2-19/ <i>AL KHAFJI</i> REGION ULTIMATE CONCEIVED PLAN.....	230

FIG. AP 2-20/ <i>AL KHAFJI</i> CITY DIRECTIONS OF DEVELOPMENT	231
FIG. AP 2-21/ <i>AL KHAFJI</i> CITY PROPOSED LANDUSE.....	232

LIST OF TABLES

TABLES 3-2: CLIMATIC CONDITIONS IN <i>AL KHAFJI</i> REGION	93
TABLE 4-1 – EXISTING CONDITION FACT FINDING.....	127
TABLE 5-1– STRATEGIC DEVELOPMENT (EVALUATION TABLE).....	154
TABLE AP1-1 / CBD FIELDWORK FORM.....	208
TABLE AP1-2 / INNER AREA FIELDWORK FORM.....	209
TABLE AP1-3 / OUTER AREA FIELDWORK FORM.....	210

LIST OF CHARTS

CHART 1-1: ORGANIZATIONAL STRUCTURE FOR <i>AL KHAFJI</i> MUNICIPALITY (CLASS B).....	44
CHART 5-1– EVALUATION PROCESS GRAPH	153

ACKNOWLEDGMENT

I have a great opportunity throughout my working experience in the Ministry of Municipal and Rural Affairs in the kingdom of Saudi Arabia, and my previous education in the field of planning. As I hold a masters degree from the University of Southern California, this all made me appreciate the importance of planning and its role in the people's life. Particularly, where it is needed most, in my great-blessed country the Kingdom of Saudi Arabia that houses the Two Holy Mosques and the Mecca for all Muslims.

This Study could have never been developed without the absolute help of Merciful *Allah* who gave me and still is, all the power and support to continue studying and to be able to finish this comprehensive research. In addition, I would like to express my great thanks to the support of the Government of the Kingdom of Saudi Arabia headed by the Custodian of the Two Holy Mosques, King *Fahd Bin Abdel Aziz* who places education as his first priority in human development. I am also very grateful to a few honest colleagues and friends who supported me with their valuable contribution especially during the survey stage of this research.

I am certain to express my deep gratitude to my supervisors Prof. Peter Morgan and Dr. Maged El Gammal, that supported me through out the long five and a half years of my research with their pure and honest attention and unfailing encouragement. They also provided stimulating ideas during our discussion, that always provoked fresh avenues of inquires and interpretations. Their insightful suggestions and concern regarding this research have been of great value. Without their endless support and gracious understanding this work would have never been completed.

Finally, I would like to dedicate this research to my people and specially my parents, brothers, wife and children. They all have been so patient with me during the long nights and days I had to spend researching as well as traveling, and to their unlimited support and help.

ABSTRACT

This research investigates the concepts that underline the development of a regional planning strategy and attempts to apply what seem to be suitable applied in a case study which deals with the Kingdom of Saudi Arabia (KSA) in general, emphasizing on its Eastern Region (*Al Khaffi* Governorate) in particular.

Most of the current research and writings are based on general studies of planning a large area in the Arab World, such as the Arabian Gulf countries, or the North African countries. Little attention has been given to the planning of a specific region inside a nation, while taking into consideration its relationship to the other regions in the same country. Although Saudi Arabia has experienced unprecedented case of urban growth with high rates of internal and external migration, it has not received enough research and evaluation studies. An in-depth analysis of Saudi Arabian provincial development is needed from the strategic planning concept point of view.

This study focuses on this second level of planning, Regional Provincial Planning (RPP). Consequently, this could have a positive effect in bridging the gap between Macro Country Planning and Micro City Planning. Such an approach brings the abstraction of the macro concept into the reality of the micro, live planning project without compromising main concepts and goals, and balances resource distribution.

The study is divide into six chapters, with an introduction, appendices, and selected bibliography. It starts with an **Introduction** that outlines the research background in the context of the Kingdom of Saudi Arabia. **Chapter one** gives a brief overview of the theoretical basis of the study and the location of the case study. **Chapter two** reviews the literature on planning development strategies and theories, with a view to highlighting development, in its two facades implementation methods and practice techniques. **Chapter three** examines the case study in depth including the region's profile and characteristics. Also, it offers an assessment of the region's physical, social, and economic components. **Chapter four** discusses the general development concepts and ideas, which seems applicable to *Al Khaffi* Region. **Chapter five** focuses on the chosen strategy and the methods proposed for its incremental implementation. This chapter attempts to provide the basis for establishing criteria of development through setting the hypothesis, testing, and ultimately developing a set of recommendations and conclusions. Finally, a number of concluding remarks and final discussion of the research findings, conclusions, implications and recommendations for future research are outlined in **Chapter Six**.

INTRODUCTION

Background

Planning is as old as mankind, because man is a purposeful animal and planning is inherent in his nature. Man differs from other animals because he can conceptualize a goal, make plans to achieve it, and ascribe values and priorities to whatever help the achievement. The dilemma of planning arises because men are not purely purposeful but also lazy and reactive. Man is lazy because he is governed by the conflict between purpose and inertia. Men do not plan if they can avoid it, because planning is work, and no rational man will work to achieve any goal if he thinks he can achieve it without effort.¹

As explained above, planning practice is essential for mankind. Planning does not come from space. In most cases it has its origin in a form of strategy. Any discussion of the notion of strategy inevitably draws on a set of established notions, which closely relate to clarity, reliability, reality, purity and possibility of implementation. In this sense, it should not be imaginary; however, it must be built on a dream, which is called in planning studies 'a goal'. It is worth mentioning that strategies differ from one setting to another. The different settings might result in various strategies as the ones that emerge from human culture and others that are established by government systems in the real world. Another point worth mentioning is that strategies are all common in dealing with human problems and hardship. Everyone needs shelter, food, and clothing. Successful Strategies should address these basic needs. However, in the modern world, some needs are no more looked upon as complementary needs but as essential ones. For example, education, has become essential due to the fact that it become a prerequisite of all jobs, which in turn may distinguish between the realization of thought and the illusion of fantasy.

Development is the institutional, governmental and societal capacity to realize the potential of a country's natural and human resources to create a steadily improving quality of life for all levels of society. Its value cannot be judged only in a material sense by what people have. As a total concept, its success depends upon how people use their own resources, no matter how limited, to improve their quality of life as well as that of all members of their society. Development encompasses both the motivation for improvement as well as the ability and knowledge to implement its goals.²

¹ Crane, Robert D., Planning the future of Saudi Arabia : A Model for Achieving National Priorities. New York: Frederick A. Praeger, Inc., 1978, pp.203-204.

² Ackoff, Russel "On the Nature of Development and Planning." Operations Research, vol. 25, no. 2 (M/A 1977) : 212-218.

Fig. 1-1 – Middle East Satellite Image ³



Although resources are not an essential component of development activity, they add remarkably to the existing potentials and opportunities. In other words it is only through good planning and investment of any country's wealth resources that citizens can benefit from those resources. However, wealth is a double-edged weapon, in the sense that its benefits depend on where, how and when to spend it. A successful development strategy has to address aspects such as location, method and time. To bring these strategies into reality they should be translated and materialized as development proposals and plans. For safe results, it is advised that development should not be based on trial and error. It has to draw on real concepts and studies, in order to establish a conceptual framework with the potential of application. Based on the fact that the implementation of development plans is essentially a learning process that enhances production to develop a better environment, such activity should provide encouragement, tools and expertise for citizens to fulfill their own self-development. Consequently, development plans can assist community members in a self-learning

³ Courtesy of Saudi Weather Center – Riyadh.

process. In this context, the professional planner's main task is to provide information, instruction, motivation and resources to help citizens to perform their own roles in the national development plan.

Fig. 1-2 – Saudi Arabia General Location Map ⁴

The Structure of the Study

This study's main concern is the regional strategies with a view to defining means for their development, implementation and improvement. For methodological convenience, the study develops an empirical case study that accounts for the theoretical concepts. The case study deals with the Kingdom of Saudi Arabia (KSA) in general, with a special focus on the Eastern Region (Figure 1-1). In terms of area KSA occupies the largest land in the Arabian Peninsula and accommodates 80% of its resources. The oil resource base categorizes KSA of one of the wealthiest countries in the world. (Figure 1-2). In addition to the fact that it is the world's first supplier of oil, KSA strategic location with an access to the Red Sea from the western side and the Arabian Gulf from the eastern side, has special significance. Figure 1-3 indicates the highest rate of KSA in crude oil production in southwest Asia region, it amounts to 293.66

⁴ Courtesy of Ministry of Information – Riyadh.

(million metric ton coal equivalent), which is around 10 million barrels per day. Figure 1-7 shows the total GNP of southwest Asia, while figure 1-8 indicates southwest Asia GNP per capita and figure 1-9 illustrates its growth rate. Figures 1-10 and 1-11 point at the population growth in the same area. The population figures 12 and 13 show the population projection and the birth rate respectively. These maps show that KSA will grow into a medium size country by the year 2025 in terms of its population (around 40 million) in comparison to the other countries in the region. Its birth rates range from (39/1000 to 42/1000). These rates are considered relatively high compared to other rates worldwide. The maps 1-1, 1-2, and 1-3 explain the real status of KSA as an integral part of the Southwest Asian Region.

Fig. 1-3 – Southwest Asia Crude Petroleum ⁵

This study falls into six chapters as follows:

1. Chapter One

This chapter starts with a brief introduction of the theoretical basis of the research and a description of the Eastern Region of KSA. It includes a definition of the

⁵ Courtesy of Ministry of Information – Riyadh.

research problem, an identification of the research objectives, and finally a discussion of the research rationale.

Fig. 1-4 – Kingdom of Saudi Arabia Boarder Map ⁶



Also, chapter one traces in a chronological order the Region's Historical Profile (KSA and the Eastern Region - Fig. 1-4 / 5) along its main historical periods:

- The Pre-*Islam*.
- The Post *Islam* Arabia.
- The Modern era (after the unification of the Kingdom).
- The Oil Age.
- The Post Gulf War Era.

This chapter also discusses the nature and sources of the data main corpus of this

⁶ Encyclopaedia Britannica, Inc. A1999

study; also it explains the techniques involved in the analysis.

2. Chapter Two

The planning development strategies and theories are the main focus of chapter two with special emphasis on development, its implementation methods and practice techniques. It explores a wide range of development theories and models. A comparative study of such theories is attempted with a view to identifying both the positive and negative aspects.

3. Chapter Three

This chapter examines the case study in depth, it also address the issue of significant aspect of the *Al Khaffi* region and its characteristics. An assessment of the region's physical, social and economic components is presented. Also, chapter three offers an overview of the inter-relation between each and every zone in the region, as well as an analysis of the part of the region under study- the *Al Khaffi* Governorate (Figure 1-6).

It is worth adding that chapter three is built on detailed data (statistical & visual), in term of the social, economic, and urban factors in the *Al Khaffi* Governorate. It also includes a global view of the Kingdom with a focus on the importance of its Eastern Region.

For this end chapter three concerns' itself with:

- A presentation of the general features of KSA (Social, Economic, Demographic, Cultural, Environmental, Geological, Resources, etc.)...
- A study of the Eastern Region and its importance.
- A discussion of the physical and cultural features of the Eastern Region.
- A presentation of the features of *Al Khaffi* Governorate (Social, Economic, Demographic, Cultural, Environmental, Geological, Resources, etc.).
- A study of the economic and development mutual interests of the various zones in KSA Eastern Region.
- A discussion of the advantages and disadvantages of the interrelations of the kingdom's various zones.

Fig. 1-5 – Kingdom of Saudi Arabia Main Features Map ⁷

⁷ Encyclopaedia Britannica, Inc. A1999

Fig. 1-6– Al Khafji Governorate Regional Map ⁸



⁸ Courtesy of *Dammam Municipality* – Riyadh.

Fig. 1-7 – Southwest Asia Total GNP ⁹

Fig. 1-8 – Southwest Asia GNP per Capita ¹⁰

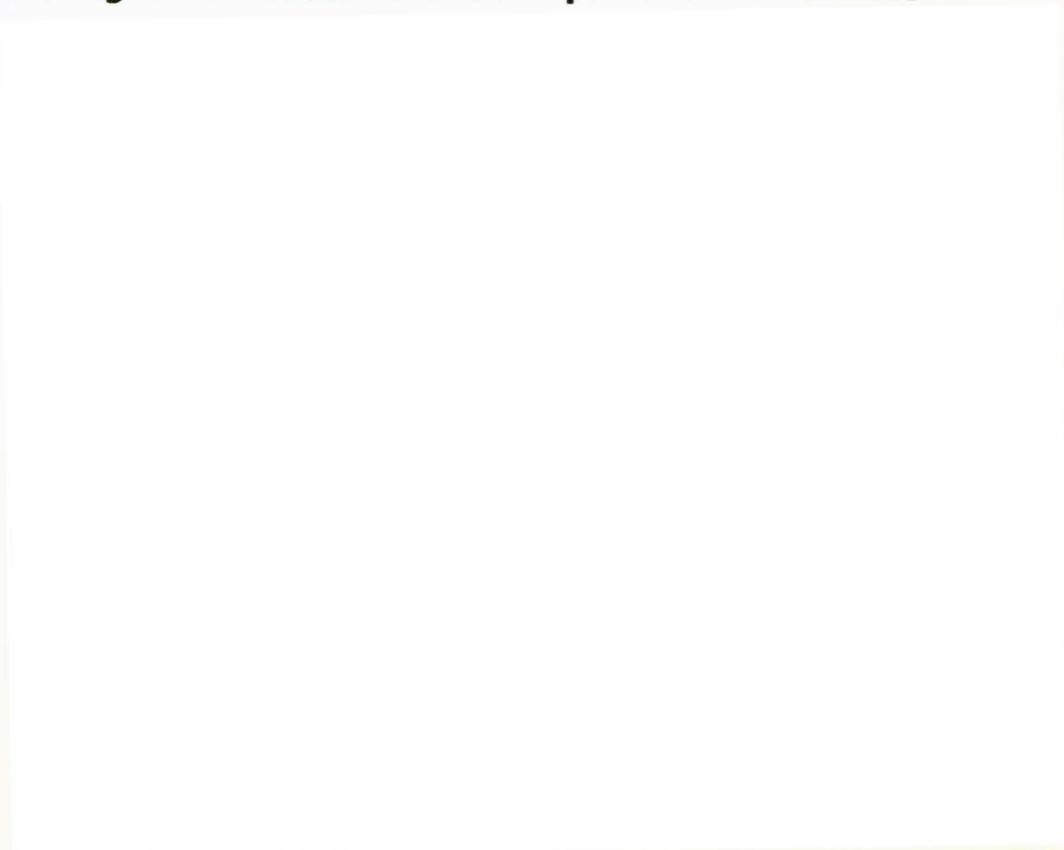
⁹ Courtesy of Ministry of Information – Riyadh.

¹⁰ Courtesy of Ministry of Information – Riyadh.

Fig. 1-9 – Southwest Asia GNP Growth Rate ¹¹



Fig. 1-10 – Southwest Asia Population Growth Rate ¹²



¹¹ Courtesy of Ministry of Information – Riyadh.

¹² Courtesy of Ministry of Information – Riyadh.

Fig. 1-11 – Southwest Asia Total Population Growth ¹³

Fig. 1-12 – Southwest Asia Population Projection Year 2025 ¹⁴

¹³ Courtesy of Ministry of Information – Riyadh.

¹⁴ Courtesy of Ministry of Information – Riyadh.

4. Chapter Four

This chapter offers a brief overview of the present conditions of *Al Khaffi* Governorate and discusses a list of facts and findings related to such conditions and their anticipated results. Moreover, the general development concepts and the other suggestions that the region might bring about any improvement in the region under study are reviewed. The proposed development procedure and the response to the current problems are also discussed. The General Development Concepts and Ideas focus on the following:

- A review of other general development concepts and ideas established in local regions (Gulf Region and the Arab World) and other international zones.
- An analysis and a discussion of the surveyed and published literature related to the Eastern Region.
- The establishment of a theory (strategy) in the form of a hypothesis that will be examined along a set of criteria that take into consideration the local setting, and the nature of the selected site.

Fig. 1-13 – Southwest Asia Birth Rate ¹⁵

¹⁵ Courtesy of Ministry of Information – Riyad.

Fig. 1-14 – Topography of Southwest Asia¹⁶

5. Chapter Five

Chapter five investigates the potential of the proposed development concepts and ideas in an attempt to development similar concept for the suggested development models related to the area under study in this research namely *Al Khaffi* Governorate. The future perspectives taking into consideration the challenges and problems concerning the region under study are investigated in terms of the following points:

- Future forecasts and expectations, based on the current trends and expected policies in terms of the present and future economic and political index, are presented.
- An identification of the challenges that might face the proposed development model is attempted.
- The issues that might develop in response to such concepts are identified with a focus on the selected strategy and the methods proposed for its incremental implementation. The development concepts that adopt the

¹⁶ Courtesy of Ministry of Information – Riyadh.

selected main strategy and its sub-strategies in an applied perspective are also discussed. Further analysis and discussions of the proposed hypotheses, focusing on the role of socio-cultural values and decision-making anchors in the society are outlined in this chapter.

Fig. 1-15 – Saudi Arabia Main Cities¹⁷



The establishment of development criteria by means of hypothesis testing, coupled with a set of recommendations and conclusions are illustrated as follows:

5.1 Proposed Development Procedures:

- Developing several criteria to construct a specific model that appropriates to the region under study.
- Performing the appropriate amendments for such a model taking into consideration the current setting.

5.2 Selected strategy and its time schedule:

- Developing a strategy aiming at achieving a set of identified goals.
- Setting a time schedule for implementation.
- Identifying certain projects and procedures within specific action areas.
- Developing a phasing plan for implementation.

¹⁷ Courtesy of Ministry of Information – Riyad.

- Adopting sustainable methods and techniques.

6. Chapter Six

A summary of findings and suggested guidelines for future development are concluded in chapter six. A set of recommendations for further research is attempted as a guide lines for scholars to develop the studies that addresses the issue of the development of one of the most important regions in the New World. This chapter highlights the following issues:

- The final conclusions in terms of the methods of research that aim at the construction of models of development.
- Recommendations for further action in terms of a sustainable development of the region.

CHAPTER ONE

HISTORICAL BACKGROUND AND RESEARCH STRUCTURE

1.1 Saudi Arabia Historical Profile

Saudi Arabia is a developing country with an area of approximately 830,000 square miles and a widely dispersed population living in scattered informal settlements and urban activity centers. The Kingdom possesses a variety of material resources located in different parts of the country, together with various cultural activities dispersed around populated areas. It is very important to identify the features of these areas in terms of the economic and social development criteria. It is also essential to become aware of the fact that the regionalization of development plan would provide a strong case for equitable distribution of public services among the population, according to the needs of the different locations. Such regionalization could be applied in an integrated manner within the context of the comprehensive development all over the country and especially in the Eastern Region. By means of a regional development plan, each region may become an active part of the country, capable of achieving balanced and proportional development, with the help of the central authorities. This concept will generate a high rate of development plan for the various regional localities, which might mirror the rate of progress planned for the country as a whole. This does not mean that the goal should be the establishment of absolute equality among all regions and localities in the country. The discrepancies in the current natural capacity and resources, and also the cultural heritage and the historical traits of various regions, must always be taken into consideration.

The present review is attempted to trace in chronological order, the five main periods in the history of KSA as follows:

- The Pre-Islamic Arabia.
- The Post-Islamic Arabia.
- The Modern Era.
- The Oil Age.
- The Post-Gulf War Era.

1.1.1 The Pre-Islamic Arabia

1.1.1.1 *The Civilizations of Prehistoric Arabia*

The Neolithic period presents the first evidence of life in Eastern Arabia, which took place 7,000 years ago. It might be possible that humans inhabited the area before this period, however, no physical proof for this assumption could be traced.

Nyrop states that;

Archeological investigations of pre-Islamic Arabia are still in an embryonic state, and the results are hypothetical and controversial at best. Through the middle of the twentieth century few people had the physical endurance or the survival techniques crucial to investigate the area. Scarcity of water, the difficulties of desert transport, and until the 1940s hostile tribes made systematic research a heroic under-taking. Further, little was known about present-day Arabia beyond its coastal settlements. Initial archeological discoveries were often the accidental finds of explorers anxious to investigate this isolated land and map its interior. The first three known Arabian civilizations were coastal settlements. The oldest evidence of civilized man in northern Arabia is artifacts found sixty miles to the north of Dhahran on the coast of the Persian Gulf. Dated to 5000 BC they are identical to those of the *Al Ubaid* culture of Mesopotamia.¹⁸

Furthermore, Nyrop observes that Arabia was only sparsely peopled in the interior. Until about 3000 BC, inland Arabia was sufficiently verdant to support both cereal agriculturists and herding peoples in the north and hunting and gathering societies in the south. Due to the changes in the climatic condition and the slow encroachment of the desert upon land which formerly had supported both animal and human life, the inhabitants were faced with three options: to cling to the inland oases, to move to the coasts, or to leave Arabia entirely. People who made the third choice and migrated to the north, northeast, and southwest are the only ones who could be traced historically.¹⁹

1.1.1.2 *The Migrations*

Migration pattern existed as early as 4000 BC Nyrop elaborates that:

In the middle of the fourth millennium BC a pattern emerged that proved disastrous to the material advancement of the peninsula but that benefited the rest of the world immeasurably. Approximately every thousand years either because of population pressures caused by inadequate food and resources or because they were following wild

¹⁸ Nyrop, Richard F., Etal., AREA BOOK FOR SAUDI ARABIA, Third Edition, 1977, p.11.

¹⁹ Ebid., p. 12-13.

herds, major migrations of Semitic-speaking people from the Arabian Peninsula insinuated themselves into the more hospitable lands around them. In about 3500 BC two parallel migrations occurred: one by the western route northward to the Sinai Peninsula and into Egypt, where the immigrants mixed with the indigenous people to produce the historical Egyptians; the other by the eastern route to Summer where they amalgamated and became known as Babylonians.²⁰

This further indicates that although Arabia seemed virtually resourceless to its inhabitants, other more technologically advanced peoples found it very alluring.²¹

1.1.1.3 The Settled Areas

Facey holds the view that in the early years before modern times, settlement in the Eastern Province was almost entirely confined to the towns and villages in the two great oases of *Al Hasa* and *Qatif*.²²

1.1.2 The Post-Islam Arabia

1.1.2.1 The Hejaz on the Eve of the Islamic Spread

Islam first appeared in *Hejaz* and spread all over the world. *Islam*, in its early period was fought by *jahaliyah* (religious belief in icons and status).

Muslims refer to the period before the revelation of *Islam* as the *jahaliyah*, or time of ignorance, and hold the belief that knowledge of this period is of little importance in understanding *Islam*. Nevertheless, *jahaliyah* is a religious and not a historical concept.²³

Arabia had become unified, but ironically it had to be virtually emptied to ensure unification. Like the great migrations of the past, Arabia in the immediate post prophet Muhammad period once again fed its people into the surrounding areas. Peasants were easier to control than refractory tribes, and the social structure and agricultural assets of the conquered land outside the peninsula encouraged permanent settlements that were necessary in any case to secure Islamic rule. Thus Islamic politics moved from Arabia to Damascus, and in the period between the ministry of *Muhammad* and the rise of the House of *Saud*, Arabia became an economic backwater.²⁴

It might be useful to indicate that the entire Saudi population is Muslims, the

²⁰ *Ibid.*, p. 13.

²¹ *Ibid.*, p. 13

²² Facey, William, *The Story of The Eastern Province of Saudi Arabia*, Chamber of Commerce & Industry - Eastern Province, Stacey International 1994, p. 67-68.

²³ Nyrop, Richard F., *Etal.*, *AREA BOOK FOR SAUDI ARABIA*, Third Edition, 1977, p. 16-17.

only non-Muslims foreign diplomatic personals, technical assistance or businessmen as well as unskilled labor.

Saudi Arabia houses the *Islam's* two Holy Cities: *Makkah* and *Madinah*. Pilgrims perform *haj* trips to those two cities on annual base at least once in a lifetime of each Moslem. It is worth mentioning in this context that the Egyptian support had provide security to the political base in *Hejaz* and supplied the area with economic resources.

1.1.2.2 Prophet Muhammad and The Spread of Islam

The Prophet Muhammad had struggled hard to preach the divine messages and to convince non-believers to convert to *Islam*, until *Islam* became one of the most spread religions in the world. Muhammad, the Prophet of *Islam*, was born in AD 570 into the prosperous *Qurash* tribe.

About 610, when he was nearly forty, Prophet Muhammad began to seclude himself in a cave outside *Mecca* and one evening there received the first of a series of divine revelations from the angel *Gabriel*. After a period of self-doubt he began preaching the messages he received first to his extended family and then to his tribe. Initially his message was relatively innocuous: there was only one God, who had created all things, and there was a Day of Judgment after which all men would be assigned to paradise or to hell. Exclusive of his wife and a few friends he was generally scoffed at as a harmless but unbalanced religious enthusiast.²⁵

1.1.2.3 The Early Centuries

In the dawn of the spread of *Islam*, non-believers resisted this religion under the pretension that its beliefs and rationale were against the conventions of the tribes existing in these early days.

Due to the early conversion of the *'Abd al-Qays* tribe, *Islam* was quick to take root in the Eastern Province. *Jawatha*, their town in *Al Hasa* Oasis, boasted the first mosque in Arabia outside *Madinah*: its carefully preserved remains can still be seen, although the town of *Jawatha* is little more than a name today. In the 620s, during the lifetime of the Prophet, *Islam* made steady progress and contacts with the Islamic government and teachings in *Madinah* were strong. While inland *Al Hasa* was controlled by the Arab tribes, the coast was still nominally governed by the Sasanians. Eastern Arabia now began to look outwards. The *'Abd al-Qays* led seaborne expeditions against the Persian coast, and participated in the final conquest of Fars in 649-50. From around this time the entire Arabian seaboard of the Gulf as

²⁴ Ibid., p.23.

²⁵ Ibid., p.19-20.

far as Oman came to be incorporated into a single province under the great new Muslim foundation of *Basra*.

The Abbasid assumption of power in 750, and the removal of the Islamic capital to *Baghdad*, ushered in a new golden age of trade in the Gulf which was to last until the tenth century. As before, eastern Arabia with *Al-Yamamah* had a series of governors appointed from *Baghdad*.... The Gulf ports and merchants involved in the trade to India and China grew immensely rich; Siraf in particular, on the Persian side, flourished, but Arabs played an increasing role in the trade, as witnessed by the rise of Suhar in Oman, and the stories which grew up around. The port of *Al Hasa* Oasis, 'Uqayr, is mentioned in the 840s as a port of call for *Basra*, Oman, China and *Yemen*, and a large archaeological site there probably dates to this Early Islamic period. The importance of Eastern Arabia to the Abbasid treasury is confirmed by the very large revenue collected from there greater than Oman, and almost as much as the *Yemen*.²⁶

1.1.3 The Modern Era (after the unification of the kingdom)

1.1.3.1 The Modern Saudi State

The modern Saudi State was established in 1824 when *Imam Turki bin Abdullah*, managed to earn enough fortunes. He chose *Riyadh* to be the capital of the Saudi State. Then, *Imam Faisal* escaped from his exile in 1843. For twenty-two years, *Imam Faisal* succeeded to establish his rule and to maintain peace in the region. Needless to say that during his reign, *Imam Faisal* dealt with the foreign powers at that time (the Ottomans and the British).

Modern Saudi Arabia was formed by the *Saud* family, beginning in the 18th century in which they sought to form a religious state based on the Islamic principals. The first two efforts by the *Saud* lineage were successful in forming nation-state on the Arabian Peninsula. In 1901, *Abdul Aziz Ibn Saud* left exile in Kuwait and entered the central Arabian Peninsula in force to achieve his people's ambition. Seizing control of *Riyadh*, and *Najid* region of central Arabia. *Abdul Aziz* took advantage of the waning power of the Ottoman Empire, the diversion of Western (especially British) concerns to European affairs, and World War I, as well as lack of coordinated opposition in the region to gain territory and consolidate power over the next 30 years. By 1932, King *Abdul Aziz* had successfully formed the Modern State of Saudi Arabia and achieved international recognition.²⁷

²⁶ Facey, William, *The Story of The Eastern Province of Saudi Arabia*, Chamber of Commerce & Industry - Eastern Province, Stacey International 1994, p. 47-48.

²⁷ *Ibid.*, p.55-61.

When Abd al Aziz Ibn *Abd Ar Rahman Al Saud* established the Kingdom of Saudi Arabia in 1932, the foreign capitals then concerned with affairs on the Arabian Peninsula regarded the event as a minor curiosity. The general view of the new state was of an empty desert region ruled by a warrior family whose members were the dour adherents of a staunchly orthodox Islamic sect.²⁸

The two holy cities namely, *Mecca* and *Medina*, add special significance to the Kingdom, apart from the fact that it attracts the attention of the oil companies worldwide with its possibility of being rich in oil. Thus, the Kingdom of Saudi Arabia became a well-known region with the potential of increasing rich resources. The growing need to develop and modernize the Kingdom started then and continued to be a conscious attempt. The rate of growth and prosperity could be measured along the scale of the population growth, as illustrated in Table 1-1 which maps out the population make up during the early years of the establishment of the Kingdom.

²⁸ Nyrop, Richard F., Etal., AREA BOOK FOR SAUDI ARABIA, Third Edition, 1977, p.1

Table 1-1: Eastern Province population in the early twentieth century

This table illustrates the distribution of population in the eastern province along with the nomadic population in the early days of the twentieth century:

SETTLED PEOPLE

Area	Population
<i>Hasa</i> Oasis, including <i>Hofuf</i> (25,000) and <i>Mubarraz</i> (8,500)	67,000
<i>Jinnah</i> island	500
<i>Miyah</i> (Wadi al-)	1,000
<i>Musallamiyah</i> island	2,000
<i>Qatif</i> Oasis, including <i>Qatif</i> Town (1 0,000)	26,000
<i>Subaih</i> (<i>Qasr Al</i>)	1,000
<i>Tarut</i> island	3,500
Total settled population	101,000

NOMADIC PEOPLES

Area	Population
Tribe	
<i>'Ujman</i>	35,000
<i>Hajir</i> , (<i>Bani</i>)	5,000
<i>Khalid</i> (<i>Bani</i>), after deducting settled <i>Bani Khalid</i> on the islands of <i>Musallamiyah</i> , <i>Jinnah</i> and <i>Tarut</i> and at <i>Qasr Al Subah</i> , etc.	10,000
<i>Murrah</i> (<i>Al</i>)	7,000
Total nomadic population	57,000

[From Lorimer Gazetteer of the Persian Gulf, 'Oman and Central Arabia, 1908-15]²⁹

²⁹ Middle East Research Institute (MERI), Saudi Arabia. London: Croom Helm, 1985, p.64.

1.1.4 The Oil Age.

1.1.4.1 Discovering Oil Wells:

In 1938, after five years of serious attempts to search for oil which eventually the American geologists of Standard Oil of California, decided that *Dammam* Well no.7 should be drilled "a little bit deeper". This decision, made in a mood of exasperation at the elusiveness of the treasure beneath the rock strata, led to the discovery of oil in vast quantities. Thus, a new era in the Eastern Province and the Kingdom as a whole began.³⁰

1.1.4.1a Early Planned Oil Towns

Following the Second World War, oil operations were resumed. The construction of three major settlements by *Aramco* was a clear evidence. The establishment of these settlements marked the oil age as plentiful and resourceful.

1.1.4.1b Planned Communities in the Eastern Province

In 1935, *Al-Khobar* City was a settlement, which comprises fifteen huts. Its pre-oil growth, owes to the migration of members of the *Al Dawasir* tribe from *Bahrain* in 1923. The *Al Dawasirs* who settled in *Al-Khobar* and *Dammam*, worked mainly in pearl diving. Prior to the actual exploitation of oil in commercial quantities, *Al-Khobar* and *Dammam's* growth was largely governed by its population's natural birth growth. In 1935 *Al-Khobar* witnessed a great improvement where a small dock was built by the Oil Company to facilitate the importation of oil drilling equipment and other materials from *Bahrain*.³¹

In 1938, in its effort to encourage sedentarization in the potentially prosperous oil region, the government allotted free land to settlers in *Dammam* and *Al-Khobar*. The land distribution program, the first in the region, granted land to individuals on several conditions including: (1) All citizens have the right to request a piece of land to be built according to the conditions and regulations. (2) No rent should be levied for the first ten years. (3) Henceforth, annual rent is to be collected. (4) Building activity must be completed before the lapse of

³⁰ Ibid., p.91.

³¹ The use of concrete structures and cement blocks was introduced in 1950 for the first time in the Eastern Province. Mr. Ahmad Al-K'aki imported skilled builders from Lebanon and Syria to build his big multi-story apartment buildings with commercial spaces on the street level on prospering *Khalid* Street in *Al-Khobar*. He hired an Arab architect, Niqulla Salem who introduced the Mediterranean multi-story style to the region. In the new residential units, no space was assigned for livestock. for household production, a storage room for dates and foodstuffs, or a water well. Unlike the traditional introverted homes, the new units were adorned with wide windows and doors opened onto wide, straight streets, all to meet the new building codes of the municipalities. The architectural style that was opted by Salem was more suited to the Mediterranean region than to the hot and humid climate of the Eastern Province. The new style was to inspire mass emulation. Abdullah N. Al-Subaie, *The Discovering of Oil and its Impact on Ac Social Life in the Eastern Province, 1352/1933- 13%VI'960: A Study in Social History*. Second Edition. (Riyadh: Asharief Press, 1989.), 160.

a two-year period. (5) Structures should not exceed one story, structures on waterfronts can be higher, and (6) that grantees should only use concrete and stone to erect their homes. Until 1939, *Al-Khobar's* homes were all huts built of palm reeds and trunks, with the exception of one structure constructed of rubble rocks quarried from the seashore. The small building belonged to the town's Amber (governor).³²

Al Khobar City first planned as a gridiron layout comprising rectangular lots of 130 by 200 feet. For service facilities the city was linked to a north south oriented road system of various widths ranging from 40 to 60 feet wide. The network was connected to a major road spine adjacent to the Waterfront Street. In the light of its rapid growth, another planned annex to the city was established in 1951, to be followed by a new extension in 1953. The 1960 and 1970s brought about an outstanding growth to these cities same was the case in many other Saudi cities.³³

In the early 1930s, *Dammam* was a small hamlet of 300 residential huts, nestled on the Arabian Gulf shores. Now at the locus of the industry, its population historically thrived on fishing and pearl diving. Its subsequent growth owes its location next to the first oil well. Its production of crude oil lured waves of migrants for decades to come. The traditional compact form of the town was soon to witness a fury of building activity as more migrants settled in the vicinity of the oil company's drilling and exporting operations. Under surmounting growth, *ARAMCO* staff picked a large parcel of land outside the old organically organized town of *Dammam*. By 1950, *Dammam's* growth was phenomenal and the municipality was forced to extend the gridiron network to accommodate the increasing demand for lots. Learning from previous experiment, lot sizes were considerably reduced to dimensions of 150 by 300 feet. In a mere few years, 1952-1957, the area of *Dammam* tripled from 170 to 925 acres.³⁴

Oil policy is based on five factors. The first is a high level of oil reserves, which today stands at 263 billion barrels, or about 26 percent of the entire world's total production. Second, is the daily oil production which amounts eight to ten million barrels of crude oil per day, and more than 500 thousand barrels of natural gas liquids, hence, the Kingdom comes as the top of all other producers. The third is the back-up capacity, which is the ability to bring on stream, in an efficient and prompt way, another 2.3 million barrels a day, if needed. Fourth, is the concern over the stability of world

³² Ibid, 160.

³³ Ibid, 170.

³⁴ Ibid, 170.

petroleum supply, and the environmental and international economic health. Fifth and finally, Saudi Arabia has maintained a policy of acquiring and developing technology to improve its expertise. This has resulted in the wise and conscious management of our vast and growing complex enterprise. It is then fair to mention that there has always been a driving force to improve and reach full integration.³⁵

1.1.4.2 The Oil Policy

In its oil policy, Saudi Arabia has always showed concern for the international economic community. Its policy and leadership, in terms of world oil production within the Organization of Petroleum Exporting Countries (*OPEC*), were very instrumental in protecting the stability of world industries and economies. The proven oil reserves in Saudi Arabia now stand over 260 billion barrels; which amounts for more than twenty five percent of the world's crude reserves. In October 1993, the Kingdom became the first oil producer and the top exporter of crude oil and natural gas liquids in the world. Saudi Arabia is the heartbeat of the Arab world, and the energy giant with indisputable worldwide moderating force and influence. Being the owners of at least a quarter of the world's oil reserves, Saudis have to adopt long-term plan. It is possible that Saudi Arabia will still be producing oil at a time when many other fields would have gone dry. Our control of our own tanker fleet will further add to the integration process. (Saudi Arabian Marketing and Refining Company (*SAMAREC*) was merged in June 1993 with the largest Oil Company in the world, Saudi *Aramco*.³⁶

1.2 Saudi Government and Policy-Making Process

The king of Saudi Arabia is the head of the political structure. He possesses the highest degree of control in all decisions. However it is useful to mention that there is a board of advisors and institutions, which assist the King in the decision making process. The King presides over a cabinet of government ministries or Council of Ministers (CM), which is the legislative body first established in 1953. By 1975, the CM comprised twenty-three ministers heading the various bureaucratic ministries. It is worth mentioning that a number of ministries and government departments are vested with the responsibilities of making decisions of direct and indirect impact on urban development. Many factors such as economy, culture, transportation, demography,

³⁵ H.E. Ali I. Al-Naimi, Minister of Petroleum and Mineral Resources "Saudi Oil Policy in a Globalized and Dynamic Market" 15th World Petroleum Congress, Beijing, China, October 15, 1997.

³⁶ Nasser Rashid, Esber Shaheen. Saudi Arabia: All You Need To Know 1995.

education and health have direct implications for the urban development, hence, policies adopted by relevant ministries account for the shaping of urban environment.

The King is assisted by the Crown Prince, or Deputy Prime Minister, and by the second Deputy Prime Minister. The cornerstone in Saudi government policies is the *Majlis*, which is an institution that allows anyone to petition Saudi leaders, starting from the King all the way down to the governors of the various provinces and other government officials. This *Majlis* gives the chance to any of the public to make a formal request to the authority.

Due to the increase in urban problems, the government ushered in a municipality system in order to shoulder the responsibility of establishing order and fulfilling the public needs in the built environment. The modern civic organizations established under the auspices of the state, such as the municipality and the *mohafaza* (town's governorship), are administrative organs of the central bureaucracy. The government finances development of modern towns, hence, it holds ultimate authority over the form and scope of local control and administration.

1.2.1 The Judicial System

The administration and application, of the judicial system of Saudi Arabia indicates the importance of the *Ulama* (religious leaders). At the time when King *Abdul Aziz* extended his rule over the western part of the Kingdom, he was faced with the problem of three separate judicial systems. The first was the judicial system of the Western Province, with an Ottoman orientation. The second was that of the small town of *Najd*. According to the rules of this system, an *Amir* (similar to a regional governor), with the assistance of one judge, represent the law. The *Amir* would try to settle the disputes submitted to him or refer them to the judge for a final ruling decision. The implementation of the judge's decisions was the *Amir's* duty. The third judicial system, which is more primitive and indigenous, was the tribal law. The rules of this system stipulated that the conflicting parties would settle their disputes in accordance to the individual tribe's law, and its own lawyers would give a final decision according to precedent. There was an urgent need then to maintain temporary regulations that cope with the current situation. Needless to say that King *Abdul Aziz* did not allow such perplexing and impeding judicial systems to continue. Hence, a Royal Decree was issued in 1927 (1345/46 AH) with the aim of unifying the judicial system of the nation. Its institutions were classified into three hierarchical categories: -“expeditious courts,

Shari'ah courts, and the Commission on Judicial Supervision.³⁷

1.2.2 The Formative Era, 1930s and 1940s

In 1937, the Royal Decree number 8723 assigned the government to regulate the urban growth and development. In turn the government passed such power to the municipalities, which were given the authority to develop zoning and building regulations and codes. In 1941, this decree was followed by the Roads and Building Statute, which indicated the authorities' need for some form of town planning.

The statute concerns itself mainly with three issues: planning procedures, building codes, zoning and the right-of-way. It was through this statute that the setback concept was introduced in Saudi Arabia with sole objective of meeting the need for future street widening.³⁸

1.2.3 The Council of Ministers (*Majilis al-Wuzara*)

The Council of Ministers is the most potent political body in the Kingdom. Its main concern is all internal or external affairs in the Kingdom. It derives its power directly from the King being the sole ruler of the Kingdom.

At present, the Council of the Ministers consists of:

The Prime Minister, The King.

The Deputy Prime Minister, who is the Commander of the National Guard.

The Second Deputy Prime Minister, who is the Minister of Defense and Aviation and Inspector General.

- Minister of Agriculture and Water.
- Minister of Commerce.
- Minister of Communication.
- Minister of Education.
- Minister of Finance and National Economy.
- Minister of Foreign Affairs.
- Minister of Health.
- Minister of Higher Education.
- Minister of Industry and Electricity.

³⁷ Kingdom of Saudi Arabia, *Majmo'at al-Nuzum- "Collection of Regulations"* - Makkah: Umm al-Qura Press, 1955.

³⁸ Saleh A. al-Hathloul and Anis-ur-Rahmaan, "The Evolution of Urban and Regional Planning in Saudi Arabia." *Ektistics*, 312 (May/June 1985), 206.

- Minister of Information.
- Minister of Interior.
- Minister of Islamic Affairs. Endowments (*Awqaf*). Summons (*Da'wa*) and guidance.
- Minister of Justice.
- Minister of Labor and Social Affairs.
- Minister of Municipal and Rural Affairs.
- Minister of Petroleum and Mineral Resources.
- Minister of Pilgrimage (*Hajj*).
- Minister of Planning.
- Minister of Public Works and Housing.
- Minister of Post, Telegraph and Telephone (PTT).
- Ministers of State (six).

To enhance the level of administrative and developmental work in the region of the Kingdom, certain amendments had to take place in the regional government. In addition, these changes will preserve security and order and ensure the rights of the citizens and their freedom within the framework of the Islamic *Shari'ah*.

In this respect, a Royal Decree was issued to deal with regional government, it includes a list of the 13 regions and their capital cities in which the headquarters of each region are to be located. Each of the regions has a Regional Governor who is ranked as a Minister reporting to the Minister of the Interior. The structure of the regional government and the establishment of the regional governing bodies and regional councils provide further evidence of the Kingdom's strategy to increase the public involvement policy of the Government of Saudi Arabia, and at the same time maintaining stability and continuity.

1.2.4 The Establishment of the *M.O.M.R.A.* (1975)

In 1975, the government established the Ministry of Municipal and Rural Affairs to replace the Deputy Ministry of the Interior for Municipal Affairs. *M.O.M.R.A.*, which was mainly formed to improve the planning, development, and administration of both urban and rural areas. It was also meant to be a step towards specialization and decentralization. Although, the establishment of *M.O.M.R.A.* was initially intended to enhance decentralization, the ministry's internal organization operates under a centralized system of authority. The massive growth in the country's financial resources, coupled with the ambitious goals of the second five-year development plan (1975-1980)

aiming at the provision of more and better municipal services, considerably accelerated the pace of the *M.O.M.R.A.*'s activities. The increase in the number of municipalities, the enormous expansion of their services and responsibilities, and the country's overall development, made it difficult for the central ministry (*M.O.M.R.A.*) to cope with tasks of strategic planning and a detailed supervision and comprehensive control over the municipalities and their activities. Knowing the fact that such situations exhaust the capacity of any central organization, the Ministry of Municipal and Rural Affairs, hired McKinsey International in 1976 to study and re-organize the administrative structure of the Ministry and suggest recommendations for any reform that might be needed.

In its 1978's report, McKinsey pointed out that the municipal affairs in Saudi Arabia adopted an increasingly centralized basis. Accordingly, McKinsey proposed a new administrative structure for *M.O.M.R.A.*, based on the principle of decentralization. The report recommended the reorganization of the internal administration of the Central Ministry, and the distribution of the responsibility to the municipalities and the regional branches of the Ministry. The role and responsibilities of each department in *M.O.M.R.A.*, the municipalities, and the regional offices was redefined in a way that changed the role of the Central Ministry. The Central Ministry was no longer responsible for the detailed administrative regulation, but rather the overall policy-making and co-ordination. The consulting company summarized the task of the *M.O.M.R.A.* and its affiliated organization. The McKinsey's report identified four major responsibilities in the development process that the Ministry had to carryout:

- To plan the physical development of the Kingdom's cities and towns, with a view to developing road networks and other basic infrastructure elements.
- To manage the services needed to keep cities and towns clean and healthy, and to maintain the infrastructure in these areas.
- To administer the various procedures concerned with the donation, sale and rental of free land and the acquisition of land for municipal projects.
- To co-ordinate the development of the rural areas outside the jurisdiction of the municipalities.³⁹

1.2.5 Municipalities

In 1977, The growing number of municipalities reached more than 100, among

³⁹ Mackinsey International, Inc., *Mastering Urban Growth: A Blueprint for Management*, a report prepared for the Ministry of Municipal and Rural Affairs (New York, 1978).

which *Riyadh*, *Makkah*, and *Jeddah* municipalities accounted for nearly half of the country's urban population and a similar proportion of *M.O.M.R.A.*'s allocated capital budget. (Table 1-2).

In accordance with the McKinsey's proposal in 1978, and taking into account the cities and towns populations, as well as their political, commercial, and spiritual importance, new municipal classifications and administrative organizations were introduced. Class "A", are the municipalities of large cities with population size of 300,000 and above; Class "B", are the municipalities of towns with population size of 100,000 and above; Class "C", are the municipalities of smaller towns with population size of 30,000 and above; and finally, Class "D", are for small towns with a population size of 5,000 and above. A fifth category was introduced for the smallest towns, but was cancelled in 1979, and upgraded to class "D" level.

The six large cities with Class "A" rating have been granted considerable autonomy to run their own affairs. Other municipalities have been delegated responsibilities in accordance with their capacity to fulfill them. The water and sewer authorities continued to retain substantial power and autonomy, with a direct access to the Minister of *M.O.M.R.A.*, which they had already possessed.

Table 1-2: The number of municipalities

This Table shows the number of municipalities and their increase to reach 169. The municipalities are as follows:

Type	Number
<i>Amana</i>	5
General Municipal Affairs	5
Municipalities 'A'	7
Municipalities 'B, C, D'	90
Rural Affairs	62

1.3 Planning Process, Policy Making and Urban Planning

The planning model of Saudi Arabia adopts the trickle down planning approach. Urban development in Saudi Arabia is shaped by several factors including a political structure performing within a given agenda concealed from public scrutiny. The

planning process in the Kingdom mirrors the central government political goals and objectives. Policy and decision making fall within the realm of the bureaucracy of a complex organization encompassing twenty-three ministries, all of which affect the urban process in varying degrees. (Chart 1-1).

In the Saudi urban domain, the transformation of the built environment and the resulting rigid character it came to embody was a function of several factors including: (1) the unguarded application of Western planning architecture and planning models. (2) the lack of local adept expertise and well developed indigenous institutions capable of offering solutions for the emerging transitional problems. and (3) the overall dismal political environment incapable of advocating independent initiative and allow for self-evaluating mechanisms, based rationality and open to popular scrutiny.⁴⁰

In the light of the basic infrastructure of the Kingdom in place and to ensure that all parts of the Kingdom benefit from the country's continuing progress, a special attention is been given to regional development. In 1993, there were three major political developments:

1. The formation of the *Majlis Al-Shoura* (Consultative Council).
2. The restructuring of the Kingdom's regional government.
3. The promulgation of the Basic System incorporating the first two developments.

These three developments formed part of a carefully constructed strategy to modernize the Kingdom's system of government within the unalterable framework of *Islam* and the Kingdom's traditions.

The municipalities are affected positively by the interference on the national level. The ministries coordinate with the municipalities in putting into effect and implementing the various regulation and laws in the localities jurisdictions. They put into force such laws and make sure that they are implemented in an appropriate way that does not violate the royal decree in that respect. The municipality being a part on the *Amana* (the Higher Municipality in the region), plays an important role in the general development of the region. These development goals and objectives are set, general speaking, by the *Amana* and are performed in a plan of action. The municipalities each on its own following the proper method that account for their settings should implement such plans of actions.

Al Khafji, the main focus of this case study reflects a typical municipality with a

standard administrative organization. Such organization consists of (Chart 1-1):

- 1) At the head of the municipality is the Mayor, who is responsible before the Ministry of municipal and rural affairs of the performance standards of his municipality in implementing the development plan according to the royal decrees and their laws and regulations. Also the Mayor has to be able to discuss the needs and requirement of his region with the higher authorities. In addition, the Mayor is the head administrative person in the municipality that is responsible for all its administrative and financial affairs.
- 2) The Deputy Mayor is responsible before the Mayor of any assignments set for him by the Mayor. He also represents the Mayor during his absence in minor administrative and financial matters.
- 3) The Municipal Mayor Office is responsible of running the Mayor's municipal affairs, in a way that facilitates his work.
- 4) The Follow Up and Work Performance Department, in responsible for monitoring the entire municipality's departments and their performance. Also it follows up and settles any municipal and city problems that might occur. This department reports directly to the Mayor.
- 5) The Safety and Security Department, petrol's all municipal facilities and buildings maintains its safety and security around the clock. The department reports to the Follow Up Department.
- 6) The Technical Affairs Department consists of two sections: 1. Planning Section, which is responsible for making the study of all the proposed development projects including city and urban planning. 2. Projects' Section is responsible for supervising the implementation of the proposed projects. In addition, the Section is the body within the municipality which is responsible of issuing the building and demolition permits for any site. Also the section takes care of the roads' maintenance.
- 7) The Municipality service Department consists of three sections: 1. Environmental Affairs Section is the body within the municipality, which is responsible of issuing the commercial permits for all shops and stores in the city. Also it inspects the validity and the quality of the goods sold. The Section is also responsible of the city cleanliness by monitoring the performance of the solid waste collection contractor. The Section controls

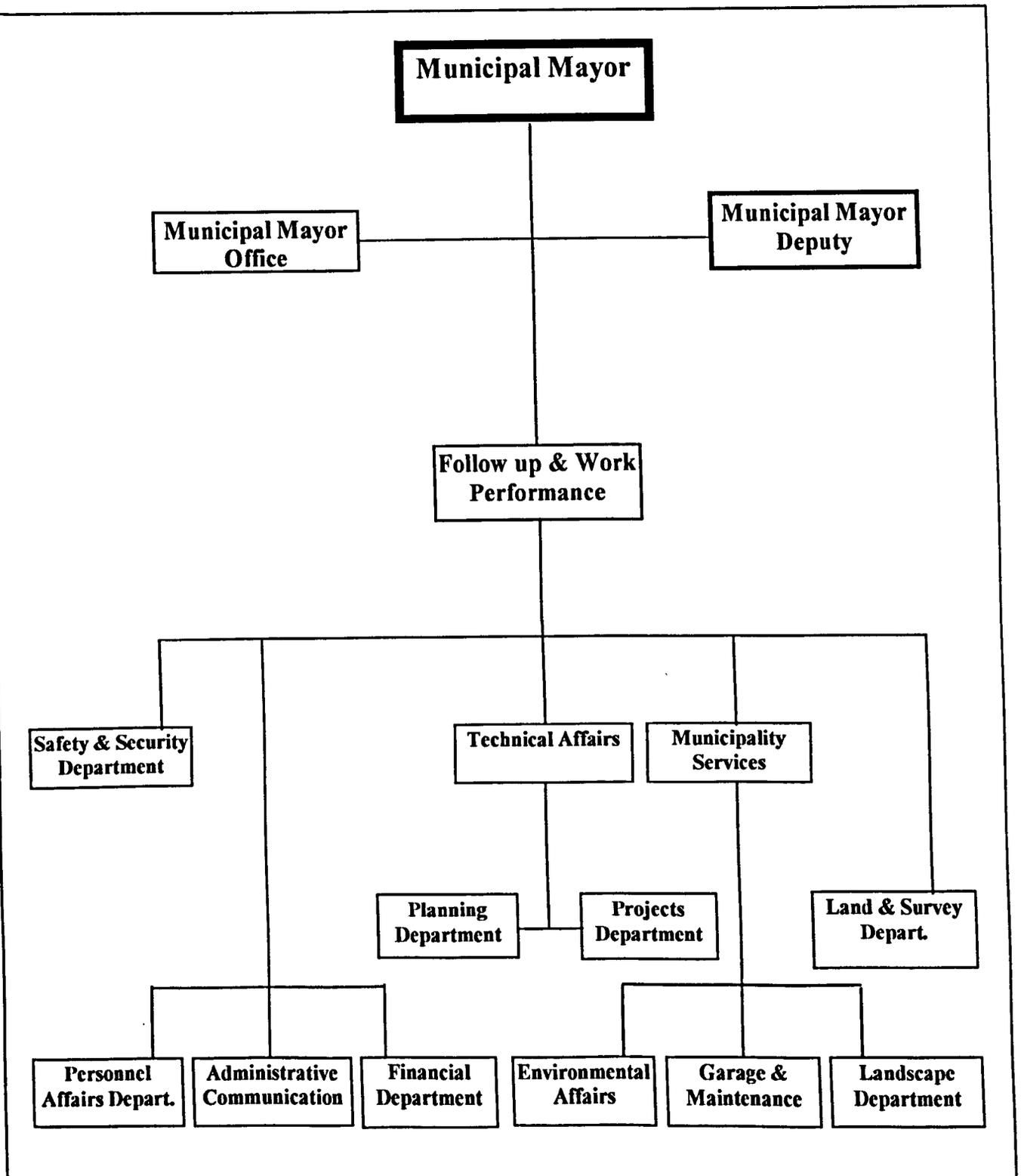
⁴⁰ Friedmann (1981); Dyckman et al (1984), op. Cit.

the slaughterhouse, which is part of the municipal facilities. 2. The Garage and Maintenance Section is responsible of all the municipality vehicles and their maintenance. 3. The Landscape Section is responsible for all the greenery, irrigation, plantation and beautification matters of the city. All these section report to the municipality services department.

- 8) The Land and Survey Department is responsible of land distribution and titles, and surveys all sites and lots.
- 9) Other departments including administrative and financial departments are the cores of the municipal affairs.

It is worth mentioning that each ministry controls its respective projects within the Municipality jurisdiction. This is done in coordination with the municipality. Each project is totally funded by its respective ministry. The Municipality allocates no fund for any public projects except for certain private projects where the municipality seeks funding through private bidding.

Chart 1-1: Organizational Structure for *Al Khaffi* Municipality (Class B)



1.4 Post Gulf War Era. (1990 – To-date)

During the 1970s and 1980s, the Government of Saudi Arabia was the main body responsible of establishing the basic infrastructure and institutions aiming, to strengthen the country's structure. During the 1990s, the Saudi economy had reached its peak. Meanwhile, future growth underlines the strength and importance of private enterprise and capital.

The oil price boom during the 1970s helped the Kingdom to make huge strides in creating a modern and an efficient infrastructure, including national systems for health care and education, world-class petroleum and downstream industries, durable and effective finance and government institutions. However, in the mid 80s the oil price collapse brought this first phase of infrastructure expansion to a halt. Companies that survived the collapse re-assessed their aims; many re-organized themselves in order to reduce their dependence on government's contracts in favor of businesses that aimed to benefit from the Kingdom's rapid population growth and the large potential for private sector expansion.

The quick and successful resolution of the Gulf War spurred these trends. War-related spending left the economy flushed with liquidity, much of which was invested in new local ventures. Basically they were agricultural and dairy products, household goods and furnishings, construction material, pharmaceuticals, or a growing list of appliances and electronic components. As a result, the Kingdom became increasingly self-dependant.

Saudi Arabia has embarked on a process of economic reform, designed to restore equilibrium to public finances, reduce its dependence on oil revenues, and encourage private-sector investment among other things. The government has recently announced spending cuts to reduce the budget deficit, increased charges for public services, issued bonds to clear payment arrears, and embraced the notion of privatization.⁴¹

However, Saudi Arabia remains vulnerable to the international oil market, since oil exports still generate the bulk of its foreign exchange, earnings, and government revenues. Nevertheless, the Saudi economy has continued to improve with the help of the increasingly important role, played by the private sector. It is important to mention that the government encourage the private sector by means of incentives in the form of the provision of cheap loans, land, infrastructure, and utilities, as well as tariff

⁴¹ Peagam, Norman, *Becoming a more normal economy.*, Euromoney. (314): 231-234. June, 1995.

protection in some cases.

