

# Birdville ISD 2022 Bond Planning Committee

## March 21, 2022

- Long-Range Master Plan  
Process/Priority Codes/Facilities  
Condition List
- Repairs/Replacements
- New Construction/Replacements/  
Additions





## General Process We Shall Follow

- We will be presented complex school finance information by District and external professionals.
- We will gain an understanding and insight into District needs through presentations by demographers and professionals in several different meetings.
- We will be given a spreadsheet with projects and associated costs when all presentations are complete.
- We will be informed of the District's financial capacity in Meeting #3.
- We will deliberate and make decisions individually at our tables – in groups of eight, then four, then collectively.
- We will reach consensus on a Bond Referendum that we consider viable in the community, represents good stewardship, and meets the needs of our District/students.
- We will present that proposed referendum to the Board of Trustees who have the final decision on the Bond election.





# **2022 Long Range Facilities Master Plan**

**March 21, 2022**



# 2022 Long Range Facilities Master Plan

## AGENDA

1. The Long-Range Master Plan Process
2. Priority Definitions
3. District Totals & Facilities Conditions Index (FCI) List
4. Categories & Totals
  - a. Maintenance & Condition
5. Possible New Construction/Replacements/Additions
6. Questions

# Long-Range Facilities Master Plan

## The Process



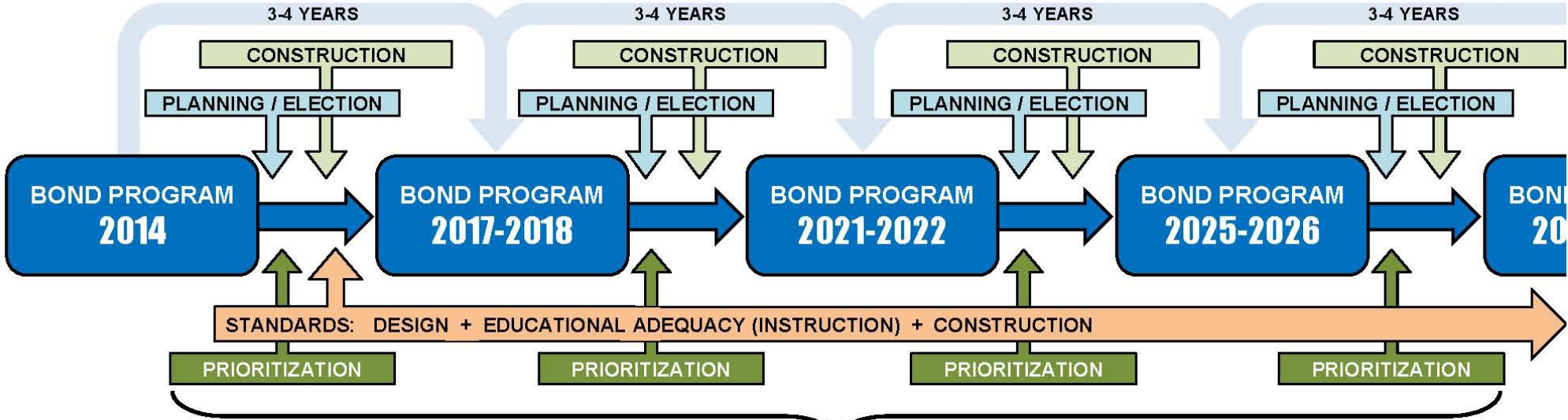


# 2022 Facilities Master Plan

B I R D V I L L E I N D E P E N D E N T S C H O O L D I S T R I C T

## LONG-RANGE PLANNING - VISION 2025

(IMPLEMENTING A 3-4 YEAR BOND CYCLE)



### W O R K I T E M S



# Long Range Facilities Master Plan

## THE PROCESS

### Launch Facilities Assessment



- Analysis of the condition of a facility in terms of age, design, construction methods, and materials.
- Identify district needs per campus and across the district
- Start with items left over from 2018 Bond
- Incorporate new state mandates and codes

# Long Range Facilities Master Plan

## THE PROCESS

### Facilities Assessment – Data Gathering



- Met with key district personnel to gain insights on goals, educational plan and vision for the district's facilities.
- Issued questionnaires for campus input.



# Long Range Facilities Master Plan

## THE PROCESS

### Facilities Assessment – Facility Walkthroughs



- Teams of Architects, Engineers & Specialized Consultants walked every district facility & documented:
  - System Deficiencies
  - Code Issues / ADA Compliance Issues
  - Lifecycle Replacements
  - TEA Compliance
  - Programmatic Issues / Capacity Verification
- Data entered and prioritized
- Costs estimates generated
- Reports generated by campus

# Long Range Facilities Master Plan

## PRIORITY DEFINITIONS

**Priority 1** : Critical replacements of equipment & systems (0-5 years)  
critical programmatic or campus needs

**Priority 2**: Replacements of equipment & systems (5-10 years);  
programmatic or campus needs

**Priority 3**: Replacements of equipment & systems (10-15 years);  
programmatic or campus enhancements

**Priority 4**: Replacements of equipment & systems (15+ years)

# Long Range Facilities Master Plan

## FACILITIES CONDITION INDEX

The **facility condition index** (FCI) is used in to provide a benchmark to compare the relative **condition** of a group of **facilities**.

FCI is an industry-standard measurement of a facility's condition that is the ratio of the cost to correct a facility's deficiencies to the Current Replacement Value (CRV) of the facilities. FCI is typically expressed as a percent.

*For example, and FCI of 50% means that it will cost you 50% of the cost of a new facility to address the deficiencies within it.*



# Long Range Facilities Master Plan

## **FACILITIES CONDITION INDEX**

### **Included in FCI number:**

- Systems deficiencies i.e. HVAC issues
  - Material replacements i.e. flooring, roofing
  - Code compliance items i.e. fire alarm replacements
  - Repairs to address safety issues

### **Not included in FCI number:**

- Additions to campuses for items such as storage, or administration
- Fine Arts or Athletics additions and/or renovations

# Long-Range Facilities Master Plan

## DISTRICT TOTALS - FACILITY ASSESSMENT

PRIORITY 1	\$126,102,633
PRIORITY 2	\$219,626,463
PRIORITY 3	\$141,159,922
PRIORITY 4	\$1,989,845
<b>TOTAL</b>	<b>\$488,878,863</b>

# Long-Range Facilities Master Plan

## DISTRICT TOTALS & FACILITIES CONDITION INDEX

School Name	Total P1 & P2	Benchmark FCI	Building Age
Shannon HS	\$20,842,498	93%	73
Mullendore ES	\$10,645,388	83%	66
Smith ES	\$8,986,573	63%	67
Francisco ES	\$6,535,156	47%	62
Spicer ES	\$11,177,006	45%	31
Foster Village ES	\$10,258,253	44%	41
Snow Heights ES	\$7,883,572	42%	62
North Ridge ES	\$8,724,787	34%	34
Academy CF Thomas	\$8,299,866	34%	30
Holiday Heights ES	\$6,262,819	31%	55
Smithfield MS	\$12,294,891	30%	46
Porter ES	\$7,396,746	30%	45

\*Foster Village FCI drops to 14% with proposed HVAC, Electrical and Roofing system replacements.

Spicer FCI drops to 9% with proposed HVAC, Electrical and Roofing system replacements.

Snow Height drops to 10% with proposed HVAC, Plumbing, Electrical and Roofing system replacements.



