Crabtree, Rohrbaugh & Associates

CONEWAGO VALLEY SCHOOL DISTRICT

ARCHITECTURE / ENGINEERING SERVICES

January 29, 2024

AGENDA

1. Introduction
2. Purpose of the Study
3. Study Requirements
4. Timeline
5. Guiding Principles
6. Projected Enrollment
7. Building Capacity
8. Existing Conditions
9. Option Development
10. Cost Estimates
11. Design Phases
12. Community Engagement

INTRODUCTION

Corporate Information and Project Experience

CORPORATE INFORMATION

75+

EMPLOYEES

$4B+

MIDATLANTIC

EDUCATIONAL EXPERTISE

CLIENT ORIENTED APPROACH

200+
studies in the past 10 years

$23.2M
of grant dollars for K12 clients

3M SF
of sustainable & LEED certified educational buildings

Improved educational spaces for over
100,000
students

21M
SF of educational design expertise in the last 15 years

1997-2020
PA Department of Education
Report 30 Publication
Most Cost Effective Design

GETTYSBURG AREA SCHOOL DISTRICT

HANOVER PUBLIC SCHOOL DISTRICT

LITTLESTOWN AREA SCHOOL DISTRICT

SPRING GROVE AREA SCHOOL DISTRICT

Crabtree, Rohrbaugh & Associates - Architects
401 E. Winding Hill Rd, Mechanicsburg, PA 17055
www.cra-architects.com

UPPER ADAMS SCHOOL DISTRICT

SOUTH WESTERN SCHOOL DISTRICT


BERMUDIAN SPRINGS SCHOOL DISTRICT

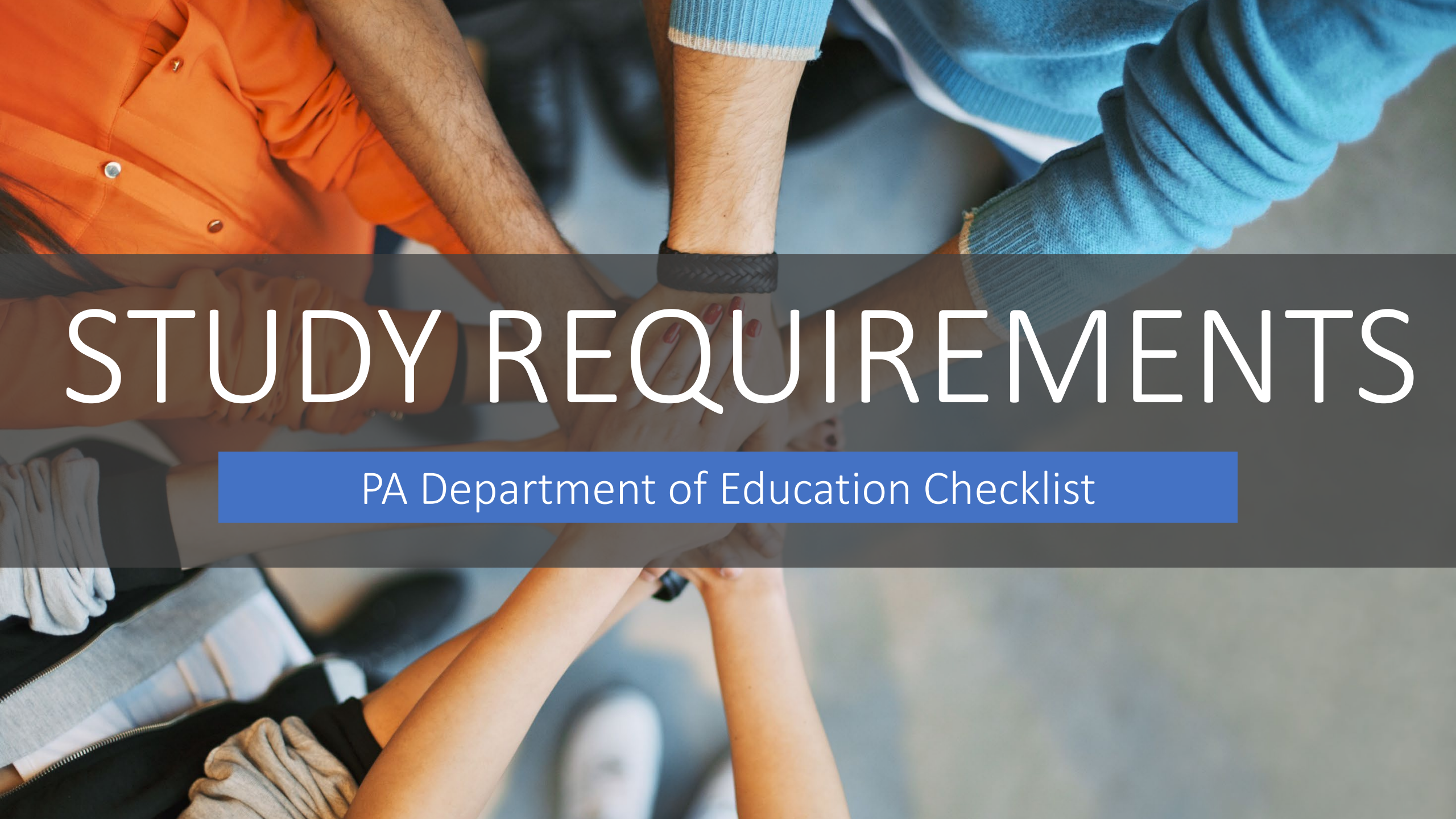
DOVER AREA SCHOOL DISTRICT

PURPOSE of the STUDY

Plan for Success

PURPOSE OF THE STUDY

Short and long term planning	Implement future-focused educational vision	Plan for projected enrollment
Capital Improvement Plan to maintain facilities & assets	Guide for decision making	Eligible for PlanCon reimbursement



STUDY REQUIREMENTS

PA Department of Education Checklist

STUDY REQUIREMENTS

Geographical & Population Overview

Educational Program Overview

Projected Future Enrollment (10 Years)

