

The logo for Huckabee, consisting of a red square with the word "Huckabee" in white text.

**Huckabee**

# FACILITY ASSESSMENT REPORT

(ELEMENTARY SCHOOLS AND ADMINISTRATION)

REPORT 3 OF 3

---

KILLEEN INDEPENDENT SCHOOL DISTRICT



# TABLE OF CONTENTS

---

Professional Signature Sheet

Acknowledgments

Preamble

Schools and Facilities

District Map

Executive Summary

## ELEMENTARY SCHOOLS

---

### BELLAIRE

Campus Data

Site and Master Plans

Civil - Site

Building Condition

Engineering Report – MEP

Engineering Report – Structural

Roofing / Walls

Security

### BROOKHAVEN

### CEDAR VALLEY

### CLARKE

### CLEAR CREEK

### CLIFTON PARK

### DUNCAN

### EAST WARD

### FOWLER

### HARKER HEIGHTS

### HAY BRANCH

### IDUMA

### IRA CROSS, JR.

### MAXDALE

### MEADOWS

### MONTAGUE VILLAGE

### MOUNTAIN VIEW

### NOLANVILLE

### OVETA CULP HOBBY

# TABLE OF CONTENTS

---

PEEBLES  
PERSHING PARK  
REECES CREEK  
SAEGERT  
SKIPCHA  
SUGAR LOAF  
TIMBER RIDGE  
TRIMMIER  
VENABLE VILLAGE  
WEST WARD  
WILLOW SPRINGS

## ADMINISTRATION

---

ADMINISTRATION BUILDING  
JACKSON PROFESSIONAL LEARNING CENTER (JPLC)  
KILLEEN LEARNING SUPPORT SERVICES (KLSS)

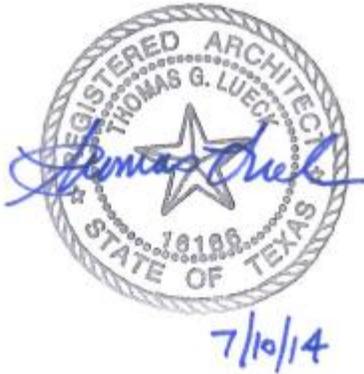
## APPENDIX

---

OPINION OF POSSIBLE PROJECT COSTS

# PROFESSIONAL SIGNATURE SHEET

---



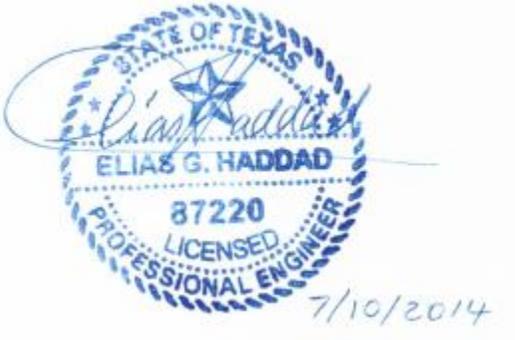
**ARCHITECT:**  
Huckabee & Associates, Inc.  
Attn: Thomas G. Lueck, AIA  
4521 South Hulen, Suite 220  
Fort Worth, Texas 76109  
817.377.2969



**STRUCTURAL ENGINEER:**  
Huckabee & Associates, Inc., F-1252  
Attn: Benchmark H. Harris, P.E.  
4521 South Hulen, Suite 220  
Fort Worth, Texas 76109  
817.377.2969



**MECHANICAL ENGINEER:**  
Estes McClure & Assoc., Inc., F-893  
Attn: Clint A. Johnson, P.E.  
104 West Main, Suite C  
Pflugerville, Texas 78660  
512.251.5177



**CIVIL ENGINEER:**  
Cunningham-Allen, Inc., F-284  
Attn: Elias Haddad  
3103 Bee Cave Road, Suite 202  
Austin, Texas 78746  
512.327.2946



## ACKNOWLEDGMENTS

---

### Administration

Dr. Robert Muller, Superintendent

Dr. John Craft, Assistant Superintendent

### Board of Trustees

Terry Delano, President

Corbett Lawler, Vice President

Minerva Trujillo, Secretary

JoAnn Purser, Board Member

Susan Jones, Board Member

Shelley Wells, Board Member

Marvin Rainwater, Board Member

### Support

Kenny Crawford, Executive Director of Facilities

Thomas Colvin, Director of Maintenance &  
Operations

Martha Blount, Facility Planning & Evaluation  
Specialist

### Assessment Team

#### Architecture

Thomas G. Lueck, AIA

Huckabee

Fort Worth, TX

Lance C. Melton, AIA, LEED AP BD+C

Huckabee

Fort Worth, TX

#### Structural

Benchmark Harris, PE

Huckabee

Fort Worth, TX

#### Security

Alan Lawrence, RCDD/NTS

Huckabee

Fort Worth, TX

#### Civil Engineering

Cunningham-Allen, Inc.

