

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

GEOGRAPHY AND PLANNING IN PALMERSTON NORTH

A Thesis Presented in Partial Fulfilment of the Requirements
for the Degree of Master of Arts in Geography
at Massey University

By

VERNON RICHARD CROSS WARREN

Massey University

1969

PREFACE

The statement that "planning has an inescapable geographical basis"¹ is in some respects a truism since town and country planning by its nature must operate within a territorial context. It follows that geography and planning should stand in some direct relationship to each other but the question of degree of relationship is open to debate. This present work is an attempt to explore and test the contribution which geographical studies of an area can make to one stage of the planning process - the compilation and analysis of planning data.

Town planning in New Zealand has reached an interesting and critical stage of development. Although comprehensive planning legislation has been in effect since 1926 it is only since the passing of the 1953 Town and Country Planning Act that widespread efforts have been made to prepare planning schemes. During this period as problems have been encountered and experience in the preparation and administration of schemes have been accumulated, critical attention has been focused on the efficacy of both the legislation and the resultant schemes. As a result of this scrutiny substantial amendments were made to the legislation in early 1967.

But almost all the emphasis has been placed on procedural matters and points of law; little attention

1. Freeman 1958 (a) 13.

has been centred on the content or quality of the planning schemes themselves. Already development in the main urban centres is controlled by planning schemes and the stage has been reached where a number of planning authorities are placing a considerable degree of reliance on their schemes. It seems therefore, to be appropriate and important that some assessment of their content and quality should be made.

The nature of planning is such that an assessment of quality and content could be made from a variety of disciplinary standpoints including economics, sociology and architecture. This study is approached from the geographical point of view and to provide a definitive framework for the study the hypothesis is advanced that:-

- (a) the planning process in New Zealand should contain a strong geographical component and hence that,
- (b) geographically conceived studies of planning districts would provide a sounder basis for planning than the present planning surveys as required and detailed by the legislation.

It was initially proposed to test the hypothesis by means of a broadly based geographical study of Palmerston North, the results of which were to be critically compared with the Palmerston North District Scheme and, in particular, the planning data used in its preparation.

It soon became apparent, however, that a more satisfactory result would be derived from detailed studies of selected aspects of Palmerston North than from a more general survey of the whole city system. Not only would the work have greater depth but it would also enable a more penetrating analysis of part of the planning process. In addition an analysis of the theoretical relationship between geography and planning together with a brief discussion of planning in New Zealand would be needed to give relevance and perspective to the detailed studies of Palmerston North.

The work has, therefore, been organised in two main sections - the theoretical background to the hypothesis and the detailed test studies.

In the first section a discussion of the theoretical relationship between planning and geography is followed by a brief examination of planning in New Zealand with specific reference to legislative requirements and some apparent weaknesses in the planning process.

Finally in this section after reviewing some aspects of planning in Palmerston North a conceptual basis for an integrated planning survey is advanced. The requirements of the legislation and the local authority setting for planning have been adopted as decisive factors in the formulation of the survey framework and the subsequent organisation of the test studies.

If the initial hypothesis is held to be true and if the work is to have any practical significance then the planning survey proposals should be within the scope of the territorial local authorities who are required to prepare planning schemes.

In the second section two major aspects of the proposed survey - population and manufacturing industry - are analysed in detail together with the detailed study of a problem area. No attempt has been made to exhaust the research possibilities in any of the three test studies. They have been organised within the overall survey framework and are designed to provide and analyse geographical data which is likely to be significant in the preparation of planning proposals.

The choice of population as one of the test studies rests on the fact that population analysis is fundamental to the remainder of the survey. Population characteristics and trends are dynamic factors which underlie the growth and internal structuring of urban areas. Not only are planning proposals prepared to meet the needs of a predicted future population but the development of every aspect of a city is related in some way to population trends. Moreover, initial population analysis frequently indicates aspects of city development that will require special investigation and control measures.

Manufacturing poses unique problems for the planner. Industrial space requirements tend to alter over time and are sensitive to a series of variables ranging from changes in industrial structure to technological innovations. Land allocated for industrial development, usually in association with major transport facilities, tends to be surrounded by other development. It is important, therefore, that adequate land be set aside for industrial development in industrially suitable locations and in advance of other development.

