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UNM Institute for Public Policy



**Unfinished Business:
New Mexicans' Views on the
Waste Isolation
Pilot Plant,
1990-1996**

Institute for Public Policy
The University of New Mexico
Albuquerque, New Mexico
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**Kristan Cockerill, Amy Fromer, John Gastil
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INTRODUCTION

For over a decade, New Mexico has been the site of an ongoing public debate over the safety, necessity, and acceptability of the nation's first permanent underground transuranic waste disposal facility. Located near the town of Carlsbad in the southeastern corner of New Mexico, the Waste Isolation Pilot Plant (WIPP) has been designed to permanently isolate radioactive by-products of the nation's nuclear weapons program.¹ As the scheduled date for opening the facility in 1997 approaches, it is probable that considerable media and public attention will continue to focus on the WIPP.

Over the course of the WIPP policy debate, those who have actively supported or opposed opening the facility have maintained relatively consistent arguments for their positions. Transcripts of public hearings, which are attended primarily by those most concerned about the issue, show that opponents have argued that both transport and storage of WIPP materials would pose substantial environmental and public health risks to New Mexicans. In addition, opponents have claimed that government officials implementing WIPP policy have been unresponsive to public concerns and have changed stated program goals without public consultation.² Proponents of the WIPP have responded that the WIPP poses very small environmental and human health risks and that the transport of wastes to WIPP will be among the safest transport programs ever implemented. Proponents also point to numerous public hearings, public comment periods, and other public fora that have elicited public views and concerns.

It is clear that to date, the debate over the WIPP has concerned a facility that is still under review. This is indicated by continuing scientific research and the ongoing development of a regulatory process for assessing the safety of the facility, which signals to the public that no authoritative decision has been reached about whether the WIPP is safe, let alone whether it should be opened. Thus, the assessment of the safety of the WIPP remains "unfinished business."

OBJECTIVES

Given the polarized nature of the ongoing debate over the safety of the WIPP program, what kinds of perceptions do members of the public have about the safety of the WIPP? And, given that the safety assessment process has not yet been completed, what positions have New Mexicans taken about opening the facility? This report attempts to answer these questions by describing how citizens of New Mexico have reacted to the policy debate concerning the WIPP over the period from 1990 to 1996. The purpose of this study is to assess past and present

public opinion on various aspects of the WIPP. Specifically, this study assesses:

- public perceptions and attitudes related to the safety of the WIPP facility;
- public perception of the risks associated with transporting waste to the site; and
- levels of public support for, and opposition to, opening the facility.

More generally, our intent is to provide a representative and systematic assessment of public opinion and perceptions about the WIPP, and how these perceptions have evolved over the past seven years.

METHODOLOGY

Since 1988 the University of New Mexico Institute for Public Policy (IPP) has surveyed New Mexicans about their opinions, beliefs, and preferences on various social issues.³ The IPP uses a random digit dialing procedure to select respondents from within the state, which assures that all households with telephones have an equal probability of being contacted. Using the IPP's computer assisted telephone interviewing system, IPP interviewers randomly select respondents among the adult residents within a household.

Beginning in 1990, the IPP quarterly survey (conducted in February, May, August, and November of each year) included a question about the perceived safety of the WIPP, and since November 1992 each survey has included a question on the risk of transporting waste to the site. In 1995 the IPP added a question which asked respondents to indicate whether they would vote to open the WIPP if a referendum on the issue were held at the time of the survey. In addition to the WIPP questions, each survey has gathered demographic background information about the respondents, as well as their opinions and preferences on other policy issues affecting New Mexicans.

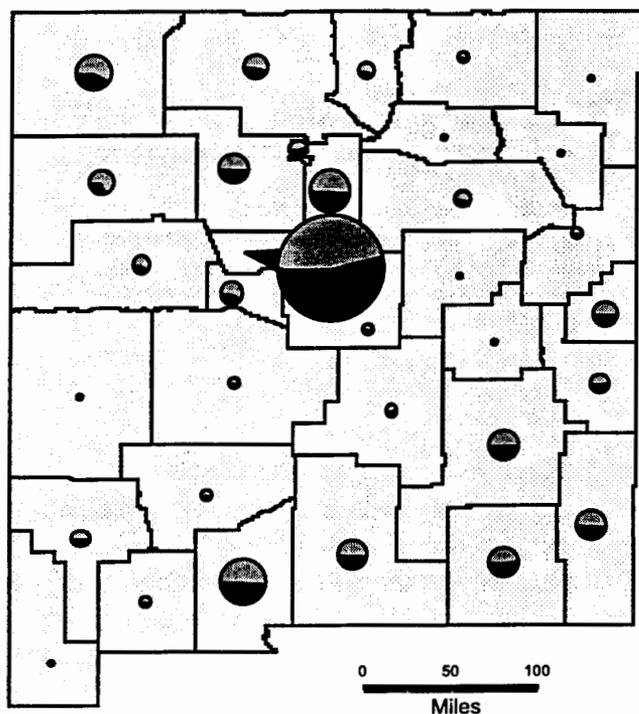
For purposes of this study, the results of the August 1990 through February 1996 surveys have been compiled into an aggregate data set, which includes 14,358 completed interviews. Because each quarterly sample includes a random selection of respondents from the state population, the aggregate sample can be used as a pooled time-series sample reflecting the changing views, preferences, and perceptions of New Mexico's citizens. From this data set, responses to the three WIPP questions are analyzed, with specific attention to differences in responses associated with respondents' ethnicity, gender, and locale within the state.

Characteristics of the Sample

Given that survey respondents in each quarterly survey were chosen through a random selection process, aggregation of these surveys should result in a single sample that represents the overall population. Comparison of the survey sample with geographic and ethnic population statistics indicates that a representative random sample was indeed obtained.

Just how well does the geographic distribution of the sample match the actual distribution of the population? As illustrated in Figure 1, the geographic distribution of the 14,358 respondents closely matches the distribution of the state population.

FIGURE 1
The Geographic Distribution of the New Mexico Survey Sample
Representativeness of the Sample Population Distribution Compared to the 1990 U.S. Census



Sampling vs. Population Distribution

The size of the circles in each county represent the relative population for the respective counties. The lighter shade of blue represents the percentage of the total state population (based on 1990 US Census figures) and the darker blue the percentage of respondents sampled in each county. It is clear that the number of respondents sampled in each county closely matches the county level census statistics.

