



CLAY COUNTY DISTRICT SCHOOLS

# SCHOOL CONSTRUCTION FEASIBILITY STUDY IN KEYSTONE HEIGHTS

kasper architects + associates  
with Civil consultation from Mittauer & Associates, Inc.  
June 15, 2021



Acquire a **third party** to determine the feasibility to build a new Elementary school on the vacant +/- 9-acre property known as McDavid Park.

If this is not feasible, **present an alternate proposal** to create a feasible idea for the School Board owned property at Keystone.

What was the **purpose**  
of kasper architects  
Feasibility Study?



Project Description

Provide a **Feasibility Study** for the Keystone Heights school property utilizing the six existing parcels owned by the Clay County School District.

1. Determine whether the project is **reasonable** and **practical**
2. **Evaluate a new Elementary School** for the Keystone area using the six parcels currently owned by CCDS
3. Examine the effects on the **long-range plans** of a Junior High and High School on the remaining property

# Feasibility Study

"The **examination** and **analysis** of information related to a projected educational facility to determine whether it is **reasonable** and financially **practical**".

-State Requirements for Educational Facilities, Chapter 1 (37)



## Project Description

# A feasibility study is **NOT:**

A recommendation on if it **should be done**

A **master plan**

A complete **financial** analysis

A consideration of **district-wide** needs

A recommendation on **when** it should be done

# Feasibility Study

"The **examination** and **analysis** of information related to a projected educational facility to determine whether it is **reasonable** and financially **practical**".

-State Requirements for Educational Facilities, Chapter 1 (37)



# Project Description



Let's take a closer look  
at your property



Background

Layer List Legend

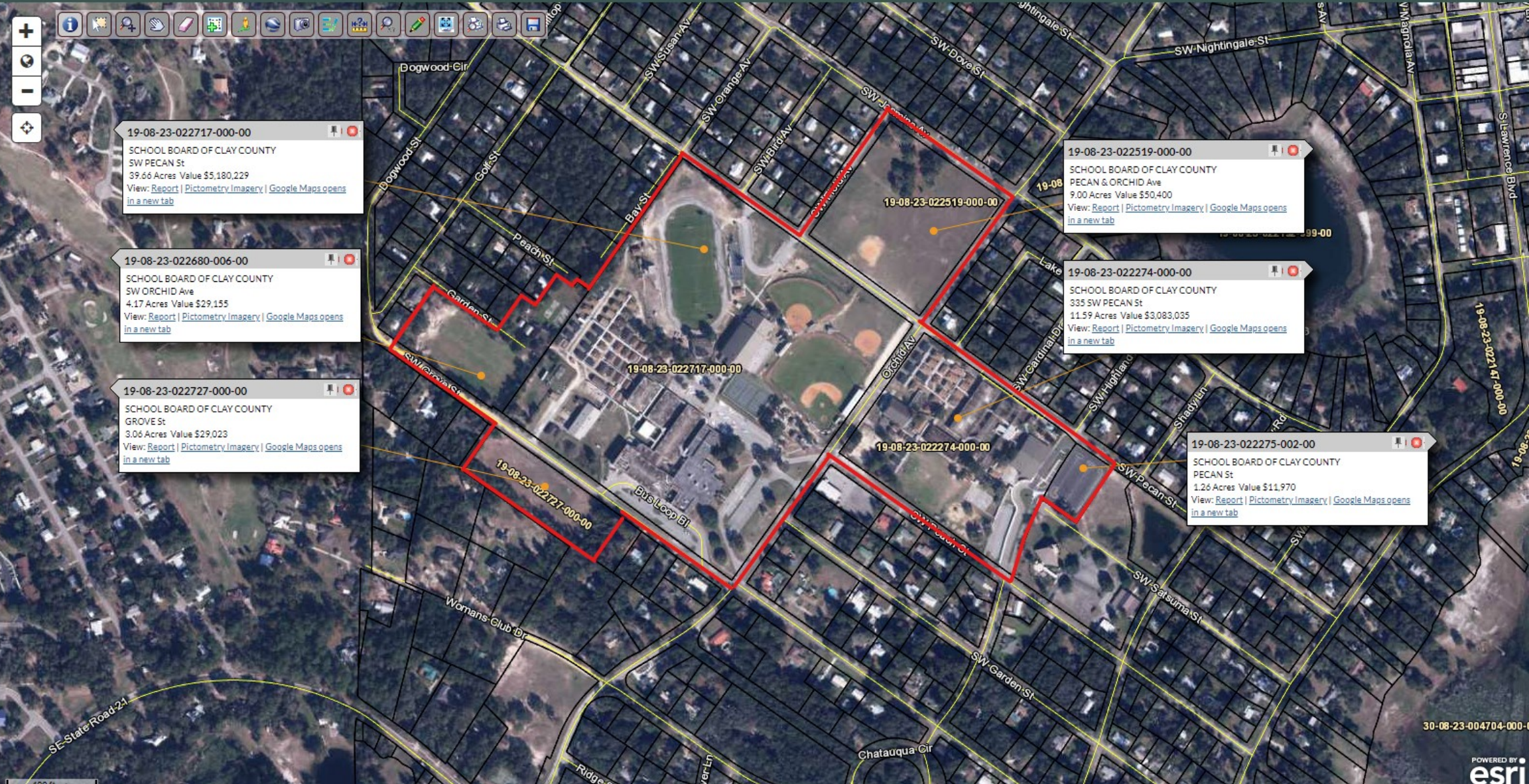
Quick Links:

- Search Records
- View Map
- Tangible Property Search

Layers:

- Personal Property
- Dimensions
- Acre Anno
- Loc Anno
- Parcels
- Parcel Numbers
- Yearly Sales
- Roads
- USA Major Highways
- Railroads
- Historical Lines
- City Labels
- Subdivisions
- Certificate of Title Transfers
- Conservation Easements
- Townships
- Ranges
- Sections
- Streams and Rivers
- Lakes
- County Outlines
- State Outlines
- 2020 Aerial Photos
- 2017 Aerial Photos
- 2014 Aerial Photos
- 2011 Aerial Photos
- 2009 Aerial Photos

[Restore Layer Defaults](#)



68.74 acres currently owned

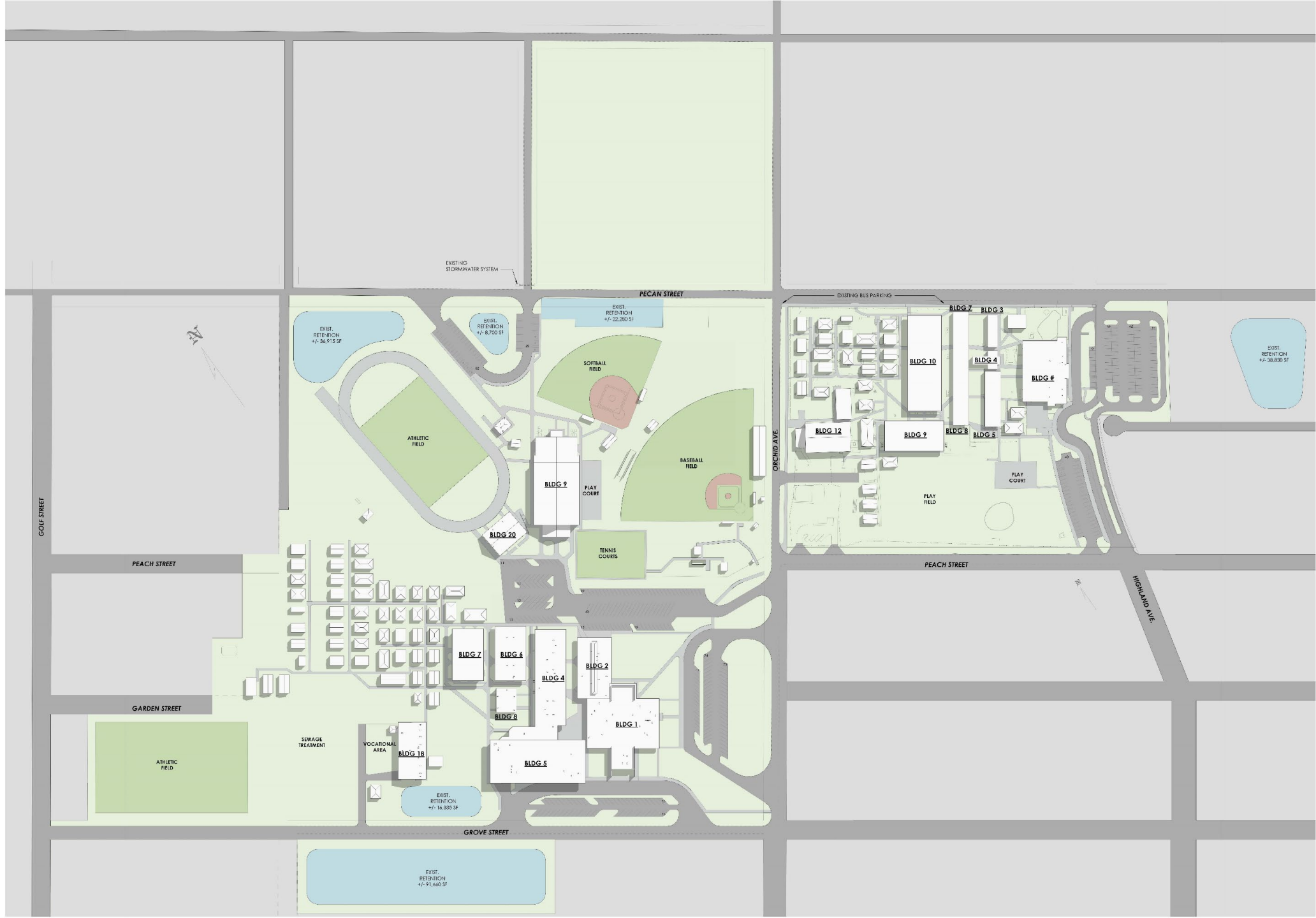
# Existing Keystone Heights School Properties

Total Owned Acres:  
68.74 Ac  
(2,994,314 Sf)

Retention:  
+/- 214,720 SF  
(4.93 Ac)

Building Net Sq. Ft.:  
252,835 NSF

Parking Spaces:  
463 Spaces  
(Inc. 26 ADA)



# Existing Combination School





# Existing Combination School

Student Population:

1,113 students

397 Junior High, 7-8th grade

716 Senior High, 9-12th grade

Parking: 312 (15 ADA)

