Natural Hazard Research

LOCAL REACTION TO ACQUISITION: AN AUSTRALIAN STUDY

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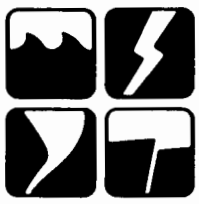

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SUMMARY

One method of dealing with frequent and severe flooding in urban areas involves the purchase of property in such areas by government and the relocation of flood susceptible development--a process known as acquisition. Development in these areas is generally the result of historical necessity or accident, and protection by engineering works is often not feasible. However valid the original reasons for settlement, such areas are now frequently characterized by low property values and deteriorating public utilities and housing stock.

Local reaction to acquisition schemes has often been mixed, even though the schemes may effectively provide the only market for the decrepit and severely flood-prone property. As participation in most acquisition programs is entirely voluntary, the cooperation of those affected is a prerequisite for scheme success.

Using questionnaire surveys of three acquisition sites in south-eastern Australia, this study attempts to establish which local factors are important in determining attitude to acquisition and suggests procedures to ease the implementation of such a program.

ACKNOWLEDGMENTS

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PREFACE

This paper is one in a series on research in progress in the field of human adjustments to natural hazards. It is intended that these papers be used as working documents by those directly involved in hazard research, and as information papers by the larger circle of interested persons. The series was started with funds from the National Science Foundation to the University of Colorado and Clark University, but it is now on a self-supporting basis. Authorship of the papers is not necessarily confined to those working at these institutions.

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TABLE OF CONTENTS

LIST OF TABLES

Table

INTRODUCTION

Rigorously enforced land use regulations may stop or limit the spread of urban development into hazardous areas, but the problem of existing development remains. In many cases the flood-prone development may be protected by structural works or floodproofing. However, for some development the only feasible solution may be acquisition, which involves the purchase of property by government and the permanent evacuation or relocation of certain flood sensitive activities to flood-free areas.

Occasionally such programs are in part justified by the anticipated post-acquisition use of purchased property for parks, etc. However there is often a genuine desire on the part of public officials to alleviate the tangible damages and anxiety brought about by chronic flooding. At first sight one could reasonably expect that the occupants of these severely flood-prone areas would support acquisition proposals. Other work has established that a large proportion of the people in these areas are seriously socioeconomically disadvantaged and that many have little choice in their selection of dwellings (Handmer, 1981a; 1984). Locational choice was restricted--because of poverty or attachment to an area--to the oldest, cheapest, most run down, and most flood-prone housing. Opportunities to sell such housing on the normal open market are limited, and acquisition expands the prospects for sales.

Yet, support for acquisition is varied, and outright opposition exists in some communities. Clearly, in a voluntary program, the support, or at least the acquiescence, of the potential relocaters is a prerequisite for scheme success.

In an attempt to establish which factors are important in local reaction to acquisition, in this study three acquisition programs in southeastern Australia are examined. On the basis of this examination and a review of the relocation literature, hypotheses are developed to test for the existence and strength of relationships between attitude to acquisition and a range of variables. The penultimate section of the paper includes a brief overview of those factors for which questionnaire data are available and attempts to rank them in order of importance. Finally, policy recommendations are offered which could ease implementation of acquisition programs by increasing local acceptance.

The Study Sites

The three study sites represent different approaches to acquisition; their dispersal represented the practical geographic limits to fieldwork. The settlements are Lismore in northern coastal New South Sales (NSW) (pop. 24,000), Wagga Wagga on the southwestern slopes of NSW (pop. 40,000), and Echuca on the southern riverine plain (pop. 8,500). Some 1,900 dwellings in Lismore are within the 1:100 flood plain. Of these, 283 (at study commencement) lie in zones of especially frequent and severe flooding and constitute the main focus of acquisition. In the other sites the acquisition areas are spatially quite distinct. At the commencement of acquisition, Echuca West consisted of 67 dwellings including an old bus and a hut built on wheels in an attempt to escape planning regulations. Most of the houses in both the Echuca and Lismore acquisition areas lie below the 1:5 flood level, though the flooding in Lismore is more severe. In contrast, the 200 or so houses in the village of North Wagga Wagga lie at about the 1:10 flood level but are often completely surrounded by flood waters.

Although the approaches to acquisition in these three areas are quite different, certain major variables are constant across the sites providing a reasonably stable base for evaluation. The cities vary considerably in population, but all function as major service centers and are experiencing relatively sustained growth. No site has a shortage of flood-free land, parts of all three cities have been subject to severe flooding on a regular basis since settlement began, and the acquisition areas are generally areas of low socioeconomic status with low property values.

The acquisition schemes are entirely voluntary, with the authorities offering to buy property at its estimated "market value," usually as determined by government valuers. There is no obligation for people to sell or for the authorities to buy property offered for sale. The schemes are also characterized by the absence of clear post-acquisition plans.

Methodology

Data were collected and analyzed using standard social science methods: semistructured interviews with "key people," questionnaire surveys, and documentary data. Questionnaire data were analyzed using the SPSS computer package (Nie et al., 1975). Semistructured interviews were conducted with local and state government officials and key local figures to explore the response to acquisition and to assist with questionnaire design.

Questionnaire data for Wagga were obtained from the report North Wagga Wagga Development Strategy Study (SKP & MSJKY, 1979). Surveys for Lismore and Echuca involved personal interviews conducted by the author

or his assistants. A self-completion approach was employed in North Wagga. At all three sites the questionnaire sought information on people's reasons for location, their mobility, socioeconomic characteristics, flood experience, and attitudes and behavior towards the acquisition schemes. The Lismore and final Echuca questionnaire is appended (Appendix B). The Wagga questionnaire is generally similar, with the important difference being that it made little use of an open question format. Thus interviewees had to respond in terms of sets of predetermined options (see Whyte, 1977). At all sites the household was selected as the sampling unit, an approach used in acquisition studies by Wadley and Ballock (1980) on the basis of findings by Booth and Camp (1974).

Lismore. The appended questionnaire was administered to residents of the priority acquisition areas and to random samples taken from the rest of the flood plain and the flood-free part of Lismore. Interviews were successfully completed in 272 cases--153 in the acquisition areas and 119 in the two non-acquisition control areas. In the acquisition areas an attempt was made to contact all 283 households. Although response rates were moderately low at 50-60%, the samples are considered representative. Sample sizes were arrived at through an assessment of resource availability and the determination of acceptable levels of statistical accuracy. Additional survey material from work by Munro et al. (1980), in which the author was involved, has been employed in the study. Munro's self-completion attitudinal questionnaire survey was executed two and a half years before the present acquisition study. He obtained 1033 usable flood plain questionnaires, plus 249 usable questionnaires from flood-free Lismore. Because of the large number of responses, it was possible to explore certain questions in terms of

detailed flood risk by matching the Munro questionnaires with a data base containing the flood risk of individual dwellings.

Echuca. Again, an attempt was made to contact every household in Echuca West, the acquisition area. Fifty-two interviews were completed, representing a response rate of about 85%.

Wagga. Here a response rate of 84% was achieved by the survey. This is almost certainly a result of the extensive media publicity given to the survey and the importance attached to the issues by North Wagga residents, the majority of whom appear to have a strong desire to preserve their community.

RELEVANT LITERATURE

Studies of relocation have been done within a number of disciplinary frameworks and include work by architects (Goodman, 1972), anthropologists (Arnett and Johnson, 1976; Drucker et al., 1973; Smith, 1970; Schweri and Willigen, 1978), geographers/planners (Lee, 1978), economists (Stanley and Ratray, 1978; Mishan, 1970), medical researchers (Kantor, 1967), psychologists (O'Malley, 1978) and sociologists (Burdge and Johnson, 1973; Derewlany, 1981; Gans, 1959, 1962, 1973; Motz, 1977, 1978; Young and Willmott, 1957). It is not proposed to examine the details of the different approaches or those of individual studies here, though it is particularly interesting that the results of research carried out within these various disciplinary frameworks are reasonably congruent. At first sight, part of the explanation for the similar findings may appear to be the widespread employment of questionnaire surveys as the primary research tool. However, some studies have used various official records (Drucker and Smith, 1974; Drucker et al., 1973), and anthropo-

logical research has relied heavily on long, detailed, repeated interviews and participant observation (e.g., Smith, 1970; Schweri and Willigen, 1978). Where major differences in research results do exist they have been ascribed to differences between communities studied (for example between the low-income residents of major cities and rural populations) or between the cultures of different countries, to differences in the times--1950s to early 1960s and the present--which themselves reflect different government attitudes to relocation, to differences in the scale of project from wholesale relocation of small rural communities to selective purchase of properties for road widening, and to the value orientations of the researchers (Motz, 1980).

The most widely known relocation research in the English language literature has been that concerned with the large scale urban renewal (or slum clearance), highway, and reservoir projects of America, Australia and the U.K., and hence has focused on the compulsory relocation of

(i) low income urban dwellers, and

(ii) small town or rural occupants of land needed for large public projects.

Studies of the voluntary internal migration of similar "working class" people (Toney, 1976; Weissman and Paytel, 1977), and work on the forced relocation of a different group--military personnel (McKain, 1973), report the same findings as the better known research on compulsory relocation for public works. The few studies that have examined "middle class" voluntary relocaters have found them to be members of a naturally mobile group who adjust easily to new localities (Gutman, 1963; Landis and Stoetzer, 1966).

Table 1 summarizes the relocation literature and examines the impact of a range of factors on relocater attitudes and the success or deficiencies of relocation programs. Shields (1975) summarizes the results of this research succinctly:

> Most studies of forced migration have found often severe psychological stresses and social strains associated with moving... Apprehension over moving is inversely related to people's willingness to separate themselves from current friends and homes. In addition strong identification with place... was associated with high levels of apprehension over moving.

On the other hand those with a high degree of vested interest in the project were more willing to separate themselves from friends and homes. Those with a high degree of interest tend to be "of high socioeconomic status, while those who tend to be hurt most are the poor and elderly with little formal education.... These difficulties are exacerbated by the financial costs of moving."

Factors that correlated with high identification with community and place are also associated with resistance to relocation as is community identification itself. Other issues especially relevant to the present study are the level of flood experience and perception, degree of vested interest in the program outcome, aspects of the acquisition/relocation program, and level of community organization.

A wide range of factors act to exacerbate or mediate the effects of stress on individuals and communities. Public policy can have little influence over some of these variables such as the strength of family and broader social support systems, psychological and personality attributes, biological and genetic predisposition, and demographic factors such as age and income (see Smith et al., 1980). On the other hand there are factors which are largely within the control of the acquisition

VARIABLE	RELOCATION STUDIES	SELECTED WATER RESOURCE DEVELOPMENT STUDIES
FLOOD FACTORS		
General	Personal flood experience and loss are the most important factors in the formation of flood related attitudes (Kates, 1962; Waterstone, 1978).	
Experience	Recent and severe flood experience may be critical in forming a positive attitude towards relocation (James, 1974; Time, 1981). A particularly propitious time to undertake relocation may be just after the area has experienced severe flooding (Ralf M. Field, 1981.	Flood damage experience is associated with a positive attitude to flood mitigation projects(Becker,1971).
Perception	Key perception questions are expectation of future flooding and perception of flood severity (Kates, 1962). The more pessimistic the responses to these questions the more likely the respondent is to want to relocate (Schweri & Willigen, 1978; O'Malley, 1978).	
IDENTIFICATION WITH COMMUNITY AND PLACE	Important factors concerned with attachment to community and place are summarised in Table 10. Stronger identification with community/place generally means greater resistance to movement. If relocatees believe they will be in the same community after the move, attitudes towards moving will be more positive (Burdge & Ludke, 1972; Fried, 1963; O'Malley, 1978; Napier & Moody, 1979; Sinclair Knight & Partners/MST Keys Young, 1979; TVA, 1972; UNDRO, 1977.	
VESTED INTERESTS	Those who believe that their interests are served by the project are more likely to have a positive attitude towards relocation, and vice versa (Burdge & Ludke, 1970, 1972; Napier & Moody, 1979; Shields, 1975). People may see themselves better off in terms of, for example housing or business. This factor relates strongly to the Valuation Procedure, below.	
ACQUISITION/RELOCATION PROGRAM PROCEDURES		
Knowledge/Publicity	Knowledge alone is often not very important in influencing attitudes (Burdge & Ludke, 1970, 1972; McDonald et al 1982). But good public relations and two-way communication is considered essential (Buffington, 1973; Colony, 1971; Perfater & Allen, 1976; Ralph M. Field, 1981). Also low levels of knowledge may produce tension and rumours (Drucker et al, 1973). See comments on Public Involvement below.	Some studies of water resource development projects have found that high knowledge levels are associated with positive attitudes towards the project (Dasgupta, 1967; Peterson & Ross, 1970).
Time taken to decide to Acquire	Lengthy decision time may serve to increase resistance to relocation (Perfater & Allen, 1976; Platt, 1979; Ralph M. Field, 1979), except where the locals initiated the scheme (Time, 1981). Apprehension, anxiety, resentment and resistance may increase with time and indecision (Burdge & Ludke, 1972; Colony, 1971; Kantor, 1967; Knott, 1981 pers.comm; Perfater & Allen, 1976; Platt, 1979; Smith et al, 1980). Uncertainty over a long decision period may lead to gradual neighbourhood deterioration and abandonment "blight" (Perfater & Allen, 1976). This may be an asset to program officials in that relocation may be speeded up and occurs "voluntarily" (Ralph M. Field, 1979).	
Purchase Mode Voluntary/Compulsory	Compulsory purchase may increase opposition to the program (Blair, 1980, for agricultural urban land; King, Tennessee Valley Authority, (TVA) 1980, pers.comm; US-NERBC, 1976; Ralph M. Field, 1979). However, some writers feel that regardless of opposition compulsory purchase should be used if necessary to clear hazardous areas (Kusler, 1979(a)&(b); Platt, 1979).	
Valuation Procedure	This is an issue of major concern in current Australian, Canadian and U.S. voluntary and compulsory flood plain acquisition projects (Bailey, FEMA, 1981, pers.comm; Natural Hazards Observer, 1980; Toronto, Handmer, 1981(b)).	