The second type of representativeness concerns the ethnicity of the respondents. As Table 1 shows, the ethnic makeup of the survey respondents closely reflects the state population (based on 1990 U.S. Census statistics), although there are some modest differences. These differences could be the result of several factors. Not all households have phones and, therefore, were not accessible for a telephone interview. There may also be cultural and psychological differences that make some groups less likely to participate in the survey. Finally, some variation may occur by chance due to the random sampling procedures used. Despite these potential sources of error, the ethnic characteristics of the sample reasonably reflect those of the larger population.

TABLE 1

Representative Nature of the Sample by Ethnic Group

	% in NM Pop.*	% in Data set**
White	58.7	62.6
Hispanic	32.7	31.4
American Indian	6.0	4.4
Black	1.8	1.6

* The New Mexico population figures are from 1990 census data (U.S. Department of Commerce, 1990).

** The percentage of each ethnic group in the data set was adjusted to account for differences in household size and number of phone lines available per household. To determine the actual ethnic percentage based on household data, the number of respondents for each ethnic group was multiplied by the average household size for that group and divided by the appropriate number of phone lines.

RESULTS

Measures of public attitudes toward the WIPP can range from quite general to very specific.⁴ Our over-time measures have not only been designed to provide general views of public perceptions of the *risks* associated with the WIPP facility and the transport of materials to the WIPP, but also very broad measures of *public acceptance* of opening the facility for waste disposal. Using the entire sample of responses, this section describes the overall distributions of responses to questions concerning:

1. the perceived safety of the WIPP facility;
2. the perceived risk associated with transporting radioactive wastes to WIPP; and
3. preferences for opening (or not opening) the facility for waste disposal.

Subsequent sections provide analyses of the data over time, as well as analysis of specific differences in views of the WIPP by ethnicity, gender, and locale within the state.

Aggregate Results

Perceived Safety of the WIPP Facility

The central issues in the policy debate over the WIPP have been the environmental and human health and safety implications of the storage facility. Given the enormous half-life of many of the radioactive isotopes to be sent to the WIPP, questions about the integrity and longevity of containment of the wastes are of paramount importance to New Mexicans. Much of the policy debate, and of the scientific evaluations of the facility,⁵ have focused on these questions. However, some of the scientific research and safety assessments have yet to be completed. Consequently, an important consideration for complex issues of this kind is that it may not be reasonable to expect technically trained and informed individuals -- let alone the less well-informed public -- to respond with an unconditional view that WIPP is "safe" or "unsafe," especially since there are still unresolved issues regarding WIPP. For that reason, the measure of perceived facility safety employs an ordinal scale with four categories of response. The question wording and response scale are as follows:

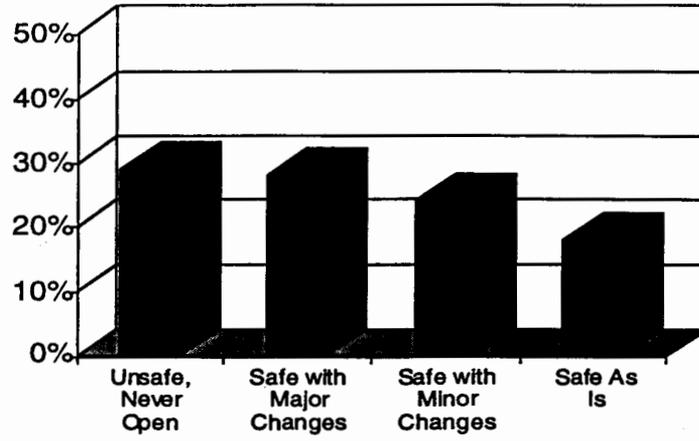
There has been much controversy over WIPP, the Waste Isolation Pilot Plant in New Mexico, which is to serve as a permanent storage facility for low- and medium-level radioactive waste. Which of the following best represents your view?

- 1. WIPP is unsafe and should never be opened;*
- 2. Unsafe, but may be made safe with major changes;*
- 3. Only slightly unsafe and can be made safe with minor changes; or*
- 4. WIPP is safe to use as it is.*

Figure 2 shows the distribution of responses to this question. A slight plurality of respondents believe that WIPP should never open (30%), while 17% said WIPP is already safe to open. A majority of our respondents (53%) take the position that the WIPP is unsafe, but can be made safe with major (29%) or minor (24%) changes in the facility. More than four-fifths of New Mexicans (83%) view the WIPP facility as currently unsafe. Nevertheless, a substantial majority still believe that the facility could be made safe with major or minor alterations, or is already safe. Thus, on the critical issue of the safety of the WIPP facility, the public does not yet appear to have taken a final position.

FIGURE 2

**Total Responses to the WIPP Safety Question
1990-1996**



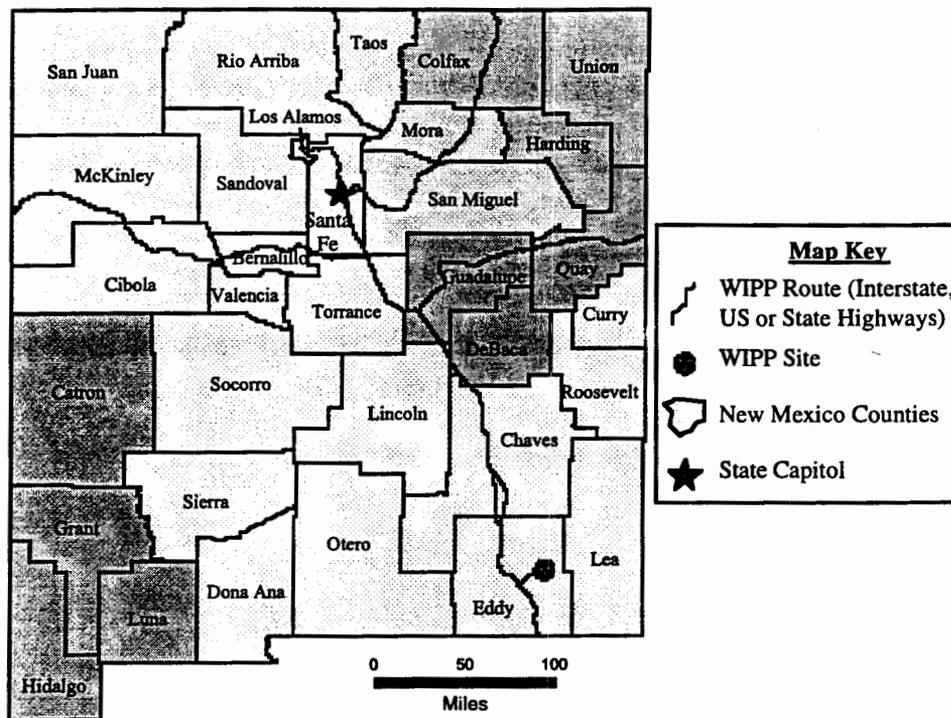
(Sample Size = 13,245)

