

## CHAPTER V

### SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

The data collected by the "Nebraska Public School Facilities Survey Questionnaire" during the fall of 1991 and the follow-up during the spring of 1992 were presented in the preceding chapter. The collection of this Nebraska school facility information was made by the researcher with the assistance of the staff of the Nebraska Council of School Administrators (NCSA) and Senior Fellows of the University of Nebraska Department of Educational Administration. The information collected was descriptive of both individual buildings and the overall condition of school district facilities. In addition, fiscal conditions for the maintenance and construction of new facilities were reported by district administrators. In this chapter, the purpose and method of the study are reviewed, and a summary of the findings, conclusions, recommendations, and recommendations for further study are presented.

#### Purposes of and Methods Employed in the Study

The first purpose for conducting this study was to establish a baseline set of Nebraska school facility data. This baseline of descriptive information and the analysis of the data will be made available to facility planners, district leaders, and legislative policy makers to assist in their decisions and to direct further investigations regarding the condition of Nebraska school facilities. This baseline facility data contained the survey

responses from Nebraska school administrators accountable for school buildings and school districts during the 1991-92 school year.

The second purpose in the study was to further describe the data by the use of frequency tables, central tendencies, and histograms. The final purpose was to determine if there were significant differences among administrators' responses when different categories of buildings and districts were evaluated. These categories included: "Class" of the school district, relative wealth as determined by "Quartile of Valuation/Pupil," the 1990 county census "Population Change Category," relative building age by "Periods of Facility Construction," and instructional grade range by "Building Category." The data were analyzed with the use of a computer with Statistical Analysis Support(c) software.

### Summary of Findings

Three research questions were posed in the study. A response to each question is given in this section. The response is presented as a summary of the findings from the previous chapter.

#### Research Question 1

What was the current status of Nebraska public school facilities? The following factors were considered: school district building fund levies, bond indebtedness, facility age, safety, capacity, physical condition, internal environment, school type, use of portable facilities, and accommodation for the handicapped.

Building demographics. In Nebraska's 828 Class II through VI public school buildings during the 1991-92 school year, administrators reported 18 percent of their facilities were overcrowded; 18 percent were rated poor for providing an adequate place for existing instructional programs; and 40 percent inhibited or prevented making desired changes in educational programming. Administrators reported that accommodations for changing technologies such as computers, closed circuit TV, and sufficient electrical outlets could not be made in 40 percent of their buildings. The physical condition of these school building interiors was judged poor by eight percent of the administrators, while the building exteriors were rated poor by ten percent of the administrators. Administrators in 10 percent of Nebraska's public school facilities perceived that their buildings were not free from safety hazards. Nebraska administrators reported that 55 percent of their school buildings were not completely accessible for handicapped individuals. Nebraska's buildings were reported to have air conditioned classrooms in just 32 percent of the buildings, and 37 percent of the administrators did not consider their classrooms to be consistently comfortable.

District demographics. Superintendents in Nebraska's 299 Class II through VI public school districts reported 45 percent of their districts had delayed facility maintenance within the past five years. Superintendents in 60 percent of Nebraska's public districts reported they had not been able to restructure or implement new instructional programs they believed desirable because of the limitations of their district's facilities. The use of technological advancements was inhibited by the facilities in 62 percent of

Nebraska's school districts. Attention to asbestos removal, radon checks, handicapped accessibility, and other required work was reported by 42 percent of Nebraska's superintendents as reasons for the delay of maintenance, remodeling, and new construction work in their districts. Portable facilities for instructional purposes were used in 15 percent of Nebraska's public school districts.

District facility fiscal condition and facility needs. The fiscal resources currently available in Nebraska school districts to provide revenue to maintain and construct new facilities were measured by reported property valuation. The efforts by district patrons to generate revenue and the existence of current facility bond debt were measured by the sinking fund levies and bond debt of a district. The superintendents' opinions regarding the current necessity for new construction and the fiscal ability to meet facility needs were measured by survey responses.

In the 1991-92 school year, superintendents in 194 of Nebraska's 299 Class II through VI public school districts, or 64 percent, reported using a special building or sinking fund levy. Similarly, 158 districts, or 53 percent, assessed property taxes to retire current building bonds. Superintendents in 100 of the 299 districts, or 33 percent, anticipated the necessity of a school bond referendum election. Of these 100 superintendents, only 58, or 58 percent, expected the bond issue would be approved by the voters of the district. Seventy-six superintendents reported a date for the bond issue election. Eight superintendents reported the proposed bond issue election was slated for the 1990-91 school year; however, the majority (58) reported the bond issue election was to be held in the years 1992-95.

