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ATTITUDES OF NEARBY RESIDENTS TOWARD ESTABLISHING SANITARY LANDFILLS

Dean T. Massey

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HIGHLIGHTS

To deal effectively with citizen opposition to landfill siting, State and local officials must concern themselves with the effect the newly established landfill will have on property values. This report gives the findings of a survey of resident attitudes toward landfills in four communities in Illinois, Indiana, and Wisconsin. The study found that factors associated with landfills which tended to cause declining property values included water pollution, blowing papers from the site, rodents and insects, and odors. Any plan regarding disposal sites needs to address such problems.

Of those respondents who felt their property values were affected by the landfills, most believed that these values declined. Those holding such an opinion were more likely to take action to express their feelings than were those who felt the disposal site did not affect their property values. In addition, the greater the value that a respondent placed on his property, the more likely he was to oppose the establishment of the disposal facility, and take action against it.

About 70 percent of the residents in the survey areas felt that proposed landfills should be established at least 1 mile from the residences. Those preferring a greater distance held a less favorable opinion of its establishment. The closer a respondent lived to a site, the more apt he was to be unfavorable toward it and to express his opinions about it.

Residents were concerned about how long their neighborhood's landfill would be in operation. Only about one-fifth felt it should be operated longer than 5 years. Those opposed to its establishment indicated a shorter length of time than did those favoring it.

In addition, using land for a reclamation site which would have been more appropriate for agriculture strengthened citizen opposition.

Therefore, to promote citizen support, landfills should be located as far as possible from residential areas, operated for as short a time as feasible, and be built on abandoned sand or gravel pits rather than on land better suited for agriculture. The control of truck traffic on local roads leading to the disposal sites will also promote support among citizens.

A number of promises made by State or local officials did little to encourage public acceptance of landfills. Promises relating to improved collection and disposal services, free access to the site, screening of the site, and development of the site as a future park or recreation area had little influence on the opinions of either the proponents or opponents. Concerns about open burning at the site and excessive noise had only moderate influence on such attitudes.

ATTITUDES OF NEARBY RESIDENTS TOWARD
ESTABLISHING SANITARY LANDFILLS

Dean T. Massey*

INTRODUCTION

Sanitary landfills are the major method of community solid waste disposal in the United States. A waste disposal site must comply with various State and local environmental protection and health standards, land use control regulations, and permit requirements. In addition, the distance between the disposal site and source of solid wastes must be close enough to permit economical operation.

State and local officials assigned responsibility for establishing and approving new sanitary landfills and other disposal facilities are faced with a dilemma. As communities grow in population and their citizens continue to increase their use of disposable products and containers, additional disposal facilities must be established for the larger amounts of wastes produced. Yet, when officials attempt to select and approve sites for these new facilities, they often encounter strong citizen opposition. Adverse public reaction may be strong enough at times and so well organized as to prevent the selection of a particular site for sanitary landfill purposes even though it otherwise complies with all of the technical, economic, and legal requirements. Cities and villages are experiencing particular difficulty in attempting to purchase sites for solid waste disposal outside their corporate boundaries. 1/

Objectives

The primary objective of the study is to identify and analyze the attitudes of citizens residing near proposed or newly established sanitary landfill sites in four survey areas toward the establishment of these facilities. Specific objectives are to analyze the attitudes of nearby residents in relation to factors that may influence those attitudes, identify the main factors

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1/ See American Public Works Association, Municipal Refuse Disposal, Public Administrative Service, Chicago, Ill. (3rd ed., 1970), pp. 93-98.

influencing the decision to favor or oppose the landfill's establishment, compare the residents' attitudes and factors influencing their decisions, and offer suggestions that may be helpful in reducing citizen opposition toward selecting sites for sanitary landfills. Results from the study will provide State and local officials with a greater understanding of public attitudes toward sanitary landfill site selection.

Hypotheses

At the start of the study it was hypothesized that residents located closest to the proposed or newly established landfills and those with the highest valued property would be more inclined to oppose the landfill's establishment. It was also hypothesized that the residents' fear of reductions in their property values was a major reason for opposing the landfill's establishment. Other hypotheses were that those opposed to a landfill would be more likely to take some action to express their attitudes and that those residents aware of a previously established landfill in their vicinity, particularly if it was not well operated, would be more inclined to oppose the landfill.

Among the factors investigated in the study that may influence residents' attitudes toward the establishment of landfills are residence location (farm versus rural nonfarm), distance between residences and landfill sites, desired length of time for operating landfills, awareness of a previously established nearby landfill, property values, and effect on property values of the proposed or newly established landfill.

Procedure

Four survey areas, two in Illinois and one each in Indiana and Wisconsin, were chosen for study. Appendix A provides more detail on the procedures for selecting the survey areas.

Both Illinois areas were located in agricultural use districts a few miles from Rockford. A sanitary landfill was successfully established at the Winnebago County Land Reclamation Site, while Rockford's effort to establish one in the town 2/ of Cherry Valley was unsuccessful due to citizen opposition. Even though the proposed and established sites were only 3 miles apart, each comprised a separate survey area. Cherry Valley was Rockford's first choice; when it was rejected, the site in Winnebago County was developed. Residents receiving questionnaires in Cherry Valley were asked to express their attitudes only on the proposed site, while those in Winnebago County were only asked to express their attitudes on the newly established landfill.

The Elkhart County Sanitary Landfill Site established south of the city of Elkhart in 1972 was selected for study in Indiana. Portage County's proposed

2/ "Towns" in Illinois, as used in this study, are unincorporated units of government into which Illinois counties are divided. See ILL. ANN. STAT. ch. 139, § 6 (Smith-Hurd 1964).

sanitary landfill site in the town ^{3/} of Stockton southeast of Stevens Point was selected in Wisconsin for study. A description of the survey areas and background information on the problems and controversy involved with nearby residents in establishing or attempting to establish the sanitary landfill sites in each of the four survey areas are provided in appendix B.

A questionnaire was developed and pretested at the Winnebago County Land Reclamation Site survey area. The pretest results were used to refine the format of the final questionnaire to be used in the four survey areas (see appendix C for the questionnaire).

Questionnaires were sent from September 1973 through March 1974 to each residence in the Cherry Valley, Stockton, and Winnebago County survey areas; because of the large number of residences in the Elkhart County survey area, a questionnaire was sent to only every other one. The response rate was about 83, 80, 61, and 55 percent for the Cherry Valley, Elkhart County, Stockton, and Winnebago County survey areas, respectively (app. table 1). (See appendix D for the tables.) Procedures for selecting the residents are provided in appendix A.

ANALYSIS OF RESIDENTS' ATTITUDES TOWARD PROPOSED OR ESTABLISHED LANDFILLS

Area Comparisons

Attitudes expressed by residents toward locating the proposed or newly established sanitary landfill in their neighborhood varied greatly by survey area (app. table 2). Almost all of the residents in the Cherry Valley survey area were opposed to the establishment of a landfill, compared to approximately one-half of the residents in the Stockton and Winnebago County survey areas. Residents opposed to such a facility in Stockton and Winnebago County were evenly divided between against and strongly against. Opposition to the landfill was the least in the Elkhart County survey area.

About one-third of the residents in Winnebago and Elkhart Counties favored establishing the landfill; however, only a few were strongly in favor. One of the reasons that a large percentage of residents in Winnebago County favored the landfill's establishment may be because they felt it was a better alternative to the proposed site in nearby Cherry Valley.

Only about one-seventh of the residents in Stockton held a favorable opinion. Much of the negative attitude was due to the residents' fear that their area would become a dumping ground for Stevens Point and to their concern with heavy truck traffic. A large percentage of the respondents to the questionnaires lived on the truck route between Stevens Point and the proposed landfill site.

^{3/} "Towns" in Wisconsin, as used in this study, are unincorporated units of government into which Wisconsin counties are divided. See WIS. STAT. § 60.01 et seq. (1975).

Resident Location and Attitude

Farm versus Nonfarm Residences

Stockton and Cherry Valley had the largest portion of farm residences (app. table 1). A large portion of the rural nonfarm residences in Stockton were located along County Trunk Highway B and in Arnott to the north and northwest, respectively, of the proposed landfill site. All of the rural nonfarm residences in Cherry Valley were located within 1 mile of the proposed landfill and most were within half a mile.

About three-fifths and three-fourths of the residences in Winnebago and Elkhart Counties, respectively, were rural nonfarm residences. Regardless of the location of their homes, almost all of the residents in the four survey areas lived in single-family dwellings rather than in mobile home or apartments (app. table 1). Six percent of the residents in Stockton lived in mobile homes and in most cases they were located adjacent to a farm home.

Influence on Attitude

A statistically significant relationship at the 5-percent level using the Chi square test with 4 degrees of freedom was found to exist between the residents' attitudes and the locations of their residences only for Elkhart County (app. table 2). Farm residents were more opposed to establishing a landfill than were rural nonfarm residents.

The relationship between farm and rural nonfarm residents indicated for Elkhart County did not exist in Stockton and Winnebago County. More rural nonfarm residents were either against or strongly against the proposed or established landfill in those two survey areas than were farm residents. The difference between the opposed rural nonfarm and farm residents was fairly large (15 percent) in Winnebago County.

Other factors must be taken into consideration when determining the relationship between attitude and resident location. Many of the nonfarm residents were located close to the established landfill in Winnebago County, while in Elkhart County most of them were located further away. Several of the nonfarm residences in Stockton were on the proposed truck route between Stevens Point and the proposed landfill site.

Distance of Residences and Attitude

Two analyses were made of the distance factor as it influenced residents' attitudes. The first related to the actual distance residences were located from the proposed or newly established sanitary landfill site. Under the second analysis, consideration was given to the residents' opinions of the proper distance a landfill should be located from residences. Residents may have had a preconceived opinion on the proper distance between landfills and residences and any violation of this preconceived opinion may have influenced their attitude toward the proposed or newly established landfill.

Distance from Landfill

Actual distance. Only a small portion of the residences in the survey areas were within half a mile of the proposed or established landfill (app. table 3). The majority of the residences were 1 mile or more from the site in all four survey areas.

Opinion of distance. The majority of residents in all sites indicated that the distance between a landfill and residences should be more than 1 mile (app. table 4).

Nearly a quarter of the residents in Cherry Valley made other comments relative to their opinions on distance. These indicated that the proper distance depends upon how well the landfill is operated, that the further a landfill is located from a residence the better, that solid wastes should be disposed of only by incineration or recycling, and that landfills should not be located in residential or good agricultural areas. Certain residents of Stockton expressed the opinion that distances could not be determined, and that landfills should not exist. Some residents in both Cherry Valley and Stockton indicated their displeasure with landfills by suggesting distances such as 50 miles.

Influence on Attitude

Actual distance. One would expect that residents located closest to the proposed or established site would be more opposed than those residing further away. Even though this hypothesis tended to be supported by the study, a statistically significant relationship using the Chi square test did not exist at either the 1- or 5-percent level between distance and attitude in three of the four survey areas (app. table 5). The reason for the lack of relationship in Stockton, Cherry Valley, and Winnebago County is that too many of the residents were either undecided or opposed (app. table 2), and too few of them resided within the first two distance categories (app. table 3). Only in Winnebago did any of the residents located under 1 mile from the landfill site have a favorable attitude toward it. A statistically significant relationship at the 5-percent level with 12 degrees of freedom was found to exist between distance and attitude in Elkhart County. Those residents located further away from the established landfill tended to be less opposed to it than those located closer.