Perceived Risk of Transport to WIPP

A second issue of import in the WIPP policy debate concerns the safety of transporting transuranic wastes to the facility. While the safety of the WIPP facility itself may appear to pose immediate risks only to those living nearby, the transport route will pass through a large fraction of the communities in the state. The originally designated routes to the WIPP facility are shown in Figure 3.

FIGURE 3

WIPP Transport Route



Points of Reference

The map reflects the locales of each county in New Mexico. Note, however, that there are groups of counties differentiated by color. Overall, all of the yellow counties had sufficient sample sizes for comparing attitudes and beliefs, while the counties in the other colored groups did not. Those counties lacking sufficient sample sizes were aggregated with proximate counties having similar attributes. Hidalgo and Luna counties were combined since they are both located in the southwest portion of the state, have similar ethnic representation, and generally rely on the same type of economic activities (such as ranching and travel services). Catron and Grant counties were aggregated in a similar manner, as were Mora and San Miguel counties, and Colfax, Union, and Harding counties. This aggregation should be kept in mind when evaluating variations in regional perceptions of the safety of WIPP transportation.

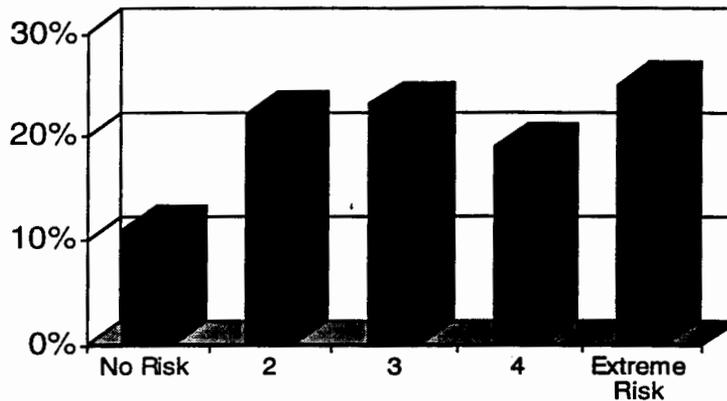
What level of risk do New Mexicans associate with WIPP waste transportation? To find out, we have asked our respondents the following question in each quarterly survey since November 1992:

Thinking specifically about the transportation of wastes to WIPP, some opponents of WIPP have argued that the transportation of materials to WIPP poses a significant risk of releasing radiation into the environment. The Department of Energy has argued that these risks are extremely small. Using the scale where one is no risk, five is extreme risk, and you may choose any number from one to five, how risky do you consider the transportation of low- and medium-level radioactive material to the WIPP facility to be?

Figure 4 shows that slightly more than 26% of the respondents reported that transportation activities pose an extreme risk, while only 10% believe that such activities pose no risk. The mean value for all responses was 3.32 on the one-to-five scale, meaning that the public tends, on average, to associate a moderate degree of risk with WIPP transportation activities.

FIGURE 4

**Total Responses to the WIPP Risk of Transportation Question
1992-1996**



(Sample Size = 9,067)

WIPP Referendum General Results

In recent surveys (since November 1995), we have included a hypothetical referendum question in the WIPP series. Specifically, respondents are asked:

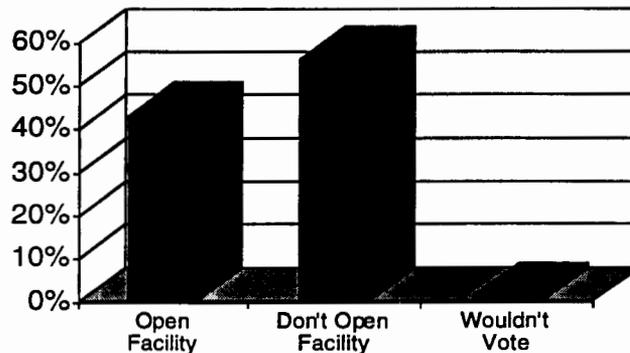
If a statewide vote were held today, and you could vote on whether or not the WIPP facility would be opened, would you vote:

*To open the WIPP facility;
Not to open the WIPP facility;
Would not vote.*

The results in Figure 5 indicate that, if New Mexicans were asked to decide the issue today, a majority would vote “not to open the WIPP facility.” Interestingly, however, even though the safety assessments of the WIPP are not yet completed and the regulatory process has not yet run its course, 42% of our respondents would vote to open the facility. The remaining 1% would choose not to vote on the issue.

FIGURE 5

**Total Responses to the WIPP Referendum Question
1995-1996**



(Sample Size = 1,077)

WIPP Referendum by Safety and Transportation Risk

To determine whether safety concerns surrounding the WIPP facility might be a driving force behind respondents' self-reported voting behavior, we compared responses on the WIPP safety and WIPP referendum questions. Table 2 shows the

results. As one might expect, 97% of the survey respondents who thought that WIPP is “unsafe and should never be opened” would vote to *not* open the facility. The most interesting result, however, was that 11% of those who said that WIPP is already safe, and 27% of those who believe it can be made safe with only minor changes, would vote to *not* open the facility. This suggests that factors other than safety are contributing to overall opposition to the facility. One of these factors might be that the scientific research on WIPP safety is not yet complete, and that the regulatory process has not yet run its course.