Even after the unexpected Government's huge funds on a highly sophisticated war i.e. the Gulf War, according to Norman Peagam in 1995, "The country's total external debt remains modest - \$20.7 billion at the end of 1993 according to one estimate, most of it short-term trade finance."⁴²

The economic development of Saudi Arabia has no parallel. Within the space of one generation, the vast empty territory has been transformed from an impoverished desert kingdom into a modern industrial state. Exploiting its huge oil reserves (the world's largest, at 260 billion barrels).⁴³

Remarkably, the performance of the oil sector determines the rate of progress of the Saudi economy. Over 11% of the world's daily oil supply is imported from Saudi Arabia; output averages 8 million barrels a day that yields \$44 billion at an average oil price of \$ 15 a barrel. The reserves of 260 billion barrels assure that the current oil production can last for at least 90 years.⁴⁴

Saudi Arabia providing financial support to Iraq during its long war with Iran. In addition the Kingdom also played a major role in supporting the allied forces during the Iraq's invasion of *Kuwait* in 1990. This happened when the US led a massive allied offensive from the kingdom to liberate *Kuwait*. According to Norman Peagam in 1995, "Saudi Arabia's financial contribution to the cost of that campaign is thought to have been at least \$55 billion."⁴⁵

More recently, the sharp decline in real income due to the drop of the oil prices and the high expenditures of the Gulf War has over-burdened the Kingdom's budget, but gradual changes in the structure of the economy have improved the situation. This was achieved by developing a world-class petro-chemical industry and the rise of the non-oil private sector.

Saudi Arabia had successfully trimmed its current account deficit before the Gulf war. the shortfall amounted to only \$4 billion in 1990 compared with almost \$ 13 billion in 1985. It then jumped due to war-related spending. But the deficit has since resumed its downward trajectory, sliding from a record \$27.6 billion in 1991 to \$21 billion in 1992, \$14.2 billion in 1993 and perhaps \$13 billion last year. Henry Azzam, chief economist at National Commercial Bank in *Jeddah*,

⁴² Ibid, 231-234. June, 1995.

⁴³ Ibid.: 231-234. June, 1995.

⁴⁴ Presley, J., Saudi Arabia, *Euromoney* (World Economic Analysis Supplement): 20. 1996 Sep.

⁴⁵ Peagam, Norman, Becoming a more normal economy., *Euromoney*. (314): 231-234. 1995 Jun.

thinks it could drop to \$11 billion this year as a result of the economic slowdown, lower imports and reduced government spending on services.⁴⁶

Nevertheless, more allocations to fast economic development plans and huge service projects along with low oil income, have placed a shadow over the Gulf. It is reflected in Government cutting-down expenses, the postponing of some projects, and reducing funds for services in general. This perpetuated a new trend of promoting privatization of some major service sectors such as communications.

The New York Times wrote: Saudi Arabia, long seen as one of the world's wealthiest countries, has undermined its financial stability with a decade of unrestrained spending, huge military purchases, and irregular banking practices.⁴⁷

To reduce the Kingdom's deficit, the Custodian of the Two Holy Mosques King *Fahd* declared at the beginning of the year 1993 that a 19% cut in the government expenses is done. The majority of these cuts were in defense, which accounted for 30% of its expenses. These cuts did not affect the services' sector and its related projects, which directly influenced the public's standard of living. As a result the internal Saudi economy has maintained its stability.

It became clear that most of the decisions taken are in fact a reaction to a certain predicament problem, rather than a preset strategy. It is always better to plan and anticipate for the future than to react and decide. Non-planned and sudden decisions are usually high in cost and have no safe result. Planning allows the possibilities of studying and examining several options for certain scenarios that have high possibility to occur. It also sets certain priorities for future actions in term of the goals and objectives set for the development purposes.

1.5 Research's Contribution to the Field

The planning process now taking place in the developing countries is a new phenomenon in comparison to the earlier experiences of developed nations. Recently, planning in the Middle East has become a topic of serious intellectual interest among students and scholars. Most of the research and writings are based on general studies of planning in the Arab world or a large region within it, such as the Arabian Gulf countries or the North African countries. However, little attention has been given to the planning of a specific region within a nation and its relationship to the rest of the

⁴⁶ Ibid.; 231-234. June, 1995.

country and its other regions. Although Saudi Arabia presents a striking case of rapid urban growth and high rates of internal and external migration, it has not had its fair share of the Middle Eastern studies, especially in the field of provincial development and strategic planning. This study focuses on this second level of planning, which is regional provincial planning. It hoped this should have a positive effect on bridging the gap between the macro-level of country planning and the micro-level of city planning. Regional Provincial Planning (RPP) might also link the macro theoretical concepts to the reality of the micro-level with minimal compromise in concepts and goals. It should also help to balance the distribution of resources among the different regions.

1.6 Planning and Development in the 20TH Century (In the Arab World)

Modern development in the Arab World began with the end of colonialism in the middle of the 20th century. At the time when the formal political imperialism came to an end, the industrialized nations showed much interest in leading the third world nations towards development, under the condition that such development would not conflict with their own strategic interests. These interests were mainly focused on maintaining a constant import of raw materials and resources from the former colonies.

Generally speaking, methods of achieving economic development in the Middle East varied from the 1950s to the 1990s according to national objectives and each nation's potentials. Each sector of the economy received sequential attention according to the obvious need at a given point of time. For example, initial development focused on the growth of agriculture, then the attention was given to increasing the industrial base. Such concepts subsequently developed to emphasizing investment in both areas concurrently. Finally, planners decided that the area of concentration was irrelevant, and the focus of development should be based on a cost benefit analysis, irrespective of the nature of the benefit which could be economic, social, environmental, etc. These developments took several directions in the policymaking process. The "Top-Down" or the "Bottom-Up" approaches were used in various political systems in order to satisfy the main objective of any given development plan.

Development has been attempted through several differing models. Top-Down development envisions a central planning authority with responsibility for making global planning decisions for the entire development process as well as overseeing disbursement of funds and project management. In contrast, Bottom-Up planning finds local

⁴⁷ Smith, Patrick, Gulf's dream, *International Management* 49(6(Europe Edition)): 32-33. 1994 J-A

government bodies retaining more goal-determining authority with the national government acting in a facilitating support role. The Mixed-System approach is a combination of these two planning practices which was adopted in later years.⁴⁸

Paces of development in the Middle East varied according to the national revenue and the population of each country. Also the countries' national goals played an important role in specifying such development projects. These projects varied from a large to a moderate scale. The level of development has also been taken into consideration re-establishing for example an old country's infrastructure, such as in Cairo, is different from building a new infrastructure network in *Dammam* (Saudi Arabia). In these two cases the aim and the plan for development is different.

Additionally, while small pilot development projects were initially popular, large-scale, globally oriented growth plans became more common as a way to provide a more generalized stimulus for developing economies. In fact, since World War II, one of the most widespread activities occurring in many countries, especially developing countries, has been the creation of comprehensive development plans. Bryant and White (quoted in Waterston commented, "The national plan appears to have joined the national anthem and the national flag as a symbol of sovereignty and modernity."⁴⁹

A World Bank's survey indicates that four out of every five countries have multi-year development plans.⁵⁰ It is now evident that a variety of planning theories and means and methods of applications has been attempted in pursuit of economic development. The 1950s and 1960s were the experimental period for the growth of such planning strategies which have their valuable results.

As most of the population of developing countries was involved in farming in rural areas, this suggests that agricultural development was the safest choice for a planning structure during the initial development phase. However, this was not essentially the last choice. Many countries, chose to imitate the seemingly simple method of the industrial development plan, which secured fast revenues on their limited resources. The failure of such development formula could be attributed to one major factor that had several severe side effects: the most significant of which was the lack of adequate spatial structure for promoting and spreading development. When limited

⁴⁸ Rondinelli, D., Development Projects as policy Experiment. London : Methuen & Co. Ltd., 1983, p. 30.

⁴⁹ Waterston, Albert, Development Planning : Lessons of Experience. Baltimore, Md. : Johns Hopkins Press, 1965, p. 28.

resources and materials were distributed widely among many small settlements, they became insufficient and did not provide a substantial support. Also, when planners focused their development efforts on specific sectors and areas thus focusing only on a relatively small segment of the population, while the majority of the other sectors remained unaffected and marginal.

Mismanagement and implementation problems coupled with inadequate resource allocation doomed these projects to poor performance and quick termination.⁵¹

However, it is rather impractical in a country like KSA to give more attention to development in rural areas rather than urban settlements. Although, the fact that it is extremely important in a new country to focus on its urban economy and development aiming at building a strong society. Since urban areas house more concentrated population, which consequently generate more economic activities. Knowing that, does not mean that we deny the right for small settlements to have its share in the development perspective. Such development should be relatively and delicately balanced between urban and rural settlements to achieve the optimum development outcome for the country as a whole.

Initial attempts at industrial and urban development met with mixed results. But because the majority of the population was located in rural areas and failed to realize any benefit from these development processes, this strategy was doomed as well. Urban industrial development of primate cities as focal points for economic growth often achieved their initial objectives. However, since the primate cities could engage in trade with the developed countries for food and natural resources needed for industrial / urban development, the rural agricultural sectors never received any "trickle-down" demand impetus for development. These third world primate cities became dependent on the industrialized world for food and factors of production as well as many manufactured goods. ... Industrial development was generally suspended in favor of a more socio-economically-equitable development strategy.⁵²

Development efforts during the 1950s and 1960s continued with a plethora of development schemes, each a logical combination of sector and spatial emphasis scope of planning, and locus of control. However, development on the scale sought remained elusive. While it

⁵⁰ Al-Saud, Mansour Mutib, "Productivity Improvement in the Public Sector of Saudi Arabia." Ph.D. dissertation, George Washington University, Washington, D.C., 1986., p. 47.

⁵¹ International Bank for Reconstruction and Development, "Rural Development Sector Policy Paper." Washington, D.C. : IRBD, 1975, p. 5.

⁵² Rondinelli, Dennis, Development Projects as Policy Experiments. London : Methuen & Co. Ltd., 1983, pp. 32-33.

has been easy to find reasons for project failures on a case-by-case basis, it has been difficult for planners to identify global factors to attribute failure to.⁵³

Although a great progress is marked in the planning emphasis or the elaboration of the planning effort during the past two decades in the Arab World and particularly in the Gulf Region, the impact of socio-political constraints cannot be undermined. Socio-economically equitable distribution of the wealth generated by the growth in gross domestic product namely oil production, necessitates a better distribution and investment of the capital resources invested.

It is the irony and paradox of socialist regimes which are based on humanitarian ideals and principles of equality and justice that they fail to come face to face and honestly with the distributive question. Despite ideological commitments, governments find that distributive policies constitute a serious constraint on capital formation, and consequently adopt a policy of statism which has all the ideological trappings necessary for a self-proclaimed socialist system and at the same time all the effects that prevail under capitalism as far as the poor are concerned.⁵⁴

By conclusion, any beneficial effects of development are diluted so as not to have any effect at all in an effort to judiciously distribute development equally. The realities of socialist concerns for development have led different countries down different paths.

In the following chapter, an extensive review of planning literature will be attempted to clarify the various concepts of development planning. In addition, planning in *Islam* and its relation to the planning law in Islamic context will be revealed. Accordingly, the researcher will investigate the effect of such theories in building a contextual theory with the potential of applying in the region under study.

⁵³ Renaud, Bertrand, Nationality Urbanization Policy in Developing Countries. Oxford : Oxford University Press, Published for the World Bank, 1984, pp. 38-39.

⁵⁴ Harik, Iliya, "Continuity and Change in Local Development Policies in Egypt : From Nasser to Sadat." in Local Politics and Development in the Middle East, Louis J. Cantori and Iliya Harik, (eds.) Boulder, Colorado : Westview Press, Inc., 1984, pp. 84-85.

CHAPTER TWO

PLANNING DEVELOPMENT STRATEGIES THEORIES, METHODS AND PRACTICE

This chapter reviews the literature on planning development strategy and its theories, with a special focus on development, its implementation methods and practice techniques. Also this chapter will draw on planning in *Islam* and its relation to the planning law in the Islamic context. Other issues, such as, urbanization in development, sustainability debate, planning models and decentralization philosophy will be raised in the course of this chapter.

The aim of this chapter is of twofold. First it is intended to give an overview of the planning theories which have a direct implication for the research under study, especially those that focus on a similar setting. This review highlights the fact that the society was the dominant agent in the spatial expression of its organization and that the use of human-made space is merely a mirror image of social and political history. Second, it will illustrate the perpetual dilemmas of the general theory of planning and design in dealing with two extremes, such as a persisting problem of people versus place and prosperity. In other words, it will examine the optimization of resources for the sake of settling the people's problems and their needs. Additionally, this chapter will examine the scientific approach favored by contemporary planning methods and techniques versus normative one that is still applied in most places worldwide. Finally, it will elaborate on the need for a comprehensive theory. Such theory should address issues like the complexity of ideological issues and the uncertain situation of how to specify which set of values and actions are most needed to satisfy the changing priorities of humans.

2.1 Literature Review

"Planning Theory" is a term that strikes terror in the hearts of many planners"⁵⁵

Theory, in general, means schools of thought. Planning theories have diverse directions, they are complex, philosophical, and perplexing. Most planning theories are

⁵⁵ Brooks, Michael P. "A Plthora of Paradigms?", *Journal of the American Planning Association*. 59(2): 142-145. 1993 Spring. [References]

difficult to be translated into physical activity in comparison to other theories in Physics or mathematics, for example.

2.1.1 What is Planning?

Early writings on planning characterized it as an act of visionary design or creative problem solving.⁵⁶

Planning offers an important means for institutionalizing the politics of deliberation within government. Democratic planning acknowledges the interdependencies of our social problems, too often overlooked in the adversary arena of legislative and executive politics.⁵⁷

The scope of planning could be local, regional, national, or international depending on the resources and objectives. Whether the aims and objectives are economic and/or social, planning always has its physical side, which is translated into its strategy. This dissertation is concerned with regional planning generally and physical strategic planning in the Eastern Region of KSA in particular. In this study “regional planning” deals primarily with the physical planning of the Eastern region, and its cities and towns. This process is often termed “Urban Regionalism” as it includes the general planning of all available resources for the benefit of the entire region. Consequently, the means of reaching the most integrated and coordinated development has to be via the optimization of the distribution of resources and investments in the region.

Paul Davidoff (1930-1984) was an unyielding force for justice and equity in planning. He viewed planning as a process to address a wide range of societal problems to improve conditions for all people while emphasizing resources and opportunities for those lacking in both. To him, planning has to expand representation and participation of traditionally excluded groups in the decisions that affect their lives. He challenged planners to promote participatory democracy and positive social change, to overcome poverty and racism as factors in society, and to reduce disparities between rich and poor, white and black, and men and women.⁵⁸

According to Davidoff, the planners, main concern should be the societal benefit. Davidoff's scope of vision could have been acceptable a few decades ago. At

⁵⁶ *ibid.*, 142-145, 1993 Spring

⁵⁷ Forster, John, "What Planners Do: Power, Politics, and Persuasion.", *Administrative Science Quarterly*. 41(4): 719-723. 1996 Dec. [References]

⁵⁸ Checkoway, Barry. "Paul Davidoff and advocacy planning in retrospect.", *Journal of the American Planning Association*. 60(2): 139. 1994 Spring. [References]

present, due to the globalization, and the rapid change in living patterns, planners have to be concerned with the various aspects of life such as economic, environmental, political aspects, etc. Accordingly, planners should be more comprehensive in their view, study, and solutions.

A planner shall seek to expand choice and opportunity for all persons, recognizing a special responsibility to plan for the needs of disadvantaged groups and persons, and shall urge the alteration of policies, institutions, and decisions, which militate against such objectives.⁵⁹

It is safe to assume that planners should be equally concerned with all social groups regardless of their status. An integrated society is a much safer one. Social interaction and a homogenous planning strategy should secure a minimum and acceptable standard of living for all sectors of society. If we plan for the disadvantaged groups exclusively, we would be compelled to neglect the other sectors of society then accordingly 'who will plan for the other groups?'

What were the roles of city planners? Most planners worked for planning agencies, whose citizen commissioners and staff members had commitment to "the public interest", of the community as a whole. Planners were akin to technical experts, who worked outside the realm of politics, advised decision-makers without promoting particular policy positions, and prepared "master plans" with singular solutions to urban problems. They emphasized the physical planning of land uses, the spatial distribution of facilities, and the general improvement of urban life.

Davidoff viewed planning as a process to promote democratic pluralism in society, by representing diverse groups in political debate and public policy. Pluralism would stimulate city planning, he argued, by better informing the public of alternative choices, and by forcing the planning agency to compete with other groups for political support. ... Some city planning agencies assigned staff planners to prepare subarea plans, organized subarea planning councils and encouraged residents to participate in citywide planning, although it is mistaken to confuse subarea planning in which central planning agencies deconcentrate functions to local subareas, with neighborhood planning in which community residents plan for themselves.⁶⁰

Planners are striving to justify their work by providing a comprehensive rationale for their profession. The main deliberation of the planning theory is to how to

⁵⁹ *ibid*, 139-140.

⁶⁰ Checkoway, Barry. "Paul Davidoff and advocacy planning in retrospect." *Journal of the American Planning Association*. 60 (2): 139-143. Spring 1994. [References]

manipulate the process rather than to only focus on the actual theoretical approach. Consequently, planning theory is almost always overwhelmed by the need to understand the political process behind the planning action.

Perhaps it is time to acknowledge that planning is not really a profession but a loose confederation of shared interests and concerns: 1. The problems or development processes occurring at one or more levels of human organization, 2. An orientation to the future, and 3. the employment of planning processes or strategies.

Some writers suggest, for example, that planners should function primarily as agents of social change (e.g., Kraushaar 1988; Beauregard 1990). Others--myself included--have called for a reemergence of the visionary spirit that once enjoyed a prominent place in planning thought (Brooks 1988). Some (e.g., Susskind and Ozawa 1984) argue for the critical importance of skill in mediated negotiation. Others (e.g., Forester 1982) urge the planner to serve as the aforementioned monitor of communication flows. And still others (e.g., Benveniste 1989) argue for the mastery of political skills. There are still writers, of course, who assert the ongoing importance of rational analysis (e.g., Black 1990). I continue to hear, on occasion, the planner's role described in terms of comprehensiveness--putting all the parts together to create a unified whole. Most recently, it has been suggested that planners should function primarily as customer service agents, as discussed by McClendon here and in an earlier *Journal* article (1991). The list includes planners as deal makers, political economists, and social institutional designers.

Planning theory can be considered the translation of what we do as planners. It is concerned with the process rather than the concepts. Theoreticians attempt to use theory for distinguishing the planning profession from other professions that deal with public policy and social factors. This search has focused on two basic issues. It has to deal with the subject matter of planning, and has taken a form of an ongoing debate. The debate is between one team who prefer to restrict professional expertise to the scope of land use and physical development versus the other team who believe that planners have legitimate roles to play in a much broader spectrum of economic, social, and other public policy matters.⁶¹

There is no single agreed upon definition of planning theory, nor is there any consensus on what it includes. Just as the planning profession grew to its present configuration, drawing its members from different backgrounds, so planning theory developed by an

⁶¹ Brooks, Michael P. "A plethora of paradigms?", *Journal of the American Planning Association*. 59(2): 142-145. 1993 Spring. [References]

eclectic accretion of concepts from a wide range of disciplines. Today planning theory reflects the sequence of dominant images that have succeeded one another since planning became a distinct area of endeavor.⁶²

Nothing is as practical as theory" said physicist J. Robert Oppenheimer, one of the developers of the atom bomb. This statement seems paradoxical, but it begins to make sense when we appreciate what theory actually is. Theory is a way of understanding the world, a framework to organize facts and experience and interpret them in a systematic way: Science is built of facts the way a house is built of bricks; but an accumulation of facts is no more science than a pile of bricks is a house.⁶³

Theory could be looked at as the blueprint we use to congregate the facts and knowledge into the synchronous structure of understanding. Thus, it could also be considered as the basis for understanding the world around us as well as the foundation for development and the methods used in implementation. In short, one can declare that theory is equally essential to the planning practitioner as it for the scientist. From what is stated one can understand that theory is good but not too good and no theory is bad but not too bad. Excessive formulation of theory is similar to taking excessive medicine. Theory should be conceived and developed in its natural habitat and environment. If this environment became polluted by foreign thoughts that are not in harmony with the habitat 'culture', it could destroy the basics of such theory.

This suggests one of the dimensions of the interaction between planning and the social sciences, from which planning has obtained many of its theories and methods. The theories developed by economists, sociologists, urban anthropologists, social psychologists, and the like, are all valuable contributions to our understanding of the subjects and contexts of our planning efforts. But planning, in turn, can provide the practical arena for confirming or refuting theory.⁶⁴

2.1.2 The Planner's Triangle: Three Priorities, Three Conflicts

Planners, from the early stages of planning, claim that they are the protectors of the environment. Historically reality seems to contradict such a claim. Planners work to promote the development of cities at the expense of destroying nature. Forests, rivers,

⁶² Thomas D. Galloway and Riad G. Mahayani, "Planning Theory in Retrospect: The Process of Paradigm Change", *Journal of the American Institute of Planners* 43 (January 1977): 62-71.

⁶³ Poincare, 1905.

⁶⁴ R. S. Bolan, "The Practitioner as Theorist: The Phenomenology of the Professional Episode," *Journal of the American Planning Association* 46 (3), (July 1980): 261-274; pp. 261-264.

air, sea and even deserts were influenced in one way or another by some sort of pollution resulting from development. Some assess such pollution as mild, while others claim total devastation of the natural environment.

That is not the complete picture, since planners also have often come to the defense of nature, through the work of conservationists, park planners, open space preservationists, the Regional Planning Association of America, greenbelt planners, and modern environmental planners. Yet along the Economic-ecological spectrum, with Robert Moses, and Dave Foreman (of Earth First!) standing at either pole, the planner has no natural home, but can slide from one end of the spectrum to the other; moreover, the midpoint has no special claims to legitimacy or fairness.⁶⁵

Accordingly, the planner moves between playing the role of a joker in the pack and sometimes, regretfully, a clown in the circus. By following direct or indirect orders, the planner mediates between two perspectives of best; neither could be acceptable by the planning directors in any given situation. In this case, the planner faces two options: either to make a compromise that please the directors at the expense of the task at hand, or to be expelled and replaced with another more understanding professional, prepared to try and make the most of any situation. The planner should execute orders and directions while maintaining professional integrity and standards. Also, he should be more elaborate in expressing his point of view and attempt to convince others that his point of view can also include theirs if viewed from a different angle.

According to Harvey in 1985, most planners view themselves as the advocates of the poor in pursuit of achieving socio-economic equality. Conversely, planners' efforts recently are focused on planning concepts and projects such as downtown redevelopment, freeway planning, public-private partnership, economic development strategies, sustainability and environmental protection. Such concepts do not contribute clearly to social equity and advocacy.

At best, the planner has taken an ambivalent stance between the goals of economic growth and economic justice... In short, the planner must reconcile not two, but at least three conflicting interests: to "grow" the economy, distribute this growth fairly, and in the process not degrade the ecosystem. To classify contemporary battles over environmental racism, pollution producing jobs, growth control, etc., as simply clashes between economic growth and environmental protection misses the third issue, of social justice. The "jobs versus

⁶⁵ These issues of language and translation were raised by Ngugi wa Thiong'o and Stuart Hall in separate distinguished lectures at the Center for the Critical Analysis of Contemporary Cultures, Rutgers University (March 31 and April 15, 1993).

environment", dichotomy (e.g., the spotted owl versus Pacific Northwest timber jobs) crudely collapses under the "economy" banner the often differing interests of workers, corporations, community members, and the national public.⁶⁶

In the Utopian world, the planner should strive to achieve the conceptual balance between all three demands- economic growth; the fair distribution of such growth and the need to preserve the ecosystem. Such a tripartite of growth, equity, and preservation forms the main paradox in planning.

However, professional and fiscal constraints drastically limit the leeway of most planners. Serving the broader public interest by holistically harmonizing growth, preservation, and equality remains the ideal; the reality of practice restricts planners to serving the narrower interests of their clients, that is, authorities and bureaucracies (Marcuse 1976), despite efforts to work outside those limitations (Hoffman 1989). In the end, planners usually represent one particular goal-planning perhaps for increased property tax revenues, or more open space preservation, or better housing for the poor-while neglecting the other two. Where each planner stands in the triangle depicted defines such professional bias.⁶⁷

According to Higgins (1994), the planner's unique contribution appears at its best in seeking to resolve both environmental and equity issues at the same time. Community development planners and environmental planners should collaborate more to cross this obstacle and try to solve such complex objectives.

2.1.3 Review of Planning Theories

There is as little agreement within planning as to what constitutes planning theory, as there is within feminism as to what constitutes feminist theory... Planning theory can be delineated into three different emphases: planning practice, political economy, and metatheory (Sandercock and Forsythia 1990). At one level are those authors who theorize about planning practice, both its processes and outcomes. In general, theories of planning practice involve analysis of the procedures, actions, and behavior of planners. They may also include an analysis of the context or concrete situation in which planners are working.⁶⁸

⁶⁶ These issues of language and translation were raised by Ngugi wa Thiong'o and Stuart Hall in separate distinguished lectures at the Center for the Critical Analysis of Contemporary Cultures, Rutgers University (March 31 and April 15, 1993).

⁶⁷ *Ibid.* (March 31 and April 15, 1993).

⁶⁸ . Recent examples include Clavel (1986), Marris (1987), Forester (1989), Krumholz and Forester (1990), Sandercock (1990), Heskin (1991).

Theory plays an awkward role in an applied profession," Hoch reminds us. "Professionals can learn to act in useful and effective ways without knowing why their actions work."⁶⁹

The laying out of various spatial elements has different values and meanings. Controlling forces, such as economic, physical and social factors usually mitigate the impact of the physical environment on human's behavior. The nature of the human - environment relationship has been explained by different theorists and planning specialists. A group of theorists argue that environment is an independent variable which determines particular human behavior. Sociologists suggest that the city is a social product resulting from conflicting interests. Other Western theorists and planning specialists with more optimism would argue that cities represent the spatial concentration of people, consequently human environment is shaped as a result of economic activity.

This Utopian perspective characterized some of the early giants who influenced both the ideology of city planning and the actual forms taken by planned cities and communities: Ebenezer Howard, Frank Lloyd Wright, Le Corbusier, Lewis Mumford, and Clarence Stein.⁷⁰

This study focuses on strategic planning and development in relation to human social values, which may be considered as the main factors responsible for shaping our environment. Thus, the social reality approach can organize the conflicting concepts of planning and design rationale.

The core of planning theory is the planning process: how should and do people plan? This question applies to individuals, groups, firms, and governments. A planning process is responsible for someone's deliberate career decisions, a family's household budget or vacation itinerary, a club's roster of events, a corporation's marketing strategy or production schedule, a city's capital improvement program; a state water resources plan, and national policies in energy, environment, defense, and human services. **Planning theory explores the planning process and examines its components:** What are they? How do they interrelate? How are they affected by the context of planning efforts? How do they determine planning outcomes? All these affect the question of how planning should be done: planning prescriptions that are divorced from reality are utopian, and are likely to be impossible to carry out. At the same time, in translating descriptions of planning

⁶⁹ Forester, John, "What Planners Do: Power, Politics, and Persuasion," *Administrative Science Quarterly*. 41(4): 719-723. 1996 Dec. [References]

⁷⁰ M. Meyerson, "Utopian Traditions and the Planning of Cities," *Daedalus*, 90(1) (Winter 1961): 180-193. Reissman, *The Urban Process: Cities in Industrialized Societies*, (New York: Free Press, 1970) 39-68.

behavior into norms for planning activities, it is important to keep the distinction clear.⁷¹

It is quite clear from the above that planning consists of processes and outcomes that should be grounded in a real world. There should also be a clear distinction between real life planning and utopian planning that is usually impossible to implement. These ideas should be taken into consideration in the context of the Kingdom of Saudi Arabia, where one can expect that planning is a straightforward process due to the availability of virtually unlimited resources. Anything can be done! However, resources are a function of the goals, needs, and objectives of any society, then, there are no such thing as unlimited resources. The Saudi context also has various constraints that direct the planning process into certain directions, e.g. the political system, cultural background, etc. In such a case, one should talk about planning theory as being the abstract thought needed to minimize the conflict that could occur between what is right or should be done and what could be done and may be applicable.

The metatheory approach involves work that asks fundamental epistemological and methodological questions about planning. Its theoretical object is an abstract, general notion of planning as a rational human activity that involves the translation of knowledge into action. At this level, theorists are no longer necessarily talking specifically about urban or regional planning, but about planning as a generic activity and as a historical legacy of the Enlightenment.⁷²

John Friedmann's recent synthesis of planning theory, *planning in the Public Domain: from knowledge to Action*, is an example of planning theory's uncertainty about its knowledge base. Initially he defines his theoretical object--planning--as the linking of scientific and technical knowledge to action in the public domain. But in conclusion he turns away from purely technocratic planning and embraces subjective knowledge as the foundation of a radical planning approach--a stance more symptomatic of feminist critiques (Friedmann 1987, 413-5).⁷³

John Friedmann, in his effort to bridge the gap between planning theory and implementation, suggested the need to focus on the technical elements of both ends. This could in a way minimize the grounds of conflict. We should face the conflicts, any conflicts, by looking at the grounds where the different points of views could meet, not

⁷¹ Alexander, Ernest R. "APPROACHES TO PLANNING" *Introducing Current Planning Theories, Concepts, and Issues*. 1986 P.7

⁷² See Majone and Quade (1980), Faludi (1986), Friedmann (1987), Lindblom (1990). And Krieger (1989).

⁷³ Sandercock, Leonie. Forsyth, Ann., "A Gender Agenda: New Directions for Planning Theory." *Journal of the American Planning Association*. 58(1): 49-59. 1992 Winter. [References]

where they differ. This will eventually reduce the loss of energy and make us join efforts to achieve a common goal even if it is very minimal in the beginning.

2.1.4 Planning Historic Background

A review of western urbanization history indicates that the wider logic of the construction of western cities lies in the notions those human agents who decide the structure of space. This can be clearly observed in the appearance of the industrial city in the 19th century, which followed the rise of modern capitalism as the dominant form of economic relations... The massive concentration of population in the core area associated with congestion and other social ills eventually prompted a decentralization policy. Not only upper income residents began to move to peripheral areas, but also workers moved into dense residential districts around the industrial districts.⁷⁴

This observation and analysis by David Gordon illustrate the evolution of the planning theory during its early stages. It is very clear that the basis for this evolution orbits around the industrial and economic factors, thus overlooking the implications of the social and political factors.

After 1945, the post-War Reconstruction period, considerable change was achieved in many cities. Such drastic change and urban transformation led to opinion clashes and reconstruction philosophies conflicted. The traditional-minded people frequently opposed this radical change. This dramatic change was conceived by many scholars as a conflict of new and old modes. Others attacked it as elitist and reflected the desire to change the object and its social context.⁷⁵

The previous quotation reflects the current situation that is facing the Kingdom of Saudi Arabia. The founders are opposing rapid change because of their fear that this change may affect the country's heritage and its Islamic culture. On the other hand, the new generation is striving to place their country on the current wave of civilization. This conflict should be resolved in a serious and careful fashion. It is true that change may affect the heritage and culture in all dimensions, but applying a gradual and metamorphic change that is mildly felt at a certain point in time, the society should be

⁷⁴ David Gordon (1978), in his review of American cities with an industrialization process, pointed out that "it was advantageous for the capitalists to locate factories in the larger cities than the smaller ones, as to make more efficient use of production systems without the disapproval of an established pre-industrial community.

less resistant and more absorbent to such change.

2.1.5 Dilemmas and Approaches to Planning

Why do we plan? Is an important argument addressed by several planning theories, which of course raises a lot of issues regarding ethics and values. Ethics and values are inter-linked to the social context that we plan for. One may ask is it better to plan to intervene in an ongoing process in order to affect its future state in a desired direction or is it better not to plan and to leave well enough alone.

The rationale for planning also raises the question of legitimacy: professional planners, after all, do not plan for themselves, but for others. What entitles them to do this, and, by implication, to make or direct social choices? Other issues also arise when we address this question.⁷⁶

Who actually plans-inquires about public and client participation in the planning process? The question, "To who are the planners accountable for planning decisions?" has been asked, in another form, since the development of the administrative apparatus of the Roman empire: *Quis custodiet ipsos custodes?* - Who will guard the guardians?⁷⁷

The above explanations of planning history in capitalist society revealed that change has occurred in the interpretation of the planners and designer's tasks and priorities. This change has resulted fundamentally from the dichotomized views of planning, such as centralization or decentralization, long-term or short-term, comprehensive or incremental, procedural or substantive, positive or normative, quantitative or qualitative, and analytic or synthetic. Basically, this dialectical relationship and the contradicting views of planning emerged from the determination of urban specialists, theorists, architects, and decision-makers to justify their actions and visions. This in turn inspired them to resort to other scientific and speculative

⁷⁶ Urbanization history in the capitalist societies reveals that planning and design professions are dominated by the preferred positivistic views of the world and the pursuit of modernism. Such views are rooted in utilitarian fundamental principles. The utilitarians argue the overriding motivation of human beings is to fulfill their desires. According to this principle of utility. Governments conceived by Bentham (1748-1832) and Mill (1773-1836) must ensure the achievement of the greatest happiness for the greatest number. Scientific means and mathematical calculations can be utilized to achieve this purpose. Basically the utilitarian Concept, Laissez-faire provided justification for the liberal democratic state. Their objective was to ensure the necessary conditions for the individual to pursue his or her interest without the risk of the arbitrary monarchical powers. In this view the best plan, design, decision, etc.. is the most efficient one. Therefore urban spaces came to be treated almost exclusively according to the prevailing market condition.

⁷⁶ G. C. Hemmens, "New Directions in Planning Theory," *Journal of the American Planning Association*, 46(3), (July 1973): 155-169.

⁷⁷ Alexander, Ernest R. "APPROACHES TO PLANNING" *Introducing Current Planning Theories, Concepts, and Issues*. 1986 P.8.

philosophies on the nature of human beings⁷⁸ (Falud, 1973; Friedmann, 1987).

Goal finding is considered the most important task in the planning process similar to the target in a shooting game. Misleading goals will eventually lead to undesirable results. Many scholars and theorists within social science seem to be drawn by a common consensus and retreat within the traditional models and values. Efficiency, that was once considered a useful measure of accomplishment, is now being challenged by its implication for equity. Thus, the obvious suggestion is that planners and designers should begin in defining goals in such a way that satisfy both human needs and desires in their specific living environment.

Some believe that the appearance of the scientific thought in our modern life and its approach to tackle our everyday problems marks the displacement of religion in our daily practice and endanger our entire belief system. This idea has its roots back in the harsh reaction to what was going on in medieval Europe, where religion forbids the interference of science in human life believing it to be black magic. This is totally against basic Islamic thoughts and beliefs, as *Islam* deals with and appreciates knowledge and science and its role in our everyday living practices. The theory of modern science explains that "magic" by science takes two forms: first, the idea transferred for explanatory purposes, with indirect or limited application; second, various formulae are taken from one discipline to the other, in order to solve practical problems rather than to provide explanations.⁷⁹

Professional planners work in an institutional order of competitive and hierarchical relationships, which, despite their adversarial and instrumental qualities, require some cooperation. Many professional planners regularly try, in imaginative, incremental, and occasionally grand ways, to shift attention from the adversarial to the deliberative. Their persistence testifies to the effort they are making in our

⁷⁸In the philosophical school of Plato and Kant, they believe that the empirical world with its knowledge is incapable of any complete embodiment of perfect order in society, while the philosophical school of Aristotle and Hegel, view that empirical world has the possibility to grow into perfection (for more elaboration see Friedmann, 1979). Following the argument of Aristotle, the western societies believe that man is master over nature, with intelligence and scientific knowledge, man can overcome all obstacles.

⁷⁹ In 1979 Marios Camhis, . pointed out that "in medieval Europe, when astrology was a highly respected science, the divine order - from God down to angels and humans was "scientifically" explained by analogy with the celestial order of planets (Bernal 1969) ... Hobbes took Galileo's mechanistic explanation of the universe and transposed it to humanity ... with the development of biology as well as the exact science the organic view of society is favored more than the mechanistic one." With regard to the application of Newton's law of gravity to the analysis of urban systems, Marios added that "the gravitational pull exerted by two bodies has been interpreted as the amount of interaction between two areas, and the mass of the bodies has been measured in terms of size or attractiveness of the area (Lee, 1973, 58). These models have gradually developed to accommodate more variables. The main problem with these models is that they cannot involve change and that they assume that people will always behave in the same way."

competitive liberal society to keep alive the practical possibilities and the hope of responsible, free, and informed deliberation.⁸⁰

Several attempts have been made by planning theorists to the feasibility of constituting a planning model, which might reconcile this tension between “efficiency” and “equity”. For example, Kevin Lynch (1984), and Christopher Alexander (1988), endeavor to find a comprehensive theory, although both of them have their own idealized vision of planning and design. However, they both admit that they did not reach a comprehensive theory. In other words, they did not formulate a solution, which clearly identifies the action that might effectively narrow the gap between “the needs” and “the means.”

“Advocacy and Pluralism in Planning”, was published in the Journal of the American Institute of Planners in 1960’s, a time of change and turbulence in American society. Increasing numbers of people--many of them Black--were moving to large cities, where racial discrimination and residential segregation concentrated them in the central ghetto areas. These areas were often so blighted-by unemployment, inadequate education, poor health care, deteriorating infrastructure, and substandard housing-as to be “unfit for human habitation.” Some residents organized against these conditions, but others retreated from participation in the community.⁸¹

Another challenge came from Davidoff in demanding of planners if they can become advocates for what they believed to be proper values and actions. Besides their client’s vision of what the good society should look like. Davidoff urged planners to express their values, engage openly in the political process, and help groups to formulate their plans and develop their capacity. Davidoff viewed advocacy as a way of enabling all groups in society, and he pointed out that organizations representing low-income families and encouraging them to become part of the society and the decision making process as it is equally important.

The plan requires education of planners who will be able to engage as professional advocates in the contentious work of forming social policy,” he wrote. “Recognizing that ideological commitments will separate planners, there is a tremendous need to train professionals who are competent to express their social objectives.

Advocacy planning took various forms. For example, some advocacy planners worked with neighborhood residents in opposition to federal

⁸⁰ Forester, John., “What Planners Do: Power, Politics, and Persuasion.”, *Administrative Science Quarterly*. 41(4): 719-723. 1996 Dec. [References]

⁸¹ Checkoway, Barry. “Paul Davidoff and advocacy planning in retrospect.” *Journal of the American Planning Association*. 60(2): 139-143. 1994 Spring. [References]

programs which threatened decline, and with community organizations which went "from protest to program" to develop services of their own. Others formed advocacy planning programs and received funding for demonstration projects, such as the Architects Renewal Committee in Harlem, the Community Design Center of San Francisco, and Urban Planning Aid of Cambridge (Blecher 1971; Heskin 1980).⁸²

An environmental psychologist, Harold Proshansky (1974), believed that most architects, designers and planners possess a wealth of unrefined data and wild and unconventional ideas about people in relation to physical space and its organization which has not yet been recorded in any systematic fashion. As a matter of fact, many planning theoreticians support Proshansky criticism and acknowledge that there is no appropriate body of literature that link both the natural and the built environment in a single planning theory.⁸³

The downfall of planning theory and practice is attributed to the ramification between knowledge and actions, along with the critical issue of goal finding. Charles Hitch (1960) debated that, "we must learn to look at our objectives as critically and as professionally as we look at our models and other inputs." John Friedman (1987) stated that, "we are forced to conclude that mainstream planning is in crisis", because when action is divorced from knowledge, it becomes a "blind action". Thus, planners and designers have had to describe their work as a failure with little use. Rittel & Webber (1973), noted that, "we do not have a theory that tells us how to find that which might be considered a socially best state".

Building on this emphasis on an ethical stance, Martin Krieger (1988) pointed out that planning theory is in difficulty because it neglected the dogmatic approach. He stated that, "the logical problems of decision making are not restricted to the earthly world, but come up in the construction of the transcendental one". The previous overview of the general dilemmas of planning and design theories suggest that inadequate models now characterize planning and design theories.

In a comprehensive way, planning and urban design symbolize social attempts to order the human environment in order to achieve certain goals through a set of decisions. As Krieger (1988), Churchman (1962), Charles Hitch (1960), and Rittel & Webber (1973), recommended that, **planning and design should be concerned not**

⁸² Ibid. 60(2): 139-143. 1994 Spring. [References]

⁸³ See John Log, 1988 : Dear, 1986; Peter Hall, 1980, 1988.

just with the rational allocation of resources, but more importantly with the selection of goals and values toward which these resources should be directed., Since planning and design process deals with future premonitory, and in so doing the decision for planning action was taken, consequently destined should be viewed within a wide range of anticipation. As a result, the planning process requires more than observation, it requires intuition to relate past to future and to lay the foundation for future action.

2.2 Regional Planning

Regional plans are, in essence, the translation of the policy to be followed, should satisfy the regional strategic development plan. These regional plans are formulated and built according to the amount of information gathered by various means, such as regional surveys and regional national directions and policies stated by higher authorities. Regional plans do not deal with fine details, rather they present general outlines capable of being interpreted.

As town planning methods and techniques have developed, and development in all aspects of life has extended over wider areas, the study and preparation of master directive plans for larger regions has become a necessity in order to secure more effective results.

An initial plan for a region should consist of creative ideas for development opportunities that suggest an ideal framework, rather than a detailed working program for immediate execution. In Britain it has been found that such plans have been of great assistance as a guide to the development of proposals, in statutory development phase. Many problems of planning can be solved if approached from the regional level where local authorities and private owners cooperate together in developing large areas. One good example is that the improvement of the road network system in an area cannot be well planned except through the framework of a regional study.

2.2.1 Why Regional Planning?

The complexity of modern life has created a need for the study of trends at the local and the national level. In recent times a growing need exists for national and regional plans which guide the development process through programming and organize suitable systems of implementation. Information Technology (IT) is playing an important role in developing regional plans that deal with real life situations in a realistic manner.

The literature on developing countries' planning has grown considerably within the last two decades but with little attention focusing on Middle Eastern countries. Yet, unlike most of what is called the Third World or, more appropriately the developing nations, the Middle East has known urban life since the early days of civilization. Islamic civilization was and still is focused in urban areas, providing the need for political centralization that complemented the requirements of the main activities, which are trade and commerce. Consequently, this section examines some research and policy issues raised by the literature on planning in developing countries, particularly in the Middle East.

2.3 Planning in *Islam*

The teachings and interpretations of "*The Qurra'n*" (the Moslems Holy Book), and the Prophet's traditions "*Hadieth*", contain a precise and consistent body of laws called the "*Sharia'h*". It covers all domains of a Muslim's life: spiritual, religious, social, economic, political, and legal. It emphasizes the principles of social ethics (Leaman, 1985, 123): those related to the rights and duties of Muslims in their relationship to "*Allah*", and in their relationship to their fellow human beings, as well as principles of justice, equality, and brotherhood. Muslims believe that the divine law is ethically binding, absolute, and immutable, and that it calls for ideal social conditions that should enable human beings to live in prosperity, dignity, harmony, and freedom. The Islamic "*Shari'a*" and Islamic value systems influence the shaping of the built environment and the use of space in Islamic cities. These cities grew and developed under a normative system, which delineated distinctions between private and public spaces and established common rules of conduct. The constitution and the civic life of Islamic cities were organized solely by religious institutions because there was no place or need for any corporate or municipal organizations. Islamic law provided a comprehensive body of directives that regulated all facets of social life: all social responsibilities were religious in character, with no distinction between duty as a believer and duty as a citizen.

The purpose of the "*Sharia'h*" is to maintain the welfare and justice of Islamic society through the application of its laws.⁸⁴

Planning in an Islamic context can be defined as a normative activity, that applies the intricacies of the rule of law as understood in the prescribed principles

⁸⁴ Khadduri, Majid 1984 "Islamic Conception of Justice", P: 135. John Hopkins University Press, Baltimore.

governing the “permissible and prohibitables” in duties imposed by the “*Sharia’h*”. Welfare and justice as defined in the *Qurra’n* (the Muslims holy book) and interpreted in the “*Sharia’h*” is the fulfillment of the general guidelines of that body of laws. Planning and policy decisions and actions are considered legal as long as they comply with the “*Sharia’h*”.

2.3.1 Law in Islamic Context

2.3.1.1 The Sources of Law The “*Sharia’h*”

Law in Islamic culture is formulated from a different foundation than Western law. As the Holy *Qurra’n* which is the base of all Islamic Laws is not a human concept rather it is the Creator’s words to mankind (and who knows the habits of the humans better than their Creator). Alternatively, Western laws are the work of human collective thoughts and ideas, and their vision of human rights and their relationship with one another. Seaman expresses these differences saying:

The concept of law in Islamic jurisprudence... differs fundamentally from Western legal thought with respect to the nature and scope of the legal injunctions. “*Sharia’h*” is a religious law resting ultimately upon divine revelation, while Western law is the secular creation of government institutions. In addition, the “*Sharia’h*” is not simply a system of legal rules and administration, rather, it extends beyond the Western sphere of laws a positive and specific regulatory technique to structure the integrity of human conduct in the moral, ethical, religious, social, and legal spheres. Islamic law is not only concerned with civil and public legal problems in the modern sense, but is also concerned with religious duties such as ritual purity, prayer, fasting, alms giving, and pilgrimage. (Seaman, 1980, 417)

The laws of the “*Sharia’h*” address the welfare and justice norms as objectives realized by its proclamations. At the same time the laws prescribe principles for their achievement. Also, considerable weight is given to the existence of rights in common properties, and thus to the corresponding duties associated with these rights. These principles find expression in what is permitted and what is prohibited, stressing that what is acceptable is not in violation of any existing rights.

Moreover, planners and policy-makers are obliged to obey the laws of the “*Sharia’h*” in their attempt to fulfil social goals. In this regard the Islamic “*Sharia’h*” gives equal weight to both norms (efficiency and justice) yet restricts their achievement to the implementation of its rules.

Islamic “*Sharia’h*” should be observed when building a theory that is derived from Islamic principals. Islamic “*Sharia’h*” in general fulfills an ultimate goal of having

a good and just society by maintaining the welfare of Islamic society, and hence, to achieve economic efficiency and establish justice.

The degree of success of transferring planning theories and methods from one culture to another depends on the degree of compatibility of both cultures, with respect to the bases of their normative judgments. The implementation of imported planning techniques by planners in the Islamic World depends on their understanding of Islamic cultural norm versus the source culture trends.

2.4 Urbanization in Development

Primacy is one of the most common characteristics of urbanization in developing countries. It could be interpreted as the concentration of population in a few cities. Urbanization is a direct result of a high natural rate of population growth coupled with an uncontrolled cross regional and inner migration to the largest cities. Family ties being a strong cultural habit also play an important role in accumulation of the population in one specific location. Although the distribution of cities in developed countries has been well documented, primacy in developing countries and its relationship to economic and social development has not been definitively studied. El-Shakhs (1972) and Friedmann (1966) claim that primacy is associated with the very early stages of economic development. El-Shakhs' study shows that the United States and Britain reached a primacy phase by the 1850s, which disappeared as they developed further. Similarly, Friedmann proposes a pattern of minimal primacy in the early stages of development, high primacy as a country approaches industrialization, and diminishing primacy in the beginning stages of industrialization. But Chetwynd's study (1976) of 40 developing countries does not confirm the Friedmann model. Chetwynd developed a longitudinal approach using 1960 and 1970 as benchmark years since this decade was associated with accelerated economic growth in LCDs. During that period he observed an increase in primacy, an implied contradiction of Friedmann's third hypothesis.

While well known as a practitioner of planning and architecture, and sometimes ambivalently remembered as the father of the shopping center, Victor David Gruen (1903-1980) also contributed significantly to the theory of good urban form. He argued that a world system of medium-sized, dense, urbane, cellular metropolises would improve considerably both human happiness and global ecological sustainability. Gruen's prototype is first placed in the contemporary literature on global sustainability, and his life and work as a practitioner and theorist are outlined. After detailing his metropolitan

ideal, its value in planning thought and practice is commented upon. Gruen's position, though seriously incomplete, is an important middle-left synthesis in planning theory. As an integrated transit-auto concept, his prototype is conceptually useful for automobile cities planning to add more mass transit, and for mass transit cities planning to add more freeways.

In 1973, at age sixty-nine, Victor Gruen published the last chapter of his literary crusade against low-density automobile sub-urbanization. He argued that it represented "land wastage, the destruction of natural assets, compartmentalization and ghettoism, economic and ethnic segregation, and enforced mobility" (1973a, 202). Without using the now current standard of "sustainability," he said the same thing: The consequences of worldwide auto sprawl would cripple global Ecosystems and could bring about the "physical and psychological starvation of urbanized man" (1973a, 202). Recent studies of ex-urbanization (Nelson and Dueker 1990), super suburbs (Dillon, Weiss, and Hait 1989), edge cities (Garreau 1991), high urban gasoline consumption (Newman and Kenworthy 1989; Black et al. 1990), and global warming (Titus 1990), suggest that Gruen's concerns remain unresolved. Many thoughtful observers believe that creating a globally sustainable society, that is, "one that satisfies its needs without jeopardizing the prospects of future generations" (Worldwatch Institute 1990), should head the agenda for contemporary planners (Lim 1990).⁸⁵

Some researchers have associated urbanization with social and economic development. Lerner (1964) argues that increasing urbanization tends to raise literacy, which leads to media exposure, which in turn increases peoples' participation in economic and political life. But many other researchers have argued that the very rapid rates of urbanization in the Arab countries have outpaced the rates of industrialization and economic production (Eskist, 1983). Issawai (1969), in his study of the relationship between urbanization and economic development, found that the rates and pattern of urbanization in the Arab countries are different from those of Western Nations in that they are not conducive to economic development. There is an over urbanization and the concentration of the urban population and services in a few cities. Similarly, Ibrahim (1975) and A. Galal (1972) claim that "over-urbanization" in Arab countries hinders modernization and economic development. They argue that in Western countries industrialization in the nineteenth century proceeded more rapidly than urbanization, but in Arab countries the opposite has been true. Urbanization has not led to the expected

⁸⁵ Hill, David R., "Sustainability, Victor Gruen, and the Cellular Metropolis.", *Journal of the American Planning Association*. 58(3): 312-326. 1992 Summer. [Diagrams, References]

modernization and economic development. Rapid increase in urban population have put considerable pressure on housing, transportation, water supplies, health services, and education, resulting in extensive urban poverty and high rates of unemployment (Roberts, 1978; Linn, 1982). Responding to such trends, policy makers in many developing countries are convinced that city size should be contained and controlled.

The political economy approach examines the nature and meaning of urban planning in capitalist society. This approach might encompass speculations about the relationships among capitalism, democracy, and reform. Generally this approach is disinterested in planning practice. Rather, this work begins with a general theory--most commonly some version of Marxism--and uses case studies from the planning arena to illustrate the prettiness theory.⁸⁶

2.5 The Sustainability Debate and Good Urban and Regional Form

Human happiness and ecological systems should be developed according to certain limits and balances. This issue raises the continuing question of how the accelerated expansions of consumable industrialization can effect the ecosystem. This also questions the case of the sustainability of the human relationship to nature. (Meadows 1972; Mumford 1961; and Worldwatch Institute 1990). McHarg (1971), expressed that human happiness depends upon a balance between human nature's needs for community and spiritual meaning, and its needs for rationality, individuality, material support, and material accumulation. Ecological stability likewise depends upon limits and balances, with these being defined within a delicate web of interdependent living and non-living natural systems.

Taking these assumptions into consideration, Mumford argues that the operation of the modern world stimulates expanding obsessions and compulsions in humanity, which push it beyond these limits.

He felt that popular democracy's ability to deal with environmental quality depended on the electorate's grasp of the complex economics, ethics, and aesthetics of urban and regional space. Until the voters could debate these issues adequately, little progress could be made. He tried to make his spatial diagrams simple, clear, and explicit, so that a broad range of busy people could get the idea quickly in preparation for public discussion.⁸⁷

⁸⁶ See Castells (1977); Tabb and Sawers (1978); Harvey (1978a, 1978b); Fainstein and Fainstein (1982); Paris (1983); Fogelson (1986); and Soja (1989).

⁸⁷ Hill, David R., "Sustainability, Victor Gruen, and the Cellular Metropolis," *Journal of the American Planning Association*, 58(3): 312-326. 1992 Summer. [Diagrams, References]

In theory, it allows us not only to calculate whether we have attained sustainability, but also to determine how far away we are. (Actual measurement, though, is another, harder task.) Clearly, it can be argued that, though initially flawed and vague, the concept can be transformed and refined to be of use to planners. History, Equity, and Sustainable Development One obstacle to an accurate, working definition of sustainability may well be the historical perspective that sees the practice as pre-existing, either in our past or as a Platonic concept. I believe instead that our sustainable future does not yet exist, either in reality or even in strategy.⁸⁸

The path towards Sustainable Development There is two final aspects of the fuzzy definition of sustainability: its path and its outcome. The basic premise of sustainable development is one that, like the long-term goal of a balanced U.S. budget, is hard not to like.⁸⁹

Evaluating the real world with all its components needs a modified model that achieves the set of goals and objectives for a specific setting.

2.6 Planning Models for the Real World

The comprehensive rational planning model, which is considered the original planning model, is characterized as being more conceptual than real.

Faludi, 1979 added that, due to its perception as a broad and theoretical model, the comprehensive rational approach has received tremendous criticism on both incrementalist and substantive grounds. Incrementalist criticism of the model centers on perceived shortcomings in command, control, and communications-implementation issues. Substantive criticism focuses on the models self-imposed value-neutral, and objective positioning.⁹⁰

Important qualitative and intangible considerations are usually absent from theoretical models and approaches. Successful corporate planning requires a balance of art and science. The corporate planner then should implement the following guidelines: 1. Give adequate attention to all dimensions of strategic planning, i.e., rational, political, and educational. 2. Balance specialized and fragmented planning inputs with overall qualitative analysis and judgments. 3. Integrate strategic planning with complementary systems, and monitor and control the execution of the plan. 4. Maintain and

⁸⁸ These issues of language and translation were raised by Ngugi wa Thiong'o and Stuart Hall in separate distinguished lectures at the Center for the Critical Analysis of Contemporary Cultures, Rutgers University (March 31 and April 15, 1993).

⁸⁹ *Ibid* (March 31 and April 15, 1993).

⁹⁰ Faludi, Andreas, *Planning Theory*. Oxford, England : Pergamon Press Ltd., 1979, 172-173.

upgrade the strategic planning system, which includes balancing the plan's internal and external dimensions.⁹¹

2.7 Criticism and Approaches

The traditional rational planning model has received many attacks for its lack of consideration of implementation issues. Friedman and Hudson identified the handling of uncertainty as one area in which the synoptic model has difficulties.⁹²

Accordingly, rational planning is perceived as a special blend of hope and expectation, although there are no two persons likely to have the same basis of judgment regarding the future. Despite the claim that statisticians have succeeded in accommodating subjectivity in decision models, this does not entirely eliminate the irrational bias inherent in the decision making and analysis process.

Consequently most decision variables can be seen as essentially unstable, subject to changes in tastes and attitudes. This leaves rational planners in a somewhat precarious position when a "best-fit" solution developed at one time becomes less desirable than other alternatives at a future time—contrary to the axioms of rationality that require rational planners to objectively select the single best choice or solution.⁹³

Another major incremental problem is related to coordination. Decision theorists assume that once a decision is taken, it should be implemented with minimal of abrasion. But empirical studies of organizational behavior have concluded that coordination not only may be difficult to achieve but may, in some cases, be altogether impossible.

In his study of bureaucracy, Anthony Downs (1967) formulated three basic principles of organizational control:

The first is the law of Imperfect Control: no one can fully control the behavior of a large organization.