Opinion of distance. It was hypothesized that the residents' opinions on what they felt to be the proper distance between landfills and residences would influence their attitudes towards the proposed or newly established landfill sites. The analyses confirmed this hypothesis. A statistically significant relationship was found to exist for Winnebago County at the 5-percent level with 8 degrees of freedom using the Chi square test (app. table 6). This same relationship existed for Stockton and Elkhart County at the 1-percent level with 4 and 6 degrees of freedom, respectively. As expected, this relationship showed that the further away residents felt landfills should be located from residences the more inclined they were to oppose the proposed or newly established landfill. For example, only a small proportion of the residents in

the town of Stockton and Winnebago and Elkhart counties indicating that the distance between landfills and residences should be 2 miles or more favored the proposed or newly established landfills, while only a small proportion of residents indicating the distance should be under half a mile opposed the sites.

Length of Time for Operating Landfills and Attitude

Preference on Time

One-half the residents in Stockton and about two-thirds in Winnebago and Elkhart Counties indicated a minimum of 2 years as the length of time a site in their neighborhood should be operated as a landfill (app. table 7). Approximately one-fourth of the residents in the towns of Stockton and Cherry Valley and Winnebago County indicated a preference of 5 years or more for operating a site, while the percentage in that time category for Elkhart County was somewhat lower.

A large proportion of residents in Cherry Valley and Stockton made other comments. Among these were, "Landfills should not exist at all," "Use incineration or recycling processes," "Fill in gravel pits," "The area is better suited to agricultural, residential, and recreational uses," ". . . do not need or want a landfill," "Only incinerator ashes should be placed in landfills," and "It is ridiculous to locate a sanitary landfill at a place there is nothing to be filled." Still other comments were, ". . . time period unimportant," ". . . depends upon operating condition of landfill and volume of solid wastes to be disposed," and ". . . until the site is completed as a landfill."

Influence on Attitude

Residents indicating that a sanitary landfill should be operated for shorter periods of time were expected to be more opposed to the proposed or newly established landfill than were those indicating a landfill should be operated for a longer period of time. Analysis of the data confirmed such a relationship. Using the Chi square test this relationship was statistically significant at the 1-percent level with 12 degrees of freedom for Elkhart County (app. table 8). Most of the residents favoring the proposed or established site preferred that a landfill be operated for 5 years or more. Nearly two-fifths of the residents believing that 2 to 5 years was a proper length of time for operating a landfill in Elkhart County favored the new site. The relationship illustrated by the analysis appears to indicate that a proposal to operate a landfill for a shorter period of time would probably assist in diffusing opposition. This, however, would increase the cost of solid waste disposal. Officials involved with planning for the landfills in Cherry Valley, Winnebago County, and Elkhart County anticipated operating them for 18 to 20

years, 4/ 10 years, 5/ and 4 years, 6/ respectively. The period of time for operating the proposed site in Stockton was finally reduced to 5 years. 7/

Awareness of Nearby Landfill and Attitude

Awareness of Nearby Landfill

A previously established landfill or dump was operating in the vicinity of three survey areas and within the fourth one. Rockford's landfill was closed when the Winnebago County Land Reclamation Site began operation, as was Elkhart's when the Elkhart County Landfill Site was established. The town of Stockton had maintained its own 2-acre landfill, where refuse was only occasionally covered, in the northern portion of the survey area for a number of years. 8/ Except in Stockton, a majority of the residents were unaware of these previously established landfills or dumps (app. table 9).

Almost all of the residents in Cherry Valley who were aware of a nearby landfill indicated it was not well operated, while most residents in Stockton held the opposite view (app. table 10). The high approval of the nearby landfill by the Stockton residents may have been because it was their own landfill. Just a little over one-half of the Elkhart County residents indicated that Elkhart's landfill was well operated.

Influence on Attitude

It was expected that residents aware of a nearby landfill, particularly if they felt it was not being properly operated, would be more inclined to oppose the proposed or newly established one. There does not appear to be a significant relationship between awareness of a nearby landfill and attitude (app. table 11). About the same percentage of residents opposed the proposed or newly established landfill regardless of awareness of a nearby landfill. The residents' opinions about the operation of the nearby landfill does not appear to have had much influence on their attitudes toward a new landfill in their neighborhood. For example, most of the residents in Stockton indicated that the nearby landfill was well operated (app. table 10), but over one-half of them opposed establishing the new landfill (app. table 2).

4/ City of Rockford and Winnebago County, Ill., City-County Planning Commission, Zoning Petition Recommendations, 99-70-W (Sept. 8, 1970), pp. 2-3.

5/ City of Rockford and Winnebago County, Ill., City-County Planning Commission, Zoning Petition Recommendations, 60-72-W (May 1972).

6/ Elkhart County, Ind., Board of Zoning Appeals, Minutes of Meeting, Nov. 18, 1971, pp. 5-7.

7/ Portage County, Wis., Sanitary Landfill Commission, Minutes of Meeting, May 22, 1972; id., June 12, 1972; id., June 15, 1972; id., June 26, 1972.

8/ See Max Anderson Associates, Solid Waste Disposal Plan for Portage County, Wis., Madison, Wis. (Feb. 1, 1972), pp. 12-13.

Operation of New Landfill in Manner Expected and Attitude

Operation of Landfill

One-fourth of the residents living in those areas where new sanitary landfills were established--Winnebago and Elkhart Counties--indicated that the landfills were not being operated in the manner expected (app. table 12), and the majority of these felt it was being run worse than expected. Respondents indicating worse operation than anticipated cited refuse falling from trucks onto the highway, loose papers blowing around the area adjacent to the landfill site, failure to pick up loose papers as promised, failure to cover wastes with earth shortly after disposal, strong odors, rodents, and excessive noise.

Factors relating particularly to Winnebago County were that rural residents in the vicinity of the site were charged for using the landfill, that many of the promises made at the board of zoning appeals hearing were not kept, and that water seeping from the fill area was being pumped into a nearby stream and was killing the fish and wildlife.

Elkhart County residents complained that the excessive clay content of the soil prevented drainage, causing the site to be muddy. The unloading area was often so muddy that small cars and trucks got stuck. Other complaints from that survey area were that the landfill was too expensive for small users, the site was closed on Saturday afternoons, and there was no standard policy for charging users.

Those residents indicating the landfill was being operated better than expected remarked that the operators were taking good care of the site and doing a good job in keeping the highway clean and the papers picked up around the area. Other affirmative factors were that the landfill was clean, orderly, well supervised, and odorless, and that the refuse was constantly being covered.

Influence on Attitude

Analysis of the data showed that most of the residents indicating the newly established landfill was not being operated in the manner expected were opposed to the landfill's establishment in the first place (app. table 13). It appears that the residents' attitudes toward the establishment of the landfill influenced their opinion on the manner in which the landfill was being operated after it was established.

Action Taken to Express Attitude

Action Taken

A much larger proportion of the residents in Cherry Valley indicated they took some type of action to express their attitudes on the proposed landfill than did residents of Stockton and Winnebago and Elkhart Counties (app. table 14). Action taken to express attitudes on the proposed or established landfill site included writing letters to political representatives, attending meetings

and public hearings, participating in fundraising drives, circulating and signing petitions, and employing attorneys.

Attitude as Influence on Action Taken

Significant relationships exist between action taken by residents to express their attitudes, and their attitudes regarding the proposed or newly established sanitary landfill (app. table 15). Even though the analysis indicated that action cannot entirely be equated with a negative attitude, it clearly indicated that it is more difficult to mobilize support for a landfill than opposition.

Action Taken and Property Value, Resident Location, and Distance

Analyses were made of the relationships between the action taken to express attitudes and property values, resident location, and distance between the proposed or established site and residences. Except for Stockton, the analysis of data appeared to indicate that those residents with a higher property value were more likely to take some action to express their attitudes than those with a lower property value (app. table 16). Residents in Stockton taking action to express their attitudes were fairly evenly spread among the various value categories.

Individual survey areas differ greatly as to whether farm or rural nonfarm residents were more inclined to take action to express their attitudes (app. table 17). A large proportion of residents taking action in Cherry Valley and Stockton lived on farms, while the opposite was true in Winnebago and Elkhart Counties.

Except for Winnebago County, the percentage of residents taking action within a particular distance category decreased as the distance categories moved further away from the proposed or newly established landfill site (app. table 18). A statistically significant relationship between taking action and distance existed at the 1-percent level with 3 degrees of freedom using the Chi square test for Elkhart County. Such relationships did not exist for the other survey areas.

Affiliation with Groups Taking Action and Attitude

With the exception of Cherry Valley, few residents affiliated with a group took action to express their attitudes concerning the location of the proposed or newly established landfill (app. table 19). A formal group was established by some of the prominent community leaders in Cherry Valley to conduct fundraising drives and to initiate litigation designed to prohibit Rockford from proceeding with its proposal to establish the landfill.

A committee was also formed to oppose the proposed landfill in Stockton. Members of that committee appeared at most meetings of the Portage County Sanitary Landfill Commission during 1972.

The relationship between affiliation with a group and the residents' attitudes toward the proposed or established landfill is statistically significant at the 1-percent level with 4 degrees of freedom using the Chi square test in Stockton and Elkhart County (app. table 20). Significant relationships did not exist for the other two survey areas. With the exception of one resident in Elkhart County, all of the remaining residents affiliating with a group were opponents of the landfill sites. At least three-fourths of the opponents joining a group in each survey area were strongly against the proposed or established landfill.

Property Values and Attitude

Property Values

Except for Stockton, a majority of the residents in the other three survey areas estimated their current property values to be over \$20,000 (app. table 21). There appears to be little difference in the percentage of farm and rural nonfarm residences in each of the value categories. A much larger proportion of rural nonfarm residents in Stockton estimated their property values at less than \$20,000 than did the farm residents. A higher percentage of farm residents valued their property at \$40,000 and above in Winnebago and Elkhart Counties than did rural nonfarm residents.

Influence on Attitude

It was hypothesized that residents with higher valued property would more likely oppose establishing landfills than those residents with lower valued property. The results of the survey do not indicate this to be true in Stockton, Cherry Valley, or Winnebago County (app. table 22). The majority of the residents in these three areas were either undecided or against the proposed or newly established landfill. However, three-fifths of the residents in Winnebago County estimating their property values to be at \$40,000 and above favored the landfill. On the other hand, property values and attitude did exhibit the expected relationship in Elkhart County.

Effect Landfills Had on Property Values and Attitude

Concern with loss of property values was hypothesized as being one of the major factors causing opposition to establishing landfills. Residents were asked to provide their opinions on the effect the proposed or newly established landfill had on their property values. Those answering were next asked to indicate their opinions on whether their property values were raised or lowered. Residents' opinions on loss of property values were examined in relationship to their attitudes toward the proposed or newly established landfill, action taken to express their attitudes, resident location, distance between residences and landfill, and opinions on the value of their property.

Effect on Property Values

The residents' opinions on the effect the proposed or newly established landfills had on their property values varied considerably among the survey areas (app. table 23). In Cherry Valley, the majority of the residents indicated the proposed landfill affected their property values. Less than one-quarter of the residents in Stockton and Elkhart County indicated the same thing. The residents in Winnebago County were fairly evenly divided in their opinions.

Property Values Raised or Lowered

Those residents answering the previous question in the affirmative were asked their opinions on whether the proposed or newly established landfill raised or lowered their property values. Except for one resident in Winnebago County, all the others in the four survey areas answering the question indicated the landfill lowered their property values (app. table 24).

Loss of Property Values as Influence on Attitude

An analysis was made of the relationship between the residents' opinions on loss of property values and their attitudes toward the proposed or newly established landfill. (Only losses were used because all except one resident indicated a decline in property values.) Those residents stating that the proposed or newly established landfill lowered their property values were assigned a "yes" in appendix table 25 and all others were assigned a "no."

If opinion that property values will decline is one of the major factors in determining citizen opposition to landfill site selection, a relationship should exist between the residents' opinions of property value losses and their attitudes toward the proposed or newly established landfill. Those residents believing that their property values have declined due to the proposed or newly established landfill should be relatively more opposed to its establishment.