TABLE 2

Voting on WIPP by WIPP Safety 1995-1996				
	Unsafe Never Open	Safe w/major Changes	Safe w/minor Changes	Safe As Is
Open	2%	25%	72%	89%
Don't Open	97%	74%	27%	11%
No Vote	1%	1%	1%	0%
% Total	100%	100%	100%	100%

Table 3 shows a similar relationship between perceived risks of WIPP transport and opposition to opening the facility. Ninety-two percent of those rating WIPP transport as extremely risky said they would vote against it if given the chance, and the same percentage of those perceiving *no* transport risk said they would vote to open it. This shows a very strong association between transport risk perception and overall opposition to WIPP. Still, a significant fraction of those who see negligible to moderate risks would vote “no” if a referendum were held at the time of the survey. These respondents may be awaiting more authoritative findings regarding the safety of the WIPP program before committing themselves to an absolute position concerning the WIPP.

TABLE 3

Voting on WIPP by WIPP Transportation Risk 1995-1996					
	No Risk	2	3	4	Extreme Risk
Open	92%	81%	49%	17%	7%
Don't Open	8%	18%	50%	81%	92%
No Vote	0%	1%	1%	1%	1%
% Total	100%	100%	100%	100%	100%

General Results Over Time

The use of the quarterly surveys makes it possible to evaluate whether there has been any *change* in attitudes toward WIPP over time. The question on WIPP safety was asked in twenty-three separate surveys between August 1990 and February 1996, and the question on transportation risk was asked in fourteen surveys since 1992. The WIPP referendum question, however, is too recent to assess changes in vote preferences over time.

Figure 6 shows the variation over time in responses to the WIPP safety question. The four vertically stacked areas differentiated by color represent the percentage of respondents who chose each of the four response categories, with the changes over time shown horizontally. While Figure 6 shows minor variations over time, there are no apparent systematic changes in responses to the WIPP safety question over the 1990-1996 period. The percentage choosing the “safe as is” response has fluctuated around 20%, while the percentage has hovered around 30% for the “unsafe, never open” response. This pattern indicates that New Mexicans have a fairly stable distribution of views on WIPP safety.

FIGURE 6

Change Over Time in the WIPP Safety Question 1990-1996

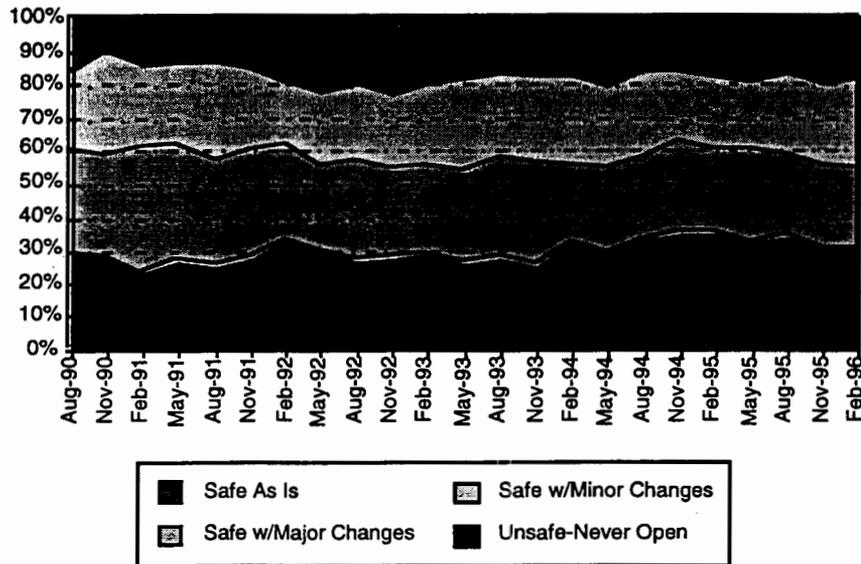
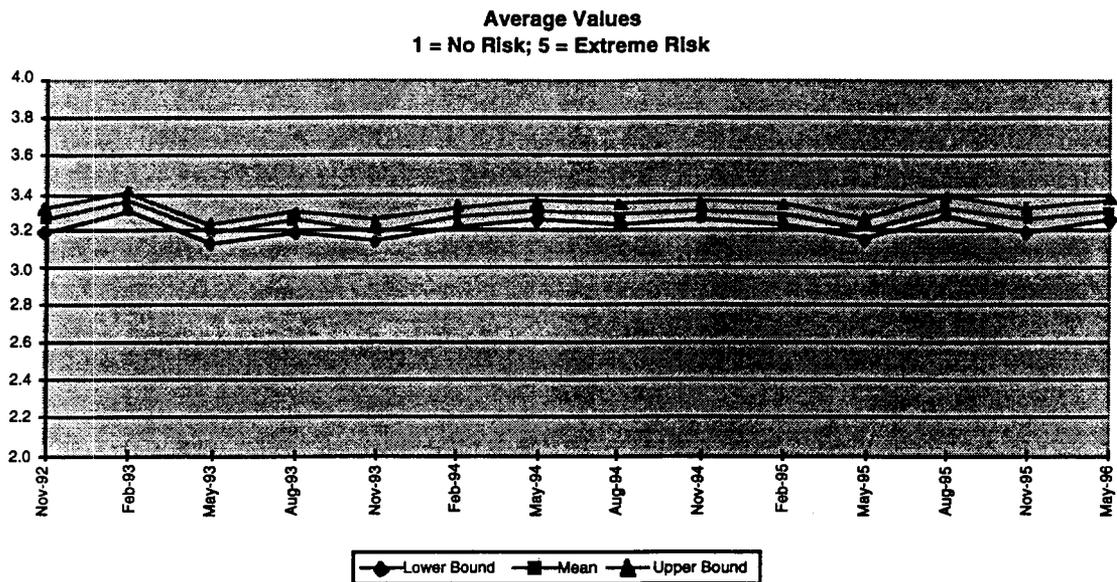


Figure 7 depicts the time-series analysis of the results for the transportation risk question. In this figure, the middle line reflects the mean value for this question from each quarterly survey, while the upper and lower bounds reflect the standard deviation of the responses about the mean. As Figure 7 illustrates, perceptions of WIPP transport risks have been highly stable over the 1992-1996 time period. In general, there has been little deviation in average perceptions of risk, with values just above the scale midpoint of 3.0. In other words, a moderate degree of risk has been associated with WIPP transport activities, and there has been no detectable trend in perceived transport risks since data collection began in 1992.