The second is the Law of Diminishing Control: the larger any organization becomes, the weaker the control over its action exercised by those at top.

⁹¹ Rodgers, William N. Babcock, Richard D. Efendioglu, Alev M., "The Art of Strategic Planning," *Advanced Management Journal*, 53(4): 26-31. 1988 Autumn. [Diagrams, References]

⁹² Friedmann, John and Hudson, B., "Knowledge and Action : A Guide to Planning Theory." *Journal of American Planning Association*, vol. No. 40, 1974, pp. 958-982.

⁹³ Hudson, B., "Comparison of Current Planning Theories : Counterparts and Contradictions. " *Journal of American Planning Association*, vol. 45, no. 4, 1979, pp. 387-398.

The third is the law of Decreasing Organization: the larger any organization becomes, the weaker the coordination of its actions.⁹⁴

Incremental planners contend that the conceptual nature of synoptic planning renders it unrealistic as a practical technique for conducting planning. It is argued that the synoptic model has a limited practicality due to:

- 1) Insensitivity to limitations on information and decision-making abilities,
- 2) Dependence on reductionism problem solving techniques, and
- 3) Emphasis on the centralized bureaucracy as a result to conduct planning functions, are all presented as arguments to support the contention of the limited practicality of the synoptic model.

On the other hand, the incremental approach stresses that: "intuition, experience, rules of thumb [sic], various techniques (rarely sophisticated) known to individual planners, and an endless series of consultations."⁹⁵ On reflection, Hudson (1979) contends that incremental planning is more typical of the type of planning that takes place all around the world on daily basis. Planning in this sense is less organized and somewhat more informal, with more individuals and groups contributing independently instead of a large organized effort under strict centralized authority.⁹⁶

However, disjointed incremental planning was found to be handicapped by its lack of comprehensiveness. Economies of scale and the benefits of synergistic programs of development were lost. In response to this, a mixed-scanning approach was developed.⁹⁷

The mixed-scanning model was the compromise approach synthesizing traditional comprehensive rationalism with disjointed incrementalism. Mixed scanning seeks to take advantage of the synoptic approach's comprehensiveness and the incrementalist approach's thoroughness.⁹⁸

Transactive planning developed for similar reasons as incremental planning but with a different focus. While incremental planning adheres to the more traditional concepts of economic incentive and gain, transactive models pursue a different objective. The transactive approach devalues statistical and mathematical modeling (objective approach) in favor of the subjective approach. Practitioners prefer

⁹⁴ Downs, Anthony, "Emerging Views of Planning." *Journal of American Institute of Planning*, vol. 33, no. 4, July, 1967, p.234.

⁹⁵ Horvat, B., et al. "Self-Governing Socialism." vol. 2 White Plains, New York: Institutional Arts and Sciences Press, 1972, p.200.

⁹⁶ Hudson, B., "Comparison of Current Planning Theories : Counterparts and Contradictions." *Journal of American Planning Association*, vol. 45, no. 4, 1979, pp. 387-398.

⁹⁷ Rondinelli, Dennis, *Development Projects as Policy Experiments*. London : Methuen & Co. Ltd., 1983, pp. 25-26.

⁹⁸ Camhis, M., *Planning Theory and Philosophy*. New York : Tavistock Publications, 1979, p. 56.

face-to-face contact with affected groups stressing quality-of-life issues rather than economic issues. Transactive planners see planning as a natural part of the learning/evolving process. Hence planners stress generalized development versus specific goal achievement, decentralized versus centralized authority, grass roots versus administration initiation of development and goal setting.⁹⁹

Klosterman (1976) found that transactive planning is also a viable solution to the paralysis caused by the dysfunction of pluralist decision making.¹⁰⁰

2.8 Substantive Critique

The area of substantive criticism is where the comprehensive rational model may have experienced its most important and fundamental refutation. The problem truly lies with the heterogeneous nature of knowledge and value sets in a democratic-pluralistic society.¹⁰¹

Planners often prepare plans less as a source of vision than as a rhetorical weapon they can deploy in adversarial development battles.¹⁰²

The problem is not a matter of uncertainty about the way things are, but the certainty that the prejudices of the current paradigm will bias and hence misrepresent the nature of the situation in the future. In addition to the problem of knowledge, a second major obstacle confronting theories of rational decision-making, is what economists call a community welfare function that is a calculation of tradeoffs among a community's preferences for different objectives. Only six years after Simon's book (1945) on administrative decision processes, Kenneth Arrow (1951) provided proof that, within the constraints of formal democracy, a community welfare function could not be logically derived from premises that conform to the formalized rules of political democracy.¹⁰³

The end ... of the practical disciplines or praxis is not theoretical knowledge... [It] is to change our forms of activity and bring them into closer approximation to the full ideal of free human activity.¹⁰⁴

⁹⁹ Friedman, John, Retracing America. Garden City, New York : Anchor Press/Doubleday, 1973, pp. 4-6.

¹⁰⁰ Klosterman, R., "Toward a Normative Theory of Planning." Ph.D. Dissertation, Cornell University, Urban and Regional Planning, 1976, p. 69.

¹⁰¹ Mandlebaum, Seymour, "A Complete General Theory of Planning is Impossible." Policy Sciences 11, 1979, pp. 68-70.

¹⁰² Forester, John., "What Planners Do: Power, Politics, and Persuasion.", Administrative Science Quarterly. 41(4): 719-723. 1996 Dec. [References]

¹⁰³ Arrow, K., Social Choice and Individual Values. New York : John, Wiley and Sons, 1951.

¹⁰⁴ Aristotle, quoted in R. Bernstein, Praxis and Action (Philadelphia: University of Pennsylvania Press, 1971) 316.

The advocacy planners will argue that no common social interest in sustainable development exists, and that bureaucratic planners will invariably create a sustainable development scheme that neglects the interests both of the poor and of nature.¹⁰⁵

Advocacy planning addresses the pluralistic concerns as well as the shortcomings of the incremental and transactive models.¹⁰⁶

From a legal point of view, advocacy planning protects minority interests. Advocacy planners' claim that, while transitive, incremental, and even synoptic planning may have the best of intentions with regards to planning for a majority population, the minority interests cannot be merely brushed aside or ignored altogether. Both aspects form the society profile that shapes its personality. This planning insures that minority interests at all phases in planning are represented and addressed. The process also insures in some ways, the satisfaction of the minority interests. Advocacy planning overcomes the shortcomings of systems based on subjective, group dominated manipulation.

Radical planning is an ambiguous tradition, with two mainstreams of thinking that occasionally flow together. One version is associated with spontaneous activism, guided by an idealistic but pragmatic vision of self-reliance and mutual aid. Like transitive planning, it stresses the importance of quality-of-life factors. More than other planning approaches, however, its point of departure consists of specific substantive ideas about collective actions that can achieve concrete results in the immediate future. It draws on varying sources of inspiration economics and the ecological ethic, social architecture, humanistic philosophy, and historical precedents. In this sense, radical planning is the empowerment of planners as active agents of change with the job of facilitating social experimentation by the people through education and social advocacy.¹⁰⁷

The second stream of radical thought takes a more critical and holistic look at large-scale social processes: the effect of class structures and economic relationships; the control exercised by culture and media; the historical dynamics of social movements, confrontations, alliances, and struggles. The focus is less on ad hoc problem solving through resurrected community, and more on the theory of the state, which is seen to permeate the character of social and economic life at all levels,

¹⁰⁵ These issues of language and translation were raised by Ngugi wa Thiong'o and Stuart Hall in separate distinguished lectures at the Center for the Critical Analysis of Contemporary Cultures, Rutgers University (March 31 and April 15, 1993).

¹⁰⁶ Davidoff, Paul, "Advocacy and Pluralism in Planning." *Journal of American Institute of Planning*, vol. 33, no. 4, July, 1967, p.239.

- Bolan, R., "Emerging Views of Planning." *Journal of American Institute of Planning*, vol. 323, no. 4, July, 1967, p. 239.

¹⁰⁷ Grabow, S. and Heskins, A., "Foundations for a Radical Concept of Planning." *Journal of American Institute of Planning*, vol. 39, no. 2, March, 1973, p.112.

and in turn determines the structure and evolution of social problems.¹⁰⁸

2.9 Planning, the Other Definition

If you're not willing to make arguments and stick to them in order to pursue difficult agendas, then don't get involved in planning. We don't need any hangnails on the fickle finger of fate.¹⁰⁹

Several and repeated attacks on the rational planning model have led some to consider abandoning the theory altogether in favor of a less rational, more pragmatic model. Although the Comprehensive Planning Model has proved to have many shortcomings in implementation, it is still applicable in many situations. Many of the other models still maintain a degree of rationalism in their approach. This is philosophically justifiable when one considers that planning occurs for rational reasons based on needs and desired objectives and goals to be achieved. As far as incrementalism is concerned, this relegates the rational theory question to be one of appropriate implementation. This concept considers the limitations and constraints in resources of any region in relation to its desires, in order to ensure the proper implementation of any conceived plan. Such limitations are translated into forms that include the planning organization for gathering data, processing information, and acting on that information in a directed and controlled manner. Yet this does not address the much more serious substantive issues. Rational planning was originally intended to be a 'value-neutral' endeavor, which was established as a legitimate scientific field with a systematic method that may ensure strict objectivity.

Development planning has been masquerading as an apolitical, technical, and rational instrument for serving the public or collective interest. In fact, planning has been an inherently political activity.¹¹⁰

In fact, in a pluralistic-democratic society, the nebulous nature of societal norms, values and goals makes it inherently difficult to arbitrarily define universal values and societal goals to plan by. But planning for the future requires the establishment or projection of goals; thus requiring a value or normative based rational model. In fact, normative models (based on various incremental approaches) are steadily gaining in favor amongst planners. Faludi (1973) cites

¹⁰⁸ Ibid.

¹⁰⁹ Forster, John., "What Planners Do: Power, Politics, and Persuasion.", *Administrative Science Quarterly*. 41(4): 719-723. 1996 Dec. [References]

¹¹⁰ Webber, M., "The Myth of Rationality : Development Planning Reconsidered." *Environment and Planning B : Planning and Design*, vol. 10, 1983, p.96.

Friedmann (1966) elucidating that "the goals of normative planning are those of the system itself."¹¹¹

Here in one pithy line we see the interweaving of substance ("good arguments"), connections ("their friends"), distributive politics ("their interests"), and political uncertainty ("feared lawsuits"), too.

Analysts have tended to over emphasize the scope of adversarial relationships in planners' work and to underestimate the social significance of their technical activity, Hoch argues. The analysts have fostered commitments to distinctions that not only miss the complexity of planners' activity, but also. Blind practitioners to the importance and value of their actions.... Planners are not only gatekeepers, but path breakers; not simply visionaries, but counselors; not just power brokers, but public servants; not experts, but teachers.¹¹²

2.10 Decentralization Philosophy

Decentralization, is viewed by many planning theorists as the only concept to achieve social, economic and political development. Decentralization, according to such theory, may deal with large as well as small states and endeavors to grant local governments some degree of autonomy. The justification for decentralization could merely be to allow practical administration, or in other cases, as a strategy for coping with political instability and demands for regional autonomy.

Decentralization is a term that has been expanded to cover a wide range of life aspects. However, one should be more specific as well as sensitive when dealing with the concept of 'decentralization'. Decentralization means different things to different people in different countries. In their analyses, Mathur, Rondinelli, Nellis and Harris show that political and administrative leaders in different countries had their own particular reasons for promoting planning and administrative decentralization. Fantini and Gittel also found that "decentralization" has been interpreted differently. Some view decentralization simply as an administrative device that shifts administration from the national to state or city governments and from central city administrative offices to the field. Others insist that decentralization plans embody a design for meaningfully yielding of up power from central agencies to local communities.

The process of decentralization denotes the transfer of authority, legislative,

¹¹¹ Faludi, A., *Planning Theory*. Oxford, England : Pergamon Press Ltd., pp. 172. 1973. Citing Friedmann, John, "Planning as a Vocation." *Plan Canada*, vol. 13, 1966/7, pp. 99-124. Vol. 1, no. 7, pp. 8-26.

¹¹² Forester, John., "What Planners Do: Power, Politics, and Persuasion.", *Administrative Science Quarterly*. 41(4): 719-723. 1996 Dec. [References]

judicial and/or administrative, from a higher level of government to a lower one. It is the converse of centralization that should not be confused with deconcentration, a term generally used to denote the delegation of a subordinate officer to act in the name of the superior without a transfer of authority to him.

In 1931, Leonard D. White gave a specific definition to decentralization. He viewed decentralization to involve the process of conferring authority legislative, executive, and judicial upon lower branches of government. Fesler notes the different use of the term, “decentralization”, in France, England and United States as follows:

The French use the term “decentralization”, for the transfer of powers from a central government to a specialized authority with a distinct legal personality (for example, the increase of the degree of autonomy of a local government or of a public enterprise corporation).

In both England and the United States "decentralization" is a generic term similar to "administrative", "political" and "governmental", which serves to specify a limited usage. Whereas, "federalism," local self-government, and "intergovernmental relations" are alternative terms for specific purposes. The United Nations Division for Public Administration, considered decentralization as the vesting of authority by the central government. To it, the term refers to the transfer of authority away from the national capital either by deconcentration (i.e. delegation) to field offices, or by devolution to local authorities and other local bodies.

A broader and more operational definition of decentralization was stated by Diana Conyers as being, ‘the transfer of authority to plan, make decisions, and manage public functions from a higher level of government to any individual organization or agency at a lower level’.

However, from the above definitions, it seems clear that the concept of “decentralization” has been to some extent confusing and undefined. No country is fully centralized or decentralized. Accordingly, if we assume that the centralization is at one end of a spectrum and decentralization is at the other, one step or two from centralization in the direction of decentralization should not be considered as full decentralization, but rather as a step toward decentralization. What is important is the balance between centralization and decentralization, that depends on each country's circumstances i.e. cultural, economic, authoritative, political system, etc. and its reasons behind initiating decentralization policies. Decentralization, by itself is not a solution to a problem but rather a process by which certain objectives can be achieved.

2.11 Conclusion

Since Planning is involved with the property rights regime in the name of justice, this makes it an activity that transcends scientific rationality and utilitarian ethics. Accordingly, property rights and their complementary aspects become essential normative components of the decision making process. Because of the emphasis of planning process on rationality, its traditions take the notion of globalization. Such claim is erroneous because of the following: 1) rationality is particular to cultures and social systems where human behavior is involved; and 2) Although property rights are the center of almost all planning activities, their relationship to justice varies widely from one context to another.

As planners, we should always believe in ourselves as human saviors. We shape human life from top to bottom. Accordingly, the 1945 post-war era was a good media for planners to demonstrate their ability and good will to join and guide the reconstruction effort. Social as well as economic reformation had to take a significant value in the objectives. After 50 years we have to run a self-criticism process. Several problems that were translated into dilemmas are reflected in the current planning confusion.

As Friedmann points out, although informal and formal planning have engaged mankind from time immemorial, it is a relatively young academic discipline. As such, planning theory has been subject to much analysis, revision, and reconsideration... Theorists and advocates of various schools of planning may criticize the synoptic or comprehensive rational model of planning (employed by the Kingdom of Saudi Arabia) for its methodology, circumscribed logic or a particular past application.¹¹³

Taking into account huge budget deficits accumulated by even the richest countries, it is no longer feasible just to buy a solution to the problems of the growing urban crisis. More creative approaches are wanted. One of them involves time: using the clock as a new resource. New social architecture of time could address a variety of ills... This means treating time as an economic and social resource - promoting 24-hour economies with successive work shifts.¹¹⁴

The time factor is a radical one, which will not work in a society like KSA where the daily life cycle revolves around Islamic prayer times (5 times a day). This concept may only work well in the holy cities of *Mecca* and *Medina*, where people

¹¹³ Hudson, B., "Comparison of Current Planning Theories : Counterparts and Contradictions. " *Journal of the American Planning Association*, vol. 45, no. 4, 1979, p. 389.

spend most of their time in practicing rituals during few days while visiting the holiest of the holy cities for *Islam* 'no time should be wasted on side issues'. Commercial and service activities have to cope with around the clock schedule, 365 days a year.

¹¹⁴ Hager, L Michael., "The nonstop city— And other heretical notions about time.", *Futurist* 31(3): 39-42. 1997 May/Jun.

CHAPTER THREE

REGIONAL AND LOCAL DATA SURVEY METHODOLOGY, DATA COLLECTION, COMPILATION AND ANALYSIS

3.1 Introduction

This chapter examines the case study in depth, including the region's importance and its characteristics. An assessment of the region's physical, social and economical components is presented. Also, this chapter includes an overview of the inter-relationship between each and every zone in the region, as well as an analysis of the part of the region under study- the *Al Khaffi* Governorate (Figure 1-4).

Both statistical and visual information that addresses the social, economic, and urban factors in the *Al Khaffi* Governorate will be drawn on. Moreover, the chapter includes a global outlook on the kingdom with a focus on the importance of its Eastern Region.

The chapter describes the proposed scope and methodology for choosing the land use surveys for *Al Khaffi* region as representing the Eastern Region of Saudi Arabia. It also summarizes the method used for carrying out the survey of natural resources.

3.2 Regional Plan Level

For the sake of recording the broad distribution of existing land use and conditions all over the Eastern Region as a basic data of developing the Strategic Development Plan, *Al Khaffi* region is selected to present the Eastern Region settlements for the following reasons:

- It is a medium size city and lies in between *Dammam* as a large city and other small towns and settlements such as *Al Jubail*.
- Its development paralleled the growing economy of the country, same is the case in other areas.
- It faces the same problems of other settlements, such as low development rate, insufficient infrastructure, inadequate facilities, such as education,

health, recreation, and a high demand for housing, etc...

- Although it is not a big city, it has a heavy traffic load passing through from and to Kuwait, which eventually addresses issues of road maintenance for example.
- It is a rich and resourceful city with a diverse economic potential that deserves special attention and comprehensive proposals for development.

3.3 Strategic Directive Plan Level

Recording existing land uses of the various settlements as well as the building condition data for the region under study (namely *Al Khaffi* region) is utilized as an input for the preparation of the Strategic Directive Plan for *Al Khaffi* urban area.

A full survey of *Al Khaffi* region will be carried out in the following steps:

- ◆ Land Use Survey for *Al Khaffi* Region Settlements in general.
- ◆ Urban Land & Building Use Classification consisting of the following:

A three tier coding system for land classification is used as follows:

1. At the lowest tier, there are 72 classifications, carrying a wide range of building uses in the Eastern Region Settlements.
 2. At the middle tier, there are 24 classifications. This map out the uses in the lower tier in one group.
 3. At the top tier, the land uses can be grouped into major headings. (Table 3-1).
- ◆ The Survey Methodology will explain the following procedures:
 1. Scale of the Random Sample Surveys.
 2. Delineation of Random Sample Survey Zones.
 3. Field Listing.
 4. Checking by the Researcher.
 5. Output and Results.
 6. Survey Team.
 7. Time schedule.
 8. Unmapped Settlements.
 - ◆ The Survey Context will consist of the following:
 1. Natural Resources Survey.
 2. Climatic Data.
 3. Soil and Land forms.
 4. Natural Vegetation (Grazing).

5. Water Resources - Surface Water and Ground Water.
 6. Economically Exploitable Minerals.
 7. Agriculture and Ecology.
- ◆ *Al Khaffi* Regional Land Use will discuss the data presentation method.
 - ◆ The Survey Analysis will tackle the following issues:
 1. Building and Land Survey.
 2. Road and Network Survey.

3.4 Land Use Survey for the *Al Khaffi* Region Settlements

The Urban Land Use Survey covers the built up areas of the *Al Khaffi* Region Settlements. It provides the basis for a general presentation and analysis of land uses and also, includes a General Settlements function in the region, and their general role in the region.

In devising the methodology for the *Al Khaffi* Region urban land use survey a number of pretests were conducted. The purpose behind these pretests was to determine a suitable land use classification, which relates concisely to the city's existing urban uses and secondly, to ensure that the proposed surveys could be carried out in an organized and accurate way.

3.5 Urban Land & Building Use Classification

In order to devise the classification, a random sample survey test was carried out in *Al Khaffi* City. The proposed land & building use classification is illustrated in Table 3.1. The system has been designed to reflect the land & building uses found in *Al Khaffi* City by the Municipality. It is also set out in sufficient detail to ensure that the diverse mix and range of uses in the region under study can be adequately recorded. The coding system, as shown in Table 3.1, has 3 tiers of classifying land use.

First, at the lowest tier there are 72 classifications, which covers a wide range of building uses in the Eastern Region Settlements. This detailed level allows to underline the distinctions between uses, of different locational requirements, such as offices and retail units or play grounds and sports clubs. It also distinguishes between the various types of government and institutional uses and provides a useful breakdown for a more detailed analysis of data.

Second, at the middle tier there are 24 classifications. These group together the uses in the lower tier in an appropriate way that allows for mapping the survey information. Any greater number of classifications would complicate the mapping in

terms of reading and interpreting.

Third, at the top tier, the land uses can be grouped into the following headings residential, commercial, industrial, transport, utilities, non-building uses, institutional, cultural, recreational, health services, educational services, religious and committed land. These major headings are used to summarize the land use survey data. (Table 3-1).

Table 3-1: Land Use Classification System

MAJOR USE	CODING	USE CATEGORY
1) RESIDENTIAL	100	
Dwelling	101	Apartments
	102	Low Cost/Popular
	103	traditional house
	104	Villa
	105	Palace
	106	Temporary/squatter housing
Communal Lodging	111	Rest -House
	112	Work -Camp
2) COMMERCIAL	200	
Whole sale	201	Wholesale
Retail	211	General Retail
	212	Petrol Filling Station
Offices	221	General -and -Private offices and Financial Services
Services	231	Personal and other' Services: e.g. laundry, photo printers, barbers, tailors and restaurants.
	232	Hotels
	233	Workshops (outside industrial areas. e.g. carpenters, tire repair).
	234	Car sale & showrooms
	235	Commercial & residential
3) INDUSTRIAL AND WAREHOUSING	300	
Light Industry	301	Light manufacturing and Fabrication
	302	Workshops
Heavy Industry	311	Chemicals and Plastics
	312	Other heavy industry
Oil and Gas	321	Oil and Gas Refinery
Extractive industry	331	Oil Fields
	332	Mining and Quarrying
Warehousing	344	Warehousing and Storage (including contractor's yards)

MAJOR USE	CODING	USE CATEGORY
4) TRANSPORT	400	
Terminals	401	Bus Terminals
	402	Taxi Terminal-s
	403	Airport
	404	Sea Port
5) UTILITIES	500	
Utilities	501	Electric Power Station
	502	Desalination Plant
	503	Sewage Disposal
	504	Solid Waste
	505	Telecom Facility
	506	Other Utility
6) NON-BUILDING - USES	600	
Cemetery	601	Cemetery
Agriculture/Farms	611	Small holding
	612	Farm Estate
Open	621	Wadi
	622	Vacant Land
	623	Grazing Land
7) INSTITUTIONAL	700	
Government Administra- tion and Services	701	Government buildings Police, Civil Defense, Coastguard Post office and other
	702	TV and Radio
	703	Other Government use
8) CULTURAL	710	
	711	Library
	712	historic building or site
	713	Community centers and other Social/cultural
	714	Private Associations and Societies
	715	Other cultural and entertainment

MAJOR USE	CODING	USE CATEGORY
9) RECREATIONAL	720	
	721	Fairground
	722	Sports activities
	723	Playground - Park
	724	Ornamental park
	725	Social club
10) HEALTH SERVICES	730	
	731	Public Hospital
	732	Private Hospital
	733	Health Center
	734	Clinic
11) EDUCATIONAL SERVICES	740	
	741	Kindergarten or Nursery
	742	Government Primary (Girls or Boys)
	743	Government Intermediate (Girls or Boys)
	744	Government Secondary (Girls or Boys)
	745	Private Schools (by-type)
	746	Education for handicapped, welfare clinics etc.
	747	Higher Education
12) RELIGIOUS	750	
	751	Eid-Mosque
	752	Juma Mosque
	753	Local Mosque
	754	Others
13) COMMITTED LAND	760	
	761	Government
	762	Oil
	763	Private

3.6 Survey Methodology

This study's main objective is to develop a Regional Development Strategy for *Al Khaffi* region, hence, a comprehensive detailed survey is not essential. Primarily, a sample survey is needed. The following procedures were followed for the random sample survey:

- Specifying the areas to be included in the random sample survey.
- Gathering any relevant data from previous survey work conducted recently in these specific areas by agencies such as Municipalities, Ministry of Planning, Department of Town Planning, *ARAMCO*, etc.
- Studying relevant survey research; its methodology, scale and type.
- A comprehensive urban survey will be conducted in a later stage in this research, which requires a random check as prerequisite to verify the quality of such surveys. Random checking also fills the gaps, corrects mistakes, and updates any changes that might occur.

3.6.1 Scale of the Random Sample Surveys

The scale at which the urban land and building use random sample surveys were carried out varies according to the current intensity of uses within *Al Khaffi* City. In this context, three types of random sample survey areas are delineated. They are as follows:

a) Central Business District (CBD): This comprises the main commercial center and major commercial corridors. It is a relatively dense urban area of relatively high-rise buildings. It also covers a significant area of a mixture of business, commercial and residential uses.

b) Inner Area: This covers an area that is characterized by a relatively lower density of urban form comprising a mixture of high and low rise buildings, with a lower intensity of business and commercial uses. The uses of the ground floors in this area tend to be different from the uses on the upper floors.

c) Outer Area: This covers a wide area and is characterized by predominantly low-rise buildings.

3.6.2 Delineation of Random Sample Survey Zones

For administrative purposes *Al Khaffi* City is divided into several zones that form the basic unit for the random sample survey. Each zone is further divided into blocks to support the field work methodology.

3.6.3 Field Listing

The random sample survey of urban land use is based on a field-listing procedure, where each individual surveyor is provided with a fieldwork form and reference map. The surveyor traverses the survey area, by foot in the CBD and inner area, or generally by car in the outer areas, and records the land uses in accordance with the coding system.

There are three types of fieldwork forms, which vary in details according to the area being surveyed. The most detailed form is employed for the CBD survey area, a slightly less detailed form is used to record uses in the inner area, and a relatively simple form is designed for use in the outer area Surveys (see tables AP1-1, AP1-2, AP1-3).

The reference maps (at an appropriate scale) show the location of each building or block under survey. The field surveyors working within the CBD and inner areas of *Al Khaffi* City complete the surveying of a specified number of buildings each day. Surveyors working within the outer areas receive similar instructions, but for the completion of a specified number of blocks. The individual surveyor systematically surveys the buildings or blocks and identifies the land uses in detail according to the particular survey zone. If the surveyor is unable to identify the use, code, character, or location of the land use, a note is made on the survey's form and map. Inside the CBD, surveyors enter buildings in order to identify the building uses on each floor.

3.6.4 Checking by the Researcher

On completion of the daily survey assignment, the surveyor return the data to the researcher who checks the completed fieldwork form and reference maps. Any discrepancies or irregularities will be noted and rectified. The researcher may find it necessary to carry out a field check to determine the accuracy of the random sample survey.

3.6.5 Output and Results

Data collected in the fieldwork forms, and the reference maps will be translated into a composite land & building use map of *Al Khaffi* City. The results will then be arranged into data lists using a GIS computer program.

3.6.6 Survey Team

The Urban land Use Survey was conducted by a team of professional surveyors

along with the researcher who trained and tested the surveyor's capabilities in carrying out the fieldwork. The selection of the surveyors was based on the following criteria.

- Knowledge of both English and Arabic languages.
- Ability to read maps.
- Good knowledge of *Al Khaffi* City.

The professional surveyors closely monitored the fieldwork and supervised the other surveyors during the early weeks, through random field checking and monitoring.

3.6.7 Time schedule

The anticipated random sample survey program for the Eastern Region Cities was designed as follows:

- | | |
|------------------|----------|
| • Field Survey | 8 weeks |
| • Data recording | 12 weeks |
| • Data Analysis | 8 weeks |

3.6.8 Unmapped Settlements

The location of settlements, which were not documented in the detailed mapping, was ascertained, if possible, from existing aerial mapping. The survey team visited each known site accessible by car, and recorded its distance from the nearest mapped location. The numbers of dwelling units in the area were recorded together with any other significant land uses. The data collected was put in lists. The random sample survey was restricted to settlements reached by a road network.

3.6.8.1 Building Condition

The random sample survey appraised the quality and the condition of the buildings in *Al Khaffi* City. The survey focused on the zones, which are identified by a big number of poor quality building.

3.6.8.2 Structural Condition

The random sample survey assessed the structural condition of the buildings on the basis of external inspection. A grading system was used as follows:

- Good structural condition: No major defects.
- Fair structural condition: non-structural defects e.g. peeling of paint work, dirt, damaged doors, windows, etc.
- Poor structural condition: evidence of structural defects such as cracks and partial use of non-permanent materials.

- **Bad structural condition:** evidence of collapse; abandonment; excessive use of non-permanent materials, etc.

The above grades have been adopted to cover a reasonable range of conditions and to lay the basis for policies and proposals of upgrading. For example, buildings in bad condition may be scheduled for detailed surveys, while an action area plan might be an appropriate suggestion for a deteriorating location. On the other hand, those buildings in good condition may be excluded from redevelopment proposals.

3.6.8.3 Buildings life span

The general life span of buildings / buildings blocks will fall within three categories, namely:

- Pre – 1960.
- 1960 – 1980.
- Post 1980.

The buildings' life span was concluded from existing data, including available aerial photographs and plans from the local authorities, as well as external inspection of buildings.

In addition to documenting the life span of these buildings within the three defined categories, relevant comments on the aesthetic quality of the buildings or blocks has also been suggested. Comments were recorded in the remarks column and included the quality of the buildings and areas. This additional information was essential at the preparation stage of the Strategic Directive Plan, which helped in identifying potential areas for conservation and / or redevelopment.

3.7 The Survey Context

The survey covered diverse fields of services in the urban context. It covered the natural resources, the climate, the soil and land forms, the natural vegetation, the water resources, minerals and agriculture.

3.7.1 Natural Resources Survey

The natural resources survey was designed to provide a thorough understanding of the natural and physical resources of the Eastern Region, also, *Al Khaffi* area. It covered a large rural area, and hence, it differed from other surveys in this study. Its basis was built on the interpretation and analysis of the existing data, which was supplemented by a limited degree of original random sample survey work. The analysis will focus on the following topics:

- Climatic Data.
- Soil and Landforms.
- Natural Vegetation.
- Water Resources.
- Economically Exploitable Minerals.

The natural resources survey and data collected provided the basis for identifying the areas that require maintenance. Also, they allow for identifying areas reserved or considered as potential zones for agriculture, grazing, mineral exploitation, water supply, coastal protection and nature conservation. The output of this work will serve the purpose of providing the definition of opportunities and constraints for the generation of development options, primarily at the regional and the strategic directive plan level.

3.7.2 Climatic Data

The climatic data was obtained from the meteorological centers all over the Region. Civil aviation data was obtained from the International Airport in addition to data from the Arabian Oil Company works in the *Al Khafji* Region. The data collected covered rainfall, temperature, humidity, evaporation, wind velocity etc. The data obtained was analyzed to identify any particular characteristics of climate, which may have an influence in the generation of development strategies at the regional level.

Tables 3-2: Climatic Conditions in *Al Khafji* Region¹¹⁵

Average Temperature

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
High	18	20	24	32	38	42	44	44	40	34	26	20
Avg	14	14	20	24	30	34	36	36	32	26	20	14
Low	8	10	14	18	24	26	28	26	24	18	12	8

Average Humidity

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
High	80	80	70	65	50	30	30	35	45	60	75	80
Avg	60	55	50	40	30	25	25	25	30	45	55	55
Low	40	35	30	25	20	15	15	15	15	20	30	35

¹¹⁵ The Climate Atlas Ministry of Water and Agriculture - KSA

Average Rain (mm)

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
AVG	10	20	20	10	0	0	0	0	0	10	10	10

Fig. 3-1 Average Temperature (degree centigrade)

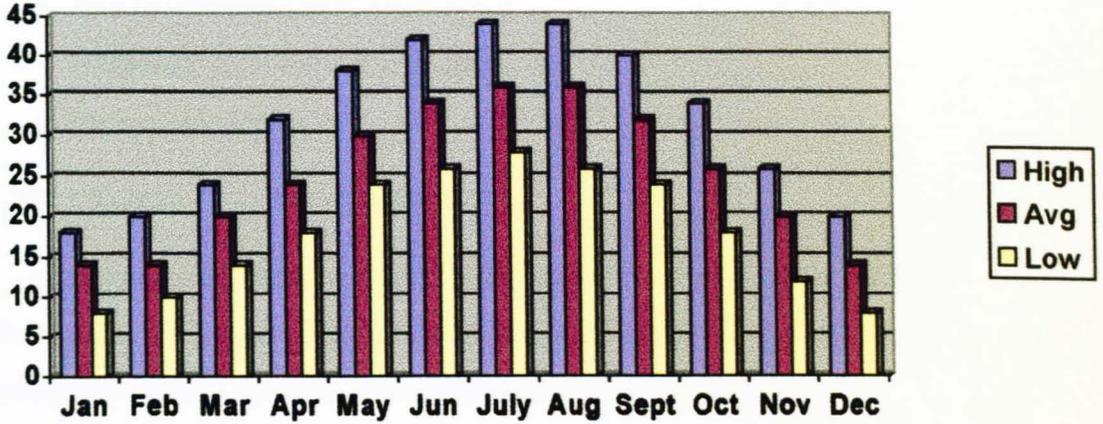


Fig. 3-2 Average Humidity (%)

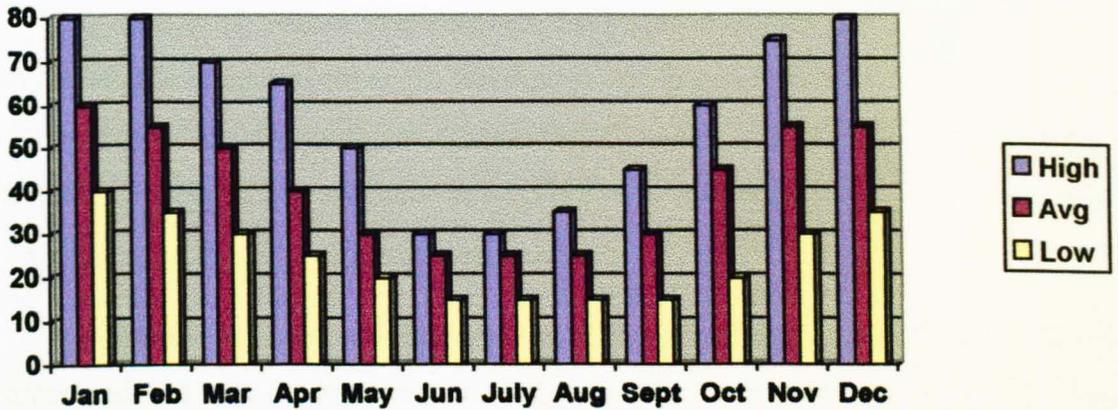
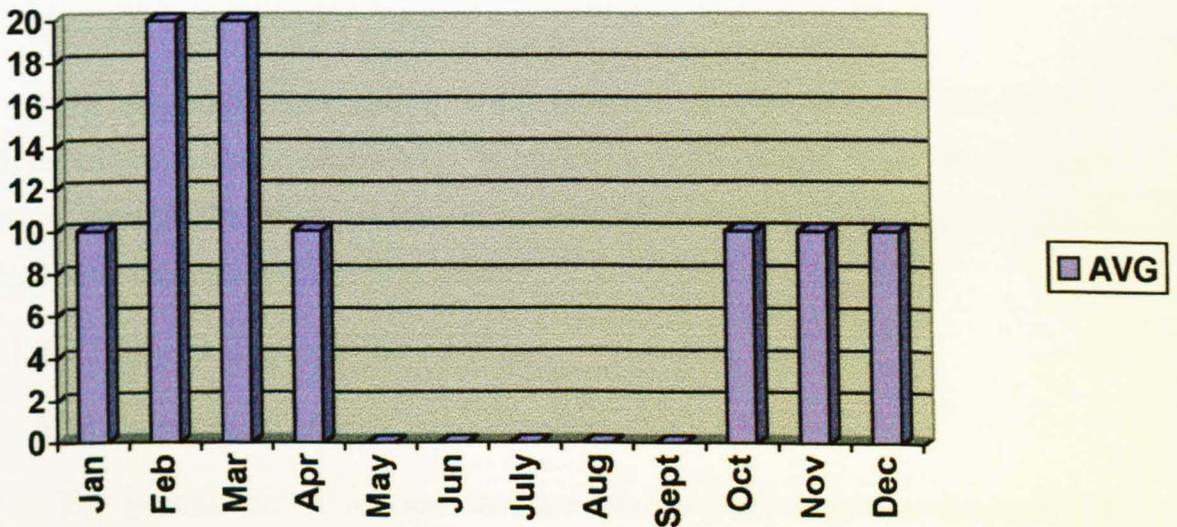


Fig. 3-3 Average Rain (mm)



3.7.3 Soil and Land Forms

Data obtained from the Ministry of Agriculture's office in the Eastern Province provided the basis for soil analysis. Particular attention was given, to factors affecting the potentials for agricultural development, this includes:

- Soil profile characteristics.
- Chemical and physical properties.
- Dune encroachment.

3.7.4 Natural Vegetation (Grazing)

It is useful to mention that natural vegetation and trees in the study region are relatively rare. Particular attention was given to the grazing potential of soil, both by analyzing the existing data and by conducting new field surveys.

3.7.5 Water Resources - Surface Water and Ground Water

This aspect of natural resources was based on the analysis of the existing data. Particular emphasis was given to the problem of the scarcity of natural water resources and its impact on development. Primary data sources was included in the current study, and also the investigation of ground water at the Eastern Region.

3.7.6 Economically Exploitable Minerals

The survey included a review of the existing data in terms of the mineral resources and the reports available from the Arabian Oil Company (*ARAMCO*). This covered the survey of mineral resources of the Eastern Region.

3.7.7 Agriculture and Ecology

The natural resources survey closely related to the process of data gathering and analysis of the relevant departments in agriculture and ecology. These were the main input to identify the opportunities and constraints of the development options at the regional and strategic directive plan levels.

3.8 *Al Khafji* Regional Land Use

3.8.1 Presentation of Data

The presentation of regional land use data involved an aggregated summary of the urban and rural land use survey data for the settlement. The broad pattern of major land uses outside the urban and rural settlements of *Al Khafji* Region was also recorded

from the existing mapping and aerial photography, besides data collected from the natural resource surveys and other sources of information. The existing *Al Khafji* Regional land use map was presented at a reasonable scale, it differentiate between urban and rural activities, and pointed out the settlement pattern in terms of the principal natural resources, agricultural land, transport, utility and other major land uses of regional significance. Due to the broad scope of presentation required at the regional level, land uses were grouped into the following major categories:

Urban Areas	Grazing land
Major Industries	Agriculture
Major Utilities	Plantations
Ports	Oasis
Villages	<i>Sabkha</i>
Defense Areas	Land-under reclamation
Oil fields	Main roads

3.9 Survey Analysis

3.9.1 Building and Land Survey

In order to reach a realistic plan that deals with real life situation an analysis of the various survey results for the city should be attempted. This survey will have different dimensions with regards to the different aspects of the city. For example, its age pattern, which is reflected in the city's structures and their uses in addition to their conditions, which makes it important to give a complete representation of the existing condition of the ground. This survey helps in deciding which zones need improvement and in what aspects (services, facilities, infrastructure, etc...).

3.9.1.1 Building life -span

Al Khafji City has two buildings only which are known to be almost 40 years old. This city is relatively new in comparison to other Saudi cities. It was established at the beginning of the period of oil exploration in the region. *Al Khafji* City is based on the oil industry due to the fact that it is its main economic base. The following figures (Figure 3-4) (Map AP2-7) illustrates the uneven building age pattern during the short life span of *Al Khafji* City.

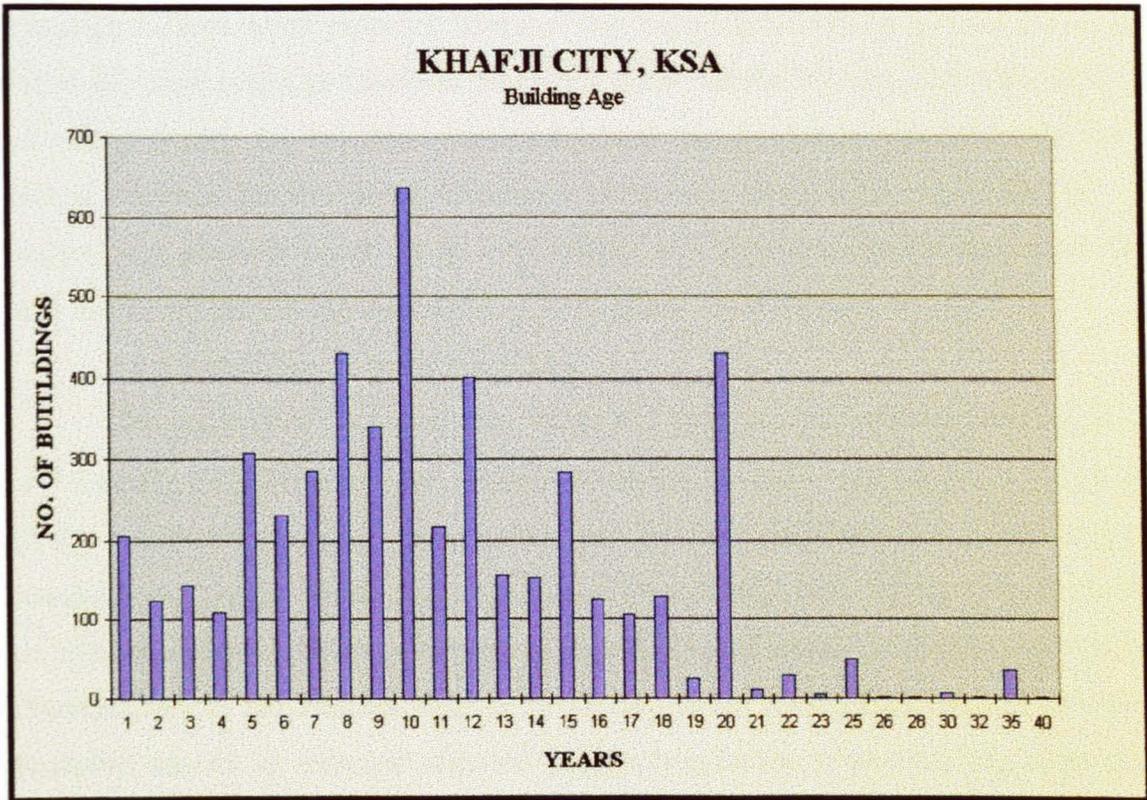


Fig. 3-4— Al Khafji City - Building Age

As clear in the building age analysis shown in Figure 3-4 that, the real building boom has started 20 years ago, during the rise in the oil prices, which also coincided with the start of the real-estate bank in the Kingdom. At that time the oil price jumped from \$5/B to \$35/B, which had its booming effect on development generally, and in real estate particularly.

The second period of growth is due to the fact that ten years ago oil companies decided to finance a home ownership program for their employees, which resulted in the building of 636 homes in one year. This represents the highest recorded number of house construction to date. The oil companies has realized the fact that providing houses for workers was a great incentive to keep their employees working for the same company for longer periods of time. This housing policy consumed a lot of cash reserves that had to be spent in Saudi Arabia as part of the oil companies' concession agreement. Additionally, housing loans are interest free, because the general policy of Saudi Arabia prohibits the charging of interest.

After the last "boom", the building of houses seems to decline, which may be due to several reasons. For example, the Gulf war of 1990 has its effect on *Al Khafji* because of its location. Being on the borders with Kuwait, it housed most of the ground

troops of the allies. Besides, government budgets were deeply affected by the fund allocated to finance war purposes. The cost was highly significant in regards to the short terms of these funds, precisely no more than eight months. Finally, the sharp fall in the oil prices during the last few years influenced the government spending. The Saudi budget depends largely on oil revenues, which was exacerbated by the fact that the budget was planned based on an expectation of a high level of oil prices and did not take into consideration the fluctuation of such prices down to the lower limit.

3.9.1.2 Building -Ground Floor Use

The analysis of the survey data shows that there are more private homes and low cost housing (4730) which are entirely occupied by local citizens, than apartments (212), which are occupied by non-citizens. This fact indicates that local residents dominate *Al Khaffi*, which is not the case in other Saudi cities. Cities, such as Khobar or *Dammam*, have a balanced number of expatriates and locals. *Al Khaffi* City is solely characterized in the Eastern Region by having more locals than expatriates. This is probably due to its strategic location being a boarder city where it is inappropriate to have an unbalanced population mix. In addition the limited range of activities that are represented in the oil production, border security and the army by their nature call more for service of locals than expatriates where the ratio is about 80 to 20.

The calculated population is about 47300 persons, nearly 10 local inhabitants per household. In addition, an estimated number of about 12700 persons live in apartments or in camp housing, making a total of about 60000 persons. The calculations of this figure includes two household helpers, such as a maid and a driver, which are considered the minimum number of helpers that any household may have. The driver specifically is essential for any household, because women are not allowed to drive according to the Saudi regulations. There are a total of 67 both boys and girls schools, which is sufficient according to the normal rates applied in KSA which tend to be higher than most rates in other countries. There are thirteen health facilities, which is not sufficient for the total population including expatriates. There is only one main hospital belonging to the oil company and serving its own personnel and other emergency cases. The twelve other clinics have no inpatient facility. (Figure 3-5), (Map AP2-3/4).

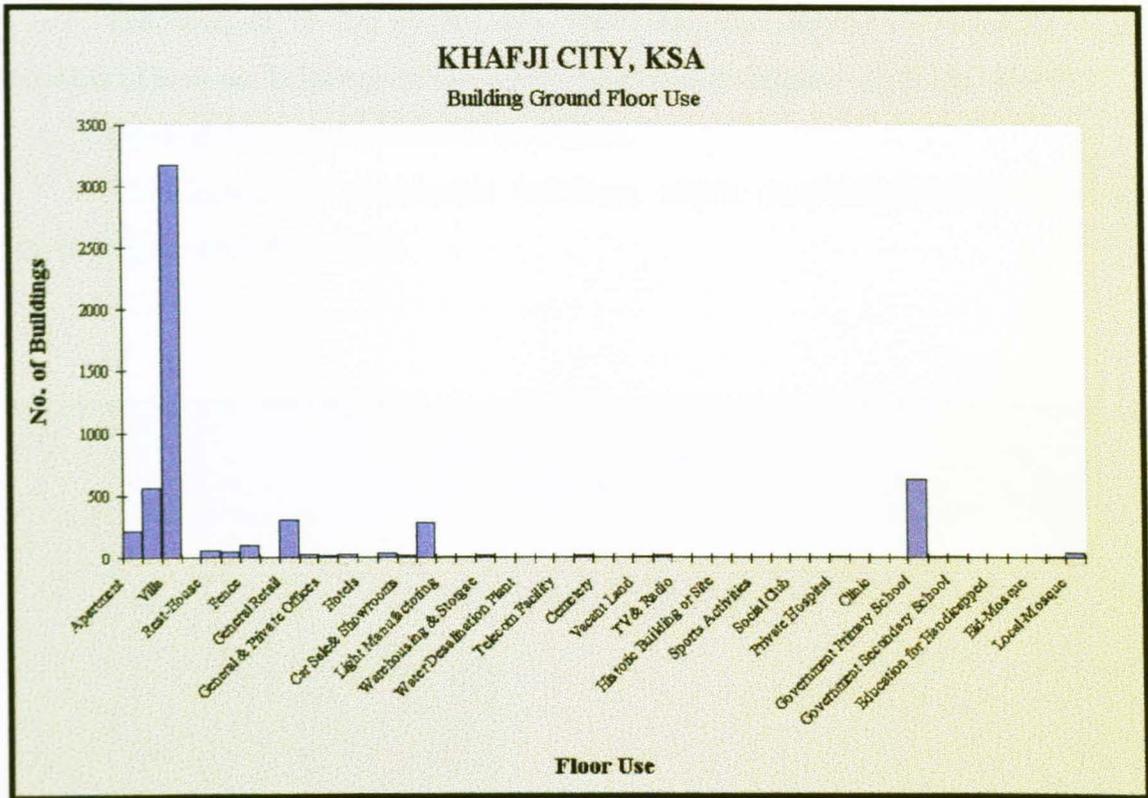


Fig. 3-5– Al Khafji City - Building Ground Floor Use

The total number of mosques is 42, which is appropriate for the population and is expected to increase in the next five years.

There are only three playgrounds and parks, which is not sufficient. However they lack privacy and are relatively small in area.

Manufacturing does not appear to be the main economic activity in *Al Khafji*. Commercial activities are quite sufficient in terms of the market demands. Nevertheless, variations in commercial facilities to meet the needs of the different classes and sectors of the society seem to be required.

3.9.1.3 Building- Number of Floors

The analysis of the survey data show that the majority of the city's skyline consists of low-rise buildings of two floors only (4840). (figure 3-6) (Map AP2-9).

One building only consists of six Floors.

The Commercial Residential buildings, which dominate the main street front, are of three to four floors high.

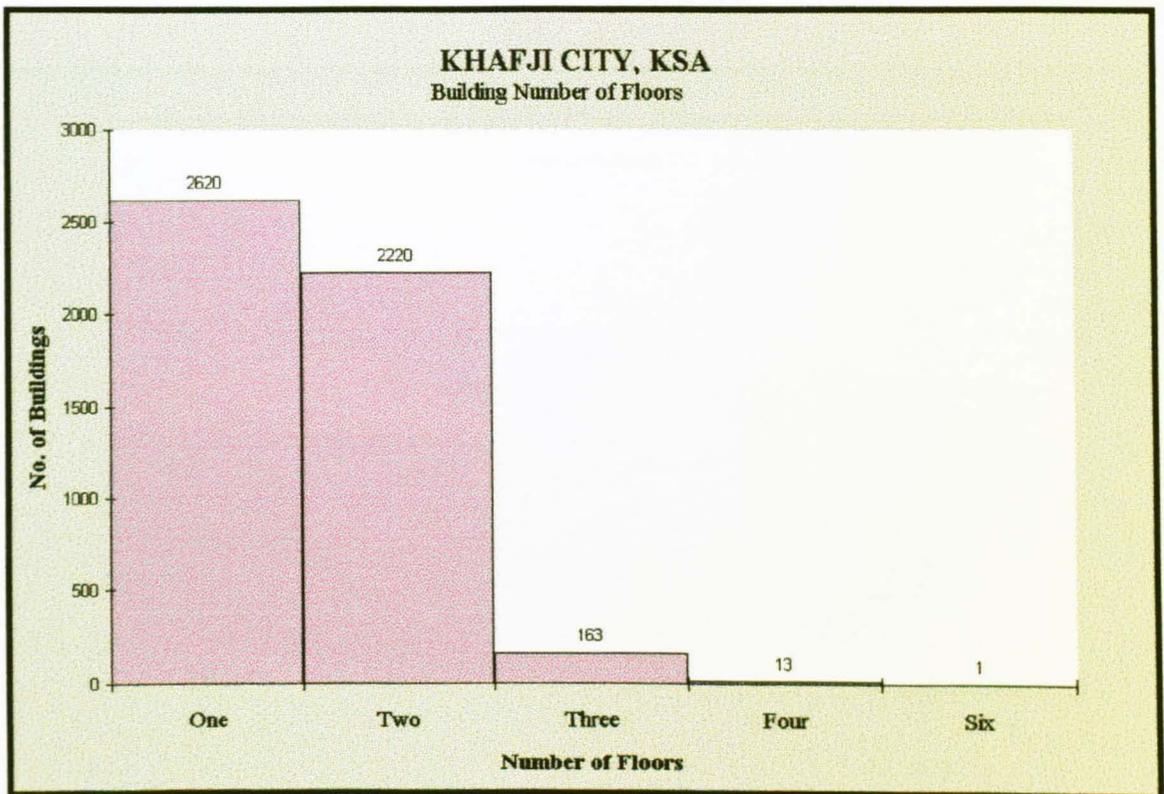


Fig. 3-6 – Al Khafji City - Building Number of Floor

3.9.1.4 Building Condition

It became clear from the Building Condition survey, which is illustrated in the map and its analytical chart, that: 78% of the buildings are in good or fair condition most of which belong to the private homes sector. (Figure 3-7) (Map AP2-8).

About 15% of the building stock is in poor condition which needs extensive maintenance. Only 7% of the building stock are in a bad or dilapidated condition and need to be totally demolished. Non-durable materials are greatly used in construction of these buildings.

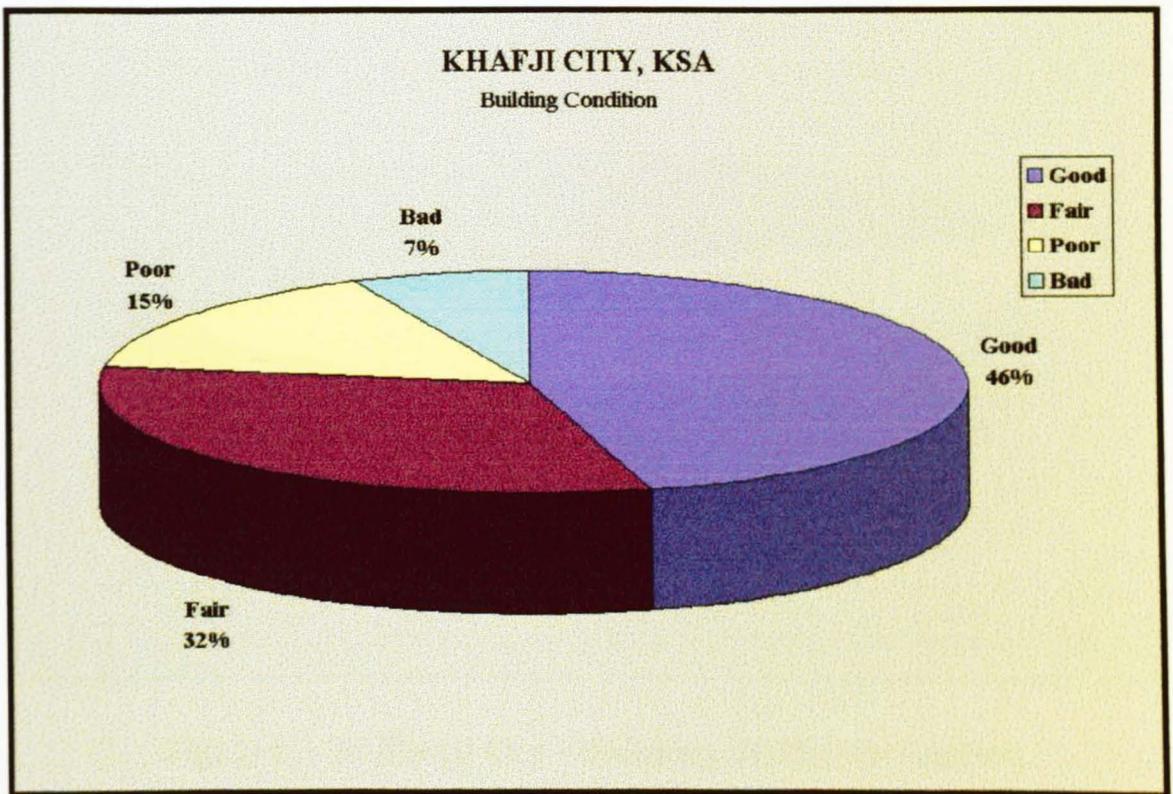


Fig. 3-7 – Al Khafji City - Building Condition.

3.9.1.5 Building Utility Connection

The Building Utility Connection survey, which is illustrated in the map and its analytical chart, proved that: 49% of the buildings have water, electric and telephone utilities. Only 18% of the buildings have water and electric utilities. 2% have water only, and these are mainly under construction. (Figure3-8) (Map AP2-10).