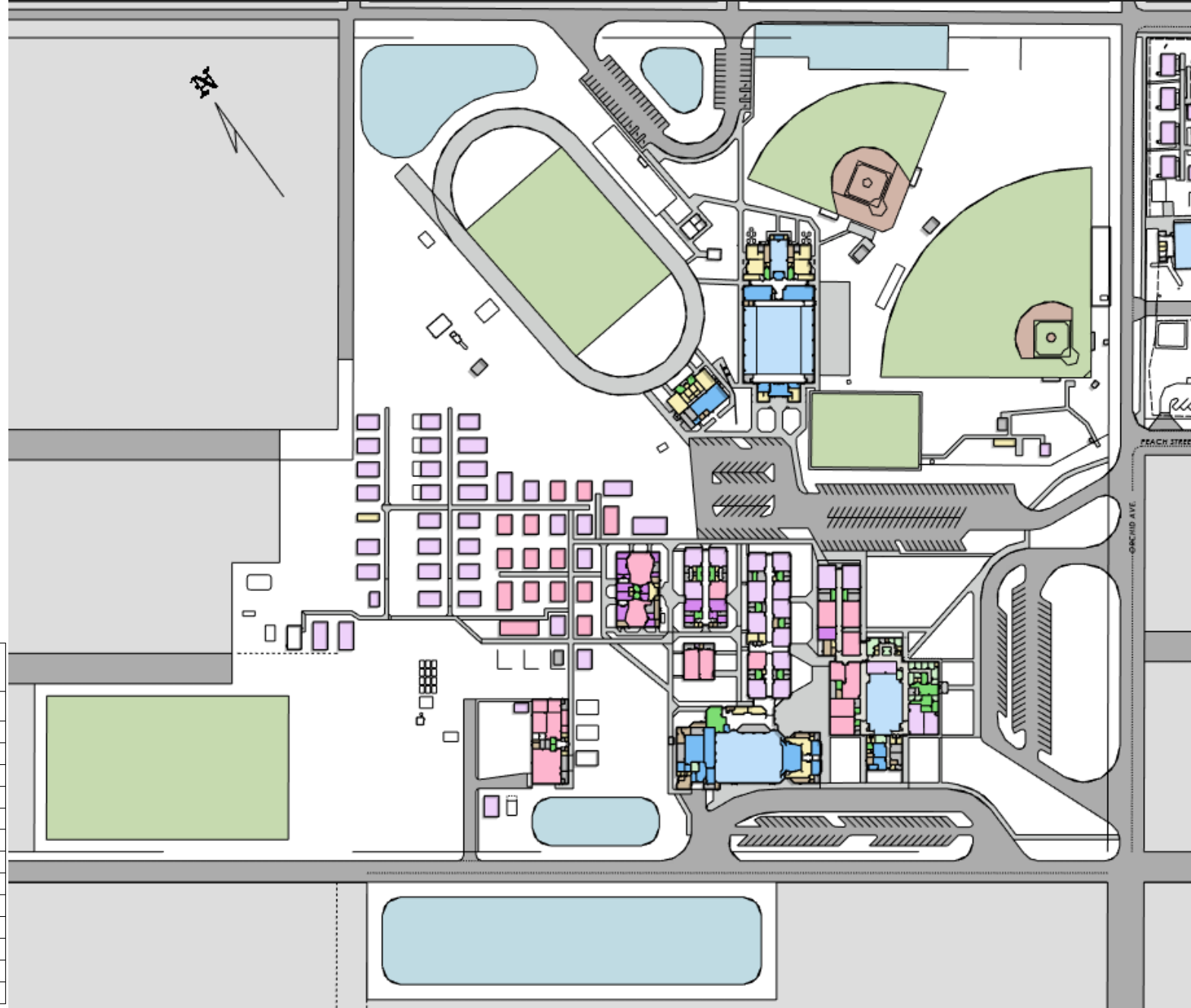
Bus Lane: 600 LF

Parent Drop-Off: 700 LF

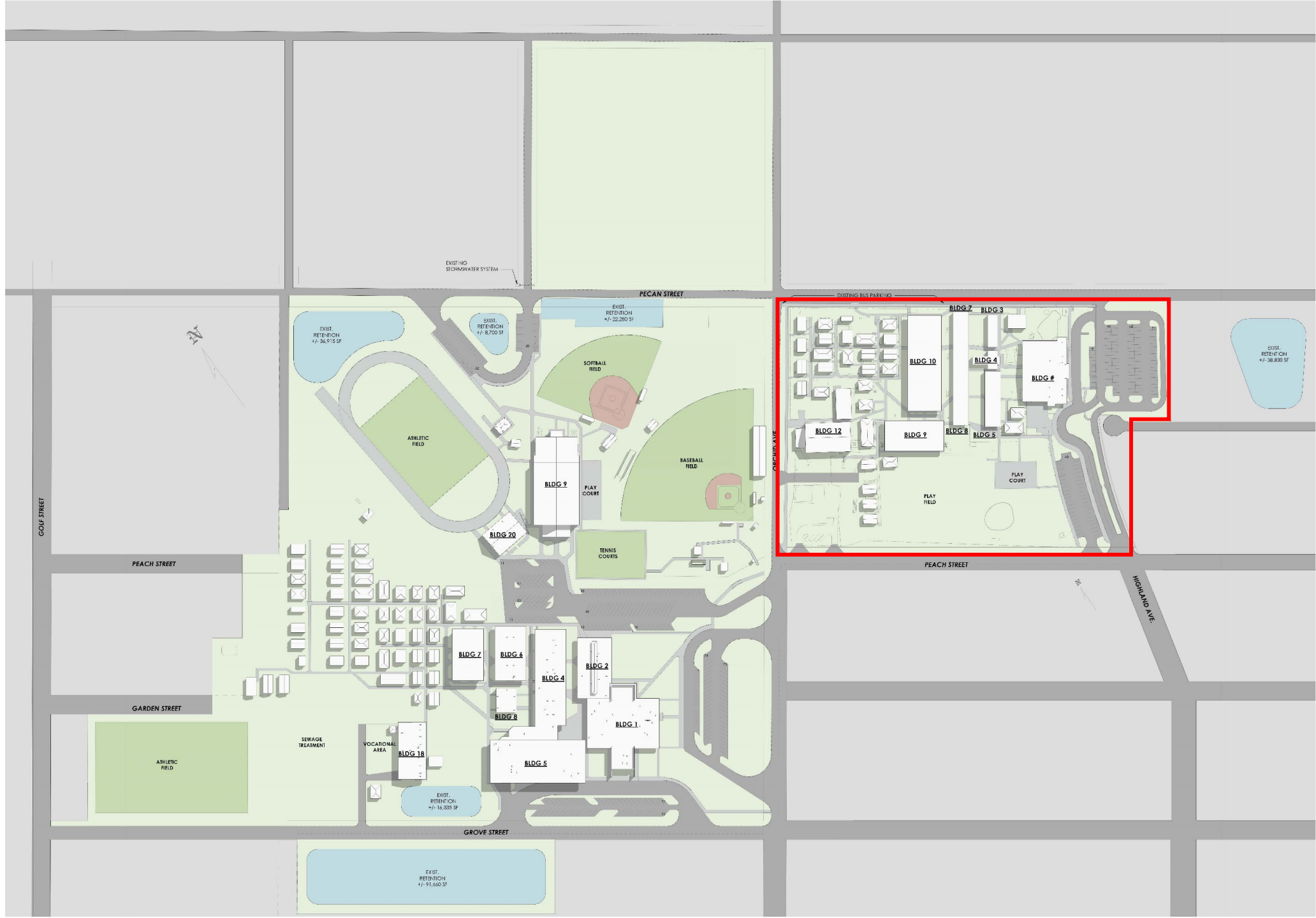
Allowable Impervious Area: 23.2 Ac

## ACTUAL COMBINATION SCHOOL MEASURED NSF

CATEGORY	SPACES	TOTAL NSF
Combination School		
ADMINISTRATIVE	18	2824 SF
ADMINISTRATIVE SUPPORT	29	6310 SF
ASSEMBLY	6	29808 SF
ASSEMBLY SUPPORT	23	12609 SF
CLASSROOM	66	49062 SF
CLASSROOM - SPECIALTY	34	34195 SF
CLASSROOM - SUPPORT	19	4853 SF
FACILITIES	61	10335 SF
RESTROOM/LOCKER/SHOWER	2	881 SF
SHELL AND CORE	40	4614 SF
STORAGE	73	11081 SF
Grand total: 371	371	166572 SF



# Existing Elementary School



# Existing Elementary School

Student Population:  
805 K-6<sup>th</sup> grade

Parking: 151 (11 ADA)