The problem area selected for study is an area adjacent to old railway yards near the centre of Palmerston North. Now vested in the City these yards are scheduled to be redeveloped for "civic purposes". Parts of the area display signs of deterioration and obsolescence. Although suggestions have been advanced for the redevelopment of the old yards little account has yet been taken of the surrounding area. The test study examines the characteristics and development trends of the area to determine whether these have any relevance to, or implications for the redevelopment of the railway yards.

Palmerston North is in many ways an ideal city for research of this nature. Located on the right bank of the Manawatu River at the inland fringe of the Manawatu Plain, the city is compact, has a relatively simple morphology and is administered by one territorial local authority.

Established in 1867 the city has experienced almost all the fluctuations in growth to which New Zealand towns have been subject and is thus representative of urban growth in this country. Of particular importance the City has a good record in planning administration. The municipality employed planning staff prior to the 1953 Town and Country Planning Act and has had an operative planning scheme since 1959. A satisfactory basis exists, therefore, in Palmerston North for the testing of the hypothesis.

Finally, it should be pointed out that the value judgements which preceded the formulation of the hypothesis to be tested here were based on many years of experience in the planning profession particularly in Palmerston North as well as geographic training received at Massey University.



V.R.C. WARREN

31st January, 1969.

ACKNOWLEDGEMENTS

Grateful acknowledgement is made of the many people and organisations who made valuable contributions to this research project. Special mention is made of:-

The Department of Labour and the Census Bureau, (particularly Mr. Muschamps, Head of the Bureau) which made essential data available:

The Palmerston North City Council which gave ready access to helpful records, assisted with the duplication and mailing of industrial questionnaires and supplied negatives of District Planning Maps from which Figures 45, 45a, and 45b were reproduced:

The Manawatu Manufacturers' Association which commended the industrial survey to its members and the many industrialists who gave time to answer the questionnaire:

The second year geography class of 1967 at Massey University who assisted with the application of questionnaires to the larger companies:

Professor K.W. Thomson and Mr. B.G.R. Saunders of the Geography Department, Massey University for encouragement, criticism and supervision of the work:

Mr. J. Missen and Mr. P. Worden of the technical section Geography Department, Monash University for excellent photocopying of maps and reproduction of photographs:

My wife Joy, for typing the final manuscript and her constant encouragement.

-----oOo-----

CONTENTS

Page

PREFACE

ACKNOWLEDGMENTS

CONTENTS

TABLES

MAPS, DIAGRAMS AND PHOTOGRAPHS

PART ONE - THEORETICAL BACKGROUND

Chapter One -	<u>Geography and Planning - The Theoretical Relationship.</u>	1
Chapter Two -	<u>Planning in New Zealand.</u>	13
	The administrative setting.	13
	The legislative setting.	14
	Some Planning Deficiencies in New Zealand.	19
	Summary.	27
* Chapter Three -	<u>A Geographical Approach to a Planning Survey for Palmerston North.</u>	30
	Planning Objectives and the Planning Survey.	30
	Planning in Palmerston North.	34
	Basis for a balanced planning survey in Palmerston North.	37

PART TWO - TEST STUDIES

Chapter Four -	<u>Test Study No. 1 - Population.</u>	43
	Population Growth in Palmerston North since 1945.	43
	General Characteristics of Population Growth.	46
	Forecast of Population.	62
	Distributional Characteristics of Population in Palmerston North.	68
	Implications for Planning.	88