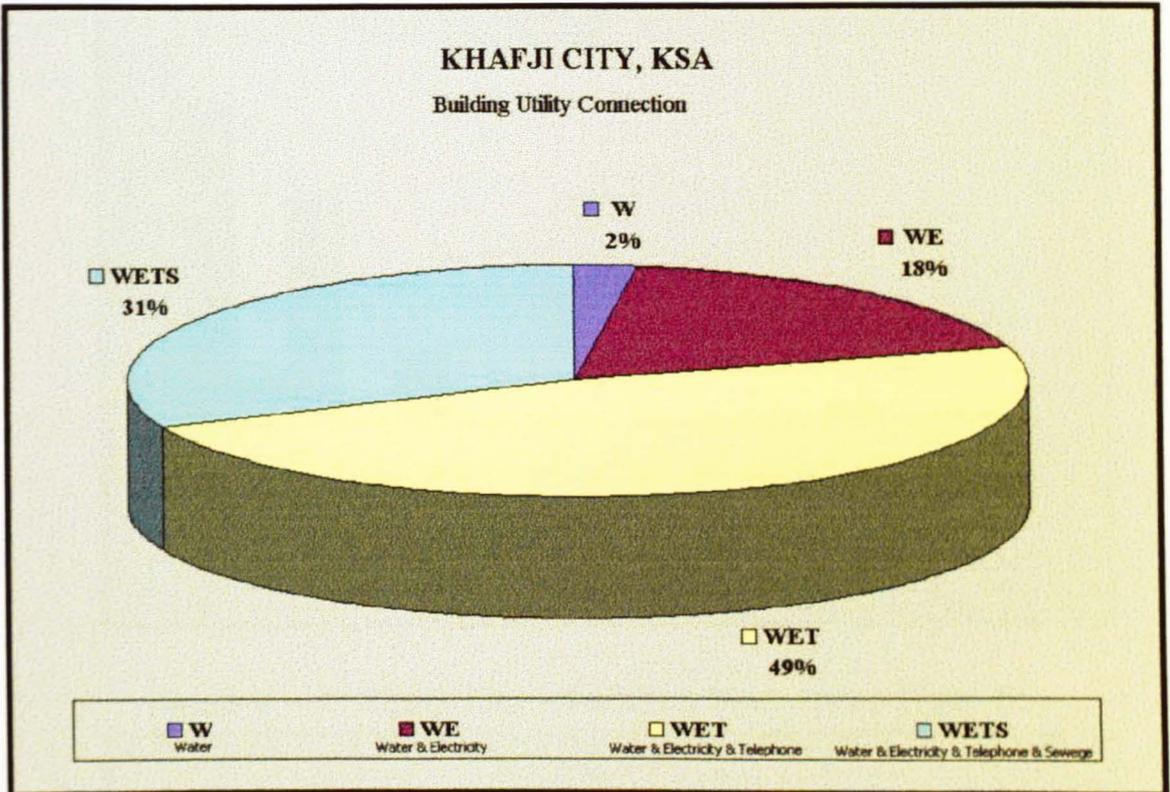


Fig. 3-8 – Al Khafji City - Building Utility Connection

3.9.1.6 Building-Mezzanine and Upper Floor Use

Most of the buildings with more than one floor are mainly apartments, Low-cost housing, villas and work camps. In addition a few multi-storey buildings are used as hospitals and schools. Buildings that have more than two floors are mainly low cost housing and apartments, which dominate the skyline of the city. (Figure 3-9 & 3-10) (Map AP2-5& 6).

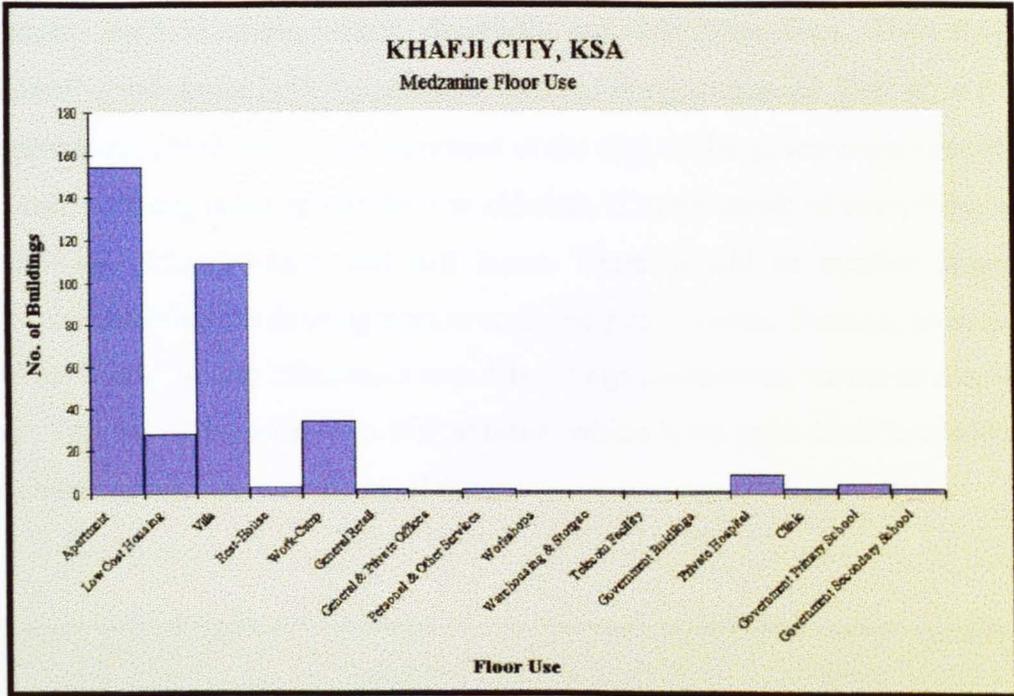


Fig. 3-9 – Al Khafji City - Building Mezzanine Floor Use

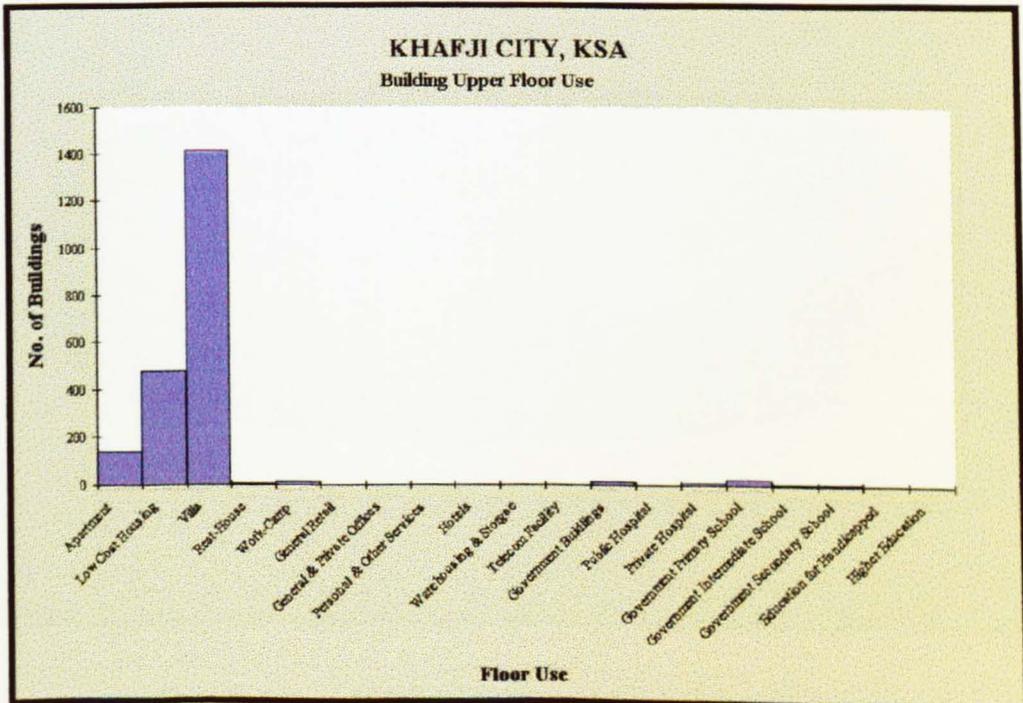


Fig. 3-10 – Al Khafji City - Building Upper Floor Use

3.9.1.7 Land Occupancy Survey

The Land Occupancy Survey reveals that only 24% of the dedicated land is occupied. Such dedicated land is planned and distributed to the locals with nearly no charge. Developing this land remains the responsibility of the owners. (Figure 3-11) (Map AP2-11).

Usually, the owners have to wait for the infrastructure services installed by the government, such as roads, water, electricity and telephone lines. Then they seek government's soft loans from the real state bank of the government. This issue causes a lot of problems for the future development of the city, as the government cannot, same is the case with any other government worldwide, be responsible of everything such as land allotting, infrastructure, and soft loans. There should be another appropriate method for expediting the development to meet the public needs. Perhaps, an innovative method of financing the infrastructure and buildings themselves, would be a conscious attempt. This solution addresses a critical issue, which is the right of all locals to have a decent shelter as stipulated in the royal decree.

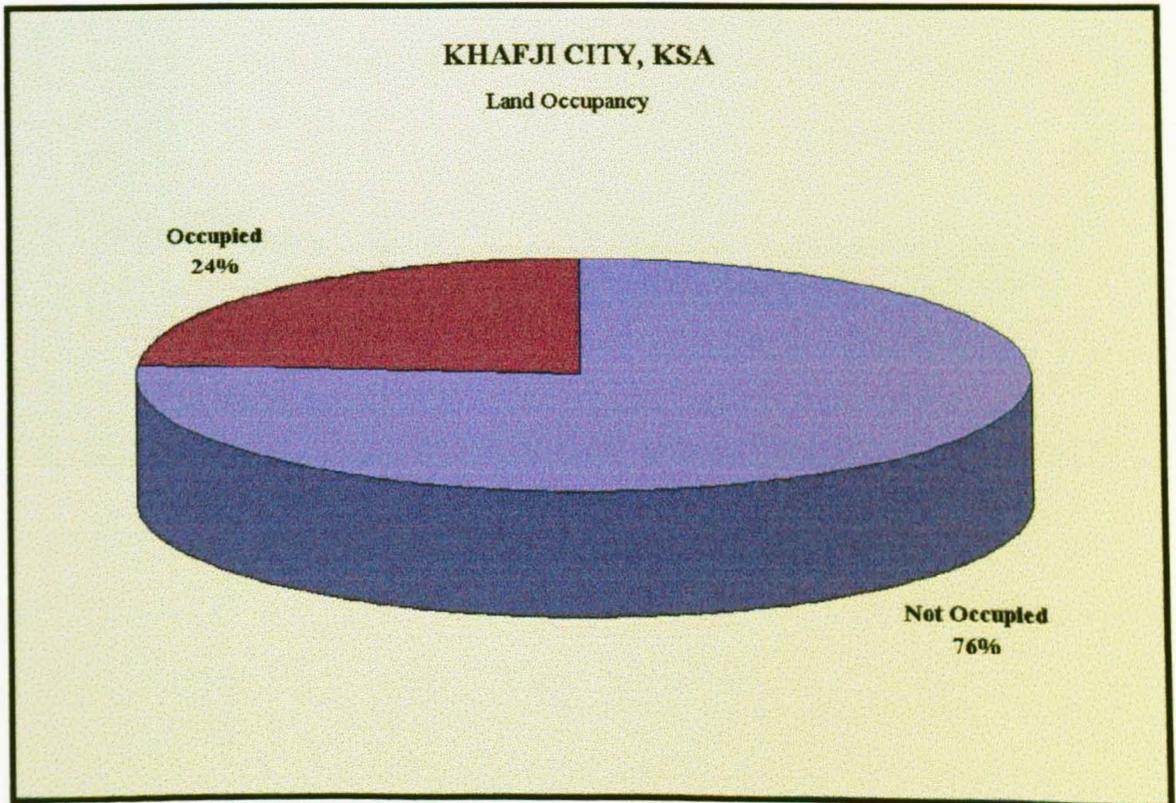


Fig. 3-11 – Al Khafji City - Land Occupancy

3.9.1.8 Land Use Survey

The Land Use Survey, which is illustrated in the map and its analytical chart, indicates the following:

The current Master Plan, which is represented as a Land Use Plan shows that the main land- use in the city is for residential buildings which, occupy about 18000 lots.

The Commercial use is appropriate to serve the planned residential use.

The Industrial use, which is represented as the third largest of all the Landuses, is not sufficient to support the community being the productive use.

The other uses occupy very limited areas, which calls for further study to fulfill the actual needs for the proposed and planned lands. Figure 3-12) (Map AP2-2).

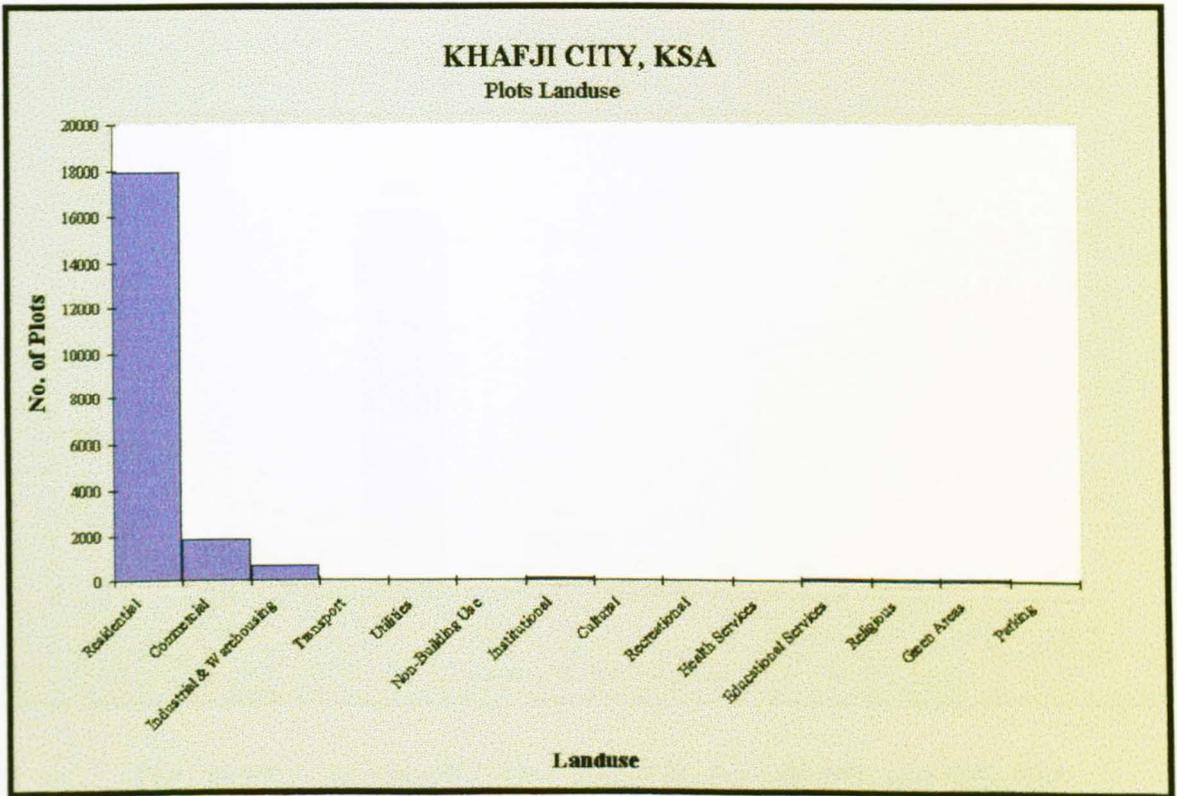


Fig. 3-12 – Al Khafji City - Plots Landuse

3.9.2 Road Network Survey

The Road Net Work is illustrated in several Maps and Charts as follows:

3.9.2.1 Street Width

Most planned streets are 15 m. wide, which is considered appropriate for service roads in residential communities.

The majority of the streets range between 10 and 25 meters wide, and they are mainly used as service roads. There are only seven high-speed roads or major roads, whose width ranges between 50, 60 and 100 meters wide. (Figure 3-13) (Map AP2-12).

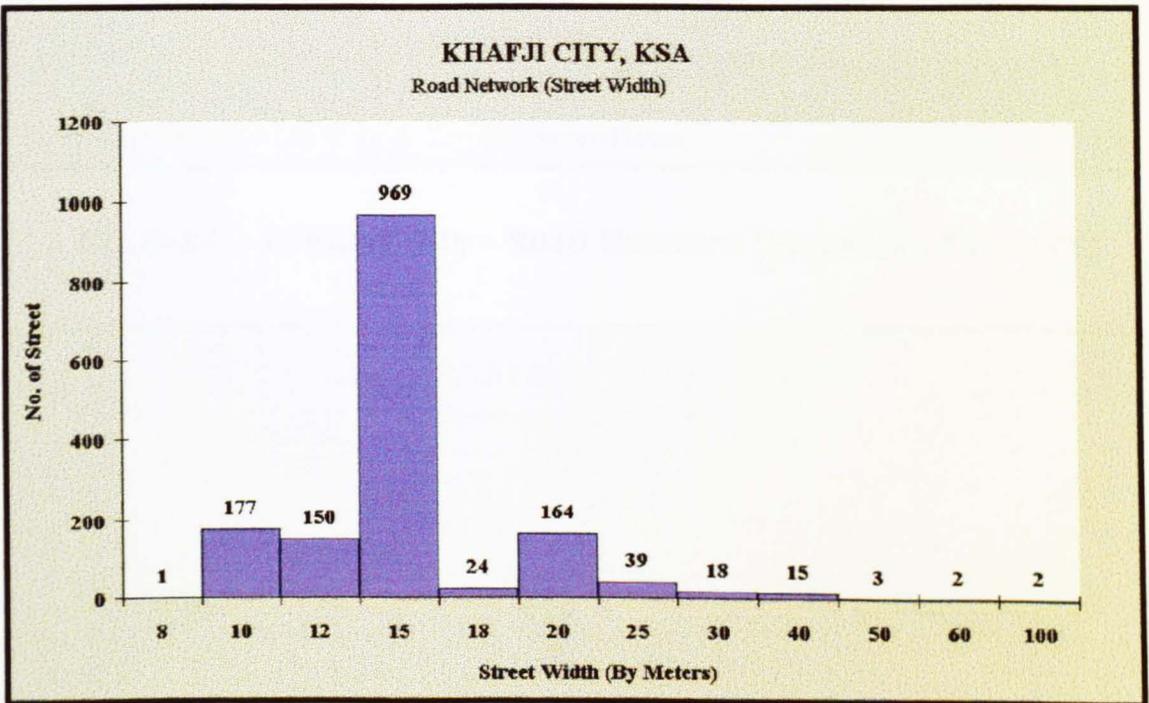


Fig. 3-13 – Al Khafji City - Road Network (Street Width)

3.9.2.2 Road Network Street Number of Lanes

As shown in the Road Network (Street Number of Lanes) Survey, which is illustrated in the map and its analytical chart: 1474 Streets are two way, two lane streets. Only 74 streets are four lanes, two lanes in each direction.

The remaining 18 streets are of 6 lanes, 3 lanes on each direction. These are streets arterial roads that join the main sectors of the city. Only one street is an eight lane road four lane on each direction, and it is the major highway in the Eastern Region, connecting *Al Khafji* with other cities. (Figure 3-14) (Map AP2-13).

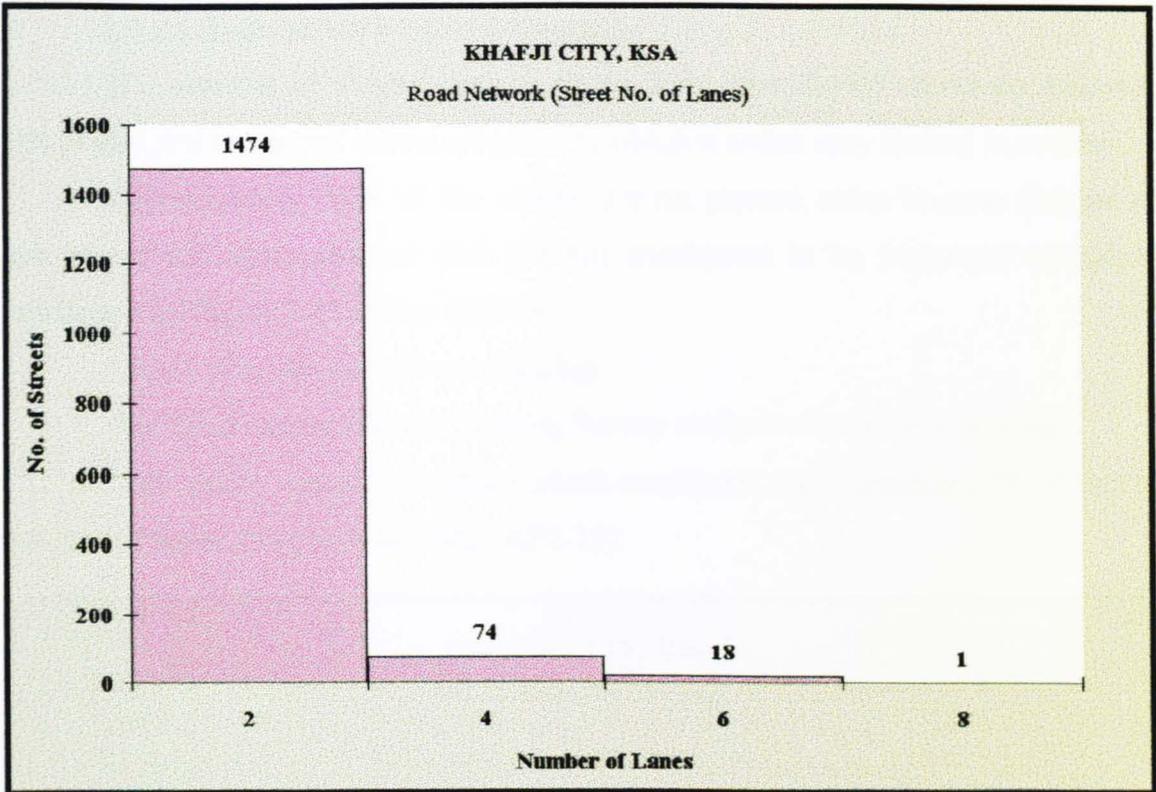


Fig. 3-14 – Al Khafji City - Road Network (Street No. Of Lanes)

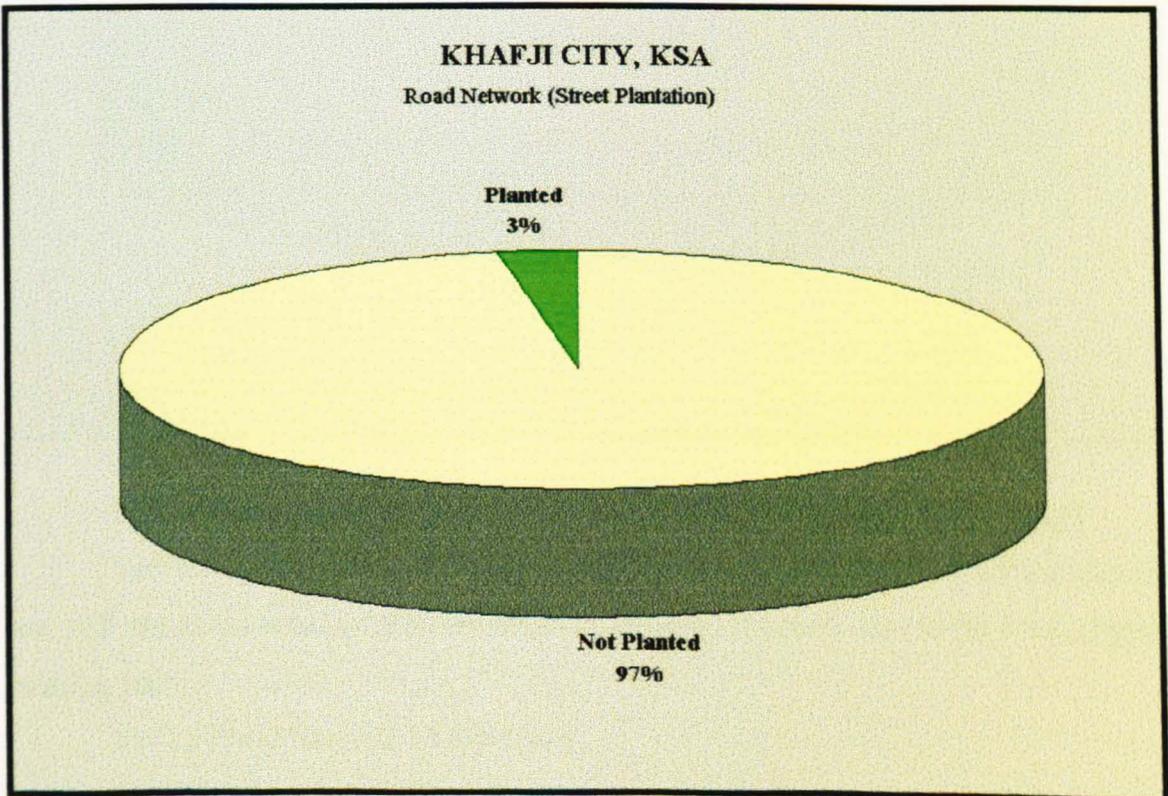


Fig. 3-15 – Al Khafji City - Road Network (Street Plantation)

3.9.2.3 Road Network - Street Plantation

The analysis of Road Network Street Plantation Survey shows the following: 3% of the total number of streets are planted, which is rather very limited in number.

Approximately 97% of the streets are not planted, either because they are still not paved and landscaped or than are not considered to be important enough for landscaping. (Figure 3-15) (Map AP2-14).

3.9.2.4 Road Network Street Lighting

The Road Network Street Lighting Survey analysis shows the following:

Only major streets are lighted which constitutes approximately 22% of the total number of street. (Figure 3-16) (Map AP2-15).

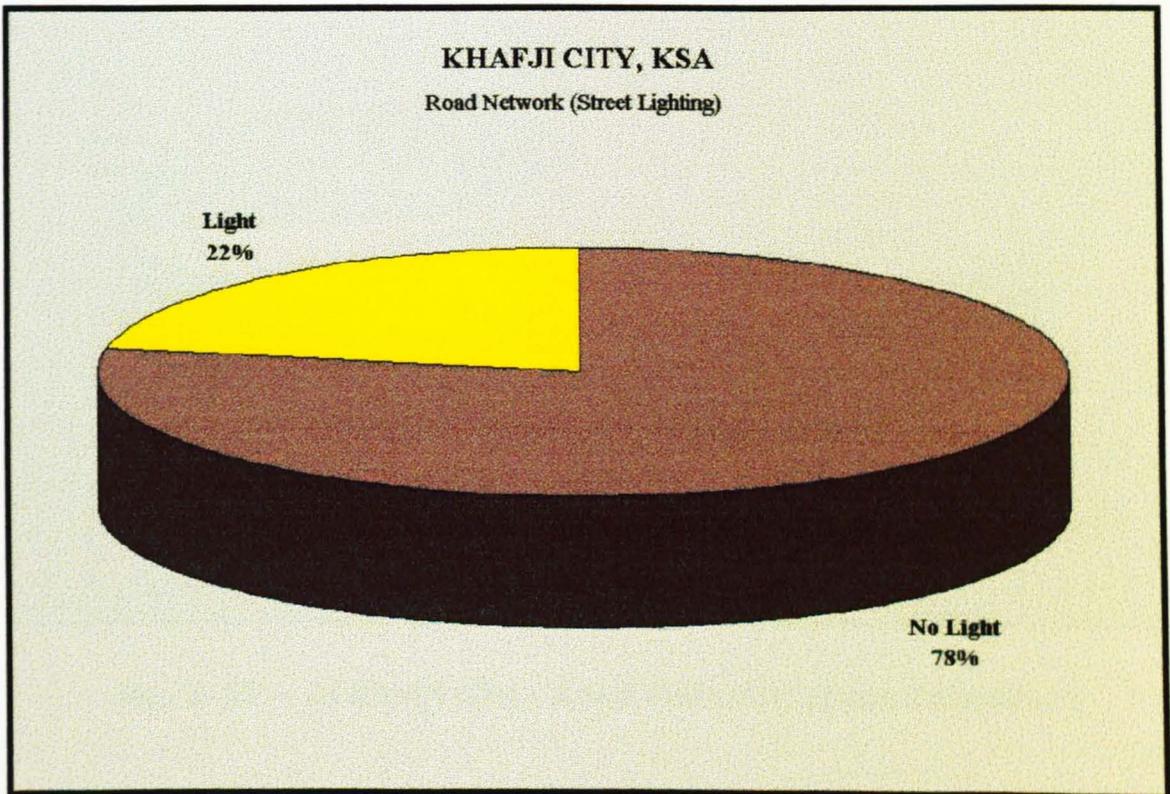


Fig. 3-16 – Al Khafji City - Road Network (Street Lighting)

The remaining 78% of the streets do not have street lights, either because they are still not constructed, or they are in the process to take their turn in the future lighting phasing plan.

3.9.2.5 Road Network Utility Lines

The Road Network Utility Lines Survey analysis demonstrates the following:

More than half of the number of the streets has no utility lines, which constitute 927 streets. This is mostly because they are only planned streets and are still under construction.

The majority of the other streets have water, electricity and telephone lines, while about (464) streets lack sewerage system. Meanwhile, 186 roads have all utility lines, which mainly serve the present community. (Map AP2-16).

3.9.2.6 Road Network Base Condition

Approximately 63% of the streets are still sand tracks, due to the fact that they are in the planning phase.

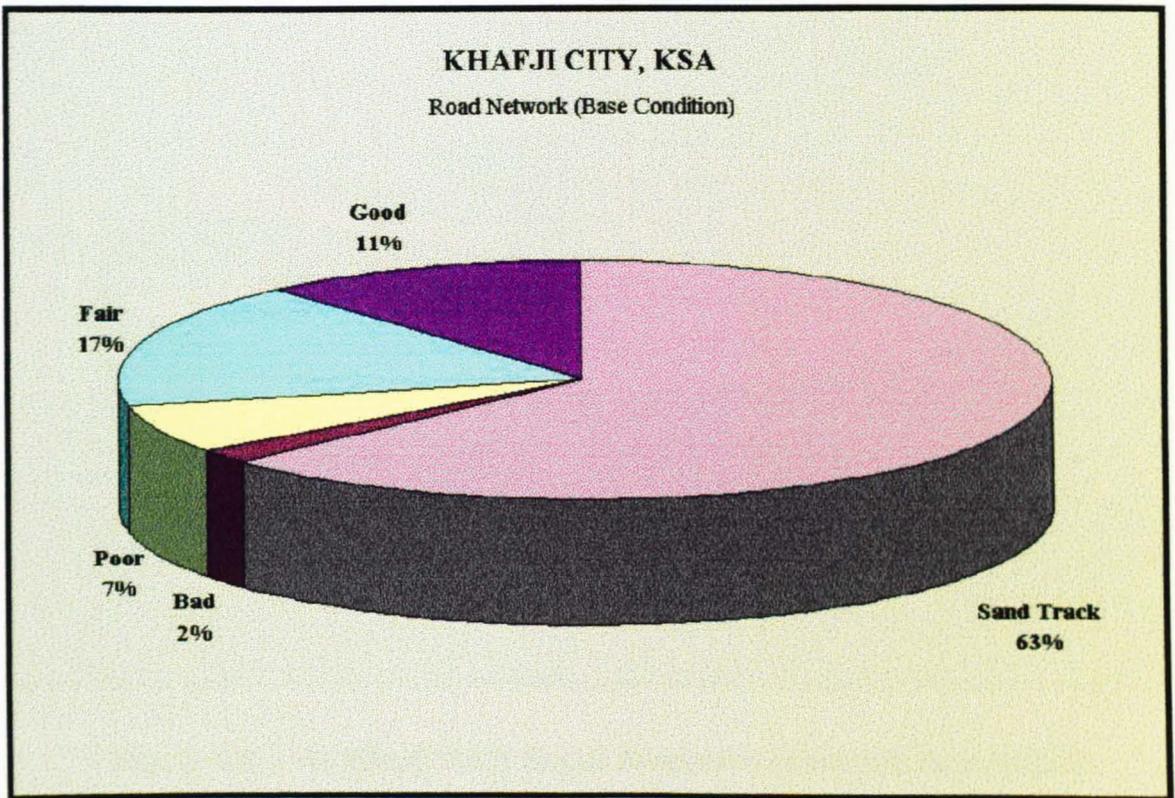


Fig. 3-17 – Al Khafji City - Road Network (Base Condition)

Only 11% of the streets are regularly maintained and in a good condition. In addition 17% are in fair condition.

The remaining 9% of the streets are in bad condition and require total maintenance. (Figure 3-17) (Map AP2-17).

3.9.2.7 Road Network Overall Condition

The Road Network Overall Condition Survey which is a mixture of all the other road surveys, illustrate in the map and its analytical chart, that it scores eight as the best score.

Two thirds of the roads, are in very poor conditions (66%), they are mainly sand tracks. 6%, 3% and 2% are in the top of the scoring which add up to 11% in a good and

acceptable condition. This corresponds to the base condition survey in which 11% are usually maintained.

The remaining 23% of the roads need extensive maintenance to be in an acceptable shape. (Figure 3-18) (Map AP2-18).

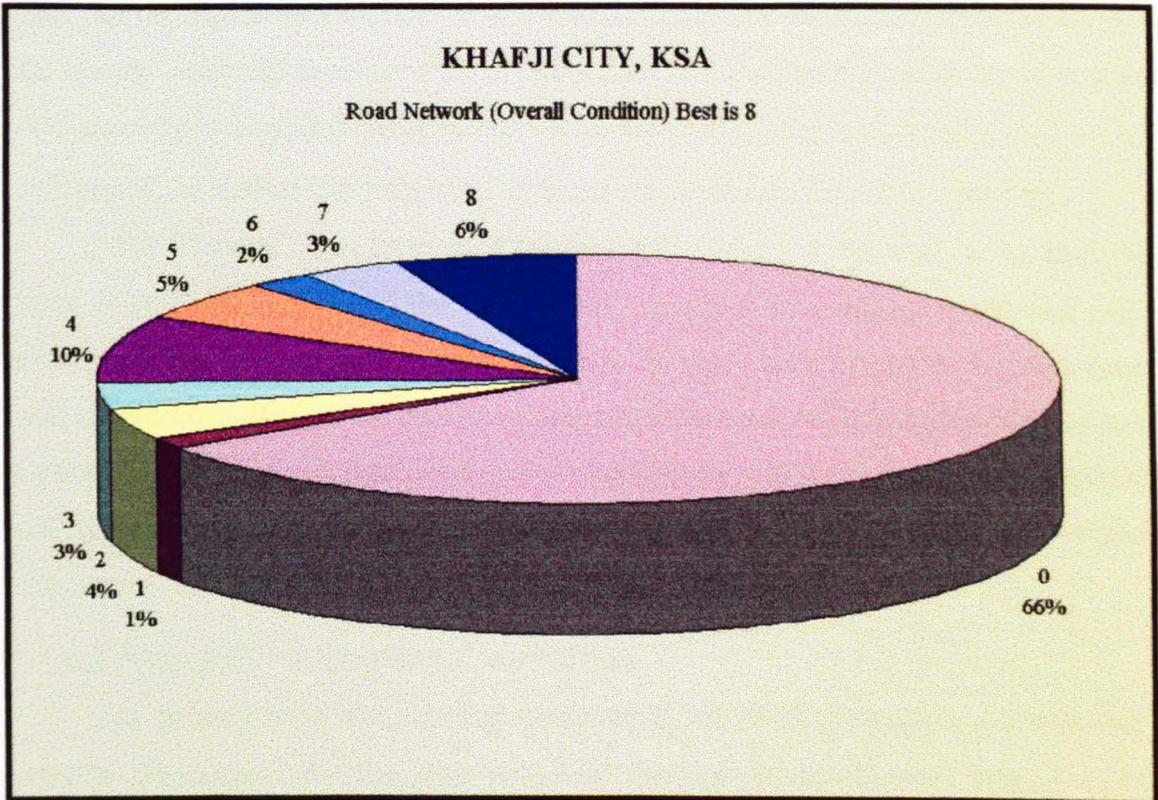


Fig. 3-18 – Al Khafji City Road Network (Overall Condition)

CHAPTER FOUR

GENERAL DEVELOPMENT CONCEPTS

4.1 Introduction

This chapter will explore the basis for the creation of a strategic development plan for the region under study. It will summarize the existing condition as revealed by the survey and will consider a list of deductions based on such conditions. In addition, the general development concepts and ideas that best suit the region under study will be deliberated, as well as the proposed development procedure for a future strategy.

The General Development Concepts will focus on the study of various ideas from local (Gulf Region and the Arab World) and other international zones, and will be elaborated into a form that seems appropriate the study area. From this end, the chapter will examine the analysis of the survey and any additional published data relevant to the Eastern Region. It will then develop a theory (strategy) in the form of a hypothesis that will be tested by using suitable criteria for the local setting and the nature of the selected site.

4.2 Synopsis of Existing Conditions

In summarizing the existing conditions in the *Al Khaffi* Region, it is intended to provide the context for the preparation of the regional development strategy and the Regional Development Plan.

4.2.1 Physical Features, Natural Resources and Environment

Al Khaffi Region is situated near the northeastern side of the Arabian Peninsula and shares its borders with Kuwait. It has a total area of about 175 km², (Figure4-1).

4.2.2 Climate

The climate of the *Al Khaffi* Region is characteristic of the hot arid desert zone with scant and variable rainfall where shade temperatures exceeds 45⁰C in summer. There are two main seasons: winter and summer. Winter starts from December till March with relatively cool temperature. Summer starts from May till September with hot temperatures while relative humidity varies between coastal zone and inland areas. Rainfall varies according to different locations, however, it is very light (Fig. 3-3).

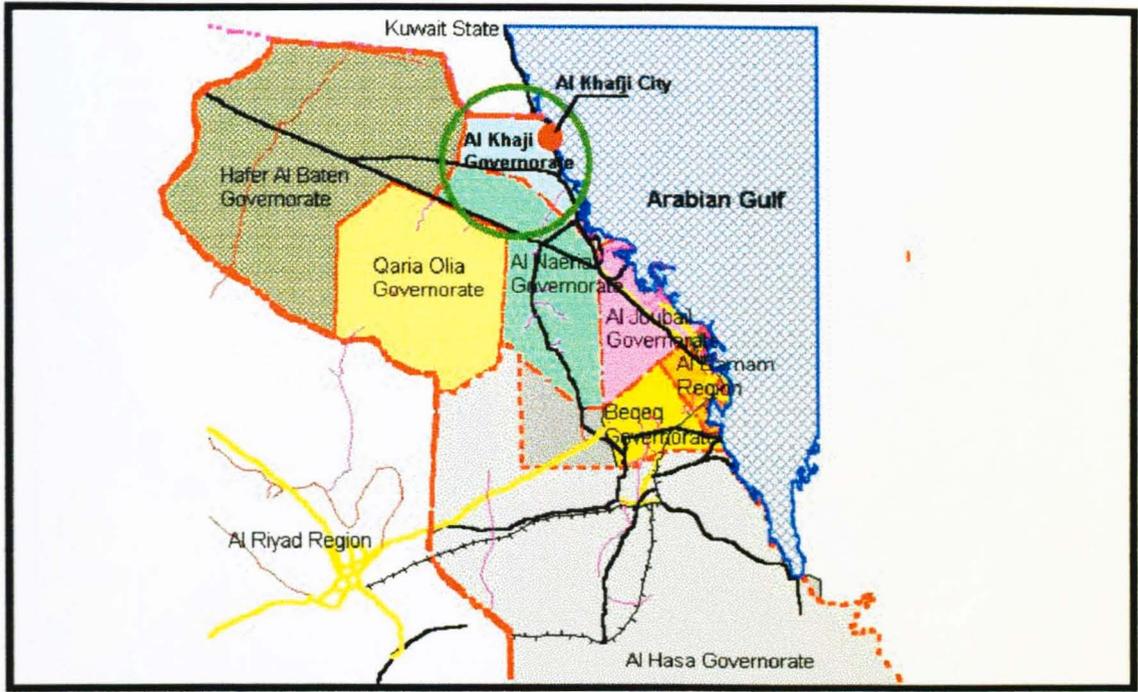


Fig. 4-1 – Al Khafji Region - Regional Location ¹¹⁶

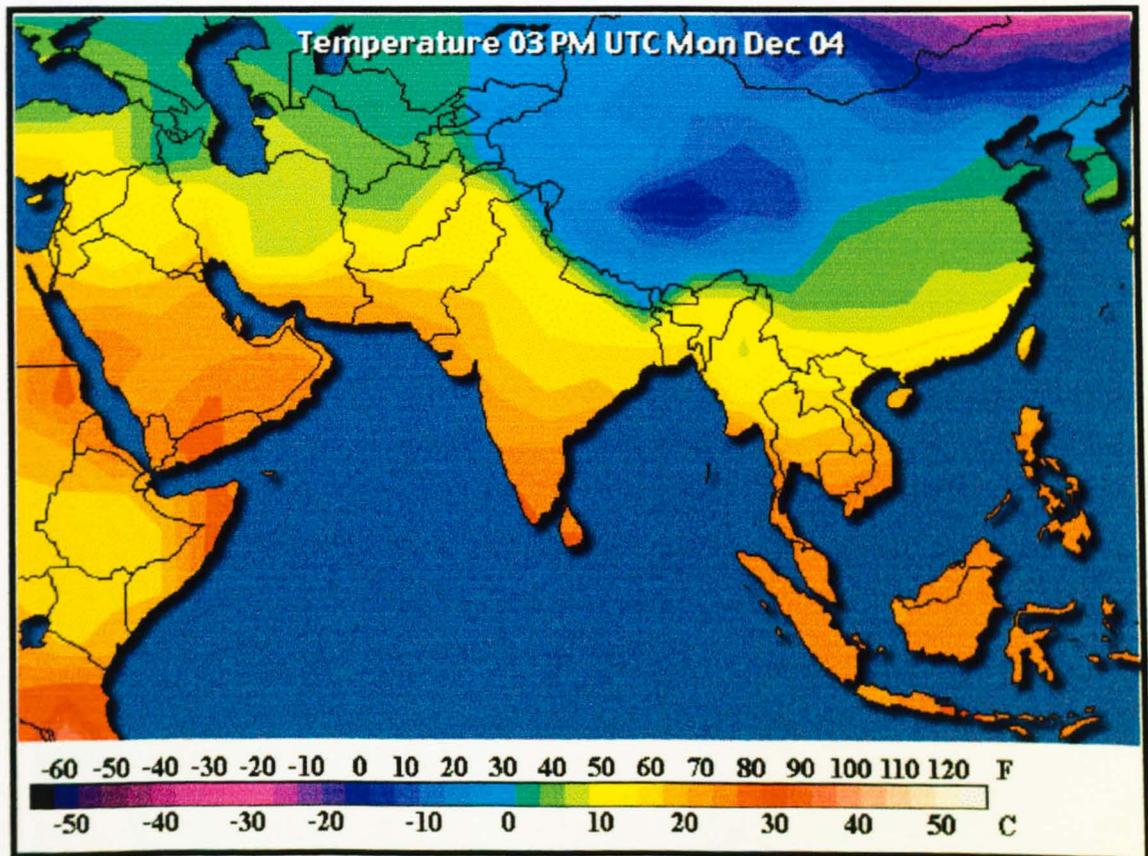


Fig. 4-2 – Southern Asian Region Including Al Khafji (Temperature) ¹¹⁷

¹¹⁶ Courtesy of Ministry of Information – Riyadh.

¹¹⁷ Courtesy of Meteorological Center- KSA – Riyadh.

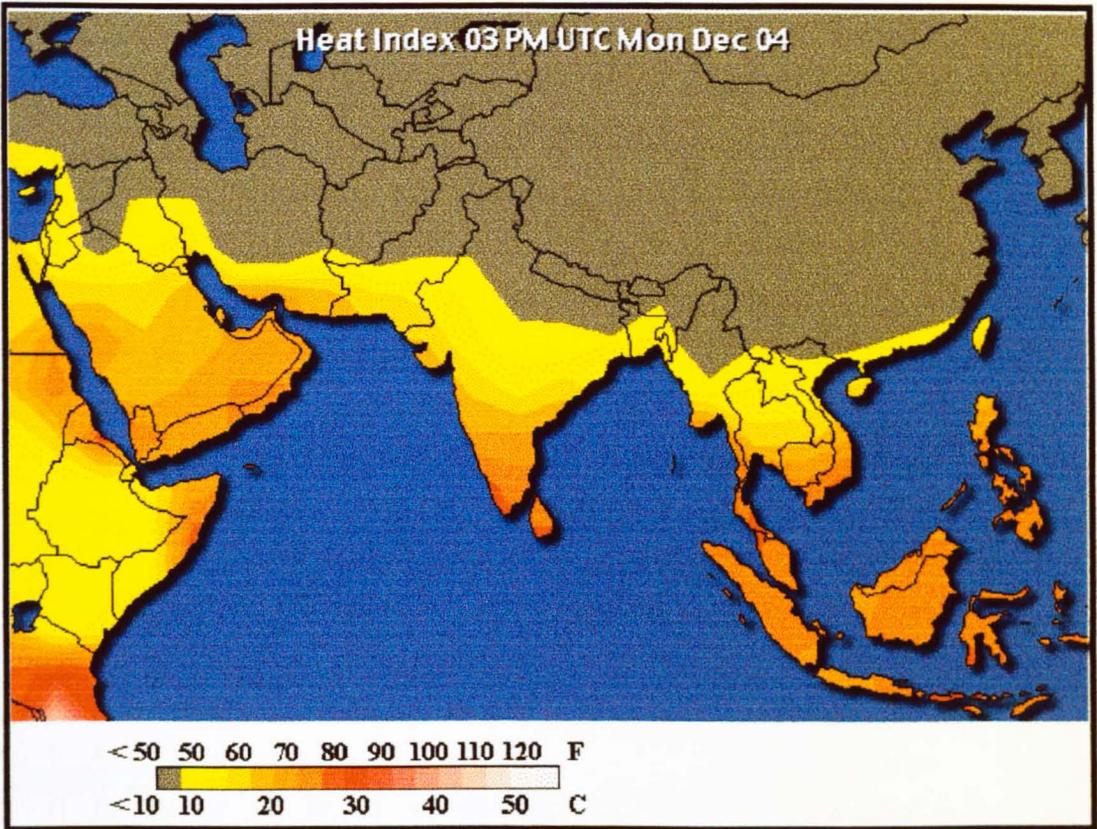


Fig. 4-3 – Southern Asian Region Including *Al Khafji* (Heat Index)¹¹⁸

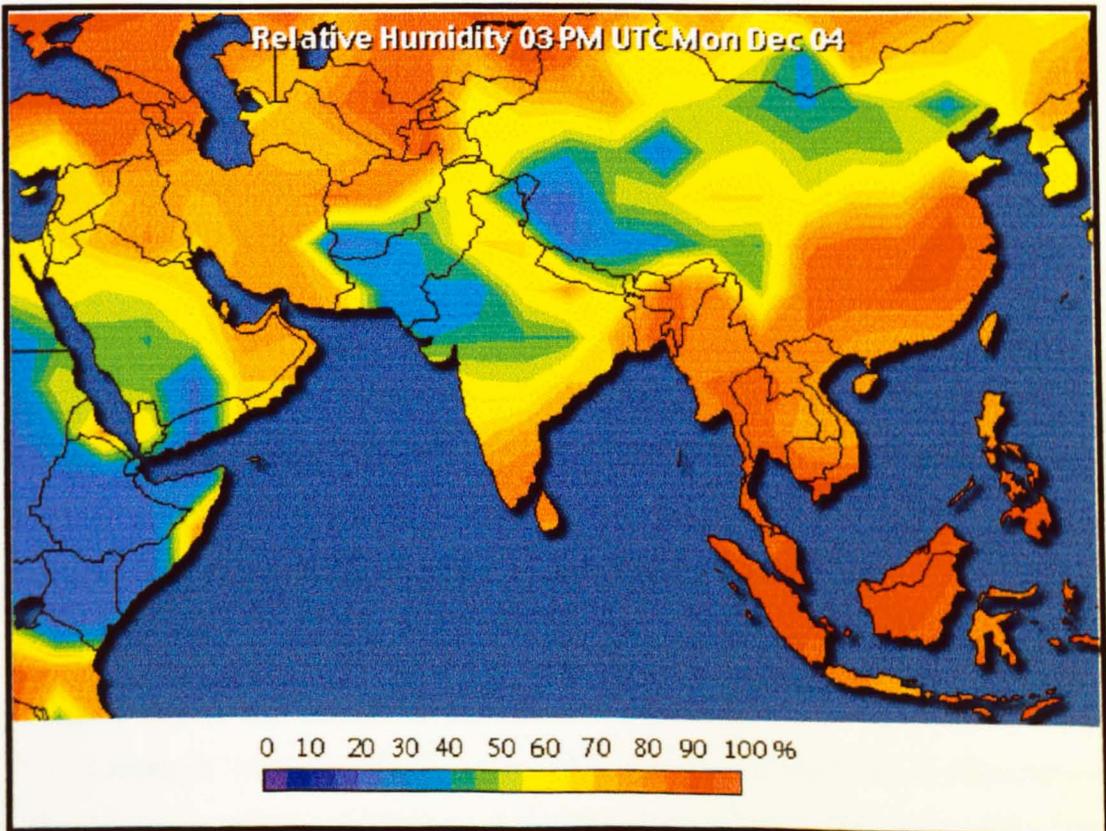


Fig. 4-4 – Southern Asian Region Including *Al Khafji* (Relative Humidity)¹¹⁹

¹¹⁸ Courtesy of Meteorological Center- KSA – Riyadh.

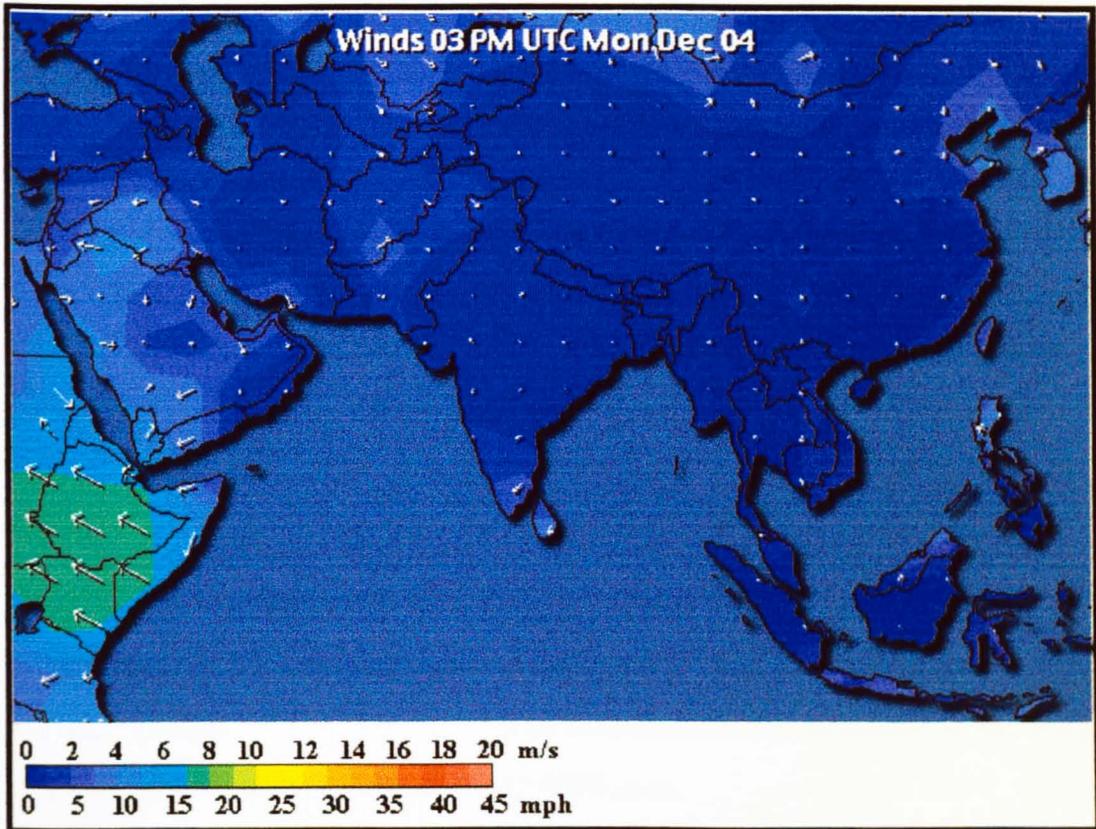


Fig. 4-5 – Southern Asian Region Including Al Khafji (Winds)¹²⁰

4.2.3 Physical Features

Few features characterize the topography of the region. The land elevation is low along the coastal line (dominated by low-lying salty mudflats-*sabkhas*) then rises gently towards the inland.

4.2.4 Soils

The soils of the Region are mostly coarse textured (sandy) and have weakly defined top soils with low organic matter contents, besides its saline soils, which occur on *sabkhas*.

4.2.5 Agricultural Resources, Crop Production & Livestock

The land areas occupied by agriculture and forestry plantations are very minimal. Dates from private plantations are the main crop.

Livestock (camels, sheep, goats and poultry) has always had an important place in the economy of the region as well as within its culture and life style of the citizens.

¹¹⁹ Courtesy of Meteorological Center- KSA – Riyadh.

¹²⁰ Courtesy of Meteorological Center- KSA – Riyadh.

Although some animals are still herded in a traditional nomadic manner, pressures on the grazing land mean that some desert ranges are being degraded. As citizens tend more towards a sedentary life style, raising animals becomes increasingly dependant on purchased food, much of which is imported.

4.2.5.1 The Saudi Agricultural Bank (SAB).

This was established and started its activities in 1964. The Bank provided Farmers and Agricultural Firms with soft loans to purchase agricultural machines and equipment. These loans which amounted to more than SR (28.1) billion were used in financing more than 2629 projects for producing vegetables, fruits, meat and dairy products. The Bank also extended more than SR (10) billion in subsidies for agriculture.

4.2.6 Water Resources

Water sources in the Region include groundwater, desalinated water, and treated recycled sewage water. Water produced from desalination amounted to 465590 m³/month and recycled sewage water amounted to 4600 m³/day.

4.2.7 Marine Resources

The water in the Arabian Gulf is shallow but productive and contains a wide range of marine natural resources. Fish are relatively abundant along the Region's coastline and can be grouped in two categories: resident fish, which includes more than 200 commercially exploitable species, and migratory fish, which travel through the Region's waters between September and May.

The total catch in the *Al Khafji* Region is more than the Region's demand. The rest of the catch is exported to other Region's in the Province. The potential for mariculture is substantial. However most of the Region's needs are presently met by fishing. Up until now, there has been an enthusiastic attitude for the promotion of mariculture by Central Government.

4.2.8 Oil and Minerals

The Region is endowed with vast oil resources. Oil is exploited and produced offshore and represents the mainstay of the economy. Associated gas from crude oil production is also produced but not efficiently used until now.

Oil resources are managed efficiently and the products are transported through a network of pipelines to the main refineries situated in *Al Khafji*, *Al Safania*, and *Tanajeb* and to shipping terminals. A number of settlements are linked to oilfields

offshore. Most of these settlements provide mainly bachelor status accommodation.

4.2.9 Environment

Urbanization, increased industrialization and the exploitation of natural resources have created various pressures on land and marine ecosystems in the Region. The desert environment is, in general, inherently fragile and the marine environment is very saline which is important in providing both nursery and feeding grounds for fish and shrimps.

Although in general the qualities of air and water are good, there are a number of potential threats to be dealt with. Air pollution may originate from refineries, quarries and urban traffic at peak hours. These emissions are not regulated at the present time but various pollution control safeguards are incorporated into industrial plants at the design stage.

Sewage in urban areas is treated and discharged into the sea. On the other hand Industrial discharges are not regulated and the discharge of hot brine waters from desalination plants may cause localized problems. However the most important potential hazard originates from tanker discharges and oil spills from accidents which result in the pollution of the marine life.

4.2.10 Population and Human Resources

Al Khaffi Region has experienced a very rapid population growth over the past 30 years. This seems to have resulted from a combination of a high natural birth rate of increase among citizens plus substantial immigration, composed mostly of non-citizens, attracted by the employment opportunities generated by the rapid development of the Region. While the natural increase in the number of citizens has been consistently high in the past 10 years, the increase in the number of non-citizen has tended to slow down after the Second Gulf War in 1991 as a result of the declining demand in the economy for foreign labor.

