Planning and Assessment

The tasks and responsibilities of the Department of Maintenance are coordinated and managed by the Director of Maintenance with support and assistance from two maintenance foremen, one fiscal secretary, one account clerk, and one work order specialist. As described in the work flow section, prioritizing of work (emergency, urgent, and scheduled) is accomplished on every work order.

Annual Facility Inspections (AFI) are an important component to the preparation and implementation of the Comprehensive Maintenance Plan for Educational Facilities. The goal of this program is to develop a systematic approach to the assessment of maintenance needs, prioritize maintenance requirements, provide better coordination in the scheduling of work, and to ensure equity of effort throughout the system. Short-term and long-term improvements are identified for possible future funding through the operating or capital budget process.

Preventive Maintenance Inspections (PMI) are physical inspections that are made of critical mechanical, electrical, plumbing equipment, and architectural features. The results of these inspections are used as a tool to increase the reliability of the schools' infrastructure.

Planning for future budgetary needs is accomplished using the following three methods:

- Scheduled Replacement, Repair, or Refurbishment (SRRR)
    - This process uses the predicted life span of a building component or system plotted against the original installation date. (See Appendixes A through L, pages 105-131 for these schedules.)
- Annual Facility Inspections (AFI)
    - This process uses a physical inspection and interview process to determine the remaining year(s) before a building component actually needs replacement, repair, or refurbishment. The frequency of these inspections increases as the SRRR date moves closer to the present date.

- Preventive Maintenance Inspections (PMI)
  - This process uses a physical inspection and operational verification to monitor the remaining life of schools' systems.

The SRRR is used to predict likely long-term (15 - 20 year) projects based on the typical life cycles of various facility components and systems. The values produced from the SRRR are useful in long-range planning and projections but may not represent the individual reality for each component and facility in fine detail. The AFI/PMI results are used to adjust for the more short-term (2 – 10/15 year) needs of each facility component. This allows accurate adjustments to be made to the SRRR which enables the Department of Maintenance to devise a near year (1 - 6 year) plan best suited to the actual condition of school sites with little change to the long-range planning and budgetary needs and requests. These adjustments are reflected in the Appendix A through L tables as the "Adjusted Number of Years."

Average System Age Per School

From a higher level, the age of school facilities is monitored by calculating an age of each school based on the average age of the systems installed within the school considering the last time these systems were renovated or replaced. After each school is assigned an average age, the schools can be viewed and plotted against a failure likelihood curve **Table 7** (on page 55). The curve represents the likelihood of failure based on the age of the systems. Systems are more likely to fail after they are first installed (Infant Failure Rate), but this rate decreases quickly and by the 7th year of age the failure rate is normal (Constant Failure Rate). Conversely, the failure rate of systems slowly increases in the 25th year and doubles by the 33rd year of the system's life (Twilight Failure Rate). This tool facilitates focused planning to help minimize unexpected system outages which could interrupt the educational process. Another way to view this information is represented in **Table 6** (on page 55) which represents the percentage of the total square footage of school facilities in each of the failure rate categories.
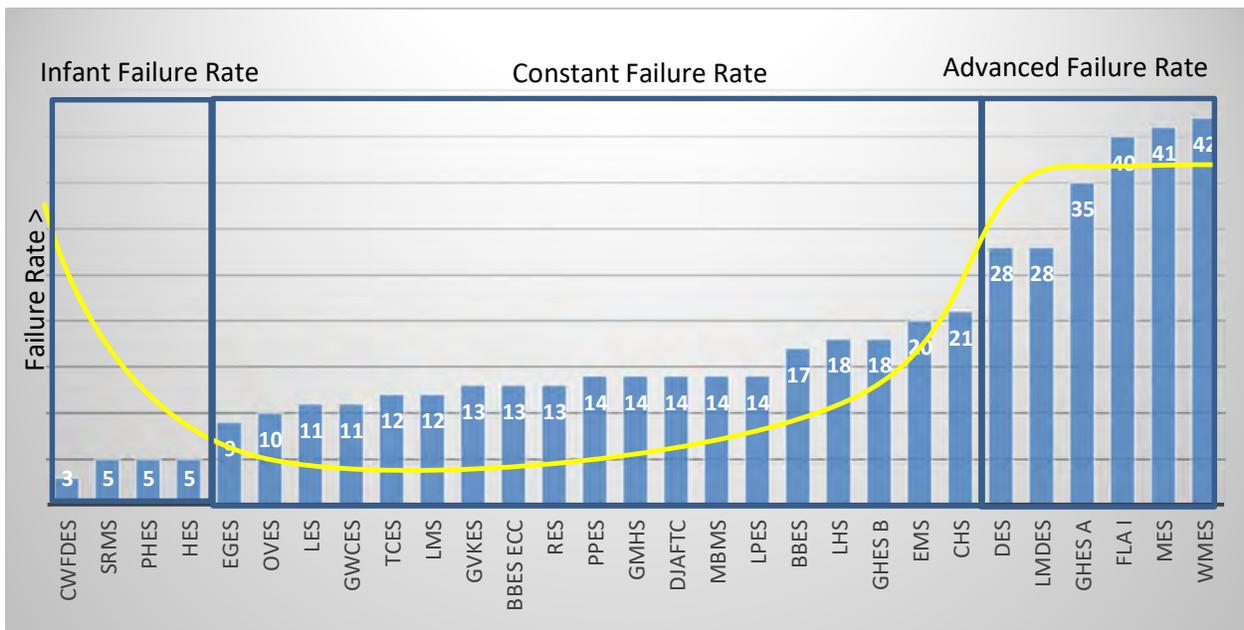
Table 6

