



# New Program: **Launch & Listening Session**

## High Performance Criteria for **Minor Renovations**

August 9<sup>th</sup>, 2023





# Mission

We aspire to make every school an ideal place to learn.

For **20 years**, CHPS has developed and maintained the nation's **only** third-party building standard explicitly designed by K12 schools and focused on improving student performance.

## Priorities:

1. Increase student performance and health of students & staff
2. Reduce operating costs through better design
3. Enhance environmental stewardship



Abbott Downing, Concord NH (NE-CHPS)



# Thank You to Our Partners





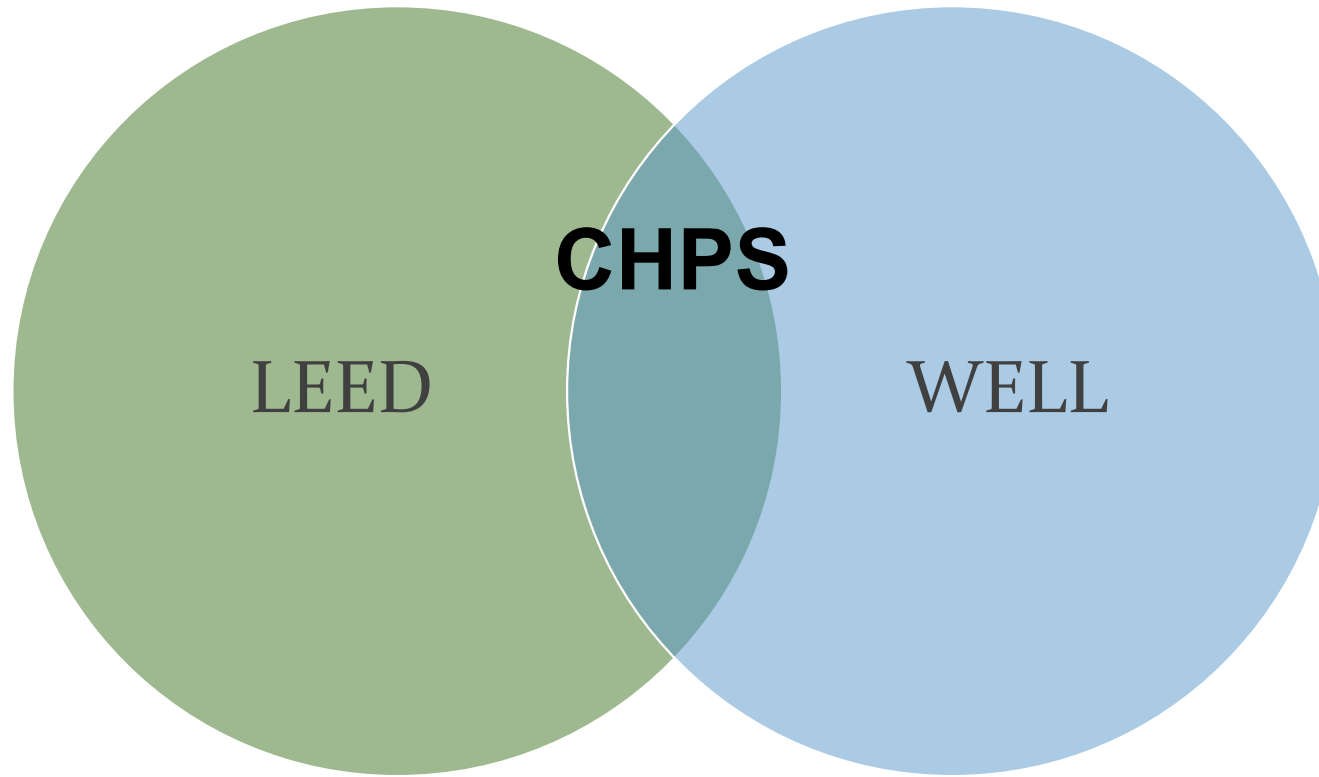
# CHPS Impact

- Over **750** CHPS projects nationwide
- **70+** school districts have used CHPS
- **4** of top **20** largest school districts require CHPS:
  - Los Angeles USD, CA (#2)
  - Fairfax County Public Schools, VA (#11)
  - Dallas ISD, TX (#16)
  - Cypress-Fairbanks ISD, TX (#21)
- Rhode Island requires CHPS
- Massachusetts & Colorado provide state funding to CHPS schools
- Washington used CHPS as the basis for their required Washington Sustainable Schools Protocol (WSSP)





# CHPS is School-Specific



Environmental  
Performance



Occupant Health  
and Productivity



# US-CHPS Overview, based on v2.0

- 250 points total; 52 for prerequisites
- 7 Sections:
  - **Integration & Innovation:** 2 prereqs, 7 credits, 35 points, includes climate action
  - **Indoor Environmental Quality:** 5 prereqs, 15 credits, 81 points
  - **Energy:** 2 prereqs, 3 credits, 20 points
  - **Water:** 2 prereqs, 6 credits, 20 points
  - **Site:** 1 prereq, 7 credits, 23 points, includes exterior measures
  - **Materials and Waste Management:** 1 prereq, 5 credits, 16 points
  - **Operations and Maintenance:** 2 prereqs, 5 credits, 18 points



# The Problem

- US school infrastructure has received a **D+ grade** or lower from the ASCE since 1988
- There are **>130,000** K-12 public schools in the US and most of them are **>50 years** old, in desperate need of repair/modernization
- Students from **low-income, minority** and **rural** families are most likely to attend underfunded school facilities
  - **>53%** of districts report the need to update or replace multiple building systems
  - The **majority** of districts' facility expenditures go toward school building renovations





# Existing Programs

**Third-Party building standards only address new construction or major renovations.**

## **LEED for Building Design and Construction (BD+C)**

This rating system is for buildings that are new construction or major renovations.