Patrons of some Nebraska public school districts could meet the revenue demands required to maintain and construct new facilities without raising the property tax rate. A constant property tax rate was achievable by continued support of an existing building or sinking fund levy assessed against an adequate property tax base or by the immediate replacement of retired building bonds with an issue of new bonds. Only 19 percent of the superintendents considered their district fiscally capable to meet the district's facility needs over the next ten-year period without raising the property tax rate.

### Research Question 2

Were there significant differences between district class, wealth, relative bond indebtedness, building age, county population growth, and how public superintendents perceived their district's need for facility bond issues, potential for success of a bond issue, delay of facility maintenance, and implementation of technology?

As discussed in Chapter II, if differences in responses occur in a universe collection, then those differences are real. The researcher used chi square for Goodness of Fit to determine if the proportional differences were significant at the  $p < .001$  level. A contingency coefficient was also calculated for each chi square to determine the effect size of the proportional significance.

The class of a Nebraska school district was defined by statute. Because Classes IV and V each had only one district, the proportional differences of the chi square analysis of questions regarding the necessity of a bond issue, success of a bond issue, delay of facility maintenance, and

implementation of technology were not considered valid measures. The differences in responses between classes of district, however, were real.

Only 15 percent of the superintendents in Class II and Class VI districts anticipated a bond issue, while over one-third of Class III (38.7%) and both IV and V districts' administrators anticipated a bond issue. Both Class IV and Class V superintendents anticipated success of their districts' proposed bond issues, and 56 percent of the Class III superintendents anticipated success. Class II and Class VI superintendents anticipated success of their districts' bond issues at a rate of at least 60 percent. The reported delay of facility maintenance was common in all class districts. Both Class IV and Class V superintendents reported they were aware of the delay in maintenance in their district, and administrators in the other three classes reported maintenance was delayed at near the statewide average of 45 percent. Administrators in all class districts reported the implementation of technology to be inhibited. A majority of the administrators in all classes, with the exception of Class VI, reported the implementation of technology was inhibited by their facilities.

The relative wealth available to the patrons of a district to support efforts for facility maintenance and construction was based upon successive quartiles of increasing district property valuation divided by the district's average daily membership. There were differences in the number of superintendents who anticipated a bond issue in successive quartiles of wealth. Superintendents in the districts categorized in the poorest quartiles, one (48.0%) and two (34.7%) anticipated a bond issue more often than those in the wealthy quartiles, three (29.3%) and four (21.6%). The difference in

the superintendents' responses regarding the anticipated success of the proposed bond issues was significant. The superintendents' anticipated success of the proposed bond issues was in an inverse relationship to the relative wealth of the district. The wealthier the district, the less confident the superintendent was of success for the bond issue. The delay of facility maintenance was commonly reported by superintendents in all quartiles of wealth. The less relative wealth available to the patrons of the district, however, the higher the rate of superintendents who reported maintenance was delayed in their district. The majority of superintendents in all quartiles of wealth reported their facilities inhibited the implementation of technology. There was no significant difference in the superintendents' responses when analyzed by the wealth of a district.

The reported percentage of change in the Nebraska county population between the 1980 and 1990 census was used to determine the change category for each school district. The districts that were reported as anticipating a bond issue by their superintendents were categorized into the major growth (77.8%) and growth (42.1%) categories and were determined to be significantly different when compared to the districts reported in the decline (37.5%) and major decline (23.4%) categories. Although not significant, there were real differences between the number of superintendents reporting the anticipated success of the proposed bond issue in districts which were experiencing growth and those districts in decline counties. The superintendents' responses regarding the delay of maintenance or the implementation of technology were not significantly impacted by the growth or decline of the population in the districts.

The proportional differences of superintendents' responses, when the age of the majority of a district's facilities was considered, did not produce any significant results. More superintendents in districts where the majority of the buildings were constructed during the Baby boom era anticipated a bond issue (36.2%), while the Recent category contained the highest number (66.7%) of superintendents who anticipated success of the bond issue. More superintendents in districts where the majority of the buildings were in the World War II category reported delayed maintenance of their facilities (48.5%), while the Recent category contained the least number of superintendents (22.2%). Districts in which the majority of the buildings were categorized in the older two categories had the greatest number of facilities in which the implementation of technology was inhibited.

### Research Question 3

Were there significant differences between relative district wealth, county population change, and how school superintendents perceived their districts' ability to fund facility needs without raising the property tax levy?

The relative wealth accessible to the patrons of a school district for facility construction was determined by the dollars of assessed property valuation per pupil in average daily membership. Nebraska school district patrons were totally reliant upon this tax base to generate the revenues required to construct school facilities.