# Long-Range Facilities Master Plan

## DISTRICT TOTALS & FACILITIES CONDITION INDEX

School Name	Total P1 & P2	Benchmark FCI	Building Age
North Oaks MS	\$9,362,809	29%	55
Haltom HS	\$81,926,504	29%	32
North Ridge MS	\$9,330,951	22%	32
Watauga ES	\$5,558,740	21%	55
Binion ES	\$5,340,798	18%	13
Walker Creek ES	\$5,425,213	17%	16
Green Valley ES	\$3,711,884	17%	29
Richland HS	\$45,240,241	13%	12
Hardeman ES	\$3,384,139	11%	49
Birdville HS	\$39,767,575	9%	22
Watauga MS	\$3,703,031	8%	52
Stowe ES	\$1,988,486	7%	13

# Long-Range Facilities Master Plan

## DISTRICT TOTALS & FACILITIES CONDITION INDEX

School Name	Total P1 & P2	Benchmark FCI	Building Age
BCTAL	\$525,988	1%	12
Birdville ES	\$24,956	-	3
North Richland MS	\$49,913	-	3
West Birdville ES	\$0	-	5
Cheney Hills ES	\$0	-	0
Smithfield ES	\$0	-	0
<i>Haltom MS (2021)</i>	\$0	-	0
<i>Richland MS (2021)</i>	\$0	-	0

# Group Work & Discussion



# Long-Range Facilities Master Plan

## DISCIPLINE TOTALS

Facility Name	GRAND TOTAL	P1	P2	P3	P4
Architecture	\$ 288,066,076	\$13,543,373	\$170,266,302	\$103,191,601	\$1,064,800
Building Envelope	\$ 65,189,524	\$45,910,152	\$14,158,320	\$5,121,052	\$0
Civil	\$ 43,863,438	\$21,878,313	\$1,043,171	\$20,941,954	\$0
Electrical	\$ 16,342,872	\$2,541,212	\$9,600,918	\$4,200,742	\$0
Mechanical	\$ 63,425,422	\$35,972,174	\$20,232,098	\$6,462,479	\$758,670
Plumbing	\$ 3,379,446	\$3,010,177	\$0	\$369,269	\$0
Safety & Security	\$ 7,131,614	\$2,681,824	\$3,992,904	\$456,887	\$0
Technology	\$ 1,480,471	\$565,409	\$332,750	\$415,938	\$166,375
<b>Total</b>	<b>\$ 488,878,863</b>	<b>\$ 126,102,633</b>	<b>\$ 219,626,463</b>	<b>\$ 141,159,922</b>	<b>\$ 1,989,845</b>

# Long-Range Facilities Master Plan

## ARCHITECTURAL

PRIORITY	TOTAL
1	\$7,362,647
2	
3	
4	

### PRIORITIES

1. Flooring Replacements: (\$6,239,063)
  - a. Porter ES
  - b. Birdville HS
- c. Walker Creek ES
2. Painting (\$1,123,584)
  2. Watauga ES
  3. North Ridge ES
  4. CF Thomas ES

# Long-Range Facilities Master Plan

## ARCHITECTURAL

PRIORITY	TOTAL
1	
2	\$59,984,173
3	
4	

### Examples of remaining Items:

1. Stage Curtain Replacements
2. Ceiling Replacements
3. Painting Other Campuses
4. Toilet Partition Replacements
5. Signage and Wayfinding

# Long-Range Facilities Master Plan

## ROOFING – MUST Dos – Priority 1

### 1. Roofing critical replacements:

- Metal Roof Coating at:
  - Foster Village ES
  - Green Valley ES
  - Hardeman ES
  - Porter ES
  - Snow Heights ES
  - Watauga ES

- North Oaks MS
- Smithfield MS
- Administration Building
- FAAC
- Transportation
- Ag Building

- All roofing replacements at:
  - CF Thomas ES
  - Walker Creek ES
  - Spicer ES
  - Haltom HS
  - North Ridge ES

### 2. Richland HS parapet coating repairs

\$	<b>42,451,990</b>
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# Long-Range Facilities Master Plan

## MECHANICAL – MUST DOs – Priority 1

1. HVAC and energy management system critical replacements:
  - a. Spicer ES
  - b. Snow Heights ES
  - c. Smithfield MS
  - d. Holiday Heights ES
  - e. Watauga ES
  - f. Administration Building
  - g. FAAC
  - h. Foster Village ES

\$	29,631,001*
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*Includes electrical and ceiling replacements
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# Long-Range Facilities Master Plan

## ELECTRICAL – MUST Dos – Priority 1

1. Electrical critical replacements, to be completed with HVAC replacements:
  - a. Spicer ES
  - b. Snow Heights ES
  - c. Smithfield MS
  - d. Holiday Heights ES
  - e. Watauga ES
  - f. Administration Building
  - g. FAAC
  - h. Foster Village ES

2. Remaining Federal Pacific Board replacements

\$ 29,631,001*
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*Includes mechanical and ceiling replacements
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# Long-Range Facilities Master Plan

## PLUMBING ITEMS – MUST DOs – Priority 1

1. Plumbing Critical Replacements:
  - Snow Heights ES - replacement of the existing domestic water, sewer and vent systems. **(\$1,331,000 )**
  - Remaining priority 1 items **(\$1,679,177)**
    - Examples:
      - Water Heater Replacements
      - Drinking fountain replacements
      - Restroom fixture replacements

# Group Work & Discussion



# Long-Range Facilities Master Plan

## COURTYARDS

PRIORITY	TOTAL
1	\$21,878,313
2	
3	
4	

1. Perform courtyard repairs at the following campuses:
  - a. Birdville HS
  - b. North Ridge ES
2. Infill the courtyard at Haltom HS and connect library

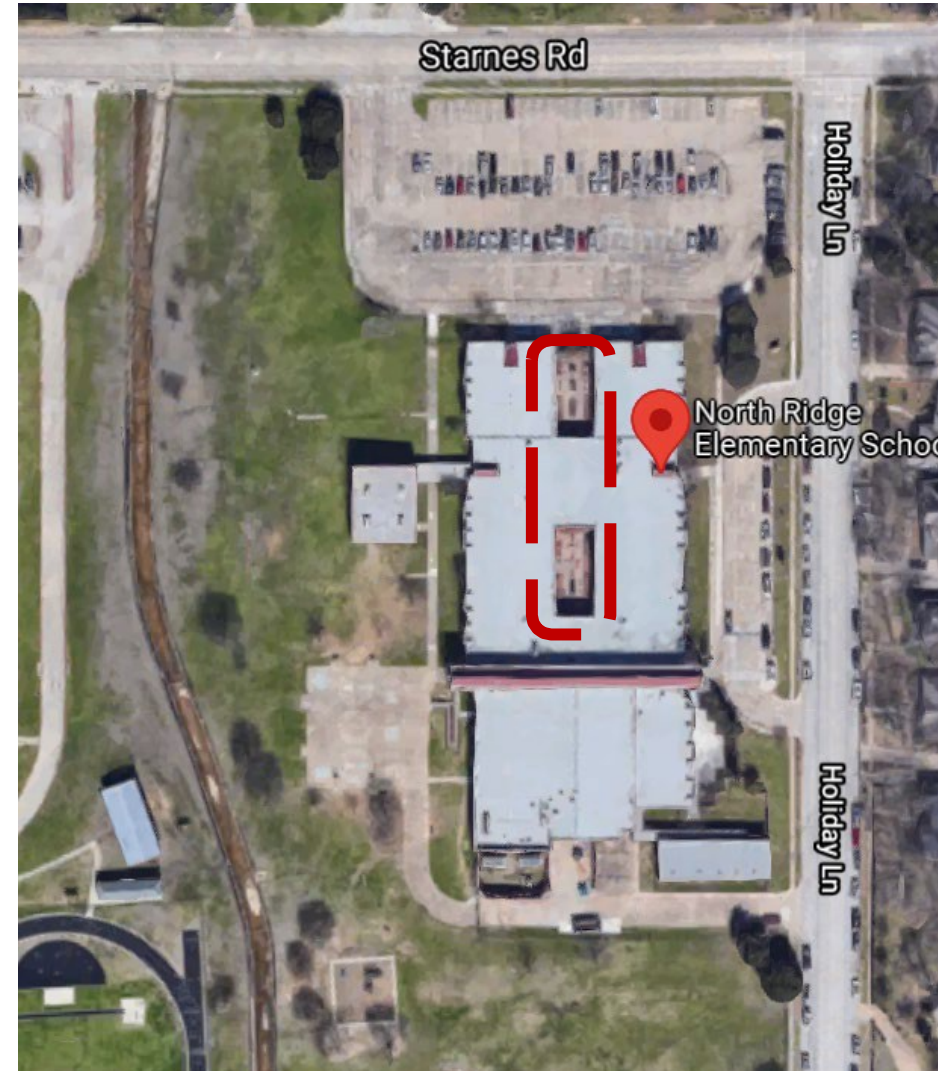


# Long-Range Facilities Master Plan

## COURTYARDS

### North Ridge Elementary

- Remove existing paving and landscaping as area has heaved and cannot be used.
- Provide new under slab soil treatment and drainage, and new paving.
- Provide area canopy.
- **Cost: \$1,081,438**





