

### 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 improvement 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, 1980-1). 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, 1981-1).

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 Goonellabah 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 politicians were content with the compromise because it freed the commercial district from regulation (McCartney, 1981-1). 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 embankments 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.<sup>1</sup> 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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<sup>1</sup>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 interviewers 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.