TABLE 1

LOCAL REACTION TO RELOCATION: SUMMARY OF THE LITERATURE

VARIABLE	RELOCATION STUDIES	SELECTED WATER RESOURCE DEVELOPMENT STUDIES
DEMOGRAPHIC FACTORS:		
Sex	Generally not significant: in relocation; Booth & Camp, 1974 in hazard studies, Handmer (1979); Mileti et al (1975); (Irwin, 1979, found some differences).	
Age	Older people are more negative about relocation and experience greater apprehension (Buffington, 1973; Burdge & Johnson, 1973; Colony, 1971; Hall & Guseman, 1975; Holdsworth, 1973; US-NERBC,1976; Perfater & Allen, 1976; Shields, 1975). They are more likely to feel unfairly treated and because of the greater stress are more likely to experience psychological problems of adjustment (Perfater & Allen 1976). However, successful relocation of older people does occur (Wadley & Ballock, 1980).	Pothiadis (1960), found a similar pattern in attitudes towards major water resource projects.
Length of residence	Longer term residents are likely to be older and to this extent will exhibit reactions similar to the aged. In addition they will generally have a stronger identification with community/place. (Adler & Jansen, 1978; Colony, 1971; Hall & Gusman, 1975; Hallberg & Flinchbaugh, 1967; Holdsworth, 1973; James, 1974; US-NERBC, 1976; Perfater & Allen, 1976). Perfater & Allen (1976) also expect that longer term residents will experience negative health effects due to stress, but offer no evidence. Schweri & Willingen (1978) and O'Malley (1978) found that length of residence alone was not significant in attitude to relocation.	
Individual mobility	Life cycle stage is an important mobility determinant (Bourne, 1981) Increased mobility is associated with increased ease of relocation (Fried, 1963; Wadley & Ballock, 1980). There is evidence that migration and/or high mobility causes stress and is associated with increased mental ill-health (Abrahamson, 1965; Kantor, 1967).	
SOCIO-ECONOMIC FACTORS		
General	There is some debate on the importance of these factors, Burdge & Ludke (1972) for attitudes towards water resource projects in general, consider that socio-economic variables are not very important. While Becker (1971) found that high socio-economic levels were associated with positive attitudes towards projects. Shields (1975) for relocation, is more accurate: socio-economic variables are of some significance in that they are related to other factors known to be important, eg. vested interests, and at a community level, ability to organise.	
Education	The literature suggests that those with higher education are more supportive of relocation (Perfater & Allen, 1976; Colony, 1971 (significant in the long term); Shaw, 1975). Schweri & Willingen, (1978) and O'Malley (1978) found that the least and most educated opposed relocation.	The better educated were more in favour of projects. Pothiadis, 1960; Dasgupta, 1967.
Income	See general comments above. Schweri & Willingen (1978) found that higher income respondents were opposed to relocation, while those on low incomes hoped to better themselves (O'Malley, 1978).	
Occupation	Those whose livelihood depends on the land, farmers, will generally be more opposed to relocation (US-NERBC, 1976; NSW-WRC, 1978; Shields, 1975). See community/place attachment.	Non-farm people are more in favour of projects (Dasgupta, 1967; Pothiadis 1960). Farmers are more likely to worry about unwanted change, while business-people tend to support projects (Smith, 1970).
HOUSING FACTORS		
General	A high degree of property investment in both symbolic and monetary terms will generally lead to greater resistance to relocation (Schweri & Willigen 1978). However, in some situations forced relocation may be seen as an opportunity for upgrading accommodation or tenancy status (Wadley & Ballock, 1980; Motz, 1978).	
Tenancy	Renters are generally less motivated to remain (Schweri & Willigen, 1978; O'Malley, 1978) Tenancy status may be indicative of other factors: outright home ownership and low rents are associated with older people and longer terms of residence, which in turn are associated with greater attachment to place/community and resistance to relocation.	
Inheritances	A highly significant factor - inheritors are particularly likely to resist relocation (Schweri & Willigen, 1978; O'Malley, 1978). The factor is also important in determining identification with the area.	

TABLE 1 continued

VARIABLE	RELOCATION STUDIES	SELECTED WATER RESOURCE DEVELOPMENT STUDIES
Local Involvement in Plan Development	There is evidence to suggest that the involvement of residents early in the planning process assists in increasing program acceptability, (Adler & Jansen, 1978; Colony, 1971; James, 1974; King TVA, 1980 pers.comm; Ralph M. Field, 1981; Shields, 1975). Low levels of communication between the residents and responsible authority increase rumour, misinformation and anxiety (Smith, 1970 for water resources project), and produces tension (Drucker et al, 1973). Ralph M. Field, (1979) contains examples demonstrating, for relocation for flood damage reduction, the strength of the connection between local involvement and program success.	
Community Organisation	The general evidence for the effect of community organisation is somewhat ambivalent. Strong community leadership is considered an essential factor of a successful program by Ralph M. Field (1981). Such leadership may make it easier to involve the community in project planning. However, strong leadership has played a major part in overturning Wagga's acquisition program, and is sustaining resistance to projects in Tennessee (Schweri & Willigen, 1978).	Wilkenson (1966) found stronger resistance to water resouuce projects from a better integrated community.
OTHER FACTORS		
Physical Features of the Flood Plain	The size, shape and location of the flood plain area may make acquisition more acceptable if the hazardous area is well defined and not extensive (James, 1974).	

authority. These factors relate to the relocation procedure and include the financial arrangements, the time taken to reach decision, and the involvement of potential relocaters in decision making. Inadequate financial arrangements, long decision periods, and a failure to involve residents in project planning and implementation increase the risk of alienating the community and provoking the development of organized resistance or engendering a feeling of helplessness among potential relocaters. Feelings of alienation and helplessness greatly increase stress and the disease potential (Erickson, 1976; O'Malley, 1978; Seligman, 1975). It is important to note that being told of an impending change such as a job transfer or forthcoming move provokes stress in much the same manner as the actual event (Burdge and Ludtke, 1972; Smith et al., 1980; Toney, 1976).

Fortunately, the outlook for relocaters has improved greatly since the days of Gans (1959, 1962), Fried (1963), and Hartman (1966). Legislative and policy changes have seen bulldozer diplomacy replaced by more flexible financial compensation arrangements and negotiated settlements which have reduced both the hardships associated with land resumption and resistance to the process. As pointed out by the Australian Law Reform Commission (1980) the changes may, however, be more appearance than reality because people are aware that if they fail to reach a negotiated settlement, the government can simply resume the land. In addition, there are still aspects of both tangible and intangible losses from relocation for which financial compensation is frequently inadequate.

Australian law makes no provision for compensation where land is not physically taken but is diminished in value by government action (Australia - The Law Reform Commission, 1980, p. xvii). Also, relocaters are often faced with increased living costs for which compensation is generally not available. In studies of people displaced by freeway developments in Melbourne and Brisbane, a majority of "respondents complained that they were unable to procure comparable homes for the compensation they received" (Australia - The Law Reform Commission, 1980, p. 19). A number of U.S. studies report similar findings but add that frequently the difficulty results from an involuntary upgrading of housing (Colony, 1971; Buffington, 1973; Clark County, 1975; Perfater and Allen, 1976). Outright home ownership and low rentals are closely associated with long periods of residence and older people. For these people, living costs will almost invariably rise, and, unfortunately, it is just such people who are the most attached to an area and who suffer the most stress from relocation (Table 1).

No compensation is payable for certain intangible effects of compulsory relocation such as loss of support from a sympathetic socioeconomic community and possible adverse effects on the education of school children. Indeed, relocaters, in particular older residents, are often less concerned about the extent of payments than about enforced lifestyle changes and the community destruction frequently implied by acquisition. Of course, community destruction need not always occur. It may be avoided where relocaters move to new residences within their old community and in the rare cases where whole towns are relocated.

By no means are all people adversely affected by relocation. Many want to move and may view the compensation accompanying forced relocation as providing an opportunity to better themselves (Motz, 1978; O'Malley, 1978). Similarly, it is not generally known how well those who appear to be worst affected by relocation were adjusted to their original communities. It is possible, though unlikely, that relocation becomes a focal point for their preexisting frustrations and anxieties (Mogey, 1964; Motz, 1978). Also, not all relocation programs engender widespread opposition and negative feelings (Institute for Urban Studies, 1963; Niebanck, 1965, 1968; Millspaugh, 1961). Positive results also come from a recent study of Yallourn, Australia, where Wadley and Ballock (1980) found that "initial conflicts were largely overcome by the ability of an adequately financed relocation agency to tailor policies to the... population and the possibilities of resettlement environments."

Based on previous research, voluntary or compulsory flood plain relocation will encounter the least opposition if the relocaters are young, mobile, short-term residents with nonfarm occupations who have a low identification with the community or place, are of a higher socio-

economic status, have a vested interest in the projects' outcome, have recent flood experience, and see the flood problem as severe. The ideal program would have adequate finance (Wadley and Ballock, 1980), involve the potential relocaters in project planning as early as possible, avoid a lengthy decision period, be voluntary, and ensure that owner-occupiers were able to obtain equivalent replacement dwellings. Unfortunately, apart from the flood related aspects, the above description of the ideal relocater does not fit the residents of the acquisition areas under study. Thus, in such cases, and in particular where strong attachment to community or locale exists, efforts should be made to place relocaters within the same general community (Drucker et al., 1974; Fried, 1963).

RELEVANCE TO PRESENT STUDY

Most of the research reviewed above deals with response to compulsory property acquisition. It would appear, therefore, that its relevance to the present study is limited to a hypothetical discussion of the use of compulsion to acquire flood-prone land; in the voluntary programs examined in this study, the government acts like any buyer in a normal free market. In fact, the literature is of broader relevance because in many areas people have objected to voluntary flood plain acquisition schemes on a number of counts: the authority may effectively be the only buyer of property--putting it in a monopoly position; the government's aim, or at least the result of government action, is occasionally seen as one of community destruction; acquisition programs are frequently accompanied by stringent building regulations which residents fear will lower the value of their properties and discourage other buyers; and some residents misunderstand the programs and see them as compulsory.

Furthermore, and perhaps more importantly, there is some evidence that the intangible negative effects experienced by involuntary movers are similar to those experienced by people whose movement is voluntary (Butler et al., 1973).

Conclusions about the relevance of the literature on compulsory relocation would founder if the voluntary and compulsory moves were being made by two fundamentally different groups of people. In fact, the usual subjects of compulsory relocation research and the residents of the acquisition areas presently under study are very similar in that both groups consist of socioeconomically disadvantaged people.

> The occupants of the acquisition areas have been examined in terms of the poverty criteria developed by the Australian Commission of Inquiry into Poverty (1975) and other related studies. Regardless of which criterion is employed, an exceptionally high proportion of the area's residents are found to be disadvantaged. Their incomes, health, and education levels are low, as is the level and type of employment. Much of the housing and (physical) urban environment is rundown and property values are depressed (Handmer, 1984, p. 220).

The apparent preoccupation of relocation research with this section of society has itself been the subject of criticism (Jones, 1973), but it is ideal for the purposes of the present research.

EVOLUTION OF RESPONSE IN THE STUDY SITES

A detailed examination of the three acquisition programs is necessary, in conjunction with the literature review, for the development of research hypotheses to aid in the interpretation of questionnaire and other data. As is appropriate, material for this section comes primarily from interviews and documentary sources rather than the questionnaires, which are the subject of later sections.

Lismore

Scheme Origins. Lismore's acquisition scheme has its origins in a Council initiative enacted before the record 1974 flood to extend the city's riverside park area, clear what was seen to be a conspicuous slum area, and at the same time reduce the flood problem by buying up dwellings in particularly low areas. Finance came from Council's general loan fund, and the scheme was entirely voluntary (Blair, 1981-I). It appears there was no real reaction against the principle of acquisition from any quarter at this stage. The scheme was very small scale and involved the purchase of some dwellings and vacant land in the Ballina Street Bridge area as the properties came onto the market.

After finding that a proposed North Lismore levee would be high and dangerous and would also adversely affect flood levels elsewhere in the city, the Richmond River County Council (RRCC, flood mitigation authority) proposed improving access to the area by road raising. Following detailed planning however, Fred Barlow, RRCC engineer, "realized that one section of this work costing $100,000 gave only limited access improvment to fifteen old houses. At this point the PWD District Office suggested trying to buy up these places" (Barlow, 1981-I).

Following the floods of the early 1970s, there was strong support from most sections of the community, as well as from state and local governments, to take some action to reduce the Lismore flood problem. In the immediate wake of the record March, 1974 flood, the Northern Star newspaper (3/18) reported that an innovative aspect of the disaster relief was the provision of a $2,000 (1974 dollars) grant or loan, means tested, to reestablish homes in flood-free areas. The provision was certainly a step in the right direction but apparently failed to in-

fluence the postdisaster settlement pattern. This failure is probably a reflection of inadequacies in both the scheme and potential relocaters. The owners of many of the dwellings needing major repairs, who were the most likely relocation candidates, lacked the necessary resources to move. The small amount of money provided by the scheme and the absence of complementary arrangements (land, etc.) did little to assist those most in need.

Far more successful was the expansion of Council's parkland acquisition scheme with the support of the PWD District Office. The program was given a subsidy of two state dollars for every local dollar spent. Almost at once the federal government agreed to provide financial assistance through the preexisting Coastal Flood Mitigation Works funding agreement.

Local Support. Government officials generally felt that there was widespread support for the acquisition scheme from the flood plain residents and other local groups with the exception of the Lismore Chamber of Commerce, sections of Council, and the Richmond River Flood Action Committee, this last body representing primarily farming interests.

The major concern of those Council members initially opposed to acquisition appears to have been the loss of rate revenue. Once Council buys the property it becomes nonrateable, a loss of about $400 (1980 dollars) a year per property at the most, as the properties are generally on the minimum rate. "An argument to offset this one is of course that the people will buy another property and again become ratepayers somewhere else in the Lismore area" (Wade, 1980-I). As well, many potential purchasers of the property and some Council members and residents see money spent on acquisition as unavailable for structural works. These

people would much prefer a structural solution to the flood problem and regard "acquisition as admitting defeat and that the government is taking the easy way out--they think something should be done about the flood water" (Barlow, 1981-I).

However, most of the negative response is directed more towards attempts to regulate flood plain development and the plans to establish a new town center in the rapidly expanding suburb of Goonellabah in east Lismore. Local development and established business interests are concerned at what they see as an attempt to encourage relocation of the main business center of Lismore out of the flood plain. Some non-Council elements are not only opposed to the Goonellebah scheme and flood plain regulation but have also been campaigning for a structural solution to the flood problem, even though successive reports have found that structural flood solutions for Lismore's flood problem are not viable. The construction of dams and diversions, etc. is technically feasible, but costs would greatly exceed benefits.

The minority view in support of a major structural solution to flooding is shared by just under one-third of the Lismore flood plain sample, who advocated canals/diversions or levees (about another third advocated dredging). It is, however, reassuring to note that some two-thirds believe that floods cannot be stopped, principally because of the amount of water involved and the geography of the area.