# Long-Range Facilities Master Plan

## COURTYARDS

### Birdville High School

- Remove existing retaining walls in rear and front of building.
- Remove existing trees.
- Provide new underground drainage system in rear courtyard and regrade to level with rear of school, and slope to drain.
- Provide new concrete paving in areas, including adjacent to cafeteria to allow for additional dining.
- Provide area canopies.
- **Cost: \$4,159,375**

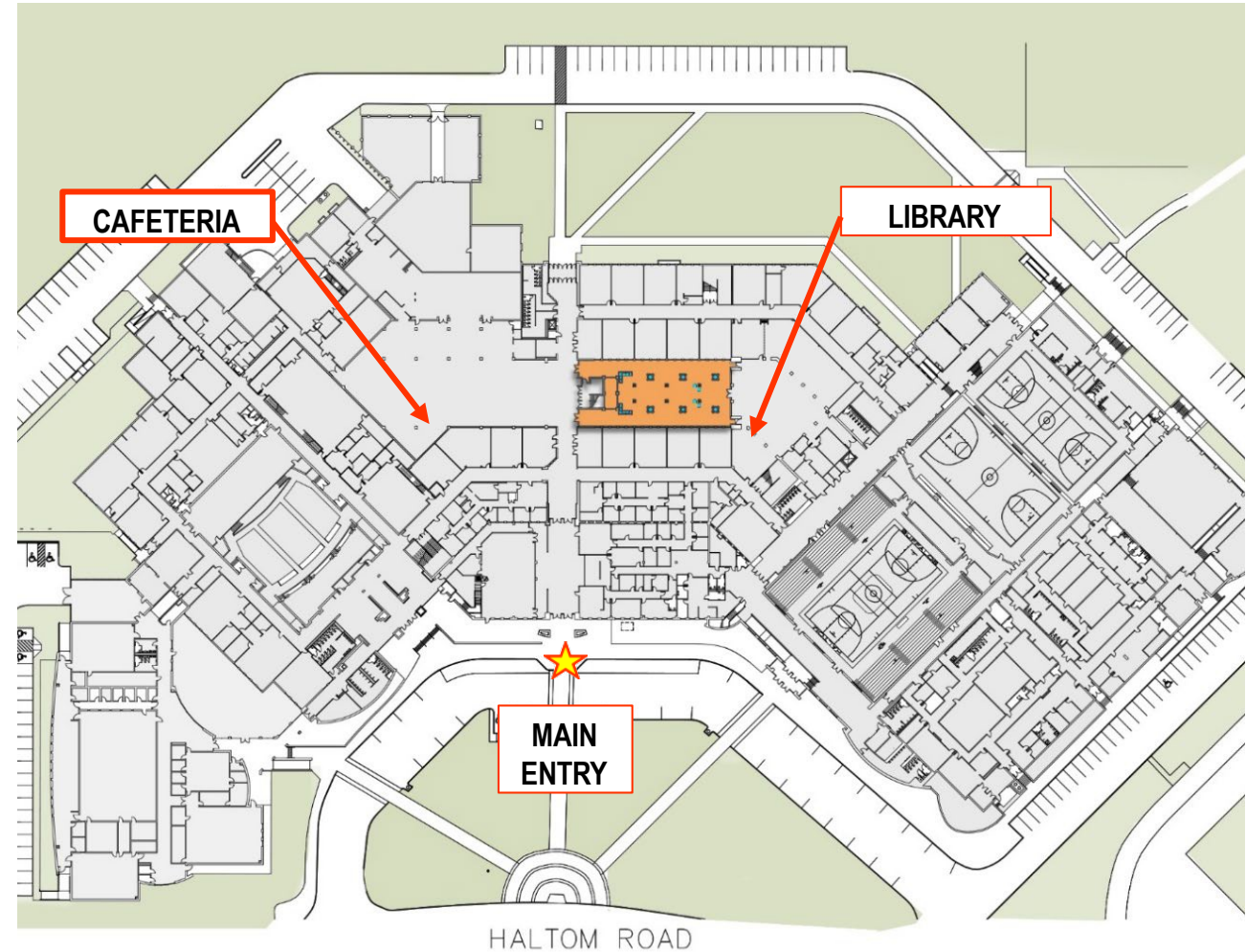


# Long-Range Facilities Master Plan

## COURTYARDS

### Haltom High School

- Existing courtyard is not handicap accessible.
- Existing paving is heaving and settling creating an uneven surface.
- Large trees are contributors to heaving and settling issues
- Library access is difficult making it underutilized.
- Cafeteria is undersized and additional space can allow for added seating.
- Infill existing courtyard to expand dining area and connect library to main campus circulation.
- **Cost: \$16,637,500**



# Long-Range Facilities Master Plan

## **SAFETY & SECURITY (Facilities)**

### 1. Fire Alarm Replacements at:

**Priority 1:** CF Thomas ES, Spicer ES, WG Thomas Coliseum, Fleet Management, Central Warehouse, Watauga MS, Holiday Heights ES, Grace Hardeman ES, North Ridge ES and Green Valley (\$2,894,850)

**Priority 2:** Binion ES, Stowe ES, Richland HS, BCTAL (\$3,285,810)

### 2. Exterior Lighting Improvements at Various Campuses- **Priority 1** (\$1,190,247)

### 3. Elevator Upgrades at High Schools, FAAC and Administration Building – **Priority 1** (\$608,933)



# Long-Range Facilities Master Plan

## KITCHENS

PRIORITY	TOTAL
1	
2	\$3,453,946
3	
4	

1. Expand kitchen and provide walk-in refrigeration (P2)  
at:
  - a. Mullendore ES (In Mullendore's P2 number)
  - b. Smith ES (In Smith's P2 number)
  - c. Snow Heights ES (\$1,726,973)
2. Renovate and Expand serving area at Foster Village ES (P2) (\$1,726,973)

# Group Work & Discussion

# Long-Range Facilities Master Plan

## New Construction/Replacements/Additions



# **Long-Range Facilities Master Plan**

## **New Construction/Replacements/Additions**

1. Alliene Mullendore Elementary School
2. David E. Smith Elementary School

# Long-Range Facilities Master Plan

## DFW Construction Market



FEB

2022

**CONSTRUCTION  
INFLATION ALERT**

Two years after the coronavirus pandemic struck, the U.S. construction industry is still experiencing

### CONSTRUCTION PRICE

**Construction Producer Price Index \***. Change in Producer Price Index for Final Demand Construction for all non-residential construction and key sub-categories. Includes material costs, labor costs, and contractor overhead and profits.

In Dec 2021, final demand pricing for all new non-residential construction increased +7.1% from Sept 2021 and +12.5% since Dec 2020.

