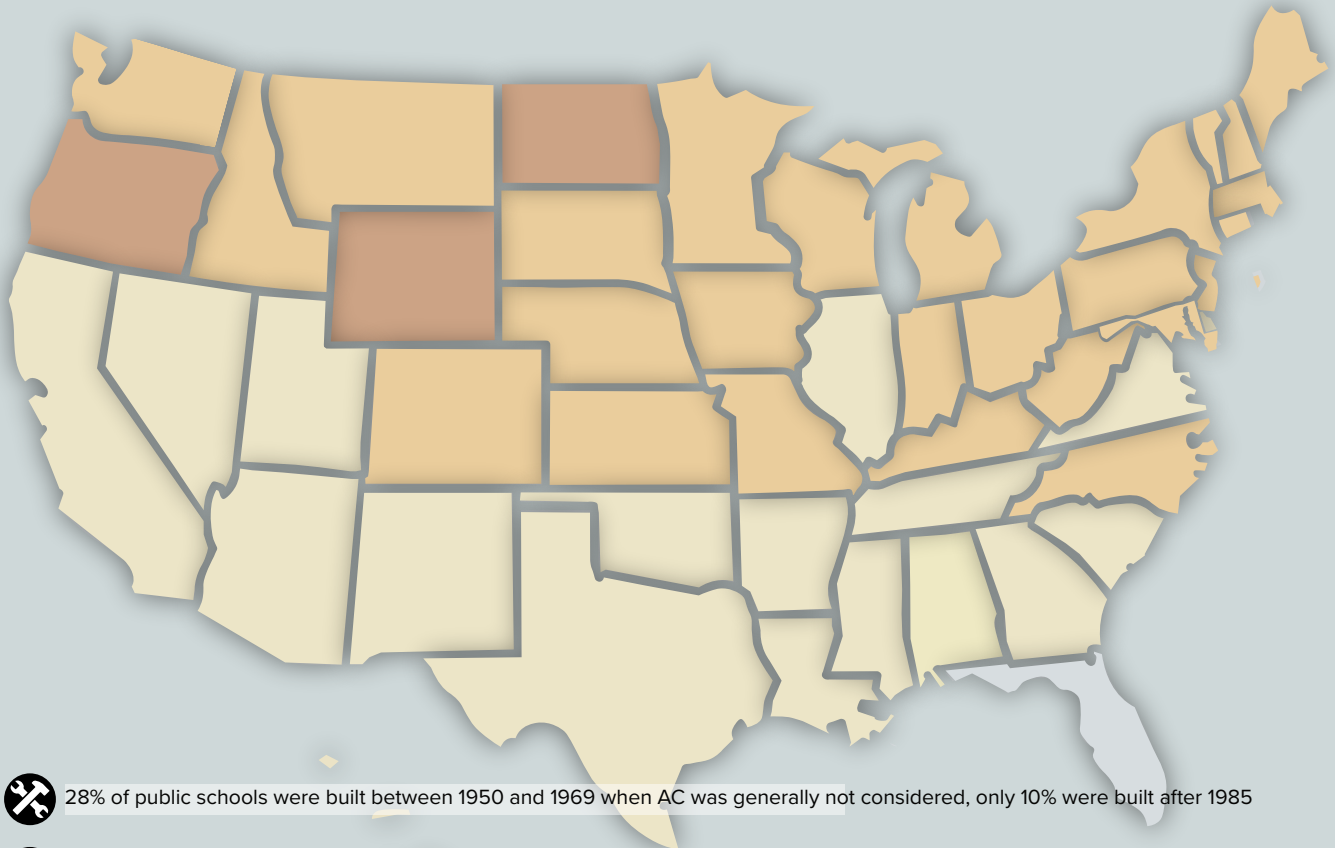


NATIONAL SCHOOL HEAT STUDY

Percent of schools in a given state that are too hot



28% of public schools were built between 1950 and 1969 when AC was generally not considered, only 10% were built after 1985



One study has found that students math scores were increased up to 11 points with proper ventilation



54% of small schools (Under 300 students) in the US have inadequate AC



58% of the elementary schools have inadequate AC

TOP 10 STATES BY COST (IN MILLIONS)

State	New AC	Upgrade AC	Annual Cost	Total Cost
NY	\$9,384	-	\$248	\$9,633
IL	\$7,875	\$14	\$166	\$8,056
OH	\$7,747	\$8	\$163	\$7,919
PA	\$6,561	\$4	\$129	\$6,696
MI	\$6,347	\$0.4	\$146	\$6,494
NJ	\$5,652	\$0.3	\$144	\$5,796
IN	\$4,459	\$7	\$109	\$4,576
MN	\$3,519	-	\$63	\$3,583
WI	\$2,535	-	\$47	\$2,583
MA	\$2,437	-	\$35	\$2,473

	50-59.99%	3 States
	40-49.99%	24 States
	30-39.99%	17 States
	20-29.99%	2 States

About Resilient Analytics

Resilient Analytics answers climate impact questions with the Infrastructure Planning Support System (IPSS). IPSS is a unique, first-of-its-kind system that performs engineering analysis within a broader resiliency perspective. IPSS models infrastructure vulnerability to future climate conditions, considers specific adaptation scenarios, and provides a cost benefit based risk analysis. IPSS draws its data from a range of climate science projections, engineering and materials studies, and environmental research to provide users with decision support that is based in real-world risk scenarios.

Resilient Analytics Project Summaries

Schools in the US are not equipped for extreme heat. Renovating these schools to install appropriate air conditioning will result in a \$100 billion price tag to prevent overheated schools. As climate change escalates, including an increase in extreme heat events, it is imperative that schools are prepared for these events. Evidence illustrates that US public schools are already experiencing extreme heat in many parts of the country.

Over the last several years, schools across the US have been forced to take 'heat days,' or cut school days short because of classrooms that are too hot for students to effectively learn. Temperature projections indicate that this issue will only increase over the next two decades. In many parts of the country, air conditioning will need to be installed where it never previously existed. In many other areas of the country, air conditioning systems will need to be upgraded to meet the needs of hotter temperatures. In both cases, these adjustments to air conditioning systems will be required within the next decade.

Failing to address these upgrades will result in students experiencing extreme heat in locations as diverse as Florida and Washington. Evidence of this exposure and its potential impact has already been seen in multiple cities where public schools have cancelled school or ended days early due to temperatures that were unbearable for students, faculty, and staff. The challenge facing the country is that in many locations air conditioning was never considered due to the lack of need when the schools were built. The Department of Education has found that 28% of public schools were built between 1950 and 1969, while only 10% were built after 1985.

In a study by Resilient Analytics, Inc, the cost of addressing this lack of air conditioning is projected to exceed \$100 billion by the year 2040. These costs include new systems across the upper Midwest as well as upgrades across the southern sunbelt states. Additionally, increased energy costs must be factored in to successfully operate these systems as well as maintenance over an extended period.

Unfortunately, school districts are challenged to find the budgets required to meet these estimated costs. This lack of budgetary capacity is resulting in over 30% of public schools facing the deterioration of existing systems and many districts facing costs in the tens of millions of dollars to install or upgrade air conditioning systems. The bottom line for schools and their surrounding communities is that climate change is an ever-increasing threat to school infrastructure, requiring schools to get support for infrastructure adaptation. The alternative is an environment where students suffer both educationally as well as physically for the foreseeable future.