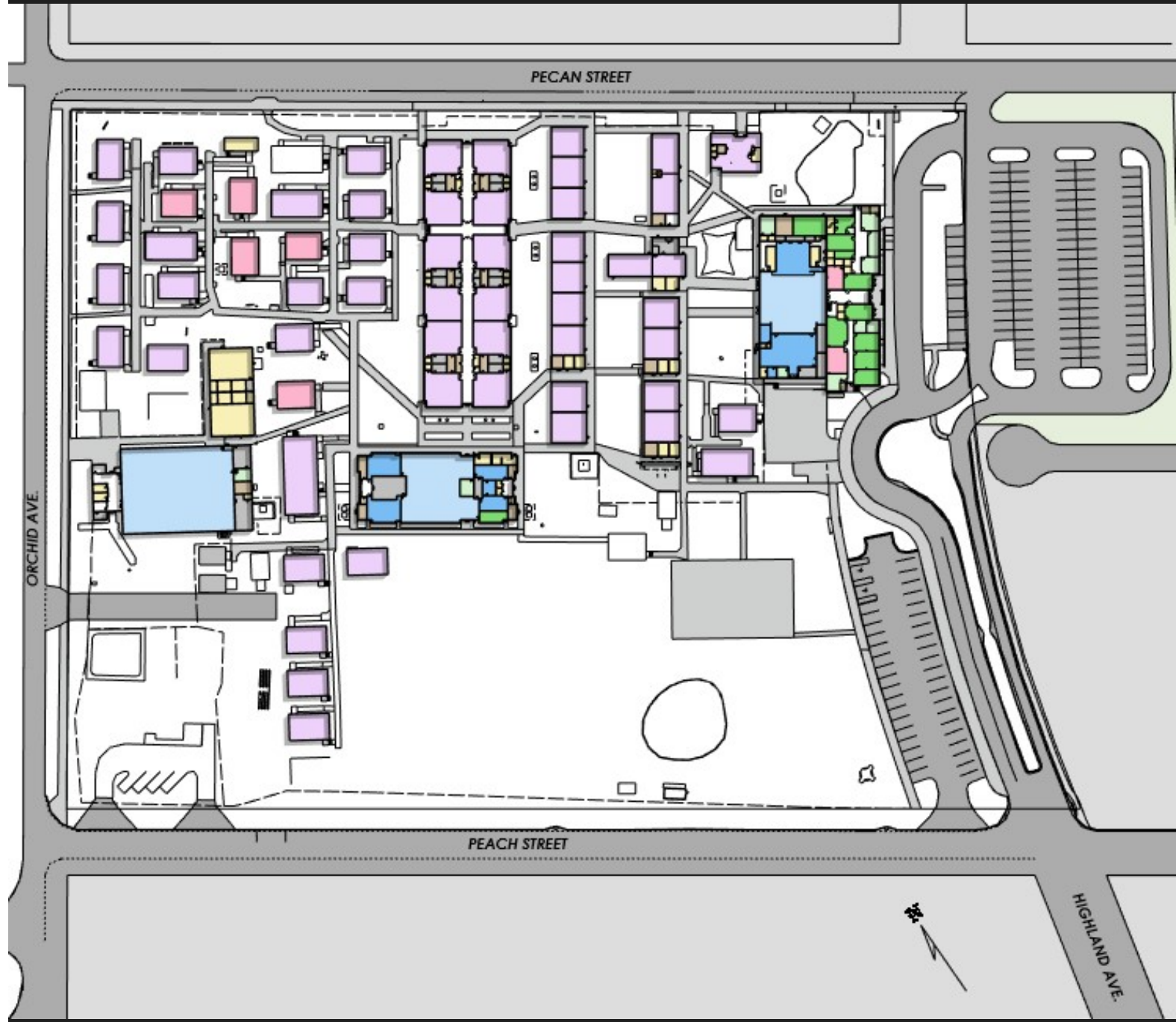
Bus Lane: 650 LF along Pecan St

Parent Drop-Off: 1,616 LF

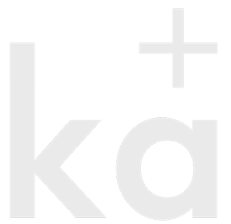
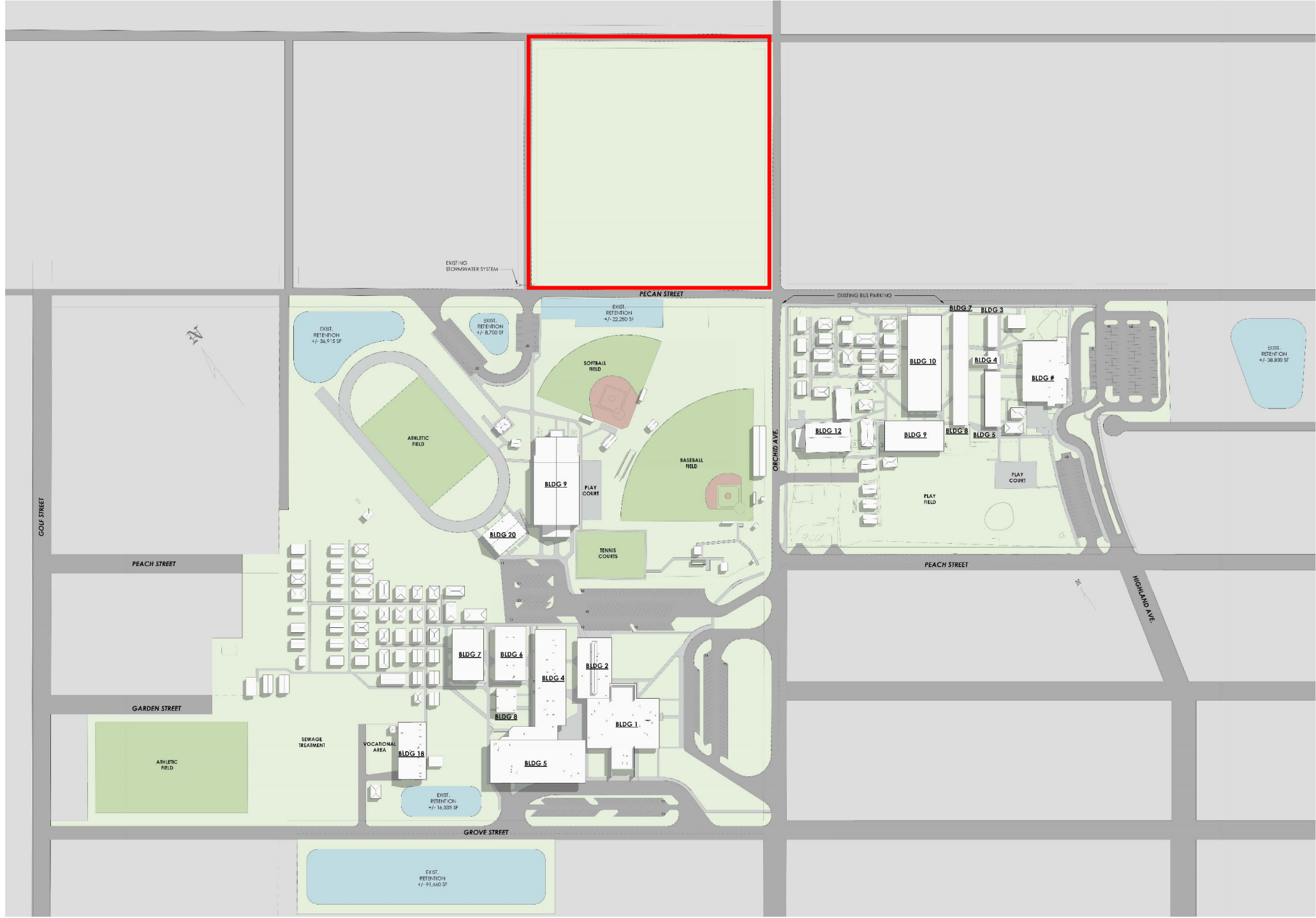
Allowable Impervious Area: 10.64 Ac

## ACTUAL ELEMENTARY SCHOOL MEASURED NSF

CATEGORY	SPACES	TOTAL NSF
Elem. School		
	2	49 SF
ADMINISTRATIVE	11	1959 SF
ADMINISTRATIVE SUPPORT	11	3748 SF
ASSEMBLY	3	14768 SF
ASSEMBLY SUPPORT	9	4772 SF
CLASSROOM	54	48746 SF
CLASSROOM - SPECIALTY	7	4857 SF
FACILITIES	57	5957 SF
RESTROOM/LOCKER/SHOWER	1	369 SF
SHELL AND CORE	29	2546 SF
STORAGE	32	4750 SF
Grand total: 216	216	92520 SF



# Vacant 9-Acre Parcel



What's going on **below the surface**?

Can the existing **utility systems** accommodate growth and expansion?

Items to consider include:

1. **Stormwater**
2. **Wastewater** Management & Sanitary Sewer
3. **Parking** & Drop-Off

# Sitework Considerations



Civil Engineering Analysis

## Criteria

The 2014 SREF and the 2020 FBC places limited requirements on educational facilities for stormwater and only **requires positive drainage** across the site elements and a provision mandating that stormwater discharge **not be directed across pedestrian travel ways** such as sidewalks.

### Water Quality:

Provide **pond storage** sufficient to retain the first inch of water that runs off the site and release that water over a period of **72 hours**.

### Water Quantity:

Provide additional **storage as necessary** to attenuate the runoff from the developed property, resulting from a **25-year, 24-hour storm event**, to pre-development rates.

# Stormwater Management Strategies



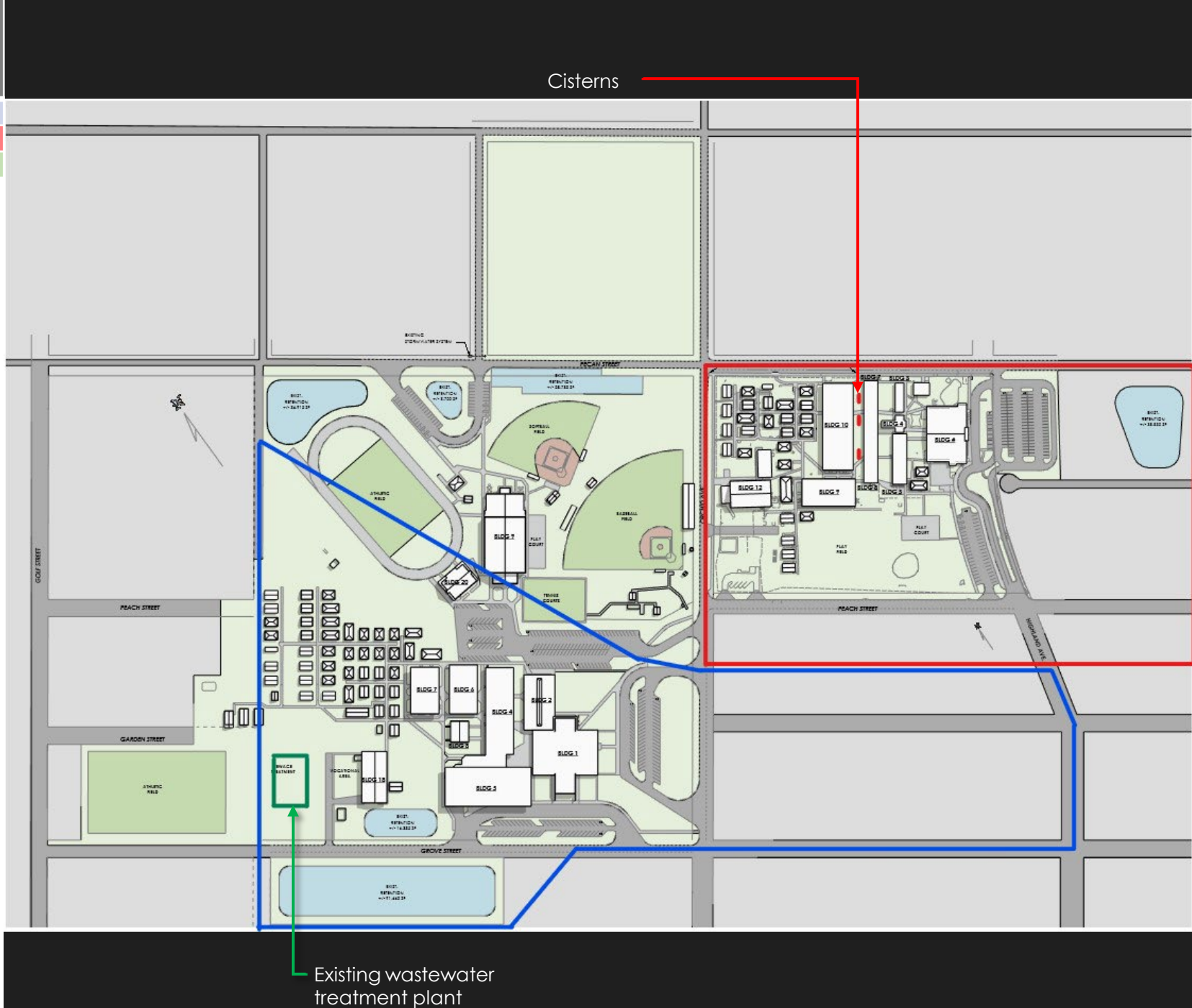
Facility	Permitted Acreage	Allowable % Impervious	Permitted Impervious Area in Acres	Current Impervious Area in Acres (% Impervious)
Combination	27.3	85	23.2	7.98 (34.3%)
Elementary	12.52	85	10.64	5.38 (43.0%)
Vacant Lot	9.0	0	0	0 (0%)

### Existing Elementary school

- Red = Drainage area for Pond 1
- Total allowable impervious = 85%
- Pond is owned by the city.
- Use is shared by KHE and the surrounding area.

### Existing Combination school

- Blue = Drainage area for Pond 2
- Total allowable impervious = 85%
- Pond is owned by CCDS.
- Use is shared by KHS and the surrounding area



## Criteria

The **quantity of water, treatment standards** and other **quality** and quantity standards are governed by the local Water Management District and the Florida Department of Environmental Protection.

FDEP requires that wastewater treatment facilities within springsheds to **provide advanced waste treatment** (AWT) for wastewater treatment systems.

# Wastewater and Sanitary Sewer Strategies



Civil Engineering Analysis





Satsuma St

SW Peach St

SW Peach St

Keystone Heights High School

Immanuel Anglican Church

SW Garden St

SW Garden St

SWI Grove St

SW Grove St

SW Grove St

SW Grove St

SW Grove St

Orchid Ave

Existing wastewater treatment plant

ka

Google

# Current Sewer System Capabilities:

The existing campus is served by a .04 MGD **extended aeration package plant** located on the south side of the high school property. The plant is owned and operated by the Clay County School District.

Given the current population of **both campuses** the likely **peak flow** demand on the system is summarized below:

The estimated flows calculated here are **pushing the permit limits** for the facility.

A review of the most recent monthly operating reports for the facility indicates that the **estimated flow rates exceed the measured rates** being reported.