Austin, TX

#### MEP Engineering

Estes McClure

Pflugerville, TX

#### Roofing

Roof Technical

Fort Worth, TX



## PREAMBLE

---

As directed by Killeen ISD, Huckabee has prepared the following Facility Assessment Report of the conditions of the thirty Elementary Schools and three administration buildings within the district. The report outlines the current status of the facilities, including observed building code and handicap accessibility non-compliance; and general building conditions for Mechanical, Electrical & Plumbing, Fire Protection, site Civil, Structural, Roof and Building Envelope, Security surveys that review the facility's infrastructure, and equitability between facilities.

This report is intended to outline the general condition of the facility by visual observations and is not intended to be an exhaustive, detailed study of all existing conditions, potential hazards and/or important considerations for all possible future construction projects. If the Board of Trustees would like to assess areas for a specific construction scope, this will require a more focused assessment.

Existing buildings in the City's jurisdiction are not required to meet each new building code as it is adopted. However, if the building undergoes a major renovation or addition, the City can then require that the entire building, not just the addition or renovation, be brought up to current codes. In the report, building code violations are identified in the event the facility is renovated.

Where ADA / TAS (handicap accessibility) non-compliance items were discovered and noted, the deficiency items will need to be repaired in order to bring the facility into compliance with the American Disabilities Act / Texas Accessibility Standards. Unlike the building code, ADA/TAS is federal and state law that has no grandfather clause for non-compliant items. The district previously brought many deficient items discovered during a TEA PAR inspection up to compliance. The items noted in the report are those items observed that were not noted and corrected by the PAR inspection.

Contained in the body of the report are color-coded floor plans of the facility that show the areas of identified deficiencies in terms of building code, ADA (handicap accessibility), Texas Education Agency (TEA) facility requirements and other needs. Also in the report are photographs and floor plans of the facility noting different areas of concern. No guarantees are implied by these Professional Opinions which are limited by the conditions observed at area selected for viewing by each Professional on the Assessment Team.

There are often many ways to address any one concern; some ways can cost more to address the concern and have a low risk or low maintenance cost, while other ways can cost less to address the concern but have a higher risk or higher maintenance cost, and in some cases action may be deferred. Huckabee Staff have met often with various people that represent Killeen ISD. Opinions of Possible Project Cost (cost estimates) to address the items noted in this report are provided based on Huckabee's understanding of how the District would like to address each item.

It is the intent of this report to assist the Killeen ISD Board of Trustees in making informed decisions regarding future needs. This assessment should be considered a living document, to be reviewed and updated at regular intervals as the District grows and as educational needs change.



# SCHOOLS AND FACILITIES



## Elementary Schools ●

1. **Bellaire**  
106 W. Jasper Drive  
Killeen 76542  
336-1410
2. **Brookhaven**  
3221 Hillard Avenue  
Killeen 76543  
336-1440
3. **Cedar Valley**  
4801 Chantz Drive  
Killeen 76542  
336-1480
4. **Clarke**  
51612 Comanche Avenue  
Fort Hood 76544  
336-1510
5. **Clear Creek**  
4800 Washington Boulevard  
Fort Hood 76544  
336-1550
6. **Clifton Park**  
2200 Trimmer Road  
Killeen 76541  
336-1580
7. **Duncan**  
52400 Muskogee Road  
Fort Hood 76544  
336-1620
8. **East Ward**  
1608 E. Rancier Avenue  
Killeen 76541  
336-1650
9. **Fowler**  
1020 Trimmer Road  
Killeen 76541  
336-1760
10. **Harker Heights**  
726 S. Ann Boulevard  
Harker Heights 76548  
336-2050
11. **Hay Branch**  
6101 Westciff Road  
Killeen 76543  
336-2080
12. **Haynes**  
3309 W. Canadian River Loop  
Killeen 76549  
336-6750
13. **Iduma**  
4400 Foster Lane  
Killeen 76549  
336-2590
14. **Ira Cross, Jr.**  
1910 Herndon Drive  
Killeen 76543  
336-2550
15. **Maxdale**  
2600 Westwood Drive  
Killeen 76542  
336-2460
16. **Meadows**  
423 27th Street  
Fort Hood 76544  
336-1870
17. **Montague Village**  
84001 Clements Drive  
Fort Hood 76544  
336-2230
18. **Mountain View**  
500 Mountain Lion Road  
Harker Heights 76548  
336-1900
19. **Nolanville**  
931 Old Nolanville Road  
Nolanville 76559  
336-2180
20. **Oveta Culp Hobby**  
53219 Lost Moccasin Street  
Fort Hood 76544  
336-6500
21. **Peebles**  
1800 N. W.S. Young Drive  
Killeen 76543  
336-2120
22. **Pershing Park**  
1500 W. Central Texas Expressway  
Killeen 76549  
336-1790
23. **Reeces Creek**  
400 W. Stan Schlueter Loop  
Killeen 76542  
336-2150
24. **Richard E. Cavazos**  
1200 N. 10th Street  
Nolanville 76559  
336-7000
25. **Saegert**  
5600 Schorn Drive  
Killeen 76542  
336-6660
26. **Skipcha**  
515 Prospector Trail  
Harker Heights 76548  
336-6690
27. **Sugar Loaf**  
1517 Barbara Lane  
Killeen 76549  
336-1940
28. **Timber Ridge**  
5402 White Rock Drive  
Killeen 76542  
336-6630
29. **Trimmer**  
4400 Success Drive  
Killeen 76542  
336-2270
30. **Venable Village**  
60160 Venable Road  
Fl. Hood 76544  
336-1980
31. **West Ward**  
709 W. Dean Avenue  
Killeen 76541  
336-1830