## **LEED for Interior Design and Construction (ID+C)**

This rating system is for interior spaces that are a complete interior fit-out

## **US CHPS Criteria 2.0**

Criteria & Implementation Guide for New Construction & Major Renovation of School Buildings

- A major renovation is defined by a substantial improvement to a building of at least two of the following systems: lighting, HVAC, building envelope, interior surfaces, and/or site.



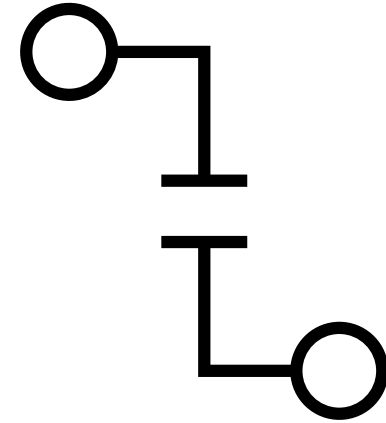
**LIVING  
BUILDING  
CHALLENGE<sup>SM</sup>**





# The Disconnects

- Facility improvement needs of existing schools
- School districts bond programs
- Utility rebate incentives
- Federal funding opportunities
- Lack of project accountability for Energy Savings Performance Contracts
- Districts often rely on for-profit companies telling them what's best

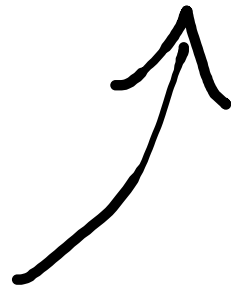




# Expanding CHPS' Focus

## 'RAISE THE FLOOR'

Help ensure that **all** students have access to better indoor environments.



## 'RAISE THE CEILING'

Existing programs certify some of the world's best new school buildings but only apply to new construction, substantial renovations, and additions.



# CHPS Minor Renovation Program

## NEED: INDUSTRY STANDARD FOR SCHOOL MODERIZATION PROJECTS

Districts need a **school-specific** third-party standard, adaptable to **any school project**, representing actionable best practices for the majority of their facility expenditures: **individual school projects**. A standard that represents:

- ✓ Holistic and student-centric approach
  - ✓ Actionable technical standards
- ✓ Industry collaboration & stakeholder alignment
  - ✓ Stewardship of public funds
  - ? Third party verification



# Roy Sprague

(Retired) Chief Operations Officer at Cypress-Fairbanks ISD





# Christos Chrysiliou

Director Architectural & Engineering Services at  
LAUSD



**LAUSD**  
UNIFIED

# CHPS Minor Renovation Program LAUSD Perspective



August 9<sup>th</sup>, 2023

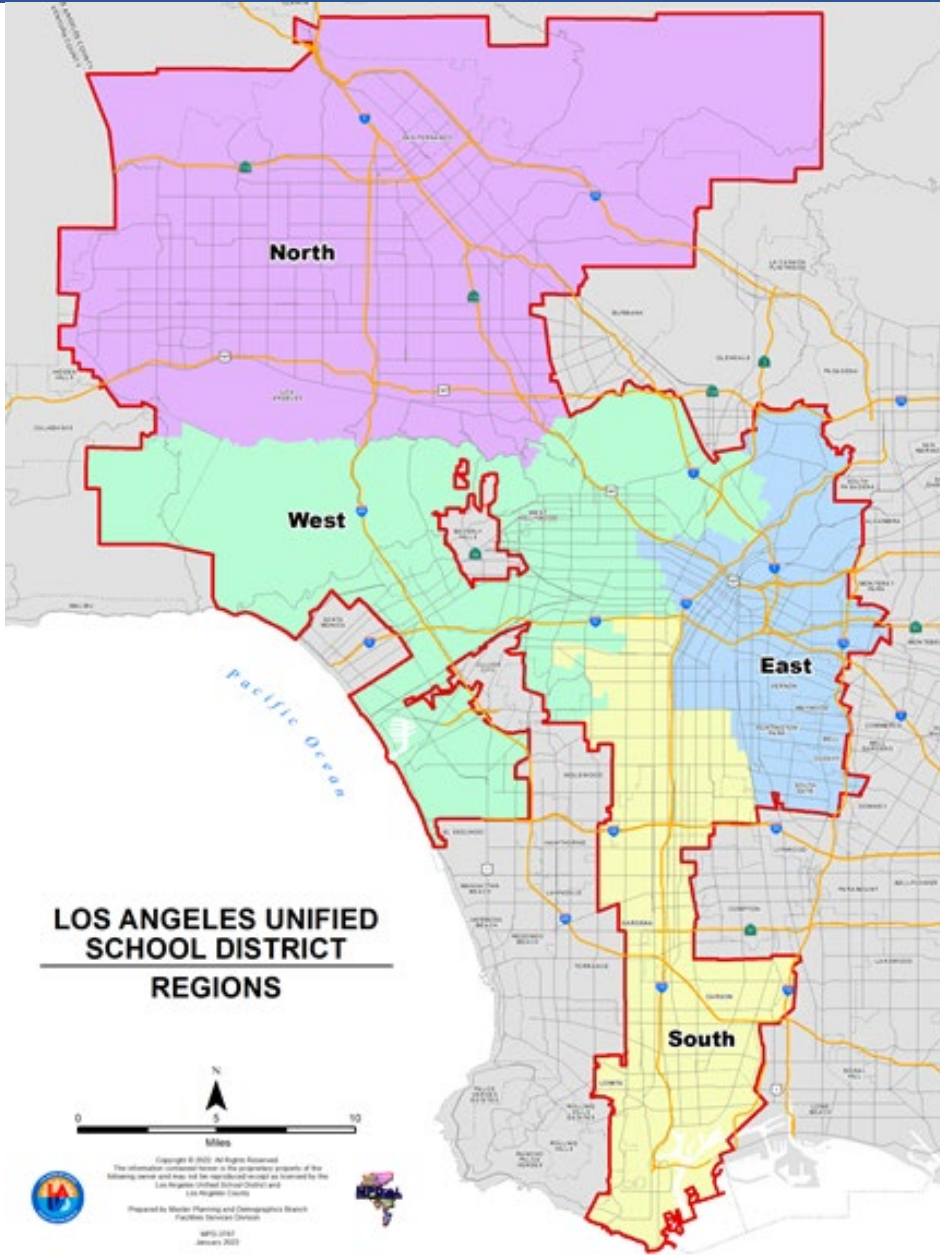
Christos Chrysiliou, FAIA, LEED AP  
Director of Architecture & Engineering Services  
Facilities Services Division