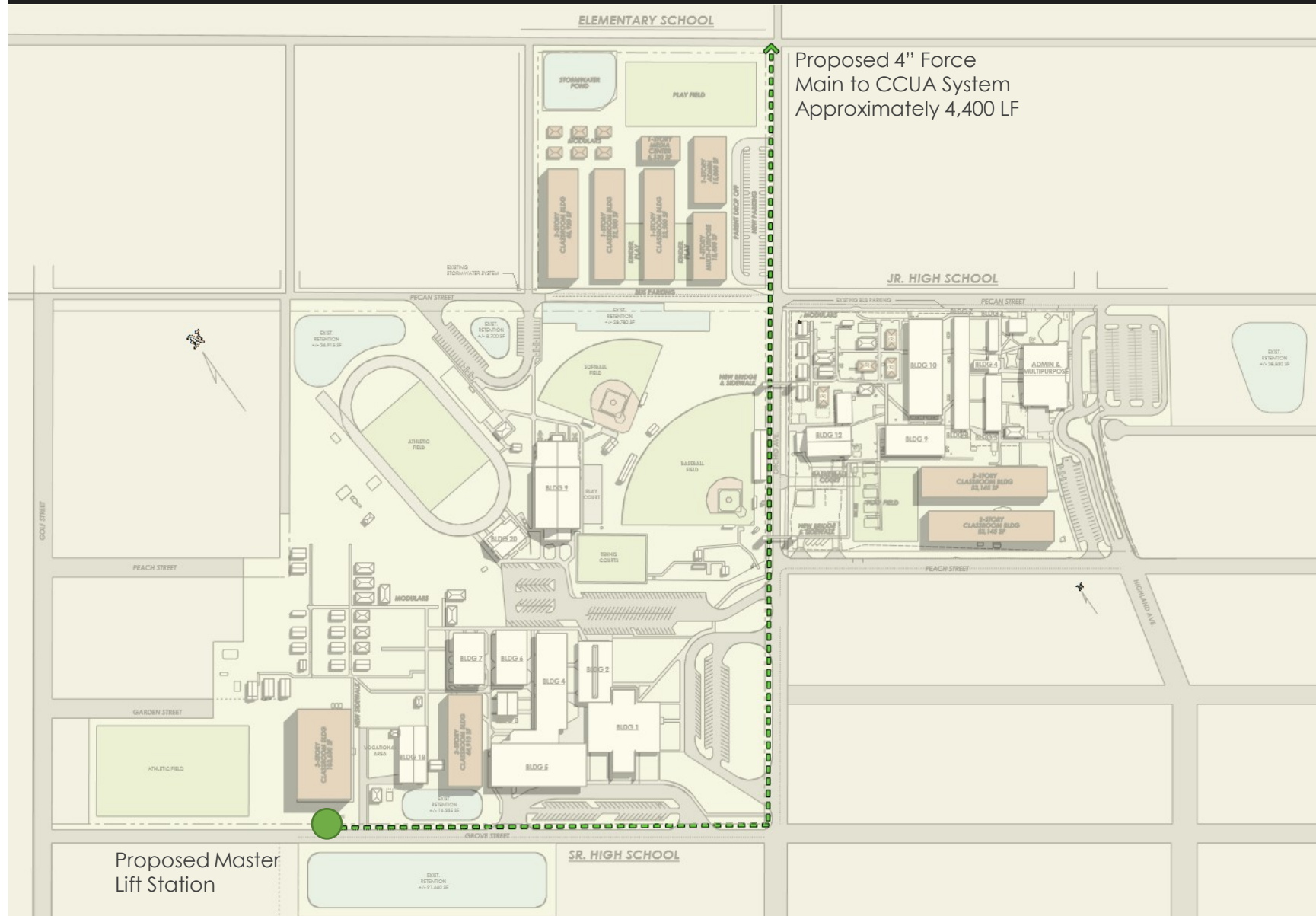
	Approximate Number of Users	Estimated Flow/Capita	Total Flow
<b>Students</b>	2560	14 gpd	35,800 gpd
<b>Staff</b>	200	15 gpd	3,000 gpd
<b>Total Flow</b>			38,800 gpd
<b>Peak Hour Factor</b>			5
<b>Peak Hourly Flow</b>			194,000 gpd (0.19 MGD)



# Wastewater Recommendation:

Wastewater service is likely **not able** to accommodate an increase in the student population. Based on the analysis, the system is likely already **at or exceeding its permitted capacity**.

CCUA maintains a **municipal treatment plant** approximately 3/4 mile from the High School parcel and which **has sufficient capacity** to accept and treat the proposed expansion. The closest connection point is **approximately 4,000 feet** north of the current campus and will **require a pump station** and force main to transmit the wastewater to CCUA's force main. The schools pump station will require a **generator back-up** as the school is listed as an evacuation center.



## Criteria

There have been past discussions on **closing portions of SW Pecan Street** between the SW Field Avenue and Orchid Avenue. However, there are no existing plans or agreements that ensure the viability of this plan. **No other streets** shall be considered for closure.

- Establish **code minimum** requirements
- Determine **current parking** capacity
  - Identify **bus drop-off** capacity
- Identify **parent drop-off** capacity

# Parking and Drop-Off Strategies



# Parking

Projected Parking Requirements to Meet Facility List

Facility	student stations	Est. # of Staff	Student Parking	Staff Parking	Visitors	Total Spaces	ADA Spaces
Elem	862	60	0	60	9	<b>69</b>	<b>3</b>
Jr High	1,117	75	0	75	12	<b>87</b>	<b>4</b>
Sr. High	1,739*	115	87	115	18	<b>133</b>	<b>6</b>
<b>TOTALS</b>	<b>1,979</b>	<b>250</b>	<b>87</b>	<b>250</b>	<b>39</b>	<b>289</b>	<b>13</b>

Existing Parking Capacity

Facility	Total Existing Spaces	ADA Existing Spaces
Elementary	151	11
Combination	260	9
Athletic Fields	52	6
<b>TOTALS</b>	<b>463</b>	<b>26</b>



# Bus and Parent Drop-Off

Elementary:

Busses: 650 LF along Pecan St  
Parents: 1,616 LF

Combination School:

Busses: 600 LF  
Parents: 700 LF

New solution should meet or exceed existing conditions



## Evaluation A

Is a **new Elementary School**  
on the **9-Acre Site** Feasible?

## Evaluation B

Is a **phased rebuild** of a  
new Elementary School on  
the **existing Elementary site** Feasible?



CLAY COUNTY SCHOOL DISTRICT - KEYSTONE HEIGHTS FEASIBILITY STUDY  
ELEMENTARY SCHOOL

CATEGORY	SPACES	TOTAL NSF	TOTAL STNS.	TOTAL GSF
CLASSROOM	48	41,568	862	52,789
CLASSROOM SUPPORT	27	8,430	0	10,701
CLASSROOM - SPECIALTY	14	9,220	0	11,706
ASSEMBLY	4	9,632	0	12,230
ASSEMBLY SUPPORT	3	4,228	0	5,368
ADMIN	13	3,627	0	4,603
ADMIN SUPPORT	8	3,913	0	4,965
RR-SHOWER-LOCKER-DRESSING	107	6,812	0	8,644
STORAGE	164	14,993	0	19,034
<b>TOTALS</b>	<b>388</b>	<b>102,423</b>	<b>862</b>	<b>130,040</b>

CLAY COUNTY SCHOOL DISTRICT - KEYSTONE HEIGHTS FEASIBILITY STUDY  
JR HIGH SCHOOL

CATEGORY	SPACES	TOTAL NSF	TOTAL STNS.	TOTAL GSF
CLASSROOM	37	29,628	688	39,107
CLASSROOM SUPPORT	33	6,565	0	8,662
CLASSROOM - SPECIALTY	27	23,621	349	31,174
ASSEMBLY	8	22,240	80	29,356
ASSEMBLY SUPPORT	20	15,710	0	20,736
ADMIN	13	2,290	0	3,022
ADMIN SUPPORT	11	6,625	0	8,745
RR-SHOWER-LOCKER-DRESSING	122	9,184	0	12,118
STORAGE	117	14,270	0	18,833
<b>TOTALS</b>	<b>388</b>	<b>130,133</b>	<b>1,117</b>	<b>171,753</b>

CLAY COUNTY SCHOOL DISTRICT - KEYSTONE HEIGHTS FEASIBILITY STUDY  
SR HIGH SCHOOL

CATEGORY	SPACES	TOTAL NSF	TOTAL STNS.	TOTAL GSF
CLASSROOM	37	30,900	825	41,406
CLASSROOM SUPPORT	60	17,358	20	23,249
CLASSROOM - SPECIALTY	64	57,183	824	76,618
ASSEMBLY	8	32,300	70	43,280
ASSEMBLY SUPPORT	15	20,801	0	27,868
ADMIN	23	7,107	0	9,522
ADMIN SUPPORT	7	6,989	0	9,362
RR-SHOWER-LOCKER-DRESSING	48	6,673	0	8,727
STORAGE	138	20,798	0	27,861
<b>TOTALS</b>	<b>400</b>	<b>200,109</b>	<b>1,739</b>	<b>268,093</b>

# Facility Lists

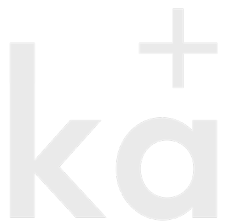
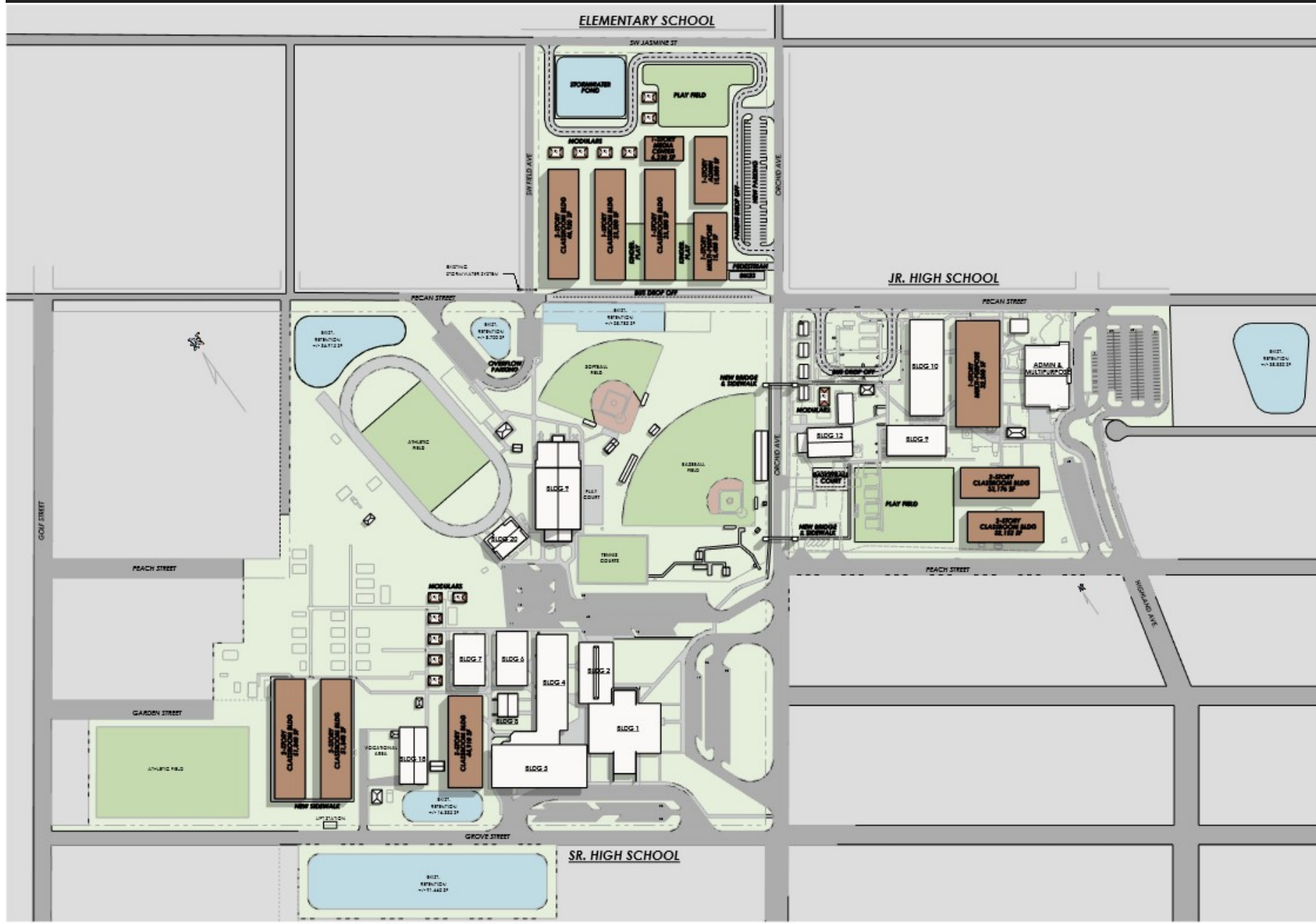
Criteria upon which each Evaluation was considered