Discussion and Conclusion. As the scope of acquisition was extended to low areas throughout the flood plain, a Council engineer visited a number of the lowest houses to reassure the inhabitants about the voluntary nature of the scheme, to explain how it was designed to assist them and so on. Undoubtedly this and the overall low-key approach by the

authorities and local media has helped the smooth implementation of acquisition. There has been no organized resistance as has occurred at the other two study sites. The single most important factor in this between-site difference may well be the severity of Lismore's flood problem--combined with the facts that at the commencement of the acquisition scheme, well over 100 houses lay below the 1:5 flood height, and the warning time for that area was very short (6-12 hours). The large transient population and absence of local leadership may also be important factors underlying the absence of effective scheme opposition.

	LISMORE*	ECHUCA WEST#	NORTH WAGGA
HOUSES AT SCHEME COMMENCEMENT	295 (1977)	67 (1979)	241 (1956)
HOUSES REMAINING	265 (1983)	51 (1984)	202 (1982)
PERCENTAGE PURCHASED	10%	24%	16%

* Priority acquisition areas. Worst small pockets largely cleared. Clearance is "aided" by private purchase of property for commercial use.
\# An additional 7 sales are pending.

TABLE 2

DWELLINGS ACQUIRED AT CASE STUDY SITES
Considerable amounts of vacant land have also been purchased at Lismore and Echuca. Figures in brackets refer to relevant dates.

One exception to this picture has been the now moribund North Lismore Progress Association. The association was instrumental in having some important access roads raised. The last effective leader of the association and key to its past success, Mrs. Miles, was firmly against acquisition and felt she had the support of other North Lismore residents (Miles, 1981-I). Nevertheless, with or without the government purchase scheme, North Lismore's days as a residential area appear to be numbered. The newly established roller-skating rink has been buying up properties along Wotherspoon Street to expand car parking space.

The smooth progress of acquisition in Lismore, as revealed by the lack of organized protest, the sales figures, and the optimism of the scheme's implementers, suggests that the program is gathering momentum and has the broad based support or at least the consent of those affected (Table 2).

Echuca West

Background to the Decision to Acquire. The process leading to the decision to acquire Echuca West started well before the Victorian acquisition criteria were established (see Victoria - Water Resources Council, 1977, 1978). In fact, following the severe floods of the early 1970s, an inquiry into flooding in northern Victoria was begun in 1973 by the State Parliamentary Works Committee (1975). In a submission to the inquiry, the then Echuca city engineer suggested that the West could be leveed at a cost of $183,000 (1973 dollars).

After further severe flooding in 1974 and 1975 the situation took on a new urgency. The city of Echuca suspended development in Echuca West and other areas flooded in 1975, and, in conjunction with the Victorian

State Rivers and Water Supply Commission (SR & WSC), examined the city's flood problem within the context of the new Drainage of Land Act (1975). At the time, the act required that the largest flood on record be considered for use as the regulatory event. In Echuca this means the 1870 flood (1:188 frequency) (Victoria - SR & WSC, 1979) which was substantially higher than the calculated 1:100 level and, if adopted, would put the entire business district under regulation. Naturally the Council protested and had a "tremendous row" with State Rivers, until "the 1:100 standard was imposed" on Echuca as a regulatory base (from interviews with local officials). In general, council staff and most local politicans were content with the compromise because it freed the commercial district from regulation (McCartney, 1981-I). The Victorian government has since adopted the 1:100 flood as the legal flood plain definition.

Initially the SR & WSC investigation focused on Echuca West because of the local flood frequency and severity. The first report, released in June, 1975, estimated that an embankment to protect much of West Echuca against a flood of the 1870 level could be constructed for $250,000 (1975 dollars). The report concluded by suggesting that in view of the cost and danger of levees, the money might be better spent relocating the houses from an area that should never have been developed. The structural and nonstructural flood damage reduction options for Echuca were aired at a public meeting held on December 10, 1979.

Throughout the period from the early 1970s up to the public meeting there were individual as well as semiorganized group protests of the lack of flood mitigation action. Protests took the form of petitions requesting the removal of enbankments and fill, which, it was argued, increased flood levels in Echuca West; correspondence with the local council, state

government MPs, the SR & WSC; and a survey on the extent of local flood assistance. This activity was largely at the instigation of one elderly resident, Eric Bethune.

With the support of some local residents, Bethune obtained legal aid to investigate the legality of the construction of the two embankments, both of which were constructed by Council, one on its own land and one on a drainage reserve. In both cases it appears that the residents were technically correct: the constructions were undertaken without the necessary permits. However, on both counts they found they would have to personally seek remedies through the courts. Because Council resolved to examine the drainage reserve matter, legal aid was no longer available to Bethune, although the city appears unlikely to take action (data from Bethune's correspondence, legal counsel files, and interviews). The issues surrounding the other embankment are more complex. To quote from correspondence (letter to Bethune from the Premier's Dept. 12/28/73):

> It was unfortunate that by the time the State Rivers and Water Supply Commission was approached for approval to place the filling, the works were already completed, and it would have been unrealistic to require the filling to be removed. The Commission granted its approval but only on the basis that the Council of the City of Echuca accepted responsibility for flooding caused as a direct result of these works.

Having proved their case, some residents could not understand the absence of corrective action. This simply served to increase the frustration and feelings of powerlessness among Bethune and his supporters, and helped to guarantee their opposition to any government action which did not address the physical side of the Echuca West flood problem. Unlike the Lismore respondents, virtually all the Echuca sample felt that the government (local or state) should do something about flooding, and over half thought that the flood water could be stopped from entering their area.

The Decision to Acquire and Local Response. A few months after the public meeting in 1979 it was decided to proceed with the acquisition of Echuca West. A joint submission by SR & WSC and the City of Echuca reads (April, 1980, pp. 2, 5):

> there is fundamental agreement between the Commission...and City Council...that the existing land uses in Echuca West and the acute flooding problems it suffers, indicate clearly that this area is one where conversion to public ownership of subdivided privately-owned lands is the only feasible solution and should be undertaken as soon as possible.

The decision to acquire was made public by the Minister for Water Supply in a news release on May 16, 1980. After the SR & WSC flood study permanent evacuation was seen as the only viable option given that a political/administrative decision had been made to solve the flood problem and given that structural measures were felt to be infeasible (Parks, 1980-I; Stringer, 1980-I).

The apparent Council unity on the issues belies strong opposition from the then mayor, who commented that "the scheme was forced on us by State Rivers" and that it did not have the support of Echuca West residents (Oberlin, 1980-I). He felt that a structural solution was both feasible and preferable to acquisition. One reason for the apparent local political support for the scheme may have been the lack of strong public feeling about it in Echuca. A council staff member observed that "if councillors felt it was politically advantageous they would probably all be against the acquisition scheme".

A clear decision was reached to remove all residential development from the lower part of Echuca West through a voluntary acquisition scheme. The scheme was expected to cost $1 million (1980 dollars) and to take at least ten years to complete. It is administered directly by

State Rivers, and acquired land reverts to the Crown. Echuca City plays an advisory role and shares program costs with state and federal governments. There are no plans for post-acquisition use.

Following the decision to acquire, notes of intention to declare flood-prone that part of Echuca West lying below the 1:100 flood line "on or after August 1980" were sent to each affected land owner in early June, 1980 as required by the Drainage of Land Act (1975). Notice of the intention was also published in the government gazette and local newspaper. Before the acquisition scheme could proceed, a proclamation was necessary to give SR & WSC the necessary regulatory power. Sixty days were allowed for any objections against the proclamation to be lodged. In addition, a public meeting (not a statutory requirement) was held in June, 1980 to explain the scheme to the affected residents. At this stage some vigorous opposition to the scheme was expressed through written objections and at the public meeting. The SR & WSC received a number of objections which included technical arguments questioning the accuracy of the Commissions' hydrologic calculations. However, the issues addressed by most objections concerned the actual decision to acquire rather than to protect and the valuation procedure to be employed.

The Public Meeting.[1] The meeting was "not intended as a discussion of the merits of the land purchase proposal as opposed to other flood mitigation measures," but was held to acquaint people with the acquisition scheme (letter from State Rivers to McKenzie, resident of Echuca

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[1]Information for this section comes primarily from a tape recording of the meeting lent to the author by Eric Bethune, supplemented by comments made to inverviewers and a few detailed interviews made by the author.

West, June, 1980). Many residents clearly resented being presented with the decision to acquire, and the representatives from State Rivers did discuss the reasons for the scheme. It should be noted that other residents were happy with the quick decision and took advantage of it (Table 2).

At the meeting officials gave the following reasons for the scheme and advised that those who opposed the proclamation should write to the Minister:

(i) the infeasibility of structural protection including flood proofing; the danger of levees; and the cost of levee protection (having risen to $2 million, from the 1975 estimate of $0.25 million).

(ii) the government's concern about possible repeated compensation to flood victims. "Echuca West can't be a flood problem every year. The state government wanted to relieve the need for compensation" (D. Dole). On these grounds the "only reasonable prospect for Echuca West" was seen to be "to implement a sound, sensitive, and sensible program to enable people, should they so desire, to leave the area" (D. Dole). In fact the amount of flood compensation paid to Echuca West residents is very small, amounting to only $2330 (1974 dollars) after the severe 1974 flood (information from a survey by E. Bethune).

Despite attempts by commission officials to refer the issue elsewhere, considerable opposition to the scheme was voiced by a number of long-term residents who principally argued that, first of all, Echuca West is no more flood-prone than parts of East Echuca and that, in any case, for many residents the problem is not very severe, and secondly, that the prices being offered for their properties would not enable purchase of replacement dwellings. This important issue is discussed later, but it is worth observing that the group that appeared to be most concerned, the long-term residents who moved to Echuca West before the substantial property value difference emerged, stand to suffer the largest financial loss, while those who invested recently will retrieve

their investment. Echuca Council commented that once they knew the extent of the problem, they perhaps could approach the state government for assistance along these lines.

Some other issues raised at the meeting elicited replies from the government representatives which appeared vague to many residents. For example, the response to a question on the length of the scheme was not unequivocal: "My understanding is there is no time limit." Misunderstanding of these issues was evident during the questionnaire survey. As a result (and because of their earlier experiences with the law), some people were confused over the extent to which acquisition was actually voluntary, even though they were assured that it was entirely voluntary. The main issues here were the length of the scheme (people were concerned that after ten years they might be forced off their property), maintenance of services (would public utilities be maintained to remaining properties?), to whom they could sell, post-acquisition activities, and various technical points concerning the embankments mentioned earlier and the accuracy of the 1:100 flood delineation.

Recent Response. Final assessment of the general acceptance of acquisition must be weighted heavily by the evidence from the property sales data (Table 2). On this basis there can be no question that the scheme has wide acceptance. This does not mean that those who sold did not have the misgivings expressed at the public meeting, but it suggests that it was more important for them to leave. Also there is a vocal minority of older, long-established residents who still object to the whole concept of the scheme.

North Wagga Wagga

The Decision to Acquire and Early Reaction. Preparation of the City of Wagga's planning scheme commenced in the early 1950s. Repeated major flooding during that time gave the work impetus by making prompt decisions necessary on the future direction of development in the flood plain. Considerable attention was devoted to the future of the village of North Wagga because of the relative severity of its flood problem, though the village is rather less flood-prone than the other acquisition sites under study.

As an interim measure while the planning scheme was being prepared, Wagga Council placed a number of restrictions on North Wagga in 1955. In 1957 these culminated with the area being zoned "non-urban 1c" with few existing use rights. No further subdivisions or new building of any sort were to be permitted, and the users of existing premises were permitted "only minor alterations and repairs necessary for the reasonable preservation and use of existing buildings and works" (incorporated into the Wagga Wagga Planning Scheme as finally adopted in 1965). If these restrictions are compared with those proposed for Lismore under Section 38 of the Coastal Protection Act (1979) (generally seen as a last resort measure--see Handmer, 1984), it is clear that the North Wagga regulations are very much more prohibitive. Council's decision to zone the village "non-urban" was not without its difficulties. Nevertheless a firm decision was taken, and it was at this time that the idea of acquiring the village was first mooted.

North Wagga residents strongly opposed to the zoning found useful support in Council. A special Council Committee was established to safeguard the interests of residents (Council resolution 1470, 7/4/57)

who were pressing to have the non-urban designation changed to industrial (letter from Progress Association, 8/1/58).

However, much stronger reaction came from the residents when it was decided to exclude North Wagga from the levee protection being provided for the main city in 1958/60. On the recommendation of the town planner, Council decided to retain the non-urban zoning and to gradually acquire properties as they came onto the market, subject to funds being available. It was assumed that the village would eventually just "wither away." In the words of a past president of the North Wagga Residents Association (Burgam, 1980-I), "...they said let them die... they don't exist.... Naturally this proposal got a very hostile reaction from the North Wagga residents." In response, the Progress Association called a number of public meetings, put forward a petition signed by 300 people (Morris, 1980), and made a submission against the levee to the Wagga Land Board. These actions failed to have any effect on the levee or zoning decisions. "However, the declaration that North Wagga was to 'wither' promoted a strong community spirit and seemed to unify the place, and made people determined that it wouldn't wither away" (Knott, 1980-I). In the subsequent 27 years, the housing stock of the village has been reduced by less than 20% (Table 2).

The decision to attempt to phase out development in North Wagga was seen by many as consistent with the historical treatment of the village by the main city. Since the earliest settlement, North Wagga was largely ignored (Morris, 1980) and "has always been regarded as a poor quarter" (Burgman, 1980-I).

Lack of Commitment and Vacillation by Council. The zoning and piecemeal acquisition were contested almost immediately by North Wagga

residents and sympathetic councillors and later by members of the city's engineering department. This led to a public inquiry in the early 1960s into the possibility of rezoning the village from non-urban to residential (Daily Examiner 1/21/62). The local newspaper, the Daily Examiner, predicted that the village would in fact be rezoned (2/23/62). However, after his investigations, the town planner claimed that it would be possible to relocate North Wagga for less than it would cost to bring it up to 1962 subdivision standards with levee protection (Daily Examiner 7/25/62). However, these estimates suffered from a number of deficiencies (discussed in Handmer, 1984). Nevertheless, on this basis the New South Wales (NSW) Department of Local Government was approached in 1963 for funds to carry out the relocation (Wagga Wagga City Council (WWCC), et al., 1971). The following year, the Minister for Local Government offered to contribute from the Local Government Assistance Fund the major part of the funds required for relocation of the village, provided Council developed a relocation scheme (WWCC et al., 1971). This offer was not taken up, even though at different times Wagga Council bought land in other parts of the city for those who wished to relocate and prepared plans for relocation of the village to Cartwright's Hill.