The rate of change in county population in Nebraska during the ten-year period preceding this project varied greatly from county to county.



The number of counties experiencing growth were greatly outnumbered by the number of counties in which there was a population decline. Relative property wealth and population change were major categories used for the analysis of responses in this study.

As previously reported, the patrons of some Nebraska public school districts could meet the revenue demands required to maintain and construct new facilities without raising the property tax rate. The ability to maintain a constant tax rate for facility construction or maintenance purposes could be achieved through the use of an existing building or sinking fund levy assessed against an adequate property tax base, or by the immediate replacement of retired building bonds with an issue of new bonds. In 1991, only 19 percent of the public school district superintendents considered their district fiscally capable to meet the district's facility needs over the next ten-year period without raising the property tax rate. As previously mentioned, access to an adequate property tax was a requirement to maintain the facility revenues without raising taxes. There were real differences in the responses of administrators in those districts with access to a higher amount of property valuation/pupil when compared to the responses of those administrators in districts with less resources. As the relative wealth of the district increased by quartile, more superintendents indicated their district was fiscally capable to meet their facility needs. In no quartile of wealth, however, did more than 30 percent of the superintendents report their district was fiscally capable for facility construction. The chi square analysis of these proportional differences revealed the results were not significant.

The analysis of fiscal capacity to fund facilities without raising property taxes by Population Change Category revealed no significant differences. Proportions did not vary significantly between categories of population change.

### Conclusions

The conclusions drawn from this study are presented by the descriptive indexes used throughout the study. These descriptive indexes are: "Class" of school district, relative wealth as determined by "Quartile of Valuation/Pupil," 1990 county census "Population Change Category," relative building age by "Periods of Facility Construction," and instructional grade range by "Building Category."

1. The "Class" of Nebraska school district was only descriptive from the perspective that it provided a known reference to a familiar categorization for Nebraska schools. Any significant findings related to class of district would need further study to determine if other variables present in the analysis by class of district had a relationship. For example, Class IV and Class V school district superintendents reported a need in their school district for a bond issue and an immediate or imminent date of urgency for the bond issue. Did the superintendents report the need for and urgency of the bond issue because of district classification or was the need for and urgency of the bond issue reported because both Class IV and Class V districts are urban districts experiencing major growth in their populations? A second example was that the lowest percentage rate of superintendents who reported their district using a sinking fund levy were

in Class VI school districts. Were these differences in rates solely attributable to the classification of the district or were they the result of a characteristic present in this class of district, such as more recently constructed buildings with access to a high property valuation per pupil?

Class II school districts had higher rates of inadequate buildings, which were more likely to inhibit change and whose exteriors were in poor condition. Class II school districts had low sinking fund levy rates and very few had bond debt. Those districts which did have bond debt had less than other classes of districts.

Class III school districts were the most numerous and diverse class of Nebraska school districts. This class contained the mean and the median in almost every category of analysis. Class III districts had every category of analysis, from poor to wealthy, from growth to decline, and with facilities categorized both old and new. Administrators in Class III districts reported a high need for school bond issues.

Class IV, Lincoln, and Class V, Omaha, each contained one school district. Both Class IV and Class V district superintendents reported a large number of buildings that had the same descriptive demographics as other school buildings in other class districts throughout the state. These buildings were in varying degrees of condition, age, and type. Administrators in both Class IV and Class V districts reported their districts had to delay regular maintenance of their facilities during the past five years. The administrators reported the need for facility bond issues, an expectation for success, and a high degree of urgency. These two districts used portable attendance facilities.

Class VI school districts had very few facilities that inhibited or limited change or the use of technology. Superintendents in Class VI schools reported more relative wealth, lower sinking fund levies, less facility bond debt. Class VI school districts were the most fiscally capable of all of Nebraska school districts.

2. The relative wealth of a school district for facility maintenance and construction was defined as dollars of property tax valuation per pupil as represented by average daily membership. This descriptive index provided the most significant differences in administrator responses. The results of the analysis of administrator responses by the district wealth category confirmed presumptions regarding wealth and the ability to provide adequate funding for facilities. Poor districts had a higher rate of buildings which did not accommodate technology, facility maintenance was more frequently delayed, and were more limiting to instructional change. Interestingly, districts that were categorized in the lower two quartiles of wealth had facilities which were more accessible to handicapped individuals and were more likely to have air-conditioned classrooms than those in the upper two quartiles. Districts categorized with less relative wealth used more portable facilities. A higher rate of districts categorized with low relative wealth anticipated bond issues; however, the superintendents in these districts were more confident of the success of the bond issue than superintendents of districts with high relative wealth.