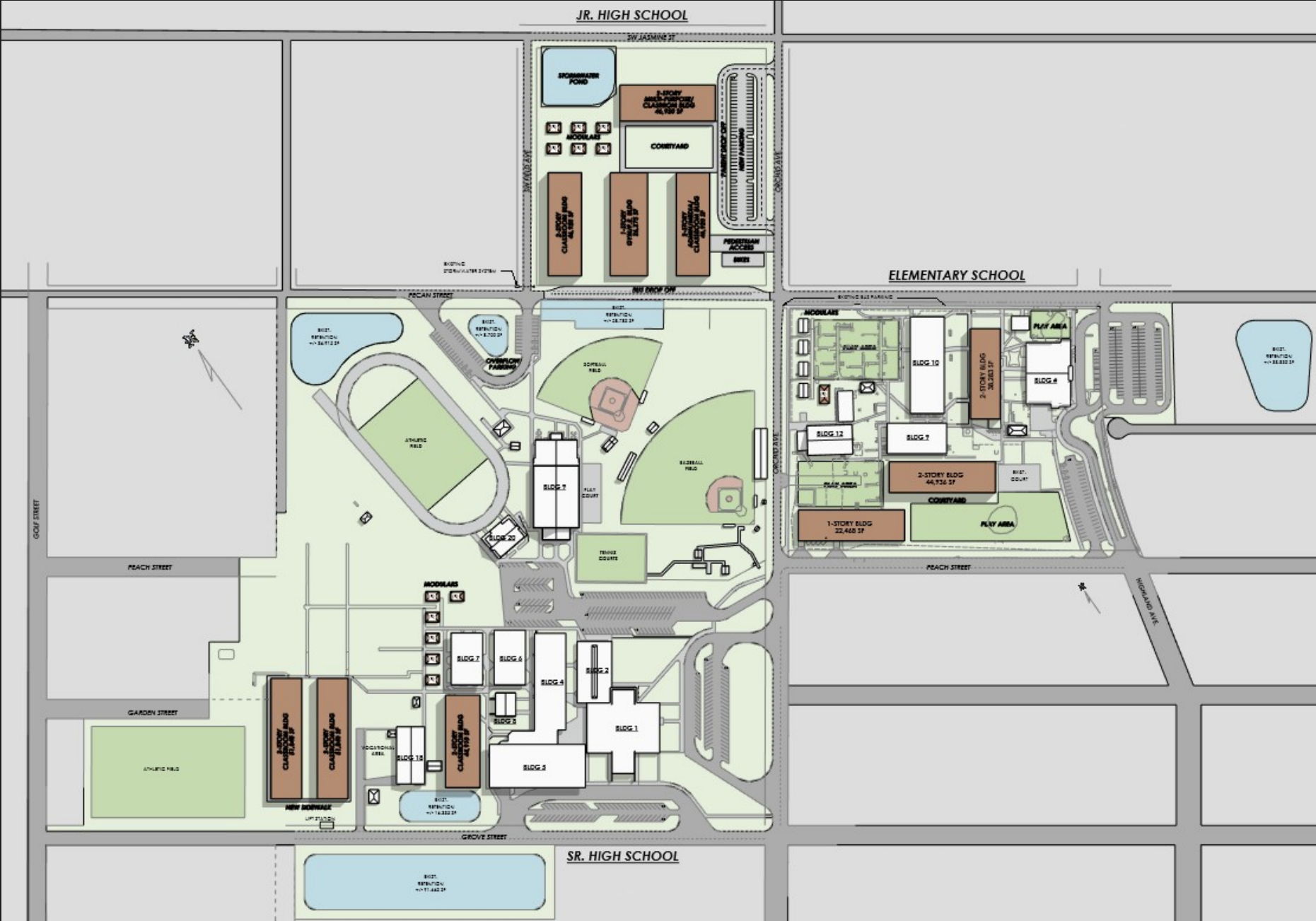
# Evaluation A

## New Elementary School on the 9-Acre site



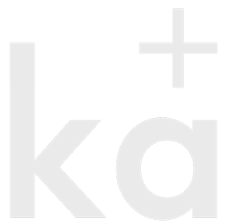
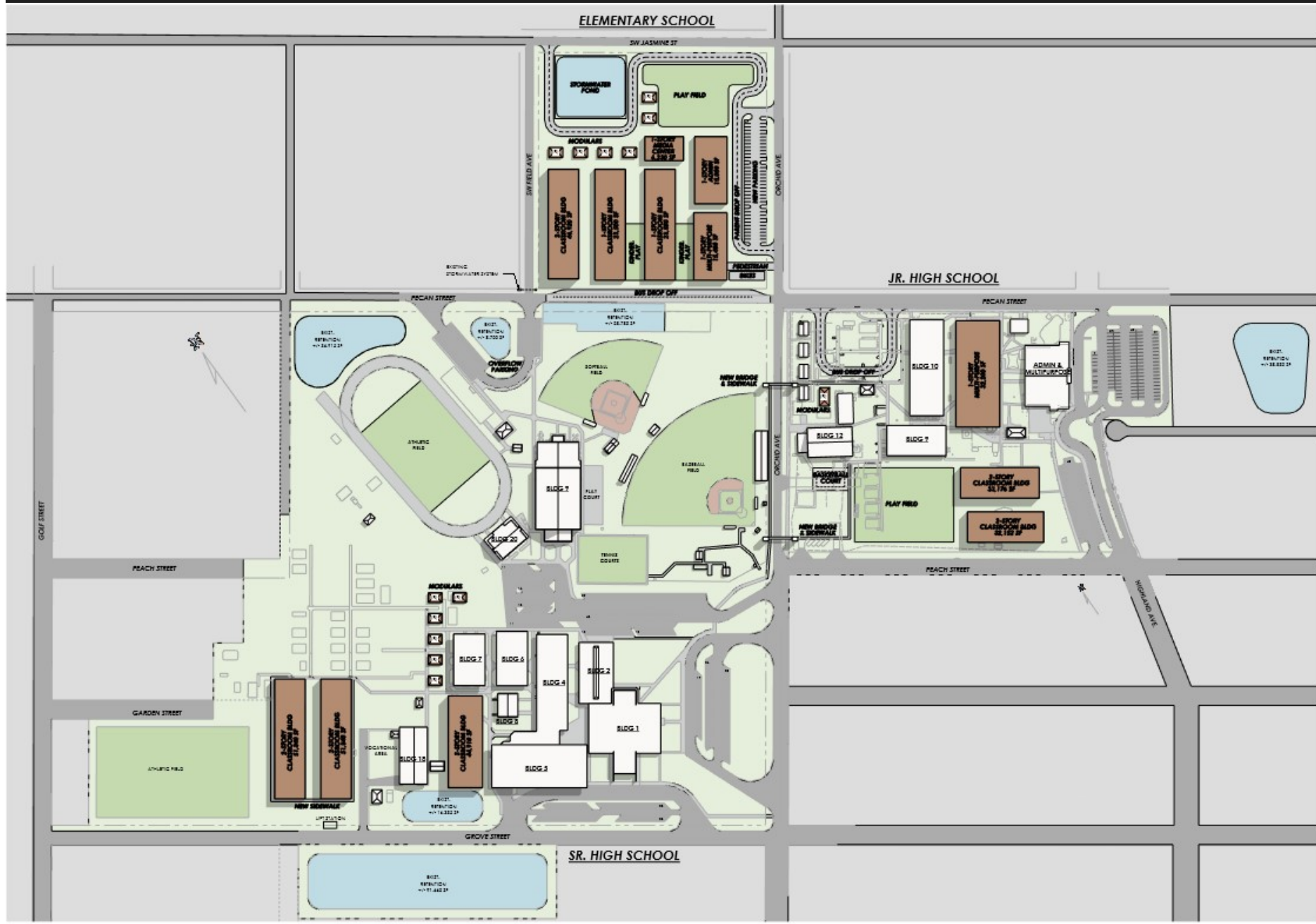
# Evaluation B

Rebuild New Elementary on the Existing Site



# Evaluation A

## New Elementary School on the 9-Acre site



# New Elementary School on 9-acres

Student Population:  
862 in K-6<sup>th</sup> grade

Parking: code minimum 69 (151 existing)

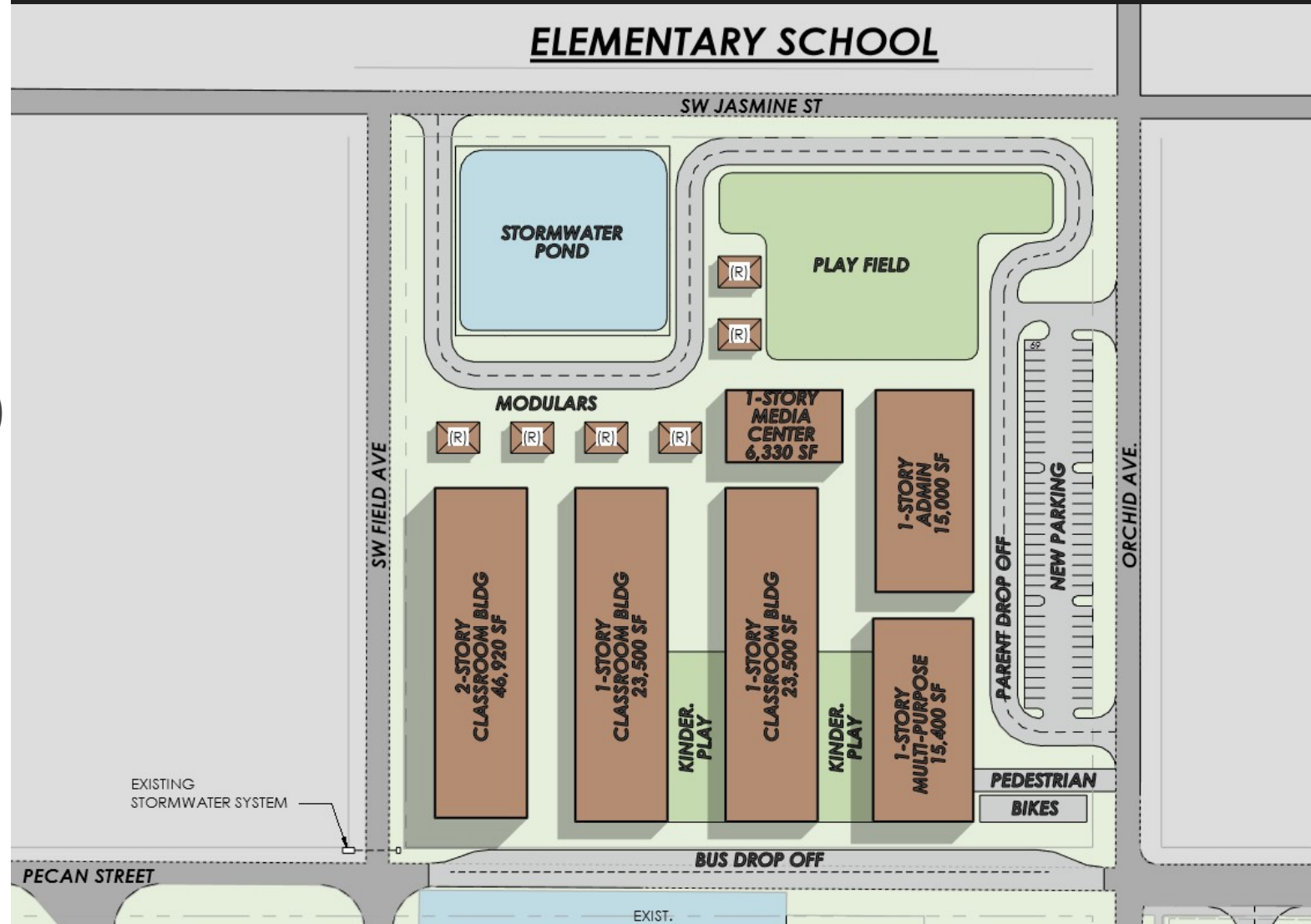
Bus Lane: 600 LF (650 LF existing)