Building Capacity vs Student Enrollment

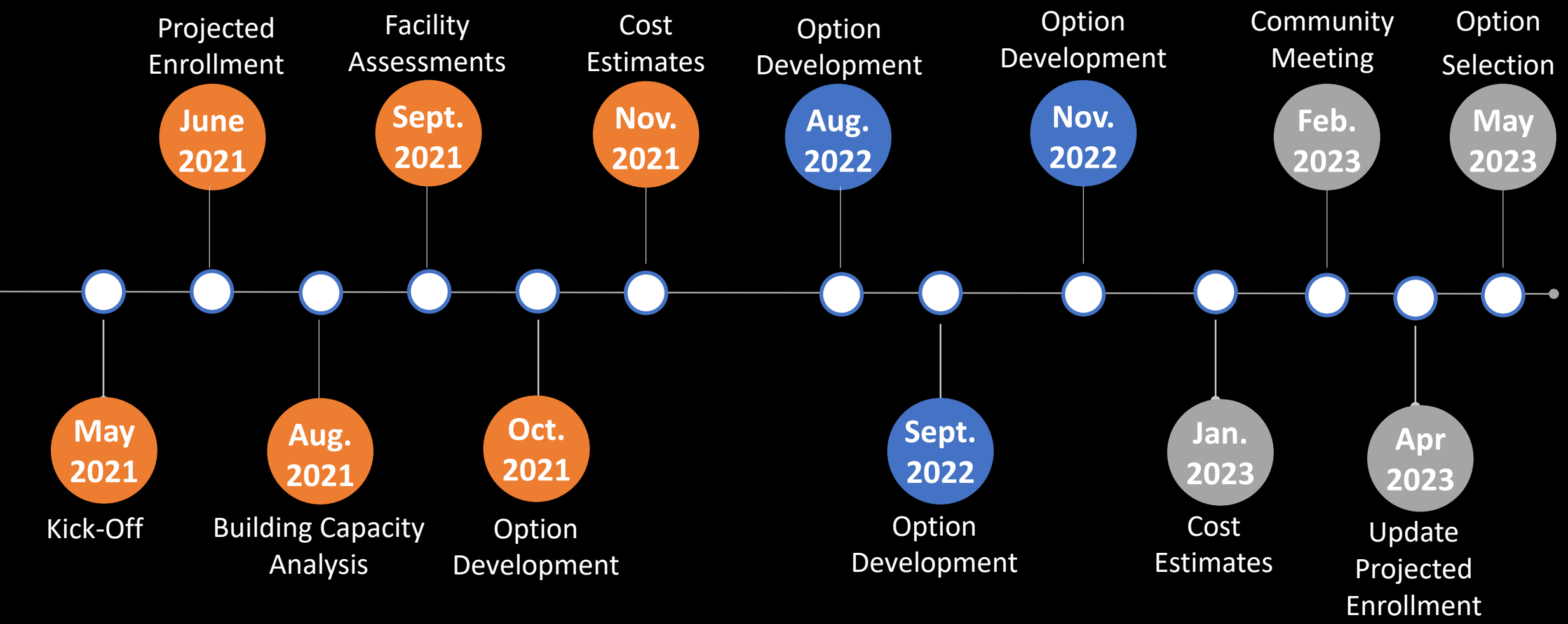
Facility Conditions & Costs to Upgrade

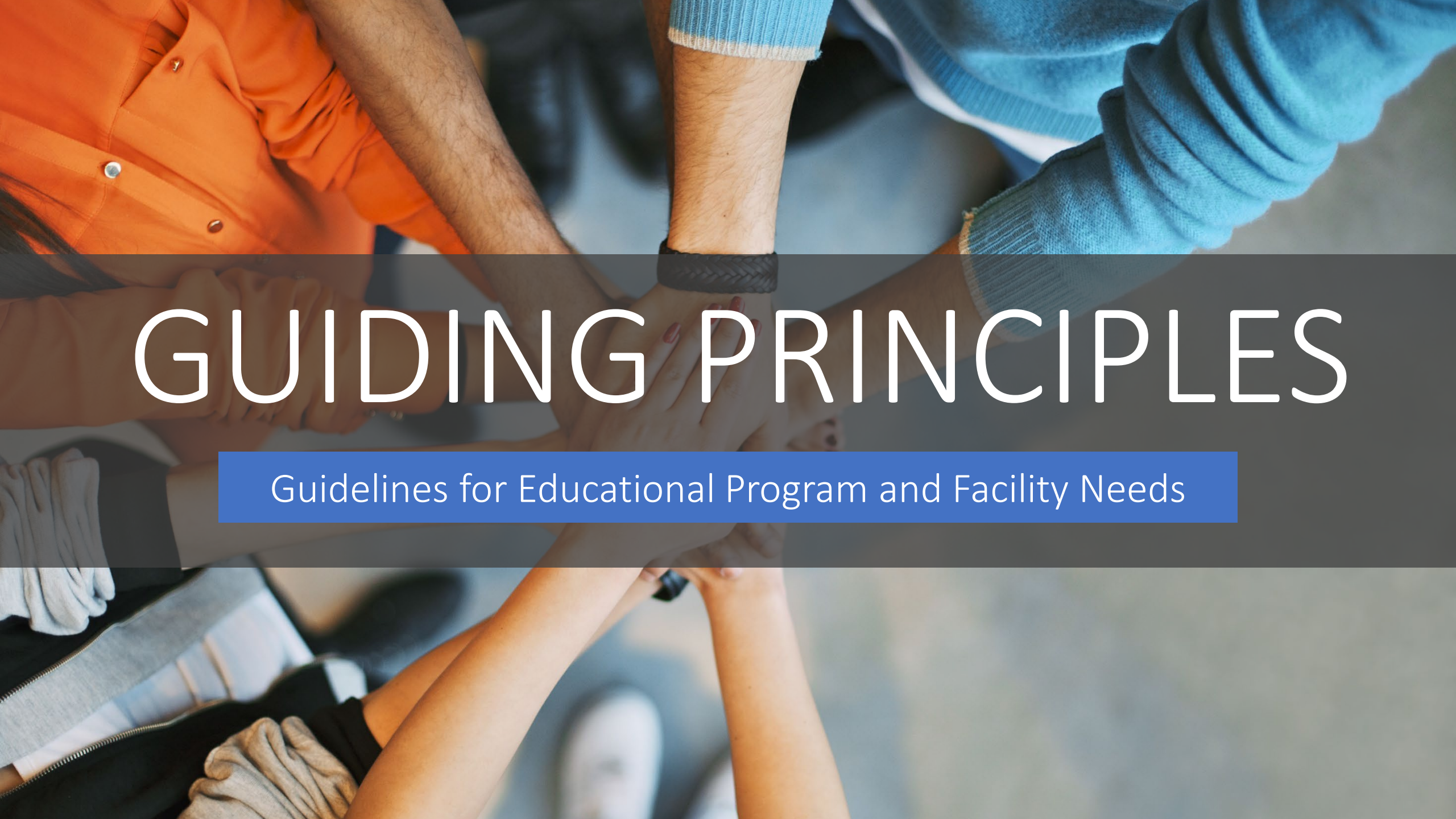
Analysis of Options

TIMELINE

Study Overview

TIMELINE

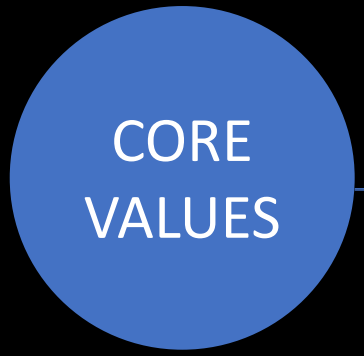

May 2021
Kick-Off
June 2021
Projected Enrollment
Aug. 2021
Building Capacity Analysis
Sept. 2021
Facility Assessments
Oct. 2021
Option Development
Nov. 2021
Cost Estimates
Aug. 2022
Option Development
Sept. 2022
Option Development
Nov. 2022
Option Development
Jan. 2023
Cost Estimates
Feb. 2023
Community Meeting
Apr 2023
Update Projected Enrollment
May 2023
Option Selection



GUIDING PRINCIPLES

Guidelines for Educational Program and Facility Needs

GUIDING PRINCIPLES



OPERATIONALLY

Schools, buildings and grounds will have the capacity to meet current and future enrollment needs. Facilities will be flexible, well-lit and ventilated, easily accessible by all stakeholders, and are individually and collectively cost efficient to operate.

EDUCATIONALLY

Students will be provided appropriate instructional spaces that facilitate whole group, small group and 1 on 1 instruction. Spaces will be nurturing and engaging environments, infused with technology.

CIVICALLY

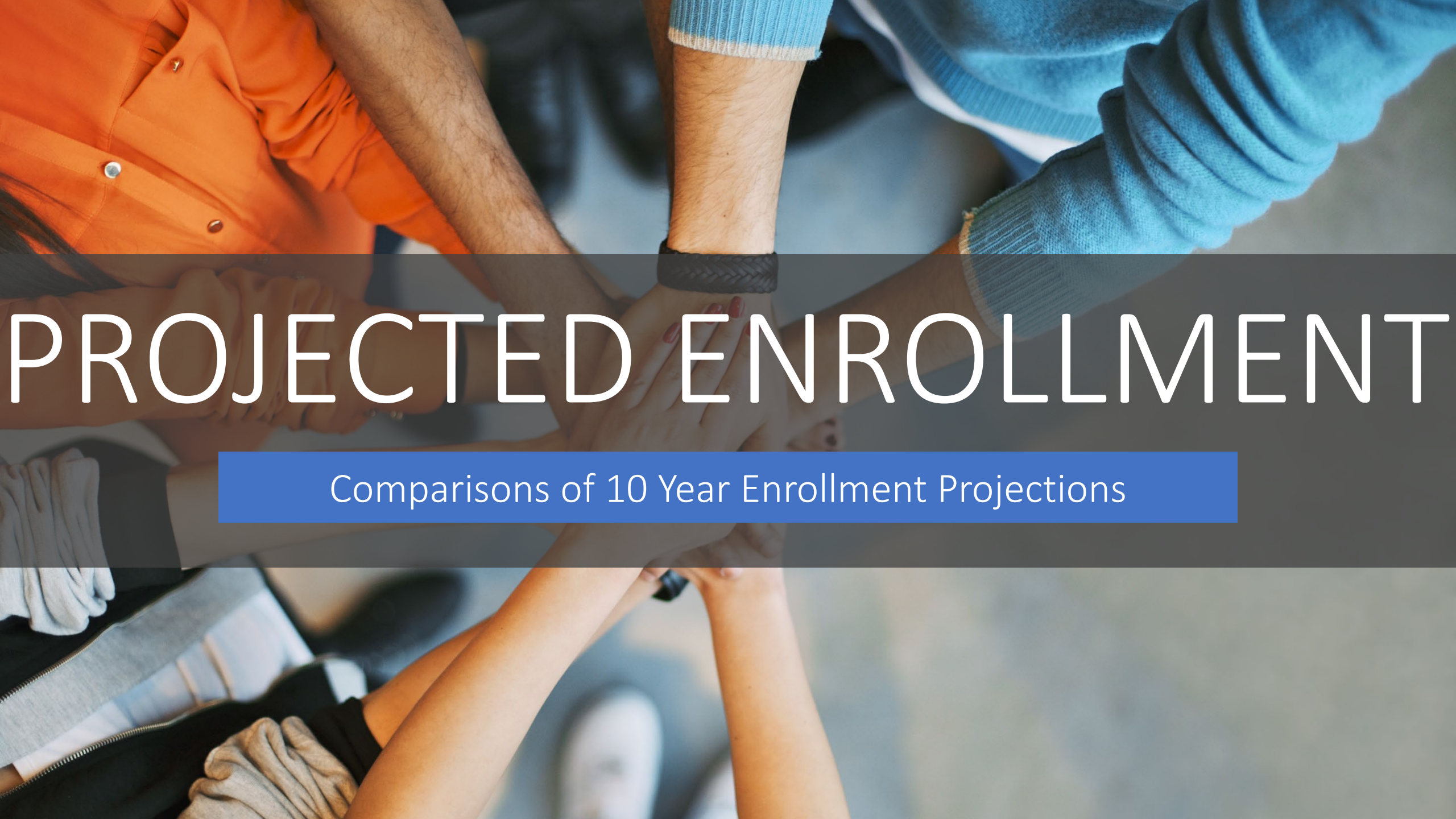
District building and grounds will serve as the hub of our community where all stakeholders have safe physical and digital spaces to gather, play, celebrate, learn, exchange ideas and interact as a community. The community will share and see the value of the taxpayer investment.

GUIDING PRINCIPLES

PURPOSE: School Board establishes criteria for Educational Program, projected enrollment and facility needs in consideration of potential improvements and future planning.

- Adopted planning number of projected enrollment
- Targeted average class size
- Health and safety of all students, staff, and community
- Maximum size of buildings and grade alignments
- Appropriate instructional spaces that align with curriculum
- Equity across buildings and standards for instructional and support spaces
- Code Compliance
- Actions aligned to our Capital Improvement Projects
- Financial stability

Upon board direction the design team proceeds with option development.



PROJECTED ENROLLMENT

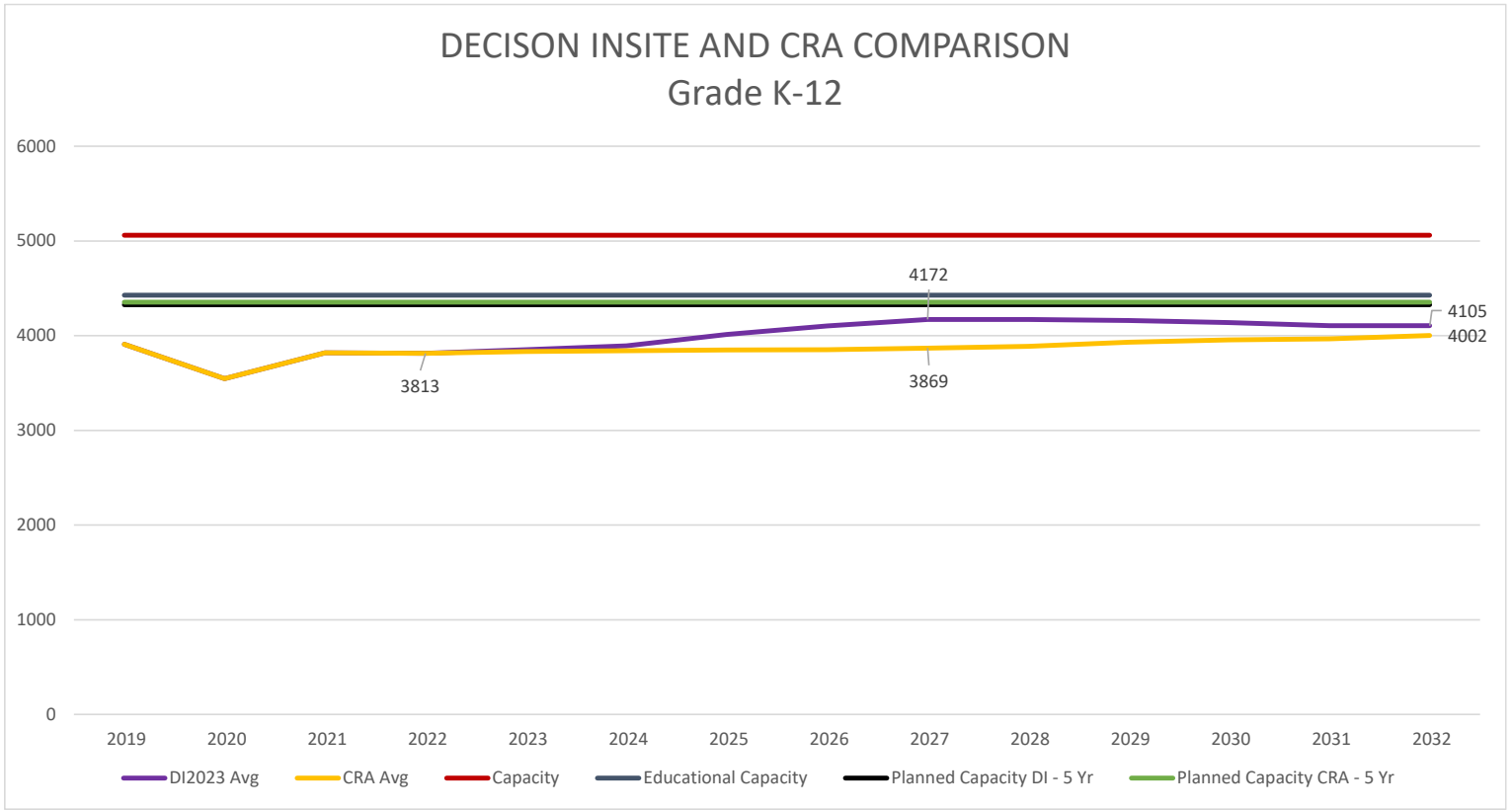
Comparisons of 10 Year Enrollment Projections