	<u>Page</u>
Chapter Five - <u>Test Study No. 2 - Manufacturing Industry.</u>	96
Manufacturing in New Zealand.	98
The structure of manufacturing industry in Palmerston North.	101
Employment Trends.	110
Industrial Location in Palmerston North.	116
Industrial Location within Palmerston North.	120
Future Industrial Employment.	124
Space Requirements.	125
The Location and Planning of Industrial Land.	134
Implications for Planning.	136
Chapter Six - <u>Test Study No. 3 - Railway Redevelopment and the Surrounding Area.</u>	140
General Relationship of Railway Land to the Central Area.	143
Land Use.	145
Amenity.	155
Population Patterns and Trends.	174
Future Development.	180
<u>PART THREE - CONCLUSION</u>	186
<u>APPENDIX A</u> Population Data.	201
<u>APPENDIX B</u> The Industrial Survey.	207
<u>APPENDIX C</u> Railway Land Study - Sample Survey.	221
<u>APPENDIX D</u> Planning Data Requirements - Extracts from Legislation.	223
<u>APPENDIX E</u> Notes on Cartography.	229
<u>APPENDIX F</u> Palmerston North District Planning Maps -	
Pocket on Back Cover.	
<u>BIBLIOGRAPHY</u>	230

TABLES

<u>Table</u>	<u>Page</u>
I North Island Urban Areas - Average annual percentage of population growth.	44
II Palmerston North urban area population growth - natural and migration.	47
III Net in-migration - Palmerston North City.	49
IV Percentages for Age Groups - New Zealand Population	52
V Percentages for Age Groups - Palmerston North City	53
VI Age/Sex Structure - Palmerston North City (Percentages).	54
VII Percentage Employment by Industrial Divisions - Palmerston North City.	56
VIII Percentage Employment by Industrial Divisions for Palmerston North, Hamilton & New Zealand.	60
IX Population - Maoris.	61
X Population Growth (percentages) - Maoris.	61
XI Population Growth - Manawatu Region.	64
XII Population Estimates - Palmerston North Urban Area	66
XIII Population Growth - Palmerston North Urban Area	67
XIV Population Growth - Palmerston North City.	67
XV Net Residential Densities - Palmerston North 1966	69
XVI Population Distribution - Palmerston North - Rates of Growth.	74
XVII Houses and Households by Zones.	81
XVIII Population Distribution - Age Bias of Zone Populations (standard scores).	83
XIX Population Distribution - Occupational Bias of Zone Populations (standard scores).	86
XX Percent New Zealand Labour Force in Manufacturing Industry.	99
XXI Percent New Zealand Labour Force in Manufacturing Industry (excluding Farming).	100
XXII Market Orientation 1967.	103
XXIII Market Orientation - Food and Drink (Per cent)	105
XXIV Market Orientation - Clothing Textiles & Leather (Per cent)	105
XXV Market Orientation - Building Materials & Furnishings (Per cent)	105

<u>TABLES</u> (continued)		<u>Page</u>
<u>Table</u>		
XXVI	Market Orientation - Engineering (Per cent)	106
XXVII	Market Orientation - Miscellaneous Manufacturing (Per cent).	106
XXVIII	Factory Size by Employment 1965 - Numbers.	108
XXIX	Factory Size by Employment 1965 - Percentages.	109
XXX	New Zealand - Composition of Manufacturing by Employment.	112
XXXI	Palmerston North - Composition of Manufacturing by Employment.	113
XXXII	New Zealand Per cent Increase of Employment in Manufacturing.	115
XXXIII	Palmerston North Per cent Increase of Employment in Manufacturing.	115
XXXIV	Number and Size of Factories - New Zealand.	117
XXXV	Per cent Palmerston North Labour Force in Manufacturing.	124
XXXVI	Floor Space per Worker.	130
XXXVII	Employment Density by Date of Establishment - Persons.per acre.	130
XXXVIII	Employment Density in Outer Areas - Persons per acre.	130
XXXIX	Comparison of Land Use by Area (Railway Land Study Area).	147
XL	Population Change (Railway Land Study Area).	175
XLI	Age Groupings (Railway Land Study Area).	178
XLII	Employment Palmerston North City by Industrial Divisions (Numerical).	201
XLIII	Population Distribution by Age Groups - Percentages.	202
XLIV	Occupation Structure of Zone Populations - Percentages.	203
XLV	Age/Sex Structure - Palmerston North City - Numerical.	204

TABLES (continued)

<u>Table</u>	<u>Page</u>
XLVI Births and Deaths - Palmerston North Urban Area	205
XLVII Deaths by Age Groups - Palmerston North Urban Area.	206
XLVIII Industrial Questionnaire Response.	209

-----oOo-----

MAPS, DIAGRAMS, AND PHOTOGRAPHS.