Parent Drop-Off: 1,560 LF (1,616 LF existing)

Allowable Impervious Area: 8.42 Ac

Play Area:  
50,946 SF (1.17 Ac)  
(90,137 SF Existing)

Building Area:  
130,040 GSF



**Section 6.01 Educational and Ancillary  
Facilities Item K(1)(a) **Minimum School Size****

Elementary: **450** students

**Section 6.01 Educational and Ancillary  
Facilities Item K(2)(a) **Maximum School Size****

Elementary: **1,000** students

**Current** Enrollment is **805**

**Policy**



School Board Policy

# Jr High School Relocated to Existing Elementary Site

Student Population:  
1,117 in 7-8<sup>th</sup> grade

Parking: 151

Bus Lane: 490 LF

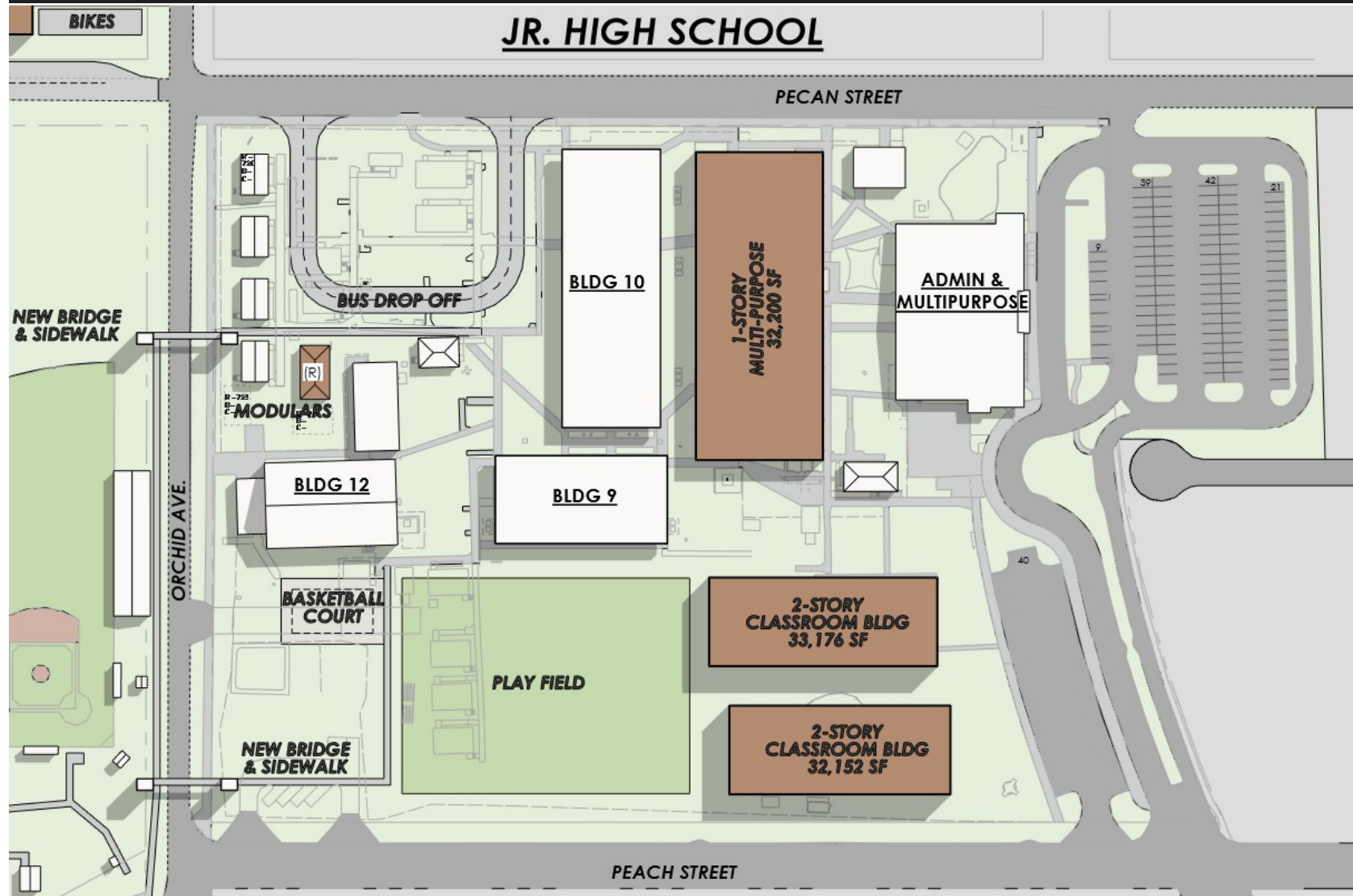
Parent Drop-Off: 1,560 LF

Allowable Impervious Area: 10.64 Ac

Play Area:  
51,732 SF  
(1.19 Ac)

Athletic Fields shared with Sr High

Building area:  
171,753 GSF



## Section 6.01 Educational and Ancillary Facilities Item K(1)(a) **Minimum School Size**

Junior High School: **750 students**

High School: **900 students**

## Section 6.01 Educational and Ancillary Facilities Item K(2)(a) **Maximum School Size**

Junior High School: **1,500 students**

High School: **2,500 students**

Junior High **Current** enrollment is **397**

High School **Current** enrollment is **716**

# Policy

Growth in Keystone would have to **exceed 2,000 homes** to meet the High School threshold and **over 6,000 homes** to meet the JH threshold.



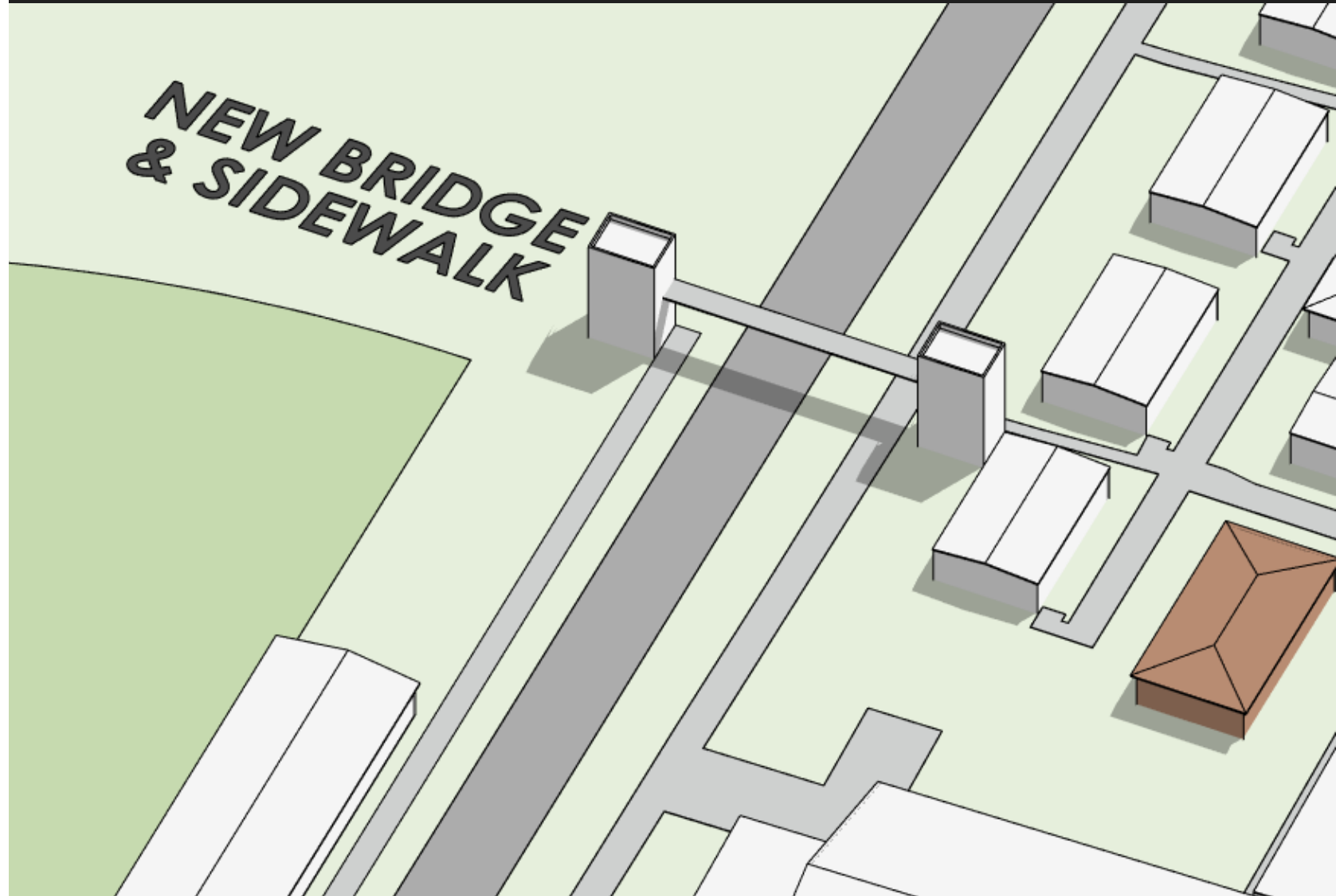
## Evaluation A only

Pedestrian Bridge to cross Orchid Ave

SREF Chapter 5, section 2.k.3 states:  
“Play areas and **athletic fields**, where provided, shall have either **direct access** from the facility without crossing roads, **traffic lanes, drives or parking lots**, or have appropriate safety devices provided where access crosses parking areas or drives”

Estimated Cost = \$3,027,000

12 feet in width | 40-foot span | 17.5 foot clearance  
meets the requirements of FDOT Design Manual  
Section 266





# Pros

- **Less disruptions** to school
- **Instant** results (relative terms 2-3 years)
- **New** facilities