FIGURE 7
Change Over Time in the WIPP Transportation Risk Question
1992-1996



WIPP ATTITUDES BY ETHNICITY, GENDER, AND LOCATION

In addition to assessing change over time, the aggregate data permit evaluation of differences among New Mexico's ethnic groups, between men and women, and among the many counties in the state. These kinds of subgroup analyses are not always possible when using results from a single or even several quarterly surveys due to smaller sample sizes. However, given the large representative sample used here, it is possible to make inferences about the preferences of individuals who make up different, and sometimes relatively small, segments of the population. Overall, the analyses reveal several attitudinal differences not only among ethnic groups, but also between men and women, and among various New Mexico counties.

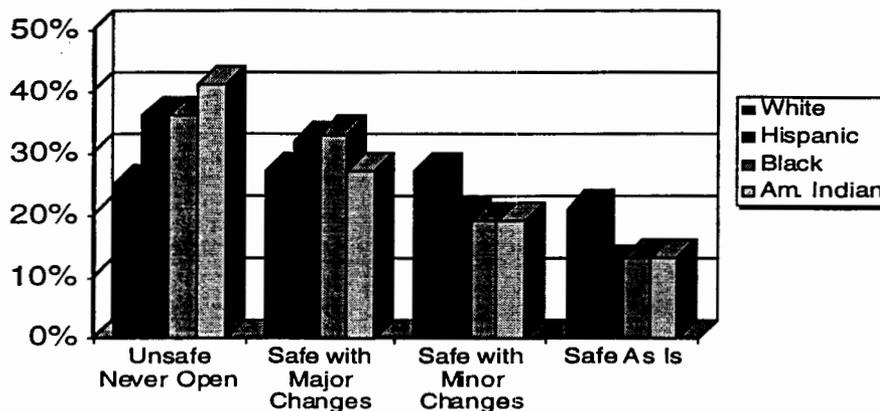
Variations in the Perceived Safety of the WIPP Facility

WIPP Safety Results by Ethnicity

The results from the WIPP safety question reveal systematic differences among ethnic groups (see Figure 8). A plurality of Hispanics (36%), Blacks (36%), and American Indians (41%) responded that WIPP is unsafe and should never be opened. White, non-Hispanic ("Anglo") responses, on the other hand, were much more evenly distributed across the four categories. These results indicate a clear difference between how Anglos and minority ethnic groups in New Mexico perceive the risks associated with the WIPP.

FIGURE 8

Responses to the WIPP Safety Question by Ethnicity
1990-1996

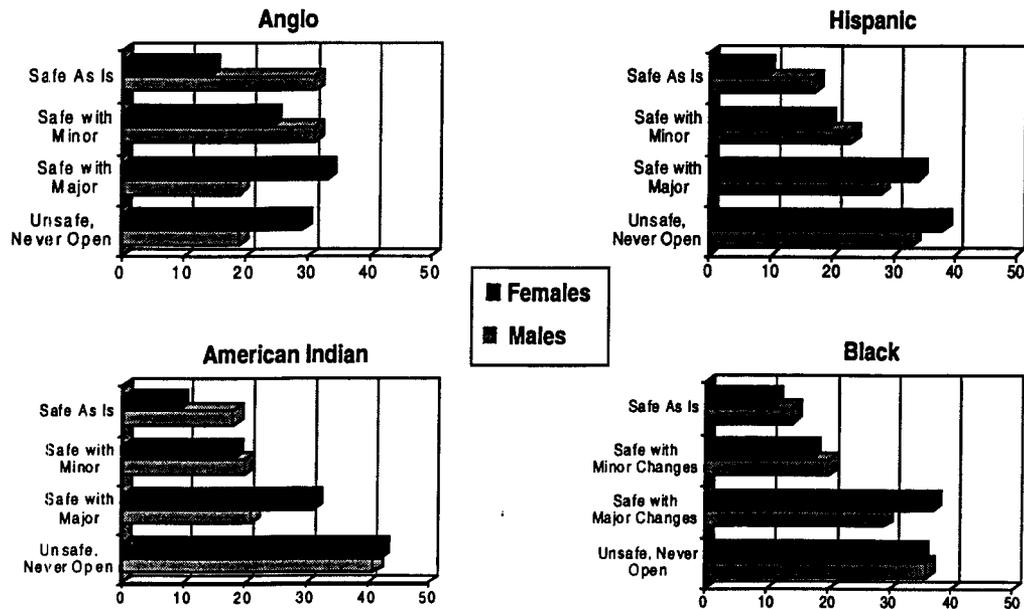


WIPP Safety Results by Gender and Ethnicity

Evaluating the data by gender, as well as by ethnicity, reveals other important differences. Among Anglo respondents, male and female responses are generally the inverse of each other, with men perceiving substantially less risk than women (see Figure 9). Of the Anglo male respondents, 31% said that WIPP is safe to open as is, while only 14% of Anglo women have similar views. Conversely, only 19% of Anglo men said it should never open, compared to 29% of Anglo women. Among the minority ethnic groups, women were consistently more likely than men to rate WIPP as unsafe, but the gender differences were smaller than among Anglos.

FIGURE 9

**Responses to the WIPP Safety Question by Gender and Ethnicity
1990-1996**



WIPP Safety Results by Locality

Figures 10 and 11 show the responses to the WIPP safety question for different New Mexico counties. As Figure 10 illustrates, respondents from Eddy and Los Alamos counties are much more likely to rate WIPP as safe than are respondents from other counties. Figure 11 highlights responses from those zip codes within counties that overlap the proposed WIPP transportation routes. As is evident from the bar charts along the routes, the pattern of responses do not differ significantly from those seen for all counties across the state.