In 1971, defending Council's apparent inaction on this offer, the town planner for Wagga, Mr. Rawlings, said that considerable thought had been given to moving houses out of North Wagga with the financial assistance offered by the Department of Local Government, but Council had ascertained from a questionnaire survey that the residents did not want to move to other parts of Wagga (it is not clear what sort of financial or housing offers were made to the residents), and as a result had decided to wait for a report from the Snowy Mountains Authority (SMA) on

the provision of flood protection by providing air space in existing and proposed reservoirs (WWCC et al., 1971). In fact, it appears that advice on the provision of reservoir air space for flood mitigation was not sought until 1966 (Council Resolution 1905, 7/21/66). Furthermore, even before the minister made his offer, some councillors were again considering rezoning the village. The Daily Advertiser reported that "comments from an Alderman suggested that a concerted effort could lead to the rezoning of the suburb" (1/14/64).

The failure of Wagga City Council to accept the offer of relocation funds represents a major lost opportunity to resolve the problem of North Wagga and an apparent turning point in the future of the village. It also represented a defeat for the town planning department which has always advocated relocation.

Replies to the air space question were not encouraging. The SMA pointed out that the primary purpose of the reservoir was water conservation--a purpose fundamentally at odds with flood control which requires that reservoirs be kept partly empty.

Although it was by no means unanimous, a movement within Wagga Council to rezone North Wagga was gaining momentum, and in 1968, Council applied to the State Planning Authority to vary the Wagga Town Plan so as to give full existing user rights to the residents of North Wagga. Eventually, as a result of Council's agitation, a conference was convened by the State Planning Authority to discuss the issues. Representatives of the Authority, Council, and the Water Conservation and Irrigation Commission (WC&IC) attended the meeting. At the conference the WC&IC confirmed that reservoir air space was not a viable flood mitigation option, and Council was asked to provide more information on the costs of the levee and relocation strategies.

The 1970s saw a firming of resolve by Wagga Council, with the support of its engineering department and North Wagga residents, to obtain existing user rights and to have the village leveed.

The residents organized themselves into the North Wagga Resident's Association in 1972. Its powerful leadership appears to have been largely responsible for maintaining the unity of the village through the major floods and the ten years of struggle. A principal founding member commented that before the resident's association was established ... "the people couldn't defend themselves...it was pathetic and immoral" (Burgman, 1980-I). The association was successful in having a special council committee formed to investigate solutions to the North Wagga problem, especially through the provision of levees (6/19/74), and the Daily Advertiser (6/26/74) commented that "after a twenty year dormant period North Wagga growth is about to be resumed." The newspaper was rather optimistic, but two Interim Development Orders (I.D.O.s) of this period did relax the stringent 1950s restrictions and gave some limited existing user rights. However, the severe flooding of the 1970s did not help; state government authorities and the Wagga Town Planning Department remained firmly convinced that North Wagga was in the wrong place. Somewhat surprisingly the residents and majority of aldermen remained equally convinced that the village should stay, and the engineering department continued with a levee design, citing the success of the city levee.

An Attempt to Resolve the Problem. In an attempt to finally resolve the issue, Council commissioned a study into the development options for North Wagga (SKP & MSJKY, 1979). The report combined existing and new economic data with a questionnaire survey of the residents. There are

two general solutions to the village's flood problem which are quite contradictory: relocate the village or protect the village with levees.

Primarily on the basis that relocation was consistent with NSW government policy, the first draft of the report recommended "that Council adopt a staged acquisition/relocation program as policy, (and) that North Wagga residents be encouraged to participate in the development and management of the relocation and acquisition program."

However this initial proposal was dropped in favor of one recommending "construction of a 1:100 year levee; extension of user rights, no additional dwellings; continuation of mandatory evacuation on forecast of an isolating flood" (SKP & MSJKY, 1979, p. 3). The about-face in attitude was made primarily on the grounds that "the convergence of economic and sociological factors is such as to outweigh the results of interpreting general policy for the particular circumstances of North Wagga..." (letter from SKP to Knott, Wagga City Engineer, 9/26/79).

Those in positions of power supporting the levee scheme, the city's engineering department, the consultants, and most local politicians, do so on the basis of its cost efficiency and the residents' strong opposition to relocation. "As a class, the village to be removed options have a significantly higher financial cost, and because of the anticipated difficulty of raising capital it is considered that these options are not feasible" (SKP & MSJKY, 1979, p. 3). Issues of safety which are the main concern of the local and state government planning departments (who are levee opponents and have final authority over the future of the village) are dealt with through a recommendation for a "mandatory evacuation on forecast of an isolating flood." On average, an isolating flood occurs every seven years.

State authorities were also opposed to approving the proposed North Wagga levee because the village represents a major test of government flood policy. "They are an ideal example of what should be acquired" (Whitehouse, 1980-I). After 28 years, a clear decision on the future of North Wagga has yet to be made.

HYPOTHESES DEVELOPMENT AND TESTING

To assess which factors are important in acquisition program success, research hypotheses were developed from the literature summarized in Table 1, and from the reviews of the acquisition schemes under study. These sources were combined to produce hypotheses in the following areas:

- attachment to community, (tenancy, length of residence),
- flood risk (experience, perception),
- vested interest (benefits and losses from acquisition),
- aspects of program development and implementation, (the valuation procedure, the time taken to decide to acquire and implement the decision, and "public relations" between the authorities and affected populations).

For completeness, other variables conventionally examined in relocation studies, even though they are generally acknowledged to have little predictive value by themselves, were also analyzed. These included sex and various socioeconomic factors. Where appropriate, background detail to specific hypotheses is discussed in the relevant sections.

Hypotheses were tested using interview responses in two ways--qualitatively and statistically. Only the Lismore and Echuca data could be examined statistically, as access to individual Wagga questionnaires was not possible (see "Methodology" above). The variable under scrutiny is cross-tabulated with expressed attitude to acquisition and a wide range

of other factors. Qualitative examination of research questions is necessary to include North Wagga in the analyses and for those variables for which statistical data is unavailable. This type of analysis operates at the community level only.

Three statistical tests were employed to examine quantitative data. The chi-square test simply helps "to determine whether a systematic relationship exists between two variables" (Nie et al., 1975, p. 223); it does not indicate the strength of the relationship. Two nonparametric tests suited to the nominal measurement level of much of the data were selected for this purpose: the contingency coefficient and asymmetric lambda. (As used in this study they are described in Nie et al., 1975). The two tests describe different aspects of association. "Asymmetric lambda measures the percentage of improvement in our ability to predict the value of the dependent variable once we know the value of the independent variable" (Nie et al., 1975, p. 225). In the present context the dependent variable is attitude to acquisition, while independent variables include tenancy status, seriousness of the local flood problem, and knowledge of the acquisition scheme. The contingency coefficient is based on chi-square, and its upper limit depends on the size of the cross-tabulation table. "For this reason it should only be used to compare tables having the same dimensions, i.e., the same numbers of rows and columns" (Nie et al., 1975, p. 225). Fortunately, all the strongly related variables are cross-tabulated in 2x2 tables. For the few factors for which this is not the case, comparisons should be made with asymmetric lambda only.

Results are presented in the form of a matrix showing the significance and strength of the relationships between the major questionnaire variables (Table 13, in "Discussion and Conclusions", below).

ATTITUDE TO ACQUISITION

Introduction

The first step in hypotheses testing was to establish the attitude to acquisition at each site through interviews with residents and officials. Straightforward questions on attitudes towards risk and other issues have frequently led to misleading and contradictory results, with a substantial gap between expressed attitudes and actual behavior. This is a serious weakness of many attitude studies, in particular those concerned with risk and hazards. Because attitude to acquisition as assessed from the questionnaire responses is the major basis of hypotheses testing, a range of other material was examined in an attempt to validate the questionnaire data.

Thus, for each site, attitude to acquisition is assessed from two separate data sources: the questionnaires, and the semistructured interview and documentary sources used to compile the "Evolution of Response" section above. A comparison of the results of the two sources should indicate the general accuracy of questionnaire responses.

Those responses found to be most useful were employed in subsequent sections to examine potential explanatory variables.

Questionnaire Results for the Residents

The Lismore and Echuca questionnaires contained questions, or groups of questions, to assess directly how the property purchase programs were perceived (Appendix B). The questions sought information on:

(i) the incentives that would be required to persuade interviewees to sell their property to the schemes (Question 19),

(ii) the behavior of interviewees in relation to the scheme--had they considered selling, had they had their property appraised, and so on (Question 22),

(iii) whether and why people in the area would sell to the scheme (Question 16(d)),

(iv) whether the respondents felt acquisition was appropriate for their particular area (Question 17).

Discussion of the incentives issue is left until later (see "Aspects of Acquisition Program Procedures"). The behavior questions showed that very few people had actually thought seriously about selling--only seven households (7%) in the Lismore acquisition sample. Although the proportion of Echuca respondents who had considered selling was higher (18.2%), it was still low, and the combined Echuca/Lismore results were too low for detailed statistical analysis. Consequently, it was decided not to use this question in acquisition attitude analysis. As far as Lismore is concerned, the very low positive response reflects the high proportion of renters and the acquisition scheme's relatively low profile rather than strong anti-acquisition feeling. Similarly, the question on whether interviewees were likely to sell to the scheme proved to be of limited value. Responses were characterized by a high level of "maybes" (up to 47% for the Lismore flood plain control) which made results difficult to interpret. Also there was no comparable question in the Wagga survey, making between-site comparisons of the data impossible.

The question seeking an opinion on whether or not the area should be acquired, however, provided reasonably clear results and has equivalents in the Wagga and Munro Lismore surveys. So data from these questions are used in most of the following analyses.

The three communities subject to acquisition schemes represent three quite different levels of program support, if all interviewees, both owners and renters, are considered. Some three-quarters of North Wagga respondents, two-thirds of those in Echuca West, and one-third in Lismore are opposed to acquisition in its present form. If only those owner-occupiers who know about the schemes are examined, as in Table 3, the pattern is much weaker, though still present. In general, owner-occupiers are opposed to acquisition.

Should Area be acquired?	LISMORE			ECHUCA WEST	NORTH* WAGGA
	FLOOD FREE	FLOOD PLAIN CONTROL	PRIORITY ACQUISITION AREAS		
YES	72%	74% (25)	32% (21)	30% (12)	14% (24)
NO	12%	21% (7)	61% (40)	66% (27)	75% (126)
Don't know	17%	6%	7%	5%	11%

* Question wording: "Could you tick those options you would consider acceptable" (for North Wagga, and rank preference). Options considered as acquisition were "government property purchase" and "relocation".

TABLE 3

ATTITUDE TO ACQUISITION FOR OWNERS WHO HAVE HEARD OF THE SCHEME
Results expressed as percentages rounded to the nearest whole number. Figures in brackets are frequency counts. (Question 17 in questionnaire, Appendix B).

Interview and Documentary Evidence

Wagga presented the most interesting results. Perhaps not unexpectedly, in view of the strong opposition to acquisition by North Wagga residents expressed through their resident's association, the local politicians now appear firmly opposed to removing the village. Unlike the politicians, Council staff are divided over the best way to deal with the village. The town planning section supports the relocation concept; it was originally their suggestion in the 1950s that "they shouldn't be there, we should wipe them out". On the other hand, the district engineer and his department reject relocation and advocate a levee.

Despite some early opposition, **Echuca** City Council staff and the great majority of local politicians were content with the flood mitigation package developed in conjunction with the Victorian SR & WSC. This support may well exist because the scheme is administered directly by the Victorian government and is largely out of local control. The residents of West Echuca are somewhat divided over the desirability of acquisition. Nevertheless, it is clear from the sales data that a substantial number of residents feel the scheme is worth taking advantage of (Table 2).

The situation in **Lismore** is curious. It is the study site in which there is by far the highest degree of support for acquisition, revealed by the scheme's smooth progress and the virtual absence of vocal opposition from the residents of the affected areas. Yet a number of local politicians and business people (the Chamber of Commerce) were opposed to acquisition. Some councillors felt that there was a serious potential for loss of rates, but a broader concern appears to have underlain much of the opposition. Acquisition was seen as part of a comprehensive plan to encourage abandonment of the flood plain, the major element in the

plan being the establishment of an alternative flood-free town center. Naturally, established flood plain businesses see such actions as very threatening.

Conclusions

Attitude to acquisition revealed by questionnaire responses is a reasonably accurate reflection of behavior towards the schemes when assessed at the community level. Attitudes and behavior in individual cases may still vary widely.

At no site is there unanimous support for or opposition to voluntary acquisition, but the situation in Wagga is the closest to unanimity, with only the Wagga Town Planning Department supporting acquisition. At Lismore and Echuca there have been some divisions among councillors over the merits of acquisition, but these have not hindered scheme implementation. The success of the Lismore scheme is largely due to the absence of opposition from potential relocaters and the determination of key state and local government officials. In Echuca, the initial opposition to acquisition by some older residents and local government officials appears to have been overcome, but, in any case, resistance is unlikely to have prevented implementation, because the scheme is under the direct control of the Victorian Government.

FACTORS AFFECTING INDIVIDUAL AND COMMUNITY RESPONSE TO ACQUISITION

Factors Examined

In the following sections the hypotheses developed earlier in this paper are tested. Certain other variables were examined but were not significant. Sex of respondent, for example, was not related to any other variable.

Perceived Losses and Benefits of Acquisition

The full range of tangible and intangible acquisition costs and benefits as identified by this and other studies is listed and discussed in Handmer (1984). Material on the evolution of the identified effects is also included. This section focuses on those effects expected or perceived by the potential relocaters, also referred to as their "vested interests."

Burdge and Ludke (1970, 1972) and others found that vested interest is an important explanatory variable underlying attitude to compulsory acquisition (see Table 1). Those who believe that their interests are served by acquisition are more likely to have a positive attitude towards the scheme and vice versa.

Two questions were used for the primary analyses of this issue. Respondents were asked:

(i) how they though they might benefit from the scheme (Question 18), and

(ii) how they thought they might lose from it (Question 25). (Question wording for Wagga: "If leaving North Wagga is required, what, if any, problems do you think this will involve for you?)