A statistically significant relationship at the 1-percent level with 4 degrees of freedom using the Chi square test existed between the residents' opinion of property value losses and their attitudes toward the proposed site in Stockton and the newly established landfill in Elkhart County (app. table 25). That same relationship existed at the 5-percent level with 4 degrees of freedom in Winnebago County. All of these relationships were in the predicted direction with the residents indicating that their property values had declined being more likely to exhibit negative attitudes toward the proposed or newly established landfill.

Loss of Property Values and Action Taken to Express Attitude

A statistically significant relationship at the 1-percent level with 4 degrees of freedom using the Chi square test existed between the residents' opinions on loss of property values and action taken to express their attitudes

about the proposed or newly established landfill in Stockton, and Winnebago and Elkhart Counties (app. table 26). Over one-half of the residents in each survey area indicating that their property values decreased took some action to express their attitudes. Even though some residents indicating their property values were unaffected by the proposed or newly established landfill did take some action, the percentage was low in two survey areas. Only in Cherry Valley was the percentage high.

Loss of Property Values and Resident Location

Of the residents in Stockton and Cherry Valley indicating an opinion that their property values declined because of the proposed or newly established landfill, a majority were farm residents (app. table 27). A majority in the other two survey areas were nonfarm residents. Farm residents comprised a majority of those in Stockton and Cherry Valley indicating their property values were unaffected, while rural nonfarm residents comprised a majority in the other two survey areas. These figures are about the same proportion as the farm and rural nonfarm residents in each survey area.

Loss of Property Values and Distance from Landfill

At least one-half of the residents in Stockton, Cherry Valley, and Winnebago County indicating that the proposed or newly established landfill lowered their property values were located 1 mile or more from the site (app. table 28). That figure was reduced to one-third in Elkhart County. The largest proportion of residents in Elkhart County indicating their property values were lowered were located one-half to 1 mile or more from the landfill.

Over two-thirds of the residents in each survey area indicating their property values were unaffected resided 1 mile or more from the proposed or newly established landfill.

Loss of Property Values and Value of Property

A pattern appeared to exist between the residents' opinions on the loss of property values and their opinion on the value of their property (app. table 29). Residents with higher property values were more apt to feel that proposed or newly established landfills caused property value losses than did those with lower property values.

Factors Affecting Attitudes Toward Landfill Site

This section ranks and discusses those characteristics relating to the establishment and operation of a landfill that may have been significant in formulating the residents' attitudes toward the proposed or newly established landfill. The questionnaire provided two lists, each of which contained 15 factors for the resident to check with regard to the degree of influence-- "much," "some," or "none"--each had on his or her ultimate decision to either

favor or oppose the landfill's establishment. Residents who were undecided about the landfill were excluded from this analysis. Those residents who favored the landfill checked one list of factors while those opposed checked the other list. The two lists of factors, however, were quite similar. Also, residents were given an opportunity to add other factors to the list. Factors given by the residents favoring the site are referred to as "positive attitude factors" and those by the opponents as "negative attitude factors."

A procedure was devised for ranking the factors by transforming the scores for them and computing averages for each one. Through the transformation procedure "much" was given a score of 2, "some" a score of 1, and "none" was scored 0. These scores were totaled for each factor and divided by the total number of residents indicating "much," "some," and "no" influence for that particular factor to give an average score for the factor.

Based on the average for each factor, the factors were ranked from highest to lowest based on a scale of 1 to 15 for each survey area, where "1" is the highest and "15" the lowest (app. tables 31 and 33).

Positive Attitude Factors

Factors given by the residents with favorable attitudes toward the proposed or newly established landfills were analyzed and ranked to assess their relative importance. The factors and their respective amounts of influence indicated by the residents are set forth in appendix table 30.

Disregarding Cherry Valley (since only one resident there had a favorable attitude), several of the 15 factors were given by at least one-half or more of the residents in the other survey areas as having had "much" influence on their favorable decision. The most frequently mentioned factor given by those residents were promises to prevent insects and rodents, open burning at the site, water pollution, and blowing papers. With few exceptions, neither a high nor very low portion of the residents indicated that any of the factors had "some" influence on their decisions to favor the proposed or newly established landfill. Only in Stockton were many of the factors indicated by one-half or more of the residents as having had "no" influence on their decisions.

When ranked, the common promises made by local officials in planning for landfills appeared generally to be the highest ranking factors given by the residents for favoring a landfill's establishment. These were to prevent insects and water pollution, prohibit open burning, and limit blowing papers and odor (app. table 31). Factors that appeared to rank low were promises to limit the period of time the site was to be used as a landfill; promises to limit dust, noise and truck traffic; and promises to develop the site for recreational purposes after the landfill was completed. Promises to develop recreational areas were made by local officials in Stockton and Cherry Valley.

Most of the high ranking factors given by the residents in Elkhart County were consistent with the requirements imposed by the county board of zoning appeals when it approved the application for a special use permit to establish

the landfill. 9/ It was not surprising that the factor "site far enough away from my residence" ranked high in that survey area because three-fourths of the residents favoring the site resided 1 or more miles from it. The factors having the least influence on the residents' decisions to favor the landfill--promises to limit noise and truck traffic and to develop the site as a future park--were consistent with the action taken by local officials in planning the site. None of them were promised or even given as a requirement by the county board of zoning appeals in issuing the special use permit.

Residents in Winnebago County ranked "best site in the area for disposal of solid wastes" first as the factor having influenced their decisions. This is probably because the site was an abandoned sand and gravel pit and an alternate to the contested proposed landfill in Cherry Valley. Other high ranking factors were promises to prohibit open burning, screen the site, prevent insects and rodents, prevent water pollution, limit blowing papers and odors, and provide sufficient distance between the site and residences. 10/ Low ranking factors for the survey area were no anticipated reduction in property values, promises to limit noise and truck traffic, and free waste collection or access to the landfill.

Factors for the favorable attitudes toward the proposed site in Stockton had relatively low averages compared to Winnebago and Elkhart Counties. Ranking factors in Stockton included best site available, free access to the landfill, site development as a future park, promises to prevent insects and rodents, limit blowing papers, prohibit open burning, prevent water pollution, and limit odors. Three of the high ranking factors (promises to prevent water pollution, best available site, and free access to the landfill) are puzzling because two of the arguments used by the opponents to the proposed site were that the landfill would pollute nearby Bear Lake and the donated land was not the best available site; also Portage County did not intend to permit access to the landfill by local residents with or without a charge. 11/ Low ranking factors included promises to screen the site, limit dust, limit noise, and limit the period of time the site would be used for landfill purposes.

Negative Attitude Factors

Factors given by the opponents of the proposed or newly established landfill were analyzed and ranked to assess their relative importance. The factors and their respective amounts of influence indicated by the residents are set forth in appendix table 32.

Four factors--possible odor, possible water pollution, possible heavy truck traffic on local roads leading to the landfill site, and possible

9/ See appendix B, note 54 and accompanying text. See also Elkhart County, Ind., Minutes of Meeting, note 6.

10/ See appendix B, note 44 and accompanying text. See also Zoning Petition Recommendations, 60-72-W, note 5.

11/ See appendix B, notes 9 to 11 and accompanying text. See also Portage County, Wis., Minutes of Meeting, note 7, Apr. 15, 1972; id., May 1, 1972; id., May 22, 1972.

reduction in property values--were given by one-half or more of the residents in each survey area as having had "much" influence on their decisions to oppose the proposed or newly established landfill. Other factors given by at least one-half of the residents in three survey areas included concerns with possible insects and rodents, blowing papers from the site, and the possibility of their area becoming a dumping ground for other areas. Nine factors were checked by at least 70 percent of the residents in Cherry Valley.

Except in a few instances, a fairly low percentage of residents indicated that any of the factors had "some" influence on their decisions. The most commonly mentioned factors having "some" influence were concerns over noise and open burning at the landfill site.

All of the scores were "transformed," and the averages were computed (app. table 33). With a few exceptions, the negative attitude reasons were ranked similarly in each of the four survey areas.

Fear of possible reductions in property values emerged as the most important negative attitude factor in three of the four survey areas. The other negative factors that emerged as "more important" can each be seen as giving reasons or fears why a landfill would cause a decline in property values. Concern over loss of property value was expressed by the witnesses in the legal action involving the proposed landfill in Cherry Valley. Testimony was given that the smaller landowners would suffer losses in excess of 50 percent and larger ones would lose tens of thousands of dollars if the landfill was established. 12/

Concern with possible heavy truck traffic on local roads leading to the site was the second most important negative attitude factor given by the residents in Stockton and Winnebago County.

Four high-ranking negative attitude factors--concerns with possible water pollution, insects and rodents, blowing papers, and odor--can be grouped together because their counterparts, promises to prevent water pollution, prevent insects and rodents, limit blowing papers, and limit odor, emerged as high-ranking positive attitude factors. Problems associated with water pollution, insects and rodents, blowing papers, and odor are concerns that characterize both proponents and opponents of the landfill. These problems are uppermost in citizens' minds when they think about the operation of a landfill and must be dealt with seriously by any agency considering the establishment of a disposal facility.

It is easily seen how each of those four negative attitude factors might promote fears of declining property values through increasing operating expenses (and thus increasing tax expenditures), creating a general nuisance, adding to health problems, and generally making the area less attractive and comfortable for living. While the insect and rodent, odor, and blowing paper

12/ City of Rockford v. Winnebago County, No. 71-78 (Circuit Court, Winnebago County, Ill., Nov. 10, 1970), Abstract of Record, pp. 87-94, O'Connor v. City of Rockford, 3 Ill. App. 3d 548, 279 N.E.2d 356 (1972).

factors are self-explanatory, more explanation may be needed for the water pollution factor. This factor in some instances would seem to represent not just abstract concern with water quality but also personal problems. A few residents at some of the sites expressed concern with anticipated or observed contamination of wells on their property or streams running through their property from landfill seepage and runoff. These wells are obviously of concern for both hygienic and economic reasons. And the streams, too, often play a part in farm production and recreation. Concerns with water pollution emerged as the most important negative attitude factor in Stockton because of the fear of polluting Bear Lake in Standing Rocks County Park. 13/

The four "least important" negative attitude factors generally seemed to be the site not being screened, a future park not being developed when the landfill was completed, noise, and dust. A possible explanation why the screening question didn't have "much" influence on the residents' opposition was that the county in each instance made some type of screening or fencing a requirement. 14/

CONCLUSIONS

State and local officials responsible for establishing sanitary landfills can gain public support by concerning themselves with the effect the newly established landfill will have on property values. Officials should ensure that plans for such facilities address problems that bother citizens most. These include the possibilities of water pollution, rodents and insects, scattered papers from the site, and odors. Because these problems have detrimental effects on property values, they are of special concern to citizens residing near landfills. Agreements by officials to prevent such problems promote public support of the landfills.

According to the results of this study, those who feel the landfill will cause their property value to decline will oppose it to the greatest degree. In addition, while few residents organize to express their opinions regarding a proposed landfill, those who do will most likely be opposed to its establishment.

Heavy truck traffic on local roads and the use of land which is better suited for agriculture also discourage citizen support of landfills. Therefore, whenever possible, abandoned gravel and sand pits should be considered for sites.

Most citizens seem to prefer that the facility be located a minimum of 1 mile from the area of residence and be in operation for a maximum of 5 years. To encourage public support of a landfill, officials should plan to locate it as far as possible from residential areas, and operate it for as short a length of time as feasible.

13/ See appendix B, note 9 and accompanying text. See also Portage County, Wis., Minutes of Meeting, note 7, Feb. 28, 1972; Wis. Admin. Code §§ NR 151.12 (4)(a), (e).

14/ See appendix B, notes 16, 30, 44, and 54 and accompanying text.