FIGURE 10

**Responses to the WIPP Safety Question by County
1990-1996**

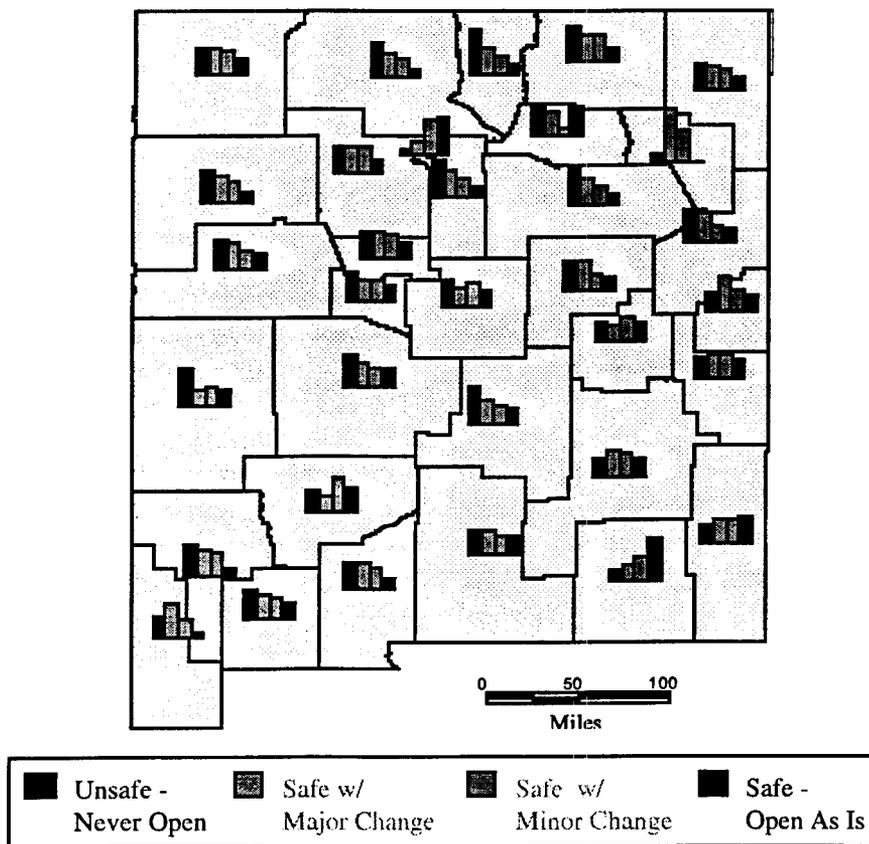
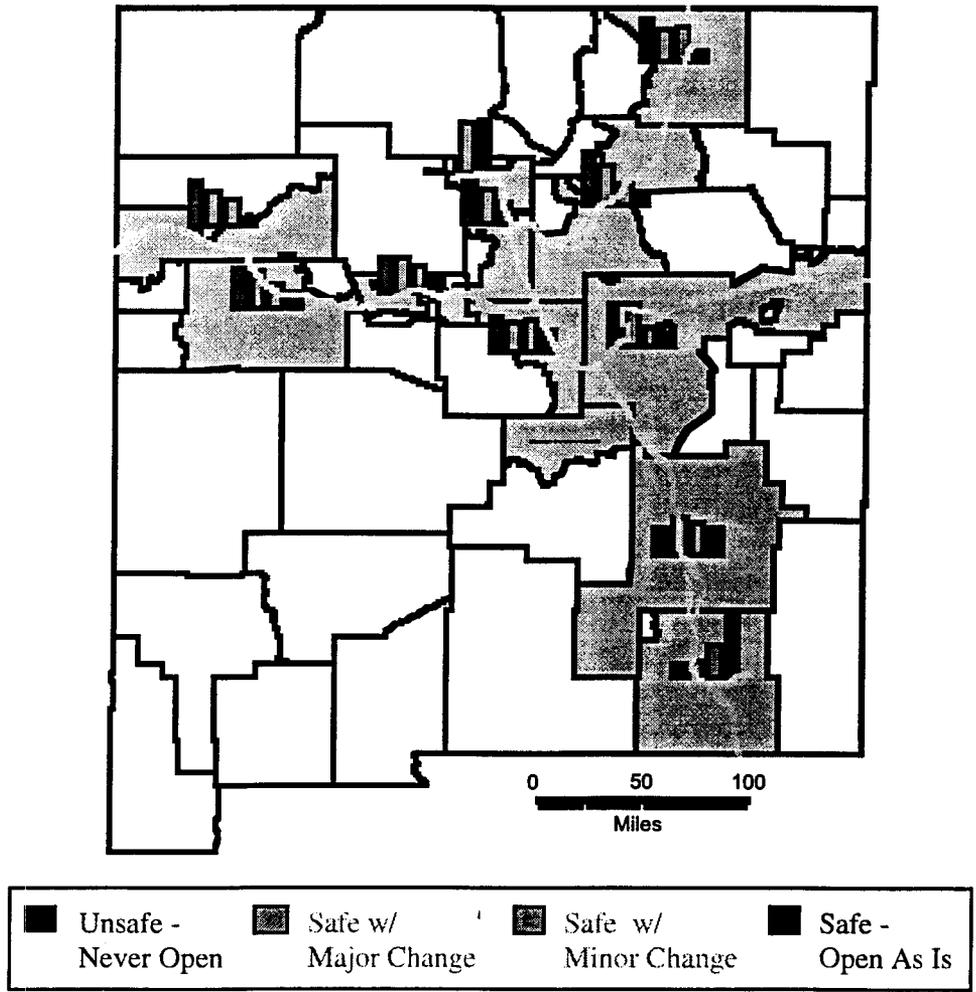


FIGURE 11
Responses to the WIPP Safety Question by Transport Route Counties
1990-1996



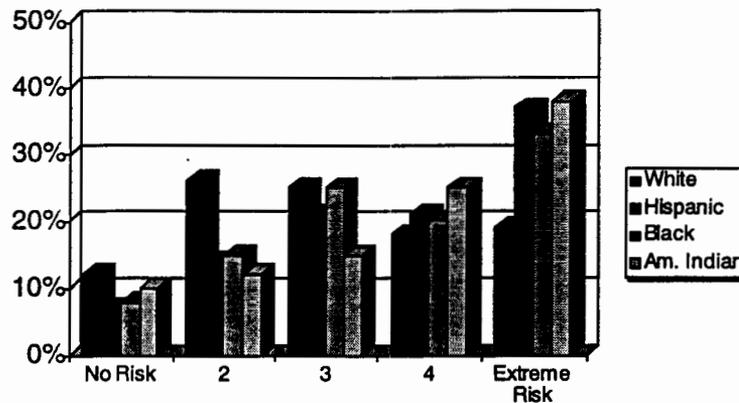
Variations in Perceived Risks of WIPP Transport

WIPP Transportation Risk Results by Ethnicity

Responses from Anglo and minority interviewees revealed clear differences in perceived transport risk, just as was the case for the WIPP safety question. As shown in Figure 12, the modal response for Anglo respondents was a low risk rating of two, whereas the mode for all other ethnic groups was the extreme risk rating of five. Comparing the average degree of perceived transportation risk across ethnic groups, Anglo respondents perceived a moderate degree of risk (3.1), compared to higher average risk ratings ranging from 3.5 to 3.7 among the minority ethnic groups.