# LAUSD Overview

**80,890,070** building square footage  
**25,392** structures  
**6,389** acres of land  
**800+** campuses  
**525,944** students (K-12)  
**66,523** employees

**Nation's second-largest school district**







# 100% CLEAN ENERGY AT LAUSD

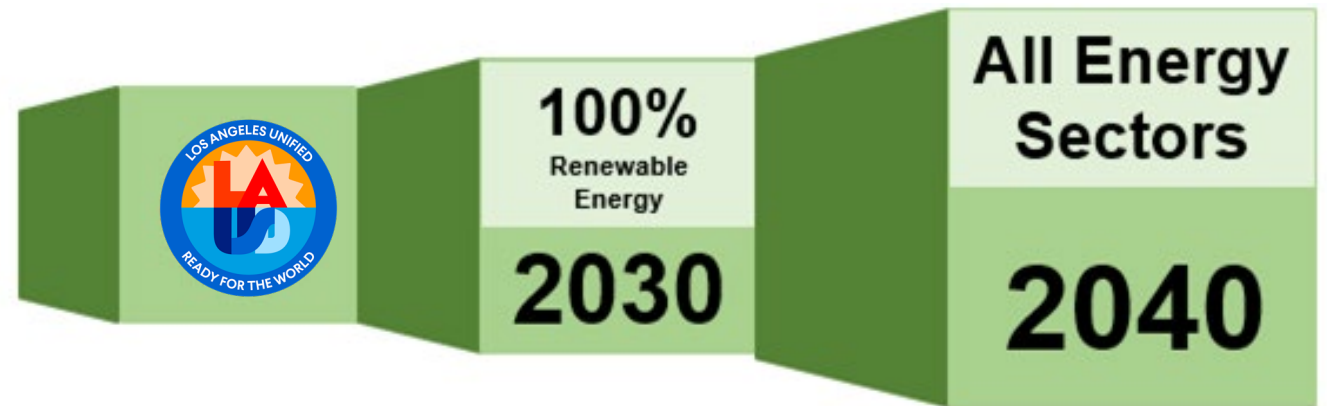
## Mission and Goals

### Resolution

Transitioning LAUSD to 100% Clean, Renewable, Energy Resulting in Healthier Students and More Sustainable, Equitable, Communities (Res-018-19/20)

### Goals

- 100% clean, renewable energy in its electricity sector by 2030
- All energy sectors, including heating, ventilation, air conditioning (HVAC), cooking, and transportation by 2040





# “Green Schools for All” at LAUSD

## Mission and Goals

### Resolution

The “Green Schools for All” resolution was adopted by the Board of Education on September 27, 2022.

### Goals

- Transitioning LAUSD school campuses across the District to include 30% green/natural schoolyards.
- The Resolution directs the Superintendent to develop a plan to achieve this goal by 2035 and identify funding.





**THE BEST WAY TO ACHIEVE  
BIG GOALS  
IS TO TAKE SMALL STEPS**





# Reducing Environmental Impact



## WHAT ARE WE DOING?







# CHPS - Reducing Environmental Impact



## High Performance Schools

**GOAL:** Ensure a safe, healthy, and comfortable learning environment in energy & water efficient schools.

20 years since Collaborative for High Performance Schools CHPS was adopted by the District.

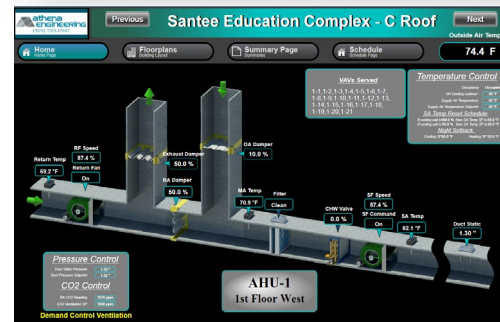
LAUSD piloted the first CHPS Schools and adopted CHPS in 2003 for all New Construction and Major Modernization projects.