Construction PPI - 12/21	Qtr	Yr
<b>Non-Residential</b>	<b>+7.1%</b>	<b>+12.5%</b>
Office Building	+6.7%	+13.1%
School Building	+5.8%	+9.6%
Healthcare Building	+5.4%	+10.9%

\* Bureau of Labor Statistics

<sup>1</sup> Turner Construction Company

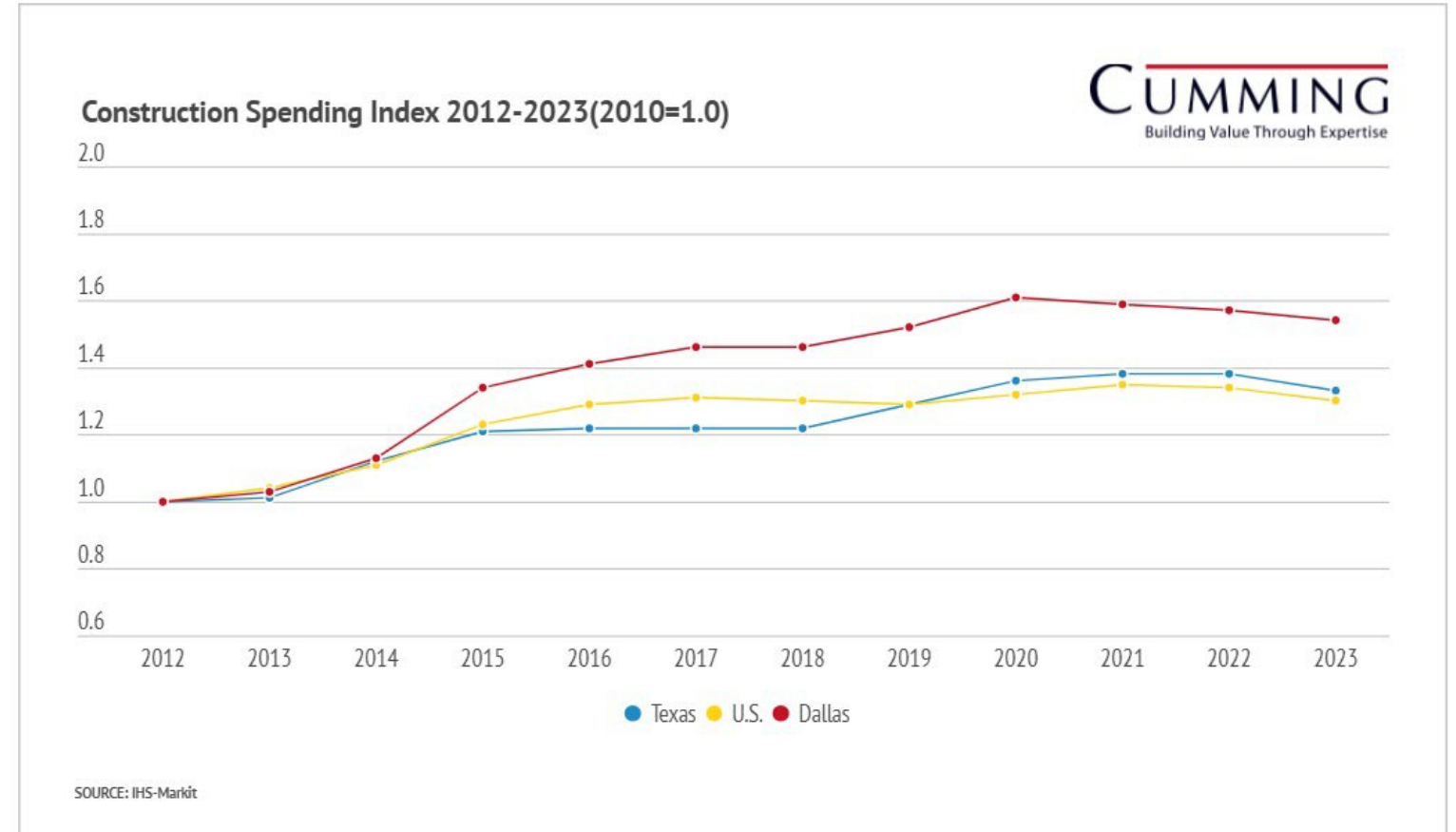


# Long-Range Facilities Master Plan

## DFW Construction Market

### RAPIDLY ESCALATING COSTS

- DFW construction spending
- Labor shortages
- Material price increases
  - Supply chain issues
  - Will go into 2023
- Delays and limited capacity

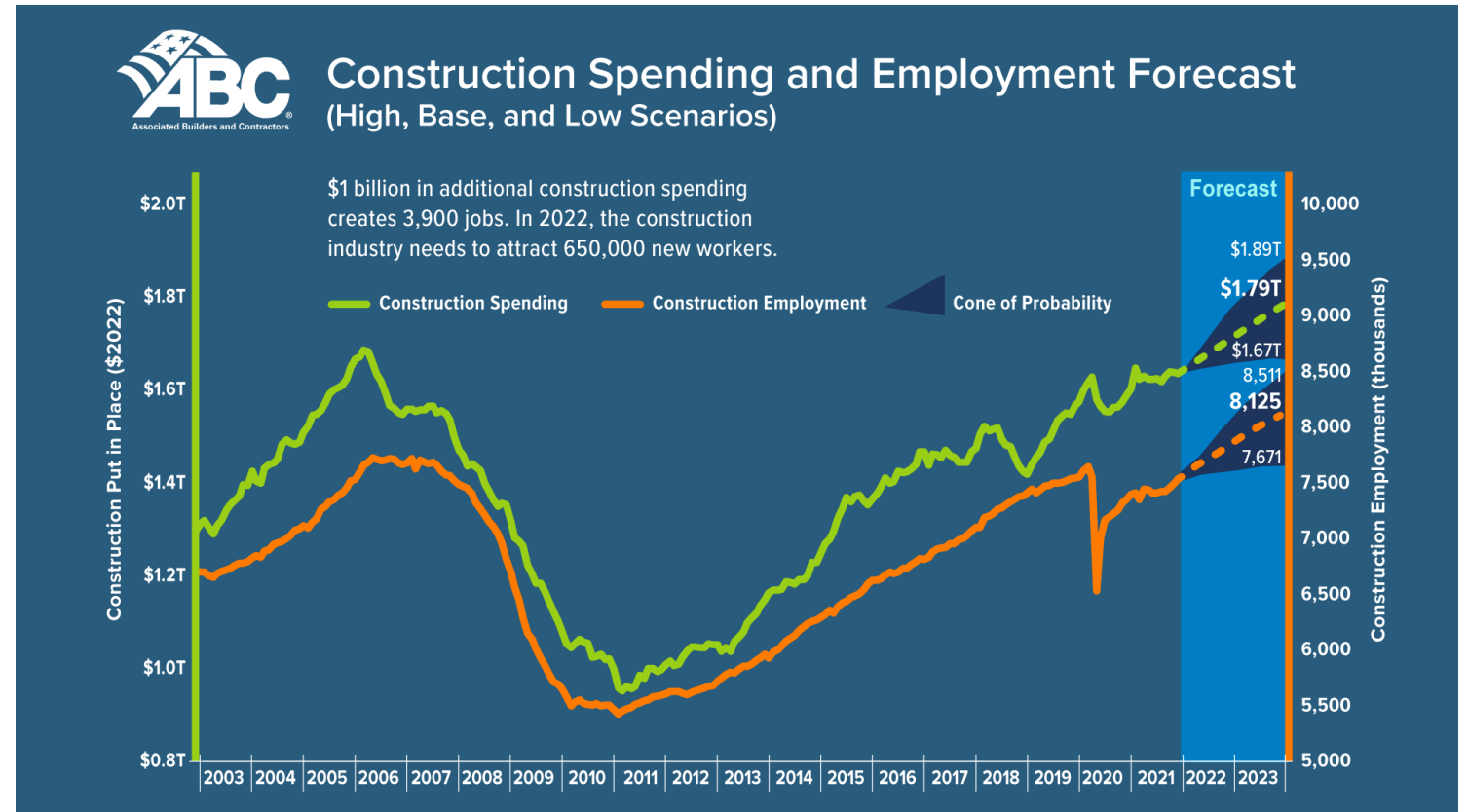


# Long-Range Facilities Master Plan

## DFW Construction Market

### RAPIDLY ESCALATING COSTS

- DFW construction spending
- Labor shortages
- Material price increases
  - Supply chain issues
  - Will go into 2023
- Delays and limited capacity



# Long-Range Facilities Master Plan

## Alliene Mullendore ES

Alliene Mullendore Existing Site  
Estimated Cost: \$55,630,875  
Capacity: 850 Students