<u>Figure</u>		<u>Page</u>
1	Conceptual Basis for Urban Planning Survey (Palmerston North).	39
2	Population Growth - Selected North Island Urban Areas.	45
3	Distribution of Flats.	71
3a	Distribution of Tenanted Houses.	71
4	Transportation Study Zones.	72
5	Population Change 1945 - 51	75
6	Population Change 1951 - 56	76
7	Population Change 1956 - 61	77
8	Population Change 1961 - 66	78
9	Socio-Economic Pattern	87
10	Population Distribution	90
11	Boundary Extensions 1967	92
12	Industrial Zoning	121
13	Factory Locations 1965	124
14	Railway Land Study Area (Aerial Photograph)	141
15	Railway Location	144
16	Land Use 1966 (Railway Land Study Area)	146
17	Age of Buildings (Railway Land Study Area)	156
18	Value Analysis (Railway Land Study Area)	162
19	Capital Values Per Acre (Railway Land Study Area)	164
20-43	Photographic Analysis of Visual Amenity	168-172
	20-27 Residential Properties	168-169
	28-29 Community Uses	169
	30-35 Commercial Properties	170
	36-43 Industrial Uses	171-172
44	Location of Photographs	173
45	Palmerston North District Planning Map - Pocket on Back Cover.	
45a	Inset to " " " " " " " " " "	
45b	" " " " " " " " " "	

CHAPTER ONEGEOGRAPHY AND PLANNING - THE THEORETICAL RELATIONSHIP

With the increasing acceptance and application of town and country planning throughout the world in recent decades, the importance of planning in geographical studies as a prime factor in environmental change has intensified. During the same period the contribution by geographers and by geography to planning particularly in the field of environmental analysis has also been important. Despite a mutual interest in human environments, however, and an increasing overlap of literature, little has been published concerning the relationship between geography and planning. Those statements which have been made have tended towards oversimplification if not mutual exclusion.

Lord Justice Scott is credited with the remark that "town planning is the art of which geography is the science"¹ - a statement which is only true in the narrow sense that planning is a professional 'art' directed at the purposeful control and development of human environments while geography focuses on the scientific study of human environments, including its development whether planned or otherwise. In this narrow sense planning may well be defined as applied geography but in the wider sense it has also developed its own distinctive scientific base as well as being closely related in practice to economics, engineering, architecture, law and politics.

1. Reported in Stamp 1960, 120.

At the other end of the scale Allen has advanced the view that "geography, at least in Britain, is sadly lacking in the analytical tools to provide and test the descriptive and prescriptive theories which must, for all the imperfections of theory, provide the basis of purposeful human action,"² and again that "Geography and Planning"³ has many useful things to say, but amply illustrates the limitations for town and country planning which appear to be inherent in the basic discipline of geography."⁴

Examined more closely the theoretical interdisciplinary relationship can be seen to exist at four major levels.⁵

- (a) Geography and planning are related in the identification of their disciplinary cores and have similar relationships with other disciplines.
- (b) The two share much of the same factual materials
- (c) The two use many of the same techniques in collecting and analysing this information.

2. Allen, 1958, 165.

3. Freeman 1958 (a).

4. Allen, 1958, 167.

5. Zetter, 1966 distinguished four similar categories of relationship but his exposition of them differs substantially from that which is presented here.

- (d) The two need some of the same concepts as a means to interpret and understand the environment.

At the first level both disciplines have encountered difficulty in defining simply their respective areas of study: both in taking a synoptic view of environment have pursued detailed studies of small and large areas as well as of individual phenomena, factors of change and the dynamic inter-relationship between "folk, place and work".⁶ Not infrequently it has been suggested that each is no more than a composite of other disciplines such as economics and sociology, a view which has been reinforced by an emergent interest in areal studies within those fields. For a time after World War II the role of the planner was seen as that of a co-ordinator bringing together a team of specialists, while the concept of geography as a "bridge" subject is well known.