4.3 Citizen Population and Labor Force Characteristics

4.3.1 Citizen Population

The structure of the citizen population reflects its youthful nature. More than 50% are below the age of 20. The male to female ratio is estimated at 1.02 : 1.00. Citizen household sizes are large and have been increasing during the past 15 years. They have been estimated at 8 persons per household. This reflects the continuing

tendency of citizens to live in extended families and this trend has been perpetuated by the allocation of large housing plots for citizens.¹²¹

4.3.2 Citizen Labor Force

The salient features of the citizen Labor force are:

- A low participation rate with a consequent low share of total employment.
- The dominance of the Government as the main employer of citizens.
- Low participation rates in the private sector.
- Relatively high and rising levels of formal education that in some cases reach university first degree level.
- Very low level of female employment with most being employed in education.

However, these characteristics are obviously changing rapidly reflecting the comparatively large numbers joining the labor force. Increasing employment rates and increasing education and training opportunities are consequently expected in the immediate future.

The occupational profile of citizen labor indicates that this employment activity is highest in administration, clerical and service positions. It is lowest in professional employment, production and agricultural jobs. It is clear that citizens tend to favor administrative employment and have not yet been attracted to professional and technical employment. There seems to be an emerging opportunity to prepare citizens through additional training to occupy higher ranked positions in professional and technical occupations.

4.3.3 Non-Citizen Population and Labor Force

The rate of increase of the non-citizen population residing in the Kingdom has steadily declined in the last decade.

The size of the non-citizen population is a function of:

- The levels of activity within the economy.
- Labor requirements.
- Occupational characteristics.
- The size of the citizen labor force.
- The proportion of family to single status workers in the non-citizen

¹²¹ Source: Saudi Arabia Census Department

population.

The population structures of non-citizens presents a very uneven profile. This is especially reflected in the great difference between the male and female population. Also, the number of male population in productivity age (18-55) is higher than both populations in the school age group and that of the older age group. The non-citizen labor force includes domestic servants who reside in households but are not part of household units. Non-citizen household characteristics are very different from those of citizens. Private family non-citizen households are smaller with an average size of 4 persons per household. Many non-citizens live in shared or 'collective' households, which include bachelors who share the same apartment.

4.4 The Economy

4.4.1 General Characteristics, and Trade

The *Al Khaffi* Region has an open economy, which must be viewed in the context of its principal resource, that of oil production and its related trade. Accordingly, the oil prices and Government expenditure levels constitute the prime determinants for the condition of the economy. The link between the economy and the population size and composition is strong in the region, since labor is an internationally traded commodity. It is also important to distinguish between the oil and non-oil components of the economy. As oil output and oil income are very volatile in nature and reflect exogenous factors.

4.4.2 Role of Public and Private Sectors

The lack of emphasis on diversification in the Region has contributed to a continued dominance by the Government and the public sector on the economy. The National Oil Company (*ARAMCO*) and its subsidiaries manage the oil related resources of the Kingdom whilst the general industries controlled by the government are responsible for many publicly owned non-oil interests. The latter has made significant investments in recent years. Other significant public investments are made by the Agriculture Sector, which plays an increasingly significant role compared to such activity in other countries. Co-operatives, established under Government Law, are significant in trade and in certain Sectoral activities.

4.4.3 Employment Structure

The employment structure in *Al Khaffi* Region reflects most of the above aspects

and is mainly characterized by the following:

- Government and community services e.g. hospitals, schools, water and electricity together with trade and other services e.g. telecommunications, post offices, transportation etc... dominate employment.
- Construction, livestock and fishing account for a limited number of employees. Both sectors employ a large proportion of unskilled labor.
- Hydrocarbon extraction and processing is very intensive and provides for a significant number of skilled employment.

4.5 Settlement Patterns, Rural Development and Regional Land Use

4.5.1 Settlement Patterns

The existing settlement pattern in the *Al Khaffi* Region has been influenced by a number of historical, geographical, economic and social factors. Outside the center of *Al Khaffi* City, the size and distribution of settlements have been influenced to a large extent by government development policies, which included the establishment of new settlements. The location of these settlements is generally conditioned by the availability of natural resources and / or tribal demand, in particular groundwater, cultivatable soil, fishing and oil, and to the main regional roads.

Settlements in the region display different characteristics and functions. At present, two major urban centers form the main poles of attraction namely; *Al Khaffi* City and *Al Safania* City. Settlements situated in the rural areas have a minor influence on the total population.

The provision of community facilities in settlements is generally good, and larger settlements tend to concentrate more facilities. The distribution of existing facilities in *Al Khaffi* City is shown in Map AP2-3/4, and is related to population size. Some rural settlements in the *Al Khaffi* Region suffer from a lack of quality of services, due to the small size of the population in each village. Also, the long distance between the settlements mitigates against the establishment of a complementary service that could be distributed amongst them. The linkages between rural settlements in the *Al Khaffi* Region are generally not very significant. The only exception is the highway connecting *Al Safania* City with *Al Khaffi* City.

4.5.2 Rural Development

The main obstacles facing an extensive rural development relate to the scarcity

of groundwater, plus the limited funds allocated for such purpose. Also, the harsh desert environment with very limited resources contributes to the problem.

4.5.3 Regional Land Use Pattern

The pattern of regional land uses in *Al Khafji* Region is characterized by the presence of large areas of desert, *sabkhas* and permanently uninhabited land which constitutes more than 90% of the total area. Human settlements, major facilities and institutions are grouped in specific areas, mostly situated along major regional roads. The regional land uses are shown in (Figure 4-6).

The pattern of land use activities is at the basic level, conditioned by the availability of water in addition to two other important factors. The first is the location of oil fields and associated facilities onshore and offshore; the second is the presence of large areas of *sabkhas*, which constrain development along most of the coastal road.

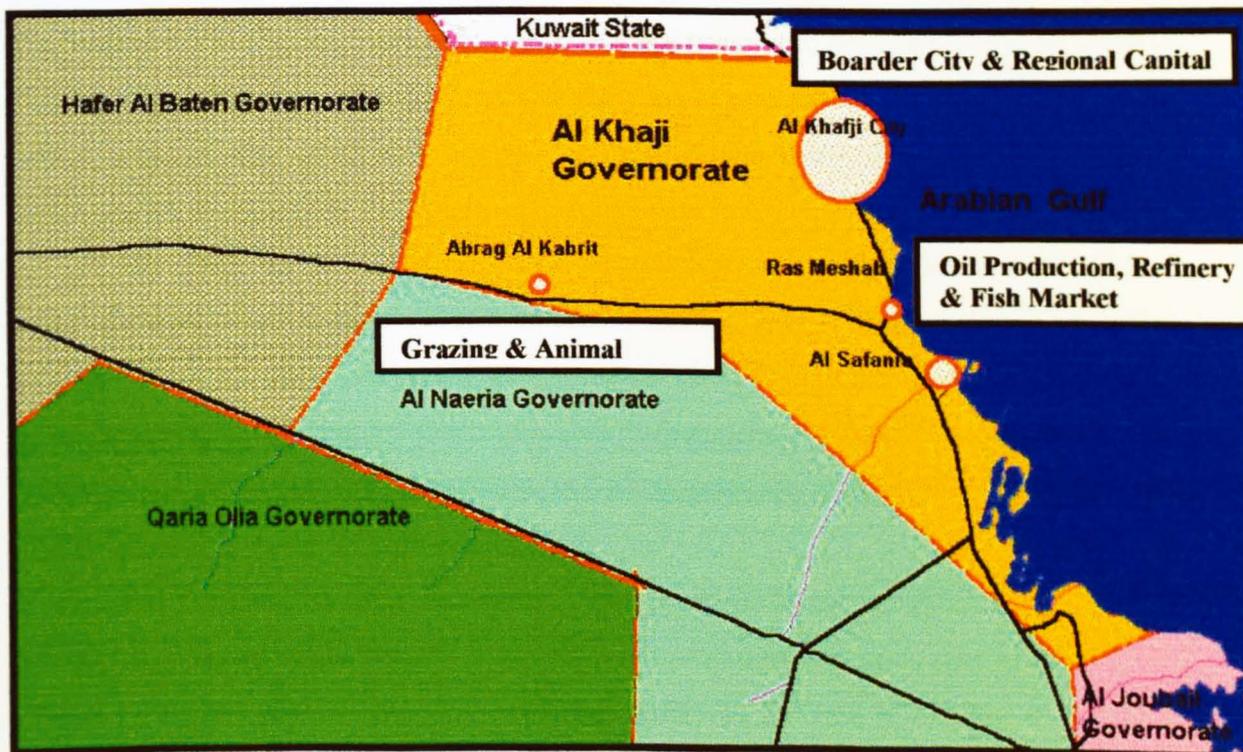


Fig. 4-6– Al Khafji Governorate Regional Land Use Map ¹²²

¹²² Courtesy of Dammam Municipality, (Information Surveyed by the Researcher) – Dammam.

4.6 Housing and Community Facilities

4.6.1 Housing

The housing stock in the Region is composed mainly of villas, low-cost housing, traditional housing, apartment units, and various forms of temporary housing as previously explained. Estimates of the existing housing stock have been derived from a number of surveys, including the household and land use surveys undertaken in this study. Complementary information was obtained from the Ministry of Municipal and Rural Affairs and was previously discussed in detail.

4.6.1.1 Types of Housing

The predominant types of citizen housing are villas and low-cost housing, the former constituting the majority of the stock in the Region. The quality of the stock is generally good, since the majority of housing developments in most areas are relatively new and of a good standard. They were constructed by using free interest loans from the Government or the real estate bank. The various types of dwelling units have different density characteristics. The highest densities are recorded in *Al Khaffi City Center* where most of the apartment blocks are located. The lowest densities are recorded in villas mainly occupied by citizens.

The distribution of non-citizen households by house type is a function of existing supply mechanisms and affordability. The majority of households living in sub-standard housing units are low-income expatriates. The absence of a mechanism for providing direct housing for this population category in *Al Khaffi City* has given rise to a filtering process whereby low-income households occupy older houses and apartments formerly used by more affluent households.

The citizen housing sub-market is mainly a direct product of Government policies and local preferences. A significant correlation has been established between citizen income and the type of accommodation in *Al Khaffi Region* as might be expected.

4.6.1.2 Housing Supply

Housing in the Region is provided by the public, private and co-operate sectors. However, the public sector, through Government and the Real Estate Bank housing policies, exercises full control over the housing supply mechanisms.

The role of the public sector in housing consists of:

- Direct lot allocation fully connected to the infrastructure, by the Government

(Municipality).

- Granting and allocating residential land plots to citizens for all types of housing.
- The provision of free interest loans to finance construction via the Real Estate Bank.
- The initiation and implementation of redevelopment programs.

4.6.1.3 The Real Estate Development Fund (REDF).

This was established in 1974 for the purpose of encouraging the private sector to engage in the building and construction business. The fund provided a total of SR (111.7) thousand billion in loans over a 20-year period. These loans were used in building (505718)-housing units throughout the Kingdom.

4.6.2 Social Services and Public Facilities

The provision of social services and public facilities includes educational, health, religious, cultural and welfare facilities. Recreation and sport facilities are included, as well as other public services.

4.6.3 Education

The education system in the Region consists of both public and private schools.

The existing school structure consists of a four-tier system described as follows:

Kindergarten (3-5 years old).

Elementary School (6-11 years old).

Middle School (12 to 14 years old).

Secondary (15-17 years old).

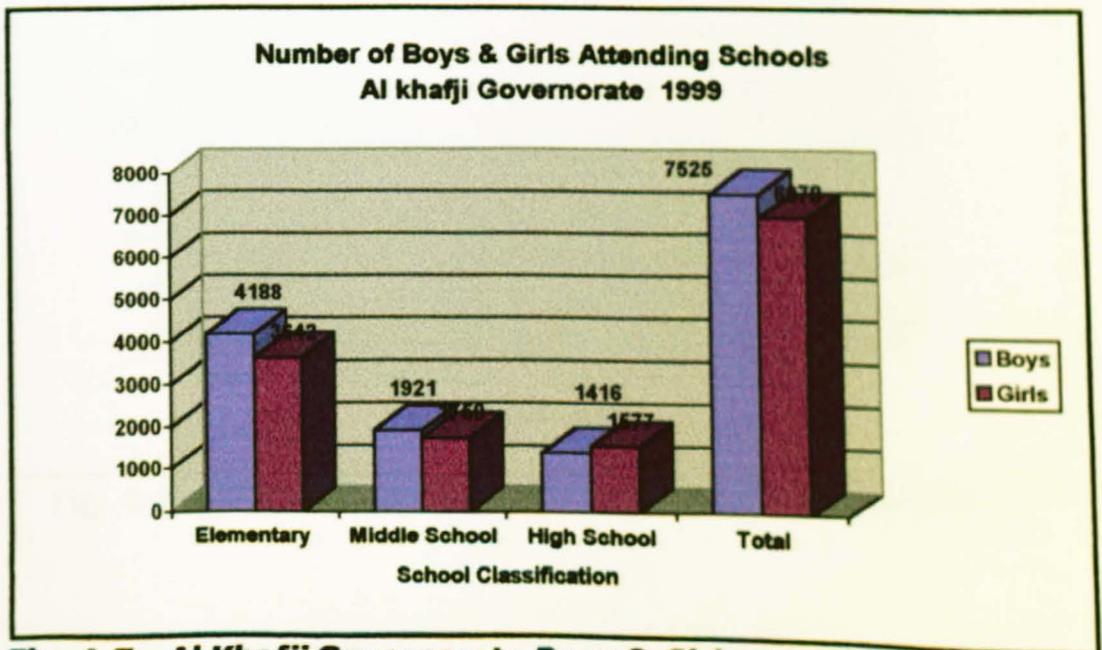


Fig. 4-7- Al Khafji Governorate Boys & Girls Attending School

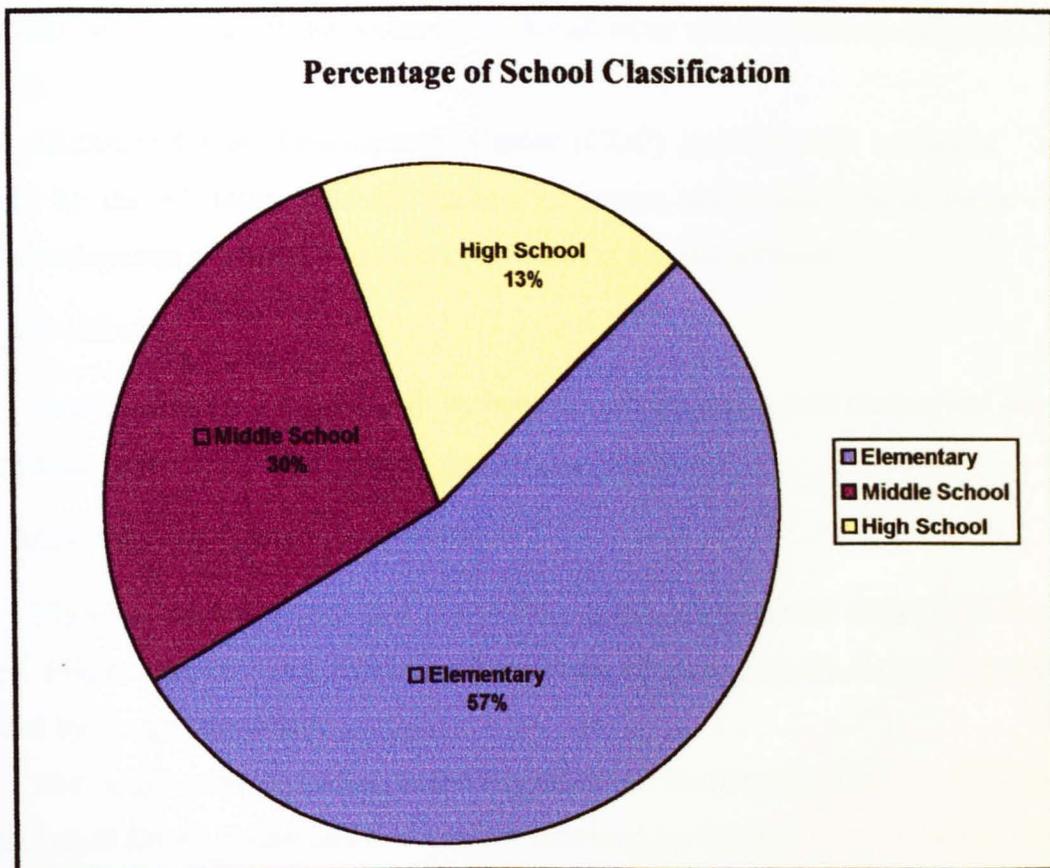


Fig. 4-8– Al Khafji Governorate Schools Classification

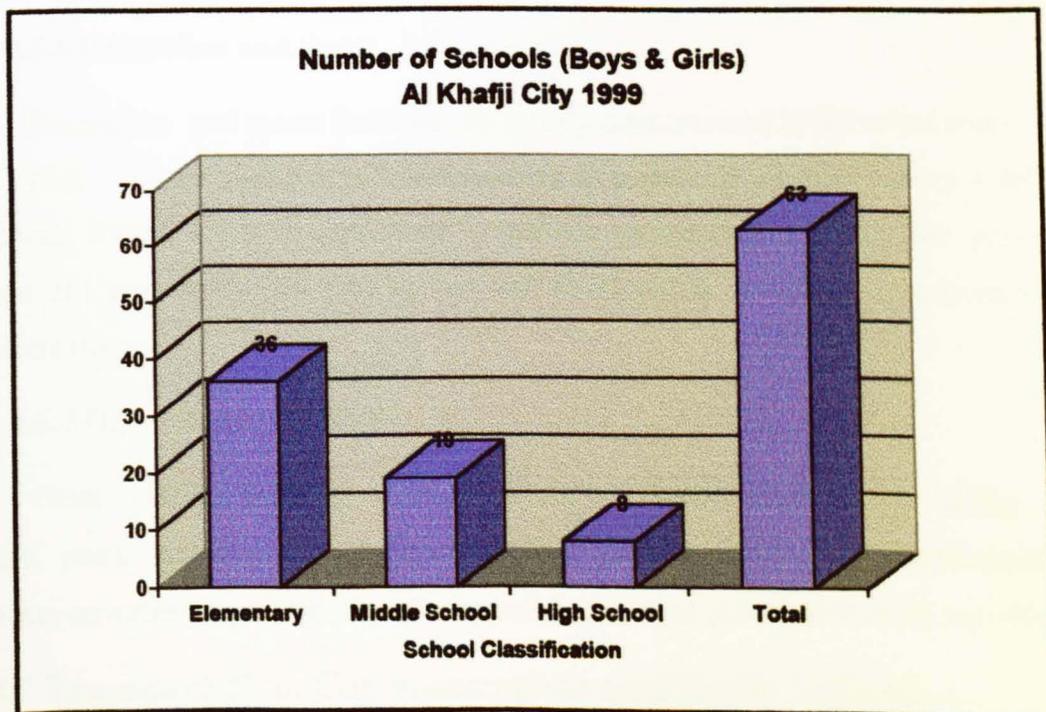


Fig. 4-9– Al Khafji City Number of Schools (Boys & Girls)

The government offers free education to all citizens and expatriates employed in

the public sector. The private sector caters for all other school children. (Figures 4 -3 , 4-4, 4-5).

ARAMCO Career Development Center (CDC) provides the vocational skills required by the oil sector through various programs and courses. Adult literacy and social development programs and on the job training are also offered.

4.6.4 Health

Health services are provided by both the private and public sectors and consist of hospitals, health centers, and public and private, clinics.

4.6.5 Religion, Culture and Welfare

Mosques are well provided for in the Region. They consist of facilities for *Eid* prayer, Friday prayers, and local mosques. Some of the registered mosques have been financed by the private sector.

The major cultural facility in the Region is the Cooperative Welfare and Charity Society of *Al Khaffi*. Social welfare services provided by the Government include social security, divorced women services, and facilities for the handicapped. The Ministry of Labor and Social Affairs manages these services.

4.6.6 Recreation and Sport

Recreation and sports facilities are mainly concentrated in the urban areas. In *Al Khaffi* city, *Al Alamain* Sports Club represents an important regional facility, while the Horseback Riding Club is considered a private sports club. Also public parks and gardens are reasonably provided but not well developed in the urban areas as well as in rural settlements.

4.6.7 Other Public Facilities

Other public facilities serving the various settlements include police, civil defense, postal services and gas stations. The existing level of services is generally adequate, nevertheless, the quality of some of the services provided must be reviewed.

4.7 Transportation, Communications and Public Utilities

Al Khaffi Region has the infrastructure necessary to support rapid development. International linkages for oil companies serving the Region are provided by sea, road and through the telecommunication networks. The current level of the other services is not responsive to the demands and needs of the region, notably with regard to power,

water and sewerage. There are indications of an urgent need to expand the capacity of these services to meet anticipated increases in future demand. Studies and projects have already begun to provide additional facilities in each of these sectors.

The strategic road network is a major element of the Region's transportation system. It provides international communication to Kuwait and other Gulf States through the eastern road. In the absence of Inter-Regional air services, strategic roads provide the only linkages to a widely spread Kingdom.

Buses and taxis provide public transport. The buses operate between towns, while taxis provide the service inside the town only, providing the principal form of urban public transport. The bus service has a low public profile and opportunities exist to promote the use of buses in the future.

4.7.1 Utilities

4.7.1.1 Water Supply

Water resources in *Al Khaffi* Region comprise desalinated water; sweet and brackish water from inland well fields. Mainly the Water and Sewage Department provides the water supply, which is a government organization, while the Ministry of Agriculture also administer the extraction of water from well fields.

All desalination facilities are presently operating at full capacity and provide some six million cubic meters each year. The trunk mains supply desalinated water to the *Al Khaffi* City only. Other settlements are supplied by mobile water tankers daily.

4.7.1.2 Electricity

Saudi Cooperation Electric Company (SCECO) in the Eastern Province supplies the Electric Power. The demand for electricity has increased significantly in the past 15 years. The principal power stations are at *Al Khaffi* City.

4.7.1.3 Sewerage

Around 20% of the total allotted land have piped sewerage in *Al Khaffi* City. The rest of the Region uses septic underground tanks.

4.7.1.4 Drainage

Surface water drainage systems are not available at the present time and the Municipalities deal with flooding in the very short rainy season by using vacuum tankers.

Drainage problems occur in *Al Khalidia* Area in *Al Khaffi* City, because of the high water table level and a fully developed area with no main sewage but only septic

tanks, which in return complicate the problem during the rainy period. This area is predominantly *Sabkha* with no natural watercourses and extensive groundwater lakes are evident following rain.

4.7.1.5 Solid Waste

Municipalities take waste from roadside bins and industrial premises at regular intervals to a solid waste disposal yard in the desert outside the settlements. They are buried in designated areas and covered with sand to a depth of four meters in layers. Landfill sites are provided to serve *Al Khaffi* City. No special facilities exist to handle and dispose of hazardous wastes.

4.8 Existing Condition Fact Finding and Reasoning

From the previous survey the following are some of the main problem that should be dealt with when shaping the conceptual strategic plan for *Al Khaffi* Region.

Most of the region is considered to be new with very few old buildings as it was mainly built after the oil boom period. As the oil prices fell the housing development declined, starting in the early 90s. Most of the area are private houses as well as low cost houses, which shows the non-homogeneity of the community. The population structure is much better compared to similar settings in KSA, as more nationals live in the region. Some community services are sufficient, such as schools and mosques, while others are insufficient, such as health care facilities and recreation facilities.

The economic structure of the community relies on consumer trade and government jobs including the oil companies. There is a short of infrastructure in newly developed areas, which is an indication of the rate of physical expansion in the region during recent years. The survey also reveals the unbalanced landuse, in that it concentrates mostly on residential and commercial uses. Also the road network does not serve the expanding areas. While the existing roads have less plantation due to the shortage of irrigation water, most roads need maintenance as there is a shortage in road maintenance funds.

The following table (Table 4-1), explains in a tabulation form the revealed facts and their possible reason or reasons. This method will help in identifying the best possible ways to tackle the existing problems.

Table 4-1 – Existing Condition Fact Finding

No.	Fact	Reason
1	Very few old buildings	<ul style="list-style-type: none"> • It is considered to be a newly developed oil city
2	Real estate booming during 70s-80s	<ul style="list-style-type: none"> • The rise of oil prices • Establishing of the Real Estate Bank
3	Oil companies in the area subsidize housing ownership for their employees	<ul style="list-style-type: none"> • To improve the standard of living • To help in the city development
4	Housing development declines in the 90s	<ul style="list-style-type: none"> • The start of the second Gulf War - <i>Al Khaffi</i> City was the main theatre of the war located at the Kuwaiti boarder • The war financing affected government budget. • Oil prices dropped to a very low level
5	More private housing and low cost housing than apartments	<ul style="list-style-type: none"> • Community demographic structure not homogenous • Reasonable land prices • Availability of loans for home ownership
6	Population Structure is better than in comparative cities where more locals live, about 57300.	<ul style="list-style-type: none"> • More burden on land demand, as all locals are eligible for housing lot. • More community facilities are needed e.g. schools, hospitals etc.
7	67 Schools consist of 631 Classes for girls and boys	<ul style="list-style-type: none"> • According to the previous calculations the number of schools exceeds the international rate.
8	13 Health facilities which does not meet the community needs	<ul style="list-style-type: none"> • Less government support • Less contribution from the private sector
9	42 Mosques	<ul style="list-style-type: none"> • Evenly contributed between government and private sectors • Being an Islamic Country which practice <i>Islam</i>, support is given strongly to all religious facilities

No.	Fact	Reason
10	Parks and Play Grounds Only 3	<ul style="list-style-type: none"> • Not efficiently utilized since they have very minimal privacy, and unsuitable areas. • Substituted by a 7 km. Stretched Corniche along the Arabian Gulf Coast which supplies more privacy for locals as well as expatriates
11	Manufacturing is not a main economic activity	<ul style="list-style-type: none"> • Not enough support from the government • No Market for any production regarding the various type of industries. • Not sufficient Freight Transportation • No easy access, to airports, sea Ports etc.
12	Commercial Activity is sufficient	<ul style="list-style-type: none"> • Plenty of shops as most multi-storey buildings have shops in their ground floor level. • Less diversity of the shop types that satisfy the community needs
13	City skyline is mostly two floors	<ul style="list-style-type: none"> • Most of the buildings are for private residential use
14	One building six storey high	<ul style="list-style-type: none"> • Government Telecommunication building and is used for antenna installation
15	Commercial/Residential Buildings are located on the main street between three and four floors	<ul style="list-style-type: none"> • Market demand. • Multi-use building one or two ground floors used for commercial activities and the upper are for residential use.
16	78% of the buildings are in good to fair condition	<ul style="list-style-type: none"> • Mainly private home buildings, recently constructed following. • Good standards and strict supervision and reasonable maintenance

No.	Fact	Reason
17	15% of the building stock is in poor condition and need maintenance	<ul style="list-style-type: none"> • Old buildings 30 years old. • Built using poor material during the early days of the oil boom
18	7% of the housing stock needs demolition	<ul style="list-style-type: none"> • Old buildings more than 30 years old • Built using poor material before the oil boom. • Very little or lack of supervision
19	49% of the buildings are connected to all infrastructure except sewage	<ul style="list-style-type: none"> • Existing sewage station cannot support all committed lands and buildings. • Less funding for infrastructure
20	18% of the buildings are connected to water and electricity	<ul style="list-style-type: none"> • Insufficient phone lines • Less funding for sewage
21	Only 2% of the building stock has water connection and no other infrastructure	<ul style="list-style-type: none"> • Under construction • Did not apply for other connections • Building is not used for human use
22	31% of the total building is connected to all infrastructure	<ul style="list-style-type: none"> • Those building were built during the oil boom
23	24% of the committed land is occupied while the remaining is still undeveloped	<ul style="list-style-type: none"> • Most undeveloped no infrastructure. • No service road network for such lots
24	Unbalanced landuse	<ul style="list-style-type: none"> • Landuse Plan concentrate only on Residential and Commercial use • Other uses are considered as unimportant and do not play a significant role in the industrial development of the city.

No.	Fact	Reason
25	Road network does not serve most of the committed land	<ul style="list-style-type: none"> • Insufficient funds • Lack of community participation, mostly from the private sector
26	Plantation is rare	<ul style="list-style-type: none"> • Lack of irrigation water • Not enough funds
27	Street Lighting are 22% of the whole network	<ul style="list-style-type: none"> • Roads are not fully constructed • Scheduled for the next street lighting phase
28	11% of the road network are in good condition while 17% are in fair condition and the remaining are still sand tracks	<ul style="list-style-type: none"> • Less maintenance funds allocated for road network

4.9 Development Concepts and Ideas

Various development concepts have been experienced in the Gulf Region with the intention of accelerating development procedures and implementation processes. As a consequence of such experiences Riyadh in Saudi Arabia and Abu Dhabi in the United Arab Emirates are today implementing full government control over all development issues and procedures. In this process the Government finances the entire infrastructure and creation of community facilities as well as housing. On the other hand, *Bahrain* and Dubai in the United Arab Emirates both practice a significant partnership role with the private sector in relation to urban development. Both concepts have their own strengths and weaknesses. Each has its own reasoning and criteria of choice in the development process.

Other concepts from different regions around the world, which can also be considered, include the following:

For example, in Australia the "System of Urban and Regional Planning distinguishes between *cross-regional* and *local urban and regional planning* or municipal development planning, resp., the latter referring to the municipal development within all substantial areas (local development concept / development program / thematic concepts and programs), the elaboration of future space utilization (zoning plan) and the area wise determination of frame conditions of spatial development (design guidelines and concepts) for the legal wording of the volume to be built-up (building-up plan).¹²³

With regard to the above context, it is possible to distinguish between several levels of planning starting from cross-regional passing through local urban all the way down to the, "building-up plan". In this research it is also necessary to deal with several levels of Planning, some of which are explicitly determined, while others are implicitly ingrained within the planning concept. As has been indicated, the research itself focuses on the local level of *Al Khaffi City*, but also takes into consideration the regional and the sub-regional implications for the proposed conceptual plan.

The "spatial master-image" (i.e. building-up master-image) is to be regarded as part of the *local development concept* (program). The local development concept (program) is to comprise at least the following elements: settlement master-image (functional structure, settlement boundaries), *spatial master image* (built-up and free space),

¹²³ CONCEPTION OF A SPATIAL MASTER IMAGE (URBAN SPATIAL MODEL), HIERZEGGER, H., VOIGT, A., LINZER, H., MAYERHOFER, R., WALCHHOFER, H. P., Vienna University of Technology, Institute of Local Planning, Vienna, Austria P. 1. The Second International Conference on Quality of Life in Cities. 8-10 March 2000, Singapore.

infrastructure concept (energy, traffic, water supply and waste water disposal) zoning plan.¹²⁴

According to these ideas, all the components of the local development plan are part of the actual physical plan of the city that are realized in a later stage. The local development concept, as mentioned earlier, is affected by the following elements:

- Culture.
- Beliefs.
- Physical Site.
- Governing system and political setting.
- Economic aspects.
- Social and demographic concerns.

Future developments of the zoning plan should principally be based on the building-up plan, thus stepwise converting the zoning plan into the building-up plan (both chronologically and spatially).

The, “spatial master-image” is to be regarded as a thematic concept regarding constructional-spatial development of the settlement space. It is to continue the local development concept (urban development concept) taking the regulations of the zoning plan into account.¹²⁵

To reach the ultimate goals and objectives of the society, the building-up plan should be a true reflection of the zoning plan. While in turn, the zoning plan is a translation of the spatial master-image. The spatial master image is the thematic concept through which the planner expresses his ideas. This image should not be built in a vacuum away from reality, rather it should fulfill the needs of the society in a realistic manner.

The outcome of the local development concept / urban development concept, the regulations of the zoning plan and the contents of present material concepts may not be rendered obsolete, but subjected to appropriate qualifying considerations.¹²⁶

Accordingly, all the previous planning efforts should be taken into consideration while formulating the future development plan for the city. All such plans were based upon certain experiences that were appropriate to the relevant conditions at that time. Regardless of its suitability to the existing conditions, such a plan has an educational value for the creation of any future conceptual plan. This is particularly true from the

¹²⁴ *Ibid.*, P. 1.

¹²⁵ *Ibid.* P. 1

political point of view in attempting to deal with the various forces that were affecting such a plan at a specific point in time. After having regard to such issues it is appropriate that the original concepts themselves can be used as a base for future conceptual planning.

Additionally, it is important in this case study that the development concept itself should deal with the idea of space and time with regard to any future development. In such a case, any proposed development is safeguarded against absolutism in the near or middle range plan. It is not a matter of solving current specific problems or certain existing matters, but rather it is about building a prosperous future while solving the current conditions and problems.

The "Spatial Master-Image" can be divided into six major elements as follows:

1. Natural and landscaped space.
2. Development.
3. Building-up.
4. Utilization.
5. Structuring of the city area.
6. Master-image projects.

Using such elements to analyze the city area resulted in the following main contexts:

- a. The structuring of the city into *sub-areas*,
- b. The drawing-up of *section characteristics* with a definition of "preservation" and / or "modification" priority (potentials) for the constructional-spatial development.
- c. Deduction of specialized area-related projects.¹²⁷

Consequently, building on these concepts, it is irrelevant to judge which one can gratify the current situation, but rather what can lead to the future outlook, goals, and objectives for both the region and the nation.

At present the Saudi Central and Local Governments play a significant role in the development process and shape the face of the country for the future. This fact influences the choice of the conceptual direction of local development since the government apparently intends to dominate most of the development activities, at least

¹²⁶ *Ibid.* P. 2

¹²⁷ *Ibid.* P. 3

for the near future. The type of governmental control may possibly vary in application but will remain at a significant level as long as the country is in transformation phase. Consequently, the proposed development procedure, its future outlook and its challenges that have to respond to current problems in the first instance, has to be scrutinized through a process of objective and subjective testing in order to determine if it would be appropriate. From these tests one concept should prevail and accordingly would be proposed.

Various general development concepts and ideas from local and other international zones have been studied. From this activity, a set of alternatives for the development concepts can be suggested and examined. The test criterion includes 22 different items that have a high fulfillment potential with regard to each concept considered in the context of the region under study. In addition, the Government Role as the 23rd. item will have a significant level of influence weighing to a high score that reflects its true position in the community.

4.10 The influence of master plans

In the KSA, town and city boundaries are determined by master plans that remain in force often over a 10 years period. On the basis of such planning strategies, municipal and governmental organizations are expected to construct infrastructure and urban facilities in advance of demand. On the one hand, this causes an increase in land costs within certain boundaries and directions. On the other hand, this decreases or stabilizes the land cost outside the determined boundaries and directions, since construction and development are prohibited. As a result, the latter areas attract poor people who build their houses informally, which are illegally constructed and inadequate for human shelter with regard to safety, hygiene, tranquillity, and the lack of infrastructure. These illegal and unsuitable buildings create new urban ghettos whose forms, materials, urban facilities, construction methods and architectural styles are completely in contradiction with other new urban precincts.

Arranging the spatial organization of the urban area based on a defined districts system may help all local inhabitants to identify themselves within the community, which increases the possibility of face-to-face communication based on their similar interests, concerns and ties. This type of spatial organization is recommended, especially for those new urban developments whose inhabitants migrate from other regions to the urban area seeking new work opportunities.

During the early days of the Kingdom (early 20th century), when growth adhered to experience and social norms, the physical organization of towns according to a preconceived plan with distinct uses and a program of implementation was unknown. No central (i.e. royal) statutes, no large-scale development, no master plans, and no strong legislative controls existed. None of the apparatuses, typical of modern urban planning under an established state, were developed. The modern modes of transportation, and systematic intervention of large-scale urban production, under the auspices of a powerful central state prior to the discovery of oil.

Finally, adding new land uses, such as oil field reservations, houses and commercial uses for farmland were done only after securing the rights of the affected tribes. This method was undertaken until a strong formal government was established around the early 50's, which took control over the land ownership and distribution of almost all the Kingdom.

4.10.1 Land Ownership and Distribution

During the early decades of the 20th century, settlement growth was slow and simple, residents encroached on raw land as the need arose. Incremental appropriation of new land conformed to the slow demographic pace. Constant increase in population was occasionally disturbed by natural disasters and random militant conflicts among settlements' populations and, or, with marauding nomads. Austere subsistence economies offered limited financial resources, a factor, which diminished the economic viability of town expansion for the political leadership. Under such conditions, urban growth was economically irrelevant, because land was perceived as a social resource rather than a financial asset. Moreover, the Islamic principle of *shufah* was acknowledged under the Islamic legal code. According to the *shufah* principle, a neighbor was given priority to buy next door properties at the given exchange price. As such, *shufah* helped form quarters which housed relatives regardless of their income categories. This situation exists since the rise of *Islam* and it is an on going practice as it is a main and important ethical concept of Islamic real estate law.

4.10.2 Sustainability

Sustainability was originally an environmental concept, best illustrated in the World Commission on Environment and Development 1997 BruntLand Report on "Our Common Future". This report established the principle that "*All our needs should be met in a way that does not compromise the ability of future generations to meet their*

own needs'. The 1992 Fifth Environmental Action Plan of the CEC, established the Precautionary Principle that *"Restraints on development should be imposed where there are grounds for reasonable suspicion of environmental damage without waiting for absolute proof"*.

It is in this particular context that practitioners have been seeking to define an appropriate approach for sustainable spatial planning and development. This could involve the following sequential principles.

- Establishing the need for social or economic development.
- Establishing the development options available in the planning phase, if the need can be justified, and estimating their use of resources and their environmental impact.
- Considering the least damaging and most beneficial development option, when the environmental impact is established.
- If the "best available option" involves the loss of resources that cannot be readily reproduced or replaced then the "polluter pays" principle applies.
- Involving the imposition of enforceable planning obligations on the development.
- If the development opportunity is "planning led", through a strategy or development plan, then the associated obligations should be identified in an appropriate document.
- If the development proposal is made through an application of planning permission, then the planning obligation could be embodied in any consent.
- A sustainable approach to the formulation of spatial planning and development strategies will usually involve an integrated land use and transportation planning. It also considers the issues of economic competitiveness, social inclusion, and environmental quality.

The functions of spatial planning and development are prevention, safeguarding, enabling, and integrating. Spatial planning, at whatever level, can fulfil the key public service functions of prevention, safeguarding, enabling and integrating. However, it is at the municipal level that the balance among prevention, safeguarding and enabling can be most effective. The following paragraphs illustrate these issues.

4.10.3 Prevention

By providing a clear and relevant overall strategy and integrated sectoral and

territorial policies, programs and proposals of spatial planning can ensure that development decisions are taken with the wider public interest in mind. Such a context can help to promote the “precautionary principle” and to prevent actions, which are unsustainable. In this way, well founded longer term planning can act as a preventive measure against the creation of problems for future generations. The outcome of effective preventative spatial planning of this kind can only be measured indirectly as a contributing factor to overall longer term social, economic and environmental well being.

4.10.4 Safeguarding

There are natural and man made environmental heritage resources which can be safeguarded through spatial planning systems. Such resources have to be recognized, defined and conserved on a sustainable basis. The continued environmental well being of such resources is considered a constraint on incompatible development, while, at the same time, it is an opportunity for compatible activities. However, it is only at the metropolitan Level that the “best available development options” can be evaluated regarding the capacity of wider ecosystems.

4.10.5 Enabling

Spatial planning has a particular and positive role to play in effective metropolitan administration by playing the following:

- Exploring longer-term futures.
- Anticipating future development needs.
- Enabling needs to be met.

This means making active use of available spatial planning processes to enable development to take place over time in a most sustainable way. By rolling a strategy forward, at regular intervals, the process can ensure that a supply of development opportunities is presented to the social and economic markets. Such an approach also makes development control a positive process in safeguarding and promoting the “best available development options”.

4.10.6 Integration

Spatial planning and development is concerned primarily with physical issues, but these clearly cannot be disassociated from the social economic and environmental forces which are shaping them. This “holistic” approach has a well-established tradition

in Europe, which enables spatial planning to be recognized as a process that achieves an integrated approach to sectoral and territorial issues. Integration at the metropolitan level, therefore, means having regard to wider and longer-term social, economic, and environmental considerations. It also balances sectoral interests, such as the demands generated by the market economy, with the territorial sensitivities of communities and the environment.

Spatial planning can assess and consider the social and economic forces affecting urban structures, over foreseeable time scales, and ensures that the changing needs of the social and market economies are anticipated and addressed. This usually involves balancing the re-use of urban land and buildings with the release of “Greenfield” peripheral or rural land. It may involve planning in a context of urban decline or growth. Over larger metropolitan regions and areas both of these forces may be experienced leading to social exclusion in some parts and pressure for development in others. Only at the metropolitan level can the necessary balance be reached between urban renewal and regeneration and urban growth.

4.11 Strategy, policies, programs and projects

In spatial planning, there are distinctions to be drawn among the roles of Strategy, policies, programs, and projects. The role of a Strategy is to provide an overall unifying direction for the future action of all “stakeholders” in the ongoing spatial planning and development process. Policies may be sectoral or territorial expressing the democratically determined attitude and intent towards strategic issues of the relevant authorities. Issues may be strategic because of their extent across urban area or their significance in specific location. Programs usually are of a medium to long term multi-sectoral nature to address strategic issues. Projects usually are of a shorter term developmental, infrastructure, or environmental nature in order to meet priority needs.

4.11.1 Strategy

Spatial planning has a key role to play in identifying and confirming the strategic issues being faced, or about to be faced in the foreseeable future, by urban regions and areas. By giving a coherent consideration to all of these, spatial planning can provide an overall longer-term strategy, which encapsulates the main urban directions for the future. There are many terms in current usage of a Strategy, such as perspectives, visions and frameworks, but the essence of all of them is to provide longer term durable directions, which can guide shorter term tactical decision-making. They

should be pushed forward on a regular basis to maintain their relevance and effectiveness. Above all, they should be capable of commanding democratic support and provide leadership.

4.11.2 Subsidiary in Spatial Planning and Development

Subsidiary is a democratic concept, which suggests that decisions should be taken at an appropriate level to the issues involved. Thus, issues of a European wide or national dimension should be addressed at such levels, whereas issues of regional or local significance should be considered at other levels. There are undoubtedly a number of strategic spatial planning issues that can only be effectively addressed at the level of the urban region or area. Subsidiary, as a practical concept, can only work if there is an effective means of governance at all appropriate levels. Democracy is not served if an adequate level of decision-making is missing.

4.11.3 Time Scales

Most of the physical change that might take place in urban areas over the next two years is already committed and much of that, which might happen in the coming 3-5 years is already programmed. Strategic spatial planning at the urban/urban region level is, therefore, aimed at the 5-15 year period where decisions can still be influenced. In order to test the robustness of adopted strategies and policies; medium term planning needs to be set in a longer-term context. The medium term planning should be guided by scenario planning, which investigates and considers longer-term futures during 15-25 years period.

Many of the strategic issues at the urban region level are of a scale and significance that require the adoption of a strategy. They need supporting sectoral and territorial policies and programs, which remain for extended periods of time, perhaps 10-15 years. The long term urban renewal and environmental recovery of older industrial areas is an example. Other strategic issues may involve considerable uncertainty, for example balancing the demand for market orientated development with the reuse of urban land and buildings. In this case, a shorter-term horizon to perhaps 5-10 years would be more appropriate. However, in both cases it is important to regularly roll forward these time horizons in order to maintain a positive and enabling "planning led" approach. As a result of these urban region wide considerations spatial planning responses will have to consider the following:

- Longer term urban futures and strategic scenarios.

- Medium term spatial planning and development options.
- Balancing the medium term demand for development with the reuse of urban land and buildings. The need for Greenfield land release.
- Evaluation of alternative Greenfield release and urban growth options.
- The integration of urban renewal and/or urban growth options with transportation strategies, to reduce travelling trips.
- Integrated transportation strategies for public and private transport, including freight and intermodal interchange, and their locational implications.
- Strategic environmental safeguarding and recovery.

4.12 The need for technical capability

Competence in spatial planning at the urban regional level requires informed decision-making. This, in turn, necessitates a technical capability to provide that information. Such a capability can be provided by a group of professionals working as a network or an “in-house team. Whatever the administrative arrangements they must have the technical capability to, perform the following:

- Identify and confirm strategic issues for the medium and longer term.
- Gather and evaluate relevant data to inform consideration of such issues.
- Formulate appropriate strategy and policy responses to such issues.
- Manage an appropriate process of public participation.
- Manage an effective process of implementation.
- Monitor and review outcomes and outputs from this process.

Consequently, the previous six points are the main outline for placing a proper strategic plan in place. Such points have to be followed carefully a sequence as they were built to form a complete work frame. The following chapter will explain such processes in details and setup a strategy to form a comprehensive plan.

CHAPTER FIVE

STRATEGY FORMATION

5.1 Introduction

Thanks to oil wealth, the urban development programs of the Saudi government have been influential in stimulating the national economy, shifting the socio-economic significance of the traditional social structure and urban network, creating a new urban hierarchy, and virtually conditioning most of the new urban scene by underwriting construction works, subsidizing private investment in the built environment and requiring municipal land use and building controls. In return, urban planning activity and public policy making have been the prerogative of the central government, a bureaucracy fully presided over by the King. Due to this heavy reliance on state spending, the Saudi City has grown economically inefficient, politically underdeveloped, and physically incompatible with its harsh desert environment.¹²⁸

This chapter focuses on the practical side of physical planning. It discusses the following main issues:

1. The different levels of planning.
2. The planning phases.
3. The methods of Implementation.
4. Planning Major issues.
5. National policy and planning.
6. Main concerns at the regional level.
7. Philosophical and Imperative perspective for the strategy.
8. Main regional issues.
9. Regional goals and objectives.
10. Development strategy.
11. Planning in the new perspective.

The chapter also highlights the goals and policies that relate well with Central Government goals and objectives and the main concerns of the region.

5.2 Levels of Planning

Depending on the conditions existing in a particular country, the intermediate level may actually encompass two or more hierarchically organized levels, for which

¹²⁸ Faisal Mubarak, Ph.D., Reclaiming Urban Quality: A "Neo-Traditional" Approach: Riyadh, Saudi Arabia", The Second International Conference on Quality of Life in Cities. 8-10 March 2000, Singapore, P. 1.

the terms “micro-region”, and “macro-region” would be appropriate. The number of intermediate levels and their distance from the local and national levels are determined by several factors. Among them the following are particularly relevant:

a) **The level of development:** At a very low level of development, such as a subsistence economy, the ties of a community with the outside world are very limited. There is not much need for an intermediate level at which popular participation in development could be organized. With gradual progress, such a level will emerge covering initially only a few neighboring communities:

b) **The size and administrative structure of the country:** The larger the country, the greater the need for organizing intermediate levels. This level will help in bridging the gap between the top authority and the local administration. It also sets the chain of command in a hierarchical model so as to achieve the optimum outcome from the plan in place. Commands and orders as well as ideas can reach both ends with less distortion.

c) **The decision-making system for development, existing in a particular country:** In a highly centralized decision-making system, the need for intermediate levels of decision-making is not as pressing as in a country where a decentralized decision-making system is prevailing. Usually, the system operating in a particular country is a combination of centralized and decentralized decision making.

One of the crucial factors in popular participation at the intermediate level is the scope of decision-making assigned to it. If the authorities at that level have more decision-making leverage, there is a greater possibility for popular involvement in the process. Concentration of development decisions at the center reduces this possibility but does not eliminate it entirely. The inhabitants of a country where such centralization exists are still able to voice their opinions about development decisions affecting their area. The central authorities may be willing to take them into account, and for this purpose establish procedures to gather and analyze them.

On the other hand, development of large-scale manufacturing industries, particularly those having international markets, requires assistance from the central authorities. This may take a form of direct aid, as in the case of nationalized industries, or indirect aid, such as tax exemptions, credits and locational permits as in the case of private industries. There are also economic and social sectors that require simultaneous involvement in decision-making on the part of central, regional and local authorities.

The general rule in this matter should be that all decisions directly affecting inhabitants of an area should be taken at the decision-making level nearest to them and with their involvement.

5.3 Planning Phases

Regional development planning should start with a diagnostic phase in which the current situation of an area, the needs of its population and potential for development are thoroughly assessed. This can be done more effectively with the assistance of the population. It is, therefore, necessary to create from the outset the required conditions for popular participation in regional development. The delineation of a planning region is the first important step toward this direction. Nevertheless a single-purpose planning region is delimited according to the nature of the area in question (river basin region, rice-growing region etc.), a multipurpose or comprehensive planning region usually coincides with the administrative boundaries which reflect the spatial structure of the existing decision-making system. The stronger the inhabitants' sense of belonging to the territorial administrative unit, the better the chances of their becoming involved in the development process on the regional scale.

Against the background of limited resources for development, choices have to be made among development goals and, consequently, priorities set for meeting national and regional needs. This means that certain needs and requirements would be met in the plan and others either dropped entirely, postponed for implementation in later planning periods, or only partially included in the plan. For instance, if it is agreed that the overarching goal of the region is to create full employment conditions, then, given limited capital investment funds, it may be necessary to curtail the program of housing construction or development of health facilities. The decisions concerning these and similar matters should not be left to the administrators and planners alone. The population should be able to express its views about goals and their proposed order of priority. In order to do this intelligently, the inhabitants of a region should be aware of possible alternatives and their consequences in terms of interdependencies between development of their region and development of all other regions of the country.

5.4 Implementation Possibilities

Implementation of a regional plan offers several possibilities for involvement of the population in development activities. There is, first, the possibility of direct popular participation. Various mutual aid schemes would fall under this category. These

schemes may be included either in the development plan as targets (e.g., construction of a feeder road to a main road provided for in the plan), or in the assessment of resources (a non-monetary supplement of government resources). In either case, self-help schemes, if organized on a mass scale, can contribute appreciably to the achievement of planning targets. They may also involve areas not covered by particular development plans, but which are important to the well being of the population, such as the establishment of regional cultural centers and common sports facilities for a number of communities.

In addition to direct forms of popular participation in the implementation of development projects and schemes, the inhabitants of a region should have a role in overseeing the implementation process. Through such control the public is able to assist in the monitoring of inconsistencies in implementation, to identify obstacles that hinder implementation, and to help institute additional measures that safeguard the timely and proper execution of projects. No control procedures organized by the central government can hope to substitute for this broadly based grassroots level of popular control.

5.5 Major Issues

The major issues under study are the following:

- The national policies and the main regional (issues).
- Philosophical and Imperative perspective for the strategy.
- Population makeup.
- National goals and objectives related to social, economical, urban, and organizational structures.
- Natural and environmental resources related to housing and infrastructure.
- Urban policies, economic efficiency, and social welfare.
- Balanced urbanization policies.
- Alternate location and comprehensive development.
- Strategy formulation and evaluation method.

5.6 National Policies

The National Policies focus on strengthening the State, and its cultural and social organizations. They also priorities upgrading the quality of life for citizens and the placing of them at the center of any development objectives.

Another goal will be reaching and preserving the optimum standards of

living for all citizens in order to insure the development sustainability on one hand, while maintaining the cultural and social dignity and beliefs on the other hand. Also, diversification of national income and liberation of cash flow, as well as exchange of goods among the various regions. This will be achieved by saving and developing wealth and natural resources, by all methods.

5.7 Main concerns at the Regional level

KSA being located in the Arabian Peninsula which is mainly arid desert, places water resources preservation, and allocation of the efficient consumption for its various uses as its main concern. The second most important issue is the sustainability of the population make-up, and balancing the labor force in relation to future economic development, while enhancing the government role in the market system along with the private sector influence. However, this will need solving due to problems of lack of information and lack of appropriate information management.

The creation of economic diversification, in terms of regional and international trade, and focusing on urban concentration instead of diffusing development should be part of the regional development concerns.

5.8 The Philosophical and Imperative perspective for the strategy

For the strategy to succeed in formulating a philosophical and imperative perspective, it should be driven from the surrounding culture and environment. Consequently, the direct result will be an appropriate comprehensive future vision, and a work program, which materializes such thoughts and preserves the main principles and features that shape the country's identity in the future.

5.8.1 Empirical perspective

In *Al Khaffi* Region the Comprehensive Development Strategy is built on thoughts and principals, which is founded upon the main national strategy based on four tiers:

- Land
- People
- Resources
- Development

5.8.1.1 Land

Land policy and directives are set to achieve environmental preservation and

optimal Landuse with regards to the geographical and topographical land features. This policy could be achieved in many ways such as prohibiting any permanent structure on the gulf shore (beach). That is to preserve the beach as a public facility with the least human interference. Also, as building on *Sabkha* land is not efficient or economic plan, and hence, it should be minimized. Roads should also be built on flat land to minimize cost and maximize safety. *Wadees* (Oasis), should be preserved and maintained.

The policies explores the possibility of employing different lands for various uses and purposes, while providing housing that suits various types of environments according to location and different activities. They also explore the possibility of agricultural land use, taking into consideration the suitable crop for the environment and the optimum strategic productivity of the land. This could be achieved by choosing crops that best grow in the desert, such as palm trees to produce dates.

Moreover, such policies should supply land with suitable infrastructure and services according to what is required for each site due to the proposed and anticipated type of development. For example, in an industrial area, electricity and water are the most important infrastructural requirements. Moreover, a comprehensive industrial drainage system is essentially required to preserve the environment and the public health. A special attention should be given by the government to supply services such as education, health, etc., due to the special importance of the community service component in building a complete, integrated and healthy society.

Finally, organizational and economic infrastructure should be considered the most important component of the modernized community, while taking into consideration that the various types of industrial and commercial activities are the main pillars in the sustainable development of any society. This makes it imperative to give a special attention to call upon private business to participate in building a stronger economy.

5.8.1.2 People

A homogeneous Local development that addresses equal share in facilities and services (e.g. education, health, etc.) to all citizens alike is considered one of the most important items in maintaining the state integrity.

Local development should aim at providing the best possible healthcare, which in turn ensures the strength and continuity of future generations and providing the suitable education of services as being an essential aspect during each and every period of development.

Population growth should be proportionate to the quantity as well as quality of such population. This is a critical issue to discuss and very hard to achieve. Total dependence on the Saudis' manpower in the future development should be the main objective, as it secures the community development on the cultural and social ethics that address the real life situation. Knowing the Saudis beliefs and culture, makes it more wise to call for a development plan set by the Saudis themselves as they are the best to understand and respect their society's beliefs and culture. An expatriate can, in a simple term, design a house for a Saudi that is not suitable for his family needs and requirements. This is not any drawback in the design itself, but rather a sort of misunderstanding of Saudis' needs and cultural implications.

Saudization of various jobs, through providing adequate training for Saudis, is mainly attempted to insure the sustainable development in all periods of the country's growth is important. The aim for settling the Saudis in secured communities, is to draw geographical boundaries of the country that might ensure its independence, international boundaries, and territorial integrity.

5.8.1.3 Resources

The target is to maximize the use and benefit of the available resources, (oil, gas, water, physical resources, etc.).

Also, to Reduce pollution as much as possible, without compromising or sacrificing the levels of development for each period. Controlling emission rates from vehicles (the main transportation mode), industries and oil refineries could achieve this.

To diversify benefits to reach the needed optimization of all available resources. This could be achieved by taking into consideration the possibility of resorting to different combinations of resources (oil, gas, water, oasis, beaches, desert and sand, etc.).

5.8.1.4 Development

To co-ordinate development with future goals, objectives and plans, in accordance with the country's strategic development plan for each phase. To specify the role and function of each and every community, town, city and region for an example:

1. *Al Khafji* City, as a border city for trade and port.
2. *Al Safania*, as an industrial city depending on oil as the main resource.
3. *Abrak Al Kabrit*, as an oasis depending on grazing and certain types

of agriculture consuming less water. Furthermore, it could be a good location for stock raising and manufacturing.

5.9 Main Regional Issues

To rationalize the use of water for different needs, such as agriculture, industrial and domestic consumption. This is considered the most critical issue for a future development.

The population make-up, and the balancing of the labor force between locals and expatriates, should be attempted according to the future needs and their relationships to development. In the due course of saudization of all jobs, a special care should be given to avoid any decline in the development rate, although a little sacrifice maybe worth taking.