142 CHPS projects completed to date

- 124 CHPS Designed projects
- 18 CHPS Verified projects

41 Current CHPS projects

7 Leadership for Energy and Environmental Design (LEED) Certified projects (1 Platinum, 5 Gold, 1 Silver)





# Minor Renovation Project Examples – Non-DSA



Los Angeles Unified School District

Facilities Services Division/Repair and Modernization/Design Services

## Projects Not Requiring DSA Review and Approval

School Name:	<u>CANOGA PARK HIGH SCHOOL</u>	Date:	<u>08/3/2023</u>
Address:	<u>6850 Topanga Canyon Blvd., Canoga Park, CA 91303</u>	Local District/Region:	<u>N/W - N1</u>
Project:	<u>Canoga Park HS - Roofing</u>	Location Code: <u>8574</u>	DSR #: <u>N/A</u>
		IFS #: <u>F310030</u>	COLIN ID #: <u>10369609</u>

Will this project be submitted for State matching funds? Yes  No  Bond Fund? Yes  No

Are there associated projects (past or future)? Yes  No  RRG Fund? Yes  No

This project does not require DSA review and approval based on the following reason:

- Reconstruction or alteration projects in excess of \$125,113 but less than \$281,504 in cost for 2023 per California Administrative Code, Section 4-309(a), when all of the following conditions are met: Design Professional in responsible charge and/or California-registered Structural Engineer shall examine and prepare a written statement (attached) certifying that the 1) Project does not contain any work of a structural nature nor does it cause any alteration or reconstruction of structural elements nor trigger structural rehabilitation per CAC, Section 4-309(c). 2) Contain no work that is regulated by the accessibility standards of Title 24. 3) Contain no work that triggers accessibility upgrades to existing buildings or facilities and 4) Meet all applicable fire and life safety standards.
  - DSA Inspection Required**  
Project is considered maintenance or repair and does not involve alterations to the originally approved design or structural work for the replacement in-kind of mechanical (heating, ventilation, air-conditioning & HVAC) and electrical units. Meets all guidelines listed on appendix note #9 of IR A-22. No A/E written certification required. **Adequate Inspection Required.**
  - Reconstruction or alteration projects not in excess of \$125,113 in cost for 2023 per California Administrative Code, Section 4-308.  
**DSA Inspection Required**
  - Project is exempt from DSA review based California Administrative Code Sections 4-314 (Structures not considered a school building & non-school structures listed in IR A-22 appendix.) **DSA Inspection Maybe Required**
- Note:** DSA Access Compliance review will be required regardless of cost and may include construction that is not considered school buildings as defined in the CAC, Section 4-314, Part 1 as Ancillary Accessory Facilities (e.g. field storage buildings, snack bars, ticket booths, etc.)

Submitted by: Signature: Labi(Leo)Norel Date: 08/3/2023

Name: Labi(Leo)Norel  
Title: APM & OAR

**Adequate Inspection Provided By:**  
 Insp. Dept.  Other: \_\_\_\_\_  
NAME: \_\_\_\_\_

**Project Scope:**  
The project will replace approximately 139,000 square feet of deteriorated roofing campus-wide with new Polyvinyl Chloride (PVC) material and metal flashing. The scope of work also includes replacing damaged wood, installing new gutters and downspouts, and painting to match existing areas affected in the roof demolition.

## Roofing Replacement Canoga Park High School

### Components:

Replace 139,000 sf roofing with PVC roofing

### Applicable CHPS Credits:

EQ C7.1 - Material Health Disclosures

SS 7.1 – Reduce Heat Islands

Integrates Title 24, CALGreen, ASTM, and ASHRAE requirements

### Considerations:

DSA-exempt maintenance projects typically involve minimal review by design staff.

Prescriptive specification requirements compliant with CHPS guidelines would facilitate review and approval.

**Roofing replacement projects help reduce the urban heat island impacts and reduce energy consumption**





# Minor Renovation Project Example – HVAC



## **HVAC Replacement**

Sun Valley High School

### **Components:**

Roof-top HVAC replacement

### **Applicable CHPS Credits:**

II C6.1 - Low/Zero GHG Schools & Existing Building Decarbonization

EE P1.0 - Energy Efficient Design

EQ P1.0 – Ventilation & IAQ

EQ C1.1 – Enhanced Filtration, Ventilation, and Dedicated Outdoor Air System

EQ C4.1 – Construction IAQ Management

EQ C5.1 Post-Construction Indoor Air Quality

OM P3.0 - Energy & GHG Performance Benchmarking

Integrates Title 24, CALGreen, ASTM, and ASHRAE requirements

**HVAC replacement projects improve indoor air quality while creating comfortable, quiet learning environments**



# Minor Renovation Project Example – DROPS and Paving



## Drought Response Outreach Program for Schools and Paving Project

Normandie Elementary School

### Components:

Stormwater Capture

Greening

Asphalt replacement with Solar Reflective Coating

### Applicable CHPS Credits:

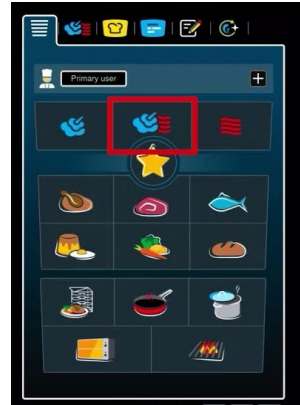
- II C2.1 – School as a Learning Tool
- II C7.1 - Design for Adaptation & Resilience
- SS C7.1 – Reduce Heat Islands
- SS C 3.1 - Stormwater & Sedimentation Management
- SS C9.1 – Living Schoolyards, Outdoor Classrooms, & Greenery
- WE P2.0 - Outdoor Water Use Budget and WE C2.1 Outdoor Water Use Reduction
- WE C3.1 - Irrigation Systems Commissioning