# Cons

- More **expensive** to build and maintain pedestrian bridges over road ROW's
- Creates a **separation** between the future Junior and Senior High Schools that will be sharing various educational programs and sports fields
- May create an **abandoned** facility
- Loss of **recent improvements** at the current Elementary Site – (parking/stacking, Admin Renovations, etc.)
- Parking would meet code requirements, however, the parking would equal the **pre-parking addition** at KHE
- Other comparable Elementary schools are on much **larger parcels**
- **Total Cost** of new elementary is around **\$23M**



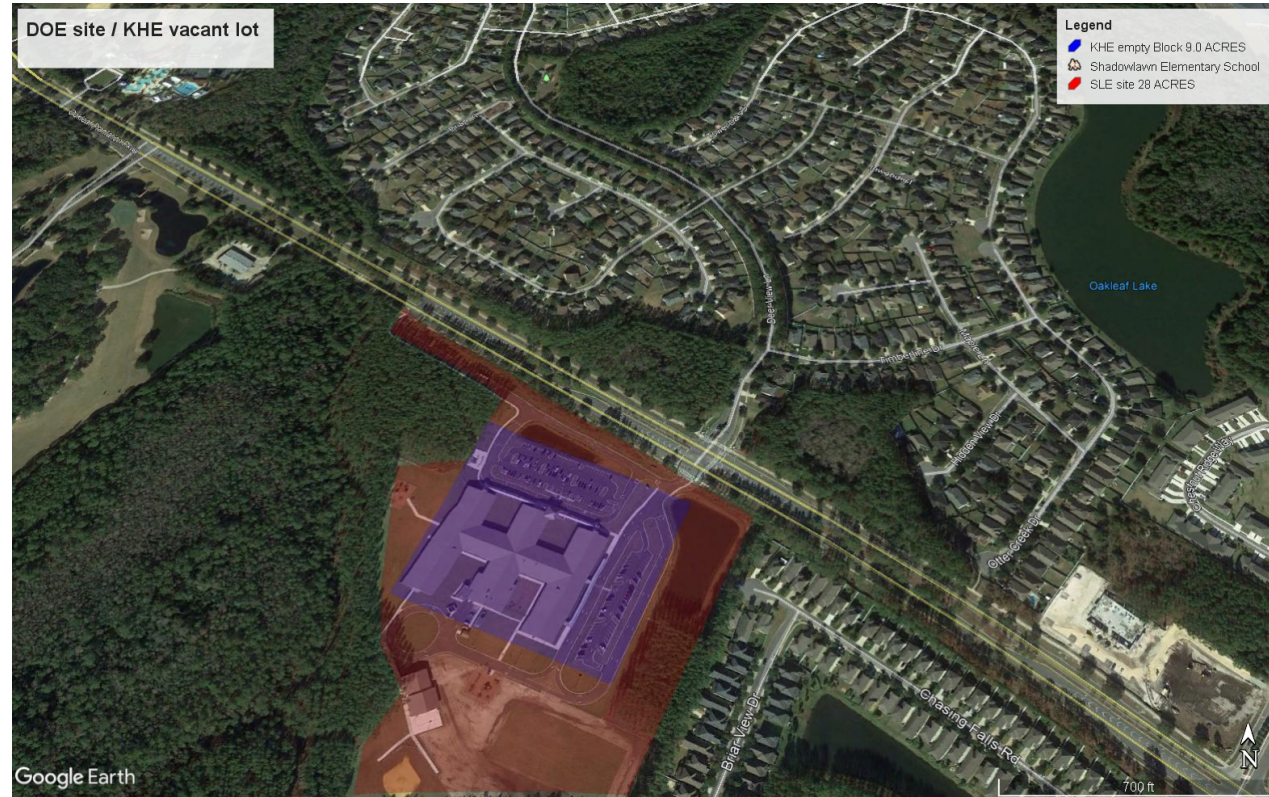
# Shadowlawn Elementary

28 acres  
Full Facility List



# Discovery Oaks Elementary

27 acres  
Full Facility List



**A Feasibility Study has two criteria:**

**Reasonable**

**Financially Practical**

**Can the buildings be built? – Yes**

The **recommended facility list** square footage can be accommodated on the site

**Reasonable? – No**

According to the study, the Facility list for a new Elementary School can be constructed on the site, with **smaller stacking, parking and play area** compared to most of the District's other schools. Creating a **New Elementary School** on the **existing Elementary Site** would be more desirable.

**Financially Practical? – No**

It may not be practical at this time when considering overall County needs and the total estimated cost for this plan is **\$23M**

# Results

Evaluation A

The construction of a new **Elementary School** on McDavid Park in Keystone is **not recommended** by the Feasibility Study



Interpretation of the results



# Elementary School Renovation

Student Population:  
862 in K-6<sup>th</sup> grade

Parking: 151 (11 ADA), Existing

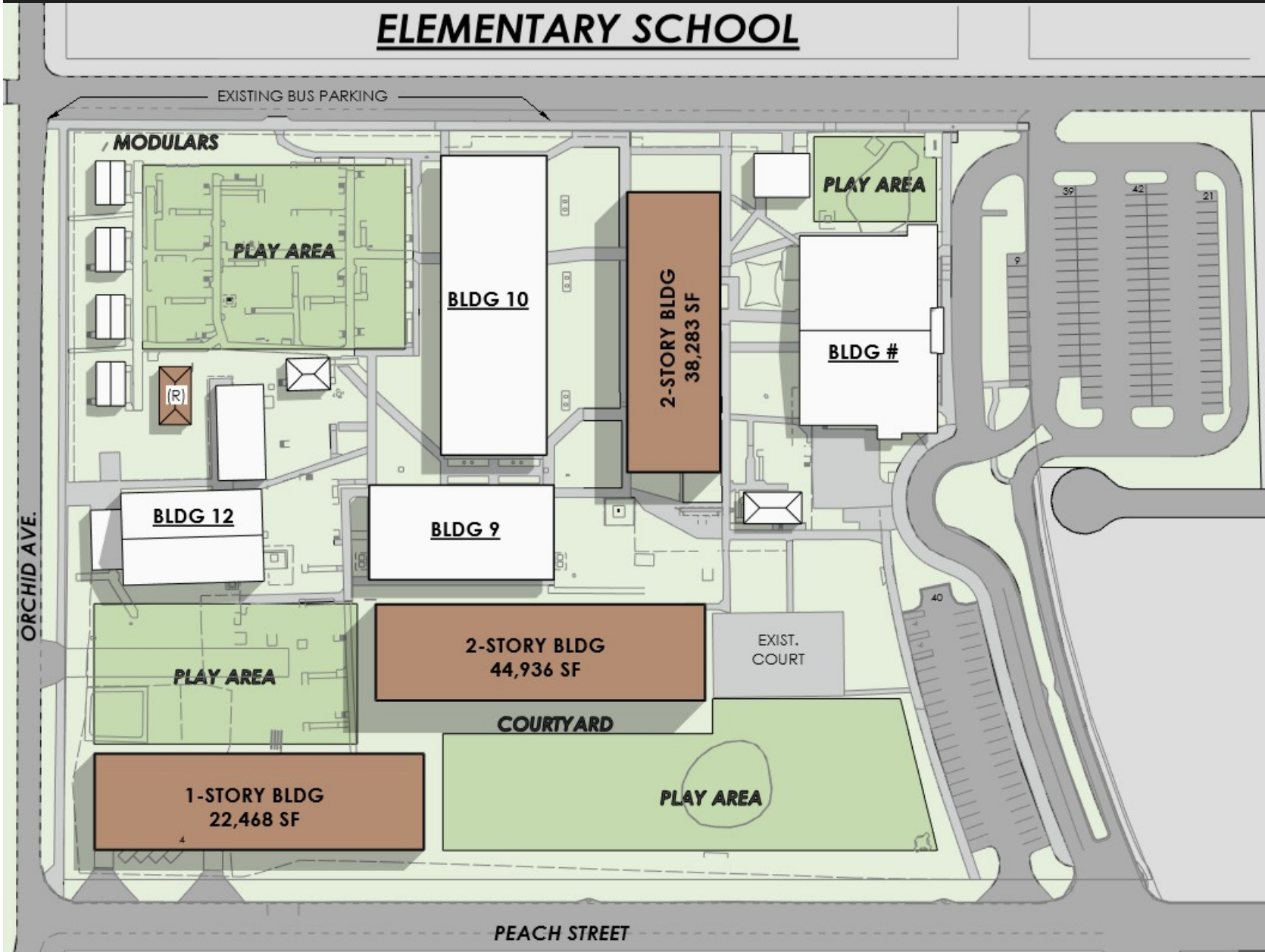
Bus Lane: 650 LF along Pecan St, Existing

Parent Drop-Off: 1,616 LF, Existing

Allowable Impervious Area: 10.64 Ac

Play Area:  
114,146 SF (2.62 Ac)  
(90,137 SF Existing)

Building Area:  
130,040 GSF



# Jr High School on 9-Acres

Student Population:  
1,117 in 7-8<sup>th</sup> grade

Parking: code minimum 87

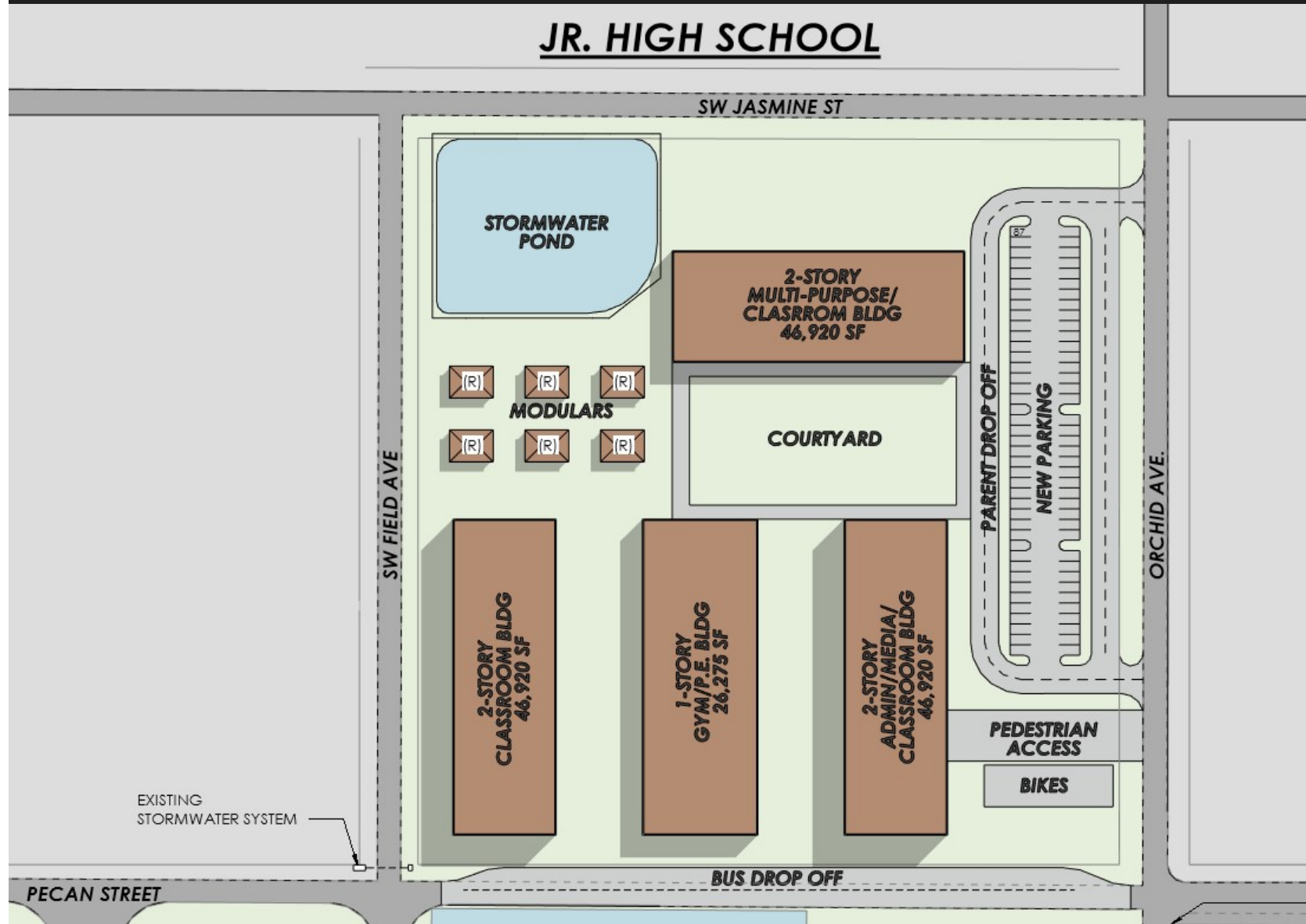
Bus Lane: 600 LF

Parent Drop-Off: 578 LF

Allowable Impervious Area: 8.42 Ac

Play Area:  
25,467 SF min. courtyard  
(.58 Ac min.)  
Athletic Fields shared with Sr High