STUDY PROCEDURES

Selection of Survey Areas

State and local personnel responsible for regulating solid waste management practices in Illinois, Indiana, and Wisconsin were solicited for assistance in identifying areas for study where recently proposed or established sanitary landfill sites were very controversial with nearby residents. A prospective survey area had to meet three prerequisites: (1) the new landfill or proposed site had to be located outside the corporate boundaries of a city or village and in an agricultural use district under the local zoning ordinance, (2) the primary reason for proposing or establishing the site had to be for disposing of solid wastes generated in nearby cities and villages rather than for those generated in the unincorporated area where the new landfill or proposed site was located, and (3) all litigation regarding the site's location had to be completed. Surveys conducted in areas where litigation was still pending could have caused undue hardship on both parties to the action.

The survey areas selected do not represent a random sample of all communities experiencing citizen controversy in selecting landfill sites, nor is the study intended to be a survey of all communities experiencing such controversy. Even though physical, geological, and geographical features; environmental considerations; political, social, and economic factors; and methods and procedures used by State and local officials in site selection may vary with the community, the attitudes and reasons for them expressed by the residents in the four survey areas studied should be applicable to other communities in the country. It also must be recognized that the residents in the two survey areas with operational landfills may respond to questions relating to previous attitudes differently than those in the survey areas where the landfills' establishment was unsuccessful.

Selection of Residents

The location of the proposed or newly established landfill site in each survey area was plotted on a plat map. Boundaries for each survey area were established by some distinguishable land feature such as a road or river that was about 3 miles from the proposed or established landfill. Regions were identified with radii of less than one-fourth mile, one-fourth to one-half mile, one-half to 1 mile, and 1 mile or more from the center of the proposed or established landfill in the Winnebago County Land Reclamation Site, Elkhart County Sanitary Landfill Site, and town of Stockton survey areas. The regions were measured from the boundaries of the proposed site in the town of Cherry Valley, rather than from the center because the site was 160 acres.

A list of residents living in each survey area was prepared using plat maps, tax assessment maps and rolls, and the county directory. Names on the

maps and assessment rolls were cross-checked with those in the county directory to insure that the list of residents included those actually living in the survey area. Absentee landowners were not considered to be residents.

Residents not responding to the first questionnaire were sent a second request and questionnaire a month later. A third request and questionnaire were sent in another month to those failing to answer the second request. Approximately 5 percent of the questionnaires were returned because of incorrect addresses or because the residents had recently moved or died.

APPENDIX B

DESCRIPTION OF SURVEY AREAS

This appendix provides a description of the survey areas and some background information on the procedures, problems, and controversy involved with nearby residents in establishing or attempting to establish the sanitary landfill sites. Such background information will enable a better understanding of the residents' attitudes and reasons for them.

Proposed Landfill Site in Town of Stockton, Wisconsin

In 1971 the city of Stevens Point and village of Whiting were disposing of their solid wastes in Stevens Point's landfill located in the floodplain of the Wisconsin River. 1/ As landfills in floodplains are in violation of both Wisconsin statutes 2/ and administrative regulations, 3/ the Department of Natural Resources (DNR) issued an order to close the landfill as soon as a suitable new disposal site could be established.

The Portage County Board of Supervisors directed its agricultural committee in the fall of 1971 to investigate possible sites to establish a county-owned sanitary landfill that could be used and operated by Stevens Point and the village of Plover. 4/ Legislation adopted earlier that year permitted counties to own and operate disposal facilities. 5/

At about the same time the agricultural committee began investigating possible sites, a farmer donated a 40-acre parcel of pasture land in the town of Stockton to the county for use as a sanitary landfill. This parcel was located adjacent to Standing Rocks County Park, approximately 10 miles south-east of Stevens Point.

With few exceptions, the land in the survey area is zoned for agricultural use under the Portage County Zoning Ordinance 6/ and is used for single family dwellings and farming. Public dumping grounds may be established in agricultural use districts under the ordinance when, after a public hearing and view of the proposed site, the board of adjustments approves in writing. The board must clearly define the area of each dumping ground at the time of approval and

1/ Max Anderson Associates, Solid Waste Disposal Plan for Portage County, Wis., Madison, Wis. (Feb. 1, 1972), p. 12.

2/ WIS. STAT. §§ 87.30, 144.46 (1975).

3/ See Wis. Admin. Code § NR 151.12(4)(b).

4/ Portage County, Wis., Sanitary Landfill Commission, Minutes of Meeting, Feb. 28, 1972.

5/ 1971 Wis. Laws, ch. 130, § 1, p. 330, WIS. STAT. § 59.07(135) (1975).

6/ See PORTAGE COUNTY, WIS., ZONING ORDINANCE (1967).

issuance of a permit. Approval must be based upon such evidence as may be presented at the public hearing that shows the desirability of the public interest, taking into consideration such factors as smoke, dust, noxious or toxic gases or odors, noise, vibration, operation of heavy machinery, heavy vehicular traffic, and increased traffic on the public streets. 7/

Early in 1972, and after the county had accepted the land for the landfill site, the chairman of the county board of supervisors created the Portage County Sanitary Landfill Commission and assigned it the responsibility for preparing plans and specifications to get the donated site approved by the Wisconsin Department of Natural Resources as a sanitary landfill. The commission met frequently throughout the year to discuss procedures for DNR approval, permit requirements, selection of alternate sites and disposal methods, and to listen to local citizen opposition to the selected site. 8/

A committee composed of citizens from the town of Stockton appeared at most of the sanitary landfill commission meetings to present their views. Some of their objections to the proposed site were that the land was chosen only because it was donated; it was designated as a future landfill 4 months before the commission was appointed; it would detract from using the 110-acre Standing Rocks County Park as a recreational facility; it did not meet DNR's criteria for an ideal landfill because the water level in parts of the area rises to within a foot of the surface in certain years; at least one-third of the site was outside the area classified by DNR as excellent for landfill purposes; and both the commission and the county board of supervisors refused to consider or furnish data regarding alternate sites. In addition, the citizens claimed that some residents would be able to see activities at the landfill, committee members were denied representation on the commission, and the site was located within 1,000 feet of a county park and two-fifths of a mile from Bear Lake contrary to Wisconsin administrative regulations. 9/ Further, the committee felt that the county planned to use the site as a landfill for 15 to 25 years, the site would present a fire hazard, and papers would be permitted to blow on neighboring land if a fence was not constructed, and that after the 40-acre site was completed, the county would have to purchase an adjacent 40 acres. 10/ Committee members made several suggestions including that the site be used for only 5 years, that three counties jointly operate a sanitary landfill for a short period of time, that abandoned gravel pits be used, and that the cities in Portage County contract with private collectors that use landfills in other counties. 11/

7/ Id., § IV(11).

8/ Portage County, Wis., Minutes of Meeting, note 4, Feb. 14, 1972; id., Feb. 28, 1972; id., Apr. 15, 1972; id., May 1, 1972; id., May 22, 1972; id., June 12, 1972; id., June 15, 1972; id., June 26, 1972; id., July 10, 1972; id., Sept 7, 1972; id., Sept. 22, 1972.

9/ Id., Feb. 28, 1972. See Wis. Admin. Code §§ NR 151.12(4)(a), (e).

10/ Portage County, Wis., Minutes of Meeting, note 4, May 1, 1972; id., May 22, 1972.

11/ Id., Apr. 15, 1972.

The sanitary landfill commission submitted an application to DNR late in the summer of 1972 for approval of the proposed site. By this time, they decided to have the landfill privately operated on a 5-year lease with the county holding the permit. The participating local governments would be responsible for hauling their own solid wastes to the landfill and assessing a service charge. Residents of the town of Stockton, where the proposed site is located, would not be permitted to use the landfill facilities. 12/

DNR tentatively approved the proposed site for use as a sanitary landfill on September 22, 1972. 13/ In its Report on Examination of Plans and Specifications for a Sanitary Landfill Operation, 14/ DNR listed the site characteristics and the development and operation requirements for the proposed landfill. Many of the site characteristics found by DNR were contrary to some of the claims made by the opposing citizens about the suitability of the site for landfill purposes. However, many of the conditions set forth by DNR, which would require operation in compliance with the Wisconsin Administrative Code and Portage County Zoning Ordinance, would alleviate some of the citizen complaints. 15/

According to the DNR report, access to the site would be provided by an entrance road from County Trunk Highway B, which would have to be prepared and surfaced to adequately support truck traffic. Other DNR requirements were a gate and fence at the site's entrance to control access, screening along the southern and eastern edge of the site by planting trees, and the construction of a portable fence around that portion of the site being used for disposal purposes to prevent blowing materials. When completed, the proposed site was to be used for recreational purposes and to have an irregular topography with a maximum 15 percent slope. 16/

After the Portage County Sanitary Landfill Commission decided to operate the proposed site under a private contract, it began accepting bids. Some of the contractors bidding wanted to use their own disposal facilities. 17/ It was finally decided to abandon the proposed site and contract with a private firm owning a landfill in another county. That firm now uses the closed

12/ Id., May 22, 1972; id., June 12, 1972; id., June 15, 1972; id., June 26, 1972.

13/ Letter from Ralph D. Darch, Acting Chief, Solid Waste Disposal Section, Bureau of Air Pollution Control and Solid Waste Disposal, Division of Environmental Protection, Dept. of Natural Resources, Madison, Wis., to James Konopachy, Chairman, Portage County Sanitary Landfill Commission, Stevens Point, Wis., Sept. 22, 1972.

14/ Wis. Dept. of Natural Resources, Report on Examination of Plans and Specifications for a Sanitary Landfill Operation in Portage County, Wis., Madison, Wis., Sept. 22, 1972.

15/ Id., See Wis. Admin. Code §§ 151.12(4)(a), (3); PORTAGE COUNTY, WIS., ZONING ORDINANCE § IV(11)(j) (1967) for requirements on distance between sanitary landfills and highways, recreation areas, streams and lakes, and residences.

16/ Wis. Dept. of Natural Resources, note 14.

17/ Portage County, Wis., Minutes of Meeting, note 4, June 26, 1972; id., July 10, 1972; id., July 20, 1972.

Stevens Point landfill site as a transfer station for the solid wastes it collects and charges each city, village, and town using its services on a per capita basis. 18/ The 40-acre donated parcel is still owned by Portage County and may be used for disposal purposes at some future date.

The 17,000-acre survey area consisted of several sections 19/ in the town of Stockton and a few in the towns of Amherst and Buena Vista. Residents responding to the questionnaire represent approximately 9,000 acres. A large amount of land in a few sections was owned by nonresidents. The survey area included Arnott, a small unincorporated village in the northwestern portion, and a couple of lakes surrounded by a few year-round and summer homes.

Proposed Landfill Site in Town of Cherry Valley, Illinois

Rockford selected a series of locations outside its corporate limits for possible landfill sites that were referred to the city of Rockford-Winnebago County Planning Commission staff for review. After review, the staff selected a 160-acre parcel of land in the town of Cherry Valley about 4 and one-half miles southeast of Rockford as having the most desirable characteristics for establishing a sanitary landfill. 20/

The proposed landfill site is flat, with very little relief and is used to produce agricultural crops. Most of the land surrounding the 160-acre parcel is used for farming; however, there are several rural nonfarm residents living on 5- or 10-acre lots to the north, northwest, and west of the proposed site. In some cases the lots were purchased to build homes and in other cases a 5- or 10-acre farmstead remained after the rest of the farm was sold to other farmers or divided into small parcels for rural nonfarm residences.