The issues associated with diversification of the economy and regional and international trade are also to be considered. The economy should not be single track that depends only on oil production. The government should rather invest more in high technological industries that uses oil and its products as raw material.

The issue of urban concentration verses expansion and spread is also important. The lack and availability of information and its management, are the main spine for any urban development, "no information no development".

5.10 Regional Goals and Objectives

These goals and objectives could be classified in the following categories:

- Social.
- Economic.
- Urbanization.
- Environment and natural Resources.
- Population.
- Infrastructure and services.
- Organizational.

5.10.1 Social Goals and Objectives

- Strengthening the social and religious beliefs and practices.
- Providing the proper and targeted employment opportunities for Saudis to meet the development needs.
- Providing suitable training and educational facilities.

- Preparing Saudis to occupy most, if not all, governmental jobs.
- Encouraging the women's role in an adequate and suitable job market.
- Enhancing the cultural awareness by providing the proper cultural and civil infrastructure. Providing a high level of social security and facilities, and making it available for all citizens.

5.10.2 Economic Goals and Objectives

- Diversifying the income sources for the region.
- Optimum employment of the relative features of the region, through a continues integration between all economic activities and financial and natural resources.
- Development of the different economic sectors that participate in achieving the economic integration.
- Enhancing the employment productivity of the labor force.
- Opening new channels for private sector participation in development.
- Coordinating economic development with other regions in the Kingdom.

5.10.3 Urban Goals and Objectives

- Distributing development benefits on all Regional Spatial Settings. This goal is achieved by a fair distribution of community services (health, education, etc.), to all communities.
- Building the proper opportunities for development in the entire region.
- Encouraging local development, which reduces expenses and raises the optimization of resources.
- Encouraging the current minor community gatherings (*HEGAR*), in order to unite with the nearest larger community development and get benefits from its facilities.
- Ensuring proper land availability for future expansion and development of existing urban areas.

5.10.4 Environment and natural Resources Goals and Objectives

- Optimizing the use of resources while protecting the local environment.
- Identifying environmentally sensitive sites and sites with a special identity and features that can be considered as natural reserves.

- Developing pollution detection, evaluation, and monitoring methods and techniques.

5.10.5 Housing Goals and Objectives

- To enhance neighborhood plans by providing all infrastructures needs. This needs a conscious plan to facilitate the government's task to meet the increasing need for housing. One way is to increase public awareness for participating to maximize the value of their property by means of sharing in the infrastructure cost.
- To provide housing for citizens by guaranteeing interest free loans.
- To provide housing for expatriates through the private sector with non-governmental loans.
- To provide proper housing and social services across the region.

5.10.6 Infrastructure Goals and Objectives

- The privatization of the supply of infrastructure for the new planed neighborhoods is another way of insuring the timely supply of such infrastructure.
- The government by the help of its local authority should maintain the current infrastructure network.
- Rationalizing water and energy use per capita.
- Enhancing road network maintenance.

5.10.7 Organizational Goals and Objectives

- Upgrading the management capabilities of the government agencies.
- Supporting different government and private organizations to help them participate in the development programs.
- Supporting the planning efforts among different organizations, especially those, which are concerned with infrastructure and services.
- Upgrading the enforcement ability of the municipality.

To achieve the previously mentioned goals, a development strategy that bridges the gap between economic efficiency and social equivalence should be setup. However, it is important to mention that this is not as easy as it seems, the Islamic norms and laws that govern all human activities in the Saudi society and its strong

cultural background, makes the social equivalence maintained through the development process is not an easy task.

5.11 Development Strategies that bridges the gap between Economic Efficiency and Social Equivalence

The development strategies could ensure one of the following three methods: concentration of population, disbursement of population or a balanced development strategy. Each method could be achieved by:

- Concentrating the population in a main urban node and few sub-rural nodes, which in turn would provide the optimum use of the infrastructure and services. This concept is mainly based on the Economic Efficiency theory.
- Similarly, the distribution of the population and the economic activities over a larger number of urban and rural nodes across the region. This may provide more Social Equivalence and better distribution of wealth.
- The creation of Balanced Development Strategies that might bridge the gap between the previously mentioned strategies of concentration and the distribution of population, and reach an acceptable balance that achieves an optimum development in the light of the current conditions. In this case, certain development process within the major nodes will be the main objective for future investment in order to enhance the current infrastructure and develop its economic role. By means of this process a suitable economic efficiency can be reached without destabilizing the capacity of the current urban settlements and their role in the regional social equivalence.

5.12 Planning the New Perspective

Development planners have, in recent years, been attracted to planning for units that are relatively larger than the community but smaller than a nation. By taking into account the spatial aspect of development, planners have sought to avoid many of the pitfalls inherent in the excessive reliance on planning at the local or the national level. The local level is generally a poor base for development planning. Its necessarily limited size rules out most internal and external economies of scale, while it lacks resources and communications, and its circumscribed administrative-political boundaries. Many factors, which vitally influence the future development of local communities, are beyond their reach and can hardly be influenced by an individual community's actions. The distance from the local level to the national decision-making

center is generally too far to have an effective two-way communication.

On the other hand, at the national level, where the major development decisions are made for the whole country, meaningful popular participation in decision-making is difficult to achieve. Decision-making at this level deals primarily with broad policy decisions, as priorities require a broad understanding of socio-economic conditions at the national and international levels supported by specialized technical knowledge. Thus, while development planning is usually most efficiently achieved at the national level, it fails to take into account the special needs of individual communities. It is precisely these needs that interest the average person and around which popular participation can be stimulated.

The disadvantages of planning within the traditional national-local framework have given rise to the need to organize for development at an intermediate level, i.e., the regional level. Planning at this level basically has two functions: creating a link between the macro and micro levels of development - the vertical connection; and integrating resources within the region - the horizontal function. The vertical link has been absent or weak in most countries, making it difficult to achieve popular participation in development. At this intermediate level most development problems could be dealt with in a manner that is consistent with national priorities and local needs. Regional planners, because of their close ties to national planners, presumably formulate their plans in the light of national priorities that ensure their full implementation. Simultaneously, at the intermediate level, local needs and issues can still be identified and dealt with. Through the process of dis-aggregating national plans, it becomes more feasible to translate national development strategies and plans into concrete programs addressed to individual community needs and problems. It is around these specific and identifiable programs and projects that popular participation can be more readily be promoted.

5.13 Strategy Formation

- The method that addresses the issue of the Regional Strategy setup is a multi-step process, which focuses on the economic, social and urban factors.
- Integration could be achieved in regards to the previously mentioned factors.
- Inductive Planning will be the main development concept for a relatively new society, where the development relations and integration are so dynamic.

The Comprehensive Strategic Plan will be setup based on the previously mentioned alternatives, and in accordance with the evaluation results of each alternative.

5.14 Evaluation Process

The Evaluation Process is the most important part in establishing a successful plan. This process of scientific choice adopts the plan that achieves most of the goals and the objects set by the authority and the planner. The process starts at the first level by looking at the set goals and objectives in relation to the main policies, issues and opportunities. The previous goals and objectives on the second level should reflect certain strategic thoughts and principals. These strategies could be achieved through several urban development strategies as well as social and economic alternatives.

At the third level a set of evaluation methods are conducted to choose between the previous alternatives that satisfy the needs of the Central Government Polices and Plans as indicated in Table 5-1. At the fourth level a proposed social and economic plan in addition to a proposed urban development plan are setup. The final level will observe the preferred strategy for regional development, which will be a combination of both set plans in previous level. (Chart 5-1).

Chart 5-1-- Evaluation Process Graph

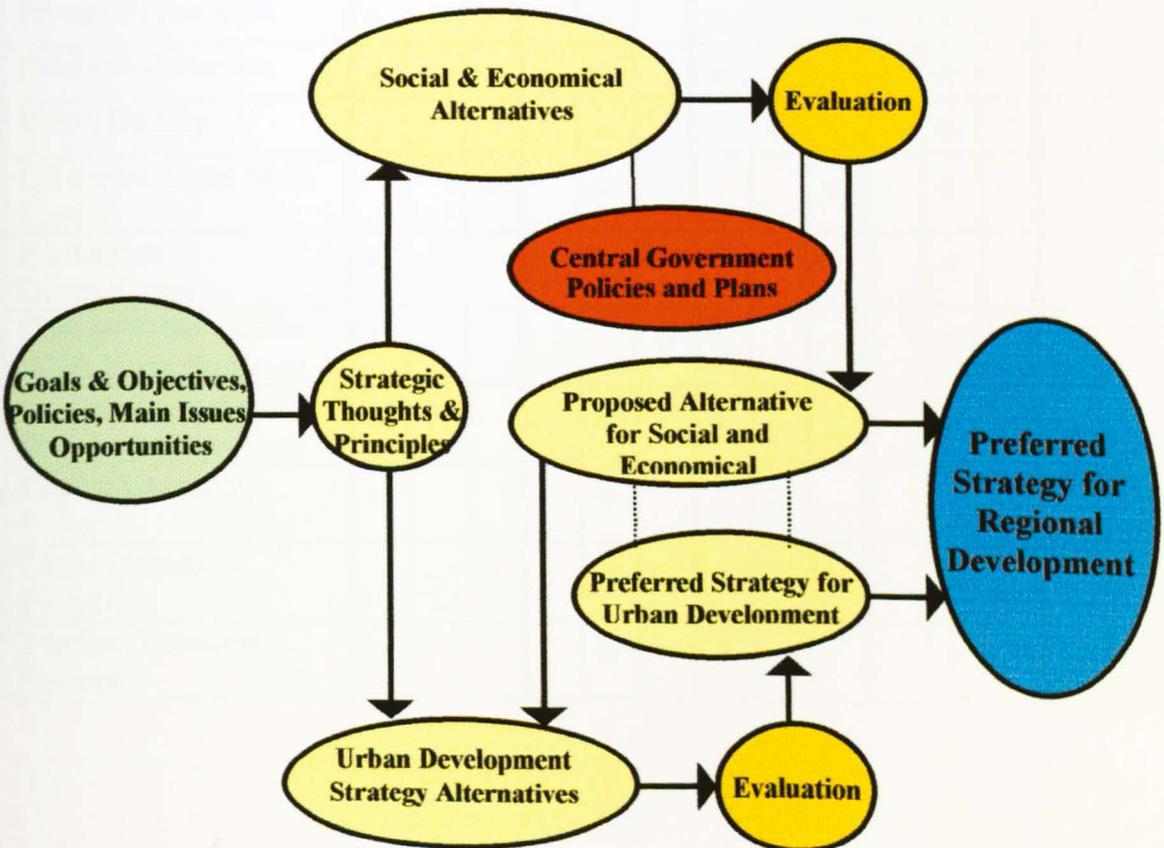


Table 5-1-- Strategic Development (Evaluation Table)

#	Alternatives	Spatial Development Alternatives						Comprehensive Development Alternatives								
		Alternative (1)			Alternative (2)			Alternative (1)			Alternative (2)			Alternative (3)		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
	Scale															
	Goal Achieved															
1	Balanced Growth			•	•			•				•				•
2	Distribution of Development			•	•				•			•				•
3	Distribution for the Benefits			•	•			•				•				•
4	Inner Migration	•					•		•			•			•	
5	Government Role			•		•				•		•		•		
6	Best Use of the Existing Infrastructure and Services		•				•			•	•				•	
7	Large Scale Economy	•					•		•			•			•	
8	Concentration of the Economic Activities	•					•			•		•		•		
9	Private Sector Role	•				•		•				•				•
10	Market Mechanism	•				•		•				•				•
11	Urban Density	•				•			•			•			•	
12	Oil Sector as the Main Leader			•		•				•		•			•	
13	Production Diversification	•				•		•				•				•
14	Change in the Current Work Force Structure	•					•	•				•				•
15	Conversion in the Economical Structure	•				•		•				•				•
16	Capital Intensive Projects	•				•		•					•			•
17	Labor Intensive Projects			•		•				•		•			•	
18	Leading Economic Sectors	•				•		•				•				•

Alternatives		Spatial Development Alternatives						Comprehensive Development Alternatives								
		Alternative (1)			Alternative (2)			Alternative (1)			Alternative (2)			Alternative (3)		
#	Goal Achieved	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
19	Government Expenditure			•		•			•			•				•
20	Development Growth	•					•	•					•			•
21	Spatial Distribution			•		•		•					•			•
22	Economic Sectoral Specialization	•				•		•				•				•
	Government Power Scale	10	20	40	10	20	40	10	20	40	10	20	40	10	20	40
23	Central Government Policies and Plans	•				•			•				•	•		
Total Score		49			67			57			86			66		
Level		5			2			4			1			3		

General Scale:

1 = Low

2 = Medium

3 = High

Government Scale:

10 = Low

20 = Medium

40 = High

5.15 Urban Planning

The Master Development Plan "MDP", introduces the concept of coherent, systematic urban planning at all levels, which makes it possible to closely relate the subdivision design to the concepts of residential neighborhoods, road hierarchy, open space and community facility provision. It is recommended that Local Plans should be considered the basis to implement provisions of the MDP. These plans include appropriate subdivisions and plot allocations as well as zoning maps and regulations to guide and control development in the specified area. It would not, however, be advisable to have each single Local Plan that dictating the basic standards and requirements for each subdivision. Therefore, a manual or guide is attempted to assist the Town Planning Authority staff with the principles, approaches and design measures that could be followed. It should also be made available to any government executive agency, which might be involved in residential layout design.

5.16 Urban Structure

The main structuring principle is the proposed community structure, which is based on a three-tier hierarchy: districts, neighborhoods, and local housing groups. The size of districts is governed by the catchment population required to support certain facilities such as secondary and intermediate schools and a range of social and public services generally located in a district center. In proposed residential areas there are communities of 32000 to 24000 people, each consisting of 3 or 4 neighborhoods of 6000-8000 residents.

The MDP provides the planning framework, the proposed types of residential development, the mixed land uses for each district, and the preferred indicative location of facilities. On the other hand, the Local Plan provides a combination of fixed and flexible site locations, access arrangements, landscaped pedestrian routes, and serves as guidelines for subdivision design.

5.17 Development Pressures for Change of Use

The overall building condition and environmental quality of an area give an indication of whether redevelopment or urban renewal is required or not. Moreover, certain areas in the city, which are currently perceived as having an acceptable environmental quality, may also need redevelopment as they are pressured to change or intensify the mixing of land uses.

It is possible to identify priority zones where current or likely future pressures

for change that may combine the results of the MDP land use and transportation surveys with other sources. The analysis should cover the indicators, which can reveal the range of the development pressures as follows:

- Committed land and land under construction.
- Zones where land use is likely to be intensified, as revealed from existing building heights in relation to the maximum permitted by current building regulations,
- Zones dominated by mixed uses, as they provide scope for possible changes in the proportion of commercial, institutional and residential uses on a given plot.
- Areas of substandard service as indicated by the ratio of formal parking provision to developed floor space.

5.18 Site Selection Objective

In identifying sites for redevelopment or renewal, reference should be made to the analytical approach included in the Master Directive Plan. The initial assessment should take into account two main elements: 1) building condition and environmental quality and; 2) development pressures for change of use.

5.19 Employee Accommodation

The construction sector is revived by the recovery in Government expenditure and in rental levels that induced a real estate boom. However, this boom is also driving up costs for employers who provide accommodation for workers. This represents major overhead, and higher accommodation costs may also result in reducing disposable income, such as those paid a housing allowance which are found insufficient to cover accommodation costs. This may have a direct impact on commerce and service sectors.

5.20 Manpower Development

Managers in most private sector businesses identify training as a special attention, due to the fact that they often resort to recruit skilled labor from overseas to meet specific requirements.

It may, however, be concluded that means must be found to increase the links between the private sector and training institutions in order to encourage a greater citizen's participation in business activities.

Generally speaking, the average citizen participation is below 10% in private

sector business activities and it is below 1% in construction and related industrial activities.

5.21 Operational Constraints

There is a good deal of satisfaction with the provision of utilities in general, although few businessmen consider this to be a major constraint. Most problems of utilities are rather localized.

5.22 Development Opportunities

Most businesses are established in *Al Khaffi* to serve the local market. This market develops new opportunities, which are opening up to everyone, equally businesses grow which makes it important to establish new markets within the region and the neighboring regions. Generally the concept of a Free Trade Zone is welcomed, but key constraints for existing businesses were perceived in terms of administrative procedures rather than physical constraints. Ways of developing *Al Khaffi* Region as a strategically located commercial, business and service center should be considered.

5.23 Site Selection Criteria

The MDP designates new sites for industrial areas and business parks. In determining the location of sites a strategic assessment should be adopted based on the following criteria:

- Strategic development context and long-term sub-regional growth potential.
- Proximity to airport or seaport.
- Accessibility to the regional road/transportation network.
- Proximity to labor force.
- Local socio-economic impact.
- Local environmental impact.
- Scope for future expansion and long-term flexibility of the site.

5.24 Site Development Potential

From the site surveys' analyses, and the maps attached, the development potential of the site should be analyzed and mapped in order to identify the opportunities and constraints that may exist. This should include the following:

- Areas best suited for development.
- Areas unsuitable for development or require excessive costs.
- Areas which would require corrective action prior to development.

- Other environmental considerations (such as pollution, vegetation, visual aspects etc.).
- Preferred site development for different industrial or business activity.

5.25 Zoning Guidelines

5.25.1 New Industrial Areas

The zoning principles for new industrial and warehousing areas are specified in the MDP. In providing new industrial areas and planning the structure of the present existing sites, it is essential to encourage the grouping of compatible industries and the spatial separation of noxious industries. The zoning of industrial activities will be subject to the following factors:

- The need to separate industrial activities in order to minimize the risk of potential noise and pollution.
- The need to group industries requiring sites of similar size to maintain an efficient relationship between plot width and depth and to help to achieve the efficient provision of infrastructure.
- The need to minimize traffic conflicts by directing industries, which generate large volumes of traffic to peripheral locations.
- The need to accommodate expansion requirements.
- The necessity of grouping industries of similar demands for infrastructure plan and which promotes efficient planning of utility networks.

5.25.2 New Business Parks

The concept behind 'business parks' is to attract new emerging technology enterprises, which conduct a significant level of office and research activities, through provision of well-designed layouts having a superior environment. The overall image is intended to be an attractive high-quality, low-density development in a landscaped park-like setting. Suitable businesses would be offices, research, warehousing and light industrial uses of category 'A' manufacturing industries, as well as government institutions and educational establishments with a significant research content.

In a new business park, zones for different types of users would be clearly identified. Zoning should also take into account the important views from both inside and outside the park. The following categories of businesses each have their own requirements and their separate identity during site zoning:

- Offices with more than a 75% office content should be located separately from factory units and would occupy the key sites within a development. These may include the approach to the site or areas with attractive sceneries.
- High technological, of 30% to 75% of its units are offices, the occupants of high-tech buildings would be typically involved in specialized manufacturing or research and development, they do not generally require outside storage areas, hence they can occupy sites similar to offices.
- Mid technological, of 10% to 30% of its units are offices, the occupants of these buildings are likely to be involved in manufacturing or storage. Hence, outside storage and service yards' are required. These are different from the 'high tech' uses and grouped around courts with well-screened storage areas.
- Other uses such as small workshops or large 'low tech' would not be permitted in the Business Park.
- Zoning should also take into account the size of units. The largest units within each category of development should generally be grouped together and located on flat areas. Smaller units are easier to establish on steeper slopes where these exist and are less difficult to integrate with the landscape. Within each zone it is important to provide a range of plots with a degree of flexibility in order to provide for different options as long as possible. On the larger sites, it may be possible to have a separate area for private plots to be sold for purpose-built and owner-occupier development.

5.25.3 Shopping and Recreation

In the light of the continuous development of economy of *Al Khafji*, it is likely that individuals will seek a greater variety and amount of recreational experiences, which will promote the residents' standards of life. Shopping development preference can be categorized as follows: Large enclosed shopping mall, Department store, Traditional '*SOUK*', Local shopping area, and town center street shops.

Leisure development priorities can be categorized as follows: More recreation facilities, more public open space, more beach facilities, more leisure facilities for women, sandy desert picnic facilities, more sailing and fishing facilities, more indoor sport facilities, shopping facilities, and more outdoor sport pitches.

5.26 Development Issues

A principal output of the socio-economic surveys is the type of information that

can be used to guide future developments in the Region.

Improvements Proposed in Local Facilities, can be listed as follows:

- Better housing.
- Better roads.
- Parks and recreational facilities.
- Better shopping facilities.
- Greater adult literacy.
- Government housing assistance.
- Preservation of cultural traditions.
- Protection of the environment.
- More recreational facilities.
- Development of industries using oil as raw material.
- Less expatriate staff in technical jobs.

5.27 Planning Production

Three different planning products are examined to determine the suitable one that should be applied in this unique setting. The chosen product will be applied at the regional and local levels. The planning products are:

- Comprehensive Plan.
- Master Development Plan.
- Master Directive Plan.

5.27.1 Planning Product Specification and Evaluation

5.27.1.1 Comprehensive Plan:

The quality of the comprehensive plan is determined as follows:

1. Has a comprehensive look for dealing with the current issues.
2. Strategy oriented.
3. Long term plan.
4. Guide line for future development.
5. Less integration.
6. Less flexibility in its general overall look.
7. Unspecific budgetary anticipation.
8. Less specificity for implementation & Phasing.

5.27.1.2 Master Development Plan

The quality of the Master Development Plan is determined as follows:

- 1. To have a specific approach in dealing with the current issue.**
- 2. Issue oriented.**
- 3. Middle term Plan.**
- 4. Specific future development concepts.**
- 5. More integration.**
- 6. No flexibility in its future plan.**
- 7. Specific Budget for implementing its certain projects to reach the targeted goals.**
- 8. Specific implementation procedures and phasing plan.**

5.27.1.3 Master Directive Plan:

The quality of the master directive plan is determined as follows:

- 1. To have a comprehensive approach in dealing with certain issues in particular.**
- 2. Issue oriented with a general strategic direction.**
- 3. Middle term plan.**
- 4. Multi-directional specific future development concepts.**
- 5. Integrated plan.**
- 6. Flexible in solutions and future plans.**
- 7. Flexible distribution of its specific budget allocations.**
- 8. Flexible implementation procedures and phasing plan.**

From the previous evaluation it is clear that the most suitable planning model for implementation in the Saudi context especially in a remote location as *Al Khafji*, is the Master Directive Plan for the following reasons:

- Small community compared to the other Saudi major cities such as *Riyadh*.**
- Less priority in development compared to other strategic locations.**
- Needs more flexibility to produce funds for development projects.**
- Helps in developing more creative ideas for future improvements and projects.**
- New community compared to other settings in KSA, which have more opportunities.**
- Dependent on oil income, which is mutable and subject to change. This may affect the Master Plan unless there is some flexibility in the implementation**

procedures and methods for allocating funds.

- Long term planning is not welcomed in such a case, rather it needs vision for an accelerated development of growth that may secure the current border setting.

5.27.2 *Al Khaffi* Master Directive Plan

The plan will be applied on two levels:

1. The regional level (*Al Khaffi* Governorate).
2. The local level (*Al Khaffi* City).

For each level two different plans will be discussed:

1. The Ultimate Conceived Plan.
2. The Optimized Realistic Plan.

5.27.3 The Regional Level (*Al Khaffi* Governorate):

5.27.3.1 The Ultimate Conceived Plan:

In such planning level each city will have its set role:

- Population Target for the region should be 500000.
- *Al Khaffi* (a boarder service city), should be the region's capital and commercial port with a free zone, a major center for high and middle tech industries.
- *Al Safania* (a major oil producer), should be the region's oil industrial complex and fishing port and market, besides relevant industries.
- *Abraq Al Kabrit*, should be the region's farming and agriculture community, mainly for dates and vegetables, grazing open desert besides animal stock production, and adjacent agricultural industries.
- To be a major transportation network system that serves the proposed plan.
- To be a comprehensive infrastructure network that meets the future demand for the proposed plan. This may include a high-tech desalination plant.

5.27.3.2 The Optimized Realistic Plan:

In such planning level each city will have its set role (Map AP2-19)

- Population Target for the region is 250000.
- *Al Khaffi* (a boarder service city), should be the region's capital and its commercial port with a free zone.
- *Al Safania* (a major oil producer), should be the region's oil industrial

complex and fishing port and market.

- *Abraq Al Kabrit*, should be the region's farming and agriculture community, mainly for dates and vegetables, grazing open desert besides animal stock production.
- To be a major transportation network system that serves the proposed plan.
- To be a comprehensive infrastructure network that meets the future demand for the proposed plan. This may include a high-tech desalination plant.

5.27.4 The local level (*Al Khaffi City*)

5.27.4.1 The Ultimate Conceived Plan (20 years):

In such planning level *Al Khaffi City* will have its detailed plan:

- Population Target for the city is 250000.
- A free zone port at *Ras Meshab*, of about 20 sq. km.
- An international two runway airport one for large bodies and cargo aircraft, and the other for mid and small size aircraft.
- Five shopping complexes (malls and hotels).
- A 5-sq. km. Recreation theme park.
- A 4 sq. km. University.
- High and Mid. Tech. Industrial park of about 10-sq. km including all its facilities.
- A high-class residential and holiday resort of about 5 sq. km.
- Three sporting clubs.
- Two private specialized hospitals with the capacity of 100-beds each.
- Two social and business clubs for men and one social club for women.
- A downtown business facility.
- New residential neighborhoods to accommodate the population demand.
- A new industrial park outside the city limits.
- A major transportation network system that serves the proposed plan.
- A comprehensive infrastructure network that meets the future demand for the proposed plan. This may include a high-tech desalination plant.

5.27.4.2 The Optimized Realistic Plan:

In such planning level *Al Khaffi City* will have its detailed plan (Map AP2-21):

- Population Target for the city is 175000.

- A free zone port at *Ras Meshab*, of about 10 sq. km.
- A local one runway airport.
- Two shopping complexes (malls and hotels).
- A 5-sq. km. Recreation theme park.
- A 1 sq. km. college.
- Two sporting clubs.
- One specialized private hospital with the capacity of 100-bed.
- One social and business club for men and one social club for women.
- A down town business facilities.
- New residential neighborhoods to meet the population housing demands.
- A new industrial park outside the city limits.
- A major transportation network system that services the proposed plan.
- A comprehensive infrastructure network that meets the future demand for the proposed plan. This may include a high-tech. desalination plant.

5.28 Conclusion:

5.28.1 Elements of Strategies for Popular Participation

Any strategy of popular participation has to pay attention to the way people are initially motivated for active participation in development. There is a need, therefore, to offer the people realistic incentives for participation; emphasis should be placed on the benefits driven from the realization of medium and long-term goals rather than on instant gains that are unobtainable. To encourage the population at large to accept deferment of present benefits for the sake of greater future gains, governments should reveal their goals and the methods they expect to use in achieving them. Also, they should indicate the burdens that the various group in society might be expected to shoulder. This can be achieved through educational programs that attempt to foster a sense of social responsibility among the people. Of equal importance, great care should be given to projecting "authentic and realistic images" of the future societies that would justify the striving for development and permit the ordering of objectives and instruments within coherent societal policies.

The fact that Since the degree of preparing government officials, local leaders, and the masses of the people for continuing decision-making roles is highly uneven,

makes it imperative that training should be an integral part of a popular participation strategy. Such training, on the one hand, should involve orientation about the nature of popular participation in decision-making. On the other, it imparts those necessary skills, such as management methods and local development planning techniques that may be required by the particular institutional arrangements in a given region.

While the creation of effective local institutions for popular participation is frequently a difficult process, the rewards in terms of development are correspondingly greater. Not only can the institutions serve as focal points for detecting and influencing public opinion about development issues, but also they can facilitate increased use of local resources, especially labor. Moreover, such institutions can help structure economic production and services in a more efficient and socially equitable manner.

An adequate infrastructure of local institutions, the mobilization of people around them, and the training of leaders (local government officials) are all necessary but not sufficient. There is also a need for procedures that link diverse local institutions with national ones. Planning and administrative mechanism, that achieve a balanced development effort.

In summary, a comprehensive strategy for promoting popular participation within an overall framework of national development strategy can prove most effective if undertaken at all levels of decision-making within a society.

5.28.2 Spatial Development Alternatives

5.28.2.1 First Alternative: Equivalent Spatial Distribution on the Region

1. The main feature of this alternative is Guided Development).
2. Reaching a balanced growth for all settlements through the distribution of development.
3. A fair distribution of the benefits of development.
4. Minimizing the inner migration within the region.
5. Providing general services, housing loans, and subsidized land, through the government sector.

15.28.2.2 Second Alternative: Concentration of Development and its benefits on the Region

1. The main feature of this alternative is Market Mechanism.
2. Best use of the existing infrastructure and services in the present settlements.
3. Maximizing the benefits from the large-scale economy, which in turn leads to concentration of the economic activities in the centers of large cities.

4. Making private sector and market mechanism the main dominator in the market place that leads the development, which attracts the urban density.

5.28.3 Comprehensive Development Alternatives

5.28.3.1 First Alternative: Enhancing the current economic and social development

This alternative achieves the following:

1. The continuation of the Oil Sector as the main leader in the development.
2. Minimizing the role of the production diversification as the foundation for the development process, since the Oil Sector remains the main dominator for economic activity.
3. The Government and the Public Sector will remain the main players in the economic activity.
4. Maintaining the current work force structure (Saudis to Expatriates), with the concentration on the labor-intensive projects.

5.28.3.2 Second Alternative: Economic Sectoral Specialization as a start for Diversification of Production

This alternative achieves the following:

1. Guiding the production diversification for leading sectors in the economy instead of relying on Oil as the sole leading sector. This will be the start of modification in the economical structure.
2. Increasing a larger participation of the private sector in the development process as compared to the current situation where the private sector plays a minimal role compared to the public sector.
3. Leading the economy to capital-intensive projects rather than labor intensive. Accordingly, the private sector participation share may increase.
4. Giving the government sector the upper hand in directing the development process in order to achieve the goals and objectives of the national strategy. Accordingly, the government will have a significant controlling role over all development issues.

5.28.3.3 Third Alternative: Maximizing Diversification of Production as the Main Foundation for Development

This alternative achieves the following:

1. Increase of production diversification to its maximum, which may lead to the increase of the leading economic sectors.

2. Make private sector the main economic player in the region.
3. Increase Government expenditure in infrastructure to match the production and development growth.

This may lead the economy to capital-intensive projects as well as labor intensive ones. Accordingly, no changes in the current work force structure (Saudis and Expatriates), within the economic activity.

CHAPTER SIX

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

6.1 Introduction

Research findings, mapped out conclusions, further implications and recommendations for future research are outlined in the present chapter. It is worth mentioning that research findings presented below are built on the presentation and discussions as underlined in Chapter five.

The first consideration of the astute planner accounts for the basic traits of the Saudi society, social historical, and economic features with a special implications for the Islamic traditions which underlines the behavior of the Saudi people and government alike. It is important to mention in this respect that the objectives, structure, policy, decision-making and administration rules of the government in the Kingdom of Saudi Arabia are closely adherent to the Islamic values and traditions. These values greatly influence the decisions and strategies of any developmental plans aiming at achieving a significant progress. By the early 1940s development was also spurred by the tremendous oil wealth brought to a newly consolidated nation. This brought with it the responsibility of guiding Saudi's largely nomadic population to a prominent place among the developed countries of the world.

6.2 Summary

6.2.1 Research Rationale

In the due course of this research, special attention was given to the regional strategy and development. To achieve this objective a case study was developed to underline the research concepts. The case study was set out to cover the Kingdom of Saudi Arabia (KSA) in general, with a special focus on its Eastern Region (*Al Khafji* Governorate).

This study is built on the literature of planning studies in the West and also the Arab world and the Arabian Gulf in particular. It is clear in this literature that the Kingdom of Saudi Arabia is an out standing case of rapid urban growth, featuring a high rate of internal and external migration. However, such urban change has not figured strongly in Middle Eastern studies in general and in the field of Saudi Arabian

Provincial Development in particular. Also, the perspective on the Strategic Planning Concept inside the Kingdom had not yet been examined to its fullest extension. These factors underline the rationale for the present study and gives it a special significance in surveying the various aspects of such urban change. A case study that addresses other issues of current planning strategies was also set out for this end.

This thesis focused on the Regional Provincial Planning (RPP) that can be given the term "second level of planning". In many cases in planning practice this second level of planning is often overlooked or might further be considered as being irrelevant. On the contrary, the concept of an intermediate planning level might play an effective role in bridging the gap between the macro country plan and the micro city plan. In other words, it turns the conceptuality of the macro to the reality of the micro with minimal compensation or ruling out concepts and goals outlined in the regional master planning.

The central government allocates budgets to different regions for developmental projects based on approved regional planning goals. In the absence of intermediate planning, such distribution of resources results in marginal losses. Second level or intermediate planning should minimize and control at the same time these losses while distributing resources among different regions.

Furthermore, such intermediate planning takes into consideration cultural systems and the ethical base of the society in any implementation of planning goals and objectives. Therefore, developing the concept of Regional Provincial Planning (RPP) might hopefully achieve the goals and objectives of the society without interfering with its political as well as cultural systems and ethics. This thesis is based on a true and comprehensive collection of data for the region under study in order to build up the planning concept in a realistic manner. The study also applied a cross-referencing technique of data analysis in an attempt to avoid all embedded characteristics. With this in mind, the concluded results contributed in developing a framework of a planning model that best fits the case study region while maintaining the required depth and breadth in covering all related issues.

Since planning practice in general draws heavily on theories and methods well articulated in the body of knowledge related to this field, this research considered all relevant literature as a foundation for designing and composing the adopted comprehensive planning model.

6.2.2 Literature Search & Review

A comprehensive review of references in various aspects that are relevant to the scope of the research was considered. Such literature focuses on strategic planning and development and their relationships to human social values. In order to narrow down this literature review emphasis was placed on planning theories that have a direct implication for the research, especially those that developed an analysis of a similar setting. The review provided an outlook on planning theory with a historic background that deals with similar settings or at least compatible environments. As cited in most of the references, planning was the main focus from theory to implementation. The following indicates a brief idea on the scope of the literature search:

Planning Theory is a term that strikes terror in the hearts of many planners.¹²⁹

Early writings on planning characterized it as an act of visionary design or creative problem solving.¹³⁰

Planning offers an important means for institutionalizing the politics of deliberation within government. Democratic planning acknowledges the interdependencies of our social problems, too often overlooked in the adversarial arena of legislative and executive politics.¹³¹

A planner shall seek to expand choice and opportunity for all persons, recognizing a special responsibility to plan for the needs of disadvantaged groups and persons, and shall urge the alteration of policies, institutions, and decisions, which militate against such objectives.¹³²

Some city planning agencies assigned staff planners to prepare subarea plans, organized subarea-planning councils and encouraged residents to participate in citywide planning. Although it is mistaken to confuse subarea planning in which central planning agencies deconcentrate functions to local subareas, with neighborhood planning

¹²⁹ Brooks, Michael P. "A plethora of paradigms?", *Journal of the American Planning Association*. 59(2): 142-145. 1993 Spring. [References]

¹³⁰ *ibid.*, 142-145, 1993 Spring

¹³¹ Forester, John., "What Planners Do: Power, Politics, and Persuasion.", *Administrative Science Quarterly*. 41(4): 719-723. 1996 Dec. [References]

¹³² *ibid.*, 139-140.

in which community residents plan for themselves (Checkoway 1984, 1985, 1991).¹³³

Planners always struggle to maintain their presence in the decision making process by providing a comprehensive rationale for their profession. The principal consideration regarding the theorization in planning is that the planning theory mainly focuses on the process rather than the actual theoretical approach. Consequently, in most cases planning theoreticians while building theories are overwhelmed to focus on understanding the political process behind the planning action rather than the planning activities themselves.

According to Harvey (1985), in most cases, conceptually, most planners see themselves as the protectors of the poor trying to achieve socio-economic equality.

Theory plays an awkward role in an applied profession, Hoch reminds us. Professionals can learn to act in useful and effective ways without knowing why their actions work.¹³⁴

The rationale for planning also raises the question of legitimacy: professional planners, after all, do not plan for themselves, but for others. What entitles them to do this, and, by implication, to make or direct social choices? Other issues also arise when we address this question.¹³⁵

Professional planners work in an institutional order of competitive and hierarchical relationships, which, despite their adversarial and instrumental qualities, require some co-operation. Many professional planners regularly try, in imaginative, incremental, and occasionally grand ways, to shift attention from the adversarial to the deliberative. Their persistence testifies to the effort they are making in our competitive liberal society to keep alive the practical possibilities and the hope of responsible, free, and informed deliberation.¹³⁶

In the due course of this research, the literature review was perpetual and the relevant references have been updated by looking at the latest related articles. Also any new laws or decrees that were issued in the Kingdom that could affect the research were taken into consideration.

¹³³ Checkoway, Barry. "Paul Davidoff and advocacy planning in retrospect." *Journal of the American Planning Association*. 60(2): 139-143. 1994 Spring. [References]

¹³⁴ Forester, John., "What Planners Do: Power, Politics, and Persuasion.", *Administrative Science Quarterly*. 41(4): 719-723. 1996 Dec. [References]

¹³⁵ G. C. Hemmens, "New Directions in Planning Theory," *Journal of the American Planning Association*, 46(3), (July 1973): 155-169.

¹³⁶ Forester, John., "What Planners Do: Power, Politics, and Persuasion.", *Administrative Science Quarterly*. 41(4): 719-723. 1996 Dec. [References]

In order to place the methodology in its contextual setting, literature of local identity was reviewed and analyzed. Also, the quotations that closely relate to the scope of this thesis were translated. Such local literature helped in better understanding relevant issues that relates to the present setting under investigation, such as: culture, belief (Islamic religion and its laws), etc.

6.3 Methodology Procedures

The methodology of the research was devised carefully in order to suit the special environment and culture of the Kingdom of Saudi Arabia. The specificity of this context contributed to the design of the research tool that best yield valid results. Accordingly, a test was made in order to determine the clarity and precision of the method. Based on the results of the test some modifications and adjustments were made. For example, such methodology took into consideration the proper survey method that bests fitted the local culture without intruding on the privacy of inhabitants. It also realized the special needs for the society that does not interfere with the government general policies.

6.3.1 Survey Methodology

A fully comprehensive detailed survey was conducted in order to give a better understanding for the Saudi society. At this specific level of planning, the Regional Provincial Planning (RPP), provided for the set up of a Regional Development Strategy for *Al Khaffi* region which figures, a two dimensional survey. The first dimension was a general regional survey with sufficient detail that essential required for the study. The second dimension was a fully detailed survey (house to house), for *Al Khaffi* City.

The second survey level (the detailed survey), was conducted as follows:

At first, a random sample survey was undertaken following a preset procedure. At the beginning, the locations that would be part of the random sample survey work were specified. This was followed by gathering any relevant survey data, preferably recent survey data, for the same location and which was conducted earlier by various concerned agencies (e.g. Municipalities, Ministry of Planning, Department of Town Planning, *ARAMCO*, etc.). The results of previous research work was compared to the results of the conducted sample surveys in order to verify the devised methodology that would best fit the situation and also its scale and type.

Due to the fact that this research carried out a full range survey in a later stage, it became necessary to have a random check to verify the quality of such surveys.

Random checking also filled the gaps, corrected mistakes, and updated any changes that might occur.

6.3.2 *Al Khaffi* Regional Land Use and Data Presentation

To present the regional land use data in an organized manner, an aggregated summary of the urban and rural land use settlement survey data were put together. The broad pattern of major land uses was recorded from existing maps and aerial photography specifically for areas outside the urban and rural settlements of *Al Khaffi* Region. It also utilized data from the natural resource surveys and other sources of information. The existing *Al Khaffi* Regional land use map was presented at reasonable scale and distinguished between urban and rural activities. It showed the settlement pattern in relation to the principal natural resources, agricultural land, transportation, utility, and other major land uses of regional significance.

6.4 *Al Khaffi* Regional Planning Model

Most of planning professionals considers the Planning Model as a set script that an planning process should follow. The application of such planning model and the its phasing methods should be part of such.

Consequently, the use of the empirical data that was collected remarkably helped in building the regional planning model. It gave an honest indicator for the development challenges facing the region. *Al Khaffi* City is a prototype for the Eastern Region Cities and an important city as well. The data collected had special significance.

Culturally, *Al Khaffi* is very similar to any other community in the KSA; therefore, the cultural needs are almost the same. Economically, it faces the same challenges as other communities in KSA, especially the communities that were built on the oil economy as its main source. Socially, it is a well-represented sample that generates an acceptable multiplier for household average demography, (count, gender, income, etc.).

Development issues address the same requirements in most of the communities in KSA. The overall Physical Plan Condition, including buildings, roads, and infrastructure, is identical allover KSA, due to the fact that most cities in KSA have the same age and went through the same phases of the development process. Accordingly, *Al Khaffi* City can function as a prototype model that can function in many other regions in KSA.

6.5 Research Composition

The research was organized in a way that develops the aimed planning strategy in a rational systematic method. Chapter one focused on a detailed review of the historic background as well as an overview of the research organization and methodology. It gave a brief introduction of the theoretical basis of the research and the location of the case study. This involved identifying the research problem, and outlining the study rationale and objectives. An overview of the Kingdom of Saudi Arabia and a focus on the *Al Khaffi* Region was analyzed in relation to the general hypothesis and its sub-hypotheses. The techniques employed as well as the nature and sources of the data required for the study was discussed.

Chapter two dealt with Planning Development Strategies, theories, methods and practice. A review of the literature on planning development strategies and theories focusing on development, its implementation methods and practice techniques was presented. It explored a full range of development theories and models in various settings.

Chapter three focused on the survey methodology, and its design. Several survey forms were designed to suite the local setting. In this chapter *Al Khaffi* case study was examined in depth, including the region's importance and characteristics. Assessment of the region's physical, social and economic components were performed. It also examined the inter-relationships of each and every zone in the region in the analysis of the region under study (*Al Khaffi* Governorate).

This analysis was done through several procedures and tools:

1. **Data Collection & Compilation:** A house to house survey and data collection for *Al Khaffi* city was carried out. Also, regional data were collected from respective sources.
2. **Map & Data Entry:** The local map was updated by using land survey. A complete and precise thematic digital map was fed into the computer that facilitated the compilation of data with minimum possible errors.
3. **First Data Output:** Data output was performed in the forms of full tally that were then compared with the survey sheets to ensure the proper entry of each single data. Also, output in the form of colored maps and visual review took place in comparison to the actual settings.
4. **Data Presentation:** Several forms of data presentation took place. Colored maps and charts that show the following: Landuse, Building use

(ground, mezzanine, top floors), height, age, condition, occupancy, utility connections, and land occupancy were consulted. Also, roads are presented by maps and charts: base condition, width, number of lanes, lighting, utility lines, plantation, and overall condition.

Chapter four summarized the existing condition and discussed a list of fact-findings related to such conditions and their projected reasons. Furthermore, the general development concepts and ideas that most suit the region under study were deliberated. General Development Concepts and Ideas focused on the following: A study of various general development concepts and ideas drawn from local areas (Gulf Region and the Arab World) and other international zones. Also, examination, analysis, and the discussion of the survey along with published data of the Eastern Region took place. Afterwards, the development of a theory (strategy) took the form of a hypothesis that was tested by using criteria that best suited the local setting, and the nature of the selected site.

Chapter five has a special significance in this thesis. It focused on examining a full range of the proposed development concepts and ideas, which was reflected in developing models against the existing situation in *Al Khafji* Governorate. The future outlook, challenges and problems concerning the region under study was part of this chapter. This was expressed as follows: Future implications and expectations were projected from the current trends and expected policies according to the current and future economic and political anticipations. Identification of the challenges that might face the proposed development model took place. Raised issues that might develop due to such concept were highlighted. The chapter attempted to set development criteria through hypothesis and testing, accompanied by a set of recommendations and conclusions.

Chapter five was mapped out in the form of Proposed Development Procedures. It developed several criteria in order to choose one certain model that well represented the region under study. Finally, it made the suitable adjustments for such model that best suited current setting.

Three different planning products were examined to determine the most appropriate one that could be applied to this special setting. The selected products would be generalized at the regional and local levels. The planning products included the Comprehensive Plan, the Master Development Plan, and the Master Directive Plan. *Al Khafji* Master Directive Plan was applied on two levels:

1. The regional level (*Al Khafji Governorate*).
2. The local level (*Al Khafji City*).

For each level two different plans were discussed:

1. The Ultimate Conceived Plan.
2. The Optimized Realistic Plan.

6.6 Conclusions

This study has attempted to outline a general framework to improve the understanding of the development process in the Eastern Region of Saudi Arabia. KSA cities are shaped to meet the human values embedded in the Arabian and Islamic culture and ideology, which is exhibited in the social interaction among people and government. It becomes imperative to employ both a qualitative and a quantitative approach to planning, which covers all elements of society. It is a reasonable approach by which many issues can be resolved in such a way that satisfies human needs of the society with constant change.

To verify these claims, a review of the theories of planning in various periods of time was presented. Different planning theories were tested in addition to a brief review of the culture context that was examined. As explained in chapter two, most planning theories are difficult to apply into direct physical components if compared, for example, to theories of physics and mathematics. It is also noted that the antagonism between the new city and the old one can be dramatic. Consequently, the exaggerated urban and economic change led to a conflict of opinions among planners and decision-makers. One group questioned whether change was really for the better standards of living, while the other group steadfast to the old traditions and methods advocating preservation and conservation.

Development planning is an art of reaching a delicate balance among diverse issue, such as: culture, tradition, social and religious values. The past experiences of planning in various parts of the world indicate that the development of the region under study is primarily determined by human values. This idea means that planning should be concerned not only with the rational theoretical allocation of resources, but more importantly with the selection of goals and values toward which these resources should be directed. These goals and values ought to be driven from the values of the natives who live in these regions and who are most affected by planning decisions.

Any planning process with an eye on the future, it should account for a wide

range of expectations. These methods require more than just observation: they require skilled judgement to relate the past to the future during the process of proposing schemes for action. With this in mind, the form and content of planning issues in different cultures can be understood and interpreted by reference to its historicity and the development of its social values. As a result, the transfer of planning concepts should be modified in such a way that takes into consideration the new social context.

Rapid social and physical transformation and massive urbanization that changed almost every aspect of traditional life has marked the past two to three decades in KSA. Obviously, this does not sit well with Western planning and design concepts. Cities have ultimately grown more conscious and sensitive to such constant erosion of their historical roots. To shape a harmonized and balanced development, a legislatively backed policy and a set of rules within the overall national policy are urgently needed. Rapid urbanization is taking place in Saudi Arabia. Two major factors are responsible for the substantial increase and inherently mutable make up of the populations of the large cities: internal migration and international labor migration. The international labor migration brought with it many values and cultural norms that may be incompatible with the traditional value systems in KSA.

Most of the data for this study is drawn on a comprehensive survey of *Al Khaffi* Governorate with emphasis on *Al Khaffi* City. The research methodology also involved an analysis of local census data, and local municipal information. Over the last few decades the developing countries have garnered extensive experience in modern, large-scale infrastructure projects such as bridges and roadways, and electric generation facilities. It is only in the last thirty years that some of the developing countries have been able to gather resources in order to organize their efforts in meeting growing demand. There is still a need for a modern, centralized plan of urban development for Middle-Eastern states where oil revenues have spurred tremendous growth. As a Middle-Eastern developing nation, the Kingdom of Saudi Arabia has made outstanding strides in the realm of development planning.

From the evaluation method of the suitable plan for the case study, it became clear that the most suitable planning model for implementation in the Saudi context specifically in a remote location as *Al Khaffi*, is the Master Directive Plan. Whether it can be applied as an ultimate plan or as an optimized one, this may depend on the policy and the bureaucratic method to be used. The decision-making process and the policy-making procedures are the most critical phases in the application of such plan.

To achieve the set goals of the proposed Master Directive Plan several development issues should be addressed. This Thesis gathered the most important issues that have emerged from the analytical review of the existing situation in *Al Khaffi* Region, its urban and rural areas. The following summary presents a synopsis of the main findings and issues related to each aspect of development.

6.6.1 Natural Resources

The Kingdom's recent phenomenal growth has depended largely on the discovery and exploitation of oil and gas resources. Oil and gas extractions are well managed and technology is being continuously harnessed to increase production efficiency and minimize adverse effects. The Kingdom possesses large resources of oil, which undoubtedly account for a sustainable economic growth. However, economic growth and urbanization have generated pressures from various forms of development contributing to strain other scarce natural resources considered essential in supporting human activities and ecosystems.

There is a number of facts that should be considered in the context of setting up any development plan such as most of the Kingdom's territory is desert and that rainfall is rare. Groundwater resources are finite and not easily replenishable in the context of increased abstraction. Vegetation is sparse except where agricultural development and forestry are maintained through irrigation. Traditional irrigation methods that preserved the groundwater reserves have been replaced by irrigation through wells bored to depths never reached in the past.

Development programs have made it possible for more lands to be used for agriculture, and hence, increasing the strain on groundwater resources. Less emphasis has been placed on the exploitation of fish resources or the development of mariculturs. In this context the major issues relating to natural resources are:

- The large scale abstraction of groundwater for agriculture and forestry
- The need for a better management of groundwater resources and of marine resources.
- The need to encourage more attempts to build an accurate data base on groundwater aquifers, soils and fishery resources.
- The need to co-ordinate the allocation of land for different uses at the regional level.

6.6.2 Socio-Economic Context

KSA has developed rapidly due to the great wealth generated from the exploration of hydrocarbons and the oil price booms in the 1970s. This is reflected in the population growth, household structure, employment profile and economic structure of the Kingdom, and respectively, the region under study.

Total population has increased rapidly amounting to a high rate of natural increase of citizens and indicates a massive inward migration of expatriates who represent composed more than one quarters of the population in 1985. This resulted in an uneven population make up, with the following features:

- A higher proportion of males in comparison to females rate.
- The majority is under the age of 40 years old.
- More than half of the citizen population is under the age of 15, which indicates a decrease in mortality rates and an increase in fertility rates.

These features indicate the need to cater for growing demands in health services, education and training facilities, and a rapid growth in household formation, which suggests a greater demand for housing, services and infrastructure.

The average size of citizen households is large. Many expatriates live in collective households or in institutions. However, the highest growth in household formation is in private expatriate households.

The Kingdom's economy reflects a rapid development, which has resulted in an uneven sectoral profile. Although the recession precipitated a consolidation of certain activities, remarkably construction, the economy still suffers from a narrow economic base which is heavily dependant on hydrocarbons for wealth creation and on Government expenditure for wealth distribution and employment. The development of non-hydrocarbon based activities has been slowed down by:

- The limited resource base.
- The small domestic market.
- The openness of the economy and lack of 'infant industry', protection.
- The dominance of the public sector.

As a result, the economy is vulnerable to cuts in Government expenditure, and the government plays a very central role in the economy by means of providing housing, subsidizing utilities and opening new vacancies. Citizens and non-citizens are equally considered in terms of the above decisions. It may be advisable to introduce

measures to reduce this state of dependency by introducing cost recovery tariffs for utilities and through the encouragement of economic diversification. The case for diversification must be assessed at the level of each sector of the economy on criteria, which include financial viability, infrastructure requirements, land utilization, human resource development, economic multipliers and leakage, and social criteria.

6.6.3 Rural Development

The development of rural areas in the Region is relatively recent. Its seeds have been engraved in the past 30 years in the Government initiatives and policies. This was translated into a series of measures and projects aimed at social and economic development, the provision of housing and community facilities and the building of infrastructure. The programs for road building and housing were of special significance in terms of opening up the underdeveloped parts of the Kingdom and settling the Bedouin population.

Social and economic development measures focused on the development of human resources and opening up rural employment opportunities. Social development focused on the development of human resources by means of formal education programs, male adult education and women's developments programs and also the promotion of medical care. The opening up of rural employment opportunities was linked to a massive agricultural development program, the provision of public administration and community facilities and the setting up of co-operatives that provide commercial and transport services to the population and to oil companies. However, deficiencies still exist in terms of quality of secondary education and the medical staffing of health centers in rural areas and the employment opportunities remain limited if compared to those available in urban areas.

In the context of rural development, agriculture advanced considerably in the last few years. The measures adopted to develop agriculture included the setting up of citizen farms, the expansion of generous free inputs and subsidies to farmers, the establishment of state farms for the production of wheat and fodder crops and incentives for livestock rearing. As a result of these measures, a large number of citizens' private farms became highly profitable. However, the contribution of agriculture to the overall economy remains little. The industry is heavily subsidized and productivity remains relatively low in view of the constraints imposed by poor soils and increasing groundwater salinity. These rule out the successful and widespread cultivation of some

crops, which would contribute to the objective of national food security.

The main issues relating to rural development include:

- The need to stabilize the citizen population base in rural areas in the face of the challenges offered by urban areas by the consolidation strengthening the social and cultural programs and the improvement of employment prospects.
- The need to increase the productivity of the agricultural sector taking into consideration the limitations imposed by the water resource base and the implications for exceeding these limits in the long term. This central issue raises questions regarding the Government's role in rural development. Aspects which deserve attention and are of direct relevance to productivity include the establishment of agricultural cooperatives, the encouragement of greenhouse cultivation, research into more salt tolerant species, rationalization of the marketing system and additional incentives to the fisheries sector.

6.6.4 The Settlement Pattern and Intra-regional Linkages

The present pattern of settlements within the Region is the result of a number of historical, geopolitical, economic and social factors. Outside the major urban centers, the size and distribution of settlements have been influenced to a large degree by the public sector investment programs in housing, infrastructure and community facilities geared towards the establishment of new settlements. The location of settlements generally relates to the distribution of natural resources, in particular groundwater, agricultural soils, grazing land, fishing and oil.

Analysis shows that settlements over the whole Region manifest different characteristics and functions. At present, the two major urban centers form the main poles of attraction within the region with nearly 85 percent of total population and employment, and are slowly increasing their share by drawing most settlements situated within commuting distance their sphere of influence.

In this context, the main issues to be investigated in relation to the settlement pattern are:

- The prospects for the developing the settlements economic base in relation to the potential offered by leading sectors, the development of footloose activities in selected settlements and the stimulation of trade, services and marketing centers and the role of interregional linkages in that respect.

- The prospects of promoting spatial efficiency in the provision of facilities and services through the establishment of a hierarchy of settlements and the creation of rural service centers which would develop stronger linkages with smaller settlements situated in their respective catchment areas.

6.6.5 Housing

The housing stock in the Region is basically villas, low-cost houses, Arabic or traditional houses, apartments and various forms of temporary housing. The predominant types of citizen housing are villas and low-cost houses, with the latter constituting the majority of the stock in rural areas. The construction quality of the stock is generally good. The lowest densities are recorded in single family residential areas. Some of the residents living in households of substandard housing units, are those of low-income expatriates. The absence of a mechanism for providing direct housing for this category gave rise to a filtering process, whereby low-income households occupy older version of houses and apartments that were previously occupied by more affluent local households. In rural areas most substandard housing consists of temporary units and shacks.

The Government contribution in the housing sector is as follows:

- Direct residential buildings through specialized companies to house its employee's e.g. oil companies and institutional housing.
- Granting and allocating private land plots for citizens in order to build their private residences, and to invest in apartment blocks mainly for housing expatriates. The government controls residential densities through building codes and regulations.
- Loans for building residential and commercial buildings for investment with rental services and maintenance contracts are provided as an option.

These mechanisms provide the Government with control on the supply of housing. However these mechanisms have led to shortages in supply, which generate a number of issues related to citizen and expatriate housing. The main issues to be addressed in housing include:

- The need to reflect citizens' hopes for better housing in a balanced program of provision articulated within the framework of a housing policy that reflects the Government priorities in urban and rural areas.
- Housing does not always aim at meeting the needs of various subgroups. It

strives to find the best means that achieves a better relationship considering the need to develop mechanisms for the provision of purpose built housing for low-income non-citizen subgroups.

- Housing requires large areas of land for its development. Considering the high opportunity costs of land in the urban area and the costs of infrastructure provision, there is a case to review plot subdivision standards in citizen areas in order to achieve an increase in residential densities and consequently improve efficiency.

6.6.6 Social Services and Cultural Facilities

Education in the Region consists basically of public and private sector schools and vocational training establishments. The majority of students are enrolled at kindergarten and primary school levels.