PROJECTED ENROLLMENT ANALYSIS

Comparison of Enrollment Projection Models:

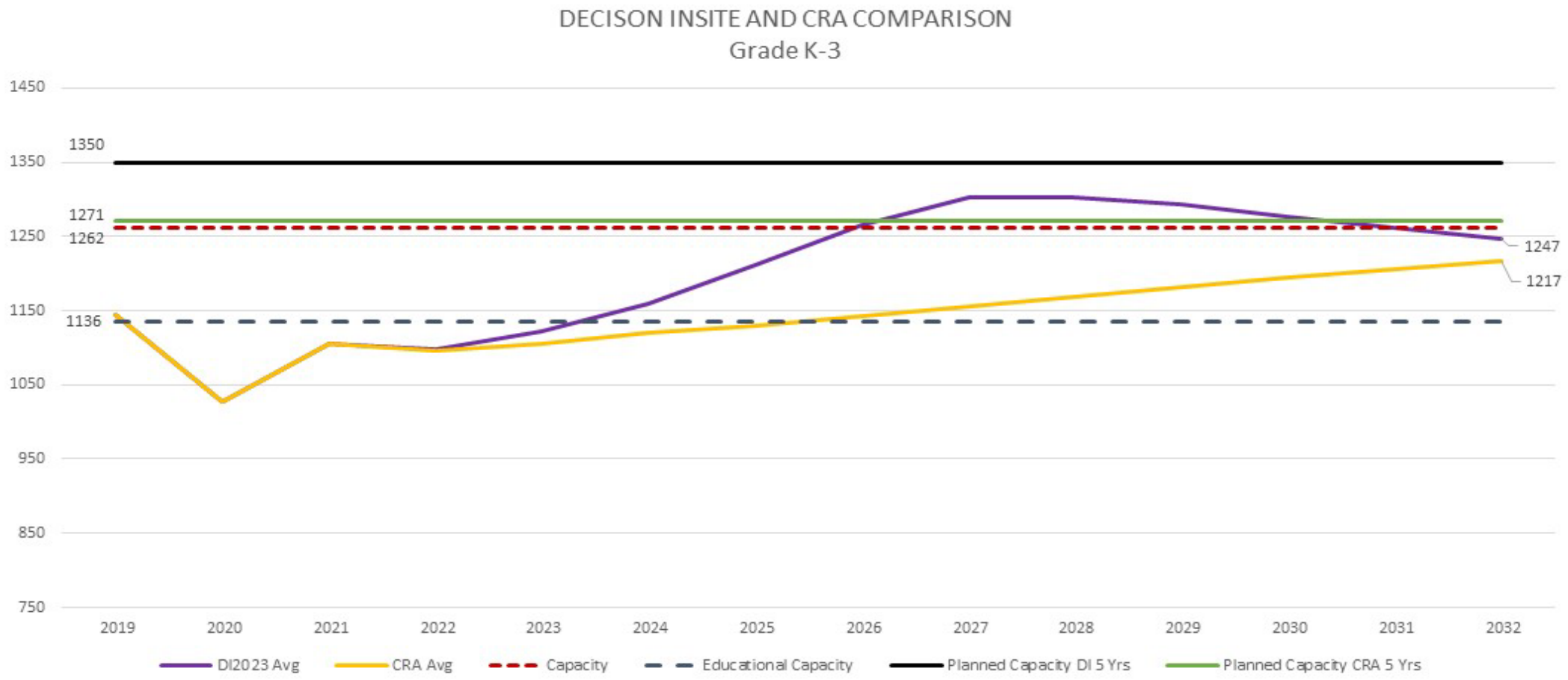
1. The Pennsylvania Department of Education (PDE) Projections
   - Resident live birth data provided by the Pennsylvania Department of Health
   - Enrollment data reported through PA Information Management System (PIMS)
2. Crabtree, Rohrbaugh & Associates (CRA) Projections
   - Five Year Average rate of growth of incoming kindergarten classes
   - Five-year average rate of growth within district grade bands
3. Decision Insite Projections
   - Recent kindergarten enrollment trends
   - Grade level cohorts
   - Anticipated new housing developments
4. Line of Best Fit
   - This represents the average of all the projections
   - Based on the Assumption that as each model is a valid mathematical probability, the average of the models represents data that is likely based on all models.

DECISION INSITE REVISED PROJECTIONS COMPARED TO CRA PROJECTIONS



- The average of DI's enrollment projections indicates that over the next five years the district is expected to climb to 4172 students, up 359 students from the current enrollment of 3813.
- The average of CRA's enrollment projections indicate that over the next five years the district enrollment is expected to climb to 3866 students, up 56 students from current enrollment.
- Based on DI's methodology they would recommend that the district plan to maintain 4327 seats by 2027.
- CRA's methodology would recommend that the district plan for 4353 seats by 2027.
- In terms of planned capacity, that is only a 26-student difference between DI and CRA.

ENROLLMENT PROJECTION UPDATE



BUILDING CAPACITY

Comparisons of Building Capacity to Student Enrollment

CAPACITY ANALYSIS

Code Capacity - The maximum number of occupants based on building and fire codes.

PDE Capacity – The total number of seats in each full-size instructional space given a state designated number of seats for each type of instructional space. The number of seats is constant regardless of the instructional program assigned being assigned. PDE capacity represents the total of those seats.

District Capacity - The total number of seats in each instructional space given the program(s) being assigned to each space.

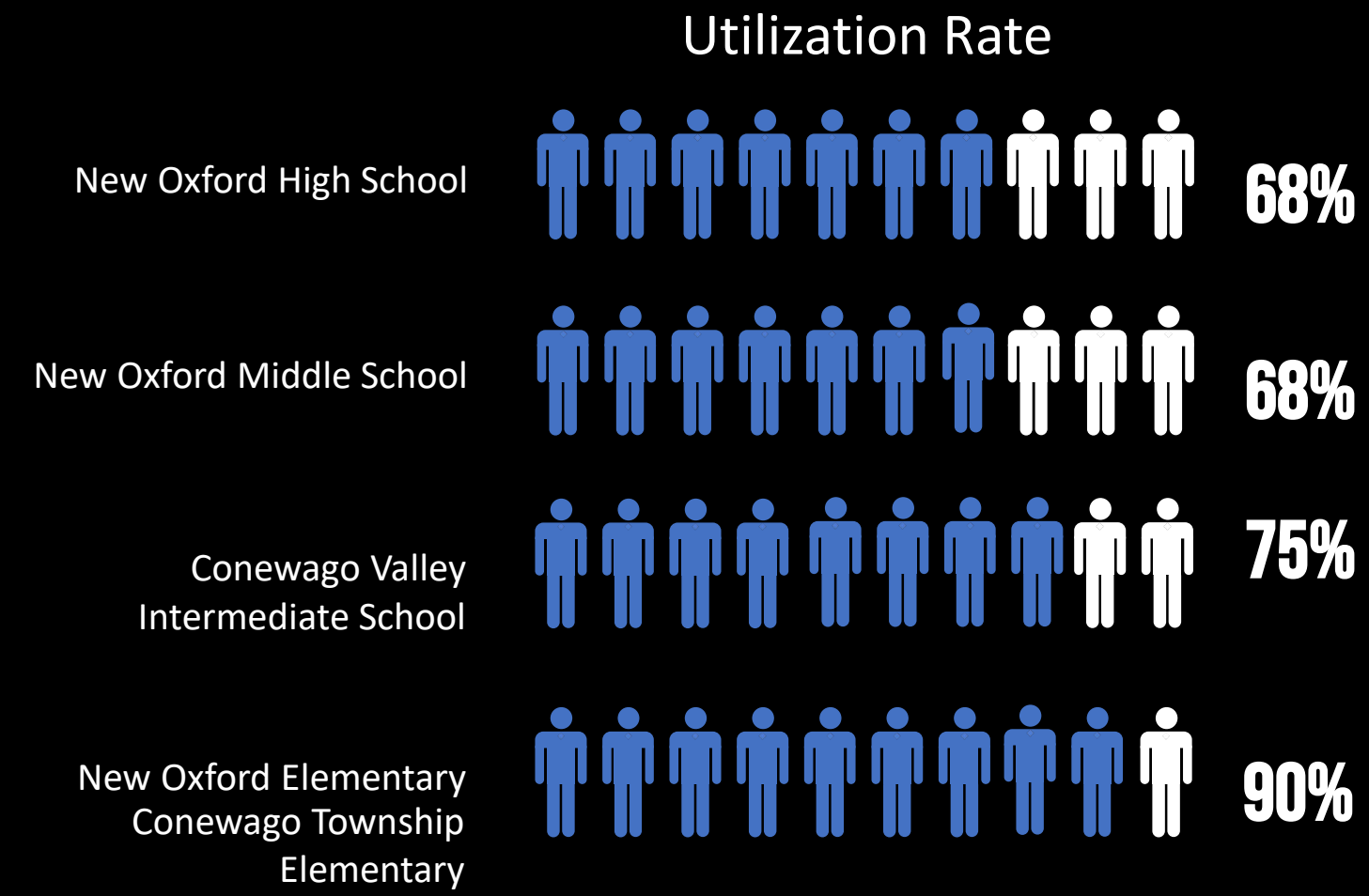
Educational Capacity – The number of students that are typically assigned to an instructional space given scheduling practices and efficiencies, demographics, and the need for flexibility. (Capacity x Utilization Rate)

Planned Capacity – The total enrollment a district should be planning to accommodate in a building, at grade level, within a program, or district as a whole in five years. It is equal to the projected enrollment plus 10%-15% at the elementary level and 15% to 20% at the secondary level.