Definitions of town and country planning such as "the art and science of ordering the use of lands and the character and siting of buildings and communication routes so as to secure the maximum practicable degree of economy, convenience and beauty"⁷ which were common until

6. The Geddesian triad of "folk place and work" has become prominent in planning circles as a fundamental approach at both the investigation level and at the level of establishing planning objectives. Abercrombie restated the triad in terms more suitable to present thought when in Town and Country Planning (1945) he referred to "environment, function and organism" (104).

7. Keeble, 1959, 9.

recently, tend to offer up the profession for division amongst a team of specialists. A rapid development of planning thought has taken place however, in the last decade in which the identity of planning has been closely examined and restated. Planning in practice is a process to which many specialists profitably contribute but the process itself is now seen as being generated and supported by a distinctive body of theory and methodology centred on the application of decision theory in the field of spatial interaction, and change. McLoughlin sees the core knowledge of planning as "location theory, of systems analysis applied to locational and communications models, of simulation and projection, and of evaluation and decision theory"⁸ all of which is to be supported by "studies of the history of society's relationships with environment, the legal, administrative, social and economic frameworks within which planning must operate, the actual processes of development of all kinds and the constraints under which they are carried out."⁹.

Geography's identity lies in part alongside that of planning, but has a fundamental difference in motivating purpose. Hartshorne has stated that "geography is concerned to provide accurate, orderly, and rational description and interpretation of the variable character from place to place of the earth as the world of man."¹⁰

8. McLoughlin 1965 - 261.

9. McLoughlin 1965 - 261.

10. Hartshorne 1957 - 21, 47.

In fulfilling its purpose geography has developed a complex of related fields of study which have been generalised into three approaches - the earth science approach, the human ecology approach and the locational approach.¹¹ As with planning, the complex identity of geography has been subjected to reassessment and restatement. Particular attention has been given in recent years to its association with the emergent school of regional science which connects geography, locational studies with human ecology and the systematic social studies such as economics and it is at this point that geography has its most substantial relationship with the new concept of planning.

It is at the second level in the sharing of factual material that the relationship between geography and planning is most commonly understood. In Geography and Planning, Freeman's primary achievement is to emphasise the value to planners of a wide range of information about place, the physical and human elements of environment and the complex inter-relationships between them which is available in the numerous geographical studies which have been carried out in Britain. The value of such studies to planners stems from a mutual interest in the same information, ranging in Freeman's work from the physical landscape climate and weather and patterns of land use to industrial location and national parks.

11. Chorley and Haggett 1965 - 372.

More important than the simple sharing of factual material is the need to organise and analyse information in much the same way. Any proposal to develop, control or restrict development, or to remedy environmental problems whether dynamic or physical in nature requires penetrating analysis of the existing situation, trends of development and the probable effect on other elements of the system which would follow its implementation. Geography is well equipped to tackle both general environmental analysis and the specific examination of environmental problems particularly in relation to existing areal patterns and the dynamics of change in them. Nevertheless there is a difference in viewpoint between geographers and planners in the orientation and organisation of the survey of any particular area. The geographer is concerned with completeness in his study of an area, or in the systematic study of any aspect, omitting nothing which is significant in establishing and explaining present patterns and inter-relationships. He believes it necessary to go back in time to obtain a sense of perspective and more certainly to interpret the present. Emphasis is placed on both interpreting the areal inter-relationships present in a study area and on the elements and degree of change. For the geographer predictions of the future are a natural extension of his work and give point to his findings but

are not regarded as an end in themselves. In planning, however, forecasting the future is of prime importance and studies of the present are orientated mainly towards this purpose. Moreover, planning surveys have as an essential component the evaluation of the significance and worth of the present environment in relation to the future demands of the community.

Nevertheless geographical techniques make a powerful contribution to planning surveys. An inherent requirement in any survey is the need to establish priorities for the collection of information and to attach a measure of significance to data if it is not to become an endless and useless compendium of facts. Geography, has at the primary level long singled out for study those aspects of the environment which are significant to man as well as attaching orders of significance to the groups of data which give character, individuality and identity to an area. At the secondary level geography relates its collection of information to the end goals of examining spatial relationships, the connections between dynamic elements and physical form setting the whole in the perspective of time and change.