On April 21, 1970, the Rockford Public Works Department applied to the Illinois Department of Health for a permit to establish a sanitary landfill at the proposed site. That permit was issued by the State on May 4, 1970. In the meantime, on April 6, 1970, Rockford acquired an option to purchase the premises for the sole purpose of using it as a sanitary landfill. 21/

A few days after Rockford obtained the option to purchase the 160-acre site, several adjacent landowners and Winnebago County brought suit in the Circuit Court for Winnebago County to prevent the city from using the premises as a sanitary landfill until it complied with the Winnebago County Zoning

18/ Id., July 20, 1972; id., Dec. 6, 1972.

19/ A section consists of 640 acres.

20/ See generally City of Rockford v. Winnebago County, No. 71-78 (Circuit Court, Winnebago County, Ill., Nov. 10, 1970), Abstract of Record, pp. 32-51, O'Connor v. City of Rockford, 3 Ill. App. 3d 548, 279 N.W.2d 356 (1972).

21/ Abstract of Record, note 20, pp. 3-4.

Ordinance. 22/ The court found for the landowners and county. Rockford failed to appeal the decision. 23/

Sanitary landfills are permitted under the Winnebago County Zoning Ordinance as a special use in agricultural districts 24/ if approved by the county board of supervisors. 25/ Prior to action by the county board an application for a special use permit must be submitted to the county planning commission and zoning board of appeals for recommendations. 26/ The zoning board of appeals has a public hearing requirement before making its recommendation to the county board of supervisors. 27/

Rockford applied to the Winnebago County Zoning Board of Appeals for a special use permit on July 8, 1970, to establish the proposed sanitary landfill. 28/ According to the application Rockford would use its closed landfill as a collection point and transfer station. Only about 20 to 25 enclosed refuse vans would travel daily to the proposed site. Rockford voluntarily offered to maintain any county roads used for travel and erect signs along the routes to warn other users of the refuse vehicles. The application also stated that a weigh station, maintenance garage, and storage facilities would be located at the site in addition to a sufficient number of machines and vehicles to cover the refuse daily. After using the site for landfill purposes for 18 to 20 years, Rockford planned to convert it to recreational uses. 29/

The City-County Planning Commission recommended to the Winnebago County Zoning Board of Appeals at its September 8, 1970, hearing that Rockford's application for a special use permit be granted. Several recommendations were made for inclusion in the permit. Among them were that the city should operate the landfill in accordance with all applicable State laws and regulations, all operations at the site should be done during daylight hours, all solid wastes should be transported to the site in enclosed trucks, onsite roads and drives should have an all-weather surface and be maintained free of dust, and the city should assume all responsibility for maintaining the county roads used to transport the wastes from the transfer station to the landfill site. Other recommendations were that screening be established, landscaping provided, an orderly phasing plan for operating the site be developed so that each phase

22/ O'Connor v. City of Rockford, No. 71-124 (Circuit Court, Winnebago County, Ill.); WINNEBAGO COUNTY, ILL., ZONING ORDINANCE (1972).

23/ O'Connor v. City of Rockford, 3 Ill. App. 3d 548, 549, 279 N.E.2d 356, 358 (1972); O'Connor v. City of Rockford, 3 Ill. 2d 360, 361, 288 N.E.2d 432, 433 (1972).

24/ WINNEBAGO COUNTY, ILL., ZONING ORDINANCE art. V, § 16-28(3)(g) (1972).

25/ Id., art. XII, § 16-70(4).

26/ Id., art. XII, §§ 16-70(2)(a), (3)(c).

27/ Id., art. XII, § 16-70(3).

28/ Abstract of Record, No. 71-78, note 20, pp. 8, 28; O'Connor v. City of Rockford, 3 Ill. App. 3d 548, 549, 279 N.E.2d 356, 358 (1972); O'Connor v. City of Rockford, 52 Ill. 2d 360, 361, 288 N.E.2d 432, 433 (1972).

29/ City of Rockford and Winnebago County, Ill., City-County Planning Commission, Zoning Petition Recommendations, 99-70-W (Sept. 8, 1970), pp. 2-3. See also Abstract of Record, note 20, pp. 84-86.

would occupy only 20 acres, and that provisions be made for revocations of the permit for noncompliance. 30/ After its hearing the zoning board of appeals unanimously recommended to the Winnebago County Board of Supervisors that the application for the special use permit be denied. 31/

Following the zoning board of appeals' recommendations, the county board of supervisors, on September 17, 1970, denied Rockford's application for a special use permit. 32/ Rockford then brought a suit in the Circuit Court for Winnebago County asking that the portion of the county zoning ordinance applying to the proposed landfill be declared unconstitutional. 33/ After hearing the evidence the circuit court upheld the ordinance and approved the county board of supervisors' denial of Rockford's application. 34/ Rockford appealed the decision to the appellate court. 35/

Based on a recent decision of the Illinois Supreme Court, 36/ Rockford asked the Circuit Court for Winnebago County to change its previous decision in the case brought by the adjacent landowners and Winnebago County that required the city to comply with the county zoning ordinance before establishing a landfill at the proposed site. 37/ The circuit court changed its previous decision as requested by the city and the adjacent landowners and Winnebago County appealed to the appellate court. 38/

The two appeals (Cases 71-78 and 71-124) were consolidated for the appellate court. 39/ The appellate court approved the circuit court's decision to allow Rockford to establish the proposed landfill without compliance with the zoning ordinance. 40/ Winnebago County and the adjacent landowners appealed

30/ Zoning Petition Recommendations, 99-70-W, note 29, pp. 3-4.

31/ Abstract of Record, No. 71-78, note 20, pp. 28-29.

32/ *Id.*, pp. 8, 29; *O'Connor v. City of Rockford*, 3 Ill. App. 3d 548, 549, 279 N.E.2d 356, 358 (1972); *O'Connor v. City of Rockford*, 52 Ill. 2d 360, 361, 288 N.E.2d 433 (1972).

33/ *City of Rockford v. Winnebago County*, No. 71-78 (Circuit Court, Winnebago County, Ill., Nov. 10, 1970).

34/ See Abstract of Record, No. 71-78, note 20, p. 29; *O'Connor v. City of Rockford*, 3 Ill. App. 3d 548, 549, 279 N.E.2d 356, 358 (1972); *O'Connor v. City of Rockford*, 52 Ill. 2d 360, 361-62, 288 N.E.2d 432, 433 (1972).

35/ See *O'Connor v. City of Rockford*, 3 Ill. App. 3d 548, 549, 279 N.E.2d 356, 358 (1972); *O'Connor v. City of Rockford*, 52 Ill. 2d 360, 362, 288 N.E.2d 432, 433 (1972).

36/ *City of Des Plaines v. Metropolitan Sanitary District*, 48 Ill. 2d 11, 268 N.E.2d 428 (1971).

37/ *O'Connor v. City of Rockford*, No. 71-124 (Circuit Court, Winnebago County, Ill.). See note 22 and accompanying text.

38/ See *O'Connor v. City of Rockford*, 3 Ill. App. 3d 548, 549, 279 N.E.2d 356, 358 (1972); *O'Connor v. City of Rockford*, 52 Ill. 2d 360, 362, 288 N.E.2d 432, 433 (1972).

39/ *O'Connor v. City of Rockford*, 3 Ill. App. 3d 548, 279 N.E.2d 356 (1972).

40/ *O'Connor v. City of Rockford*, 3 Ill. App. 3d 548, 552, 279 N.E.2d 356, 360 (1972). See also *O'Connor v. City of Rockford*, 52 Ill. 2d 360, 362, 288 N.E.2d 432, 433 (1972).

this decision to the Illinois Supreme Court. 41/ That court found in favor of the county and landowners and held that Rockford could not establish the landfill until it obtained a permit to operate such a landfill from the new Illinois Environmental Protection Agency. 42/ Compliance with the county's zoning ordinance was not held to be a requirement. By the time the litigation was concluded on October 2, 1972, Rockford had already abandoned its option to purchase the 160-acre tract of land and decided to use the newly established landfill at the Winnebago County Land Reclamation Site.

About 6,500 acres in the 10,000-acre survey area is represented by the residents responding to the questionnaires. The survey area consists of several sections or portions of them in the Town of Cherry Valley. In addition, the western and southern portions of the survey area consist of land in the Town of Rockford and in Ogle County's Town of Monroe, respectively. Both the towns of Cherry Valley and Rockford are in Winnebago County.

Winnebago County Land Reclamation Site, Illinois

After it became apparent that Rockford would be unable to establish a landfill at its proposed site in the town of Cherry Valley, Rockford Blacktop Construction Company, the owner of a 19-acre parcel of land composed primarily of an abandoned sand and gravel quarry, asked the Winnebago County Zoning Board of Appeals for a special use permit under the county zoning ordinance to establish a sanitary landfill at that site. 43/ The quarry is located on Lindenwood Road in the town of Rockford, about 2 and one-half miles south of Rockford's corporate boundaries.

Several conditions were imposed by the zoning board of appeals on May 4, 1972, when it recommended approval of the company's application to establish the Winnebago County Land Reclamation Site. Among those conditions were that the operators would comply with all applicable State statutes and regulations and local zoning ordinances, all operations would be conducted during daylight hours, only enclosed transport vehicles would be used, all onsite roads would be all-weather surfaced and maintained free of dust, screening and landscaping would be provided, substantial pollution of groundwater would terminate the landfill's operation until the cause was corrected, and all solid wastes would be shredded or reduced in size prior to compaction. 44/

The permit issued by the zoning board of appeals became effective on November 10, 1972, and terminates on May 10, 1982. 45/ Rockford then entered

41/ See O'Connor v. City of Rockford, 52 Ill. 2d 360, 288 N.E.2d 432 (1972).

42/ O'Connor v. City of Rockford, 52 Ill. 2d 360, 367-368, 288 N.E.2d 432, 436 (1972).

43/ See WINNEBAGO COUNTY, ILL., ZONING ORDINANCE, art. V, § 16-28(3)(g) (1972) for requirements of a special use permit.

44/ City of Rockford and Winnebago County, Ill., City-County Planning Commission, Zoning Petition Recommendations, 60-72-W (May 1972).

45/ Id.

into a contract with the Rockford Blacktop Construction Company whereby the company would dispose of the city's solid wastes delivered to the Land Reclamation Site at a specified amount per ton for a 10-year period or until the quarry is filled.

All of the land in the immediate vicinity of the land reclamation site is zoned for agricultural use under the Ogle 46/ and Winnebago 47/ Counties zoning ordinances. Some of the land to the west and northwest of the landfill site is in residential, commercial, and industrial use zones. A small subdivision of single-family dwellings is located in the northwest portion of the survey area. Much of the land zoned industrial or commercial is vacant awaiting development. Land in the immediate vicinity of the landfill is used either for farming or single-family dwellings. A large number of residents close to the site and in the eastern portion of the survey area reside on small farms, or are rural nonfarm residents living on lots ranging from 1 to 10 acres in size.

Residents responding to the questionnaires control about 5,000 acres of the 6,500-acre survey area. The survey area includes portions of the towns of Rockford, Monroe, and Scott. Monroe and Scott are in Ogle County, while Rockford is in Winnebago County.

Elkhart County Sanitary Landfill Site, Indiana

Several sites for a sanitary landfill in the northern portion of Elkhart County were investigated by the board of county commissioners during 1971 and each was finally rejected because of citizen opposition and the failure of the sites to meet standards and guidelines set forth by the Indiana State Board of Health. Finally in the fall of 1971, the commissioners leased 40 acres of pasture and cropland in Concord township 48/ to establish the Elkhart County Sanitary Landfill Site. The parcel is located on County Road 7, approximately 1 and five-eighths miles south of the city of Elkhart's corporate limits. A special use permit had to be applied for by the landowners and issued by the county board of zoning appeals because the site is in an agricultural district. 49/

The landowners applied to the board of zoning appeals for a special use permit in the summer of 1971. That application was referred to the Elkhart County Plan Commission for investigation. Based on a field investigation conducted by the district soil scientist for the U.S. Soil Conservation Service on October 8, 1971, to determine the nature of the soil and physical land

46/ OGLE COUNTY, ILL., ZONING ORDINANCE (1965), as amended, Feb. 10, 1970.