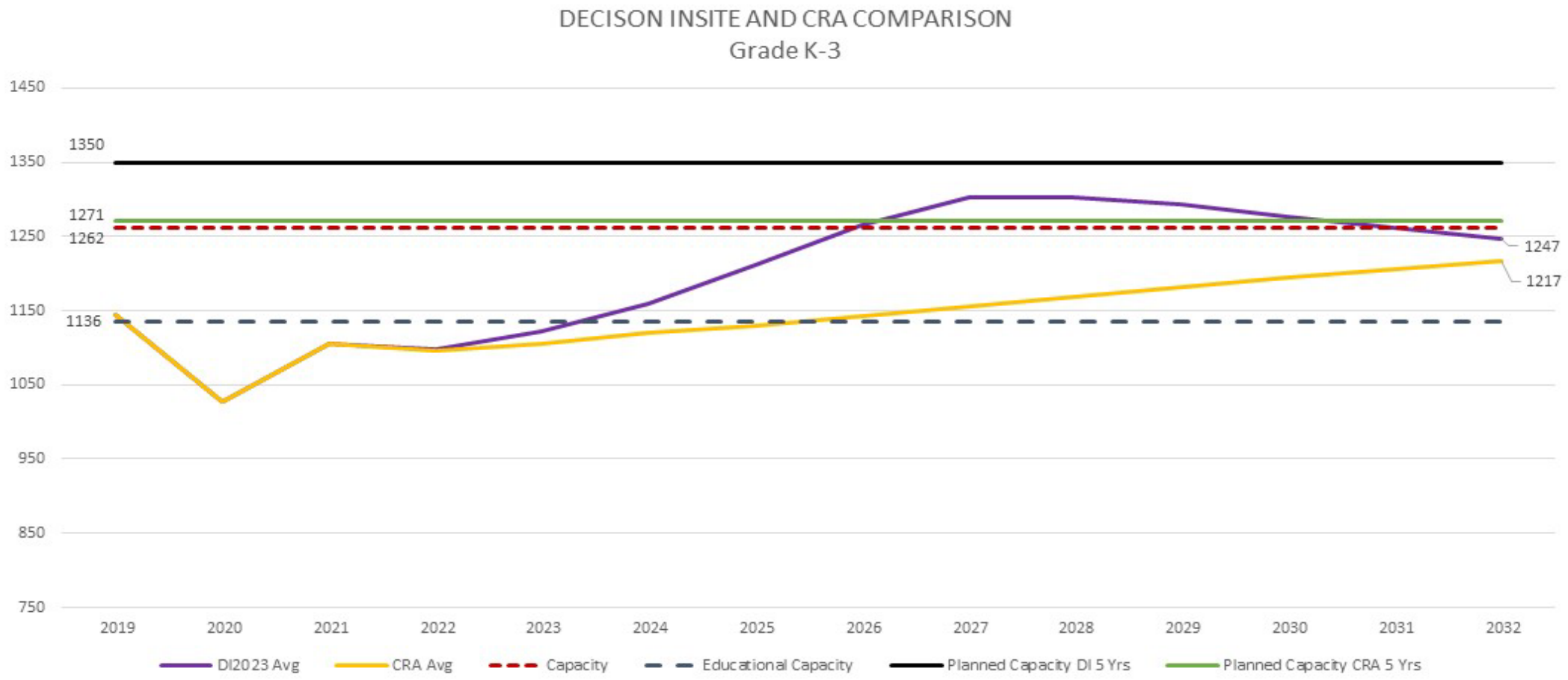
BUILDING CAPACITY vs CURRENT ENROLLMENT

Are schools overcrowded or under-utilized?

1. Document current use of spaces to determine building capacity
2. Identify undersized classrooms by PDE standards – 660 SF
3. Determine recommended utilization rate for each building
4. Compare Building Capacity to Projected Enrollment



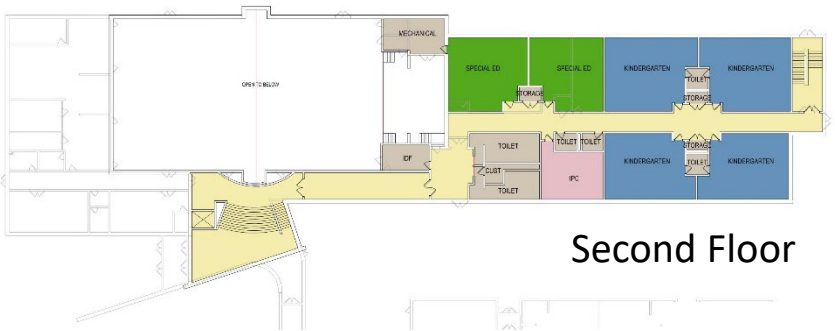
BUILDING CAPACITY vs PROJECTED ENROLLMENT



**Recommendation the District plans for 1275-1350 planned student capacity in Grades K-3*

***Planned Capacity for Option 1344 Student Capacity*

CAPACITY ANALYSIS



Second Floor

New Oxford Elementary – First Floor

Conewago Township Elementary – First Floor

EXISTING CONDITIONS

Existing Facility Conditions Assessment

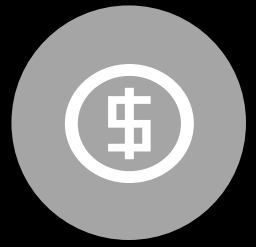
EXISTING FACILITY CONDITIONS ASSESSMENT

Costs to Upgrade

1. Estimates are based on CRA & Moore Eng. bid results
2. Costs to "upgrade" do not include space required to address educational program
3. Order of magnitude for decision making, prioritizing projects and preliminary budgeting

Evaluation: Document existing facility conditions and note building system deficiencies

Recommendations: Identify existing facility needs to extend useful life of operational systems a minimum of 20 years



Cost Estimates to Upgrade: Estimates are based on recommendations to maintain existing facilities.

Conewago Township Elementary

1958 original construction
2011 addition

Facility Condition : Fair
Noteworthy Deficiencies Identified:

Site

- Additional parking for school events
- Replace asphalt paving in playground
- Replace playground equipment and mulch

Building envelope

- Roof coping and membrane replacement
- Efflorescence cleaning on brick
- Window replacement
- Exterior door/window caulking & control joint replacement

Interior

- Floor finish replacement or re-finishing
- Casework and chalkboard replacement
- ADA compliant plumbing fixtures

M/E/P

- Efficiency of existing unit ventilators
- No air conditioning or ventilation in corridors
- Outdated Automatic Temperature Control system
- Aged plumbing piping and valves
- Hot water heater near end of lifecycle
- No dedicated closets for data closets
- Emergency power transfer switch does not meet code

Building Envelope

Building Envelope - Windows

Interior Finishes - Flooring

Plumbing Systems

3.5’- 4’ trench runs the entire original building (1956)

Interior Finishes - Flooring

Interior Finishes - Casework

ADA & Code Compliance

Plumbing Systems

New Oxford Elementary

1954 original construction
2011 addition

Facility Condition : Fair
Noteworthy Deficiencies Identified:

Site

- Increase parent drop-off access drive
- Provide pedestrian access route from north parking lot to main entrance
- Replace playground equipment and mulch
- Repair asphalt walkways

Building envelope

- EIFS soffit/fascia repair and replacement
- Pre-cast sill cleaning
- Exterior door/window caulking & control joint replacement

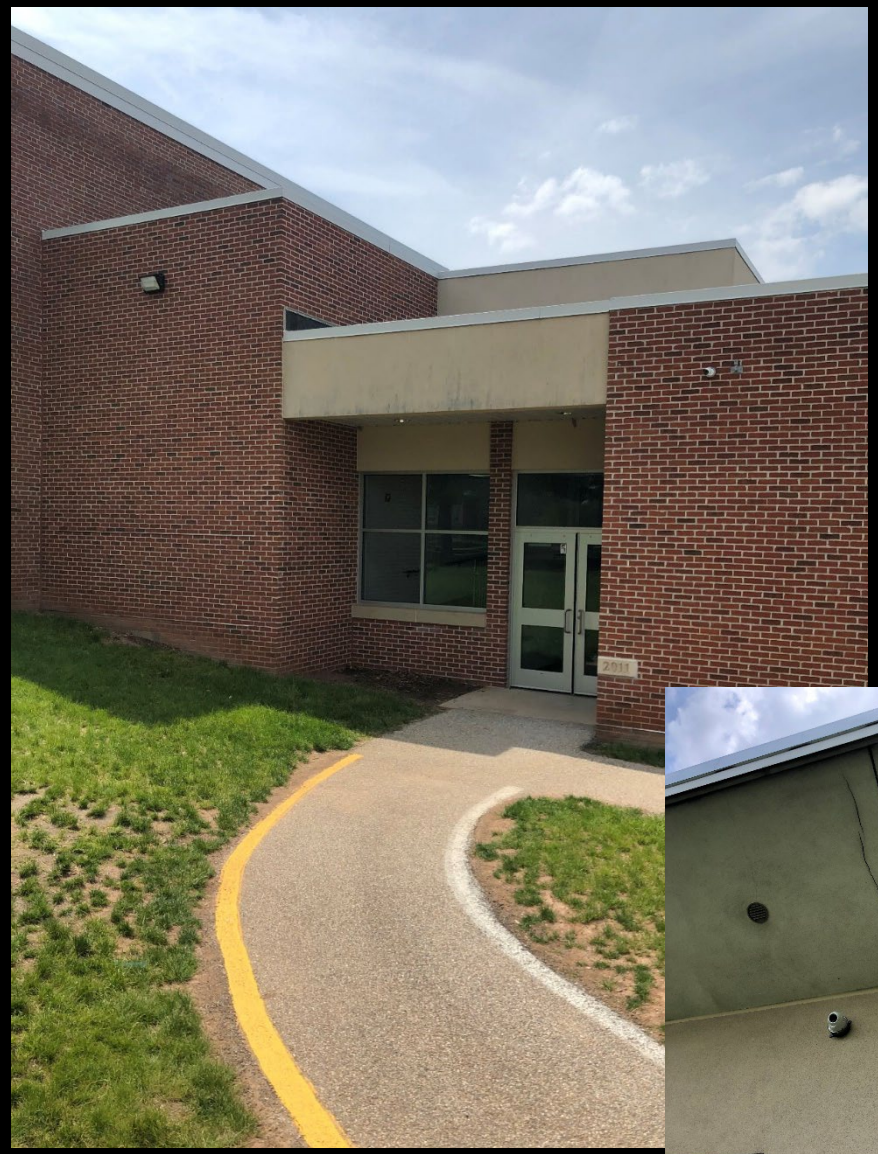
Interior

- Floor finish replacement or re-finishing
- Casework replacement
- ADA compliant plumbing fixtures, toilet stalls and door ways
- ADA compliant exits

M/E/P

- Efficiency of existing unit ventilators
- No air conditioning or ventilation in corridors
- Outdated Automatic Temperature Control system
- Aged plumbing piping and valves
- Plumbing fixtures do not meet ADA
- Hot water heater near end of lifecycle
- No dedicated closets for data closets
- Low light coverage for parking lot