**Site improvement projects utilize low impact development while adapting our schoolyards for climate change**





# Minor Renovation Project Example – All Electric Kitchen



## All Electric Pilot Kitchen

Union Ave Elementary School  
Mulholland Middle School  
Van Nuys High School

### Components:

Kitchen Electrification with Electrical Infrastructure Upgrade

### Applicable CHPS Credits:

II C6.1 - Low/Zero GHG Schools & Existing Building Decarbonization

EE P1.0 - Energy Efficient Design

MW C1.1 Food Waste Reduction and Prevention

EQ C4.1 – Construction IAQ Management

EQ C5.1 Post-Construction Indoor Air Quality

OM P3.0 - Energy & GHG Performance Benchmarking

**Kitchen electrification projects reduce carbon footprint and improve health and well-being of students and staff.**



# Minor Renovation Project Example – Play Structure



## Play Structure

Sendak Elementary School

### Components:

Storm Drainage

Play matting

Steel and plastic play equipment

Path of Travel upgrades: Concrete sidewalk, Asphalt

### Applicable CHPS Credits:

- II C8.1 – Biophilic & Responsive Design
- SS C7.1 – Reduce Heat Islands
- SS C9.1 – Living Schoolyards, Outdoor Classrooms, & Greenery
- EQ C7.1 - Material Health Disclosures
- MW C3.1 - Certified Wood & Recycled Content Materials
- MW C5.1 - Environmental Product Declarations

**Site improvement projects promote health and wellness while adapting our schoolyards for climate change**



# Sample Minor Renovation Projects & Benefits

Project Type	Related CHPS Credits	Minor Renovation Benefits
<b>HVAC Replacements</b>	<ul style="list-style-type: none"> <li>• EQ P1.0 – Ventilation &amp; IAQ</li> <li>• EQ C1.1 – Enhanced Filtration, Ventilation, and Dedicated Outdoor Air System</li> <li>• EQ C4.1 – Construction IAQ Management</li> </ul>	<ul style="list-style-type: none"> <li>• Ensures high-performance features are discussed across teams</li> <li>• All students learn in comfortable, quiet, and sustainable environments</li> <li>• Schools are future-proofed to adapt to climate change</li> </ul>
<b>Lighting Updates</b>	<ul style="list-style-type: none"> <li>• EQ C14.1 – Electric Lighting Performance &amp; Circadian Lighting</li> <li>• Superior Electric Lighting Performance</li> <li>• SS P8.0 – Light Pollution Prevention</li> <li>• SS C8.1 – Enhanced Light Pollution Prevention</li> </ul>	<ul style="list-style-type: none"> <li>• Establishes prescriptive pathway for selecting lighting systems that meet local, state, and federal guidelines</li> <li>• Helps teams design a mixture of daylight and electric light that creates a healthy learning environment</li> <li>• Creates well-lit campuses that minimize light pollution to the surrounding communities and wildlife</li> </ul>
<b>Flooring / Roofing Replacements</b>	<ul style="list-style-type: none"> <li>• EQ P6.0 – Low Emitting Materials</li> <li>• EQ C6.1 – Additional Low Emitting Materials</li> <li>• SS 7.1 – Reduce Heat Islands</li> </ul>	<ul style="list-style-type: none"> <li>• Provides key guidance on flooring systems that minimize health impacts on our most vulnerable students and staff</li> <li>• Establishes baselines for roofing material solar reflectance to help reduce the urban heat island effect</li> </ul>
<b>Outdoor Classrooms / Play Structures</b>	<ul style="list-style-type: none"> <li>• II C8.1 – Biophilic &amp; Responsive Design</li> <li>• SS C7.1 – Reduce Heat Islands</li> <li>• SS C9.1 – Living Schoolyards, Outdoor Classrooms, &amp; Greenery</li> </ul>	<ul style="list-style-type: none"> <li>• LAUSD is embarking on increasing outdoor classrooms and adapting current play structures for climate change</li> <li>• Provides guidance on healthy materials, planting, and design of classrooms to ensure comfort and a quality learning environment</li> </ul>





Similar to our major renovation and new construction projects, minor renovation projects provide important opportunities to improve the health and welfare of our students. These projects require the careful design consideration and analysis that comes with high performance standards and certification.

We are looking forward to piloting the program for minor renovation projects so these best practices can be leveraged across all scales of work.