Building area:  
171,753 GSF



# Pros

- Utilizes the **newly configured parking** and extended stacking designed for the Elementary School.
- **Total Cost** of new elementary is around **\$15M**
- Provide a **new and larger** Jr. High gym that would conform to the Facilities List
- Use the existing gymnasium on the Elementary School campus as a **large conditioned covered play area** that would not have to be “shared” with Junior High
- **Seamless link** between Junior and Senior High by providing a safe, low maintenance path for access to shared athletic fields and academic programs.

# Cons

- Construction on **active** Elementary School campus
- Instructional Programming



Elementary-Only Cost Analysis		
Evaluation A		Evaluation B
\$6,345,926	New Buildings	\$3,533,280
\$3,719,666		\$5,952,733
\$3,719,666		\$5,120,978
\$1,079,600		
\$2,636,633		
\$3,089,461		
\$0		Demolition
\$360,000	Portables	\$60,000
\$369,231	Canopies*	\$61,538
\$547,458	Parking	\$0
\$720,000	Stormwater	\$0
\$606,000	Water and Sewer	\$606,000
<b>\$23,193,641</b>	<b>Total</b>	<b>\$15,484,529</b>

\* Canopies value is a percentage of the total allowance assigned to each relocated portable



# Elementary-Only Cost Analysis



## A Feasibility Study has two criteria:

**Reasonable**

**Financially Practical**

### Can the buildings be built? – Yes

The **recommended facility list** square footage can be accommodated on the site

### Reasonable? – Yes

According to the study, the Facility list for a new Elementary School can be constructed on the existing site, reusing **existing stacking and parking, reusing select existing buildings, and expanded play fields**

### Financially Practical? – Yes

The total cost of rebuilding the New Elementary School on the existing site is **approximately \$7.7M less** than building a new Elementary on the 9-acre site. *However, it may not be practical at this time when considering overall County needs.*

# Results

## Evaluation B

The construction of a new Elementary School on the existing Elementary School site is a **better use of the land IF and WHEN** the need supports the expansion



Interpretation of the results

# Sr High School Addition

Student Population:  
1,739 in 9-12<sup>th</sup> grade

Parking: 312 (15)

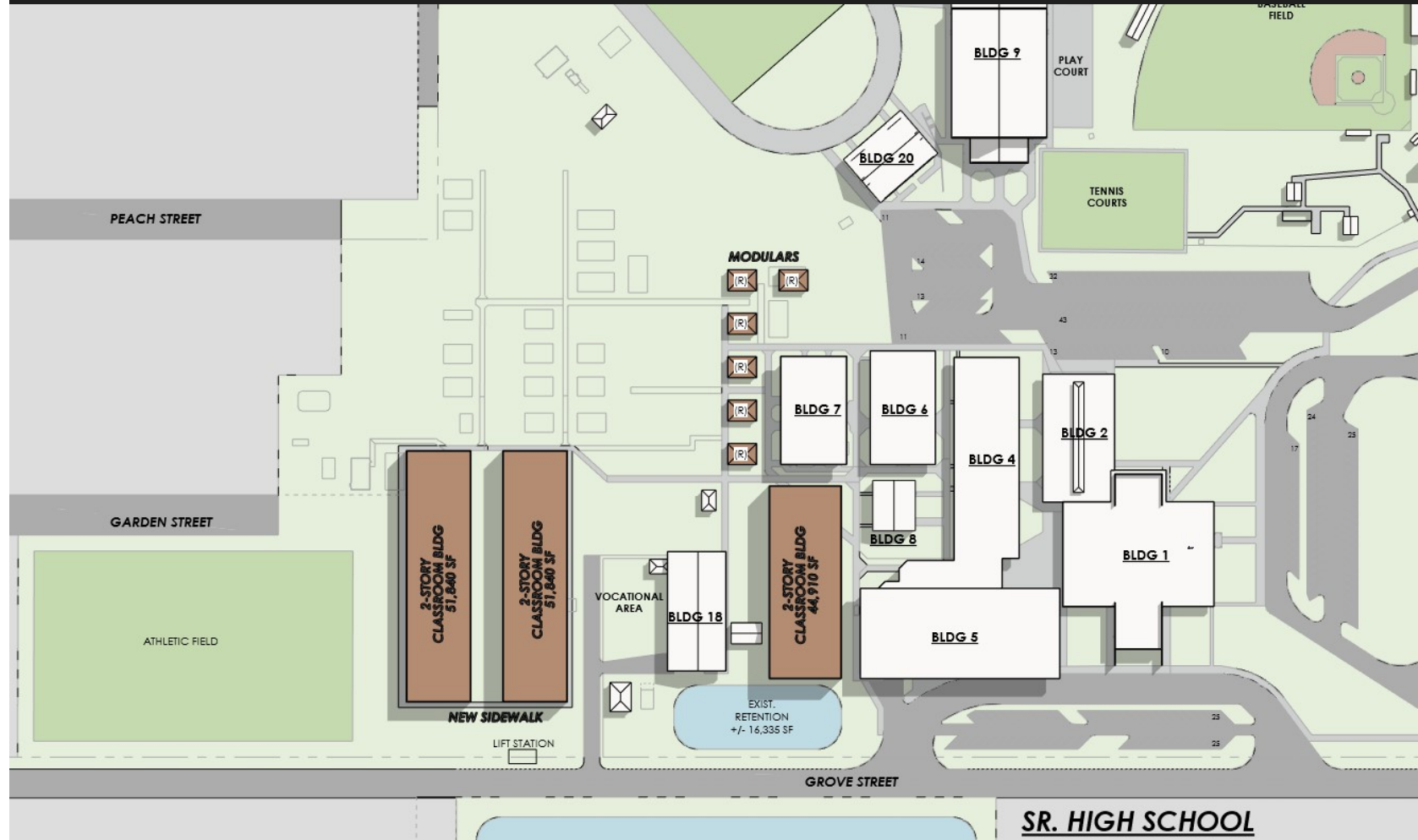
Bus Lane: 600 LF

Parent Drop-Off: 700 LF

Allowable Impervious Area: 23.2 Ac

Play Area:  
322,292 SF  
(7.4 Ac)

Building area:  
268,093 GSF



## Evaluation A

Evaluation A		
New Junior High	Building A (2-Story Classroom Building)	\$ 5,572,263
	Building B (2-Story Classroom Building)	\$ 5,749,733
	Building C (1-Story Multipurpose Building)	\$ 6,407,800
New Elementary School	Building A (2-Story Classroom Building)	\$ 6,345,926
	Building B (1-Story Classroom Building)	\$ 3,719,666
	Building C (1-Story Classroom Building)	\$ 3,719,666
	Building D (1-Story Media Center Building)	\$ 1,079,600
	Building E (1-Story Administration Building)	\$ 2,636,633
	Building F (1-Story Multipurpose Building)	\$ 3,089,461
New Senior High	Building A (2-Story Classroom Building)	\$ 8,548,195
	Building B (2-Story Classroom Building)	\$ 9,867,226
	Building C (2-Story Classroom Building)	\$ 9,867,226
Additional Portables	13 Relocated @ \$60,000 Each	\$ 780,000
Additional Covered Canopies	Allowance	\$ 800,000
Pedestrian Bridge	See Breakdown Below	\$ 3,027,000
Sitework	See Breakdown Below	\$ 1,873,458
Demolition	Allowance	\$ 150,000
<b>Total Probable New Construction Building Cost for Evaluation A</b>		<b>\$ 73,233,852</b>

## Evaluation B

Evaluation B		
New Junior High	Building A (2-Story Classroom Building)	\$ 8,095,577
	Building B (2-Story Classroom/Multipurpose Building)	\$ 8,716,328
	Building C (1-Story Admin/Media/Classroom Building)	\$ 8,023,320
	Building D (1-Story Gym/PE Building)	\$ 4,554,950
New Elementary School	Building A (1-Story Classroom Building)	\$ 3,533,280
	Building B (2-Story Classroom Building)	\$ 5,952,733
	Building C (2-Story Classroom Building)	\$ 5,120,978
New Senior High	Building A (2-Story Classroom Building)	\$ 8,548,195
	Building B (2-Story Classroom Building)	\$ 9,867,226
	Building C (2-Story Classroom Building)	\$ 9,867,226
Additional Portables	13 Relocated @ \$60,000 Each	\$ 780,000
Additional Covered Canopies	Allowance	\$ 800,000
Pedestrian Bridge	n/a	\$ 0
Sitework	See Breakdown Below	\$ 1,681,848
Demolition	Allowance	\$ 150,000
<b>Total Probable New Construction Building Cost for Evaluation B</b>		<b>\$ 75,691,660</b>



Complete Build-Out Cost

Provide a **Feasibility Study** for the Keystone Heights school property utilizing the six existing parcels owned by the Clay County School District.

1. Determine whether the project is **reasonable** and **practical**
2. **Evaluate a new Elementary School** for the Keystone area using the six parcels currently owned by CCDS
3. Examine the effects on the **long-range plans** of a Junior High and High School on the remaining property

# Feasibility Study

"The **examination** and **analysis** of information related to a projected educational facility to determine whether it is **reasonable** and financially **practical**".

-State Requirements for Educational Facilities, Chapter 1 (37)



# A feasibility study is **NOT:**

A recommendation on if it **should be done**

A **master plan**

A complete **financial** analysis

A consideration of **district-wide** needs

A recommendation on **when** it should be done

# Feasibility Study

"The **examination** and **analysis** of information related to a projected educational facility to determine whether it is **reasonable** and financially **practical**".

-State Requirements for Educational Facilities, Chapter 1 (37)



# Project Description

After a review of Codes, Rules, Clay Board Policies, Facility List, Utilities, and Existing conditions the construction of a new **Elementary School on the vacant 9-acre** site in Keystone Heights is **not recommended** by the Feasibility Study.

However, a new Elementary School **would be feasible on the existing** Elementary campus.

# Conclusion



Conclusion



CLAY COUNTY DISTRICT SCHOOLS

# SCHOOL CONSTRUCTION FEASIBILITY STUDY IN KEYSTONE HEIGHTS

kasper architects + associates  
with Civil consultation from Mittauer & Associates, Inc.  
June 15, 2021