32. **Willow Springs**  
2501 W. Stan Schlueter Loop  
Killeen 76549  
336-2020

## Middle Schools ●

33. **Audie Murphy**  
53393 Sun Dance Drive  
Fort Hood 76544  
336-6530
34. **Charles E. Patterson**  
8383 W. Trimmer Road  
Killeen 76542  
336-7100
35. **Eastern Hills**  
300 Indian Trail  
Harker Heights 76548  
336-1100
36. **Liberty Hill**  
4500 Ki Carson Trail  
Killeen 76542  
336-1370
37. **Live Oak Ridge**  
2800 Robnett Road  
Killeen 76549  
336-2490
38. **Manor**  
1700 S. W.S. Young Drive  
Killeen 76543  
336-1310
39. **Nolan**  
505 E. Jasper Road  
Killeen 76541  
336-1150
40. **Palo Alto**  
2301 W. Elms Road  
Killeen 76549  
336-1200
41. **Rancier**  
3301 Hillard Avenue  
Killeen 76543  
336-1250
42. **Smith**  
51000 Tank Destroyer Boulevard  
Fort Hood 76544  
336-1050
43. **Union Grove**  
101 E. Iowa Drive  
Harker Heights 76548  
336-6580

## High Schools ▲

44. **C. E. Ellison**  
909 Elms Road  
Killeen 76542  
336-0600
45. **Harker Heights**  
1001 FM 2410  
Harker Heights 76548  
336-0800

46. **Killeen**  
500 N. 38th Street  
Killeen 76543  
336-7206

47. **Robert M. Shoemaker**  
3302 S. Clear Creek Road  
Killeen 76549  
336-6900