Sq.ft.

- Infant Failure Rate <7 yrs
- Constant Failure Rate 8-25 yrs
- Advanced Failure Rate > 25yrs

13%

10%

77%
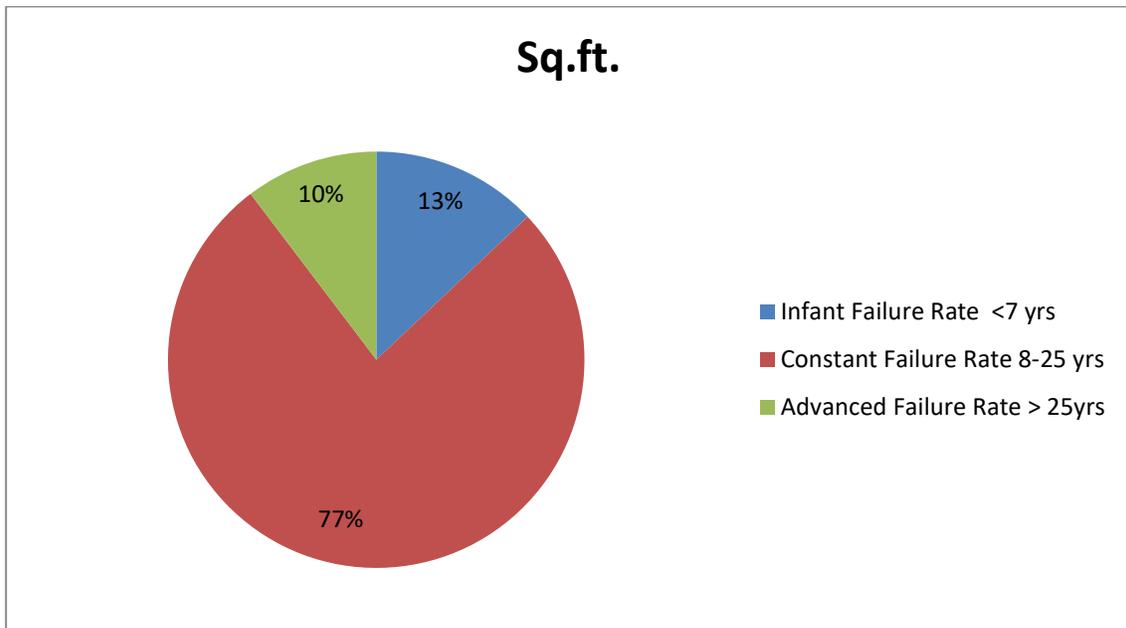
Fraction of square footage in each failure rate category

Age	Sq.ft.
Infant Failure Rate <7 yrs	298,718
Constant Failure Rate 8-25 yrs	1,769,992
Advanced Failure Rate > 25 yrs	237,552

Table 7

Average Schools' Systems' Componets age reflected against average failure rate