Repondents in the Echuca and Lismore acquisition areas were overwhelmingly convinced (approximately 80% of the samples) that the schemes held no benefits for them (Table 4). Unfortunately no data on the perceived benefits of acquisition were collected for North Wagga. However, information on expected losses was available for all three sites. Only some 20% of respondents felt that acquisition would benefit them, and a similar percentage saw no losses, with the exception of Echuca West. There, virtually the entire sample (93%) foresaw personal losses from the acquisition scheme. It was quite possible, and it would have been quite

BENEFITS		
Benefit	%	N
No benefits	85	(165)
Reduces flood risk	7.2	(14)
Post-acquisition use	4	(8)
Miscellaneous	3.8	(7)

LOSSES		
Loss	%	N
No losses	16.9	(31)
Not moving	10.3	(19)
inconvenient/ miscellaneous	7	(13)
cheap living	47.8	(88)
home area/friends	18	(33)

TABLE 4

BENEFITS AND LOSSES FROM ACQUISITION PERCEIVED BY POTENTIAL RELOCATERS
Combined Lismore and Echuca data

reasonable, for people to see both gains and losses. This might have had the effect of reducing the apparent overall negative response to acquisition if, for example, many of those who saw losses also felt they would gain something. However, with most expecting losses and no benefits at all, the outlook of respondents is clearly pessimistic.

The dominant reason for this perspective is concern over the loss of affordable accommodation. This was especially the case among those renting, and the results here are closely associated with those for persons who saw their financial position as an important locational constraint. Losing affordable accommodation was the primary concern of two-thirds of those who felt economics kept them in the flood plain and

concerned only one-third of those for whom economics were unimportant. Similar results were obtained when the question of economics in the original location was examined by perceived loss. Table 5 illustrates this association for both owners and renters for the combined Echuca and Lismore acquisition samples.

In the cross-tabulation with attitude to acquisition, only the question of expected benefits proved to be of value. This association was the strongest found among the variables examined (see "Discussion and Conclusions"). Virtually all respondents who are opposed to acquisition see no benefits in the scheme. The relationship between acquisition attitude and expected losses from the schemes was not significant.

How might you loose from acquisition	Is cost important in staying here?	
	YES	NO
WON'T LOSE	18.3% (18)	37% (22)
LOSE (miscellaneous)	14% (14)	31.5% (19)
LOSE cheap housing	69.7% (67)	31.5% (19)
Chi-square significant at .05		

TABLE 5

IMPORTANCE OF COST IN LOCATION AND PERCEIVED LOSS FROM ACQUISITION
Percent of Cost Category (Numbers of Interviewees in Brackets)

Flood Factors

Recent and severe flood experience has been shown to be a powerful motivator for flood adjustment adoption (Waterstone, 1978; Smith and Penning-Rowsell, 1982). It may also be important in forming negative attitudes to flooding and positive attitudes towards relocation (James, 1974; Time, 1981).

Key questions for assessing flood attitudes or perception are expectation of future flooding and perception of flood severity (Kates, 1962). Pessimistic responses to these questions are likely to indicate support for relocation (O'Malley, 1978; Schweri and Willigen, 1978).

Data from a number of sources were used to examine the following hypotheses that attitude to acquisition is related to flood risk, experience, and perception. These factors are not independent, especially experience and perception. However, they are examined separately because there is considerable debate about the precise nature of the relationships. The hypotheses are:

(i) support for acquisition should increase with flood risk.

(ii) those with severe flood experience and whose routine is affected by flooding should be more positive towards the scheme. Interviewees in the second part of the Echuca survey, which was conducted immediately after a major flood, should be more supportive of acquisition, and

(iii) those whose flood perception is low, i.e., who do not see flooding as a local problem, are expected to oppose the scheme.

Flood Risk. Evidence for the importance of exposure to flood risk comes from two sources: the appropriate Munro questionnaire responses matched up with a flood risk data base for individual properties and overall community attitude to acquisition ranked by the flood risk of each study site. The flood risk data base contains the ground and floor

heights of all developed properties in the Lismore flood plain (lower levels are subject to more frequent and deeper flooding). It should be noted that exposure to a flood risk, even if of long duration, does not guarantee flood experience.

Munro asked a sample of all Lismore flood plain residents whether they supported the concept of a resettlement scheme for badly flood-prone residents without nominating specific areas such as North Lismore. Table 6 shows that for owners increased support for acquisition is associated with increased flood risk. Results for renters are not clear cut. A possible explanation for this may lie in the high turnover of rented properties. As a general trend, the more flood-prone the dwellings, the more rundown they become. It is possible then that the most flood-prone houses have the highest turnover rate. If this is the case, a relatively large proportion of renters would not have experienced the

GROUND HEIGHT (metres)	FLOOD RISK (approximate recurrence interval)	PERCENTAGE in each height class supporting the scheme
6.5-9	<1:2	100% (6)
>9-10	<1:3	88% (51)
>10-11	<1:4	81% (190)
>11-12	<1:10	69.5% (217)
>12-13	<1:100	63.8% (94)

TABLE 6

SUPPORT FOR RESETTLEMENT BY GROUND HEIGHT AND FLOOD RISK
(Lismore owner-occupiers only. Figures in brackets are numbers of interviewees.)

1974 or 1976 floods and could be expected to have a lower concern for flooding than adjacent long-term residents.

The community-wide data collaborate the Munro results, with owner-occupiers in the most flood-prone area, North Lismore, being most supportive of acquisition; while those in the least flood-prone area, North Wagga, are the least in favor of acquisition. In addition, the more flood-prone interviewees were most likely to cite floods as a reason for scheme support and vice versa.

Flood Experience. Unfortunately the Lismore data on severity of recent flooding (in 1964) by attitude to acquisition are inconclusive.

However, a clear demonstration of the importance of recent flood experience comes from a comparison of Echuca West interviews conducted before and just after the 1981 flood. In an area where considerable opposition to acquisition exists, support for the scheme in the post-flood sample increased to nearly double that of the earlier survey. The change in attitude was probably greater than the figures in Table 7

SHOULD ACQUIRE?	PRE-FLOOD	POST-FLOOD
YES	18.5% (5)	45% (10)
NO	77.5% (21)	53% (11)
DON'T KNOW	4% (1)	6% (1)

TABLE 7

ATTITUDE TO ACQUISITION BEFORE AND AFTER THE 1981 ECHUCA FLOOD

indicate because a number of people who had sold or were selling their houses to SR & WDC as a result of the flood were not in residence and were not interviewed. These people would almost certainly have been scheme supporters.

Flood Perception. Perception of the severity of the local flood problem was closely correlated with attitude to acquisition (Table 8). In fact, the variable was the second most powerful predictor of attitude (after vested interests) and explained some 17.6% of the variance (see Table 13). Thus, in communities where there is widespread recognition that flooding is a local problem, support for acquisition is likely to be strong. Only Lismore owners who knew about the scheme were used in this analysis as the data for this group are complete.

Should acquire?	Flood perception	
	HIGH	LOW
YES	$60.9_{(70)}$	$39.5_{(30)}$
NO	$39.1_{(45)}$	$60.5_{(46)}$
Chi-square sig. .01		

TABLE 8

ATTITUDE TO ACQUISITION BY FLOOD PERCEPTION
Figures are column percentages.
Numbers of responses are in brackets.

Attachment to Community

General. A major group of acquisition area people--the older, longer-term residents, the "stayers"--are strongly attached to the community (North Wagga), place (Echuca West), or a mixture of both (Lismore). This has been established by analysis of their demographic characteristics and questionnaire responses in Handmer (1984). Factors important in community attachment identified from a review of the literature are summarized in Table 9. An earlier study established that by any commonly employed poverty criterion, the acquisition area residents are poor or socioeconomically disadvantaged (Handmer, 1984; see "Relevance to Present Study," above).

Degree of attachment to community or place has been found to be an important, if not the critical, demographic variable influencing attitude to compulsory relocation (Table 1). It is expected, given the similarities between the subjects of the compulsory relocation studies and the residents of the case study area, that the strongly attached group will oppose relocation even of a voluntary nature.

In the following paragraphs, factors important in the degree of attachment to community are examined for their influence on expressed attitude to acquisition.

Housing Factors. Other work has shown that the greater the degree of property investment in both symbolic and monetary terms, the greater the degree of attachment to place and resistance to relocation (Table 1). A difference in attitude, therefore, is expected between owners and renters. Because renters generally have a low degree of economic and symbolic property investment, it is likely that they will be less motivated to remain and will support acquisition. Conversely owner-occupiers,

FACTORS	COMMENTS AND REFERENCES
Length of Residence	Longer residence time stronger attachment: Colony 1971; Adler & Jansen, 1978; Hallberg & Flinchbaugh, 1967; James, 1974; Motz, 1978; USNERBC, 1976; Perfacter & Allen, 1976.
Age	Older people more attachment: Buffington, 1973; Colony, 1971; Motz, 1978; USNERBC, 1976; Perfater & Allen, 1976; Shields, 1975.
Life Cycle Stage	Families are more likely to move at certain stages in their life cycle (though old age is more important), at marriage, and as the family expands and contracts. Thus community attachment may vary: Bourne, 1981; Motz, 1975. Rossi, 1980
Education Level and Occupation Type	Those with higher education levels and higher status occupations are less attached or rather are more mobile residentially: Bourne, 1981; Colony, 1971; Effrat, 1974; Motz, 1978; Perfator & Allen, 1976; Shields, 1975. Burdge & Ludtke 1972, consider that in general socio-economic variables are not very important in water resources planning. However, Shields, 1975, is probably more accurate: socio-economic variables are of some significance in that they are related to other factors known to be important eg. vested interests and at the community level, ability to organise. A further point related to occupation is that those whose livelihood is closely associated with a particular place such as farmers will often identify strongly with the locale: USNERBC, 1976; NSW WRC, 1980; Shields, 1975.
Family History	Ancestral ties will strengthen identification with the locale, and community if relatives still live in the area: Motz, 1978; TVA, 1972.
Social Interaction	The number of friends and relatives in the community and the frequency of interaction with them is positively associated with level of community attachment: Bourne, 1981; Burdge & Ludtke, 1972; Motz, 1978; SKP & MSJKY, 1979
Tenancy Status	Renters are more residentially mobile: Bourne, 1981; and often less attached to the community.
Area/Suburb Type	Dormitory suburb residents often have a low community attachment: Adler & Jansen, 1978.

TABLE 9

DEMOGRAPHIC FACTORS ASSOCIATED WITH STRONG ATTACHEMENT TO COMMUNITY

and in particular those who inherited their property, (O'Malley, 1978), are likely to want to stay.

Occasionally low rents are associated with older people and longer terms of residence, but this does not appear to be the case in the study sites. The proportion of accommodation rented is low in Echuca West and North Wagga at about 10%; while in the Lismore acquisition areas, where the proportion of dwellings rented reaches 40%, the renters are relatively young, mobile, short-term residents.

Renters are substantially more supportive of acquisition than owners (Table 10). In fact most renters (70%) feel that they would not lose from having to move or would find it only a nuisance. Those who felt they would lose generally cited money difficulties related to finding

Should acquire?	Tenancy status	
	OWNER	RENTER
YES	$47.7_{(62)}$	$61.7_{(37)}$
NO	$52.3_{(68)}$	$38.3_{(23)}$
Chi-square sig. .1		

TABLE 10

ATTITUDE TO ACQUISITION BY TENANCY STATUS
Figures are column percentages.
Number of responses are in brackets.

alternate low-cost accommodation. It should be noted that in the areas under investigation the authorities attempt to ensure that people are not forced from their homes.

At the opposite end of the symbolic property investment spectrum should be those who inherited their dwellings. This is a sizeable group, especially in North Lismore where some 25% of dwellings are owner occupied. However, inheritors are less certain about their attitude towards acquisition than other occupant groups, and their level of scheme opposition is similar to those of the rental group and significantly lower than that of the non-inheritor owner. Unlike renters, on the whole inheritors did not consider themselves trapped by cost but were concerned about the flood problem. The unexpected results may be a reflection of the slightly poorer and more flood-prone dwellings occupied by inheritors, particularly as other parts of the questionnaire tend to demonstrate their degree of attachment to the area. The absence of compulsion in the scheme might also be important.

A number of alternative explanations for the higher degree of renter support for the scheme were examined. As the most flood-prone areas in Lismore contain the highest proportion of rented dwellings, it follows that the severity and frequency of flooding may explain renter support. Support for the resettlement scheme was found to decline with decreasing flood risk, but for the rental subgroup the decline is erratic and does not appear to be significant (see "Flood Factors"). This itself is probably a result of the high turnover rate of rental properties and the consequent low level of flood experience among residents. Another possibility is that if renters are less interested in their area, they may not be as well informed as owners about the acquisition scheme and thus hold

different views. The knowledge question is explored below, and as expected, renters are less aware of the scheme's existence. However, while in the case of renters awareness of acquisition increases scheme support, the opposite occurs among owner-occupiers. As renters are relatively unaware of the scheme this relationship should reduce the proportion of the rental group who support acquisition. Therefore, knowledge is not seen as an important factor underlying scheme support by the renter group.

Another potentially important factor is economics. Other work has established that a very high proportion of renters would prefer to leave acquisition areas because of floods but find themselves financially unable to do so (Handmer, 1984). Many of these people may support acquisition, believing erroneously that it will help them find alternative, affordable flood-free accommodation.

In summary, tenancy status is an important variable underlying attitude to acquisition, with low levels of property investment associated with increased acquisition scheme support and vice versa. An anomaly in this pattern is that those who have inherited their property are fairly ambivalent about acquisition. Finally, in each study site the overall level of scheme support is broadly related to the site's tenancy makeup, with Lismore being the most supportive and having the highest proportion of rental accommodation and the residents of the other sites being more likely to oppose acquisition--in particular residents of North Wagga where outright home ownership is highest.

Length of Residence. Although length of residence is a useful indicator of attachment to place or community (Table 1), the variable has not generally been of value in predicting attitude to acquisition (O'Malley,

1978; Schweri and Willingen, 1978). Results from Lismore confirm these findings; the association between attitude to acquisition and length of residence is not significant.

Aspects of Acquisition Program Procedures

Organization of Section. Certain aspects of program development and implementation have been found to be important in securing public support for acquisition. As derived from the literature these are set out in Table 1. The review of the case study sites' acquisition programs raised a number of similar points. The issues discussed are:

(i) decision time,

(ii) public involvement in program planning and implementation,

(iii) knowledge of the program, public relations, and communication flow, and

(iv) property valuation procedure/scheme incentives.

Decision Time and Public Involvement. Lengthy periods of uncertainty for the residents while the decision to acquire is being made may serve to increase local resistance to the scheme. Although uncertainty may lead to gradual neighborhood deterioration and abandonment, those who remain may become increasingly determined to stay. The study sites illustrate this problem. Whereas, the decisions to acquire in Echuca and Lismore were relatively quick, property purchase in North Wagga has proceeded in a haphazard fashion for nearly three decades. Over time, opposition to the scheme there has increased and become more organized and effective.