FIGURE 12

Responses to WIPP Transportation Risk Question by Ethnicity
1992-1996



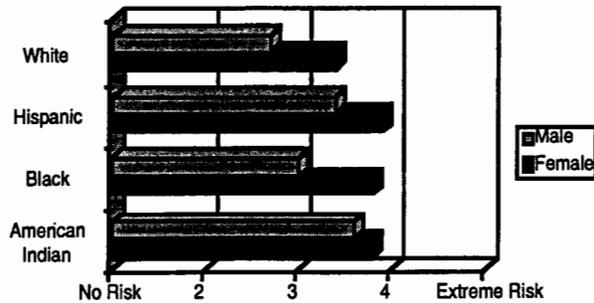
WIPP Transportation Risk Results by Gender

Figure 13 shows that gender differences are evident for the transportation risk question, and were even more pronounced than for the WIPP safety question. The mean difference in men's and women's risk attributions was largest among Anglos (0.74), although there were also significant differences for all other ethnic groups (Hispanics 0.53, American Indians 0.39, and Blacks 0.70).

FIGURE 13

Responses to the WIPP Transportation Risk Question by Gender

1992-1996



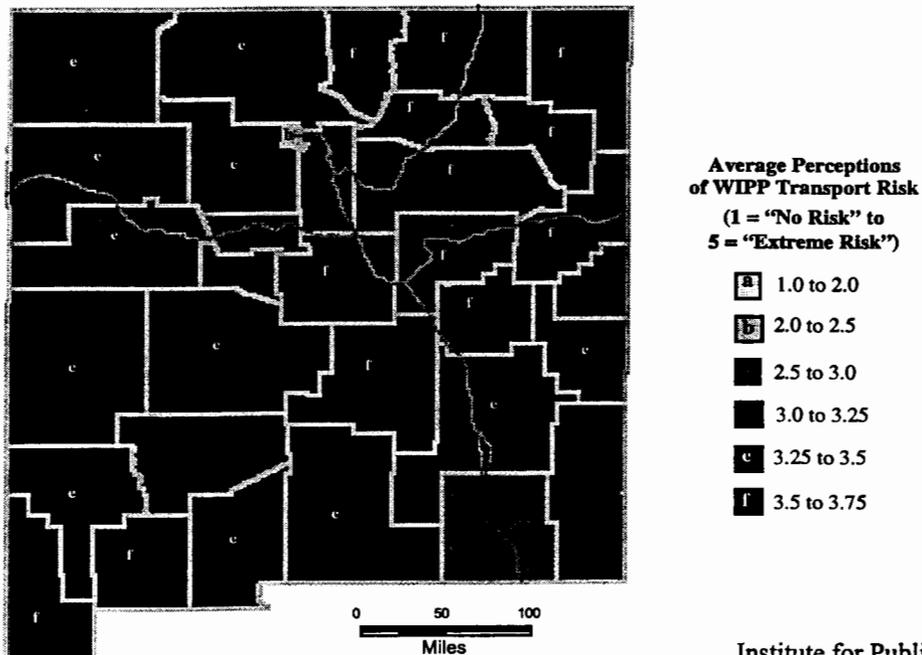
WIPP Transportation Risk Results by Locality

Figure 14 shows the perceived level of WIPP transport risk across New Mexico counties. The northeastern counties and the two most southwestern counties rated WIPP transport activities the riskiest: these counties reported mean scores ranging from 3.5 to 3.75 on a scale where one is no risk and five is extreme risk. In contrast, Eddy and Los Alamos Counties rated transportation to the WIPP facility as least risky with mean values of 2.6 and 2.0, respectively.⁶

FIGURE 14

Responses to the WIPP Transportation Risk Question by County

1992-1996



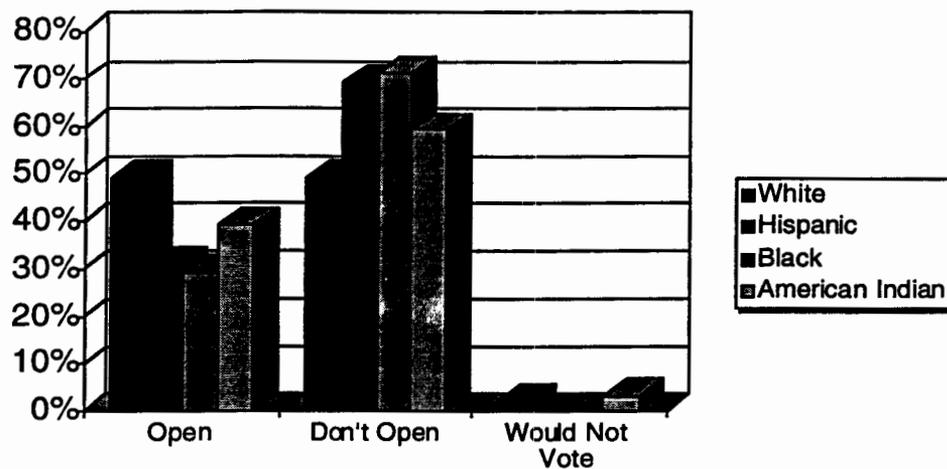
Variations in Voting Preferences for Opening the WIPP Facility

WIPP Referendum Results by Ethnicity

Among Anglo respondents there was an even split on the referendum question (49% would vote to open WIPP vs. 49% who would vote *not* to open the facility). However, Figure 15 shows that a majority of Hispanic, Black, and American Indian respondents would vote *not* to open the facility (the percentages are 69%, 71%, and 59%, respectively).