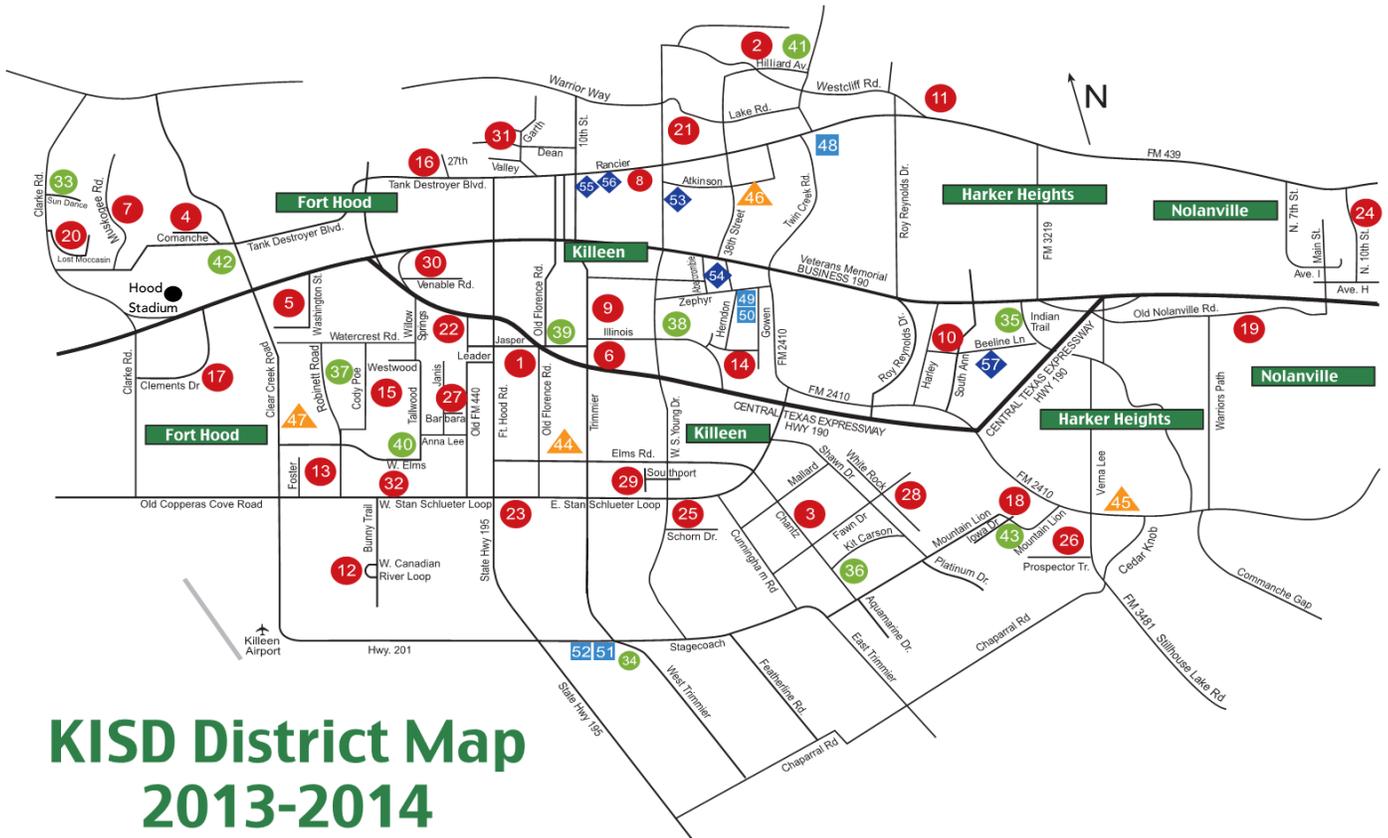
## Special Campuses ■

48. **Bell County Juvenile Detention Ctr/JJAEF**  
4800 E. Rancier Avenue  
Killeen 76543  
690-7022
49. **Gateway High**  
4100 Zephyr Road  
Killeen 76543  
336-1700
50. **Gateway Middle**  
1307 Gowen Drive  
Killeen 76543  
336-1690
51. **KISD Career Center Campus**  
1322 Stagecoach Road  
Killeen 76542  
336-3800
52. **Pathways Academic Campus**  
1322 Stagecoach Road  
Killeen 76542  
336-7250

## Administration ◆

53. **Administration Building**  
200 N. W.S. Young Drive  
Killeen 76543  
336-6000
54. **Jackson Professional Learning Center (JPLC)**  
902 Rev. R.A. Abercrombie Drive  
Killeen 76543  
336-1741
55. **Killeen Learning Support Services (Administrative Annex)**  
902 N. 10th Street  
Killeen 76541  
336-0200
56. **Student Services**  
902 N. 10th Street  
Killeen 76541  
336-3822
57. **Technology Services Ctr**  
104 E. Bellins Lane  
Harker Heights 76548  
336-6884

# DISTRICT MAP



## KISD District Map 2013-2014

# EXECUTIVE SUMMARY

---

## BACKGROUND OF THIS ASSESSMENT

Herein, we are pleased to present the findings of our assessment of your facilities. We would like to express our sincerest appreciation to all those who met with us, assisted us, and at times tolerated us throughout this entire process. This input is invaluable to the success of this process.

In this executive summary we outline facts and figures about the work, facts about the Killeen ISD facilities, the general findings of the assessment, and overall opinions of probable costs (cost estimates). Findings about specific facilities can be found in the later portions of this document where each facility is discussed in great depth and detail. Also included in those portions are task lists of needs.

The facility assessment is a tool to assist Killeen ISD in several key ways. It documents existing building finishes, classroom sizes, and other facility information that will allow for comparison to future adopted district facility standards (none adopted as of the date of this assessment). It further serves as a tool for making decisions about the future of the district as it relates to facilities and how well those facilities support the district's mission. It allows for a determination of the level to which facilities are consistent and provide a reasonable level of equity across all district facilities for all learners. It provides a baseline of pricing / budgeting for the District to begin project and/or capital improvement planning (CIP).

A facility opinion of probable costs (cost estimate) for each building is included for planning purposes in prioritizing possible items to include as a budget for use in the proposed CIP. The costs are presented in the following categories of hierarchy per input from KISD Administration:

- Tier 1 – Life Safety Code / Handicap Accessibility Deficient Items
- Tier 2 – Repair (2a) or Replacement (2b) Items
- Tier 3 – Cosmetic / Equitability / TEA Items

In a few cases, items may be included in more than one place as they may overlap with other survey items. For example, roof work may be noted in the roof report that may be duplicated under MEP as it relates to the installation of new rooftop mounted equipment.

All costs included are conceptual in nature and include escalation (a measure of anticipated inflation) to the end of 2015 (if work bids after 2015, then budget to be adjusted for inflation at 6%-8%/year). Costs shown are total project costs and include cost of work, escalation, contingencies, and soft costs. Furniture, Fixtures, and Equipment (FF&E) is not included in the proposed project opinion of probable costs / budget. A summary table shows the cumulative cost impacts. However, it is important to note that prioritization, phasing, discovery of additional detail, and development of the final scope of work for projects will almost certainly affect these costs. Therefore, costs need to be continually monitored for the duration of the project to manage the impact of these type activities on the cost presented herein.

This report should become the data that will provide for decision making and consensus building as to where the district is going and where KISD wants to be within a yet to be determined timeframe.

## THE ASSESSMENT TEAM:

We have had a team of more than 30 individuals who have been:

- Gathering documents of the KISD facilities;
- Walking the approximately 2.7 million square foot of space in the Elementary Schools (not including Cavazos and Haynes) and 3 auxiliary facilities (Administration, KLSS, and JPLC);
- Walking the 503 acres of property with those facilities;

# EXECUTIVE SUMMARY

---

- Reviewing and documenting with KISD staff any known needs of the district facilities;
- Downloading institutional knowledge important to the task at hand;
- Meeting with leadership to understand what the future of KISD is envisioned and how the facilities need to serve that future;

Total Number of Facilities Included in this assessment [High Schools (report 1) + Middle Schools (report 2) + Elementary Schools and Support Buildings (report 3)]:

Elementary Schools	30
Middle Schools	10
High Schools	4
Other Educational	2
Athletic Facilities	3
<u>Administrative/Support</u>	<u>1</u>
Total	50

Note that the following facilities were not included within this assessment scope by KISD direction to keep the focus mainly on direct education facilities older than 2009:

ES – Cavazos and Haynes (both opened after 2009) not assessed

MS – Patterson (opened after 2009) not assessed

Support – Gateway, New Career Academy, Pathways, KLSS Technology, Technology Center, Fleet Maintenance, Grounds Maintenance, Central Warehouse, Property Management, Athletic Warehouse, Fairway, Sallie Mae Building, and Old Nolanville Facility not assessed

## BUILDING ANALYSIS

Killeen ISDs facilities include several older facilities with multiple additions and a lesser number of newer facilities. The age of the facilities is largely a reflection of the development of the community which is served by the school district. For example as would be expected the oldest facilities are generally located in the City of Killeen and the newer facilities are generally in expansion areas of Killeen and located in the City of Harker Heights, Nolanville, and Fort Hood. Due to the varying population impact to the KISD community has relative to troop activity on Fort Hood, the quantity of elementary schools in respect to the quantity of middle and high schools is disproportionate to a typical K-12 school district model. Simply stated, the number of younger military families with young children is greater than any other age family unit. The location of these facilities by community is as follows:

### Elementary Schools

- 19 in the City of Killeen
- 7 on Fort Hood (5 within secure perimeter)
- 3 in the City of Harker Heights
- 1 in the City of Nolanville

### Middle Schools

- 6 in the City of Killeen
- 2 on Fort Hood
- 2 in the City of Harker Heights
- 0 in the City of Nolanville

## EXECUTIVE SUMMARY

---

### High Schools

- 3 in the City of Killeen
- 1 in the City of Harker Heights
- 0 in Fort Hood
- 0 in the City of Nolanville

### Athletic Facilities

- 2 in the City of Killeen
- 1 on Fort Hood

A simple calculation of the average age of KISD's building stock shows the following:

- Elementary Schools are 31 years
- Middle School are 23 years
- High Schools (including Buckley Stadium) are 33 years
- Other Ed Facilities are 33 years

It should be noted that the ages range as follows:

- Elementary Schools range in age from 70 years to new fall 2014
- Middle Schools range in age from 53 years to 5 years
- High Schools range in age from 50 years to 18 years.

### PROTOTYPE FACILITIES

Killeen ISD's facilities consist of several prototype plans that have been used for multiple campuses. The prototypes used by the district have changed and varied over the years. The prototypes evolve for some of the following reasons:

1. Teaching methodologies have changed.
2. The community has grown quickly in some areas and slower in others.
3. Different administrations have led the district with a vision shift toward facilities and programs.
4. In many cases the prototype has been added onto in differing manners following their original construction.
5. A prototypical school may not be exactly the same campus to campus as there may be subtle changes to the basic form of the prototype. These changes may be due to site conditions or configurations, lessons learned each time the facility was built, or other undefined reasons.

For instance Hay Branch, Willow Springs, Mountain View, Reeces Creek, Clear Creek, and Cedar Valley are sister plans of either Clarke or Duncan Elementary.

### SITE SIZES

While there is no defined standard for site size in the State of Texas, however our experience tells us that schools sites should be in the following ranges:

- Elementary School Sites           10-12 usable acres
- Middle School Sites                24-30 usable acres
- High School Sites                   65+ usable acres

The Council of Educational Facility Planners International (CEFPI) makes the following recommendations for school sites:

# EXECUTIVE SUMMARY

---

- Elementary Schools 10 acres, plus 1 acre for every 100 students
- Junior High Middle Schools 20 acres, plus 1 acre for every 100 students
- Senior High Schools 30 acres, plus 1 acre for every 100 students

## GENERAL FINDINGS

In general terms we have made the following observations:

1. General Items:
  - a. While all facilities have been maintained to the greatest extent possible with the monies and staff available and the age of many of the building's elements, in general terms the older buildings are showing their age and their systems are getting more difficult to maintain including subsurface utilities.
  - b. As would be expected newer facilities have fewer problem areas that were evident during this assessment.
2. Texas Accessibility Standards and Building Code:
  - a) Though most of the interior elements of the facilities comply, many of the items noted in the assessment identify railing and accessible route deficiencies. Site corrections around facilities are needed to properly comply with TAS / ADA.
  - b) Many of the classrooms have fire rated doors with wire glass. Future renovations will require replacement of this glass and in some cases the entire door assembly in order to be compliant with life safety code. The doors will need to have closers, proper smoke gaskets, fire rated assembly labels on each fire rated door, and replace wire glass with the current code allowed vision glazing. This cost consideration should be considered on any high school renovation. Doors with noted replacement / repair issues have been noted for replacement in this assessment. However, not all need to at this time.
1. Once new district wide facility technical standards are adopted by the district, more consistent equitable educational environments can be provided across the district. Mainly due to the varying age of the buildings, the interior educational environment varies between schools.
2. Site General:
  - a) The elementary school sites in general are sized sufficient for the functions they serve with exception to Clifton Park, East Ward, (old) Fowler, Harker Heights, Sugar Loaf, West Ward, Bellaire, and Brookhaven (8 out of 30). Though the proximity of the exterior program elements could be better located in proximity to the programs they serve, most sites are within the recommend size range of 10-12 acres for an Elementary School.