Critical factors in the success of that campaign against the scheme and regulations have been the organization and leadership of the local residents association, which claims members in half the village house-

holds (SKP & MSJKY, 1979), and the strong sense of community the area is universally acknowledged to have. Executives of the association and council officers identified the long period of uncertainty during which "residents were deprived of their rights" (Knott, 1981-I) as a major equity issue and called for a speedy and firm resolution of the problem.

There is evidence to suggest that an absence of public involvement early in the planning process may lead to problems similar to those associated with lengthy decision times because low levels of communication between the residents and responsible authority increase rumors, misinformation, and anxiety (e.g., Smith et al., 1980; see Table 1 for other references). In no site could public involvement be said to be high at the time of the initial acquisition decision; the residents were not involved in the early planning stages in a consultative way. Meetings between the residents and authorities have been held at Echuca and Wagga but generally have not been held to seek residents' views. Rather, they have been called to explain decisions already taken. In Echuca this caused considerable resentment among "stayers" and has also led to some misinformation despite the best efforts of the state and local authorities (see "Echuca West" above). Wagga City Council has conducted surveys in North Wagga to obtain residents' views on alternative planning strategies for the area (SKP & MSJKY, 1979: earlier surveys are referred to by Rawlings, the town planner, in Wagga Wagga City Council et al., 1971; and in Livingstone, 1975), but these have been subsequent to the 1956 decision to zone the village non-urban and to commence acquisition and were a reaction to public pressure rather than a coordinated part of the planning process.

Undoubtedly cases exist in which both the public interest and successful program implementation are best served by a very low key approach to participation. This appears to have worked well in Lismore, though other local circumstances may be responsible for program success--in particular the recognized severity of flooding, the lack of sense of community, the obvious and preexisting decline of the areas, and the ability of the original program coordinator, John Wade, to reassure potential relocaters.

On the other hand, the costs of ignoring the public view may be great, especially when it is strong as in North Wagga. Therefore, public participation in the planning process increasingly is becoming a legislative requirement. Victorian legislation now provides for the use of "Consultative Committees" which formally involve local residents in the planning process, though their use is not mandatory. The Dandenong Valley Authority (DVA) in that state has involved the public in decision making for many years and believes that this is a major factor in its success in securing public support for its programs (Thompson, 1981). New South Wales is about to establish local flood plain management committees similar to those in Victoria.

Unfortunately, involvement still tends to be reactive, and, apart from the Victorian "Committees," to date little effort appears to have been made to take account of various public views from the commencement of project planning. Involvement after major decisions have been made, typical of many major inquiries, may reduce the whole procedure to a legitimization exercise (Bain, 1980).

After a recent review of their public participation exercises, the NSW Department of Main Roads concluded that it was not possible to formu-

late any general guidelines (Watson, 1980-I). Clearly, determining what constitutes the "public interest" is difficult when the public cannot agree on values. Arrow and others have argued that where major social choices are concerned, reconciliation of all viewpoints is impossible (Arrow, 1950; Kelly, 1978). Certainly, attempts at consensus where widely divergent attitudes exist are often doomed to failure. In these circumstances effort is better directed towards achieving the consent of those opposing the program. For example, many long term residents would never directly support the destruction of their neighborhood but may be content to allow those who want to sell to a voluntary scheme to do so. This is, in effect, what has occurred in Lismore and Echuca.

Finally, some general points emerge from the study sites and literature. To reduce feelings of frustration and alienation, participation exercises should commence before major planning decisions are made. They should seek out and attempt to defuse potential objections rather than simply react to strong public feelings. Concern is often expressed that those at public meetings, those who make submissions and so on, do not truly represent the affected public. Grima and Wilson-Hodges (1977) dispute this view, citing examples with no significant differences between viewpoints expressed in surveys and public meetings. In any case, other techniques, including surveys and local "committees" or panels, may help to overcome such bias. However it needs to be recognized that a vigorously held minority viewpoint may be important and may constitute a major obstacle to successful implementation, though in an entirely voluntary program this is less likely to be the case.

Knowledge of the Program, Public Relations, and Communications Flow. Knowledge alone is often not very important in changing attitudes and

behavior; indeed the majority of public education/information programs do not appear to have significantly influenced public opinion (Hyman and Sheatsley, 1947; Roder, 1961; Kates, 1962; Handmer and Milne, 1981; Illinois Dept. of Transportation (IDT), 1980; McDonald et al., 1982). This is the case in programs as diverse as those concerning natural hazards, crime prevention, seat belts, and smoking (IDT, 1980).

Nevertheless, it has been established that, generally, very low knowledge levels are associated with higher levels of uncertainty, anxiety, rumors, and misinformation about relocation programs (Drucker et al., 1973; Drucker and Smith, 1974; Smith, 1970). Thus the importance of a public relations program and two-way communication has been stressed to minimize anxiety and consequent negative reactions to a project (Buffington, 1973; Colony, 1971; Perfater and Allen, 1976; and Ralf M. Field, 1981).

When examining the role of knowledge in attitudes to acquisition at the study sites, it must be borne in mind that only in Echuca West had any real attempt been made to inform residents of the decision to acquire property and that in this area everyone was aware of the scheme. Unfortunately, therefore, much of the following analysis is restricted to Lismore--it being the only site with suitable questionnaire data. Some 25% of the Lismore acquisition sample--mostly renters--had not heard of the scheme (Table 11). Owners are expected to be more aware of the program because of their greater investment and interest in the property and because many renters are short-term residents.

Tenancy	Knowledge of scheme? YES	NO
RENTERS	(36) 64%	(20) 36%
OWNERS	(95) 82%	(21) 18%
Chi-square significant at .01		

TABLE 11

KNOWLEDGE BY TENANCY

Should this area be acquired?	Knowledge of the Scheme? YES	NO
YES	(65) 76%	(21) 24%
NO	(41) 73%	(15) 27%
Chi-square not significant		

TABLE 12

KNOWLEDGE AND ATTITUDE TO ACQUISITION

Lack of knowledge does not appear to have affected overall attitudes towards acquisition (Table 12). Curiously, the effects of knowledge were more profound on renters than owners. Renters were much more likely to support the scheme if they were aware of it; while owner-occupiers' attitudes were largely unaffected by knowledge of the scheme's existence.

The main sources of knowledge about the scheme in Lismore were newspapers, and neighbors, friends and relatives. The Lismore Council was not an important source. Less than 10% of those surveyed claimed to have heard of the scheme through public officials. This is in contrast to the situation in Echuca West where the local council and SR & WSC were the major informants (60% of the sample) through a public meeting and a letter posted to every resident. Nevertheless, there was considerable misinformation about the Echuca scheme (See "Echuca West"), whereas Lismore residents generally realized that the scheme was voluntary and offered market value.

Property Valuation Procedure/Scheme Incentives. Property valuation has emerged as an important issue in voluntary flood plain acquisition programs both overseas and in the Australian study sites. The issue arises because property in the more hazardous areas is frequently of very low value, and residents find that the market prices offered by government authorities are too low to enable them to buy replacement housing. Of course, as there is no compulsion in the proceedings and the resident does not have to accept the government's offer, there may appear to be no grounds for complaint. However, for the reasons outlined earlier ("Relevance to Present Study"), government authorities are frequently not like other property buyers, and many residents feel that they have some moral right to replacement housing.

The questionnaires asked respondents to state the incentives that would persuade them to sell their property to the scheme. After this open question they were asked to indicate how acceptable or unacceptable they found various specified incentives. The Wagga survey did not contain an open question first. It asked interviewees to indicate their preferences for various options and then asked how much money would be adequate compensation for relocation--the "consumer surplus technique".

At the other two sites, over half the interviewees volunteered "replacement housing" in response to the incentives question. A further third of the respondents said that nothing would persuade them to sell. Although attachment to the area is important to many of those who do not want to sell, the removal of economic constraints through the prospect of reasonable alternative housing would enable some to realistically consider relocation. To provide a realistic option, the individual requirements of the residents would need to be taken into account--for example, the need of many people to remain in the same general neighborhood and to be able to keep their pets. Among the non-acquisition, flood-free and flood plain residents interviewed there was virtually no opposition to the scheme, but there was a strong emphasis on the need to provide relocaters with replacement housing.

The argument is often advanced by local councils that it is immoral, if not illegal, to prevent, without compensation, the development of land if the zoning at the time of purchase would have permitted it. Frequently this is extended to include situations where the owner might reasonably have expected that the zoning would be changed to permit development. Furthermore, compensation generally takes the form of purchase of the property by government, and it is often implicit that the purchase

price should include allowances for the loss of speculative profits, rates paid, and so on. It seems quite inequitable that owner-occupiers are not entitled to the same consideration when regulations prohibiting any further development, including renovations and extension, are applied to their properties.

RELOCATER SATISFACTION

Stress and Ill-health

Unfortunately, given the limits of the study, it was not possible to interview relocaters to establish how they felt about the scheme, so the following discussion relies on indirect evidence and relevant literature.

Problems associated with forced relocation and voluntary migration are summarized in the literature review. Because the acquisition schemes under examination are entirely voluntary, the worst of these problems, which include elevated mortality and illness rates, are unlikely. However, it is well established that moving is a stressful experience for many people even when the move is voluntary (Kantor, 1967; Rahe, 1972). The degree of stress and its physiological effect are dependent on a variety of factors as set out in the literature review. An important factor is age, because it is the chronic, noninfectious diseases--more common among the aged--that seem to be the most influenced by stress (Dodge and Martin, 1970; Rabkin and Struening, 1976). Thus, some ill effects may be expected due to the preponderance of older people in the acquisition areas.

Older people constitute a fairly stable group, long resident in the area, that contrasts with the other group of people occupying the acquisition zones who are relatively young and mobile. This second group, many of whom are renters, will not be seriously affected by the move itself, though any difficulties experienced in finding suitable replacement accommodation may precipitate similar stress and health problems.

When considering the effect of relocation on health, earlier work is instructive. It shows that the occupants of the Lismore acquisition areas have very high hospital admission rates (Handmer and Smith, 1983). If a major contributing factor to these high rates is the stress and anxiety associated with the constant fear of flooding, then relocation may actually reduce the incidence of stress-induced ill health and in this respect save the community resources. However, the high levels of ill health may also be a reflection of poverty, a linkage established in the literature (Australia - Commission of Inquiry into Poverty, 1977).

Financial Aspects. An important question in relocater satisfaction is the existence of alternative low-cost accommodation. This affects both the groups identified above, but in particular those seeking rental housing. Handmer (1984) clearly shows that the great majority of this group feel their locational choice is constrained by finance. Where the low cost housing supply is very limited--the case in many areas--caravan parks may provide the only option. Many relocaters would consider this quite inadequate, and, in any case, even this option is becoming less viable as costs rise steeply. The weekly charge for an on-site van in some parks now approaches $100.

Another facet of the alternative accommodation issue is the location of the low cost housing. In general, relocater satisfaction is increased

if relocation is possible within their own community (Table 1). On the other hand, extra difficulties appear to be experienced by people relocating from blue to white-collar neighborhoods. These difficulties are documented in other studies (Booth and Camp, 1974) and were commented on by the coordinator of the Lismore scheme (Wade, 1981-I).

The Official View. Officials in Echuca and Lismore generally feel that because the program simply provides a market for properties that are otherwise very difficult to sell, people taking advantage of the government's offer must be quite happy with the scheme. No doubt many of those in the acquisition areas see the scheme in this light. However, many other residents are not so positive (see "Attitude to Acquisition" above), and as these people are less likely to take part in the scheme, the comments of the former coordinator of the Lismore program are probably quite accurate:

> The people (relocaters) have all been most grateful at the time of sale and afterwards.... A lot have moved into country areas and some have moved into other flood-affected areas (Wade 1981-I).

Other Lismore officials and community business leaders echoed these views, though they were not involved in the scheme directly. An interesting aspect is that a few relocaters have moved within the flood plain from a severely flooded site to one less severely flooded. This may reflect a desire to remain within familiar territory or the difficulty of finding low-cost, flood-free accommodation.

DISCUSSION AND CONCLUSIONS

Section Outline

The first part of this concluding section reexamines the statistical analysis of the questionnaire data in an attempt to provide an overview of the results. The second part uses these results and other material from the paper to present a number of policy oriented conclusions and recommendations.

Reexamination of Cross-tabulation Results

Cross-tabulation results are summarized in Table 13 using a matrix. Each matrix cell contains three numbers. The top or first number indicates the significance of the relationship in terms of chi-square. A significance level of .01 (or 99%) indicates that there is only one chance in 100 that the relationship observed in the sample is random, or put another way, it is 99% certain that the observed relationship actually exists in the population. Associations significant at less than the .1 (90%) level are not considered significant. The second and third figures are measures of the strength of the association. The first of these is the contingency coefficient which has a maximum value of .707 for a 2x2 table, and the last number is the asymmetric lambda expressed as a percentage (Nie, 1975).

The most obvious point about Table 13 is the large number of relationships which are not significant at the .10 level. All the variables have been thoroughly examined individually earlier in this paper. Here the focus is on those found to be associated with attitude to acquisition in Lismore and Echuca. In order of strength of relationship, these factors are:

	ATTITUDE TO ACQUISITION	ATTACHMENT TO COMMUNITY: TENANCY	ATTACHMENT TO COMMUNITY: LENGTH OF STAY (x 3)	FLOOD PERCEPTION	BENEFITS OF ACQUISITION	KNOWLEDGE OF ACQUISITION	ACQUISITION INCENTIVES (x 3)	LOCATION COSTS	COSTS OF ACQUISITION (x 4)
ATTITUDE TO ACQUISITION		sig at .1 cc = .129 L = 6.6%	N.S.	.01 .205 17.6	.0001 .31 17.6	N.S.	N.S.	N.S.	N.S.
ATTACHMENT TO COMMUNITY Tenancy	sig at .1 cc = .129 L = 6.6%		.0001 .48 27.6	.1 .136 0	N.S.	.01 .212 1.6	N.S.	.05 .18 2.6	.1 .183 0
Length of Stay (x 3)	N.S.	.0001 .48 27.6		N.S.	N.S.	N.S.	.1 .24 4.8	.0001 .34 13	.0001 .347 0
FLOOD PERCEPTION	.01 .205 17.6	.1 .136 0	N.S.		N.S.	N.S	N.S.	N.S.	N.S.
BENEFITS OF ACQUISITION	.0001 .31 17.6	N.S.	N.S.	N.S.		N.S.	N.S.	N.S.	N.S.
KNOWLEDGE OF ACQUISITION	N.S.	.01 .212 0	N.S.	N.S.	N.S.		N.S.	.1 .137 0	N.S.
ACQUISITION INCENTIVES (x 3)	N.S.	N.S.	.1 .24 4.8	N.S.	N.S.	N.S.		.01 .307 22	.01 .346 1.7
LOCATION COSTS	N.S	.05 .18 2.6	.0001 .34 13	N.S.	N.S.	.1 .137 0	.01 .3 15.3		.05 .219 2
COSTS OF ACQUISITION (x 4)	N.S.	.1 .183 0	.001 .347 0	N.S.	N.S.	N.S.	.01 .346 1.7	.05 .219 2	

In each cell the first figure is the Chi-square level of significance, the second figure is the contingency coefficient, and the third is the asymmetric Lamda value. All statistics were applied to 2 x 2 tables except where otherwise indicated. For a detailed explanation of the statistics see the text. An association significant at less than the .1 (90%) level is considered not significant. The contingency coefficient, a measure of association strength, has a maximum value of .707 for a 2 x 2 table. Asymmetric Lamda, here expressed as a percentage, measures the predictive power of the association.

