METHODS OF ESTIMATING THE SUPPLY OF, AND DEMAND FOR LABOUR,
IN URBAN AND REGIONAL OPERATIONAL PLANNING MODELS

by

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ABSTRACT

Both within Australia and overseas, a significant amount of effort
and resources have been expended in the construction of new towns and
growth regions, designed, in a large number of cases, to reduce the
population pressure upon the larger, well established conurbations.

The need to integrate policies concerned with the demand and supply
of manpower within such growth regions has long been recognized.
However, there are important theoretical deficiencies associated with
orthodox methods. Thus, in the traditional approach to "operational"
urban models formulated originally by Lowry,¹ it is claimed that the
relationship between labour demand and labour supply is functional and
one sided i.e., that the growth of labour demand causes population
growth and leads to an assured level of labour supply.

Structural manpower imbalance is assumed not to exist, as all
available manpower is defined to be employed and allocated to
residential zones.

However, it is argued here that in the development of regional
manpower policies aimed at recognized objectives, estimates of the
number and characteristics of persons available to the labour force are
at least as important as estimates of the structure of labour demand.

Populations moving to growth regions are likely to possess
distinctive social and demographic characteristics compared with the

¹ Lowry, I.S., A Model of Metropolis, RM-4035-R, Santa Monica,
nation as a whole. Such characteristics are likely to have an important influence upon the supply of labour from a given population group, both in aggregate, as well as to different occupational sub-markets.

A change in the traditional theoretical structure is therefore necessary to allow for the influence of the particular and special sets of demographic characteristics of potential immigrant populations upon labour availability.

Presentation of a more independent treatment of methods aimed at estimating the "requirements" for and "availability" of labour also allows for the possibility, and consequences of, labour market imbalance to be recognized.

This work then is primarily concerned with the presentation of extended methods designed to assist in the identification of a path toward equilibria between the demand (requirements) and supply (availability) of labour within designated growth regions. On the basis that relative wages can not be expected to adjust within the growth region, especially in the short run to reconcile disequilibria, other adjustment mechanisms are sought. In particular, the occurrence of commuting as a regional adjustment mechanism is examined. Other possible adjustment mechanisms such as occupational change and unemployment and "hidden" unemployment are examined in less detail.

Quantification of likely levels of labour market disequilibria and consequent commuting flows allows for an assessment of the likelihood of planners obtaining stated objectives such as "self containment" and "balance" in relation to the proposed growth region. The methods are

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2 See Chapter One for a definition of these two terms.
designed to monitor progress toward the achievement of such objectives and to reveal the implications of possible non-attainment. Policy measures aimed at reducing regional labour market disequilibria may also be developed from the model proposed here.

No attempt has been made to locate households and economic activities to zones within the proposed new growth region.

Data available from the planning process for the proposed new town of Monarto in South Australia is used to demonstrate the capacity and usefulness of the model.

The methods advanced are designed to have general applicability to "overspill" developments where a relatively small expanding region is constructed to relieve population pressures upon a large established urban centre. A main purpose is to present a model extending established theories and empirical work which is also relevant to the policy making process.