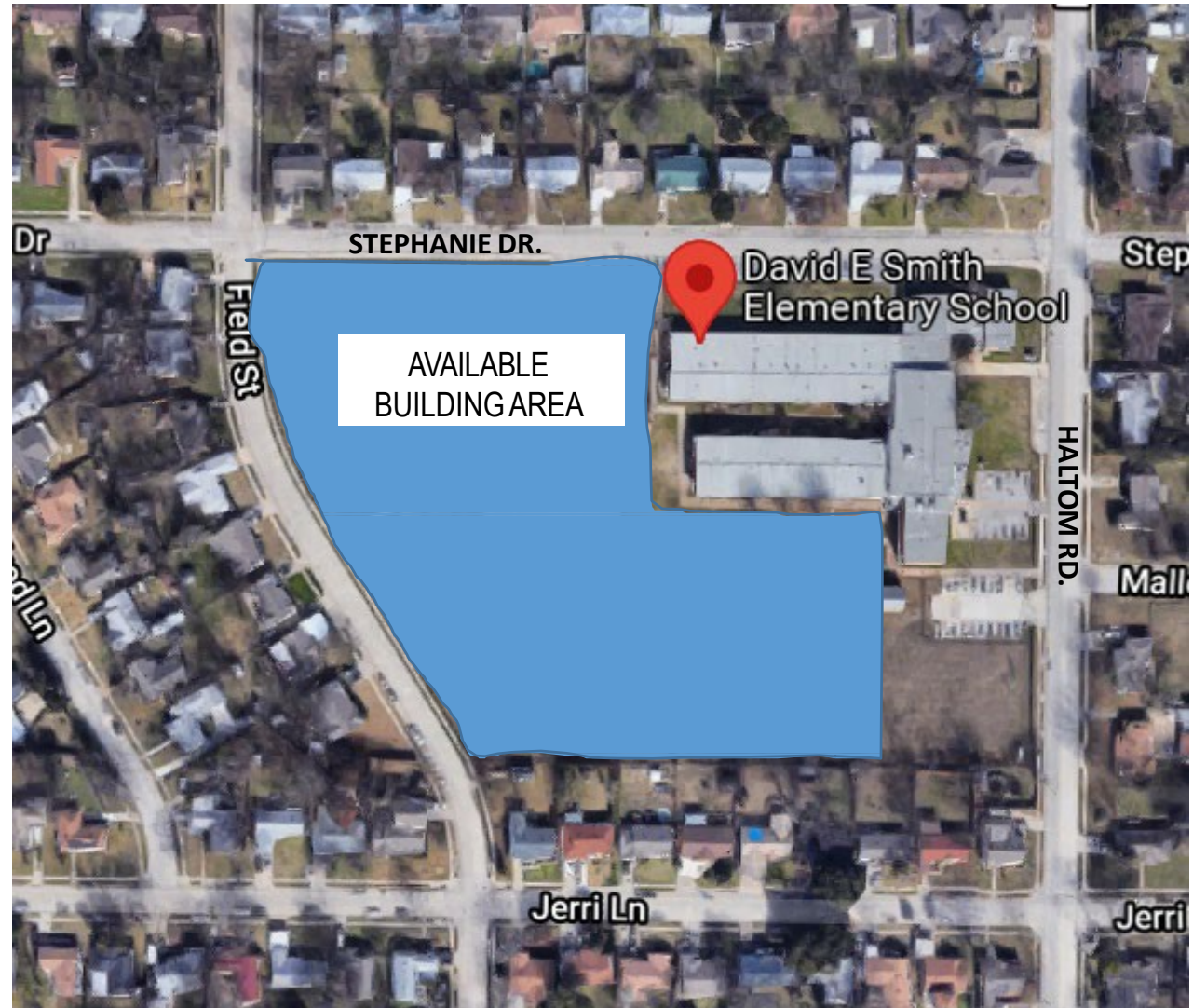




# Long-Range Facilities Master Plan

## David E. Smith ES

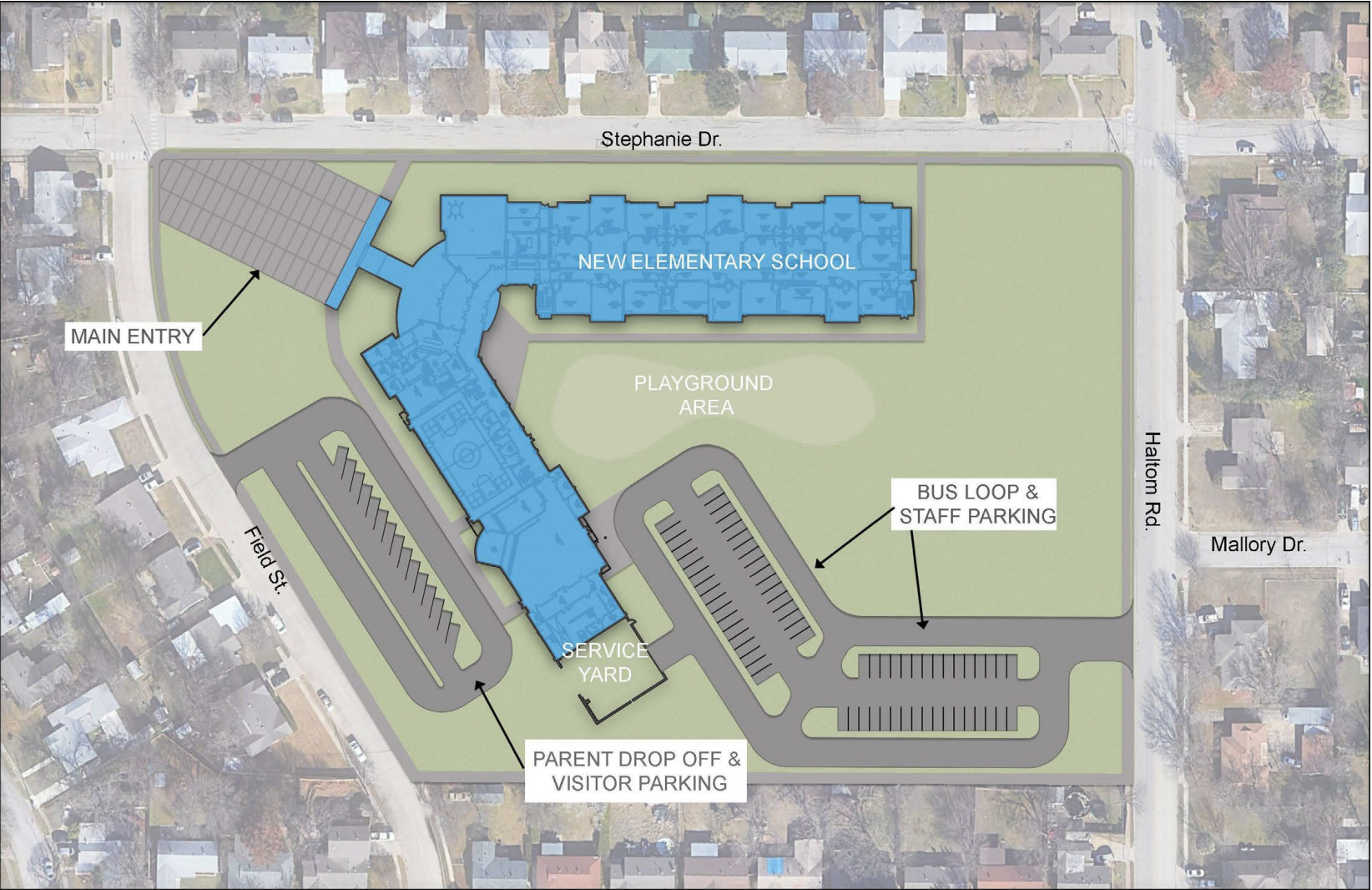
David E. Smith Existing Site



# Long-Range Facilities Master Plan

## David E. Smith ES

**POSSIBLE SITE PLAN**  
**Estimated Cost: \$56,274,656**  
**Capacity: 850 Students**



# Long-Range Facilities Master Plan

## DFW Construction Market

### BIRDVILLE ELEMENTARY SCHOOL COSTS

#### 2018 BOND:

- Smithfield Elementary School: \$29,686,972
- Cheney Hills Elementary School: \$35,951,712 (Cost includes bridge)