47/ WINNEBAGO COUNTY, ILL., ZONING ORDINANCE (1972).

48/ "Townships" in Indiana are unincorporated units of government into which counties are divided. See IND. CODE § 17-4-4-1 (Burns 1972). "Towns" in Indiana are incorporated units of government and are similar in nature to villages in some other States; Indiana does not have villages. See IND. CODE § 18-3-1-1 et seq. (Burns 1974).

49/ See ELKHART COUNTY, IND., ZONING ORDINANCE, Specifications F, §§(a)(3), (21) (1960).

features of the proposed site, the technical committee for the plan commission concluded that the physical properties of the site were suitable for a sanitary landfill. 50/

Soil composition found at the site was desirable for landfill purposes, according to the soil scientist, because it contained sufficient amounts of clay, silt, and sand to restrict the leachate movement and was workable throughout most weather conditions. Even though a perched water table was observed at the site, the soil scientist did not feel that pollutants from the solid wastes would come in contact with the groundwater table. A well planned drainage system would have to be initiated to control excess surface water if the county wanted to use the entire area for landfill purposes and excavate deeper than 6 to 8 feet. In addition, the soil scientist recommended the construction of a hard surface all-weather access road from County Road 7 to the site. 51/

The county plan commission accepted its technical committee's report on November 4, 1971, and sent it to the Elkhart County Board of Zoning Appeals with the recommendation that the board approve the landowner's application for a special use permit. 52/ A public hearing was held on the application by the board on November 18, 1971. Several witnesses, both favoring and opposing granting the application, appeared before the board and testified. Those testifying in favor of the petition were primarily local officials and Elkhart businessmen who explained the need for a landfill in the northern portion of the county and the reasons for choosing this particular site. They stated that the only alternative was a more expensive transfer station and that the landfill would be operated in such a manner to prevent leachate, odor, insect, and rodent problems. The landfill would be operated for approximately 4 years and then revert back to its former agricultural use. The witnesses opposed to the petition were primarily nearby residents who were concerned that the landfill would lessen their property values, that the leachate would pollute the high groundwater table, that possible litter would be scattered along the roads by trucks, and that the soil composition was such that it would hold water and be difficult to work. After the public hearing was adjourned, the board agreed to grant the application for a special use permit. 53/

The board of zoning appeals at a later meeting imposed several additional conditions for operating the proposed landfill. Among the conditions imposed were that the county construct and maintain a fence completely surrounding that portion of the premises used as a landfill; provide screening on the east side of the site; permit only one entrance road to the site and that it be along a 50-foot-wide right-of-way provided from County Road 7; landscape and construct the entrance road of blacktop; prohibit burning or combustible materials; license and cover vehicles using the landfill; and that the county

50/ Elkhart County, Ind., Plan Commission, Technical Committee, Minutes of Meeting, Oct. 29, 1971.

51/ Id.

52/ Elkhart County, Ind., Plan Commission, Minutes of Meeting, Nov. 4, 1971, p. 6.

53/ Elkhart County, Ind., Board of Zoning Appeals, Minutes of Meeting, Nov. 18, 1971, pp. 5-7.

observe all State and local health rules and regulations while operating the landfill. In addition, the landfill was to be open only during specific hours determined by the county board of commissioners, a supervisor was to be on duty when the landfill was open, the gate to the landfill was to be locked and disposal not permitted when the supervisor was off duty, and the refuse was to be covered daily with approximately 6 inches of earth. Other conditions imposed upon the county were to provide adequate fire protection, improve County Road 7, and clear litter from the road leading to the landfill site and neighboring property. ^{54/} Meeting these conditions, the landfill became operational in June 1972.

Several sections or parts of them in Concord township and a few in Harrison and Baugo townships are included in the approximately 11,000-acre survey area. Land in the immediate vicinity of the landfill site is used for either farming or single-family dwellings. Much of the land in the northern portion of the survey area is zoned for residential and business uses. Several single-family rural residential subdivisions exist in the northern and western portions of the survey area. Almost all of the residents in those two portions were rural nonfarm residents.

^{54/} Id., Jan. 27, 1972, pp. 2-3.

APPENDIX C
QUESTIONNAIRE

O.M.B. No. 40-S73024
Approval Expires: 3-31-74

Economic Research Service
U.S. Department of Agriculture

CITIZENS' ATTITUDE ON SITE SELECTION AND OPERATION
OF
SANITARY LANDFILLS

1. Which of the following best describes your residence? Please check (✓) one answer.
 Apartment
 House
 Mobile home

2. Is your residence located on a farm? Yes No

3. How far do you live from the sanitary landfill that was proposed for your area? Please check (✓) one answer.
 Less than 1/4 mile
 1/4 mile to 1/2 mile
 1/2 mile to 1 mile
 1 mile or more
 Do not know

4. Is the sanitary landfill being operated in the manner you expected?
 - a. No Yes (If yes, skip to question 5)
 - b. Is it better or worse? Better Worse
 - c. Why? _____

5. Which one of the following responses best expresses your position on locating the sanitary landfill in your area? Please check (✓) one answer.
 Strongly favored)
) Go to question number 6 on page 2
 Favored)
 Undecided } Skip to question number 9 on page 4
 Against)
) Skip to question number 7 on page 3
 Strongly against)

6. If you avored locating the sanitary landfill in your area, how did the following reasons influence your position? Please indicate the amount of influence each item had on your position by placing a check (✓) in the appropriate column.

	Amount of influence		
	Much	Some	None
a. Promised to limit dust			
b. Promised to limit noise			
c. Promised to limit odor			
d. Promised to prevent insects and rodents			
e. Promised <u>not</u> to permit open burning at site			
f. Promised to prevent water pollution			
g. Promised to limit period of time site to be used for landfill purposes			
h. Promised to limit blowing papers			
i. Promised to screen site by fencing or planting trees or shrubs			
j. Site to be developed for use as a future park or recreation area			
k. Promised to limit truck traffic on local roads leading to site			
l. Site far enough away from my residence			
m. Reductions in property values not expected in my area			
n. Best site for providing better waste collection and disposal services for my area			
o. Free waste collection or access to site for residents of my area			
p. Other reasons, such as: _____			

COMMENTS: _____

[SKIP TO QUESTION NUMBER 8, PAGE 4]

7. If you were opposed to locating the sanitary landfill in your area, how did the following reasons influence your position? Please indicate the amount of influence each item had on your position by placing a check (✓) in the appropriate column.

	Amount of influence		
	Much	Some	None

- a. Concerned with possible dust
- b. Concerned with possible noise
- c. Concerned with possible odor
- d. Concerned with possible insects and rodents
- e. Concerned with possible open burning at site
- f. Concerned with possible water pollution caused by landfill
- g. Period of time site to be used for landfill purposes too long
- h. Concerned with possible blowing papers from site
- i. Concerned that site will not be screened by fence, trees or shrubs
- j. Site will not be developed for use as a future park or recreation area
- k. Concerned with possible heavy trucks on local roads leading to site
- l. Concerned with possible reduction of property values in my area
- m. Land taken off tax rolls or better use could be made of land
- n. Site will not provide better waste collection and disposal services
- o. My area would become a dumping ground for other areas
- p. Other reasons, such as: _____ .
_____ .

COMMENTS: _____

[CONTINUE WITH QUESTION 8, PAGE 4]

8. Did you take any action personally to express your feelings about the proposal to locate the sanitary landfill in your area?
- a. Yes No (If no, skip to question 9)
- b. What action did you take? _____

9. Did you belong to or join an organization that took group action concerning the location of the landfill in your area?
- a. Yes No (If no, skip to question 10)
- b. What action did your organization take? _____

10. In your opinion, how far from a residence should a sanitary landfill be located? Please check (✓) one answer.
- Less than 1/4 mile
- 1/4 to 1/2 mile
- 1 to 2 miles
- 2 miles or more
11. In your opinion, how long a period of time should a site in your area be used as a sanitary landfill? Please check (✓) one answer.
- 1 year
- 1 to 2 years
- 2 to 5 years
- 5 years or more
12. If you own or are buying your house, what do you think is its current value? Please check (✓) one answer.
- Less than \$10,000
- \$10,000 to \$15,000
- \$15,000 to \$20,000
- \$20,000 to \$30,000
- \$30,000 to \$40,000
- \$40,000 and above

[CONTINUE WITH QUESTION 13, PAGE 5]

13. Do you think locating the sanitary landfill in your area has actually affected the value of your property?

a. Yes No (If no, skip to question 14)

b. How was the value affected? Raised it Lowered it

14. Prior to the proposal to locate the sanitary landfill in your area, was there another solid waste disposal facility located near you?

a. Yes No

b. If yes: How many miles was it located from your residence? _____

c. Do you feel the solid waste disposal facility was well operated?

Yes No

d. If no, why do you feel it was not? _____

Thank you for your cooperation.

APPENDIX D

TABLES

Appendix table 1--Selected characteristics of survey areas

Item	Unit	Proposed sites		Established sites	
		Stockton	Cherry Valley	Winnebago County	Elkhart County
Total residences	Number	131	78	98	639
Questionnaires sent	do.	131	78	98	320
Residents responding	do.	80	65	54	255
Type of household:					
Apartment	Percent	0	0	0	1
Single-family dwelling	do.	94	100	100	98
Mobile home	do.	6	0	0	1
Total	do.	100	100	100	100
Resident location:					
Farm	Percent	81	71	41	24
Nonfarm	do.	19	29	59	76
Total	do.	100	100	100	100

Appendix table 2--Resident location as influence on attitude

Attitude	Proposed sites			Established sites		
	Stockton		Cherry Valley	Winnebago County		Elkhart County
	Farm	Non-farm	Farm	Farm	Non-farm	Farm
Strongly favored	5	7	0	0	5	3
Favored	9	13	2	0	33	19
Undecided	32	20	0	0	18	19
Against	23	33	17	21	22	34
Strongly against	31	27	30	79	22	25
Total	100	100	100	100	100	100

Percent

Appendix table 3--Distance of residences from proposed or established landfills

Opinion of distance	Proposed sites		Established sites	
	Stockton	Cherry Valley	Winnebago County	Elkhart County
	<u>Percent</u>			
Less than ¼ mile	0	11	6	2
¼ to ½ mile	1	8	7	5
½ to 1 mile	9	23	17	27
1 mile or more	90	58	68	66
Do not know	0	0	2	0
Total	100	100	100	100

Appendix table 4--Residents' opinion of proper distance between sanitary landfills and residences

Opinion of distance	Proposed sites		Established sites	
	Stockton	Cherry Valley	Winnebago County	Elkhart County
	<u>Percent</u>			
Less than ¼ mile	2	0	4	2
¼ to ½ mile	9	6	17	25
1 to 2 miles	20	17	33	39
2 miles or more	55	48	42	28
Other comments	9	23	0	1
No response	5	6	4	5
Total	100	100	100	100

Appendix table 5--Distance of residences from proposed or established landfills as influence on attitude

Survey area	Attitude	Less than ½ mile	½ to 1 mile	1 to 1 mile	1 mile or more
		<u>Percent</u>			
Proposed sites:					
Stockton	Strongly favored	0	0	0	6
	Favored	0	0	0	11
	Undecided	0	0	14	32
	Against	0	0	29	25
	Strongly against	0	100	57	26
	Total	0	100	100	100
Cherry Valley	Strongly favored	0	0	0	0
	Favored	0	0	0	3
	Undecided	0	0	0	0
	Against	0	0	7	29
	Strongly against	100	100	93	68
	Total	100	100	100	100
Established sites:					
Winnebago County	Strongly favored	0	0	0	5
	Favored	0	25	45	22
	Undecided	0	50	11	19
	Against	67	25	33	27
	Strongly against	33	0	11	27
	Total	100	100	100	100
Elkhart County	Strongly favored	0	0	2	4
	Favored	0	0	23	32
	Undecided	50	17	23	34
	Against	25	33	25	21
	Strongly against	25	50	27	9
	Total	100	100	100	100