TABLE 13

CROSS-TABULATIONS: SIGNIFICANCE AND STRENGTH OF THE ASSOCIATIONS

- perceived benefits from acquisition,
- perception of floods as a problem, and
- tenancy (used as a surrogate for attachment to community),

with the first two factors being by far the most important.

According to the asymmetric lambda statistics, flood perception and perceived benefits each explain some 17% of attitude to acquisition. Tenancy adds 6.6% to this, making a total of 42% of the variance in attitude explained. In arriving at this combined figure, it is important that the components are quite independent of each other. This appears to be the case, because, although tenancy status (owner/renter) is related to flood perception, the relationship is weak. Of course other variables altogether may be important. For example, tenancy status in Lismore is itself largely a function of age.

From the perspective of public policy, two disappointing results of Table 13 are the very weak performance of acquisition incentives and knowledge of acquisition. It appears that both variables have no effect on attitude to acquisition; cross-tabulations with knowledge recorded the weakest levels of association in the matrix.

On this basis, public information programs cannot be recommended as a way of improving local reaction to acquisition, although again, other factors may be at work here. Knowledge was high among owners and low among renters, while for other reasons renters tended to support acquisition and owners oppose it. Nevertheless, these results are in broad agreement with those of other studies as reviewed in the "Attachment to Community" section. Care is needed to distinguish the simple provision of information to the public from public involvement in the planning process. Provided there is some flexibility in program development,

involvement of the affected public may ease implementation and reduce community alienation. (The one standard measure of alienation employed in the questionnaire, the Srole Anomie Scale (Question 46) (Srole, 1956), was not related to acquisition attitude).

Investigation of the incentive issues was complicated because the schemes in all three sites were the same; they all offered market value, and almost all (95%) interviewees said either that they would not sell (39.3%) or that only replacement housing or its equivalent would be satisfactory (55.7%). It is clear, however, from other evidence that the cost of replacement housing is a major issue and that offers of relocation assistance would improve scheme acceptability provided that residents' individual needs can be accommodated. These needs are not so much material desires, but rather the wish of many older people to stay in the same general neighborhood and to maintain their independence and lifestyle.

Conclusions

Only a few of the wide range of variables examined were found to be associated with attitude towards acquisition in the study sites. Of those associations which could be subject to statistical testing, perceived benefits of acquisition had the highest predictive power, followed closely by flood perception, and then attachment to community. Other factors not analyzed statistically but also important were aspects of acquisition program procedures--in particular public involvement in the planning process--decision time, the property valuation process, and issues of community organization and leadership. Specific conclusions and recommendations follow.

Those with greater **attachment to community,** here assessed as those with greater economic and symbolic attachment to their community or property (i.e., owner-occupiers), are more likely to resist relocation. Much of the resistance, especially in areas with a severe flood problem, is due to the "market value" purchase policy. In contrast to the findings of other studies, inheritance of property was not strongly related to attitude to acquisition.

Acquisition programs will be best received where local residents **recognize the existence of a severe flood problem.** This is a major reason for the failure of acquisition in North Wagga and its success in Lismore.

Implementation success is particularly likely when people feel that their interests are served by the scheme. This **vested interest** or **perceived benefits** of acquisition variable had the strongest predictive power of the factors examined. Those who see themselves benefiting from acquisition are much more likely to support it. However, this number was very small in all the case study sites (14%). Again, the property valuation procedure is almost certainly a major reason why people cannot see benefits in acquisition. In most cases their flood-prone property is worth much less (20-50%) than comparable flood-free property, and payments under "market value" purchase policies will therefore generally preclude outright purchase of flood-free replacement dwellings.

Unfortunately, no data on relocater satisfaction was available from the present study, but it is clear from the results of other studies that the **stress and anxiety** accompanying relocation may precipitate a range of health problems, including possible elevated mortality rates, especially among the aged and poor--people who constitute a substantial proportion

of the populations of the acquisition areas. Financial problems and difficulties at the time of moving will only exacerbate any stress and its subsequent effects. Although these remarks are based primarily on literature concerning compulsory acquisition, there is considerable evidence that the same general comments apply to voluntary moves. A further caution is applicable to Lismore (and similar situations). There, the residents of the most flood-prone areas exhibited hospital admission rates over double those of flood-free area residents. It is most likely that this differential is at least in part a reflection of the anxiety associated with living in constant fear of floods. If this is the case, then relocation to a flood-free area may actually reduce the demand on health resources. Some of the anxiety observed in the study sites was due to the residents being unsure of the acquisition program procedures, but experience with public information campaigns has not been encouraging.

The issue of perceived benefits therefore, is important in scheme success, especially where owner-occupied housing is involved and where the authorities wish to minimize adverse impacts on the affected population. In a policy context, benefits are closely linked to scheme **incentives to sell.** If at all possible, consideration should be given to taking responsibility for **relocating** genuine needy cases. Such cases would include long-term owner-occupiers whose property is not sufficiently valuable to enable the purchase of replacement housing. Some potential relocaters in the study sites have been offered housing commission accommodation but have declined the offers because of the conditions typically attached to such housing (such as "no pets"). The conditions are particularly difficult for people who may have spent 50 years or more

in their own homes. Nevertheless this approach is a step in the right direction.

Another approach to reducing the economic problems of moving would be to relocate the existing dwellings to flood-free sites. This is being investigated in Lismore and may prove to be quite viable where a council owns undeveloped blocks. If these are situated near the acquisition area, the approach may also appeal to those with a strong symbolic attachment to their location or community and help to reduce the disruption associated with relocation.

There is evidence that **involvement of the public** early in the planning process will also reduce anxiety and disruption by reducing the sense of alienation and frustration that often develops when people find that major decisions affecting their lives are being made without their opinion or consent. This is not to deny that in some circumstances a lack of public involvement works well. However, since the major justification for acquisition schemes is frequently that it "will help the people get out" (in other words it is directed at assisting a disadvantaged group), it seems reasonable to seek the views of potential relocaters and to incorporate these into the policy development/implementation process where possible and to reassure them about the scheme's aims and procedures. Knowledge, and hence public information, was found not to be associated with attitude to acquisition; so satisfactory public participation involves more than the provision of information. In many instances, reconciliation of the sectional interests among the potential relocaters, local, and state governments is impossible. Attempts to reach consensus under such circumstances are doomed to failure and may be a little more than a frustrating waste of time and money. However, it

may be quite possible to obtain consent for program implementation from those opposing acquisition. In effect this is what is occurring at Echuca West and Lismore.

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Note
Interviewees are listed in Appendix A. When referenced in the text they are identified by the letter "I" following the date.

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APPENDIX A
LIST OF INTERVIEWEES CITED IN THE TEXT

Note: Interviewees are identified in the text by the letter "I" following the date.

Barlow, F.	10/23/81	Chief Engineer: Richmond River County Council Flood Mitigation Authority
Blair, Mr.	1/28/81	Mayor: Lismore City Council
Burgman, Mr.	6/5/80	President: North Wagga Residents Association
Graham, Mr.	6/5/80	Town Planner: Wagga City Council
Knott, C.	6/4/80 3/19/81	Chief Engineer: Wagga City Council
McCarthy, K.	4/14/81 3/9/81	Town Clerk: Echuca City Council
Miles, Mrs.	2/21/81	President: North Lismore Progress Association
Oberlin, D.	9/1/81	Former Mayor: City of Echuca
Parks, A.	9/1/81	Chief Engineer: City of Echuca
Stringer, D.	4/10/81	Engineer: State Rivers and Water Supply Commission, Victoria
Wade, J.	2/21/80 2/22/80 1/23/81	Engineer: Lismore City Council
Watson, Mr.	5/1/80	Deputy Principal Surveyor: NSW Department of Main Roads, Survey and Property Division
Whitehouse, G.	4/29/80	Deputy Principal Engineer: NSW Water Resources Commission, Sydney

APPENDIX B

QUESTIONNAIRE USED IN LISMORE AND ECHUCA

(This example from Lismore)

INTERVIEWER TO COMPLETE AFTER INTERVIEW OR IF INTERVIEW IS REFUSED OR HOUSE VACANT.

Interviewer ----------

ADDRESS _____

	Date/time		Call backs	
A.	Interview Obtained			
	appointment made			
	refused			
	Not home			
	House vacant			
	House abondoned			

IF VACANT ASK NEIGHBOURS HOW LONG IT HAS BEEN VACANT _____

DWELLING

B. Type of dwelling - house ☐
subdivided house ☐ specify _____
semi-detached ☐ " _____
flats ☐ " _____
other ☐ " _____

C. Material of outer walls-
brick ☐
concrete ☐
wood ☐
fibro ☐
other ☐ specify _____

D. Condition of house (see explanatory sheet)
very good ☐ NEW ☐
good ☐
fair ☐
poor ☐
very poor ☐

E. Size of house (see explanatory sheet)
small ☐
medium ☐
large ☐

F. House raised ☐ → height _____ metres ___ How? steel ☐
not raised ☐ wood ☐
brick ☐
closed in ☐
other ☐ _____

SPACE UNDER HOUSE
Used ☐ → Specify _____
Not used ☐ _____

G. Sex of respondent -Female ☐
male ☐

H. Estimate of respondents age -
18 - 29 ☐
30 - 39 ☐
40 - 49 ☐
50 - 59 ☐
60 + ☐

I. Owner ☐
Rent ☐

J. Ethnic origin _____

I. Any other information _____

Hello, my name is _____. I'm from the Department of Geography at the Australian National University. We are carrying out research into the affects of flooding in this area. A letter about the survey was sent here a few days ago. The aim of the study is to help planners deal with floods. The interview results are confidential and will only be reported in combination with those of other people. The interview should take about 30 minutes. We would greatly appreciate your assistance.

Before getting on to floods I'd just like to ask you a few questions about your background.

1. When did you move to North Lismore/Ballina Bridge & Victoria St (DESCRIBE AREA WE ARE REFERRING TO) (IF BORN HERE GO TO QUESTION 3 4)

2(a) When you moved here in - (year) _____ what was it that made you come to North Lismore/Ballina Bridge, Victoria and Molesworth Sts. area?

(b) Was the cost of housing important in your decision to come to North Lismore/Ballina Bridge, Victoria and Molesworth Sts. area?

NO ☐
YES ☐

(c) Why was it that you chose this particular house?

(d) Which of the reasons was most important in your decision to come to this area. (repeat reasons if necessary). Which was next most important? etc. (RANK REASONS)

MOST IMPORTANT _____

LEAST IMPORTANT _____

3. Are you likely to leave this address within the next 12 months?

☐ Definitely will move
☐ Quite likely to move
} Why do you intend to move? _____

☐ Not sure
☐ Unlikely to move
☐ Definitely will stay
} GO TO QUESTION 5

4. (FOR MOVERS)

Would you prefer to stay but find it too difficult?

NO ☐ → GO TO QUESTION 7
YES ☐ → Why would it be too difficult to stay? GO TO QUESTION 6

_____ 39 40

5. (FOR STAYERS & NOT SURE)

Would you prefer to leave but find it too difficult?

NO ☐
YES ☐ → (a) Why would you prefer to leave? 41

_____

(b) What makes it toc difficult? 42 43

_____ 44 45

_____

6. As you have lived here for some time and know the area, I am interested in why you stay here.

(a) What is it in particular that keeps you in North Lismore/Ballina Bridge, Victoria and Molesworth Sts. area? 46 47

_____

_____

_____

(b) Is the cost of housing important in your decision to stay in North Lismore/Ballina Bridge, Victoria and Molesworth Sts. area? 48

NO ☐
YES ☐

(c) Are the people in this area (North Lismore/Ballina Bridge, Victoria are Molesworth Sts. area) important in your decision to stay here? 49 50 51

NO ☐
YES ☐ → In what way? _____

_____

(d) Is there anything about this particular house that keeps you here? 52 53 54

NO ☐
YES ☐ → What? _____

_____

55

(e) Which of the reasons is most important in keeping you in this area? (repeat reasons if necessary). Which is next most important? (RANK REASONS) 56

MOST IMPORTANT _____ 57

_____

_____

LEAST IMPORTANT _____ 58

7. What would you say are the disadvantages of living in North Lismore/ Ballina Bridge, Victoria and Molesworth Sts. area? (PLEASE RANK IN ORDER OF IMPORTANCE . FROM 1 = MOST IMPORTANT)

_____ 59

NO DISADVANTAGES ☐ REASONS

_____ 60

_____

_____

_____ 61

_____

8. Oo you own, rent or have free occupancy of this property?

☐ Own → Buying the house? ☐ NO ☐ YES
Own it outright? ☐ NO ☐ YES → was it inherited ☐ NO ☐ YES 62

☐ Rent

☐ Free occupancy → Oetails _____ 63

☐ Other → Specify _____

NOW I'D LIKE TO TALK ABOUT FLOODS AND WHAT YOU FEEL SHOULD BE DONE ABOUT THEM.