FIGURE 15

Responses to the WIPP Referendum Question by Ethnicity
1995-1996

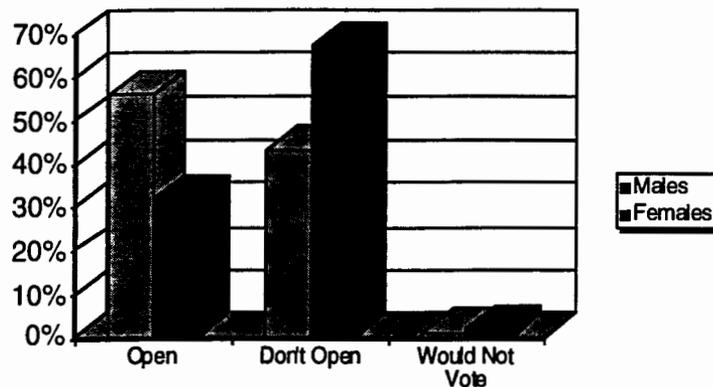


WIPP Referendum Results by Gender

Figure 16 shows that the results from the referendum question are also different for men and women. Of the women surveyed, 67% would vote to *not* open the facility, whereas only 43% of men would vote similarly.⁷ Overall, these results show stark differences among ethnic groups and men and women in how the WIPP is perceived. These differences are sufficiently pronounced that, if a referendum were held today on whether the WIPP should be opened the outcome could well hinge on the relative voter turnout across ethnic and gender lines. At least at the time of writing Anglo males would be likely to vote to open the facility, while women and minority voters would be likely to choose not to open the facility.

FIGURE 16

**Responses to the WIPP Referendum Question by Gender
1995-1996**



SUMMARY AND CONCLUSIONS

This study has shown that fewer than one-third of the respondents to our composite survey sample have taken the position that the WIPP is unsafe and should never be opened. A majority (53%) of the New Mexicans interviewed between 1990 and 1996 believed that although WIPP was unsafe at the time they were asked, they considered it possible to make the site safe with either major or minor changes. It is nevertheless quite probable that, if a referendum were conducted, New Mexicans would vote to oppose opening the WIPP at this time.

Our analysis also identified several relationships that have important implications for the WIPP policy debate. Most striking are the differences in perceptions of the WIPP among ethnic groups, between men and women, and across counties.

Differences among Anglo, Hispanic, American Indian, and African American respondents are also important in that they suggest that cultural factors influence how respondents view the WIPP. On average, Anglo respondents generally perceived less risk than other ethnic groups. Interestingly, however, gender differences were largest among Anglos. Put another way, Anglo men perceived less risk than all other groups (this includes Anglo women and minorities of both sexes).

Overall, women perceived the WIPP to be less safe and to pose greater transport risks than did men. This finding is consistent with other research. For example,

Barke, Jenkins-Smith, and Slovic (1997) found that such gender differences in perceptions held even when assessing risks among scientists.

Views of WIPP were also differentiated by geography. Respondents from Eddy and Lea Counties, which are most proximate to the WIPP facility, tended to perceive the WIPP to pose little risk. Along with those from Los Alamos County, these respondents were most likely to prefer to open the WIPP. Respondents from New Mexico's northeastern counties, on the other hand, tended to see much greater risks and were more likely to express opposition to opening the facility. Thus, should push come to shove, the politics surrounding the opening of the WIPP are likely to have a distinctive regional flavor within the State. This can have important implications for the WIPP policy debate if public consensus is needed to bring the goal of opening the site to fruition.

How likely are New Mexican's views of the WIPP to change? Our analyses show views of WIPP safety to have been very stable over the past seven years. Over the 1990-1996 period, perceptions of the safety of the facility did not shift significantly despite major program developments and a relatively high profile afforded the WIPP in the news media. Perceptions of the risks associated with WIPP transport also remained rock-steady. Furthermore, responses to the WIPP referendum question were tightly linked with perceptions of facility and transport safety. Therefore, absent substantive change in the content of the policy debate, it appears unlikely that public perceptions of risk and policy preferences will change significantly.

It is quite possible that some kind of substantive change could be in the offing, as the date for completion of the WIPP safety compliance analysis draws near⁸ and the scientific research projects on WIPP safety are completed and published. In addition, the formal process for evaluating WIPP compliance with relevant safety regulation by the US Environmental Protection Agency and the US DOE will be undertaken. The joint effect of these events -- completion of the safety studies and the authoritative decision on whether the WIPP is in compliance with safety regulations -- will almost certainly receive substantial media attention. The net effect on citizen perceptions and preferences is uncertain, however, and will depend both on how these events unfold and on how they are reported in the news media.

In sum, New Mexicans have not yet made up their minds about the WIPP. Finishing the "unfinished business" in the form of ongoing scientific research and the evolving regulatory process for certifying safety may change this. For the present, however, when asked if WIPP should be opened, New Mexicans have responded "not yet."

ENDNOTES

¹ The facility is designed to take transuranic wastes, most of which are not highly radioactive but have very long half-lives. Transuranic isotopes are those with atomic weights that are greater than uranium.

² See the listing of references in the bibliography for the Public Meetings held in 1978 and 1979; WIPP Stakeholder Meetings, 1994; and All Peoples Coalition & Citizens Against Radioactive Dumping, 1995.

³ These surveys are funded by the University of New Mexico Institute for Public Policy.

⁴ See Jenkins-Smith, Hank, & Amy Fromer. (1993, December) and Jenkins-Smith, Hank, Amy Fromer & Scott Rosenberg. (1993, July).

⁵ For an overview of the scientific analysis, see the Preliminary Performance Assessment for the Waste Isolation Pilot Plant. (1992, December). Albuquerque, New Mexico: Sandia National Laboratories. (Report No. SAND92-0700/1).

⁶ It should be noted that because several counties have very low populations they did not contain a sufficient sample size to allow researchers to compare attitudes and beliefs in all counties at an individual level. Those counties lacking sufficient sample sizes were aggregated with proximate counties having similar attributes. Hidalgo and Luna counties were combined since they are both located in the southwest portion of the state, have similar ethnic representation, and generally rely on the same type of economic activities (such as ranching and travel services). Catron and Grant counties were aggregated in a similar manner, as were Mora and San Miguel counties, and Colfax, Union, and Harding counties.

⁷ Because this question has been asked of only 1,077 respondents, it is not possible to do two-way splits by gender or ethnicity.

⁸ Congress recently voted to move the date for opening the facility forward to the fall of 1997, in amendments to the Waste Isolation Pilot Plant Land Withdrawal Act (Public Law 104-21, 9/23/96).

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