Having assembled the survey data, techniques are required to analyse and present the information in a comprehensible form. Cartographic techniques of analysis

and representation of spatially associated phenomena are outstanding in their value to both geography and planning. Zetter distinguished three aspects of the use of maps which are especially significant in the two fields. ¹²

- (a) As iconic models maps enable the spatial patterns of phenomena to be recorded in a form which enables either large areas to be comprehended at once or the detailed composition of small areas to be studied closely.
- (b) As areal diagrams, maps enable the systematic comparison of a particular factor such as the representation of town populations by circles scaled to the size of populations or the rate of flow of goods or vehicles shown by flow lines giving a spatial emphasis lacking in tabular analysis.
- (c) The presentation of correlations between discrete data in map form is particularly useful in the analysis of spatial inter-relationships. The relationships, for example, between soils and land use or between property values and plot ratios can profitably be shown in map form.

12. Zetter 1966 - 271.

The two disciplines are further united in the development and use of techniques for the statistical analysis and synthesis of a wide range of variable data. Rapid developments in urban analysis both internal and external have produced techniques for the construction of models relating to many aspects of urban development but especially to the statistical measurement of spatial relationships and the meaningful correlation of dynamic and physical aspects of urban growth. Most of these latter developments however remain at a theoretical stage of usefulness without as yet a widespread use in the planning process.

In addition to a sharing of facts and techniques, planning and geography employ some of the same concepts in organising their work and in establishing a framework for the effective interpretation of survey information. A brief examination of one concept which is important to both subjects will suffice to illustrate the point.

The regional concept which has long been prominent as a basis of geographical research is of great value in the organisation of planning and in the co-ordination of localised planning proposals. Despite the importance and increasing emphasis on systematic studies, planning by its very nature must have as the basis of analysis and

proposal a carefully defined areal division of the total area (be it nation or continent) to be planned. The identification of planning areas, however, goes beyond a simple need to break down a large area into manageable administrative units. Just as the significance of various environmental features, the pattern of their distribution, and the relationship between them varies from place to place, so too will the approach to planning and the nature of the proposals which are devised. Taken at a simple level of planning theory, a three-tiered hierarchy of planning areas can be regarded as desirable. At the first tier a country may be regarded as a single region within which certain major features, physical and dynamic form a coarse skeletal system to which are attached a complex of sub-systems. From an analysis of this nation-region national planning objectives can be prepared laying the framework within which more detailed local schemes will be fitted. At the second tier the total area can be divided into several intermediate regions based on broad associations of environmental and/or social elements. Survey and analysis within intermediate regions provide the basis for development priorities within the region and provide perspective for and co-ordination between detailed district schemes. At the third tier small districts are identified

for the preparation of detailed proposals and control of development.

Hartshorne has defined the region as "an area of specific location which is in some way distinctive from other areas and which extends as far as that distinction extends." ¹³ The regional concept itself, however, in recognising regions in the general terms of Hartshorne also embraces the inter-relatedness of regions observing connections as well as distinctions. Moreover the concept, necessarily, is flexible, embracing as many types of regions and as many methods of identification as are appropriate to the requirements of the particular piece of research which has need of the concept.

Although a strong body of theory and technique is emerging, the importance of planning lies in its practical application. Re-expressed in practical terms the following products of the theoretical relationship between geography and planning may be observed:-

(a) Geographers are, by training, well equipped to participate in the planning process at the stages of preliminary analysis and subsequent evaluation of planning action.

(b) A fruitful area has opened up for geographical research - the theoretical testing of specific planning proposals through environmental studies before

13. Hartshorne 1957 - 130.

implementation.

(c) A balanced planning programme will contain a strong geographical component, firstly in the areal organisation of planning regions and districts and secondly during the survey and analysis of the area to be planned.

It is (c) above which provides the central focus for the present study. It is contended that the geographical component of planning is in a large measure absent from much of the planning which has been carried out in New Zealand. After a brief examination of the overall picture of planning in New Zealand and some of its deficiencies it is proposed to examine in some detail the contribution which could be made to planning in Palmerston North by the introduction of a more complete geographical component to its District Scheme.

-----oOo-----