40-50% increase in school construction costs from Spring 2020 – Spring 2022

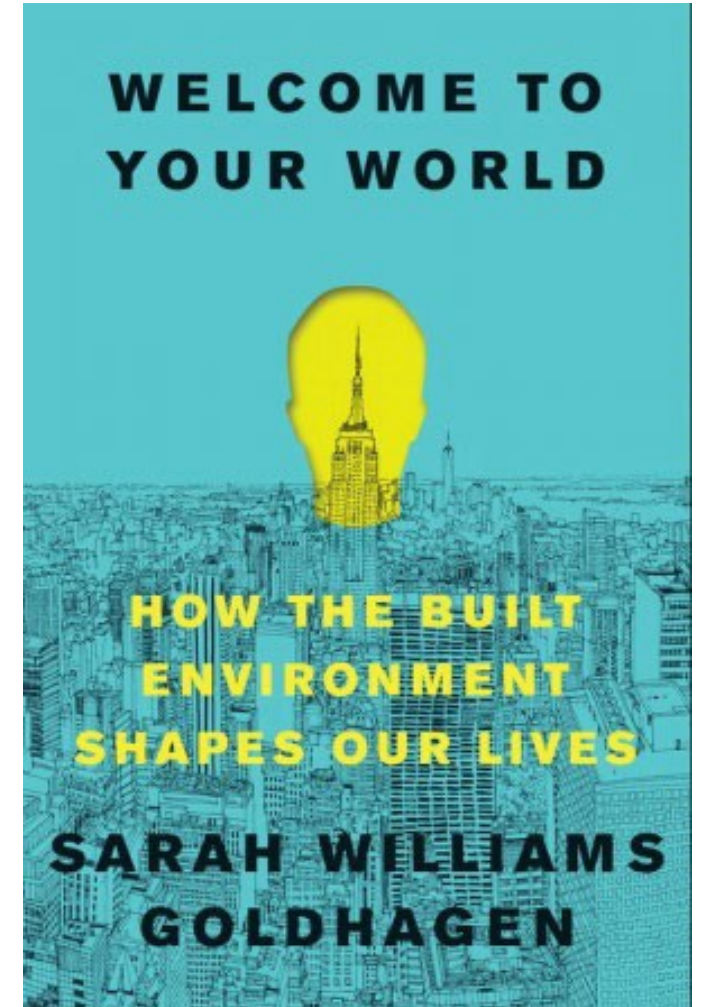


# Long-Range Facilities Master Plan

## Investing in School Facilities

“There’s no such thing as a “neutral” environment: your built environment is either helping you, or it’s hurting you.”


Sarah Williams Goldhagen



# Long-Range Facilities Master Plan

## Investing in School Facilities





Buenos Aires – 5 to 9 September, 2016  
Acoustics for the 21<sup>st</sup> Century...

PROCEEDINGS of the 22<sup>nd</sup> International Congress on Acoustics

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**Acoustics in Education: Paper ICA2016-102**

**Global case studies of acoustics in classrooms**

Kenneth P. Roy <sup>1</sup>

<sup>1</sup> Armstrong World Industries, USA, kproy@armstrongceilings.com

**Abstract**

Classroom acoustic standards and guidelines are being discussed around the world now that the design community is becoming well aware of the need for good acoustic performance in schools, and especially in grades K-12. Teachers teach and the students learn primarily by hearing and seeing the teachers work. School designers are aware that 3 aspects of the building design are important in providing an effective acoustic environment, these being 1) a high level of speech clarity, 2) adequate signal-to-noise ratio above the ambient mechanical/electrical/plumbing noise, and 3) sufficient blocking of activity noise from adjacent spaces. Speech clarity is addressed by the architectural design, noise by the ambient noise level from building systems, and activity noise intrusion by the barriers provided in the wall/ceiling systems. Schools in both North and South America and in China and India have been evaluated to date. Evidence based design studies have been conducted, and those results including measurement data and audio/video samples are being presented. In each case, an architectural intervention was conducted between the before/after evaluations that include both objective measures of performance and subjective perceptions by the students and staff. Good design is both noticed and valued by both the students and the teaching staff.

**Keywords:** classroom, speech clarity, intelligibility, ambient noise

# Long-Range Facilities Master Plan

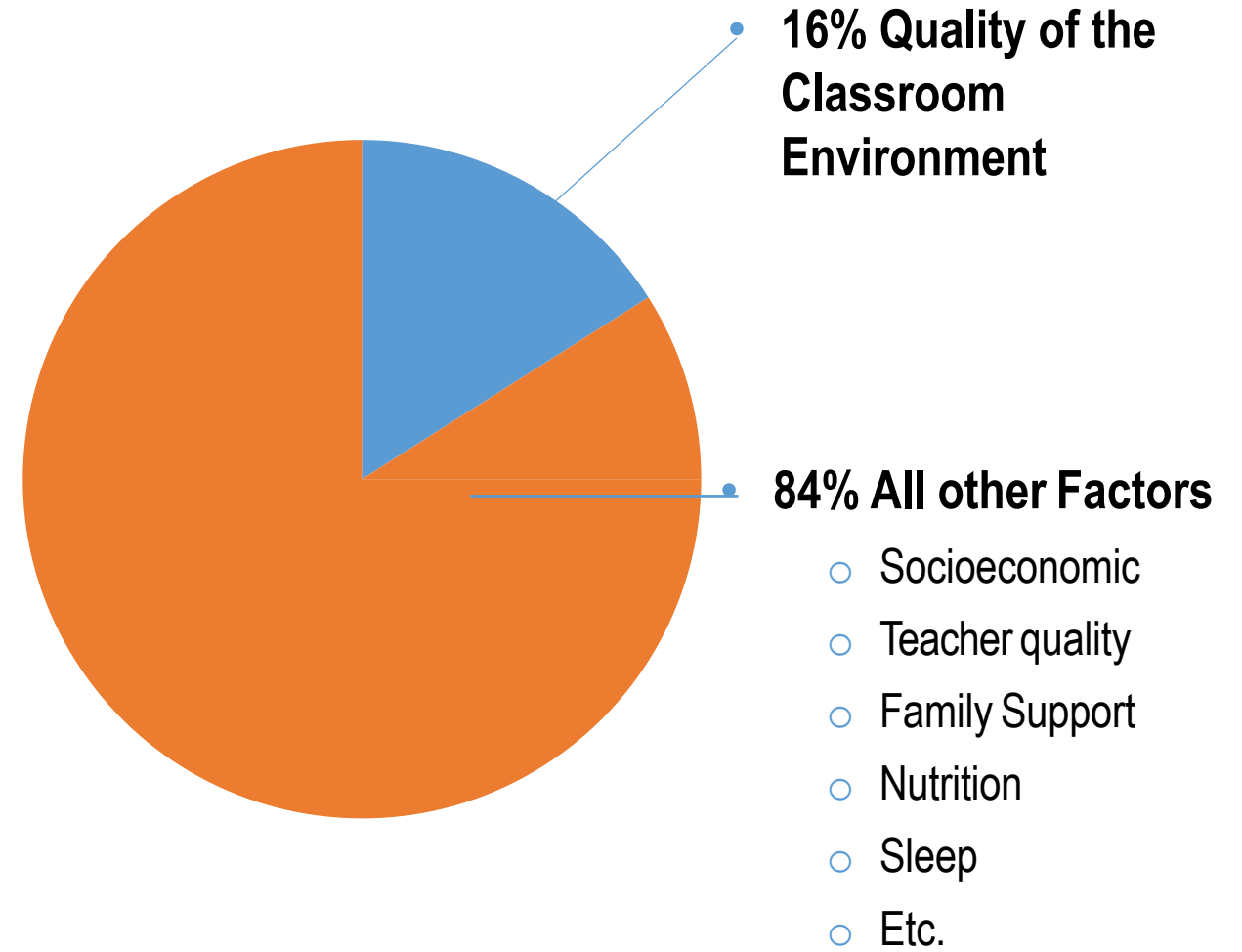
## Investing in School Facilities

### Academic Achievement

Factors affecting the gap between the highest and lowest achieving students.