Building Envelope



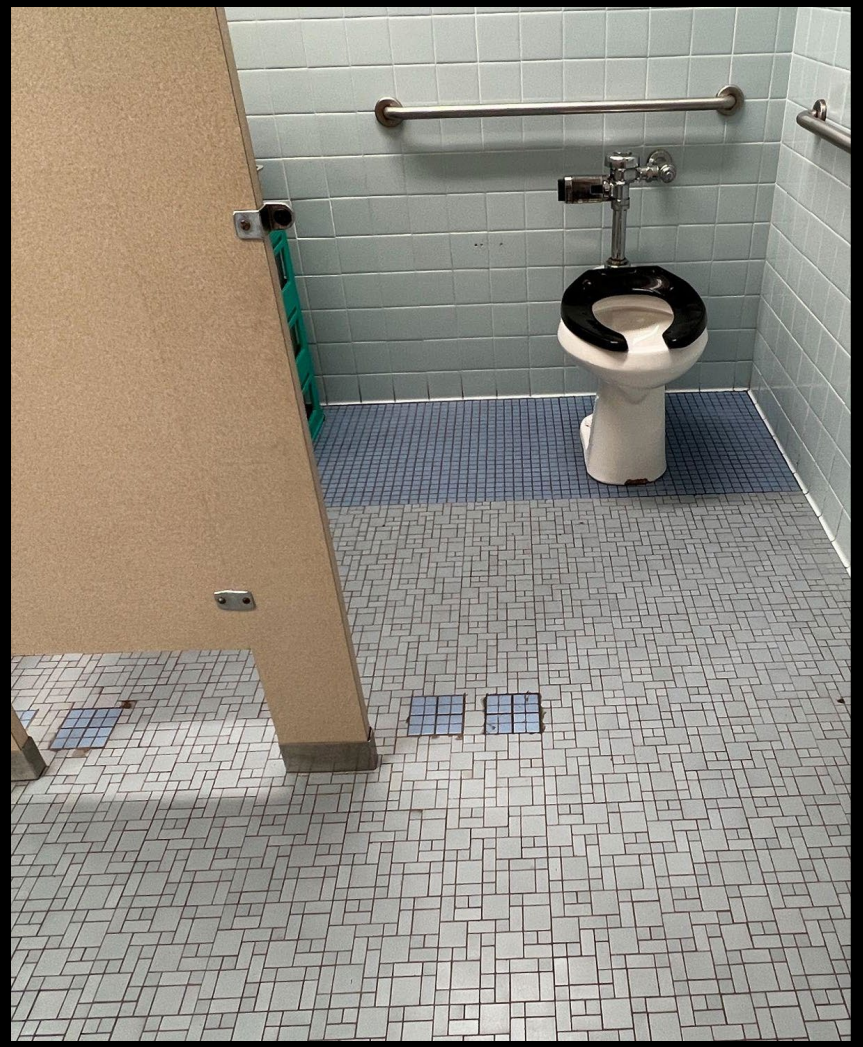
Interior Finishes - Flooring

Plumbing Systems



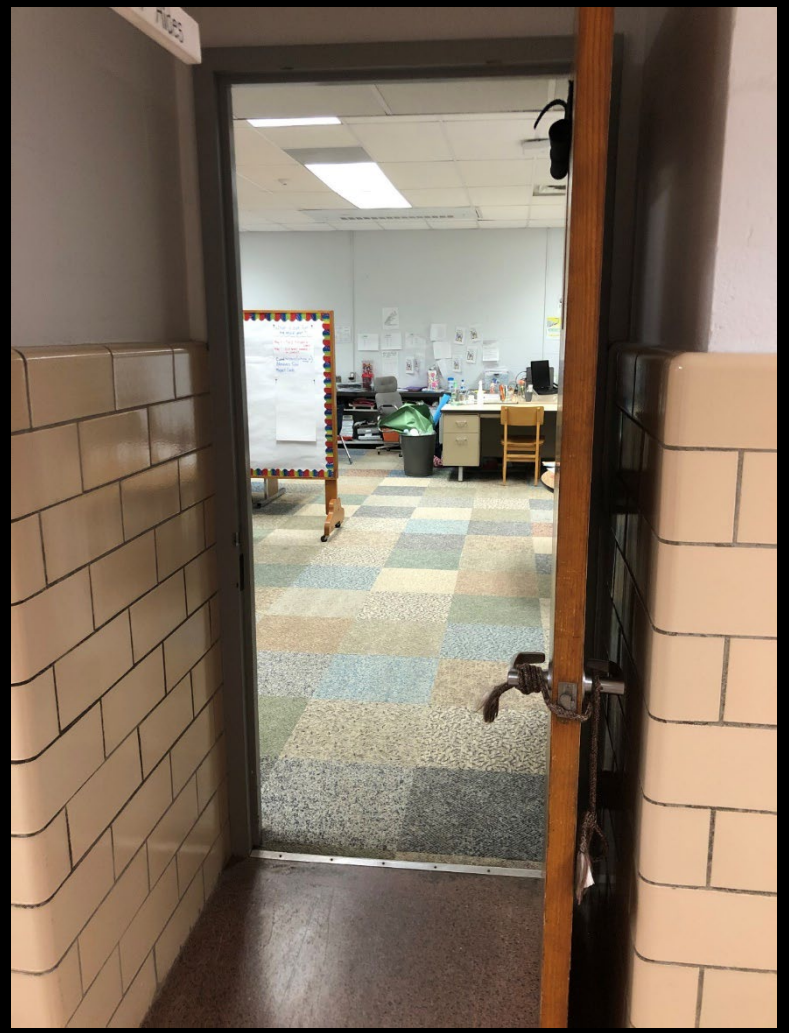

Trench system that runs underneath the entire building (1950 & 1960). Approx. 3.5’ deep. All drainage and HVAC piping in need of replacement. This flows to terra cotta pipes (outside) which are in need of replacement as well.

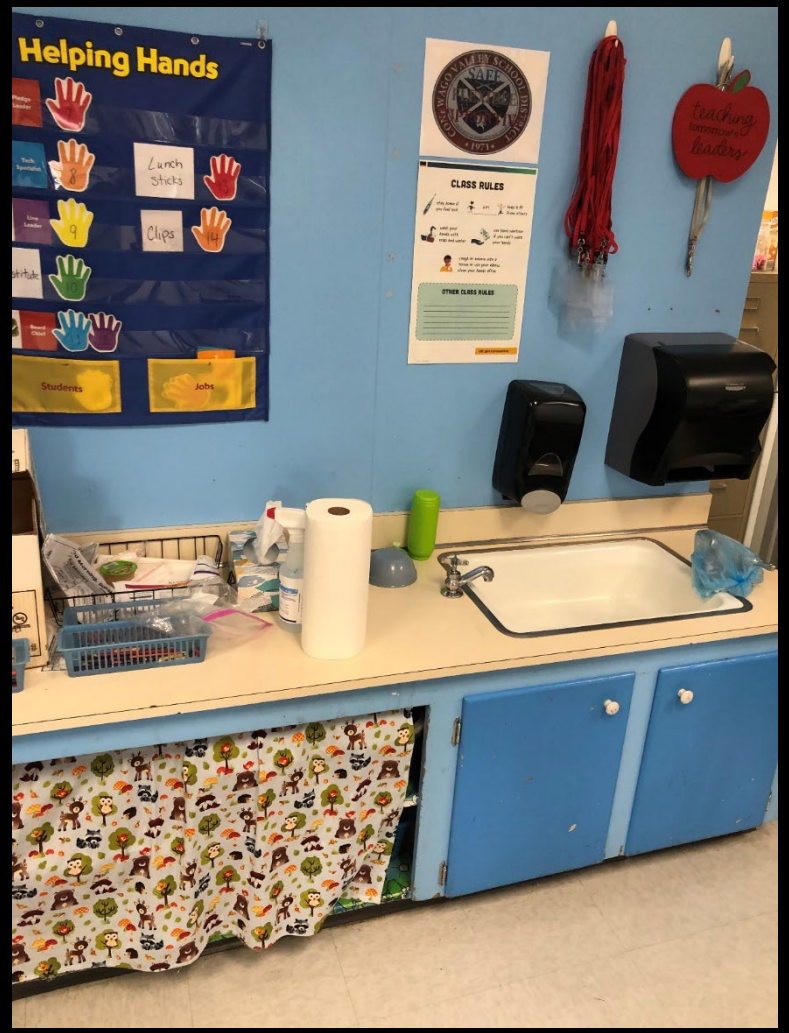
Interior Finishes - Flooring



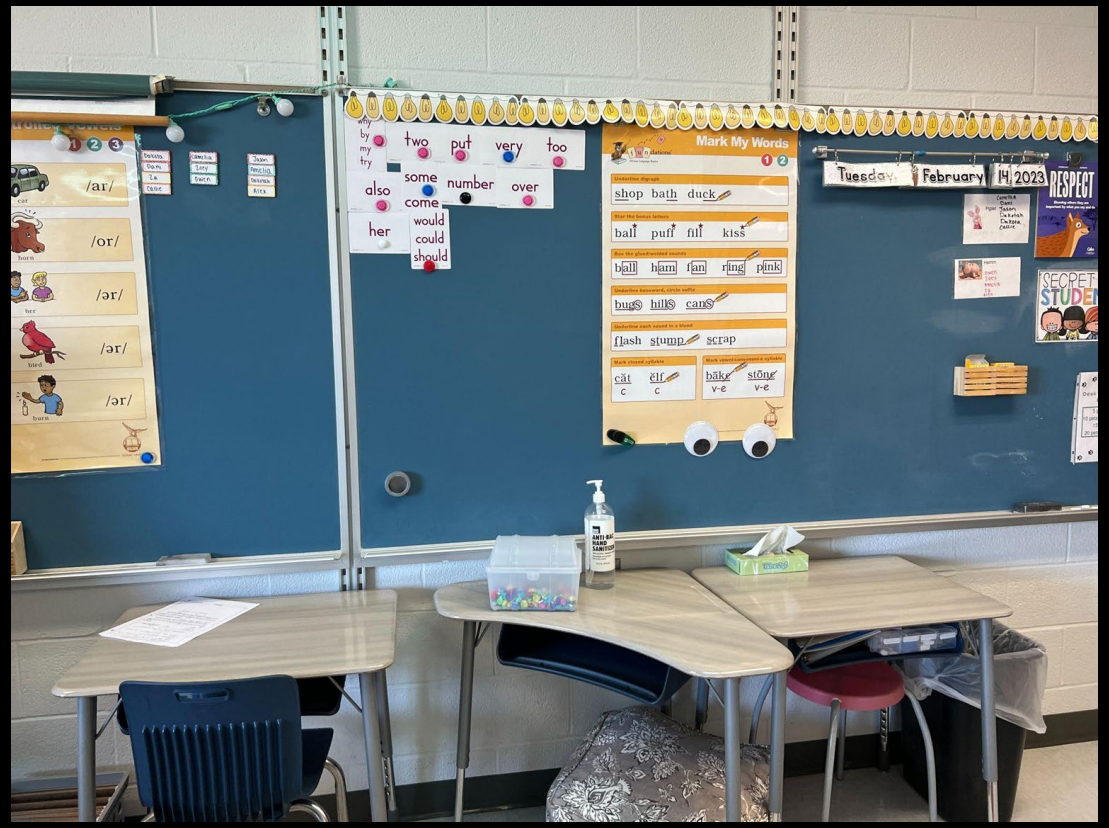
Interior Finishes – Multi-Purpose Room & Stage

ADA & Code Compliance





Interior Furnishings – Instructional Walls



Blueboards & Greenboards in most rooms are from 50’s, 60’s and 70’s.