Appendix table 6--Residents' opinion of distance between landfills and residences as influence on attitude

Survey area	Attitude	Opinion of distance				Other comments:	No response
		Less than 1/4 mile	1/4 to 1/2 mile	1 to 2 miles	2 miles or more		
<u>Percent</u>							
Proposed sites:							
Stockton	Strongly favored	100	14	0	2	0	0
	Favored	0	72	6	0	14	25
	Undecided	0	14	38	39	0	0
	Against	0	0	25	32	0	50
	Strongly against	0	0	31	27	86	25
	Total	100	100	100	100	100	100
Cherry Valley	Strongly favored	0	0	0	0	0	0
	Favored	0	25	0	0	0	0
	Undecided	0	0	0	0	0	0
	Against	0	0	27	19	7	50
	Strongly against	0	75	73	81	93	50
	Total	0	100	100	100	100	100
Established sites:							
Winnebago County	Strongly favored	0	0	11	0	0	0
	Favored	50	78	11	13	0	0
	Undecided	0	11	33	9	0	50
	Against	50	11	39	30	0	0
	Strongly against	0	0	6	48	0	50
	Total	100	100	100	100	0	100
Elkhart County	Strongly favored	0	3	4	3	0	0
	Favored	100	48	28	11	0	0
	Undecided	0	26	35	27	50	38
	Against	0	13	23	32	0	24
	Strongly against	0	10	10	27	50	38
	Total	100	100	100	100	100	100

Appendix table 7--Residents' preference on length of time
for operating landfills

Preference on length of time	Proposed sites		Established sites	
	Stockton	Cherry Valley	Winnebago County	Elkhart County
	<u>Percent</u>			
1 year	8	6	6	6
1 to 2 years	10	6	7	15
2 to 5 years	28	12	43	44
5 years or more	23	22	26	18
Other comments	20	42	7	8
No response	11	12	11	9
Total	100	100	100	100

Appendix table 8--Residents' preference on length of time for operating landfills as influence on attitude

Survey area	Attitude	Preference on length of time				Other comments:	No response
		1 year	1 to 2 years	2 to 5 years	5 years or more		
<u>Percent</u>							
Proposed sites:							
Stockton	Strongly favored	0	0	0	22	0	0
	Favored	0	13	14	11	6	11
	Undecided	28	25	41	50	6	11
	Against	44	50	27	6	6	56
	Strongly against	28	12	18	11	82	22
	Total	100	100	100	100	100	100
Cherry Valley	Strongly favored	0	0	0	0	0	0
	Favored	0	0	0	7	0	0
	Undecided	0	0	0	0	0	0
	Against	0	0	38	29	11	25
	Strongly against	100	100	62	64	89	75
	Total	100	100	100	100	100	100
Established sites:							
Winnebago County	Strongly favored	0	0	0	7	25	0
	Favored	0	25	17	50	25	0
	Undecided	0	0	30	14	0	17
	Against	33	0	44	29	0	17
	Strongly against	67	75	9	0	50	66
	Total	100	100	100	100	100	100
Elkhart County	Strongly favored	0	0	3	11	0	0
	Favored	0	15	34	42	20	13
	Undecided	21	21	34	30	35	35
	Against	43	38	18	15	15	22
	Strongly against	36	26	11	2	30	30
	Total	100	100	100	100	100	100

Appendix table 9--Residents' awareness of nearby landfill

Awareness of nearby landfill	Proposed sites		Established sites	
	Stockton	Cherry Valley	Winnebago County	Elkhart County
	<u>Percent</u>			
Yes	45	40	31	22
No	44	52	65	75
No response	11	8	4	3
Total	100	100	100	100

Appendix table 10--Residents' opinion on operation
of nearby landfill 1/

Opinion on whether landfill well operated	Proposed sites		Established sites	
	Stockton	Cherry Valley	Winnebago County	Elkhart County
	<u>Percent</u>			
Yes	92	8	18	56
No	8	92	41	33
No response	0	0	41	11
Total	100	100	100	100

1/ Includes only those residents aware of nearby landfill.

Appendix table 11--Residents' awareness of nearby landfill
as influence on attitude

Attitude	Proposed sites			Established sites								
	Stockton			Cherry Valley			Winnebago County			Elkhart County		
	Yes	No		Yes	No		Yes	No		Yes	No	
Strongly favored	6	2	0	0	0	6	3	3	3	3	3	3
Favored	11	11	0	0	3	6	34	30	28	30	28	28
Undecided	36	29	0	0	0	35	9	33	30	33	30	30
Against	17	29	4	32	29	29	31	25	21	25	21	21
Strongly against	30	29	96	65	24	24	23	9	18	9	18	18
Total	100	100	100	100	100	100	100	100	100	100	100	100

Percent

Appendix table 12--Residents' opinions on operation of landfill in manner expected

Category	Survey area	
	Winnebago County	Elkhart County
	<u>Percent</u>	
Operation in manner expected:		
Yes	63	60
No	22	29
No response	15	11
Total	100	100
Operated better or worse than expected <u>1/</u>		
Better	50	17
Worse	50	83
No response	0	0
Total	100	100

1/ Includes only those indicating landfill not operated in manner expected.

Appendix table 13--Residents' opinion on operation of landfill
in manner expected as influence on attitude

Attitude	Winnebago County		Elkhart County	
	Yes	No	Yes	No
	<u>Percent</u>			
Strongly favored	6	0	5	1
Favored	32	8	41	9
Undecided	21	8	30	23
Against	24	42	16	35
Strongly against	17	42	8	32
Total	100	100	100	100

Appendix table 14--Action taken by residents to express attitude

Action taken	Proposed sites		Established sites	
	Stockton	Cherry Valley	Winnebago County	Elkhart County
	<u>Percent</u>			
Yes	30	75	26	17
No	70	25	72	83
No response	0	0	2	<u>1/</u>
Total	100	100	100	100

1/ Less than 0.5 percent.

Appendix table 15--Residents' attitudes as influence on action taken

Attitude	Proportion of residents who took action											
	Proposed sites				Established sites							
	Stockton	Cherry Valley	Winnebago County	Elkhart County	Stockton	Cherry Valley	Winnebago County	Elkhart County	Stockton	Cherry Valley	Winnebago County	Elkhart County
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
<u>Percent</u>												
Strongly favored	4	5	0	0	0	0	5	0	0	0	4	
Favored	4	12	0	6	7	28	9	31				
Undecided	0	43	0	0	0	26	0	37				
Against	21	27	14	31	36	28	30	21				
Strongly against	71	13	86	63	57	13	61	7				
Total	100	100	100	100	100	100	100	100	100	100	100	

Appendix table 16--Action taken by residents by property values

Property value	Proportion of residents who took action											
	Proposed sites				Established sites							
	Stockton		Cherry Valley		Winnebago County		Elkhart County					
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
	<u>Percent</u>											
Less than \$10,000	8	20	2	0	0	5	0	0	0	2		
\$10,000 to \$15,000	17	20	0	0	0	11	0	0	0	4		
\$15,000 to \$20,000	17	11	4	25	7	5	7	7	7	12		
\$20,000 to \$30,000	24	21	10	13	21	30	21	23	23	34		
\$30,000 to \$40,000	8	5	14	6	29	18	29	29	29	26		
\$40,000 and above	13	5	62	43	29	23	29	41	41	17		
No response	13	18	8	13	14	8	14	0	0	5		
Total	100	100	100	100	100	100	100	100	100	100		

Appendix table 17--Action taken by residents by resident location

Resident location	Proportion of residents who took action							
	Proposed sites				Established sites			
	Stockton		Cherry Valley		Winnebago County		Elkhart County	
	Yes	No	Yes	No	Yes	No	Yes	No
	<u>Percent</u>							
Farm	88	79	65	88	29	44	30	23
Nonfarm	12	21	35	12	71	56	70	77
Total	100	100	100	100	100	100	100	100

Appendix table 18--Action taken by residents and distance of residents from site

Distance	Proportion of residents who took action							
	Proposed sites				Established sites			
	Stockton		Cherry Valley		Winnebago County		Elkhart County	
	Yes	No	Yes	No	Yes	No	Yes	No
	<u>Percent</u>							
Less than $\frac{1}{4}$ mile	0	0	14	0	22	0	0	2
$\frac{1}{4}$ to $\frac{1}{2}$ mile	4	0	10	0	0	10	14	3
$\frac{1}{2}$ to 1 mile	13	7	29	6	14	16	54	21
1 mile or more	83	93	47	94	64	74	32	74
Total	100	100	100	100	100	100	100	100

Appendix table 19--Affiliation with groups taking action to express attitude 1/

Affiliation with groups	Proposed sites				Established sites			
	Stockton		Cherry Valley		Winnebago County		Elkhart County	
	<u>Percent</u>							
Yes	16		65		7		11	
No	84		35		91		89	
No response	0		0		2		0	
Total	100		100		100		100	

1/ Includes all residents responding to questionnaire.

Appendix table 20--Residents' attitudes as influence on affiliation with groups taking action

Attitude	Proposed sites				Established sites			
	Stockton		Cherry Valley		Winnebago County		Elkhart County	
	Yes	No	Yes	No	Yes	No	Yes	No
	<u>Percent</u>							
Strongly favored	0	6	0	0	0	4	0	3
Favored	0	12	0	4	0	25	4	31
Undecided	0	36	0	0	0	20	0	34
Against	23	25	12	31	25	31	18	23
Strongly against	77	21	88	65	75	20	78	9
Total	100	100	100	100	100	100	100	100

Appendix table 21--Relationship between property values and resident location

Property value	Proposed sites			Established sites							
	Stockton		Cherry Valley	Winnebago County		Elkhart County					
	Farm : Non- farm :	Total : Farm : Non- farm :	Farm : Non- farm :	Total : Farm : Non- farm :	Farm : Non- farm :	Total : Farm : Non- farm :					
Less than \$10,000	12	33	16	2	0	9	2	4	2	2	2
\$10,000 to \$15,000	18	20	19	0	0	9	0	9	9	5	2
\$15,000 to \$20,000	11	20	12	9	11	4	6	6	6	11	10
\$20,000 to \$30,000	28	0	23	11	11	18	35	28	31	22	32
\$30,000 to \$40,000	6	7	6	11	16	14	25	20	13	34	26
\$40,000 and above	8	7	8	56	57	28	22	24	29	18	22
No response	17	13	16	11	5	18	3	9	9	2	4
Total	100	100	100	100	100	100	100	100	100	100	100

Percent

Appendix table 22--Property values as influence on attitude

Survey area	Attitude	Property value					No response
		Less than \$10,000	\$10,000 to \$15,000	\$15,000 to \$20,000	\$20,000 to \$30,000	\$30,000 to \$40,000 and above	
		<u>Percent</u>					
Proposed sites:							
Stockton	Strongly favored	8	13	10	0	0	0
	Favored	8	7	10	11	20	15
	Undecided	46	27	20	39	20	31
	Against	23	33	40	17	40	23
	Strongly against	15	20	20	33	20	31
	Total	100	100	100	100	100	100
Cherry Valley	Strongly favored	0	0	0	0	0	0
	Favored	0	0	0	0	0	0
	Undecided	0	0	0	0	0	0
	Against	0	0	67	0	38	0
	Strongly against	100	0	33	100	62	100
	Total	100	0	100	100	100	100
Established sites:							
Winnebago County	Strongly favored	0	0	0	0	9	20
	Favored	50	40	0	13	0	0
	Undecided	0	0	33	20	27	20
	Against	50	40	67	40	9	20
	Strongly against	0	20	0	27	55	40
	Total	100	100	100	100	100	100
Elkhart County	Strongly favored	0	0	4	5	2	0
	Favored	25	57	28	26	34	19
	Undecided	50	29	39	36	27	36
	Against	0	14	18	24	21	36
	Strongly against	25	0	11	9	16	9
	Total	100	100	100	100	100	100

Appendix table 23--Residents' opinion on effect of landfills
on property values

Effect on property values	Proposed sites		Established sites	
	Stockton	Cherry Valley	Winnebago County	Elkhart County
	<u>Percent</u>			
Yes	24	57	43	17
No	71	18	46	77
No response	5	25	11	6
Total	100	100	100	100

Appendix table 24--Residents' opinion on whether property values
raised or lowered 1/

Property values raised or lowered	Proposed sites		Established sites	
	Stockton	Cherry Valley	Winnebago County	Elkhart County
	<u>Percent</u>			
Raised	0	0	2	0
Lowered	24	57	41	17
No response	76	43	57	83
Total	100	100	100	100

1/ Includes only those indicating their property values were affected.