Districts categorized with a high relative wealth had more buildings whose interiors and exteriors were in poor condition, fewer air-conditioned buildings, and buildings less accessible to the handicapped.

Superintendents in districts with high relative wealth reported their buildings did not prevent educational change and were not inhibiting the use of technology. Superintendents of districts categorized as having high relative wealth reported a lower rate of the use of sinking fund levies and less bond debt. Superintendents in the districts categorized as wealthy did not anticipate a high need for bond issues; however, when they did anticipate a bond issue they were not as confident of the success of the bond issue as superintendents in districts with low relative wealth.

3. During the 1980's, the rate of population change among Nebraska's 93 counties varied from a growth rate of 19.3 percent in Sarpy County to a decline rate of 22.1 percent in Blaine County. Along with this contrast in the rate of Nebraska population change, there was a disparity between the number of counties reporting population growth to the number reporting population decline. In Nebraska, only 10 of the 93 counties had a growth rate in their population from the 1980 census to the 1990 census.

When the change in the population demographics of the counties was considered, the analysis of building administrators and superintendents' responses regarding the condition of their buildings and the overall condition of the districts' facilities revealed some significant differences. The administrators of buildings and districts located in counties which experienced population growth reported higher rates of overcrowded buildings and more buildings that were not completely accessible to handicapped individuals. These same administrators, however, reported these school buildings were more likely to be air conditioned, had more comfortable classrooms, and were able to accommodate new instructional

technologies. At the district level, schools in the growth county category utilized portable facilities at a higher rate and had facilities which were perceived as more limiting to the instructional program by their superintendents. The use of special building or sinking fund levies, their rate, the existence of bond debt, and amounts of bond debt in population growth county districts were higher than those in districts in population decline counties. Population growth county districts had a high rate of need for facility construction bond issues, and the superintendents were more confident of success of their district's referendum for bond approval than superintendents of decline county districts.

Principals and superintendents in school districts in counties with a population decline painted a gloomy picture. These administrators reported the highest rates of buildings whose interiors and exteriors were judged to be in poor condition, and their school facilities inhibited changes in the educational programs. Principals of buildings in districts with a population decline also reported the highest rate of buildings considered not free of safety hazards. Superintendents of the districts in counties with population decline were more likely to report their districts had delayed maintenance and remodeling because of required attention to asbestos removal and handicapped accessibility projects. With regard to facility finance issues, superintendents in population decline counties reported lower use of building fund levies and less bond debt. The urgency of a facility construction bond issue, however, was reported high among some of the districts with a decline in population, while the anticipation of the success of these same bond issues was low.

4. When periods of original construction were considered, the evaluation of the results of the reported status of buildings and the opinions of the district-level administrators matched the anticipated responses of the researcher. With the exception of overcrowding, where no differences existed, school facilities classified in the categories of older facilities were reported at the lowest or poorest extreme in almost every item explored on the questionnaire. Administrators reported old facilities were the most inhibiting to instructional change, had the highest rate of poor interiors, exteriors and uncomfortable classrooms, had more buildings judged not generally free from safety hazards, were least accessible to handicapped individuals, and did not accommodate the utilization of new technologies. Superintendents in districts that had older facilities reported facility maintenance was more frequently delayed; attention to required work, such as handicapped accessibility and asbestos removal, limited their efforts to restructure the district's instructional programs. A higher rate of superintendents, in districts with a majority of older facilities, reported their districts were less fiscally capable to meet the district's facility needs without raising taxes. These same superintendents reported their districts anticipated a bond issue with a high rate of urgency; however, these superintendents did not anticipate the success of their district's facility bond referendum.

Patrons in districts in which the majority of the facilities were constructed in more recent time periods were paying for bond debt and had more bond debt than districts with older facilities.

5. The type of instructional facility, either elementary, middle, secondary, K-12, or other, was only considered in the analysis of buildings. The purpose of this descriptive analysis was to determine differences in the responses of building administrators when different types of buildings were considered. The results of this analysis did not reveal any significant results when comparing elementary to secondary, middle to secondary, or middle to elementary. However, when comparing the responses of administrators in the K-12 instructional facility category to the other categories of facility types, there were differences, some of which were significant. The K-12 instructional facility category was only reported in districts which were in Class II and, more frequently, in small Class III school districts. Districts with K-12 buildings tended to have a higher valuation per pupil and were located in school districts in counties where population was in decline. Most of these K-12 buildings were constructed in the period of construction of World War II and prior. The age of most of these K-12 structures was at least 40 years; some were as old as 90 years. Administrators of these buildings reported their facilities had the highest rate of uncomfortable classrooms, no air conditioning, classrooms that did not accommodate the use of new technology, buildings that were not accessible to the handicapped, and buildings that were not completely free from safety hazards.