ADA & Code Compliance - Egress

ADA & Code Compliance – Accessible Routes

ADA & Code Compliance - Restrooms

Plumbing Systems

OPTION DEVELOPMENT

Options align with District's Vision and Educational Program

OPTION SUMMARY

OPTION 1: Renovate Existing Buildings

CTE & NOE	Renovations & Additions to develop equitable schools
CVIS	Limited Renovations
NOMS/HS	Renovations

OPTION 2: One Campus Model

CTE & NOE	New Construction of one K-3 School on Main Campus
CVIS	Limited Renovations
NOMS/HS	Renovations

OPTION 3: One Campus Model

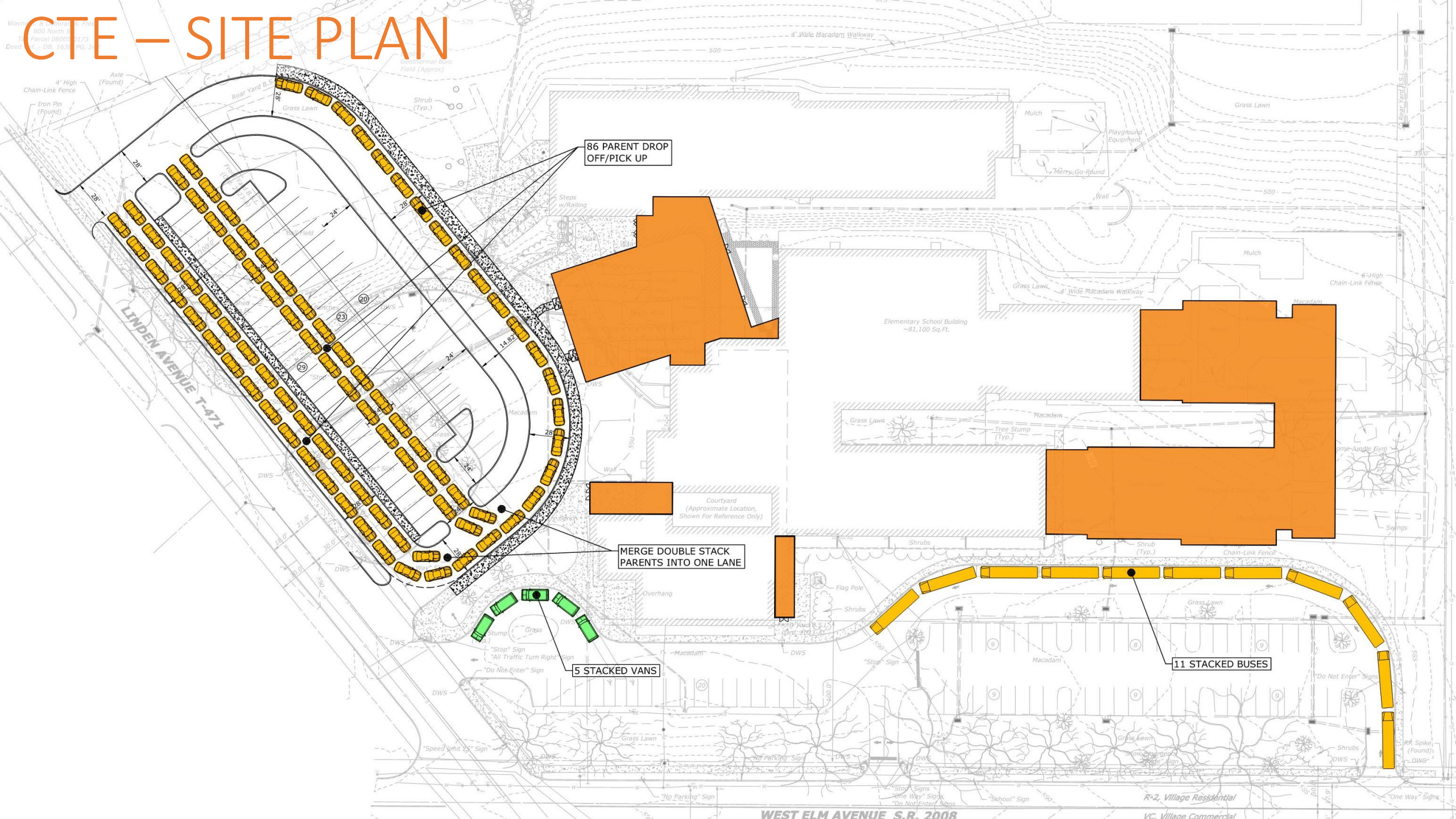
CTE	Vacate
New K-1	New Construction of K-1 Primary School on Main Campus
NOE	Renovations & Additions to convert to 2nd-3rd Grades
CVIS	Limited Renovations
NOMS/HS	Renovations

OPTION SUMMARY

OPTION 1: Renovate Existing Buildings

CTE	Renovations & Additions to develop equitable schools
NOE 1a	Renovations & Additions to develop equitable schools
NOE 1b	Renovations & major Additions to avoid extensive construction activity
CVIS	Limited Renovations
NOMS/HS	Renovations

CTE – SITE PLAN

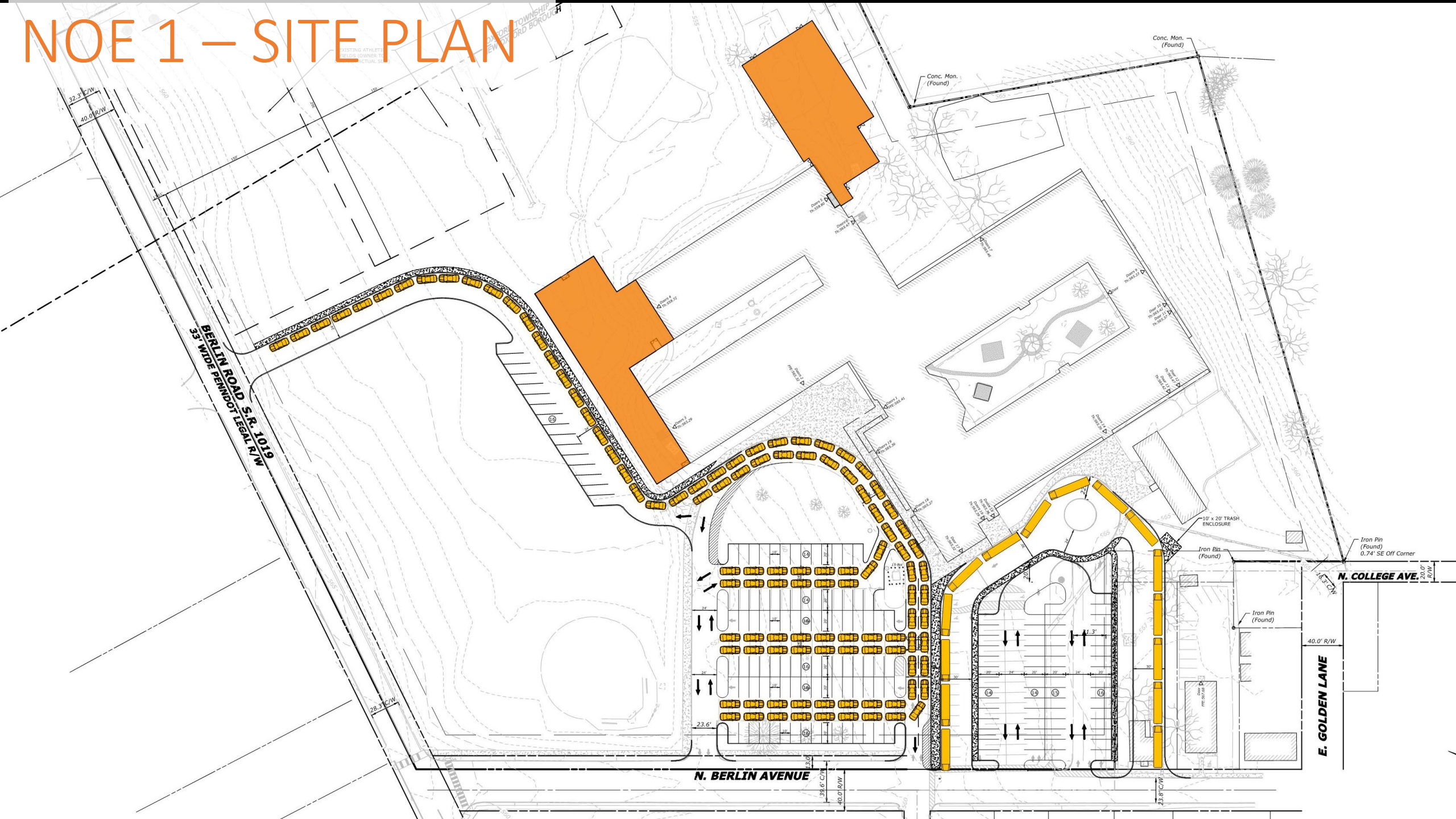


CTE – FLOOR PLAN

Floor Plan

- General Classrooms
- Special Education
- Small Group Instruction
- Music
- Art
- Library/Cafeteria/Gymnasium
- Faculty
- Building Support