**IT'S POSSIBLE.**



**LET'S GET THINGS DONE!**

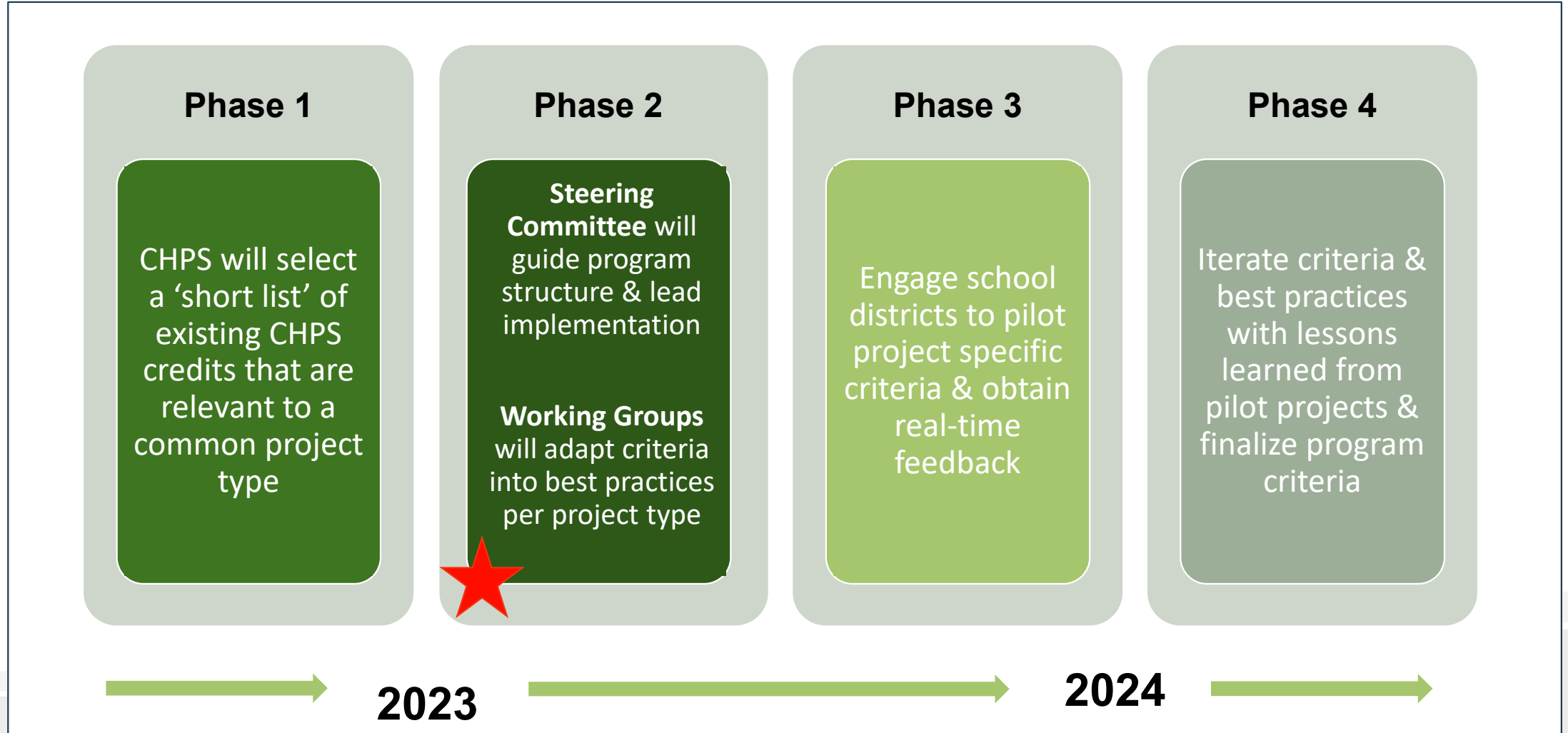


# Thank you!



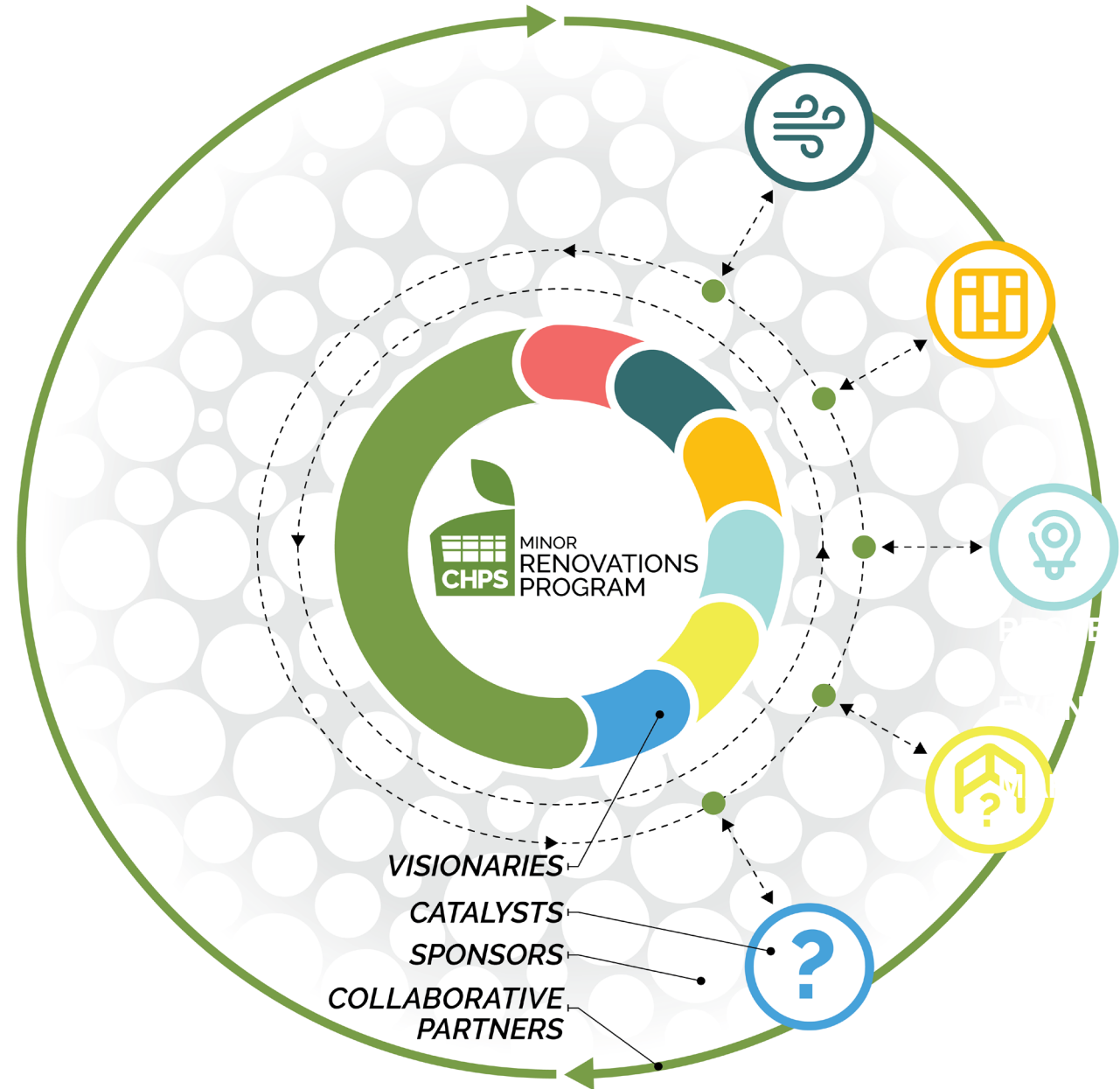


# Piloting Process Overview



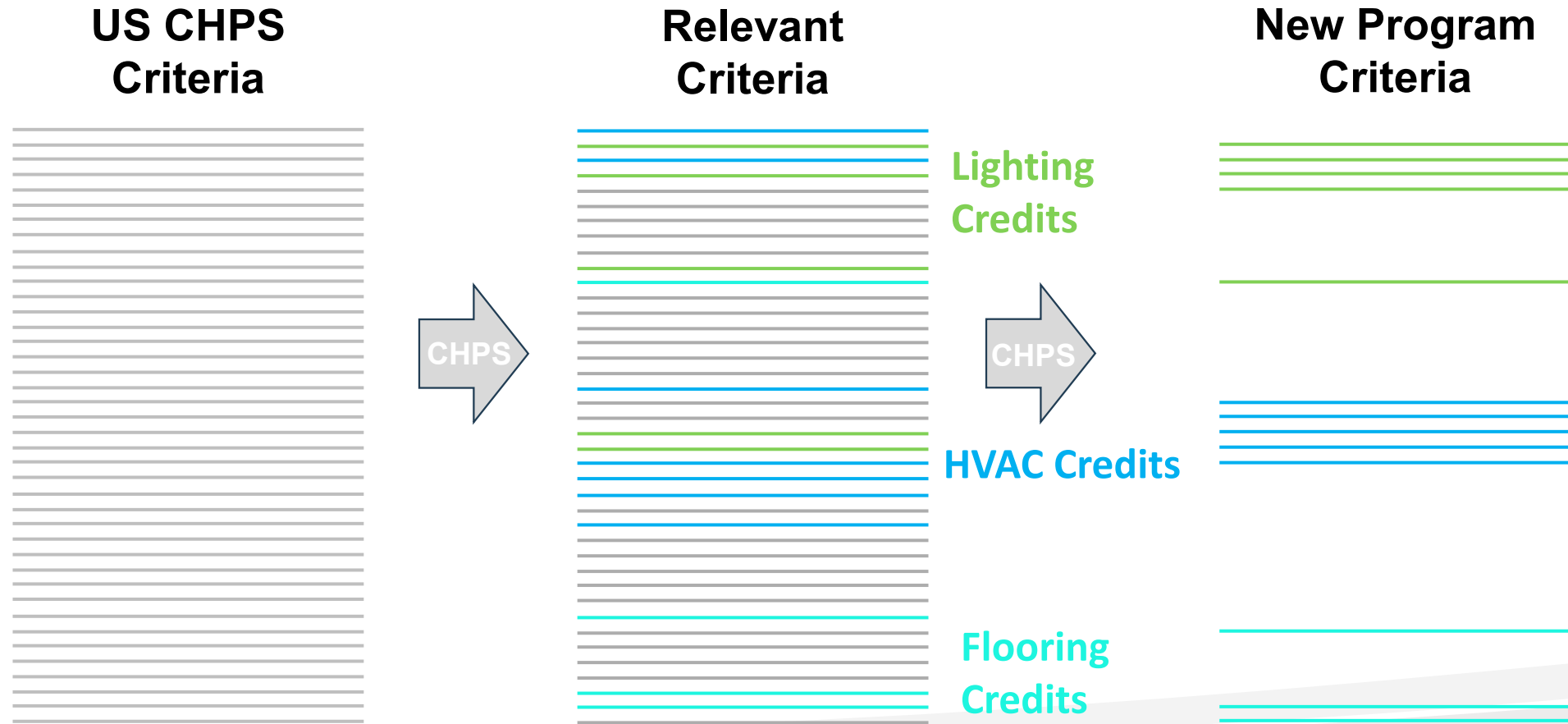


# Process & Involvement





# New Program Creation Process



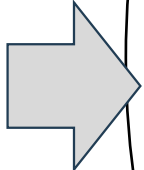
# We need you here



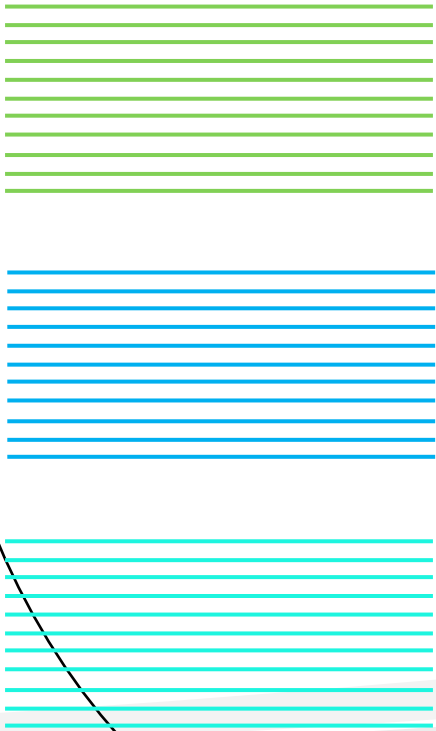