9. (a) Are floods a problem for people in North Lismore/Ballina Bridge, Victoria andMolesworth Sts. area? Would you say they are a: (READ OUT) 64

☐ Serious problem
☐ Problem 65
☐ Nuisance
☐ Not a concern 66
☐ Other _____

67

(b) What about for the rest of the City of Lismore, South Lismore, (North Lismore) the city centre - are floods a problem there? (TAKE DOWN COMMENTS)

_____

_____

_____

68 69 70

10. Did you know that this area was affected by floods when you first moved here?

☐ NO
☐ YES ⟶ Where did the information come from?
☐ DONT KNOW

Information came from:
☐ City Council
☐ Real estate agents
☐ Local people (neighbours)
☐ Owner/Prior owner
☐ Parents
☐ Own observation and experience
☐ Local flood map
☐ Other source ⟶ Specify _____
☐ Dont know
☐ People at work

71 72

11. Do you know of anything that has been done by government/to reduce the risk of flooding in Lismore? (Local, State, Federal)

☐ NO
☐ YES ⟶ What has been done? _____
☐ DONT KNOW

_____

73 74

12. Should anything (more) be done about flooding in Lismore?

☐ NO
☐ YES ⟶ What should be done? _____
☐ DONT KNOW

_____

_____

75 76

13. Do you think floods in this area can be stopped from occurring again?

☐ NO ⟶ Why do you say that? _____
☐ YES ⟶ How can they be stopped? _____
☐ DONT KNOW

_____

77 78 79

14. (a) If something (more) was to be done about floods in Lismore, who should be responsible for getting it done?

_____

_____

80 1

(b) Who should pay for it? READ OUT

☐ All Australian taxpayers
☐ N.S.W. taxpayers
☐ City of Lismore ratepayers
☐ Residents of the part of Lismore benefiting
☐ Other ⟶ Please specify _____

(c) Would you be willing to pay an increase in your rates to get something done?

NO ☐
YES ☐ How much of an increase per year as a proportion or percentage of what you pay now? _____
DONT KN. ☐

2 3 4

15. (a) Have you been involved to try to get something (more) done about floods?

NO ☐
YES ☐ ⟶ What? _____ GO TO QUESTION 16
D/K ☐

DETAILS

☐ Signed a petition _____
☐ Talked to local officials _____
☐ Attended a local meeting _____
☐ Other ⟶ Please specify _____

(b) What were the results of your actions? _____

_____

_____

_____

5 6 7 8 9

IN SOME FLOOD PRONE AREAS, STATE AND LOCAL GOVERNMENTS ARE THINKING OF ENCOURAGING PEOPLE TO MOVE TO FLOOD FREE AREAS BY OFFERING TO BUY THEIR PROPERTY. SUCH A SCHEME HAS BEEN UNDERWAY IN PARTS OF LISMORE FOR ABOUT TWO YEARS. A FEW PROPERTIES HAVE BEEN BOUGHT UP AND THE PURCHASE OF OTHERS IS BEING NEGOTIATED.

16. (a) Had you heard about this scheme?

NO ☐ GO TO QUESTION 17
YES ☐

If YES -

(b) Where did you hear about it? _____

_____

(c) What do you understand the scheme to be? _____

_____

(IF NECESSARY - PROBE - VOLUNTARY/COMPULSORY? - HOUSE VALUE/COMPO?)

_____

10 11 12 13 14 15 16 17

(d) Do you feel that people in this area will sell?

☐ NO
☐ UNLIKELY } Why do you feel that? _____
☐ MAYBE
☐ LIKELY
☐ YES } _____

(e) Could you tell me what areas are included in the scheme? (USE MAP)

_____

NORTH LISMORE/BALLINA BRIDGE, VICTORIA AND MOLESWORTH STS. AREA IS ONE OF THE AREAS CURRENTLY BEING BOUGHT UP.

17. (a) Do you think this is what should be happening to North Lismore/ Ballina Bridge, Victoria and Molesworth Sts. area?

NO ☐
YES ☐
Why do you say that? _____

_____

(b) Should it be happening anywhere else in Lismore?

NO ☐
YES ☐ →Where? _____

Why is that? _____

_____

18. How do you think you might benefit from the government scheme?

_____

(PROMPT - Getting away from floods)

_____

FOR OWNERS ONLY - IF RENTER GO TO QUESTION 23.

19. What incentives would it take to persuade you to sell your property to the scheme?

_____

_____

_____

Should not be encouraged to sell ☐

☐ 18
☐ 19
☐ 20
☐ 21
☐ 22
☐ 23
☐ 24
☐ 25
☐ 26
☐ 27
☐ 28
☐ 29
☐ 30

FOR OWNERS ONLY

20. I have a number of incentives that I'll read out to you. We are interested in how acceptable or unacceptable each of these are to you as an incentive to move.(PROMPT AND USE CARD).

	very accept	accept	unsure	unaccept	very unaccept
(a) An alternative equivalent house in a flood free part of Lismore. Would you find that....	---	---	---	---	---
(b) Flood free land & your present house moved there. Would you find that....	---	---	---	---	---
(c) Either equivalent flood free house, or land & your house moved there - in an area with your present neighbours	---	---	---	---	---
(d) Cash for your property at its present market value	---	---	---	---	---
(e) Cash for your property at its market value before the building restrictions were imposed here in 197 .	---	---	---	---	---
(f) Enough cash to buy an alternative equivalent flood free house	---	---	---	---	---

FOR OWNERS ONLY

21. Suppose flooding was controlled in some way, and you were offered a reasonable price for your house (ie. enough to buy another place), would you sell it?

☐ NO
☐ MAYBE
☐ YES
☐ DON'T KNOW

FOR OWNERS ONLY

22. (a) Have you considered selling your property to the government?

☐ NO Why? _____

_____

☐ YES Did you ☐ Decide to sell Why? _____

_____

☐ Decide against selling? _____

_____

☐ 31
☐ 32
☐ 33
☐ 34
☐ 35
☐ 36
☐ 37
☐ 38
☐ 39
☐ 40
☐ 41
☐ 42
☐ 43
☐ 44

(b) Has anyone contacted you over the possibility of selling to the scheme? 45

- ☐ NO
- ☐ YES
- ☐ DONT KNOW

(c) Have you contacted anyone in the council about selling your property to the scheme? 46

- ☐ NO
- ☐ YES
- ☐ DONT KNOW

(d) Has your property been valued by anyone as part of the government scheme? 47

- ☐ NO
- ☐ YES
- ☐ DONT KNOW

GO TO QUESTION 24.

FOR RENTERS ONLY

23. (a) Do you think your landlord is likely to sell to the scheme? 48

- ☐ VERY LIKELY
- ☐ LIKELY
- ☐ MAYBE
- ☐ UNLIKELY
- ☐ WON'T SELL
- ☐ DONT KNOW

(b) If the house is sold where will you go? _____ 49 50

_____

(c) How would having to move affect you? _____ 51 52

_____

FOR EVERYONE

24. (a) If your neighbours moved away and their houses were removed, how would you feel about selling (moving FOR RENTERS) then? _____ 53

_____

(b) Would you say the area would be as good as it is now or better if that happened? _____ 54

_____

25. How do you think you might lose from the scheme? 55 56 57

(PROBE — HOUSE/PROPERTY VALUES?; LEAVING HOME AREA?; FRIENDS/COMMUNITY? ETC...)

_____

26. As properties in parts of Lismore are sold to the government, what do you think should be done with the land? _____ 58

_____ 59

27. Suppose that the government wasn't buying up properties what do you think the future of this area would be? _____ 60

_____

27A Suppose you were going to move - where would you like to go? 61

_____

THANKS FOR YOUR VIEWS - NOW I AM INTERESTED IN YOUR EXPERIENCE WITH FLOODS.

28. (a) Since you've been in Lismore has flood water ever entered your house? 62

- ☐ NO
- ☐ YES — What year was that? _____
  How deep was the water on the worst occasion? _____
  Did you suffer much damage in the 1974 flood? _____

	YEAR	DEPTH (worst/most recent)	DAMAGE (1974)
		63 64	65

(b) Since you've been in Lismore has flood water ever entered your yard? 66

- ☐ NO
- ☐ YES

	YEAR	DEPTH (worst/most recent)	DAMAGE (1974)
		67 68	69

(c) Have you been flooded anywhere else you've lived?

Water in House? 70

- ☐ NO
- ☐ YES

	YEAR	DEPTH (worst/most recent)	DAMAGE (1974)
		71 72	73

Water in Yard? 74

- ☐ NO
- ☐ YES

	YEAR	DEPTH (worst/most recent)	DAMAGE (1974)
		75 76	77

29 (a) Have you yourself ever done anything to reduce the risk of flood damage to your property? READ OUT LIST 78

- ☐ NO
- ☐ YES — Have you...
  - ☐ Raised House - When? _____
  - ☐ Leveed house/yard
  - ☐ Insurance or war service loan
  - ☐ Plan to cope with next flood
  - ☐ Boat
  - ☐ Temporary accommodation
  - ☐ Other Specify _____

CARD 3

79 80 1

IF HOUSE IS NOT RAISED GO TO QUESTION 30. 2

(b) What are the advantages of having a house raised like this?

_____ 3

_____

10.

(c) Are there any disadvantages?

☐ NO ⟶ (PROMPT - What about the steps etc.)_____
☐ YES ⟶ What are they? _____

_____

_____

30. Has anywhere you've worked been flooded?

☐ NO
☐ YES ⟶ When was that? _____
How serious was it? _____

_____

31. (a) Does a flood in Lismore affect your normal daily routine, such as going to work, shops, school etc?

☐ NO
☐ YES ⟶ How? _____

For how long? _____

(b) What about things that are not needed everyday like the doctor, hospital, & other emergency services - does a flood affect your access to them?

☐ NO
☐ YES ⟶ How? _____

For how long? _____

32. (a) Were you here in the 1974 flood?

☐ NO — GO TO QUESTION 33
☐ YES — Were you able to cope without outside assistance? (List)

_____

(b) Were there any particular aspects of the 1974 flood that caused you concern?

☐ NO
☐ YES ⟶ Specify _____

_____

Water depth? ⟶ NO ☐ YES ☐
Water speed? ⟶ NO ☐ YES ☐
Debris/rubbish in water NO ☐ YES ☐

33. Lismore has had a number of floods over the last 20 years. Over the next 20 years how many floods do you think might enter

Your house? _____
Your yard? _____

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

11.

NOW, TO FINISH OFF I HAVE A FEW QUESTIONS ABOUT YOURSELF AND LISMORE.

34. Do you (if Family - or members of your household) belong to any local clubs or associations, including local government committees, council, etc.?

Name of Organisation	Meeting Place	Active Member	Committee Member
NONE ☐			

35. (a) Do you have any relatives in North Lismore/Ballina Bridge, Victoria & Molesworth Sts. area, that you keep in touch with?

☐ NO
☐ YES ☐ How many households? _____

(b) What about in the rest of Lismore? Do you have any relatives that you keep in touch with?

☐ NO
☐ YES ☐ How many households? _____

36. (a) Do you have any close friends in North Lismore/Ballina Bridge, Victoria & Molesworth Sts. area?

☐ NO
☐ YES ☐ How many households? _____

(b) What about the rest of Lismore?

☐ NO
☐ YES ☐ How many households? _____

37. How many people live here? Over 18 _____
Under 18 _____

38. Which of these best describes your household. READ OUT

☐ Young single person
☐ Single parent with children
☐ Young group house
☐ Young/mature couple
☐ Couple with young children
☐ Couple with schoolage children ⟶ Which school? _____
☐ Couple with mature family
☐ Elderly couple
☐ Elderly single person
☐ Other (eg. extended family) Specify _____

26 27 28 29 30 31 32 33 34 35 36 37 38 39

12.

39. (a) Where were you born? _____ IF LISMORE ASK SUBURB/STREET. ☐ 40

(b) (IF APPLICABLE) where was your spouse/partner born? _____ IF LISMORE ASK SUBURB/STREET. ☐ 41

IF IN HOUSE LESS THAN 20 YEARS

40. Before you came here where did you live? ☐ 42

When did you move here? ☐ 43
(If numerous moves ask how many moves in the last year. The 4 yrs before that & the 15 years before that.) ☐ 44
(REPEAT TO 1961)

PLACE	WHEN MOVED THERE

☐ 45 ☐ 46 ☐ 47 ☐ 48

41. (a) Is your family from this area:

☐ NO
☐ YES ☐ 49

(b) (IF APPLICABLE) Is your spouses/partners family from this area?

☐ NO
☐ YES ☐ 50

42. Have you travelled in the last 10 years? (READ OUT) ☐ 51

☐ Interstate
☐ Overseas
☐ Local (Northeast NSW)
☐ None

43. Are you employed? ☐ NO → Are you retired? ☐ NO → Are you looking for work? ☐ NO ☐ 52
☐ YES ☐ HOME DUTIRES ☐ YES ☐ NO ☐ YES
☐ OCCASIONAL WORK

What is your present job (if unemployed or retired, last main job). ☐ 53 ☐ 54 ☐ 55

(NATURE AND LEVEL) _____

_____

13.

(b) IF APPLICABLE - SAME QUESTIONS FOR SPOUSE/PARTNERS ☐ 56

Is your spouse employed? ☐ NO → Retired? ☐ NO → Looking for work? ☐ NO
☐ YES ☐ HOME DUTIES ☐ YES ☐ YES
☐ OCCASIONAL WORK

What is his/her present job (if unemployed or retired, last main job). ☐ 57 ☐ 58 ☐ 59

(NATURE AND LEVEL) _____

44. How much education do you have? ☐ 60

☐ No schooling
☐ Primary
☐ Some primary (4yrs age 10)
☐ Some secondary
☐ Secondary - school certificate (4 years)
☐ - higher school certificate (5/6 years) ☐
☐ Technical college/trade certificate
☐ Bachelors degree (Uni or C.A.E.)
☐ Higher degree (Masters/Ph.D)
☐ Other (specify) _____ ☐ 61

45. Would you tell me what age category you fit into.
How old are you? _____

☐ <20 ☐ 60-69
☐ 20-29 ☐ 70-79
☐ 30-39 ☐ 80-89
☐ 40-49 ☐ >90 ☐ 62

46. Finally I would like to get your reaction to several statements. Based on your experience and the way things are going for you now, would you tell me whether you agree or disagree with the following? ☐ 63 ☐ 64

	Agree	Disagree	
(a) There's little use in writing to public officials because often they are not really interested in the problems of the average person.	___	___	☐ 65 ☐ 66
(b) Nowadays a person has to live pretty much for today and let tomorrow take care of itself	___	___	☐ 67 ☐ 68
(c) In spite of what some people say, the lot of the average person is getting worse.	___	___	☐ 69 ☐ 70
(d) It's hardly fair to bring children into the world with the way things look for the future.	___	___	
(e) These days a person doesn't really know who he or she can count on.	___	___	☐ 71 ☐ 72

47. Do you have any comments on the acquisition scheme - floods?

Floods/Acquisition _____

This community/survey _____ ☐ 73 ☐ 74 ☐ 75

THANK RESPONDENT FOR HIS/HER TIME AND COOPERATION

48. Int. Att.

Enthusiastic ___, Cooperative ___, Ambivalent ___,
Uncooperative ___, Hostile ___, Other Comments _____

_____ ☐ 76

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