NOE 1 – SITE PLAN



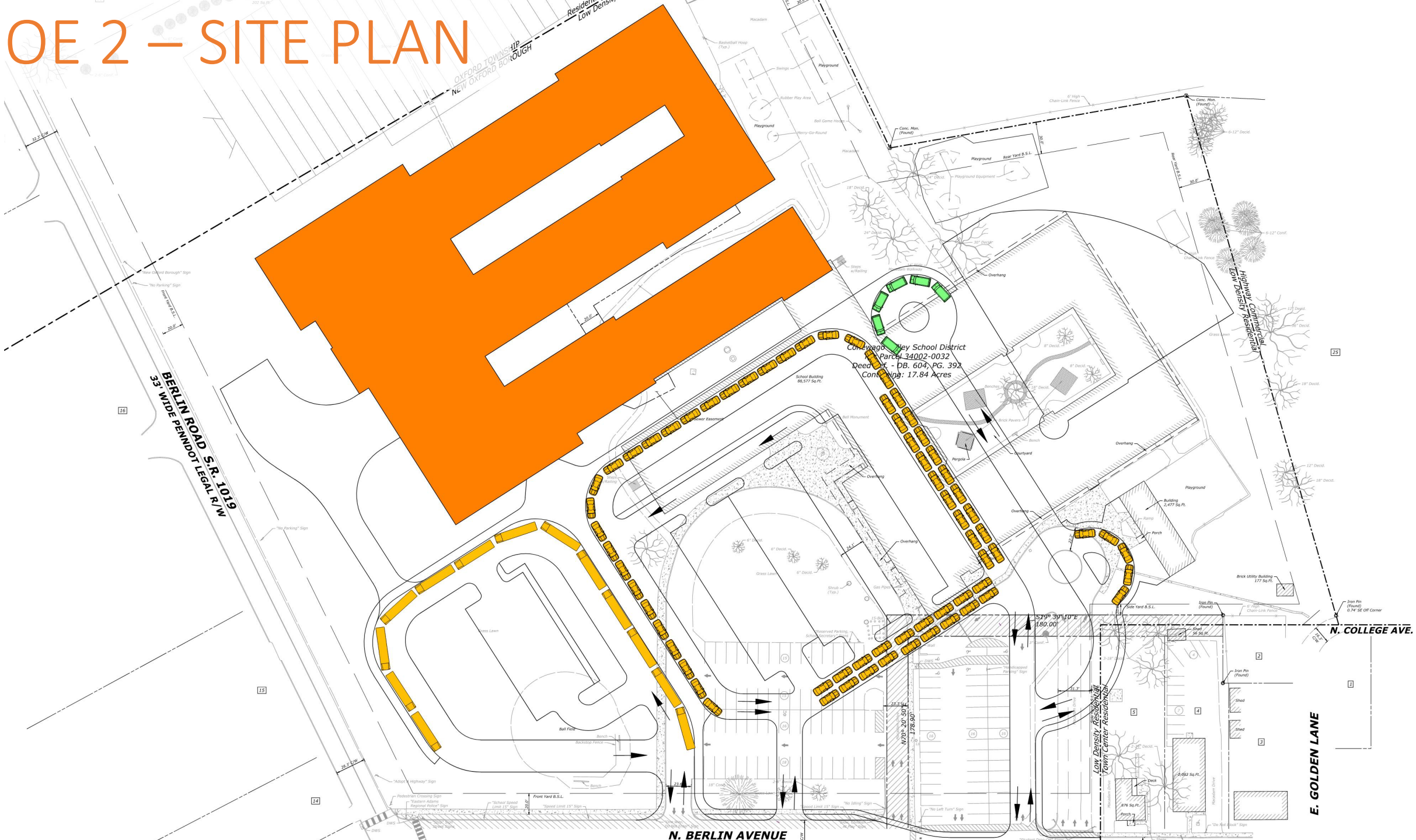
ASBESTOS ABATEMENT

NOE – OPTION 1

Floor Plan

- General Classrooms
- Special Education
- Small Group Instruction
- Music
- Art
- Library/Cafeteria/Gymnasium
- Faculty
- Building Support

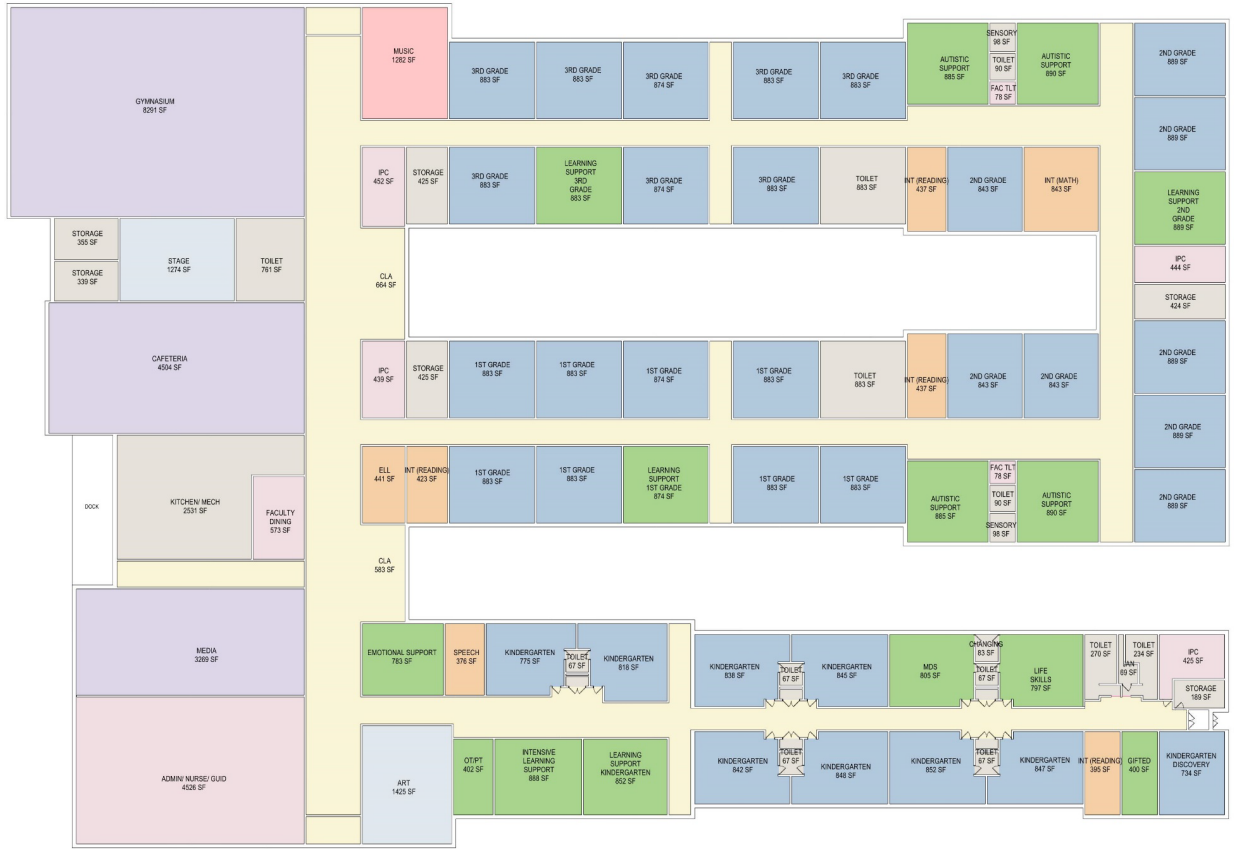
NOE 2 – SITE PLAN



NOE – OPTION 2

Floor Plan

- General Classrooms
- Special Education
- Small Group Instruction
- Music
- Art
- Library/Cafeteria/Gymnasium
- Faculty
- Building Support



1 OVERALL FLOOR PLAN - OPTION 2
1/16" = 1'-0"

OVERALL BUILDING SF

NEW:	96,950 SF
EXISTING:	11,265 SF
TOTAL:	108,215 SF

COST ESTIMATES

Construction & Total Project Costs

COST ESTIMATES

Cost Estimates revised following verification of Educational Program and Schematic Design

- CTE program increase by 15,000 SF
- NOE reduction of SF by (3,000 SF)
- Modular Classrooms Costs during NOE Asbestos Abatement
- Industry increase of HVAC, Electrical and Plumbing costs

CTE - COST ESTIMATE

Conewago Valley School District		Date: 11/29/2023
Conewago Township Elementary School	**SF**	**COST ESTIMATE**
Renovation Construction Costs	91,003 SF	$ 15,771,779
Additions Construction Costs	37,465 SF	$ 10,292,745
Site Construction Costs	LS	$ 750,000
Escalation & Contingency	7.25%	$ 1,944,053
Subtotal Construction Costs		**$ 28,758,576**
Construction Soft Costs	3.5%	$ 2,300,686
Total Construction Costs		**$ 31,059,263**
Project Soft Costs		$ 3,887,832
TOTAL PROJECT COSTS		$ 34,947,094

- *Costs do not include Fire Protection System except in new Gymnasium*

NOE 1 - COST ESTIMATE

Conewago Valley School District		Date: 11/29/2023
New Oxford Elementary School	**SF**	**COST ESTIMATE**
Renovation Construction Costs	87,865 SF	$ 17,762,073
Additions Construction Costs	24,260 SF	$ 6,690,180
Site Construction Costs	LS	$ 875,000
Temporary Modulars	LS	$ 6,000,000
Escalation & Contingency	7.25%	$ 1,836,226
Subtotal Construction Costs		**$ 33,163,478**
Construction Soft Costs	3.5%	$ 2,668,078
Total Construction Costs		**$ 35,831,557**
Project Soft Costs		$ 4,493,721
TOTAL PROJECT COSTS		$ 40,325,277

** Costs do not include Fire Protection System except in new Gymnasium*

***Costs do not include Roof Deck Asbestos Abatement*

NOE 2 - COST ESTIMATE

Conewago Valley School District		Date: 12/19/2023
New Oxford Elementary School	SF	COST ESTIMATE
Renovation Construction Costs	11,265 SF	$ 3,907,513
Additions Construction Costs	96,950 SF	$ 27,504,050
Site Construction Costs	LS	$ 2,135,400
Escalation & Contingency	7.25%	$ 2,432,155
Subtotal Construction Costs		$ 35,979,117
Construction Soft Costs	4.5%	$ 2,893,329
Total Construction Costs		$ 38,872,447
Project Soft Costs		$ 5,034,213
TOTAL PROJECT COSTS		$ 43,906,660

**Site Construction Estimate not confirmed until Schematic Design developed*

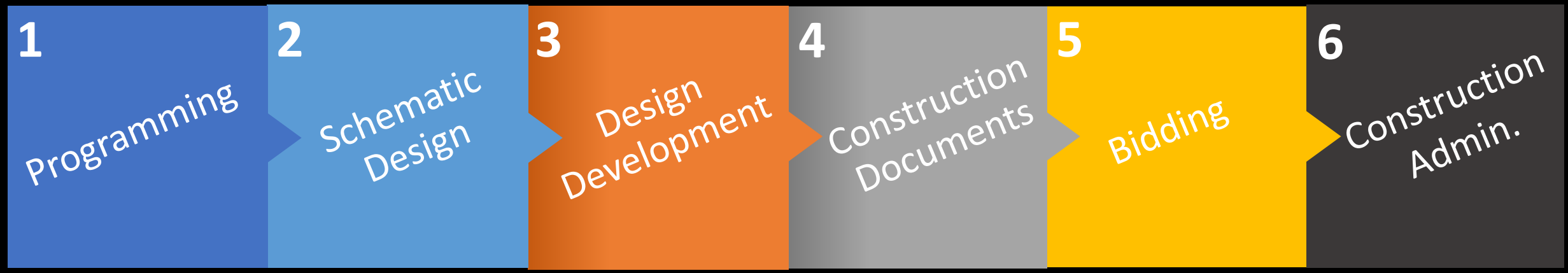
***Costs include Fire Protection System*

****Costs do not include Roof Deck Asbestos Abatement*

DESIGN PHASES

Step-by-step process of Architectural Services

ARCHITECTURAL SERVICES BY PHASE



NOTE: The images in the upcoming slides do not represent the design of the Conewago Valley Elementary School projects. These example images are used to illustrate project development and detail throughout the various design phases.