Clifton Park ES	9.8 acres	Nolanville ES	15.0 acres	Venable Village ES	32.0 acres	
East Ward ES	8.0 acres	Clarke ES	16.6 acres	Trimmier ES	18.0 acres	
(old) Fowler ES	6.5 acres	Duncan ES	25.1 acres	Montague Village	17.5 acres	
Harker Heights ES	6.0 acres	Hay Branch ES	15.0 acres	Maxdale ES	20.0 acres	
Meadows ES	15.1 acres	Willow Springs ES	15.0 acres	Ira Cross ES	15.0 acres	

## EXECUTIVE SUMMARY

---

Peebles ES	10.0 acres	Mountain View ES	16.5 acres	Iduma ES	15.0 acres	
Pershing Park ES	16.0 acres	Reeces Creek ES	26.0 acres	Oveta Culp Hobby	14.0 acres	
Sugar Loaf ES	7.0 acres	Clear Creek ES	18.0 acres	Timber Ridge ES	16.9 acres	
West Ward ES	6.5 acres	Cedar Valley ES	18.0 acres	Seagert ES	13.4 acres	
Bellaire ES	6.4 acres	Brookhaven ES	8.0 acres	Skipcha ES	18.4 acres	

- b) As typical for most school district's facilities, it does not appear concrete pavement joints are being resealed for any district facilities on a regular basis which would help protect the pavement sub-grade thereby extending the life of the pavement. In addition, sidewalk joints, where abutting buildings, are not being resealed on a regular basis which would help protect the building foundation sub-grade from water infiltration.

### 3. Civil:

The majority of the deficiencies observed consisted of pavement and flatwork failures with a few instances of drainage and erosion issues. Below is a generalized summary of our findings.

#### i. Surface Drainage

- a) Overall, surface drainage appeared to be adequate. In general, fixes for the localized drainage issues that were observed can be addressed by improving the grades and the drainage system in the vicinity of the area. The more severe instances were observed at Montague, Venable, Willow Springs, and Trimmier, where the grades may have changed over time and more grading work will be necessary to return the drainage patterns at the classroom wings to the original design intent.

#### ii. Asphalt Pavement:

- a) As an on-going maintenance program, it is recommended that pot hole repair, crack sealing, and seal coating be applied where the asphalt pavement section has not failed. This helps avoid further deterioration which would result in more costly repairs later. Based on our observations, the following elementary schools would benefit from such measures: Cedar Valley, Clarke, Clear Creek, Duncan, East Ward, Fowler, Mountain View, Reeces Creek, and Sugar Loaf. Where the pavement section has deteriorated beyond repair, the recommendation is for a full replacement. This includes reworking the subgrade, and re-installing base and asphalt. These conditions were observed at Hay Branch, Peebles, and West Ward elementary schools. The repair recommendations will be tailored further after a geotechnical analysis of the existing conditions and recommendations for pavement thickness are developed by a geotechnical engineer.

#### iii. Concrete Pavement:

- a) As expected, concrete pavement is in better condition overall. A few localized areas have been identified where the concrete pavement has deteriorated. Recommendations also included replacing failed asphalt entrance driveways with concrete driveways.

#### iv. Texas Accessibility Standards:

- a) Through visual observation, it was noted that a few ramps and flatwork/sidewalks needed to be added or improved around the various sites. An overall accessibility analysis will have to be performed to ensure full compliance with the standards.

## EXECUTIVE SUMMARY

---

- v. Water and Wastewater Utilities:
  - a) No water or wastewater utility issues were apparent during our site visits.
  
- 4. Foundations:
  - a) The Elementary School foundation types vary. Many are slabs on grade, which sometimes move when the clay subgrade swells or shrinks due to moisture changes. Movement of slabs on grade can create problems such as unlevel floors which can in some instances cause conditions that do not comply with Texas Accessibility Standards, cracks in walls, door not operating properly, water leaks, etc... Many of these problems can often be reduced by maintenance projects or bond projects, such as re-levelling floors, repairing cracks in walls, resetting doors, fixing leaks, etc... We generally did not observe any slabs on grade with such an extent of problems that we would recommend replacing the existing slab on grade with a system that requires less maintenance, such as a structurally suspended foundation type. Slab movement is often related to moisture changes caused by exterior grades not providing positive drainage away from buildings which, for example, can occur as soil erodes under roof drain downspouts; we recommend following Civil Engineering recommendations for regrading to address all water drainage and infiltration problems noted during the assessment.
  
  - b) Several campuses appear to not have a functioning moisture barrier under the slab which has led to challenges to get floor finishes placed in recent years following a reduction in allowable VOCs to stick to the slabs. An example of this is Sugarloaf ES where the originally constructed portion of the building does not have an under-slab vapor barrier and the VCT has since been removed due to moisture and delamination issues. The stained sealed concrete does look and perform well for the district in this location.
  