Appendix table 25--Residents' opinion on loss of property values as influence on attitude

Attitude	Loss of property value									
	Proposed sites					Established sites				
	Stockton		Cherry Valley		Winnebago County		Elkhart County			
	Yes	No	Yes	No	Yes	No	Yes	No		
	<u>Percent</u>									
Strongly favored	0	7	0	0	0	6	0	4		
Favored	5	11	0	3	5	38	0	33		
Undecided	5	38	0	0	9	25	2	36		
Against	21	26	11	28	41	22	38	19		
Strongly against	69	18	89	69	45	9	60	8		
Total	100	100	100	100	100	100	100	100		

Appendix table 26--Relationship between opinion on loss of property values and action taken to express attitude

Action taken	Loss of property value									
	Proposed sites					Established sites				
	Stockton		Cherry Valley		Winnebago County		Elkhart County			
	Yes	No	Yes	No	Yes	No	Yes	No		
	<u>Percent</u>									
Yes	59	21	86	62	55	6	62	8		
No	41	79	14	38	45	94	38	92		
Total	100	100	100	100	100	100	100	100		

Appendix table 27--Relationship between opinion on loss of property values and resident location

Resident location	Loss of property value									
	Proposed sites					Established sites				
	Stockton		Cherry Valley		Winnebago County		Elkhart County			
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
	<u>Percent</u>									
Farm	90	79	67	76	41	41	38	22		
Nonfarm	10	21	33	24	59	59	62	78		
Total	100	100	100	100	100	100	100	100	100	100

Appendix table 28--Relationship between opinion on loss of property values and distance of residences from site

Distance from site	Loss of property value									
	Proposed sites					Established sites				
	Stockton		Cherry Valley		Winnebago County		Elkhart County			
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
	<u>Percent</u>									
Less than ¼ mile	0	0	11	10	14	0	2	1		
¼ to ½ mile	5	0	14	0	10	6	15	3		
½ to 1 mile	32	2	25	21	19	16	50	23		
1 mile or more	63	98	50	69	57	78	33	73		
Total	100	100	100	100	100	100	100	100	100	100

Appendix table 29--Relationship between opinion on loss of property values
and property values

Property value	Loss of property value											
	Proposed sites				Established sites							
	Stockton		Cherry Valley		Winnebago County		Elkhart County					
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
<u>Percent</u>												
Less than \$10,000	12	22	3	0	5	3	2					
\$10,000 to \$15,000	17	24	0	0	10	10	3					
\$15,000 to \$20,000	12	16	14	4	5	7	7					
\$20,000 to \$30,000	35	24	9	17	30	31	17					
\$30,000 to \$40,000	6	8	9	21	25	21	32					
\$40,000 and above	18	6	65	58	25	28	39					
Total	100	100	100	100	100	100	100					

Appendix table 30--Factors having influence on favorable attitudes

Factor	Amount of influence													
	Proposed sites			Cherry Valley			Winnebago County			Established sites				
	Stockton	Cherry Valley	Winnebago County	Elkhart County	Stockton	Cherry Valley	Winnebago County	Elkhart County	Stockton	Cherry Valley	Winnebago County	Elkhart County		
Much	Some	None	Much	Some	None	Much	Some	None	Much	Some	None	Much	Some	None
													Percent	
Promised to limit dust	8	17	75	0	0	100	27	40	33	23	30	47		
Promised to limit noise	0	33	67	0	0	100	20	47	33	19	28	53		
Promised to limit odor	25	25	50	100	0	0	53	33	14	48	37	15		
Promised to prevent insects and rodents	50	25	25	100	0	0	67	13	20	57	28	15		
Promised <u>not</u> to permit open burning at site	42	16	42	100	0	0	73	7	20	60	24	16		
Promised to prevent water pollution	25	42	33	100	0	0	67	13	20	52	24	24		
Promised to limit period of time site to be used for landfill purposes	8	17	75	100	0	0	47	13	40	29	29	42		
Promised to limit blowing papers	50	17	33	100	0	0	53	40	7	49	31	20		
Promised to screen site by fencing or planting trees or shrubs	0	42	58	100	0	0	60	33	7	39	34	27		
Site to be developed for use as a future park or recreation area	33	17	50	100	0	0	53	20	27	18	14	68		
Promised to limit truck traffic on local roads leading to site	8	34	58	0	100	0	20	40	40	14	32	54		
Site far enough away from my residence	8	50	42	100	0	0	67	20	13	49	31	20		
Reductions in property values not expected in my area	25	17	58	100	0	0	33	27	40	37	25	38		
Best site for providing better waste collection and disposal service in my area	50	33	17	100	0	0	80	7	13	38	34	28		
Free waste collection or access to site for residents of my area	58	17	25	0	0	100	20	13	67	34	23	43		

Appendix table 31--Ranking of positive attitude factors based on average responding "much," "some," and "none" ^{1/}

Factor	Survey area					
	Stockton		Winnebago County		Elkhart County	
	Rank ^{1/}	Ave. ^{2/}	Rank	Ave.	Rank	Ave.
Promised to limit dust	13-15	.33	11-12	.93	12	.76
Promised to limit noise	13-15	.33	13	.87	13	.66
Promised to limit odor	8	.75	8	1.40	3	1.33
Promised to prevent insects and rodents	3	1.25	5-7	1.47	2	1.42
Promised <u>not</u> to permit open burning at site	5	1.00	2-4	1.53	1	1.43
Promised to prevent water pollution	6	.91	5-7	1.47	4-6	1.29
Promised to limit period of time site to be used for landfill purposes	13-15	.33	10	1.07	11	.88
Promised to limit blowing papers	4	1.17	5-7	1.47	4-6	1.29
Promised to screen site by fencing or planting trees or shrubs	12	.42	2-4	1.53	7	1.17
Site to be developed for use as a future park or recreation area	7	.83	9	1.27	15	.49
Promised to limit truck traffic on local roads leading to site	11	.50	14	.80	14	.59
Site far enough away from my residence	9-10	.67	2-4	1.53	4-6	1.29
Reductions in property values not expected in my area	9-10	.67	11-12	.93	9	.99
Best site for providing better waste collection and disposal service for my area	1-2	1.33	1	1.67	8	1.10
Free waste collection or access to site for residents of my area	1-2	1.33	15	.53	10	.91

^{1/} Based on a scale of 1 to 15 ("1" is the highest rank, "15" is the lowest).

^{2/} Averages were determined by assigning numerical values to "much," "some," and "none." "Much" = 2, "some" = 1, and "none" = 0. These scores were totalled for each factor and divided by the total number of residents indicating "much," "some," or "no" influence for each factor. Ranks of 1 to 15 were then assigned.

Appendix table 32--Factors having influence on negative attitudes

Factor	Amount of influence											
	Proposed sites						Established sites					
	Stockton		Cherry Valley		Winnnebago County		Elkhart County		Winnnebago County		Elkhart County	
	Much	Some	None	Much	Some	None	Much	Some	None	Much	Some	None
	<u>Percent</u>											
Concerned with possible dust	18	27	55	39	30	31	17	31	52	19	28	53
Concerned with possible noise	20	37	43	42	25	33	17	35	48	22	33	45
Concerned with possible odor	57	23	20	70	22	8	59	27	14	54	28	18
Concerned with possible insects and rodents	56	22	22	77	14	9	48	38	14	60	26	14
Concerned with possible open burning at site	32	25	43	58	31	11	17	28	55	39	32	29
Concerned with possible water pollution caused by landfill	75	9	16	81	14	5	62	24	14	59	17	24
Period of time to be used for landfill too long	48	16	36	67	14	19	28	38	34	30	28	42
Concerned with possible blowing papers from site	41	32	27	73	17	10	69	21	10	59	24	17
Concerned that site will not be screened by fence, trees, or shrubs	23	41	36	61	17	22	35	24	41	31	26	43
Site will not be developed for use as a future park or recreation area	30	30	40	58	19	23	31	28	41	22	14	64
Concerned with possible heavy trucks on local roads leading to site	68	18	14	76	19	5	72	21	7	57	25	18
Concerned with possible reduction of property values in my area	56	16	28	90	8	2	79	14	7	75	12	13
Land taken off tax rolls or better use could be made of land	39	32	29	88	9	3	24	24	52	41	19	40
Site will not provide better waste collection and disposal services	30	36	34	78	9	13	38	14	48	38	12	50
My area would become a dumping ground for other areas	70	12	18	70	14	16	59	24	17	45	20	35

Appendix table 33--Ranking of negative attitude factors based on average responding "much," "some," and "none" ^{1/}

Factor	Survey area							
	Proposed sites				Established sites			
	Stockton		Cherry Valley		Winnebago County		Elkhart County	
	Rank ^{1/}	Ave. ^{2/}	Rank	Ave.	Rank	Ave.	Rank	Ave.
Concerned with possible dust	15	.64	15	1.08	14	.66	14	.66
Concerned with possible noise	14	.77	14	1.09	13	.69	13	.78
Concerned with possible odor	5	1.36	8	1.63	5	1.45	6	1.35
Concerned with possible insects and rodents	6	1.32	5	1.67	7	1.35	2	1.46
Concerned with possible open burning at site	11-12	.89	11	1.47	15	.62	8-9	1.10
Concerned with possible water pollution caused by landfill	1	1.59	3	1.77	4	1.48	5	1.36
Period of time to be used for landfill too long	8	1.11	10	1.48	8-9	.93	10	.89
Concerned with possible blowing papers from site	7	1.14	7	1.64	3	1.59	3	1.42
Concerned that site will not be screened by fence, trees, or shrubs	13	.86	12	1.39	8-9	.93	11-12	.88
Site will not be developed for use as a future park or recreation area	11-12	.89	13	1.34	10-11	.90	15	.57
Concerned with possible heavy trucks on local roads leading to site	2	1.55	4	1.72	2	1.66	4	1.39
Concerned with possible reduction of property values in my area	4	1.46	1	1.89	1	1.72	1	1.61
Land taken off tax rolls or better use could be made of land	9	1.09	2	1.84	12	.72	7	1.17
Site will not provide better waste collection and disposal services	10	.95	6	1.66	10-11	.90	11-12	.88
My area would become a dumping ground for other areas	3	1.52	9	1.55	6	1.41	8-9	1.10

^{1/} Based on a scale of 1 to 15 ("1" is the highest rank, "15" is the lowest).

^{2/} Averages were determined by assigning numerical values to "much," "some," and "none." "Much" = 2, "some" = 1, and "none" = 0. These scores were totalled for each factor and divided by the total number of residents indicating "much," "some," or "no" influence for each factor. Ranks of 1 to 15 were then assigned.

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