0.65

Impact, in grade levels, of moving an average child from the worst classroom to the best



# Long-Range Facilities Master Plan

## Investing in School Facilities

### School Size (SF)

#### Texas Education Agency (TEA)

- School Facility Guidelines
- New Guidelines: November 1, 2021
  - Size of rooms
  - Size of educational spaces based on desired flexibility level
  - Safety and security requirements

**Flexibility Level 1 (L1).** Single, fixed teacher presentation space; compact organization of spaces makes access to outdoor space limited and challenging; furniture is exclusively attached student desk/chair with an expectation of very infrequent rearrangement; minimal multipurpose functionality for walls with no capability of reconfiguration; teacher-centric digital instruction with partial access to mobile devices.

**Flexibility Level 2 (L2).** Single, fixed teacher presentation space; compact organization of spaces makes access to outdoor space limited and challenging, but outdoor spaces may be visible from classrooms; furniture includes detached student desk/chair with an expectation of very infrequent rearrangement; moderate multipurpose functionality for walls with no capability of reconfiguration; teacher-centric digital instruction with moderate access to mobile devices.

**Flexibility Level 3 (L3).** Multiple student/teacher presentation spaces; organization of spaces allows for proximal outdoor access that is visible from classrooms; flexible and mobile furniture that is easily rearranged; high use of multipurpose walls, including digital touchscreen and other functionalities; learner-centric digital instruction with high levels of access to a range of mobile devices.

**Flexibility Level 4 (L4).** Multiple student/teacher presentation spaces that are likely mobile; organization of spaces allows for direct outdoor access that is visible from classrooms; highly flexible and mobile furniture that is easily rearranged by students independently or collectively; maximized inclusion of multipurpose walls, including digital capabilities and reconfiguration; learner-centric digital instruction with high levels of access to a range of mobile devices incorporating an "anytime/anywhere" instructional philosophy.

# Long-Range Facilities Master Plan

## Investing in School Facilities

### Space Qualities

Flexible Furniture



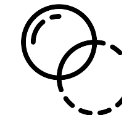
Acoustics



Ventilation



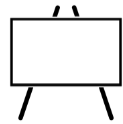
Transparency



Maintenance & Condition



Writable Surfaces



Artificial Light



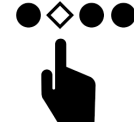
Temperature



Safety & Security



Diversity & Choice



Technology



Collaboration Spaces



Flexibility



Outdoor Spaces



Presentation Spaces



Natural Light



Storage



Color



Naturalness



Accessibility





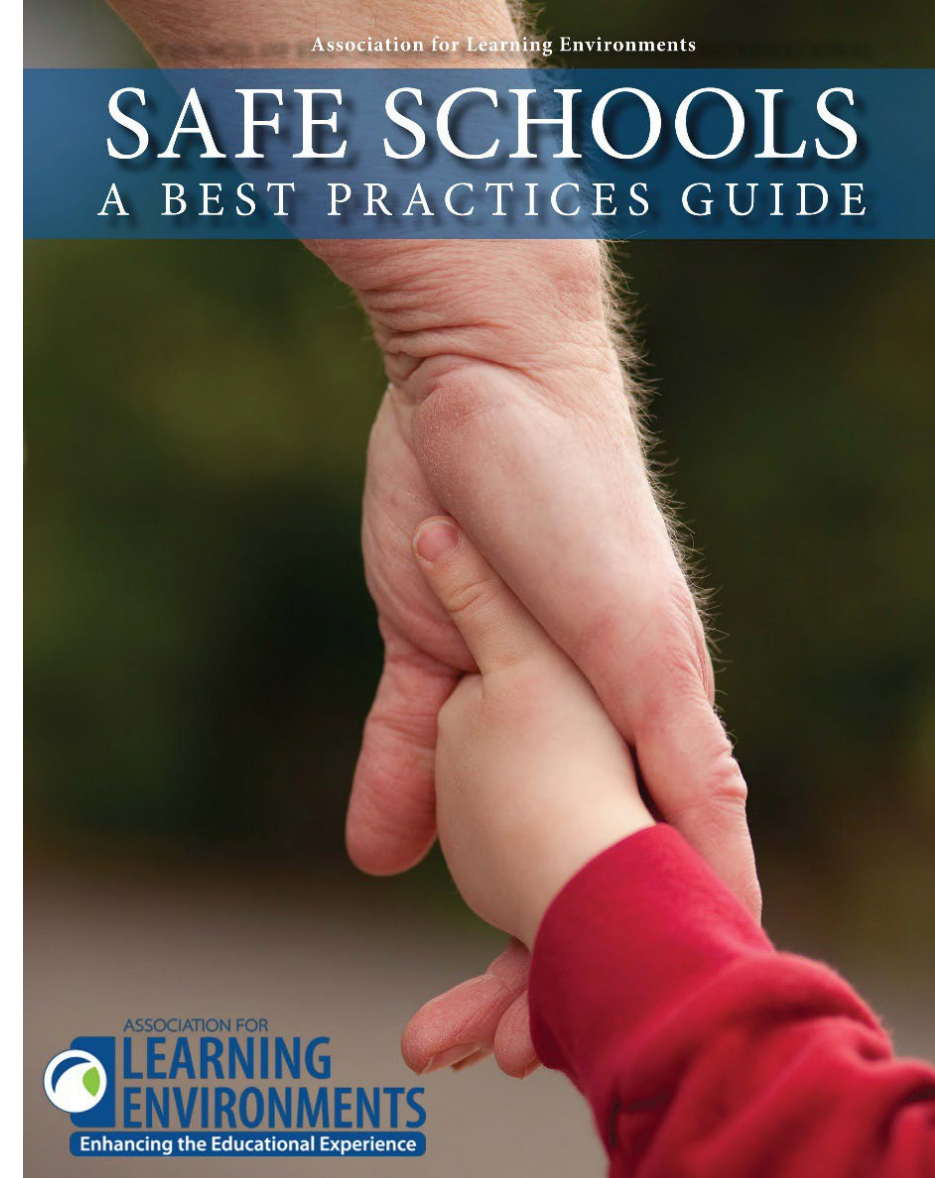
# Long-Range Facilities Master Plan

## Investing in School Facilities

### Safety & Security

#### CONSIDERATIONS

1. Operations
  - a. Clearly documented plan
  - b. Improved student- staff connection
  - c. Frequent drills and practice
  - d. Yearly reassessment
2. Facilities
  - a. CPTED design
  - b. Concentric circles of protection
  - c. Daily passive security
  - d. Technology
3. Communications
  - a. Emergency Responders
  - b. Parent Communication