- 5. Structural Framing:
  - a) Unreinforced masonry can often exhibit non-structural cracks as well as cracks that are structurally significant. Unreinforced Masonry often has an inadequate connection at the top of exterior walls that are parallel to existing joists, which in some extreme cases can allow the wall to be pulled down suddenly during an extreme wind event. Furthermore, it is common for exterior screen walls in some of Killeen's older structures to have masonry screenwalls that may be completely unreinforced, which was more common during those construction eras; it is often common that unreinforced masonry screenwalls fall suddenly during extreme wind events or when hit by vehicles. There are often many mitigating circumstances, such as shielding effects of nearby structures and bracing effects of non-structural items like flashing. Recommendations are made this report.
  
  - b) There are many steel framing systems that do not have the small bracing members underneath that are industry standard today to prevent a premature lateral torsional buckling of the roof structure during wind uplift. Pre-Engineering Metal Buildings and steel roof bar joists both were observed to not have this bracing and we recommend it be added.

## EXECUTIVE SUMMARY

---

### 6. Sealants and Asbestos:

- a) Asbestos containing materials are known to exist in some facilities as identified in District reports most updated in September 2013 by Burcham Environmental Services and APASI Lab. The data herein was derived from the district provided reports.
  - i. The JPLC and KLSS buildings each have asbestos containing elements in window glazing compounds and pipe insulation.
  - ii. The Administration building has asbestos containing elements in domestic water pipe mastic and floor tile mastic.
  - iii. Each of the following elementary school facilities are noted to contain asbestos in various locations including window glazing compound, floor tile mastic, pipe mastic, roofing mastic, and pipe insulation:
    - 1. Bellaire ES
    - 2. Clear Creek ES
    - 3. Clifton Park ES
    - 4. Duncan ES
    - 5. East Ward ES
    - 6. Fowler ES
    - 7. Harker Heights
    - 8. Peebles ES
    - 9. Pershing Park ES
    - 10. Sugar Loaf ES
    - 11. West Ward ES
  - iv. When renovations are planned for these areas, the asbestos material will have to be properly abated.
- b) Several older campuses with existing original single pane steel framed windows do not perform well from an energy stand point. These windows have been noted for Tier 3 replacement.
- c) Most of the facilities have some level of failed control and expansion sealant joints. These have been noted as Tier 2b replacement.

### 7. Door Hardware:

- a) Some door hardware is not TAS/ADA compliant.
- b) Classrooms with code required fire rated doors (which is most) have hold open stops installed and no closers. This application of hardware may function well for the teachers but, it does not comply with the life safety code today nor when the facility was constructed. These are noted as Tier 1 replacement.

### 8. Finishes and Casework:

- a) Casework in some facilities requires replacement. The items assessed are either noncompliant with accessibility codes, are old and damaged, are fabricated from substandard material, or are subjected to consistent moisture, causing warping, bowing, and separation of major components creating structural failure.

## EXECUTIVE SUMMARY

---

### 9. Mechanical

- a) The HVAC systems at all KISD elementary schools and support facilities are comprised entirely of DX rooftop units and split systems. The age and condition of this equipment varies throughout the district as new buildings and additions have been built and mechanical renovations have occurred. Many units throughout the district, however, are either at or are approaching the end of a recommended 15 year useful life.
  - i. Skipcha, Saegert, Oveta Culp Hobby, and Timber Ridge have been equipped with dedicated outside air units that provide preconditioned air to the DX rooftop units.

### 10. Electrical

- a) Many district facilities are in need of additional dedicated computer panels as well as TVSS and isolated ground protection.
- b) The age and condition of electrical systems vary throughout the district, as renovations and replacements have occurred over the years. Several facilities have distribution equipment that has surpassed a recommended useful life of 25 to 30 years.
  - i. The electrical systems at Bellaire, Clifton Park, Harker Heights Elementary, Peebles, Perishing Park, Sugar Loaf, Clarke, Duncan, KLSS, and JPLC contain such equipment.
- c) Several facilities throughout the district have electrical distribution equipment that is now considered obsolete that is being recommended for replacement. This equipment is considered a potential fire hazard, so its replacement is being classified as a Tier 1 deficiency.
  - i. The electrical systems at Clarke, Bellaire, KLSS, and the Administration Building contain such equipment.
- d) Most lighting ballasts throughout the district are electronic and the standard fluorescent bulb size is T8.
  - i. There are T12 sized fluorescent bulbs in the KLSS Athletic Field locker room areas that are being recommended to be replaced.
- e) Many facilities lack lighting occupancy sensors. The installation of occupancy sensors can help buildings become more energy efficient and cost effective.
  - i. Meadows and Saegert are currently the only KISD elementary schools utilizing occupancy sensors.

### 11. Plumbing

- a) Urinal and water closet flush valves in most facilities are in good, working condition, though some units are showing signs of dezincification. Several buildings, mostly those constructed within the last decade, have been equipped with sensor activated automatic flush valves.