Overall occupancy rates matches the Ministry of Education standards. However, there are some cases of overcrowding in some urban area schools. On the contrary, the occupancy levels in the rural areas are in general low.

Health services are provided by both the private and public sectors and consist of hospitals, health centers, clinics and health educational programs. In general, health facilities are satisfactory, with a contribution from the private sector in the urban areas. The Government is consistently upgrading the quality of accommodation and health care in hospitals. However, some rural health centers are suffering from the lack of doctors and of emergency services to transport patients to rural hospitals.

Mosques are well provided in the Region. They consist of *Eid* prayer grounds, Friday praying mosques and local mosques.

Recreation and sports facilities are mainly concentrated in the urban areas. Sport clubs, as well as public parks and gardens are neither sufficient nor adequate in the urban areas. In rural settlements there is, in general, a lack of provision.

The Government provides social welfare services that include social security, women's activities, facilities for the handicapped and youth care centers rarely provided. Other public services include police, civil defense and postal services. Significant efforts are being made to improve the quality and coverage of the above services.

The main issues related to social services and cultural facilities to be addressed in future planning include:

- The quality of service is particularly important in the domains of education

and health in rural areas where facilities have been provided but shortages in manpower and equipment have implications for the quality of service.

- The level of service: this issue relates to the need to establish flexible standards of provision for social and cultural facilities taking into consideration population catchment, distance and operational requirements.
- Deficiencies exist in the provision of some services such as civil defense, libraries etc. However the major deficiency in this respect relates to vocational and technical training which could contribute substantially to manpower development. Attention should be given in this respect, to the development of technical schools in parallel with existing secondary education. Increased attention should be given to the establishment of cultural centers.
- The replacement of substandard facilities and especially schools in urban areas is essential.

6.6.7 Transport and Communications

Al Khaffi has provided the basic infrastructure to meet current demands in transport and communications and most facilities have reserves to absorb growth and stimulate regional development.

The road system was remarkably extended substantially. The roads were mainly constructed to dual carriageway standards and recent surveys showed that much of the system is operating at less than its ultimate traffic carrying capacity. Road improvements are planned to provide additional capacity on substandard road links.

The extension of road network by constructing new major roads is rather limited with regards to preserving into the existing urban fabric and the present environmental disruption. There is a growing demand for new roads to meet the expanding capacity of traffic in the city in light of the growing economic and social activities. Attention will, therefore, necessarily be focused on urban traffic management to maximize the capacity of the existing system.

Bus services operate within the city and serve the entire major settlements. Patronage has a low profile within the city and the public taxi system provides transport to all public that does not have private cars.

Communications services in *Al Khaffi* have changed with the introduction of new technologies and the demand for rapid data handling by industry and commerce.

Conventional post and parcels services have shown a decline. Meanwhile, facsimile and air courier services have increased substantially in recent years.

At the Regional level, it seems to be no need for the construction of major new road links. The principal requirements is to provide, when necessary, bypasses to towns located on the main roads and intersection improvements and to maintain planned road maintenance programs.

Traffic levels in *Al Khaffi* are likely to rise in future years as a consequence of growth in population, economic activity and car ownership. With a limited scope in the central business district for major new road construction, attention will need to be directed to:

- Urban transport management and the implementation of road safety programs.
- Traffic engineering solutions at points of local congestion.
- The provision of improved public transport through a variety of modes.
- Highway maintenance.
- The increase of car parking facilities in the central area.

6.6.8 Public Utilities

6.6.8.1 Water Supply

Water is supplied from three sources: two desalination utilities, one is owned by the government, while the other is owned by *Aramco* Gulf Oil Company (AGOC) in *Al Khaffi*. Other sources are from groundwater and treated recycled sewage water. The treated sewage is used for watering roadside planting and municipal gardens but the supply is inadequate to cover all requirements and is supplemented from the other sources.

Groundwater supplies are severely limited and further desalination plants should be programmed.

The main development issues relating to water supply are:

- The urgent requirements for a Region water management program, taking into account the domestic, industrial, agricultural, amenity usage.
- The search for alternative water sources linked to a major commitment to increase the output of desalinated water.
- The requirement for desalinated water to fare the decline in the groundwater reserves on agricultural development.

- Increasing water storage capacities.
- Reduction in water leakage.
- Managing demand in light of reviewing of water tariffs.

6.6.8.2 Sewerage and Drainage

Piped sewage and treatment facilities are provided in *Al Khaffi* City in selected areas. Outside these areas and communities, there are no central sewage treatment works; septic tanks are used which are discharged into the desert.

The main development issues relating to sewerage and drainage are:

- The provision of adequate sewage and drainage systems in new developments
- The provision of sewage treatment plants in advance of user requirements, particularly in the urban centers.

6.6.8.3 Power

The electrical power demand has remarkably increased in recent years. Official power forecasts indicate the need for substantial increases in generating capacity. The oil industry complexes have their own generating capacity and the supply to other areas is by isolated diesel generators.

The major development issues relating to power are:

- The need for a robust assessment of the future power balance taking into account the escalating demand for desalinated water.
- Commitment at the appropriate time to the construction of new power plants.
- Development of a regional transmission grid.
- Managing demand in light of reviewing of water tariffs.

6.6.8.4 Waste Disposal

Solid waste collection services are operated in major urban areas. Waste is either composted or tipped into sites in the desert. Communities in the vicinity of these two locations utilize the tips but in other rural areas waste is dumped at convenient locations in the desert. Hazardous waste processing is the responsibility of the organizations generating the waste.

The main development issues relating to waste disposal are:

- The planned provision of land fill sites, compost plants and transfer stations.
- The need for improved land disposal techniques including environmental

management.

- Management, control and disposal of hazardous wastes.

6.6.9 Urban Land and Land Use

The system of land holding and land allocation allows only citizens of the Kingdom to own land. Land allocation is generally controlled through the Municipality and has contributed to a large degree in shaping the land use pattern. The system of land allocation is designed to provide citizens with private residential plots, investment plots as a source of supplementary income, industrial plots and agricultural plots. Applications have to be submitted for each type of plots and are considered in relation to a number of criteria prior to actual assignment. Land allocations are generally made on a block basis in accordance with a subdivision plan. The land allocation procedures need to be rationalized to speed up this process and respond to real demand. This would contribute in eliminating the current backlog in applications.

The land market is virtually at the minimum, and this reflects on the lack of direct indicators for fluctuations in the demand for different types of land uses. There is a limited scope for densification, however some opportunities exist for the release of some major sites for urban development due to relocation. There is a shortage of land readily available for future expansion. Various projects that address issues of land reclamation and the provision of major roads, infrastructure facilities and networks have been or are still under study. In this context, the major issues relating to land are:

- Ownership policy should be reconsidered to allow for the operation of a land market system. This issue should be addressed in terms of certain types of development, i.e. commercial and industrial development, taking into consideration its impact on land titles and current land allocation procedures.
- Continual land supply and allocation, and the shortage of readily available land raises the issue of the coordination between future land use requirements, possibilities of densification, reclamation programs and planned programs for the provision of strategic links and major infrastructure facilities to achieve cost effectiveness in future development.
- Standards and practices of land distribution are in need to be revised for the existing practices to achieve better urban design and layout, and increase the efficiency of land utilization.

6.6.10 Urban and Rural Structure, Design and Development Control

6.6.10.1 Al Khafji City

One of the major issues in this respect concerns the central area. The central area occupies a peripheral position in town and should be given special attention in the future structuring of the city. The question is whether this should be done by vertical or lateral expansion, or to be part of a comprehensive expansion plan that includes other secondary centers. This issue has to be investigated in relation to opportunities and constraints relating to functional, physical and social factors.

The quality of the building environment in the city has been influenced by the system of land distribution, development control regulations, urban design and architectural design processes and finally, the quality of construction. There is a growing need to improve the quality of urban development. In this respect, consideration should be given to:

- More positive urban design which aim at improving the image of the city and the identity and character of its constituent parts.
- The review of the building regulations which should aim at expressing the planning regulations explicitly and clearly, introducing imaginative concepts such as incentive zoning and planned unit development, and the amendment/addition of certain articles.
- The improvement of the quality of architectural design through the strengthening of the professional institute and increased patronage of the profession.

6.6.10.2 Rural Settlement Structure

The physical structure of rural settlements is largely determined by planning decisions of incremental nature. The future planning of individual settlements and their physical structure should draw on two facts. First, the individual settlements' role and function within the overall settlement pattern, and second, their establishment as viable communities, which display a distinctive character, related to their functions and social structure.

6.6.11 Environment and Coastal Zone Management

Urbanization, increased industrialization and natural resource exploitation are generating various pressures on land and marine ecosystems in the Region. Generally speaking land ecosystems are fragile.

It is worth mentioning that, the quality of air and water in the Region is good. Potential air pollution may originate from refineries, cement works, quarries and urban traffic at peak hours. At present, these emissions are not regulated. However, safeguards are incorporated into industrial plants at the design stage.

The quality of seawater is consequently good although there are few industrial discharges. Industrial discharges may occur, and brine effluent from desalination plants may present localized problems. Tanker discharges and accidents resulting in marine pollution are an important potential hazard.

Most threats to the environment can be dealt with through better environmental planning and management. The major issues that have to be addressed in the future planning of the Region concern:

- The delineation of environmentally sensitive areas in need of protection.
- The establishment of an environmental impact assessment procedure for large projects.
- The monitoring of air and water pollution levels in accordance with the international accepted standards backed by legislation whenever necessary.

6.6.12 Concluding Statements

Issues addressed in the due course of this study are inter-related. Furthermore, they gain additional significance when synthesized and grouped in terms according to their implications for the future planning of the region as a whole and *Al Khaffi* City particularly.

The methodology adopted, which allows for the grouping of relevant issues at both regional and urban levels, has provided the basis for the formulation of planning goals. The concluding Chapter of this thesis presents the implications of key issues at the regional and local levels.

The major issues at regional level are:

The availability of water supply and its allocation for different uses, including domestic, industrial and commercial uses, raises serious issues in respect to:

- The scarcity of groundwater resources and the impact of diminishing reserve on the long-term sustainability of agricultural development.
- Optimum population levels and population distribution in region.
- The range of the uses of the desalinated water supplies to compensate potential groundwater shortages.

Population makeup and labor force balance, and their future fluctuations in relation to economic development raises major issues related to:

- The advisable proportions of the expatriate labor force and population.
- The future demand and type of housing, social facilities and infrastructure.
- The capacity of the citizen labor force to substitute foreign labor in the future.
- The implications of job substitution for human resource development and training programs.

The issues that relate to the role of government, market mechanisms, and private sector participation are as follow:

- The over dependence of the economy on the public sector as a promoter of development and a distributor of oil wealth.
- The resulting weaknesses of regulatory market mechanisms and the inefficiencies in certain sectors generated by subsidies.
- The possibility of future development benefits from more private sector participation and the re-establishment of market mechanisms.

The issues related to diversification, interregional trades are:

- The best policy to follow in order to reduce dependence on oil and broaden the economic base in the light of constraints imposed by the small size of the domestic market.
- The need to achieve integration with the other regions in the Kingdom.

The issues related to spatial concentration versus disbursement are:

- Population and open vacancies distribution in *Al Khaffi* Region.
- The potentialities of providing employment vacancies in the rural areas through leading sectors, footloose activities, development of intra-regional and interregional linkages and trade.

The issues related to information, data deficiencies and management are:

- The need to build up a comprehensive database for regional and local planning.
- The need to gather in one unit all published data sources by means of co-operation among the various Departments and the *Amana*.
- The necessity of preparing and publishing a five-year regional and local plan

for economic and social development that provides a general policy framework.

- The strengthening of planning and management functions in various Government agencies.

The major issues at the level of *Al Khaffi* City are:

- The anticipated characteristics of the urban population and how they affect the needs of both components of the population in terms of land for housing, community facilities, services, density distribution, and facility standards.

The efficiency of the urban system raises major issues related to:

- The supply and demand relationships of land and the potential role of a land market in this respect.
- The prevailing low densities in parts of the urban area.
- The present unbalance in the urban structure, which may affect the future balance of development.
- The necessity to achieve, in the future development, coordination between the programs for land reclamation and those for the provision of major road links and infrastructure.
- The need to achieve the optimum use of existing and planned infrastructure.

The quality of urban development is manifested in the quality of the urban fabric. However, the reasons for its deterioration in parts of the urban area, raises issues related to:

- Building maintenance and the social processes of filtering in housing areas.
- The need for more positive urban design at the level of the city and its constituent parts.
- The reconsideration of the distribution system to allow more interesting layouts.
- The need to re-express existing building regulations to emphasize planning regulations and improvements in urban design.

Flexibility and adaptability to the change and future expansion aspects raise issues related to:

- The rigidity of some aspects of the planning system and the possibility of being partly offset by market mechanisms.
- The need to interpret flexibility of the planning briefs in the redevelopment areas, in relation to overall urban development objectives.
- The role of the central area, which needs to be considered in the light of future development alternatives and urban structure requirements.

6.7 Findings and Recommendations

6.7.1 Land Control

Development in the Region depends mainly on the current land management system and the possibility of its modification in the future. It has become clear in the due course of this research that several important issues have to be addressed in any future research efforts regarding land issues. Such issues are:

6.7.1.1 Land Entitlement

In principle all land in the KSA is owned by the State. However, citizens of the Kingdom are granted plots of state owned land. Once land is granted, it passes into private ownership and can be passed by inheritance to legitimate heirs.

The granting of land is a customary procedure in the Kingdom, which has not yet been fully institutionalized and rationalized. At present land plots are granted to citizens in two ways:

- Through a direct grant from the King (The Custodian of The Two Holy Mosques), or H.R.H. the Crown Prince (Deputy Prime Minister), or in case of absence of both, H.R.R. Second Deputy Prime Minister, with a specification of use, approximate general location and within a specific area. Afterwards, the municipality will finally determine the area.
- By means of a written application for a plot of land made to the *Amana* or the respective Municipality (normal channel).

6.7.1.2 Land Allocation

The approval for Granting the land is issued to applicants by the *Amana* or the respective Municipality. Approvals for plots applied for through the Municipality is given as part of a block release meeting the demand of several citizens.

The mechanisms of land supply provide the *Amana* and the Municipality with a central control over the supply of land. The system precludes the development of private subdivisions by concentrating all subdivisions in the hands of the *Amana* and the

Municipality. This system devoid the Kingdom the experiencing of uncontrolled sprawl as witnessed in other countries, and some of the resulting waste in the provision of public utilities. However, there is a growing need to revise the land supply mechanisms in order to avoid backlogs resulting from a sudden build up in demand and to shorten the time lag between application for land and effective land allocation.

Comprehensive redevelopment is generally a lengthy process. It takes several years from the inception of the concept to the actual reactivation of the land as a contributor to new or improved uses. The time lag is essentially extended as there are no written procedures, especially in cases where no firm financial commitments are made or in cases, which the economic and social returns of the process are in doubt. In other words, the comprehensive redevelopment process responds badly to sudden fluctuations in demand for land and floor space.

6.7.1.3 Land Supply and Strategic Infrastructure Planning

Future development in the Eastern Region of KSA will require additional land to be released around the cities and in other urban centers. The release of land for long-term development needs to be coordinated in relation to existing and committed programs for the provision of major infrastructure installations and networks. At the level of the distribution networks for water and sewerage, network capacities should be investigated at the level of their respective cities to avoid the possible surcharge or under use of some sections.

6.7.1.4 Improving Supply Demand Relationships in the Short Term

The land supply mechanisms in force at present are motivated by the principles of social equity. These principles when challenged with practical implementation requirements display a lack of sensitivity to fluctuations in demand. They are, however, more sensitive to fluctuations in public expenditure which can directly affect programs for local infrastructure provision and the amount of serviced land released at any given horizon. It is clearly necessary to speed up the land allocation procedures and target the granting of plots to meet real demand. To achieve this, urgent consideration should be given to:

- Rationalizing the criteria for the allocation of private residential plots.
- Application forms should request information on the state and characteristics of present accommodation (land and buildings). This will help to establish priorities for allocation, avoid hardships and defer non-urgent cases.
- Consideration should also be given to granting the land subject to a

reasonable time limit for its development. This would limit the risk of allocating land with no urgent need for development.

- In the long term, a yearly quota may be established related to the expected annual household formation.
- Adopting a wider interpretation of the concept of an investment plot to incorporate joint investments in real estate.
- In the context of rising demand of individuals for investment in property, the limitations are imposed by the size of the property market (and the rate of return on investment) and by zoning regulations. Consideration should be given to allow plots to be granted in co-partnership between municipality and investor, with construction and maintenance provision.

6.7.1.5 Strategic Planning Issues

In a longer term, the basic issue will be to provide enough serviced land areas to meet the development requirements of major urban centers, in particular centers in the major cities and the adjacent areas. For the latter, a program with set phases for the release of serviced developable land should be based on close coordination between future land use requirements, reclamation programs and the implementation of major infrastructure networks. Decisions on the intensity of development of prospective expansion areas must consider the implications in terms of strategic infrastructure provision for these areas.

The allocation of land reserves for major Government and Institutional uses and special residential uses should be carefully investigated as the special requirements for these uses are not always known in advance and their location may have an important impact on development trends.

6.7.1.6 Local Planning Issues

Subdivision standards provide for a very limited range of plot sizes. This encourages the uniformity and monotony of layouts and does not always allow for uses requiring different volumes of building or ground floor area for their operation. It also results in corners of wasted land difficult to use or landscape. Consideration should be given to establish, for each family size, an equitable range of plot sizes instead of a single plot size. This would encourage more interesting layouts and a better grouping of buildings. The Municipality should consider the preparation of Local Plans, which includes an urban design framework as a step prior to the preparation of detailed subdivision plans.

6.7.2 Implications and Recommendations for Future Research

Further research is needed to validate the causal relationship between the expansion of the role of planning and the successful socio-economic development in the context of developing countries particularly in the Arabian Gulf states. Once validation is confirmed using a rigorous qualitative technique, quantitative tools need to be developed in order to assess the level of relative success. How much goals setting autonomy is required to assure development success? When must that autonomy be granted? How far down the planning ladder does that autonomy need to extend? How strong a factor is national economic development coordination if compared to goal setting autonomy in achieving to success? Are all questions that need to be addressed in further research, on the both qualitative and quantitative levels?

Despite the tentative nature of these results, some immediate implications are apparent. Researchers need to re-examine the function of planning as it relates to policy formation. In the Saudi context, it appears that goal setting and policy formation have been crucial to success. Scholars may need to re-think a planning equation that balances the functions of planning between goal setting, methods of planning and the possibility of implementing such a plan.

Because of the particular nature of Saudi Arabia and its planning history, the implications for planning practitioners seeking to emulate the Saudi success are more limited. One factor that seems pivotal to Saudi Arabia's successful development is its cultural, social, and political homogeneity. This homogeneity permitted the government to allocate goal setting authority of planners and secure the knowledge in such a fashion that pluralistic political concerns would not confuse policy formation. It allowed the planning agency to create a development planning policy of urban diversification centered around the least populated areas. This has benefited the population far more in the long term than in the short one. It allowed the Saudi people to assimilate cultural intrusions that resulted from modernization on an extremely rapid economic growth. In addition to these cultural factors, Saudi Arabia's abundant oil wealth was pivotal to its development and transformation. Few developing countries boast this combination of cultural homogeneity and mineral resource wealth that seem necessary for such planning to flourish. Those countries could be candidates for implementing this development formula. All nations can benefit from the lessons of long range planning, the necessity to identify and set eventual goals, and the creation of a framework for future growth and permanent benefits.

As guidelines for the control of development within the regions or major similar areas of the country, the following targets are recommended:

- Land should be allocated and used for its best purposes, on both levels of public and private needs.
- Sufficient land should be reserved as open spaces for future development needs.
- Vacant land assigned for public services (e.g. parks), should be either reserved for their original purposes by the assistance of the private sector, or invested in different use that are urgently required by the community. In both cases, the overall plan of the city should not be altered.
- Building development should be placed in areas where adequate public services can be supplied economically.
- Local resources should be used wisely in order to benefit both the public and private sector.
- Private sector should be encouraged to be more involved and active in the local economic activities including services.
- More governmental and municipal aid is required to secure the role of the private sector getting involved in the large public project investments.
- Adequate means of communication and transportation should be provided for use, through, about, and within the region.
- Main roads network should be upgraded through various methods including privatization.

BIBLIOGRAPHY

- "Saudi Arabia: *Riyadh* and *Jeddah* Business Centers for the 1990s." *The Middle East* (August 1991): 25-36.
- Al Shalhoob, A. A., "*Riyadh* Completes its Embellishment by Year 2000": An interview with *Riyadh's* Mayor: *Al Yamamah*, January 2, 1991: 28-33.
- Abdullah, Walead, "Implications of Subdivision Activity for the Urban Growth of Madina." *Urban Studies* 27, May 1990: 725-738.
- Abu-Lughod, J. L. and Richard Hay, Jr. *Third World Urbanization*. New York:
- Abu-Lughod. J. L., "Contemporary Relevance of Islamic Urban Principles (extract)." *Ekistics* 280, Jan/Feb., 1980: 6-10.
- Ackoff, Russell, "On the Nature of Development and Planning." *Operations Research*, vol. 25, no. 2, March/April:1977.
- Aftab, Tahera, "Urban Centers of Arabia and the New Order (The Mission)".
- Al Hathloul, S., "The Development of Settlements in *Najd* Region During the 14th Century A.H. [c. 20th A.D.], Al-Badaie in Gassim, A Case Study." In *Saudi Cities: Distribution and Morphology* edited by A. S. Abdo (Chair), 137-169. *Riyadh: King Saud University Libraries*, 1987. In Arabic (abstracts in English).
- Akhdar, Farouk M., "The Philosophy or Saudi Arabia's Industrialization Policy". In *Saudi Arabia: Energy, Developmental Planning, And Industrialization*, edited by R. El Mallakh and D. H. El Mallakh. (eds). Lexington, Mass. Lexington Books. 1982, 15-20.
- Al Kadi, Abdullah H. Urban Planning Legislation in Saudi Arabia: A Systematic Classification, Vol. II (Appendix). Unpublished Thesis, King Faisal University. *Dammam*, Saudi Arabia, 1989.
- Al Nuaim, Abdullah A (Mayor of *Riyadh*). "Profile-*Riyadh* City Construction: Experience and Modern Development." *Riyadh: Arab Urban Development Institute*, undocumented.
- Al Nuaim. Abdullah A.(Mayor of *Riyadh*)., "Summary of A Lecture on Environmental Issues and *Riyadh* City's Experience." Paper presented to the International Summit on Critical Environmental Issues. Los Angeles: April 19-20, 1990.
- Al Sabban, A. S., "Saudi Arabia Municipalities: History Organization and Structure." In *Politics, Administration, and Development in Saudi Arabia*, Ahmed H. Dahlan (ed), 97-127. Brentwood, MD: *Amana*, 1990.

- Alder, John, "Development Control", Sweet & Maxwell, London 1986.
- Alder, John, LL.B., B.C.L., Development Control, Second Edition. London, Sweet & Maxwell 1989.
- Alexander, Ernest R, "Approaches to Planning", Introducing Current Planning Theories, Concepts, and Issues. 1986.
- Ali I. Al-Naimi, Minister of Petroleum and Mineral Resources, "Saudi Oil Policy in a Globalized and Dynamic Market". 15th World Petroleum Congress, Beijing, China, October 15, 1997.
- Al-Saud, Mansour Mutib, "Productivity Improvement in the Public Sector of Saudi Arabia." Ph.D. dissertation, George Washington University, Washington, D.C., 1986.
- Aristotle quoted in R. Bernstein, Praxis and Action (Philadelphia: University of Pennsylvania Press, 1971).
- Arrow, K., Social Choice and Individual Values. New York: John, Wiley and Sons, 1951.
- Bahammam, A. (1992). An Explanation of the Residents' Modifications: Private-sector Low-rise Contemporary Housing in Riyadh, Saudi Arabia. Doctoral dissertation, University of Michigan, Ann Arbor, MI.
- Bolan R. S., "The Practitioner as Theorist: The Phenomenology of the Professional Episode," Journal of the American Planning Association 46 (3), (July 1980).
- Bolan, R., "Emerging Views of Planning." Journal of American Institute of Planning, vol. 33, no. 4, July 1967.
- Bonine, M. E. "Cities of The Middle East and North Africa." In Cities of the World, edited by Stanley D. Brunn and J. F. Williams. 281 -321. New York: Harper & Row, 1983.
- Bonine. M. E. "The Urbanization of the Persian Gulf Nations." In The Persian Gulf State: A General Survey, Alvin J. Cottrell, C. Edmund Bosworth, R. (eds).
- Bowersock, G.W., "Nabataeans and Romans in the Wadi Sirhan".
- Bright, Elise M. Designing the City: A Guide for Advocates and Public Officials. Journal of the American Planning Association. 62(4) 527-528. 1996 autumn.
- Brooks, Michael P. "A plethora of paradigms?" Journal of the American Planning Association. 59(2): 142-145. 1993 Spring. [References]
- Brower, David J., et al., Managing Development in Small Towns. Planning Press,

- American Planning Association, Washington D.C. 1984.
- Brower, David J., et al, Managing Development in Small Towns, APA 1984.
 - Burrell, K. McLachlan, and R.M. Savory, 225-278. Baltimore: John Hopkins University Press.
 - Camhis, M., Planning Theory and Philosophy. New York: Tavistock Publications, 1979.
 - Castells, M., "The City and the Grassroots: a Cross-cultural Theory of Urban Social Movements". Berkeley: University of California Press, 1983.
 - Chatterjee, Lata, & Nijkamp, Peter, Urban and Regional Policy Analysis in Developing Countries, Gower, 1986.
 - Checkoway, Barry. "Paul Davidoff and Advocacy Planning in Retrospect." Journal of the American Planning Association. 60(2): 139. 1994 Spring. [References]
 - Christopherson, Susan., "The Cultures of Cities". Journal of the American Planning Association. 62(4): 533. 1996 autumn.
 - Conway, Mckinely. Tomorrow's Supercities. Futurist, 27(3): 27-33. 1993 May/Jun.
 - Cornell, Gary. "Urban Land Use Planning". Journal of the American Planning Association. 62(4): 530-531. 1996 autumn.
 - Costa, F J. and Allen G. Noble. "Planning Arabic Towns." The Geographic Review 76: 2 (April. 1986): 160-17.
 - Costello, V. F. Urbanization in the Middle East. Cambridge: Cambridge University Press.1977.
 - Crane, Robert D., Planning the future of Saudi Arabia : A Model for Achieving National Priorities. New York, New York : Frederick A. Praeger, Inc., 1978.
 - Dahlm Ahmed H. "The Saudi Arabian Council of Ministers: Its Environment, Its Role and Future." In Politics Administration, and Development in Saudi Arabia, Ahmed, H. Dahlan. (ed), 61 -80. Brentwood, MD: *Amana*. 1990.
 - Dandekar, Hemalata C., "The Planner's Use of Information, Techniques for Collection, Organization, and Communication", APA 1988.
 - Davidoff, P. and Reiner, T., "A Choice Theory of Planning." Journal of American Institute of Planning, vol. 28, 1962.
 - Davidoff, Paul, "Advocacy and Pluralism in Planning." Journal of American Institute of Planning, vol. 33, no. 4, July 1967.
 - Dear, M. and Allen Scott, eds. Urbanization and Urban Planning in Capitalist

State. London: Methuen and Co. Ltd., 1981.

- Downs, Anthony, "Emerging Views of Planning." Journal of American Institute of Planning, vol. 33, no. 4, July 1967.
- Dyckman. John A. Kreditor and T. Banerjee. "Planning in an Unprepared Environment: The Case of *Bahrain*." TPR 2 (1984): 212-227.
- Facey, William, "The Story of The Eastern Province of Saudi Arabia", Stacey International, London 1994.
- Faludi, A., Planning Theory. Oxford, England: Pergamon Press Ltd., 1973. Citing Friedmann, John, "Planning as a Vocation". Plan Canada, vol. 13, 1966/7, pp. 99-124. Vol. 1, no. 7.
- Faludi, Andreas, A Reader in Planning Theory, Pergamon Press, 1973.
- Forester, John. "What Planners Do: Power, Politics, and Persuasion.", Administrative Science Quarterly. 41(4): 719-723. 1996 Dec. [References]
- Friedman, John, Retracing America. Garden City, New York: Anchor Press/Doubleday, 1973.
- Friedmann, John, Urbanization, Planning and National Development. Beverly Hills, Ca.: Sage Publications, Inc., 1973.
- Glasse, Cyril. The Concise Encyclopedia of Islam. New York: Harper San Francisco. 1991.
- Grabow, S. and Heskins, A., "Foundations for a Radical Concept of Planning." Journal of American Institute of Planning, vol. 39, no. 2, March 1973.
- Hall, Peter, Urban and Regional Planning, Unwin Hyman Ltd., London 1989.
- Harik, Iliya, "Continuity and Change in Local Development Policies in Egypt: From Nasser to Sadat." in Local Politics and Development in the Middle East, Loius J. Cantori and Illiya Harik, (eds.) Boulder, Colorado: Westview Press, Inc., 1984.
- Hemmens G. C., "New Directions in Planning Theory," Journal of the American Planning Association, 46(3), (July 1973).
- Hill, David R., "Sustainability, Victor Gruen, and the Cellular Metropolis.", Journal of the American Planning Association. 58(3): 312-326. 1992 summer. [Diagrams, References].
- Horvat, B., et al., "Self-Governing Socialism." vol. 2 White Plains, New York: Institutional Arts and Sciences Press, 1972.
- Hudson, B., "Comparison of Current Planning Theories: Counterparts and Contradictions." Journal of the American Planning Association, vol. 45, no. 4, 1979.

- Innes, Judith E. Planning Through Consensus Building. Journal of the American Planning Association. 62(4): 460-472. 1996 Autumn.
- International Bank for Reconstruction and Development, "Rural Development Sector Policy Paper." Washington, D.C.: IRBD, 1975.
- Khadduri, Majid, Islamic Conception of justice, P: 135. John Hopkins University Press, Baltimore, 1984.
- King G.R.D., "Early Responses of Christians to *Islam*: The Byzantine Frontier and Bilad Al-Sham".
- Klosterman, R., "Toward a Normative Theory of Planning", Ph.D. Dissertation, Cornell University, Urban and Regional Planning, 1976.
- Lewis, Sara., Overall Strategy Essential. European Retail. (112):11.1994 Nov.22.
- Lynch, K. Good City Form. Cambridge, MA: the MIT Press, 1987.
- Mackinsey International, Inc., Mastering Urban Growth: A Blueprint for Management, a report prepared for the Ministry of Municipal and Rural Affairs. (New York, 1978).
- Mandelbaum, Seymour, "A Complete General Theory of Planning is Impossible." Policy Sciences 11, 1979.
- McWhinney, Will. "Tales of Arabian Days". New Management. 3(4): 38-43. 1986 Spring.
- Mendenhall, George E., "Qurayya and Midianities". Metbuen, 1977.
- Meyerson M., "Utopian Traditions and the Planning of Cities," Daedalus, 90(1) (Winter 1961): 180-193. Reissman, The Urban Process: Cities in Industrialized Societies, (New York: Free Press, 1970).
- Ministry of Municipalities and Rural Affairs (MOMRA). Atlas Nitaq Annomou al Omrani Lee Madinat Huraimla [urban Domain Development City of Huraimla]. Riyadh: Deputy Ministry for City Planning, c. 1989 (in Arabic).
- Muller, Walter W., Survey of the History of the Arabian Peninsula from the First Century A.D. to the Rise of Islam.
- Nyrop, Richard F., etal, Area Handbook for Saudi Arabia, 1976.
- Orr, Sarah C. & Cullingworth, J. B., "Regional and Urban Studies, A Social Science Approach", University of Glasgow, Social and Economic Studies, 1969.
- Peagam, Norman, "Becoming a more normal economy". Euromoney. (314):1995 Jun.
- Presley, J., Saudi Arabia, Euromoney (World Economic Analysis Supplement):

20. 1996 Sep.

- Rashid, Nasser and Shaheen, Esber, Saudi Arabia: All You Need To Know 1995.
- Renaud, Bertrand, "Nationality Urbanization Policy in Developing Countries". Oxford: Oxford University Press, Published for the World Bank, 1984.
- Rondinelli, Dennis, Development Projects as policy Experiment. London: Menthuen & Co. Ltd., 1983.
- Saleh A. al-Hathloul and Anis-ur-Rahmaan, "The Evolution of Urban and Regional Planning in Saudi Arabia.", Ekistics, 312 (May/June 1985).
- Samman, N. H., "Saudi Arabia and the Role of the Emirates in Regional Development." In Politics, Administration and Development in Saudi Arabia. edited by Ahmed, H. Dahlan, 85-96. Brentwood, MD: *Amana*, 1990.
- Sandercock, Leonie. Forsyth, Ann., "A Gender Agenda: New Directions for Planning Theory." Journal of the American Planning Association. 58(1): 49-59. 1992 winter.
- Smith, Patrick, Gulf's dream International Management. 49(6) (Europe Edition): 1994 J-A.
- So, Frank S., etal, "The Practice of Local Government Planning", International City Management Association, 1979.
- Stein, Jay M., Classic Readings in Urban Planning: An Introduction. 1995. R.R. Donnelley & Sons Company.
- Thomps D. Galloway and Riad G. Mahayani, "Planning Theory in Retrospect: The Process of Paradigm Change", Journal of the American Institute of Planners 43 (January 1977).
- Waterston, Albert, Development Planning: Lessons of Experience. Baltimore, Md.: Johns Hopkins Press, 1965.
- Webber, M., "The Myth of Rationality: Development Planning Reconsidered." Environment and Planning B: Planning and Design, vol. 10, 1983.

INDEX

A

Abd al Aziz	31
<i>Abraq Al Kabrit</i>	163, 164
Agriculture.....	84, 95, 96, 118, 125
Al Khafji.....	10, 16, 18, 23, 44, 82, 83, 84, 89, 90, 91, 93, 95, 98, 99, 106, 111, 112, 113, 114, 115, 116, 118, 119, 120, 121, 122, 123, 124, 125, 126, 131, 147, 158, 160, 162, 163, 164, 173, 174, 175, 176, 177, 178, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232
Al Safania	119, 147, 163
Alternatives.....	154, 155, 166, 167
Arabia.....	10, 27, 28, 29, 30, 32, 40, 46, 97, 196, 198
ARABIA	1, 27, 28, 31, 141
Arabian Gulf	10, 13, 34, 47, 115, 128, 196

C

CBD.....	89, 90, 208
Cities	59, 91, 131, 141, 174, 178, 202
Citizen	116, 117
Climate	111
Comprehensive.....	77, 145, 152, 154, 155, 161, 167, 176
COMPREHENSIVE	1
Concepts	22, 60, 62, 111, 131, 176, 199
CONCEPTUAL	1
Conclusion.....	80, 165, 177
Criteria.....	158
Cultural.....	16
Culture.....	124, 132

D

Data	82, 83, 84, 90, 91, 93, 95, 175
Decentralization	78, 79
Development.....	11, 12, 22, 24, 48, 49, 50, 51, 52, 69, 72, 74, 77, 82, 89, 111, 119, 124, 131, 133, 135, 139, 145, 147, 149, 151, 154, 155, 156, 157, 158, 160, 161, 162, 166, 167, 169, 170, 173, 174, 175, 176, 177, 198, 199, 200, 201, 202, 203
Drainage	125

E

Eastern.....	10, 15, 16, 22, 27, 28, 29, 30, 33, 48, 53, 67, 82, 83, 84, 91, 92, 95, 106, 125, 169, 174, 175, 176, 177, 201
EASTREN	1
Economic.....	46, 151, 154, 155, 167, 202
Economical	16, 132, 148, 149, 151, 154
Economy.....	118, 154
Electric.....	125
Electricity.....	109, 125
Elements	165
Employment.....	118
Enabling.....	137
Environment	1, 77, 111, 116, 135, 148, 149, 203
Evaluation	140, 152, 153, 154, 161
Existing Condition.....	111, 126, 127

F

Facilities	121, 122, 124, 161
Fact Finding.....	127
Formation	141, 152

G

Goals.....	148, 149, 150
Growth.....	20, 21, 39, 154, 155, 202
Guidelines.....	159
Gulf.....	15, 22, 27, 29, 30, 32, 45, 46, 47, 48, 51, 97, 111, 116, 125, 127, 131, 176, 203
Gulf War.....	15, 45, 46, 116, 127

H

Housing.....	97, 121, 127, 146, 150
--------------	------------------------

I

Implementation.....	143
Implications.....	196
Industries.....	96
Infrastructure.....	148, 150, 154
Integration.....	137, 138
Islam.....	15, 28, 29, 31, 67, 81, 127, 169, 202

K

King.....	30, 35, 47, 141, 202
King Fahd.....	47
Kingdom.....	10, 13, 31, 33, 34, 39, 41, 45, 46, 47, 60, 61, 80, 117, 118, 125, 149, 169, 178
KINGDOM.....	1

L

Labor.....	116, 117, 124
Labor Force.....	116, 117
Land.....	83, 84, 95, 96, 104, 105, 119, 120, 135, 145, 146, 174, 197, 208, 209, 210
Landuse.....	105, 129, 146, 175
Level.....	82, 83, 137, 163
Literature.....	52, 171

M

Manufacturing.....	99, 128
Master Directive Plan.....	157, 161, 162, 163, 176, 178
Models.....	72
Municipality.....	83, 84, 122

N

National.....	11, 46, 118, 144, 200, 201
---------------	----------------------------

O

Objectives.....	148, 149, 150
Oil.....	33, 35, 93, 95, 96, 97, 115, 118, 124, 127, 154, 167, 199

P

Parks.....	128, 159
Planner.....	56, 200
Planning.....	10, 11, 37, 40, 48, 49, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 64, 66, 67, 70, 71, 72, 73, 74, 75, 76, 77, 78, 80, 89, 131, 139, 141, 143, 151, 152, 156, 161, 166, 170, 171, 172, 173, 174, 175, 198, 199, 200, 201, 202, 203
Planning Theory.....	52, 56, 60, 62, 72, 73, 74, 78, 171, 172, 200, 201, 203
Policies.....	51, 138, 144, 155, 201
Population.....	20, 21, 116, 117, 127, 144, 145, 147, 148, 163, 164
Private.....	98, 118, 154, 197
Production.....	114, 154, 161, 167
Public.....	50, 60, 79, 118, 122, 124, 167, 199

R

Rational.....	77
---------------	----

Recreation.....	122, 124, 160, 164, 165
Region10, 15, 16, 22, 51, 53, 82, 83, 84, 91, 92, 93, 95, 98, 106, 111, 112, 113, 114, 115, 116, 118, 119, 120, 121, 122, 124, 125, 131, 145, 158, 161, 166, 169, 174, 175, 176, 177	
REGION	1
Regional10, 18, 37, 57, 66, 71, 75, 82, 84, 89, 95, 96, 111, 119, 120, 131, 143, 145, 148, 149, 152, 163, 170, 173, 174, 200, 202, 203	
REGIONAL	1
Religion.....	124
Resources.....	16, 35, 83, 92, 111, 114, 115, 116, 145, 147, 148, 149, 199
Royal Decree.....	37
Rural.....	38, 39, 50, 119, 121, 202
S	
Saud.....	28, 30, 31
Saudi10, 11, 13, 15, 17, 24, 26, 28, 30, 31, 32, 34, 35, 37, 39, 40, 41, 45, 46, 47, 48, 49, 50, 60, 61, 80, 82, 96, 97, 98, 125, 131, 133, 141, 162, 169, 177, 178, 196, 199, 200, 201, 202, 203	
SAUDI	1, 27, 28, 31, 141
Saudi Arabia10, 11, 13, 15, 17, 24, 26, 28, 30, 31, 32, 35, 37, 39, 40, 45, 46, 47, 48, 49, 50, 60, 61, 80, 82, 97, 125, 131, 169, 177, 178, 196, 199, 200, 201, 202, 203	
SAUDI ARABIA	1, 27, 28, 31, 141
Settlements.....	83, 84, 91, 119
Sewage.....	116, 125
Shopping.....	160
Social.....	16, 33, 54, 75, 80, 122, 124, 132, 148, 151, 199, 202
Soil.....	83, 93, 95
Solid Waste.....	126
State.....	30, 144
Strategy.....	138, 141, 144, 145, 152, 161
STRATEGY	1
Survey.....	82, 83, 84, 89, 90, 91, 92, 96, 104, 105, 106, 108, 109, 173, 175, 202
Survey Methodology.....	82, 89, 92, 173
Sustainability.....	70, 71, 135, 201
T	
Theory.....	52, 56, 59, 75, 172, 200, 202
Towns.....	33, 200
U	
Urban1, 37, 39, 40, 50, 53, 59, 65, 71, 75, 83, 84, 90, 96, 131, 144, 148, 149, 154, 156, 198, 200, 202, 203	
Urban Planning.....	1, 40, 65, 156
Urbanization.....	51, 62, 69, 70, 116, 148, 201, 203
Utility.....	102, 108
W	
Water.....	84, 93, 95, 109, 115, 125
Water Resources.....	84, 93, 95, 115

•

APPENDIX 1

APPENDIX 2

APPENDIX 2

APPENDIX 2

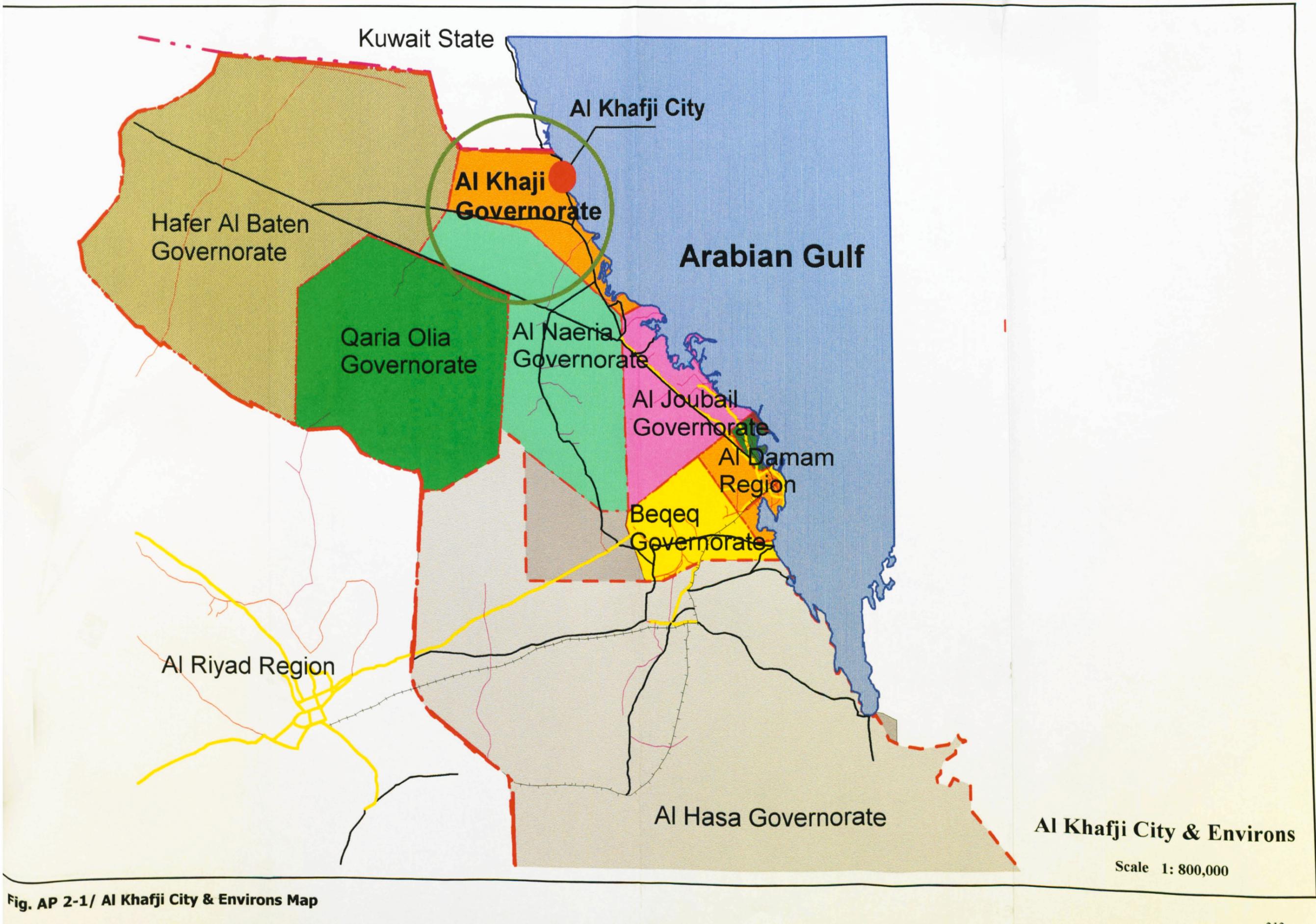


Fig. AP 2-1/ Al Khafji City & Environs Map



Fig. AP 2-2/ Al Khafji City Landuse Map



Khafji City, KSA

Buildings Ground Floor Uses

Apartment	(212)
Low Cost Housing	(559)
Villa	(3171)
Temporary	(1)
Rest-House	(62)
Work-Camp	(51)
Fence	(101)
Wholesale	(1)
General Retail	(308)
Petrol Filling Station	(31)
General & Private Offices	(18)
Personal & Other Services	(26)
Hotels	(3)
Workshops (Outside Industrial Areas)	(45)
Car Sale & Showrooms	(25)
Commercial & Residential	(283)
Light Manufacturing	(11)
Workshops	(8)
Warehousing & Storage	(17)
Taxi Terminals	(1)
Water Desalination Plant	(1)
Sewage Disposal	(3)
Telecom. Facility	(1)
Other Utilities	(17)
Cemetery	(3)
Small Holding	(2)
Vacant Land	(10)
Government Buildings	(25)
TV & Radio	(5)
Other Government Use	(1)
Historic Building or Site	(1)
Community Centers	(3)
Sports Activities	(1)
Playground - Park	(2)
Social Club	(1)
Public Hospital	(2)
Private Hospital	(9)
Health Center	(1)
Clinic	(1)
Kindergarten	(2)
Government Primary School	(36)
Government Intermediate School	(6)
Government Secondary School	(6)
Private School	(2)
Education for Handicapped	(1)
Higher Education	(1)
Eid - Mosque	(1)
Juma - Mosque	(6)
Local - Mosque	(36)
800	(1)
Gulf	(1)

Scale 1: 16500

Fig. AP 2-3/ Al Khafji City Building Ground Floor Uses Map

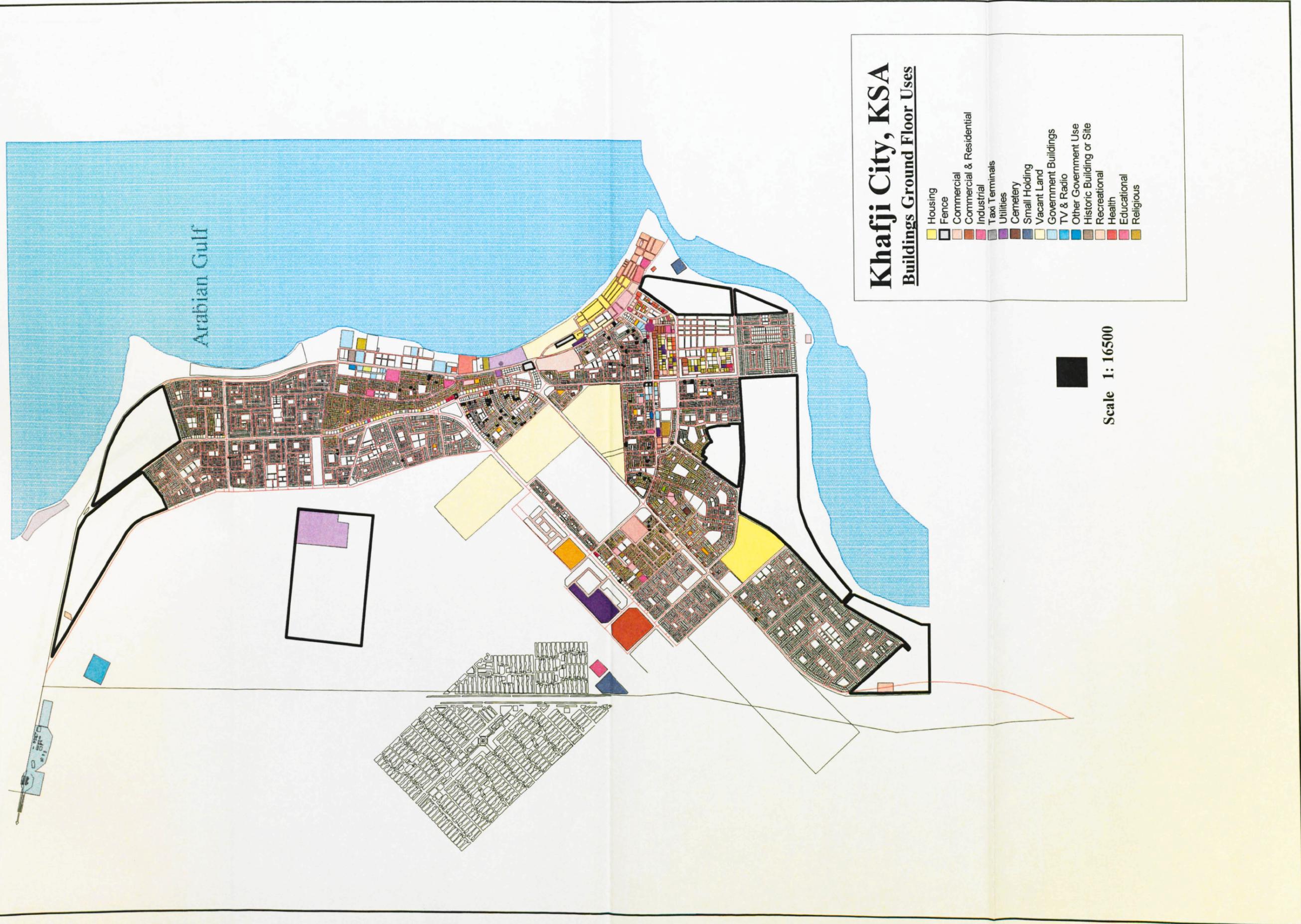


Fig. AP 2-4/ Al Khafji City Building Ground Floor Uses Map (Aggregated)

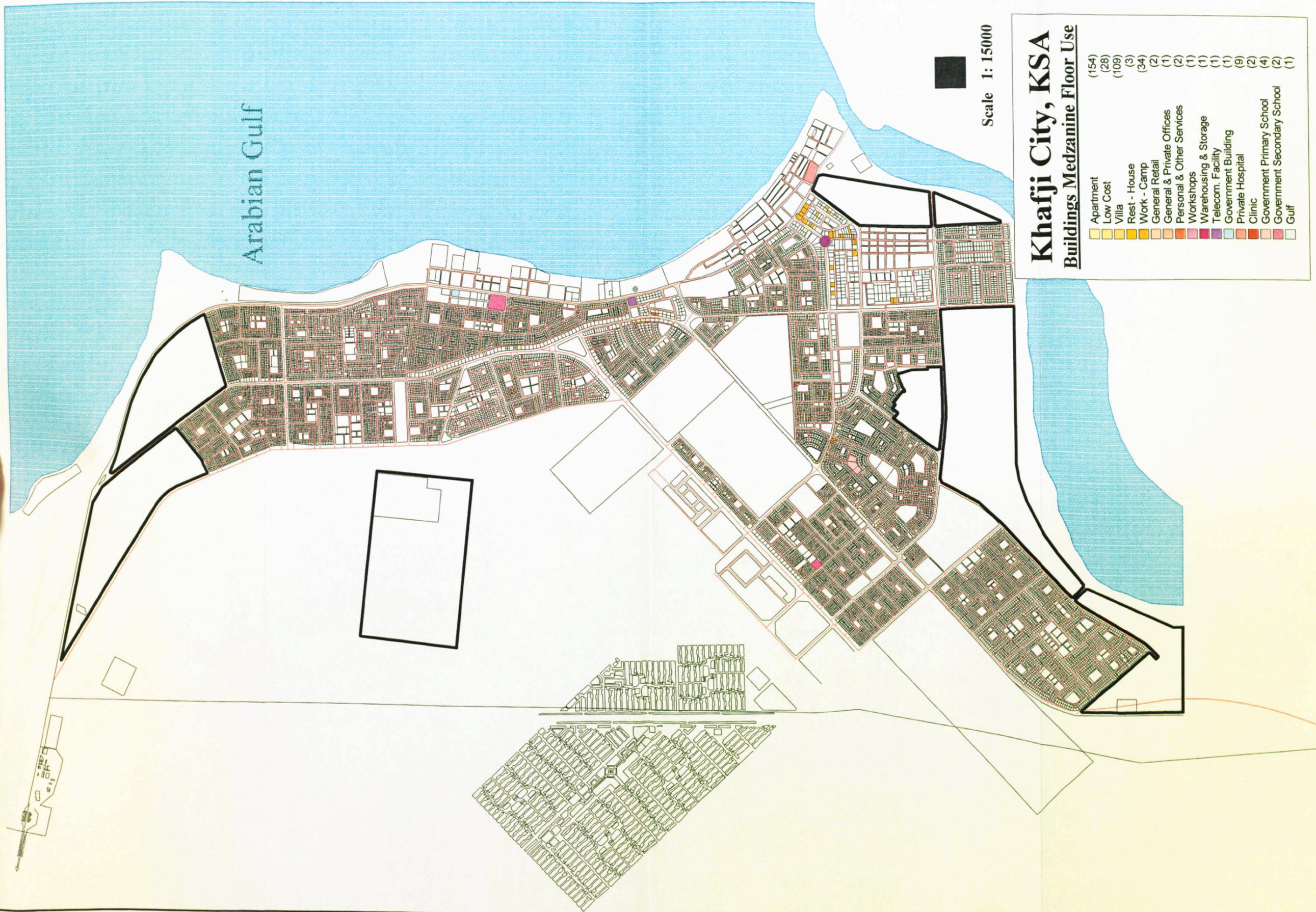


Fig. AP 2-5/ Al Khafji City Building Mezzanine Floor Uses Map

Arabian Gulf

Khafji City, KSA
Buildings Upper Floor Use

No Buildings	(18941)
Apartments	(139)
Low Cost	(480)
Villa	(1410)
Rest - House	(6)
Work - Camp	(12)
General Retail	(1)
General & Private Offices	(2)
Personal & Other Services	(1)
Hotels	(1)
Warehousing & Storage	(1)
Telecom Facility	(1)
Government Building	(12)
Public Hospital	(1)
Private Hospital	(9)
Government Primary School	(22)
Government Intermediate School	(3)
Government Secondary School	(5)
Education For Handicapped	(1)
Higher Education	(1)
Gulf	(1)