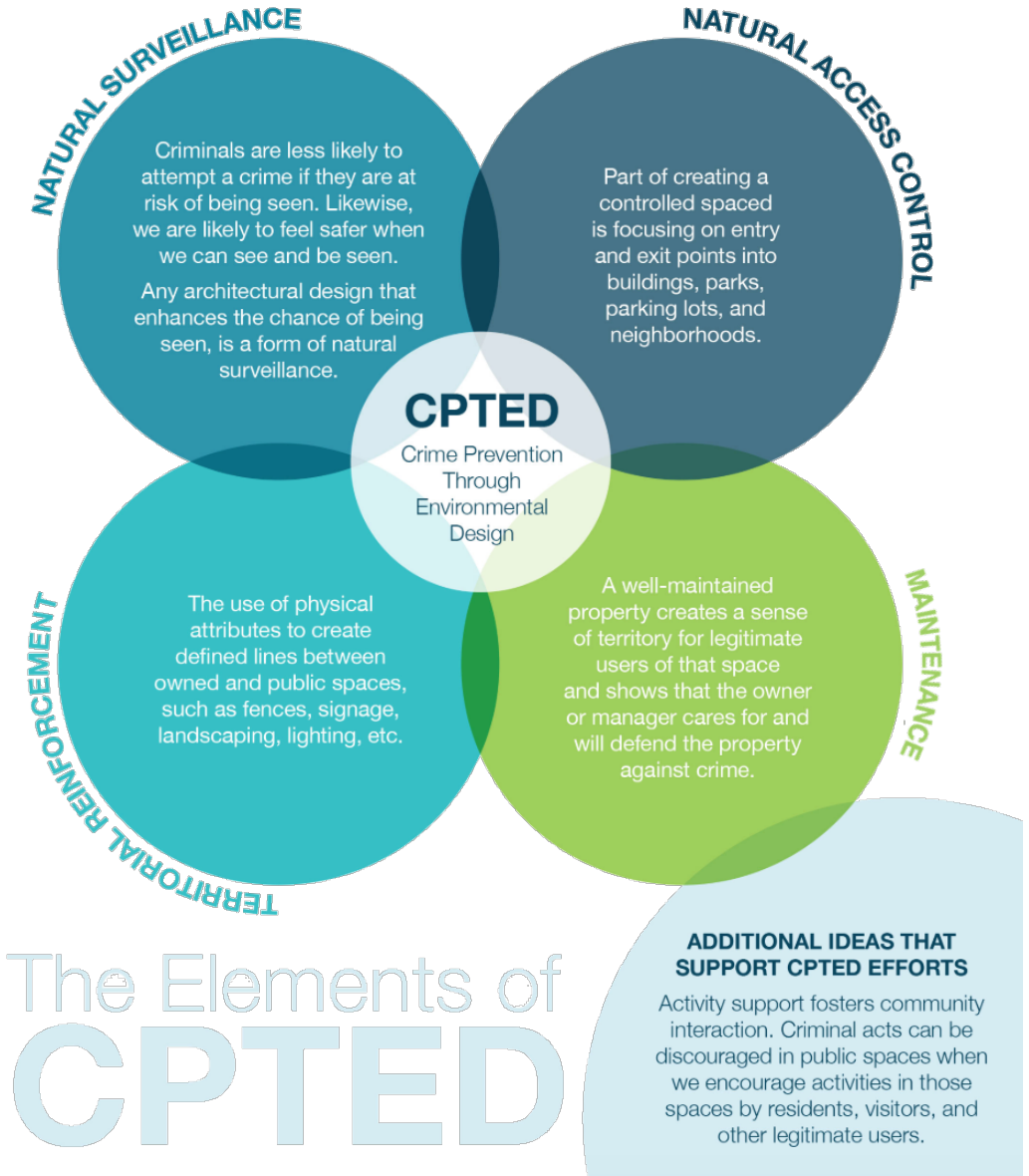




# Long-Range Facilities Master Plan

## Investing in School Facilities

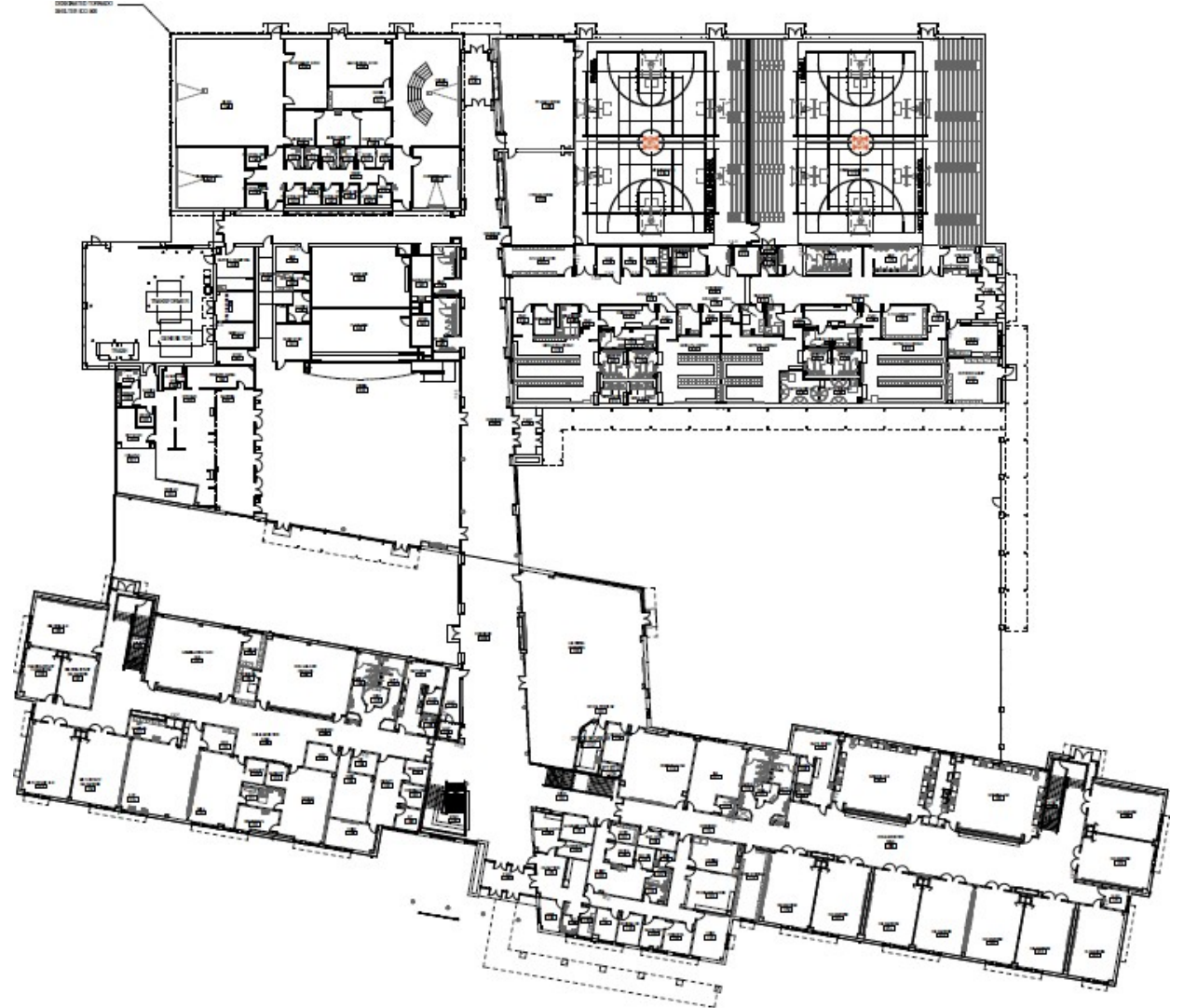
### Safety & Security



# Long-Range Facilities Master Plan

## Investing in School Facilities

### Safety & Security



# Long-Range Facilities Master Plan

## Shannon HS / Special Education Program Classrooms



# Long-Range Facilities Master Plan

## Shannon HS/ Special Education Program Classroom Discussion

### Options:

1. Relocate close to theater at BISD Plaza
2. Relocate to Cheney Elementary site
3. Demolish existing and build on existing property
4. Renovate other property



# Questions Comments Feedback





## Likes and Wishes

- Review at the close of each meeting ...
- What did you **LIKE**?
- What do you **WISH**?
- Any questions?





## Meeting 4a Information

- **Saturday, April 2**
  - Indoor Activity Center Tours

## Meeting 5 Information

- **Tuesday, April 5**
  - Review Existing Facilities
  - Technology Needs
  - Safety & Security Needs
  - Athletics Needs
  - Fine Arts Needs
  - Additional Facilities & Buses
  - Individual Bond Construction Instructions





# Birdville ISD 2022 Bond Planning Committee

**March 21, 2022**

- Long-Range Master Plan  
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