

Fire Alarms

The Fire Marshal has issued numerous reports on the condition of the fire alarms in EPISD schools. His concern is that the systems are antiquated and no longer function properly.

We observed that on nearly every campus, the fire alarm was either not functioning due to signal alarms or simply not working at all. As a result, EPISD must consider fire alarms as a high priority in the 5 year plan.

As part of the repairs and replacements to the fire alarms, consideration should be given to what the district is trying to accomplish with the alarm system. The current Eagle Pass building code is the 2012 IBC which states the following:

[F]907.2.3 Group E.

A manual fire alarm system that initiates the occupant notification signal utilizing an emergency voice/alarm communication system meeting the requirements of Section 907.5.2.2 and installed in accordance with Section 907.6 shall be installed in Group E occupancies. When *automatic sprinkler systems* or smoke detectors are installed, such systems or detectors shall be connected to the building fire alarm system.

Exceptions:

1. A manual fire alarm system is not required in Group E occupancies with an *occupant load* of 30 or less.
2. Manual fire alarm boxes are not required in Group E occupancies where all of the following apply:
 - 2.1. Interior *corridors* are protected by smoke detectors.
 - 2.2. Auditoriums, cafeterias, gymnasiums and similar areas are protected by *heat detectors* or other *approved* detection devices.
 - 2.3. Shops and laboratories involving dusts or vapors are protected by *heat detectors* or other *approved* detection devices.
3. Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1, the emergency voice/alarm communication system will activate on sprinkler water flow and manual activation is provided from a normally occupied location.

Based on compliance with the current code, the district should consider 1) should alarms protect life and/or property? 2) Will having manual pull stations be a temptation for student mischief?

The least expensive system would be a manual pull station system with a central alarm notification panel. The pull stations shall be located at each exit and every 200' within the building. Each pull station costs approximately \$25.00 for material. An automatic system would require smoke detectors at approximately 30' centers in hallways and main rooms. Each smoke detector costs approximately \$50.00 for material. *An automatic system offers the added protection of the property even when the building is not occupied.*

Buildings with automatic sprinklers such as CC Winn and EPJH only need to have a single manual pull station and alarm activation with fire sprinkler flow detection.

All types of fire alarms require notification to occupants with a horn and strobe light as required by the American with disabilities Act.

Fire Alarm Recommendations:

1. Buildings built prior to 1998 should have fire alarms replaced in compliance with current codes.
2. Elementary schools requiring fire alarm replacement shall have automatic smoke detection as allowed in section 907.2.3 Exception 2 of the IBC.
3. Memorial Jr High and Eagle Pass High school shall have a manual fire alarm installed per section 907.2.3 of the IBC
4. Buildings built after 1998 shall have the existing automatic systems inspected and fixed as required. CC Winn and EPJH have fire sprinkler systems and the alarm may be tied into the flow switch of the sprinkler system if advantageous.
5. Portable buildings do not require fire alarm protection and therefore should not be included with the fire alarm systems for their given campus.
6. A single source vendor and equipment manufacturer should be hired for all of the alarm work if possible.
7. A consultant should be hired to review the condition of the fire alarms of the district on an annual basis.

Fire alarm priority list and cost estimate:

| Fire Alarms | | | | | |
|------------------|-----------|--------------------|--------------------|-----------------|----------------|
| Item #: | Priority: | Campus: | Item: | Estimated Cost: | Comments: |
| 1.02 | 1 | LDC | Fix Fire Alarm | \$ 14,000.00 | Under contract |
| 1.04 | 1 | High School | Replace Fire Alarm | \$ 219,821.00 | Bid received |
| 1.12 | 1 | CC Winn | Replace Fire Alarm | \$ 150,000.00 | |
| 1.13 | 1 | EPJH | Fix Fire Alarm | \$ 7,500.00 | |
| 1.14 | 1 | Memorial Jr. High | Replace Fire Alarm | \$ 75,000.00 | |
| 1.15 | 1 | Benavides | Replace Fire Alarm | \$ 20,000.00 | |
| 1.16 | 1 | Cerna | Fix Fire Alarm | \$ 2,500.00 | |
| 1.17 | 1 | Glass | Replace Fire Alarm | \$ 30,000.00 | |
| 1.18 | 1 | Graves | Replace Fire Alarm | \$ 36,300.00 | |
| 1.19 | 1 | Lee | Replace Fire Alarm | \$ 20,000.00 | |
| 1.20 | 1 | Liberty | Fix Fire Alarm | \$ 2,500.00 | |
| 1.21 | 1 | Mancha | Fix Fire Alarm | \$ 2,500.00 | |
| 1.22 | 1 | San Luis | Fix Fire Alarm | \$ 2,500.00 | |
| 1.23 | 1 | Seco Mines | Replace Fire Alarm | \$ 38,599.80 | |
| 1.24 | 1 | Kennedy Hall | Replace Fire Alarm | \$ 7,500.00 | |
| 1.25 | 1 | EEC | Fix fire alarm | \$ 8,034.60 | |
| 1.55 | 1 | Darr | Fix fire alarm | \$ 20,000.00 | |
| 1.56 | 1 | Gallego | Fix fire alarm | \$ 2,500.00 | |
| 1.57 | 1 | Gonzalez | Fix fire alarm | \$ 2,500.00 | |
| 1.58 | 1 | Houston | Fix fire alarm | \$ 2,500.00 | |
| 1.60 | 1 | Rosita Valley Elem | Fix fire alarm | \$ 2,500.00 | |
| 1.61 | 1 | RVLA | Fix fire alarm | \$ 2,500.00 | |
| Total Fire Alarm | | | | \$ 669,255.40 | |

Fire alarm replacement and repair schedule:

- 9/19/14 RFP advertised
- 10/10/14 Proposals received and ranked
- 10/14/14 Proposal taken to board
- 11/1/14 Contract start date
- 8/15/15 Contract completion

We have included a conservative amount of time for the installation of the fire alarms because for cost purposes it will likely be most advantageous to use a smaller firm that will require more time to complete the work. The extended schedule should also allow some flexibility to work around testing and teacher schedules since the installations will be performed during the school year.