Scale 1: 15000

Fig. AP 2-6/ Al Khafji City Building Upper Floor Uses Map

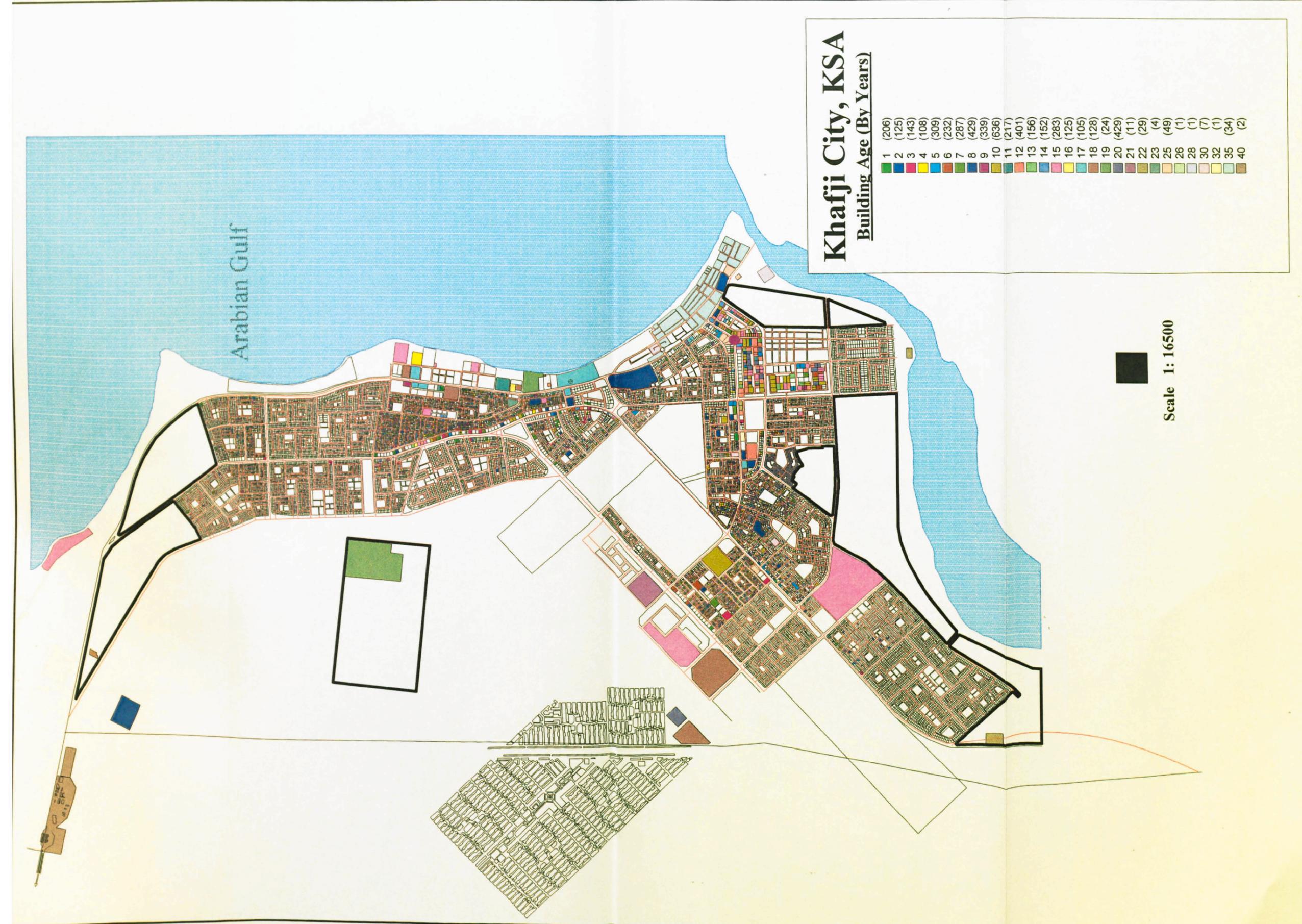


Fig. AP 2-7/ Al Khafji City Building Age

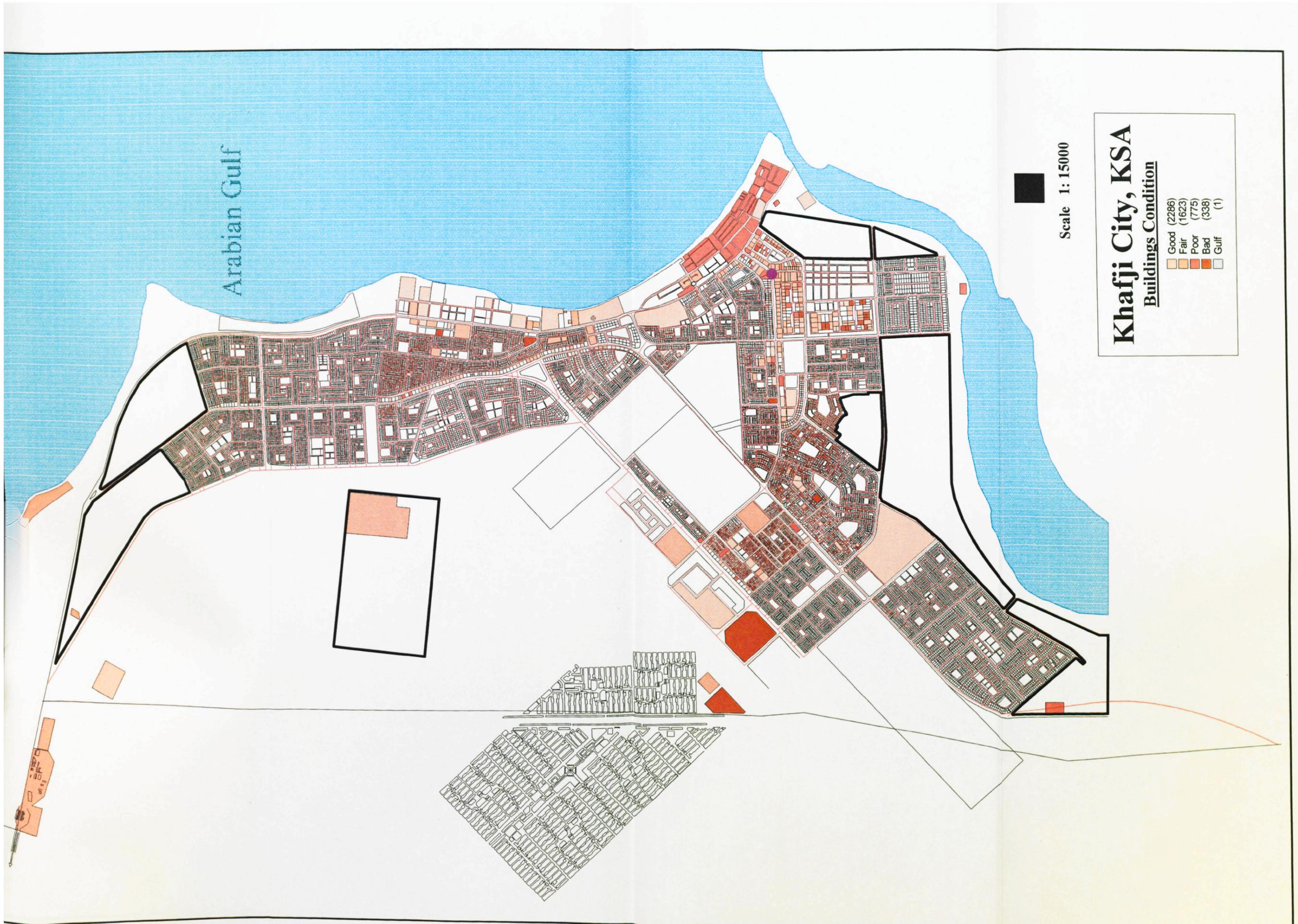
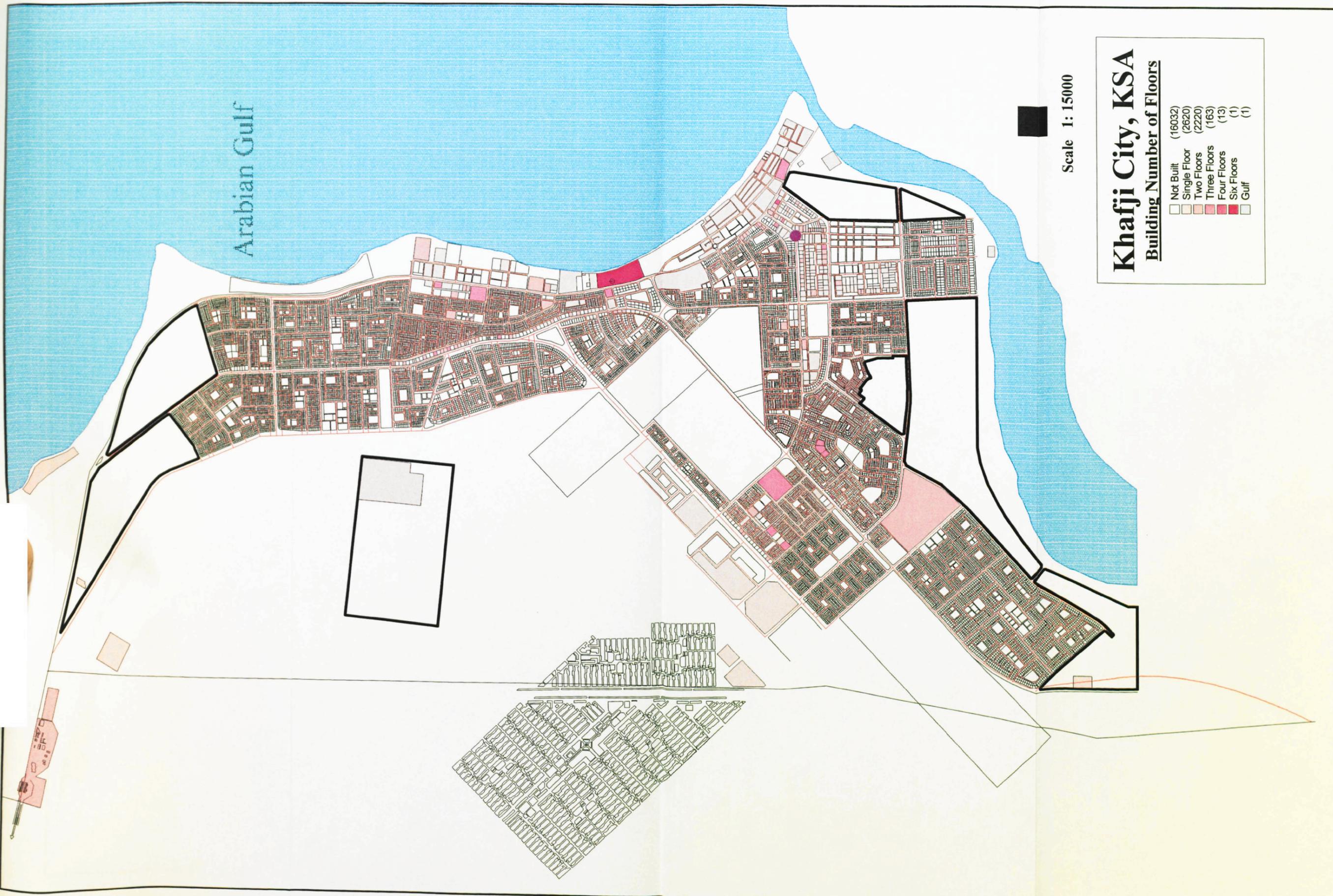


Fig. AP 2-8/ Al Khafji City Building Condition



Scale 1: 15000

Khafji City, KSA

Building Number of Floors

Fig. AP 2-9/ Al Khafji City Building Number of Floors

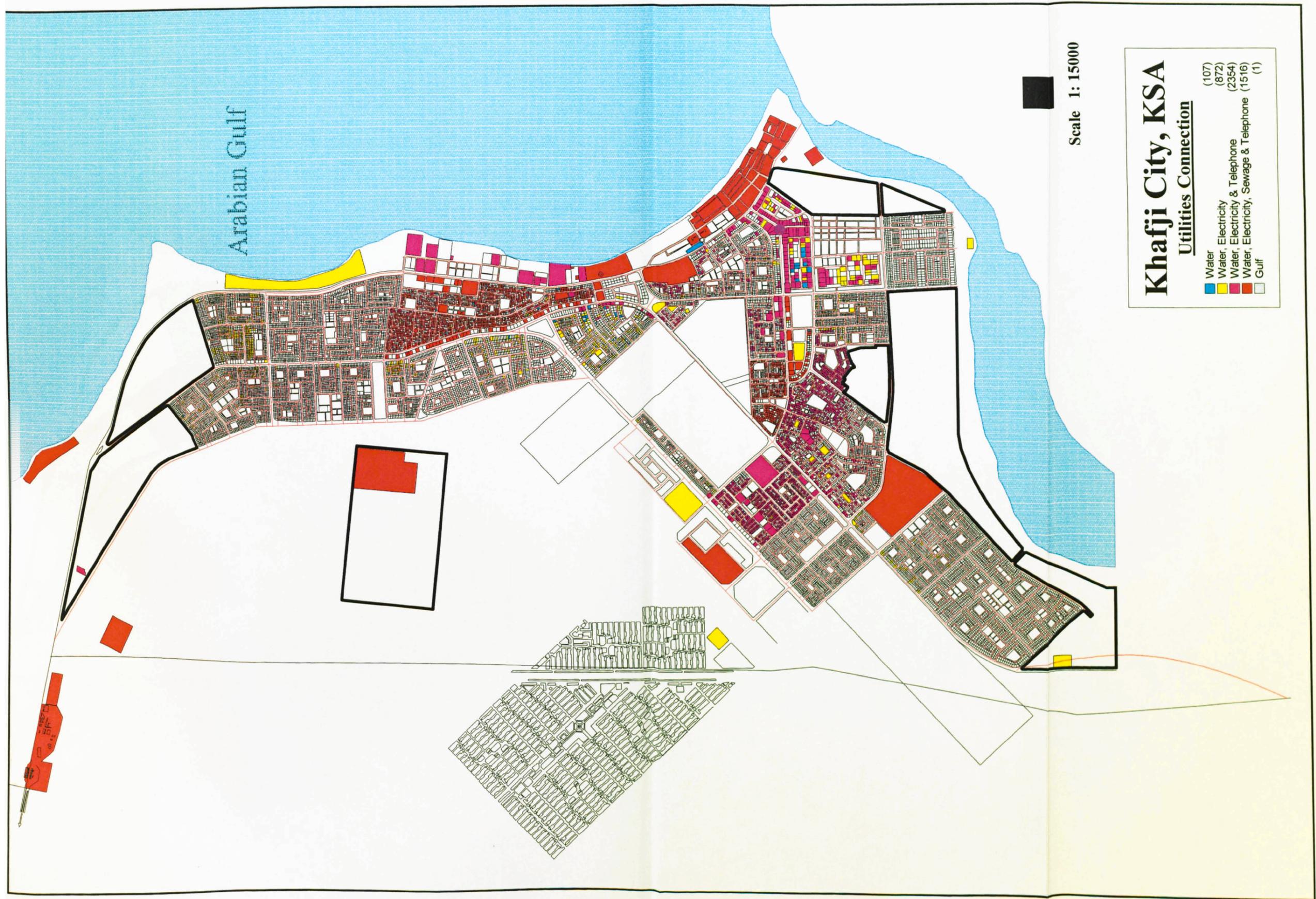


Fig. AP 2-10/ Al Khafji City Building Utility Connection

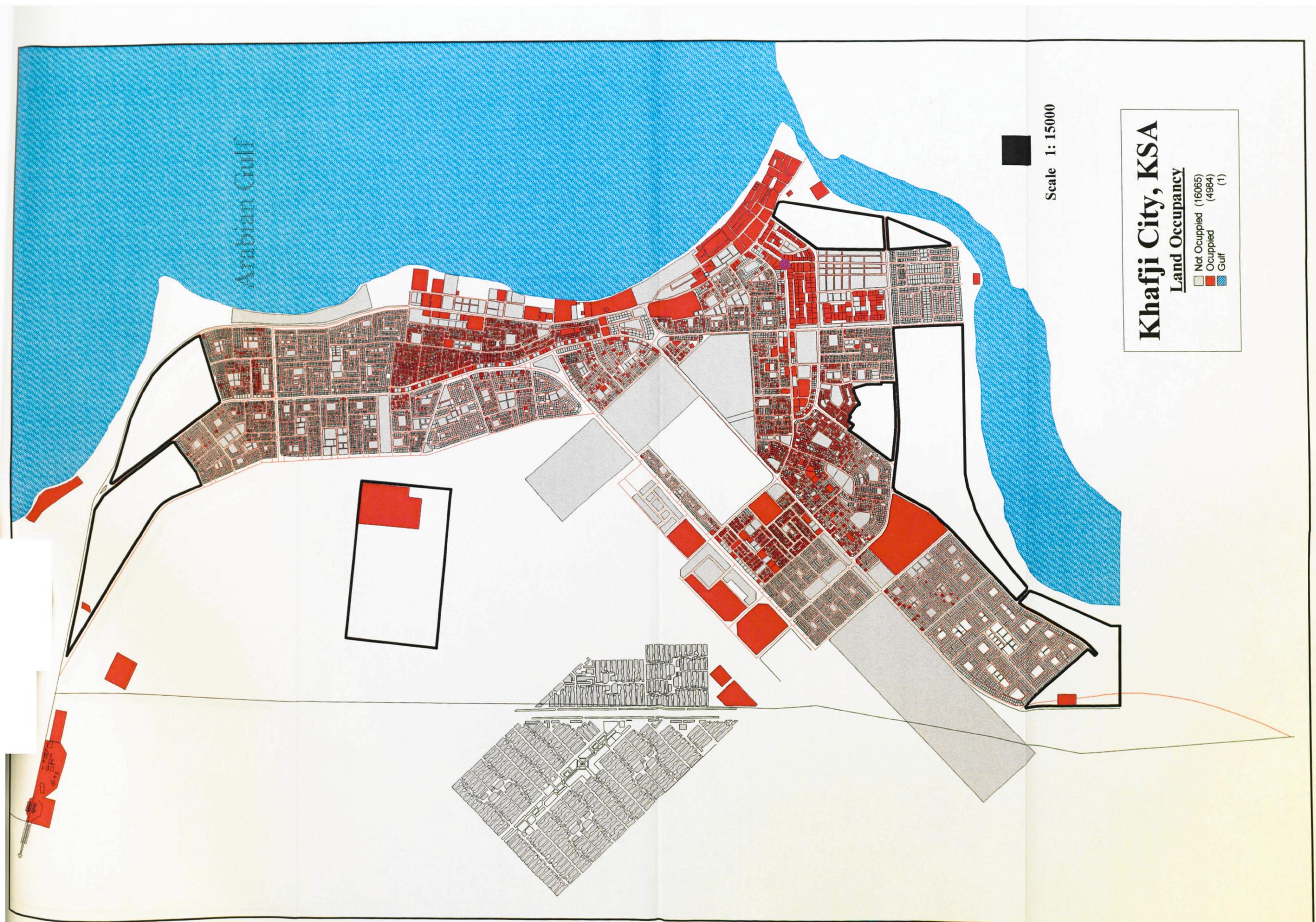


Fig. AP 2-11/ Al Khafji City Land Occupancy

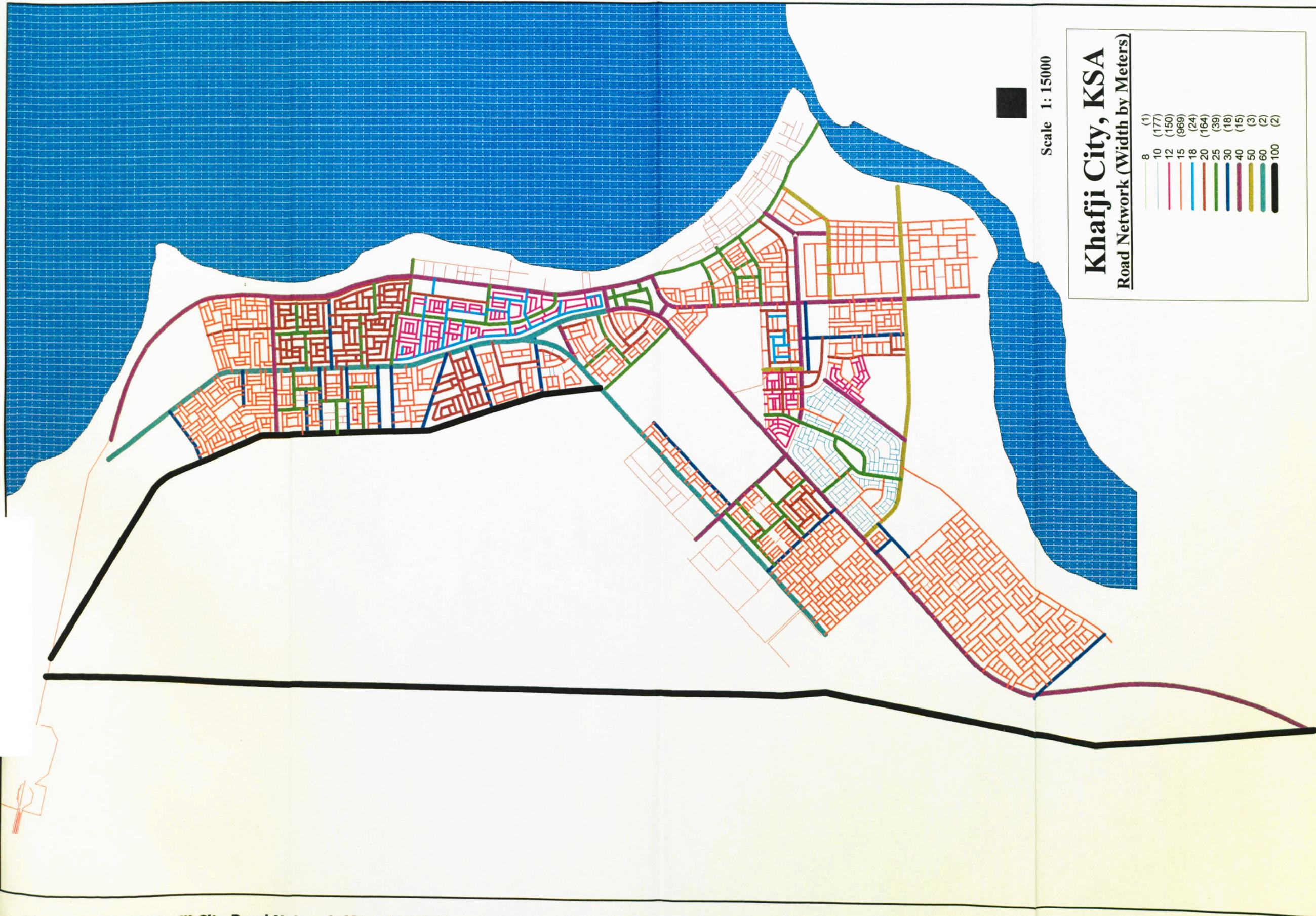


Fig. AP 2-12/ Al Khafji City Road Network (Street Width)

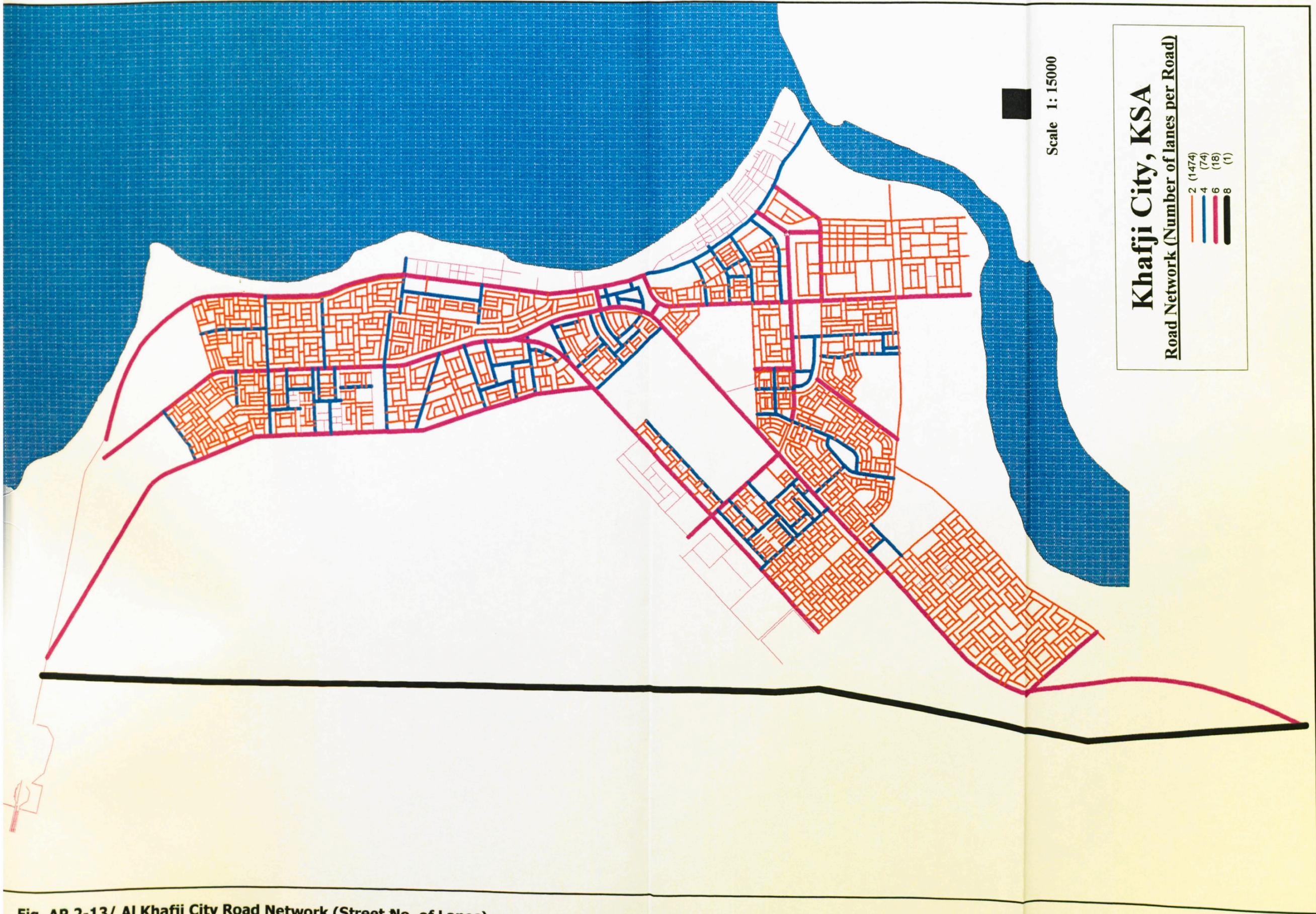


Fig. AP 2-13/ Al Khafji City Road Network (Street No. of Lanes)

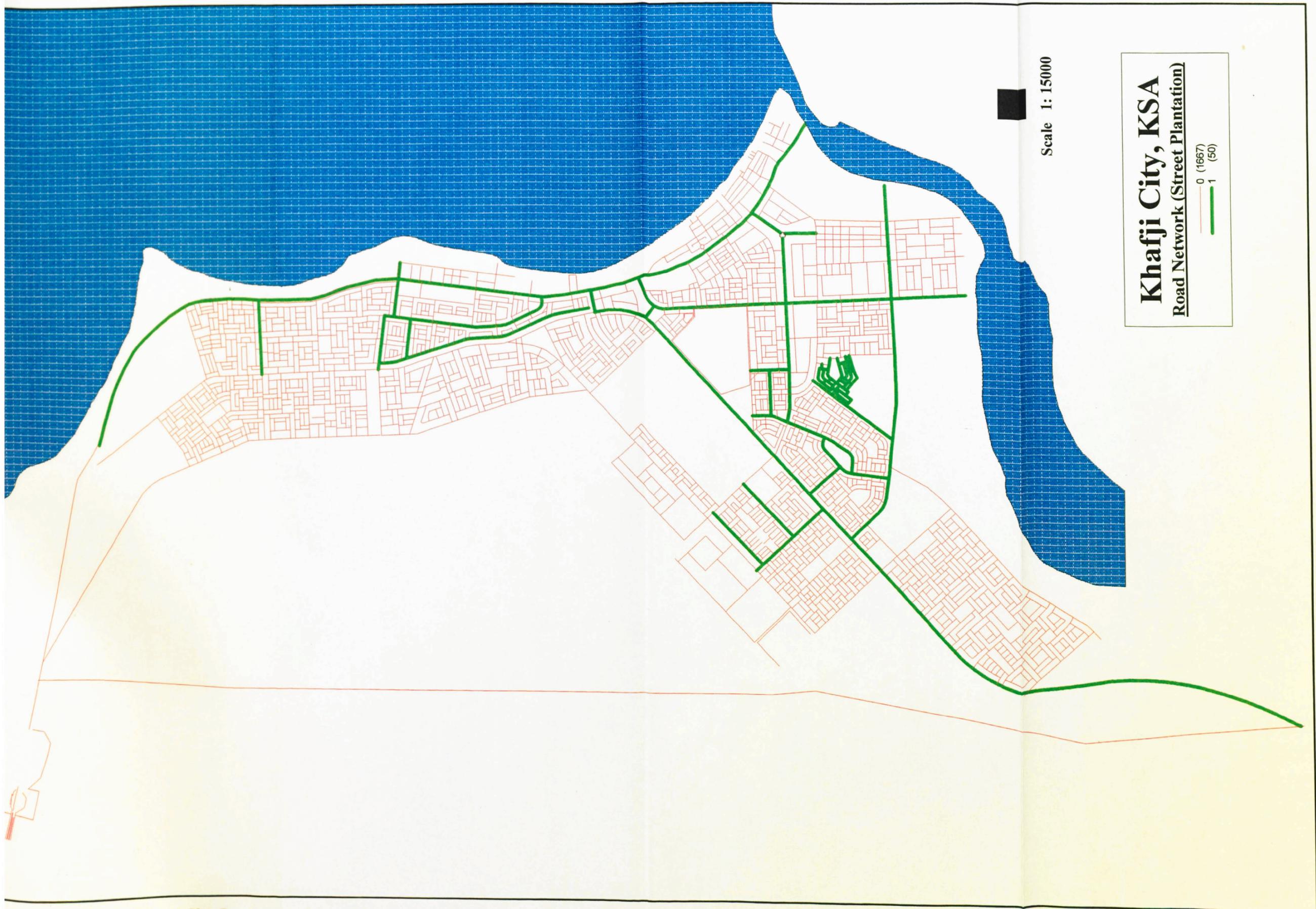


Fig. AP 2-14/ Al Khafji City Road Network (Street Plantation)

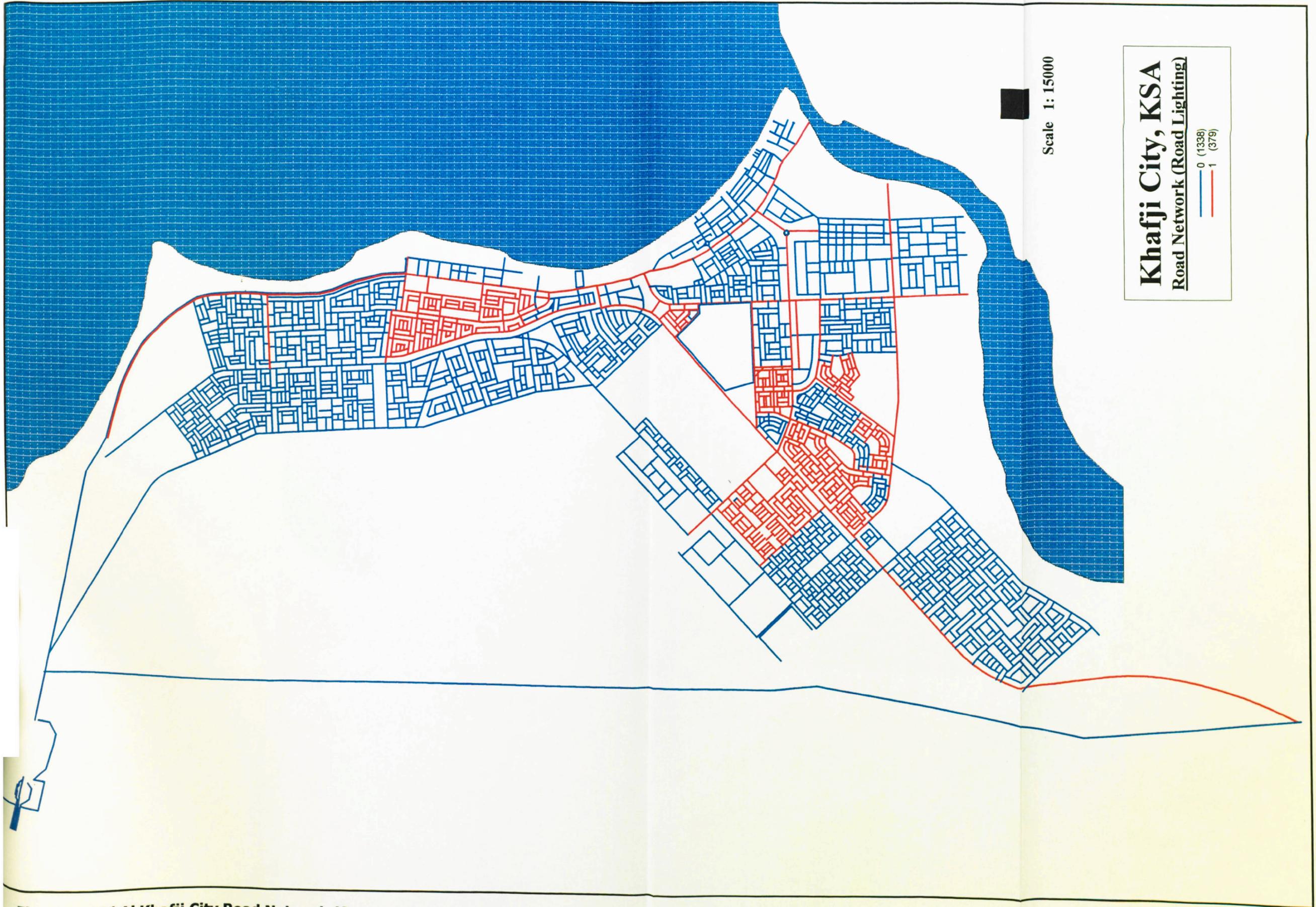


Fig. AP 2-15/ Al Khafji City Road Network (Street Lighting)

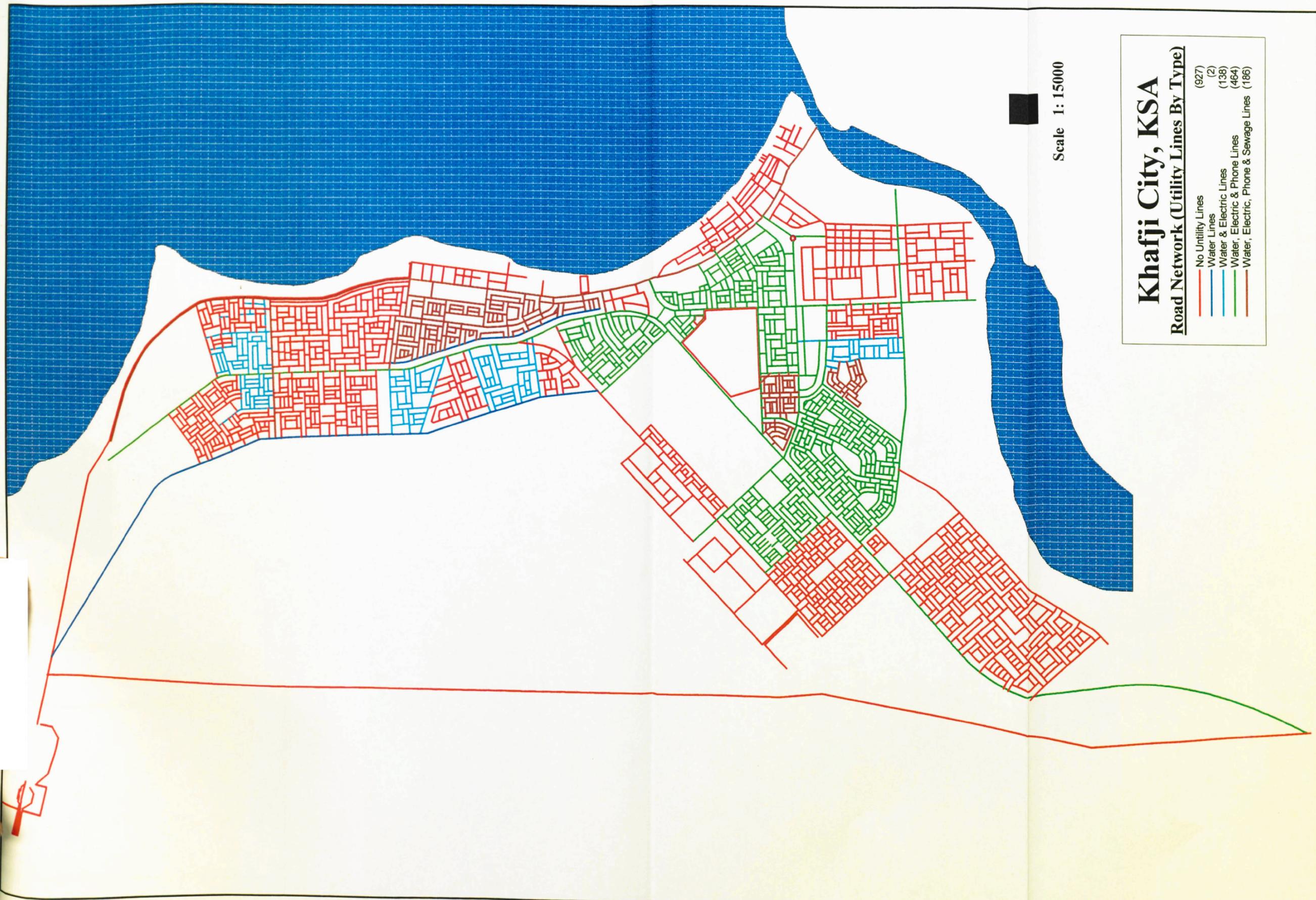


Fig. AP 2-16/ Al Khafji City Road Network (Utility Lines)

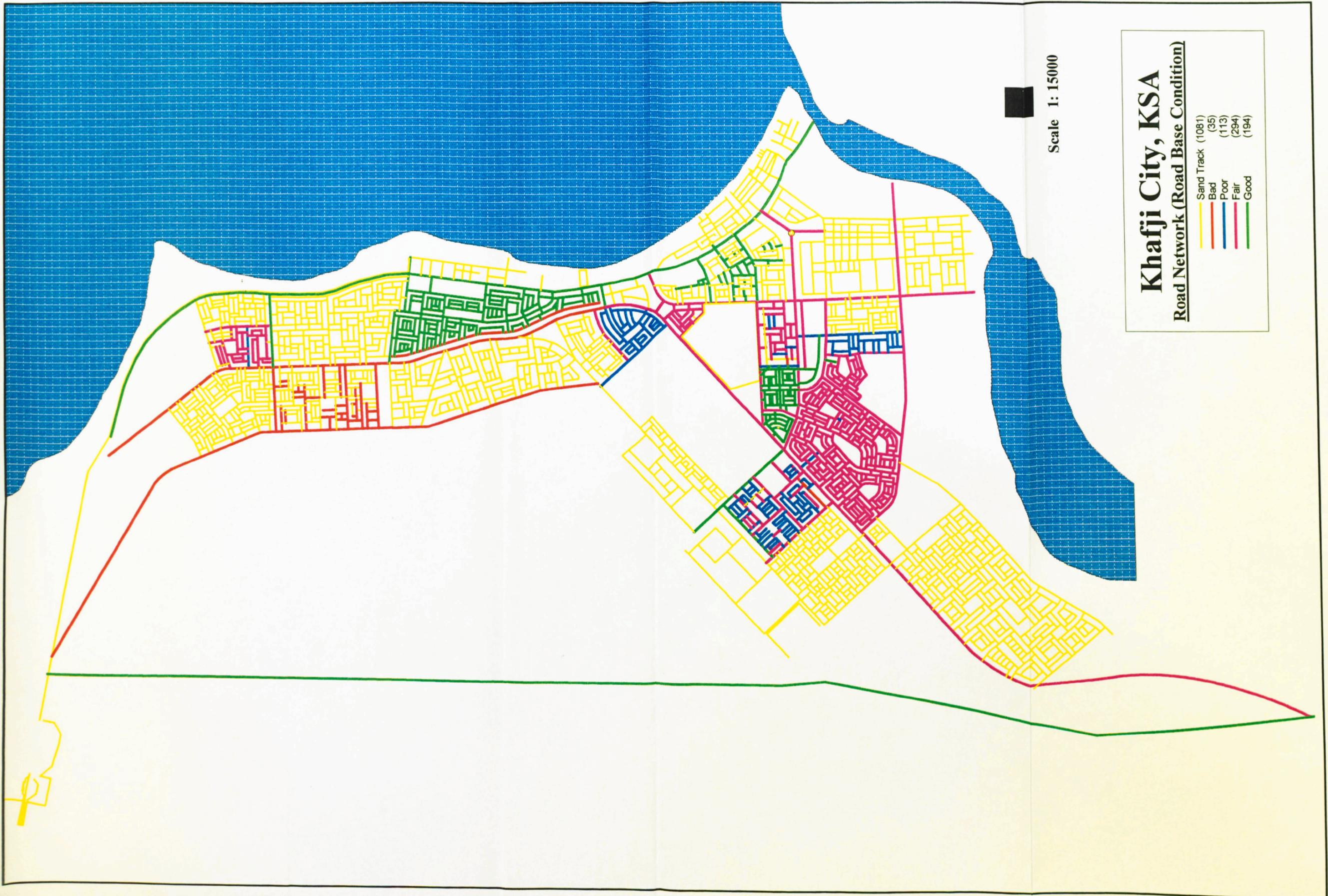


Fig. AP 2-17/ Al Khafji City Road Network (Street Base Condition)

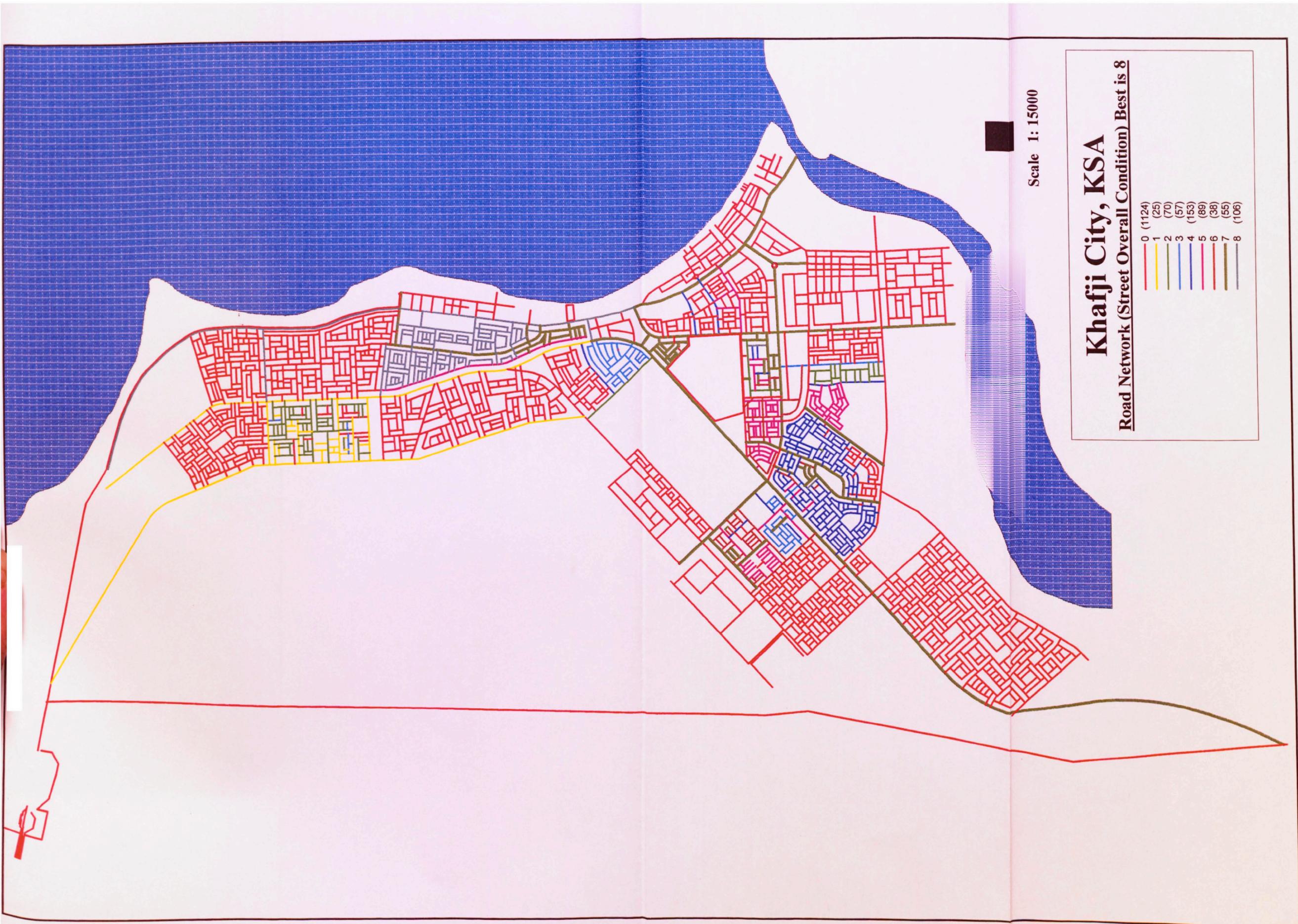
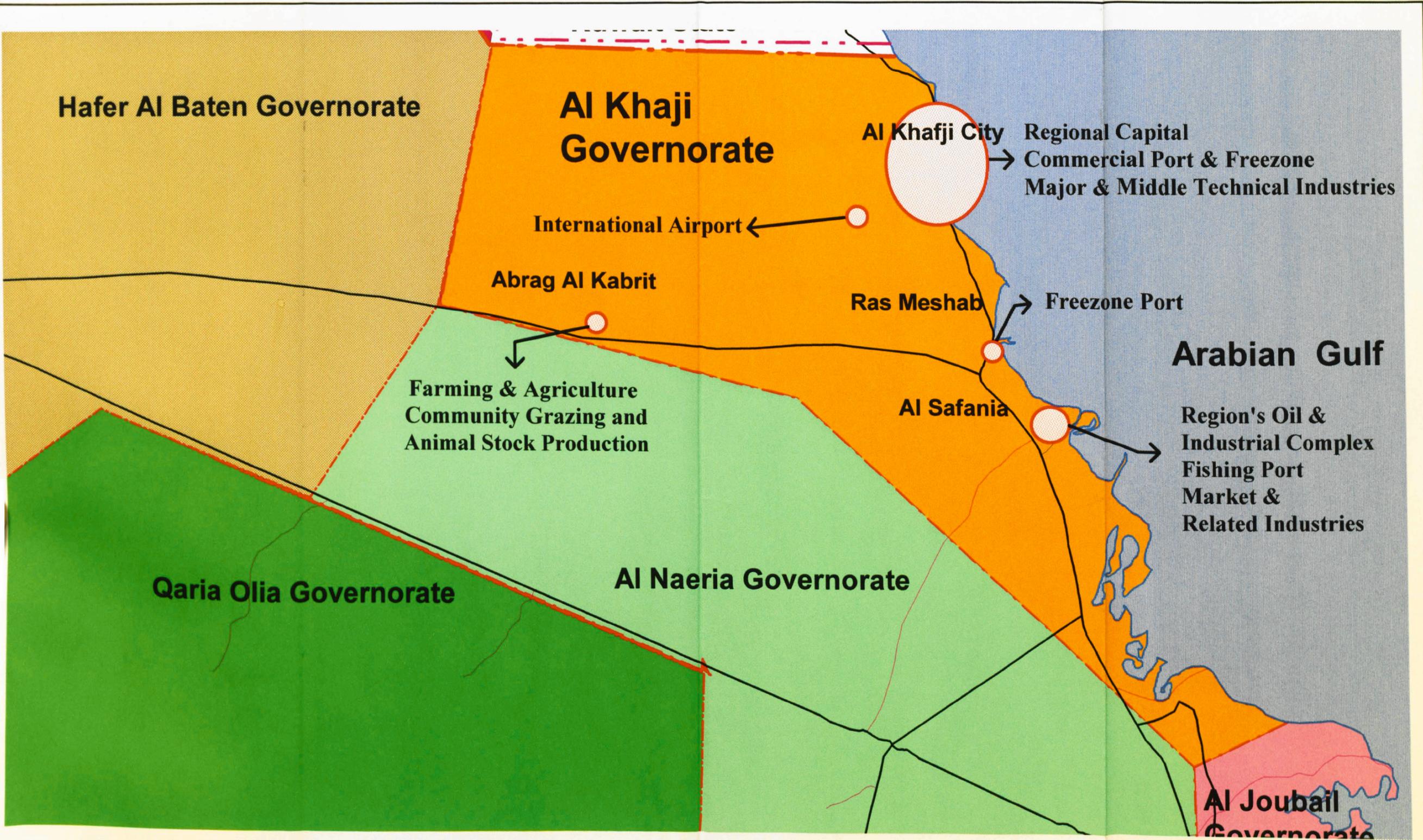


Fig. AP 2-18/ Al Khafji City Road Network (Street Overall Condition)



Ultimate Conceived Plan
 Scale 1: 200,000

Fig. AP 2-19/ Al Khafji Region Ultimate Conceived Plan

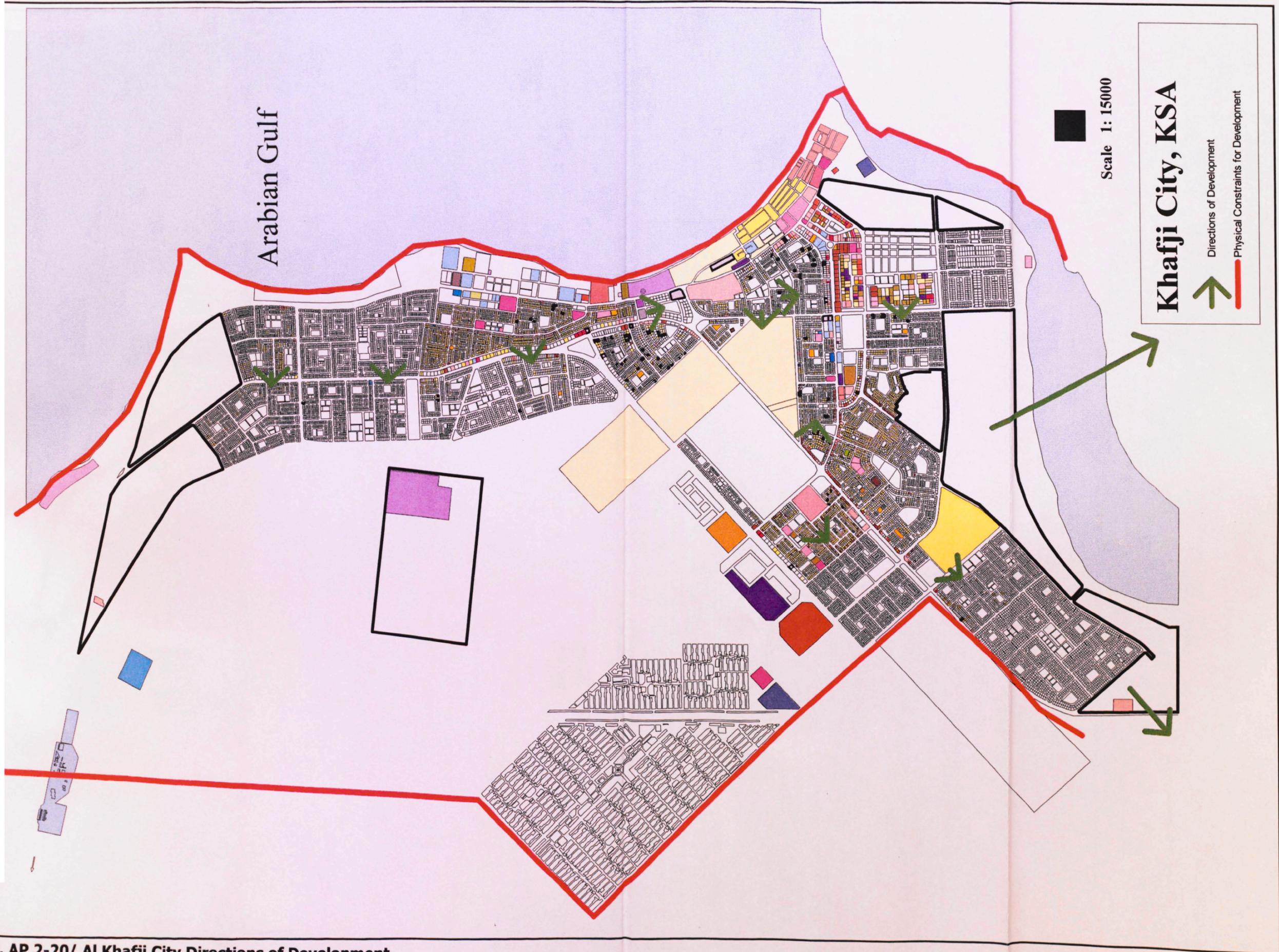


Fig. AP 2-20/ Al Khafji City Directions of Development

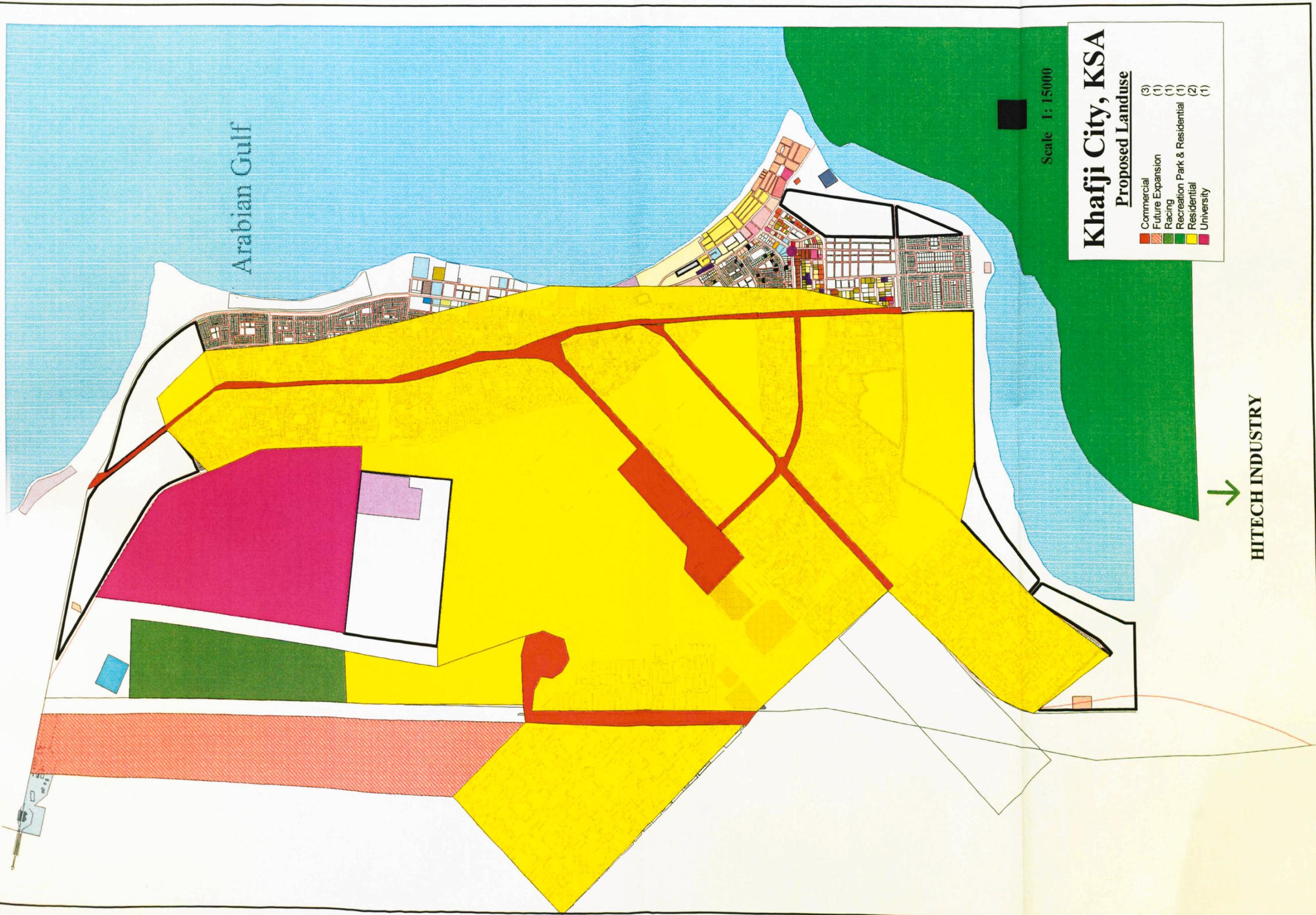


Fig. AP 2-21/ Al Khafji City Proposed Landuses

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**

**DIAGRAM ON THIS
PAGE EXCLUDED
UNDER INSTRUCTION
FROM THE
UNIVERSITY**