## EXECUTIVE SUMMARY

---

- b) Restroom lavatories are a combination of manual and metered faucets with Crane, American Standard, and Kohler porcelain. Many student restrooms utilize sensor activated 2 and 3 person wash stations.
- c) Halsey-Taylor, Oasis, Elkay, and Sunroc manufacture a majority of the electric water cooler drinking fountains throughout the district's facilities. Due to varying facility ages, the condition of electric water coolers varies from building to building.
  - i. Clifton Park, Harker Heights Elementary, Peebles, Sugar Loaf, Bellaire, Nolanville, Duncan, Hay Branch, Willow Springs, Mountain View, Clear Creek, and the KLSS have electric water coolers that are in poor condition. Several of these units were not functioning at the time of the site visit.
- d) A majority of KISD water heaters are manufactured by Rheem/Ruud, A.O. Smith, Raypak, and State Select. A majority of the water heaters throughout the district are in good to moderate condition, though some have surpassed the end of their useful life.
  - i. Clifton Park, Nolanville, Mountain View, Cedar Valley, Brookhaven, and JPLC have domestic water heaters and boilers that are in poor condition and are being recommended for replacement.
- e) Sewer and plumbing piping at most facilities is in good to moderate condition.

### 12. Fire Protection / Fire Alarm

- a) Silent Knight manufactures the fire alarm system utilized at almost all KISD facilities, and most systems are 2004 or newer. The recommended useful life for fire alarm systems is 12 years.
  - i. The Administration building, KLSS, and the KLSS Athletic Field do not have a fire alarm system in place.
  - ii. The fire alarm panel at the JPLC is a Simplex 4020 panel that has surpassed its useful life. It is recommended that this system be replaced.
- b) The installation of a fire protection sprinkler system is being recommended for any campus that does not currently have one.
  - i. Meadows, Pershing Park, Willow Springs, Reeces Creek, Oveta Culp, Timber Ridge, Saegert, and Skipcha are the only campuses with a fire protection system currently in place.

### 13. EMS

- a) Alerton control systems are utilized at all KISD campuses. The recommended useful life for EMS controls is 12 to 15 years.

## EXECUTIVE SUMMARY

---

### 14. Security:

- a. Most campuses have varying levels of need related to general campus safety from a global standpoint to protect students, staff, and building infrastructure.
- b. There is access control at all the campuses. Some campuses are more complete than others. However I did not visit a campus where all the exterior doors were on access control. Some campuses stated that additional doors were going to get the controlled access feature. Access control systems can monitor door activity 24/7 and can warn administrators when a door has been propped open or forced open. Access control systems can also allow the District to set doors to specific lock and unlock schedules when needed and eliminate the need to keep doors unsecured throughout the school day.
- c. Perimeter fencing on the campuses is limited or in some cases completely missing. Gates and extra fencing around the playground areas and portables are essential in limiting community access to the students. There should also be signage stating no trespassing during school hours and that camera surveillance is in use. This signage should be on all of the perimeter fencing. The 3 strand barbed wire fencing is the perimeter fencing on multiple school campuses however it does not provide an adequate barrier in keeping adults away from the students. These fences belong to the neighboring ranches and farms and are only designed to keep their livestock inside their property. Properly designed fencing is the first step in establishing an effective perimeter that establishes the demarcation between the public and private space, deter trespassing, increase the likelihood of detecting someone trying to gain access and delay the time it takes to enter the campus.
- d. Surveillance systems used on some of the campuses are older and of limited quality in some cases. There are many gaps in the surveillance coverage areas both inside and outside the campuses and areas of the property remain unobservable especially in areas of the pickup and drop off areas, playgrounds, field houses, parking lots and portable classroom areas. Interior areas such as cafeterias, corridors and other loitering areas often lacked adequate coverage. The storage on the system is 14 days now and should be raised to a minimum of 21 days.
- e. Intercom coverage on the exterior of some of the school campuses was limited or undetectable in the playground areas and some limited portions of the campus. Intercom coverage on the interior of some of the schools was limited in areas such as the cafeteria and gym. In some of the schools the intercom system was old and was operational only part of the time.
- f. Exterior lighting varies in coverage and consistency. Some campuses were good while other campuses were really lacking. Limited lighting combined with the architecture of the buildings creates hiding places where people can hide or loiter unseen. Lighting not only impacts the safety and security of the students and staff on campus at night but can also impact the effectiveness of the surveillance cameras around the exterior of the property.
- g. The schools have recently added controlled access vestibules to all of the campuses. Receptionist sight lines to the approaches to the main entrance were often limited, obstructed or did not exist. The line of sight ranged from good to very limited. All obstructions should be taken down from doors and windows that restrict natural surveillance. Some of the vestibules had the main entrance to the Library inside the vestibule.

## EXECUTIVE SUMMARY

---

For those campuses the main doors of the Library should be moved to the inside of the school and out of the vestibule.

- h. There were no intrusion alarm systems on any of the school campuses at this time. However the district stated that all campuses would have a functioning intrusion alarm system by the beginning of school in August. Alarms can warn of intrusion during non-office hours and alert the authorities of an intrusion. The intrusion alarm system will assist in keeping burglaries and vandalisms down.

### 15. Food Service:

- a. The district updated Kitchens and serving lines within the past few years. Therefore, Food Service was not part of the Elementary School assessment scope.

### NEXT STEPS

While the work of this Elementary School Facility and Support buildings assessment is complete from a data gathering perspective, the real work is only beginning. The next steps are to consider options, tie the identified work to the strategic plan now under development, prioritization of the needs, and work with the Administration, the Board of Trustees, and possibly a citizens committee to gain consensus and support for advancing the district forward with a plan that meets the needs of Killeen ISD for decades to come.