SCHEMATIC DESIGN

1. Programming:

- Project Visioning
- Projected Enrollment & Planned Capacity
- Educational Program
- Educational Specifications

2. Site Analysis:

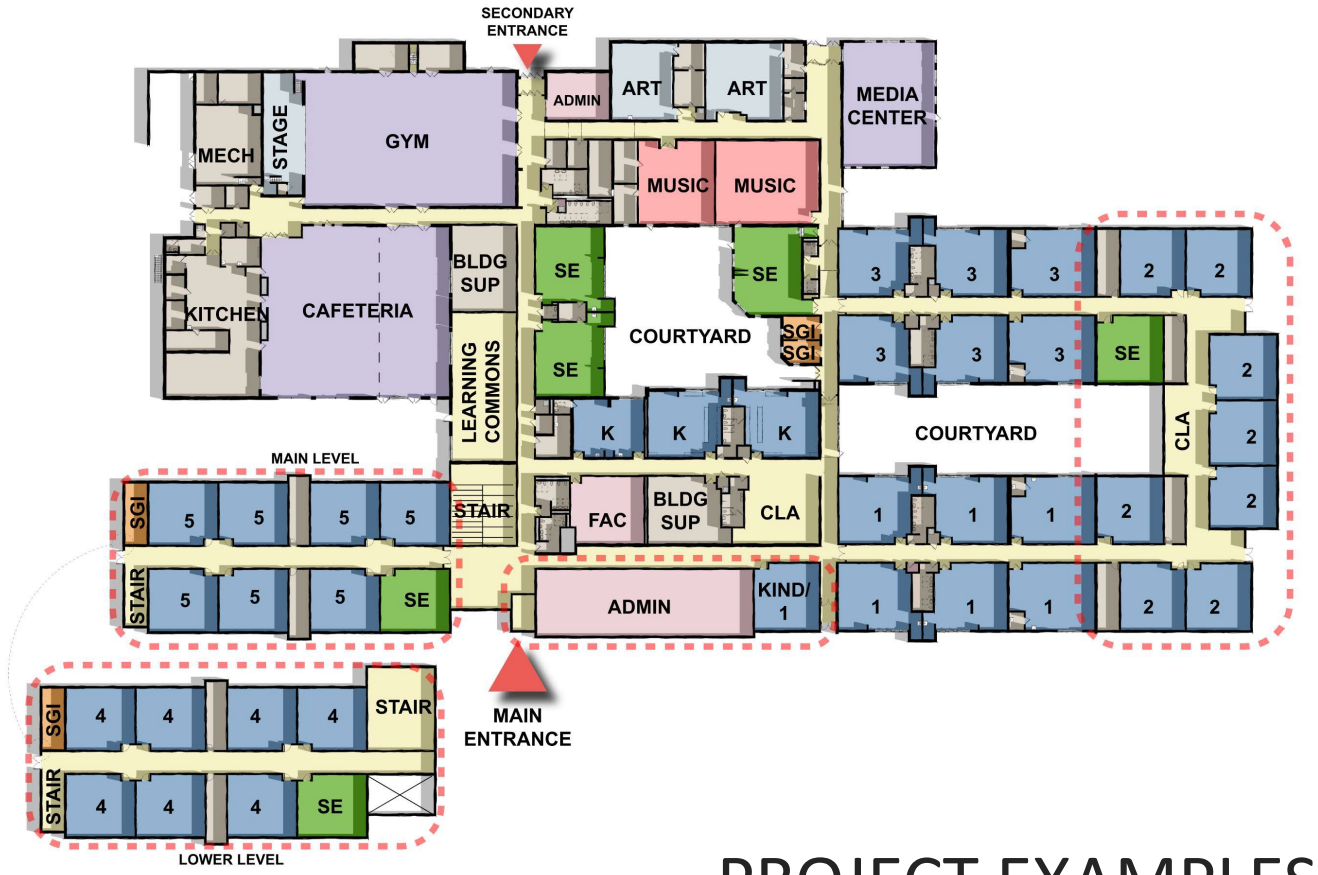
- Site survey
- Determine necessary approvals

3. Conceptual Plans:

- Establish building organization
- Prioritize Program and site adjacencies
- Develop traffic circulation

4. Schematic Plans:

- Develop Floor Plans based on Educational Program and existing site conditions
- M/E/P Basis of Design narrative



PROJECT EXAMPLES

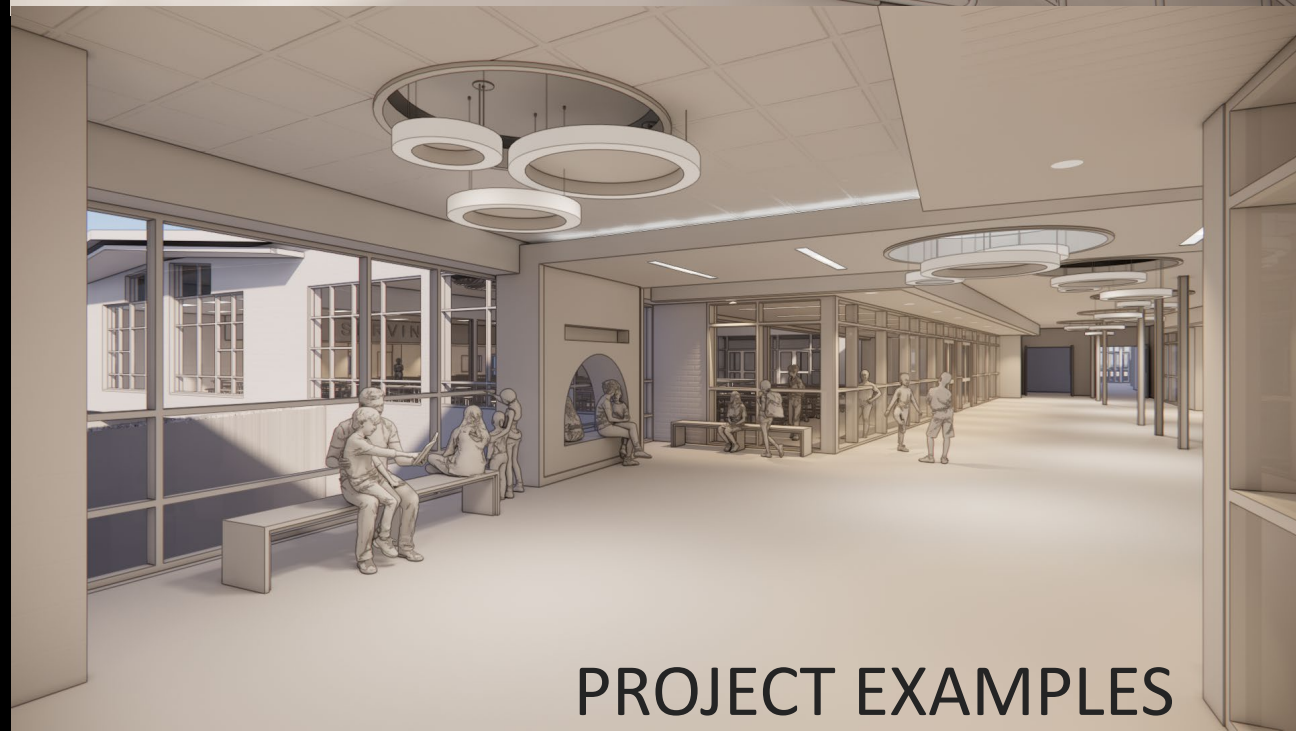
DESIGN DEVELOPMENT

1. Architectural Plans:

- Building Code Review
- Refinement of Floor Plans
- Final check of Educational Program
- Interior Design meetings with Faculty
- Structural, Food Service, Mechanical, Electrical and Plumbing Systems

2. Civil Engineering:

- Vehicular circulation and drop-off areas
- Staff and visitor parking,
- Pedestrian connections
- Land Development submission with storm water management plans



PROJECT EXAMPLES

CONSTRUCTION DOCUMENTS

1. Architectural Plans:

- Coordination and integration of building systems including Structural, Food Service, Mechanical, Plumbing, Electrical and Civil Engineering
- Final production of Construction Documents
- Release project for public bidding

2. Civil Engineering:

- Acquire necessary permits and approvals required for construction

PRELIMINARY SCHEDULE

Fall 2023 – Winter 2024	Programming / Conceptual Design – *"Visioning"*
Winter – Spring 2024	Schematic Design – *"Exploration"*
Spring – Fall 2024	Design Development – *"Refinement"* *Act 34 Public Hearing*
Fall 2024 – Winter/Spring 2025	Construction Documents – *"Preparation"*

Note:

- *Board Action required at end of each Design Phase*
- *Schedule is pending Municipal and Regulatory Agency Approvals*
- *Estimated Start of Construction in Spring 2025*

SCHOOL BOARD APPROVAL TIMELINE

Winter 2024	Approval of Schematic Design
Fall 2024	Act 34 Maximum Building Construction Cost & Total Project Cost based on Estimates
Winter/Spring 2025	Release Project for Public Bidding
Spring 2025	Approval of Intent to Award to low bid Contractors

COMMUNITY ENGAGEMENT

Community Meeting Schedule

ACT 34 PUBLIC HEARING

- Public Hearing is held in accordance with Act 34 of 1973
  - Board Resolution to adopt Total Project Cost and Maximum Building Construction Cost
  - Act 34 Hearing Notice and Proof of Publication
- Purpose of the Hearing is to inform the public of the project
  - Need for the Project
  - Review Options Considered
  - Description of Construction Elements
  - Estimated Construction Cost and Total Project Cost
  - Financial needs and Local Tax impact
  - Provide Opportunity for Public Comments

ACT 34 PUBLIC HEARING - TIMELINE

Step #1	School District, Solicitor, Architect and Financial Consultant prepare Act 34 Booklet
Step #2	Board Approval of Act 34 Maximum Building Construction Cost and Total Project Cost
Step #3	School District and Solicitor coordinate advertisement 20 days prior to Hearing date
Step #4	Act 34 Public Hearing, conducted by School District, Solicitor, Architect and Financial Consultant
Step #5	End of 30 day waiting period to compile proof of publication, written comments and Hearing minutes

NEXT STEPS

Schedule

NEXT STEPS

1. Verification of Educational Program - completed
2. Finalize Schematic Design layout - completed
3. Site Survey of NOE & CTE - completed
4. Civil Engineering due diligence: Traffic study, Geotech, Zoning requirements – on-going
5. Code Analysis of proposed design – on-going
6. Expand Design Professional Team: MEP & Structural Engineers, Food Service Consultant - on-going

Questions?

Crabtree, Rohrbaugh & Associates
www.cra-architects.com