### Recommendations

As a result of this study's findings and conclusions, the following recommendations are presented for consideration:



1. Resources should be provided for and efforts made to further study the methodology for inspection and collection of school facility information. Although administrators have opinions regarding the condition of their school building and the district in which they serve, they are not trained inspectors, and this was identified as a limitation of this study. The methodology and planning for an adequate and thorough evaluation of the condition of Nebraska's school facilities should be completed.

2. There should be a statewide program and responsible personnel to periodically inspect, collect, and report information regarding structural conditions and demographics of school facilities. Nebraska school facility inspections should be conducted on a cycle of not less than ten years, with an equal or adequate number of the school buildings inspected each year in order to meet the ten-year cycle. These facility inspections could be a part of each district's cyclic accreditation review plan of instructional programs. These facility inspections could be conducted by a combination of local personnel and approved state-trained inspectors.

3. A statewide information base regarding the status of Nebraska school facilities should be established. This information base could contain the results of periodic school facility inspections, along with annual updates of significant changes of a building's condition or instructional use. This information base should contain facility demographics, including facility age, instructional use, capacity, square footage of classrooms and other usage areas, numbers of teaching stations, and other necessary demographic information.

4. A study of Nebraska school districts should be conducted to specifically identify the required adjustments in facilities, remodeling, and retrofitting of climate control systems necessary to accommodate a year-round instructional program within the state. This information could be used to determine related costs and feasibility for a year-round instructional program. Any policy decision made to adopt such a year-round instructional program without appropriate information would be considered premature.

5. In light of the current efforts to make the financing of education in Nebraska more fiscally equitable, the Nebraska School Finance Committee and Nebraska legislative policy-makers should review the reliance of the local property tax base for construction of public school facilities. A disparity currently exists between those districts in which patrons have access to more resources for school facility construction compared to those districts whose patrons do not have equal access to an adequate resource base.

#### Implications for Further Study

In addition to the above recommendations, the following suggestions are made for further investigation regarding the status of Nebraska's school facilities.

1. A study should be conducted to determine the methodologies and resources utilized in other states for school facility inspection, data collection, and data analysis and analysis reporting. This study would provide best practices information with regard to the extent school facility

inspections and facility adequacy analysis are currently being conducted in other states.

2. A detailed study should be conducted regarding the history of school finance litigation in relation to the financing of school facilities, the current methodology for the financing of school facilities, equitable alternatives for financing school facilities, and how these alternatives might be incorporated into Nebraska's current school finance methodology. This study would provide policy-makers with an information base to draw upon if consideration is to be given to changing the current method for financing school facilities.

3. A study should be conducted to determine if the physical and instructional conditions of Nebraska school facilities have an effect upon the morale of the instructional team and the quality of instruction provided to the pupils in the school. A potential follow-up to this study could investigate the effects of the physical condition of the facility in relationship to measures of student productivity and academic achievement.

4. A study should be conducted to determine the effects of Nebraska population changes upon the attitudes of patrons of school districts regarding their school systems' instructional program, their current facilities, the potential for new facilities, or consolidation or reorganization of school districts. With the likelihood of continued population change within the counties of Nebraska, alternatives to current school facilities should be examined. Currently in Nebraska, school patrons in remote areas and areas of population decline have been experiencing school facility

replacement and renovation problems equal to school patrons in areas experiencing population growth.

Education researchers have stated that school facilities are an integral part of plans to change and provide new educational programs for the youth of this country. The researchers also confirmed there are many concerns regarding the future of public education. The plans for change have been clouded with many issues. Facility concerns was only one of the issues, but a significant issue.

5. The survey of Nebraska school administrators confirmed that many of the Nebraska's school facilities in the early 1990's had grown obsolete for their intended purposes and were inadequate to meet the physical and instructional needs of many of the districts' pupils. The resources necessary to maintain, remodel, or construct new facilities were not potentially available to many districts because of the inequity of access to these fiscal resources.

Policy-makers and legislative leaders should initiate a plan for correction of these deficiencies and fiscal inequities. Many of the facility deficiencies may have been the result of the fiscal inequities which have existed from district to district. To prescribe change, leaders will be required to search for answers regarding Nebraska's facility problems. Planners will need additional information to provide decision makers with an accurate picture of the different facility problems across the state. Action should be taken now to further the investigation of the status of Nebraska's school facilities. Negligence to act upon the identified facility

problems will allow this facility situation to grow worse and the fiscal disparities to increase.