Lighting Credits

HVAC Credits

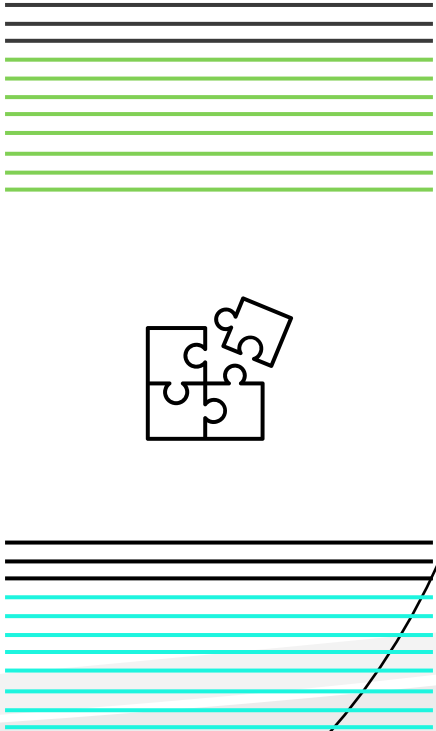
Flooring Credits



**Finalize Project Specific Criteria**



**Create Program Structure**





# Example: Criteria Adaptation

## EQ P6.0 LOW EMITTING MATERIALS

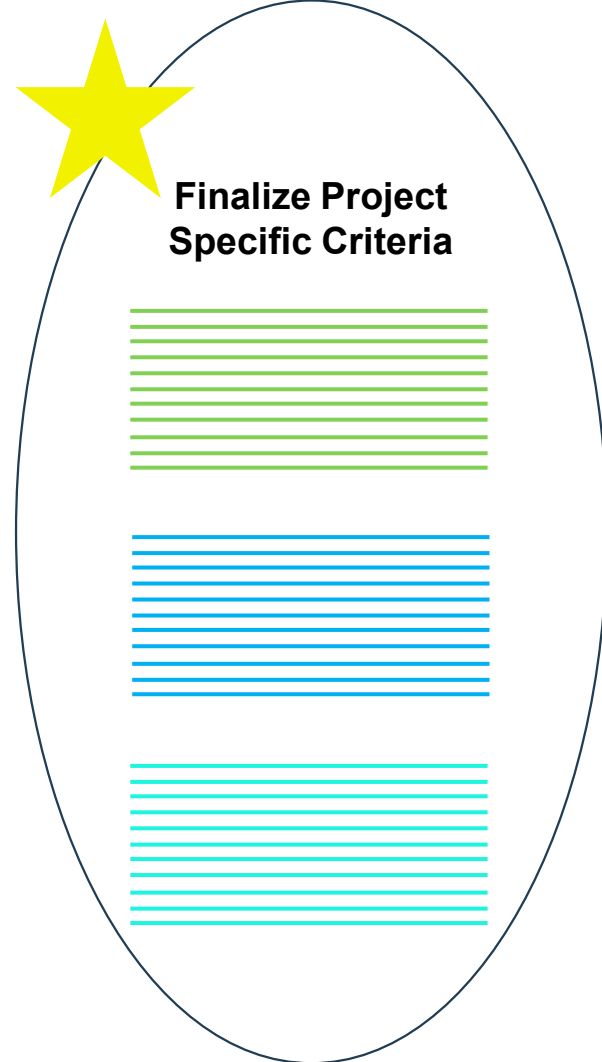
Intent: Minimize air concentrations of harmful volatile organic compounds that derive from building products and building materials used indoors.

- EQ P6.0 PAINTS & COATINGS
- EQ P6.0 FLOORING SYSTEMS
- EQ P6.0 COMPOSITE WOOD

## EQ C6.1 ADDITIONAL LOW EMITTING MATERIALS

- EQ C6.1.1 ADHESIVES & SEALANTS
- EQ C6.1.2 FLOORING SYSTEMS
- EQ C6.1.3 COMPOSITE WOOD & AGRIFIBER PRODUCTS
- EQ C6.1.5 PAINTS & COATINGS

[FLOORING  
EXAMPLE]





## **EQ P6.0 LOW EMITTING MATERIALS**

Intent: Minimize air concentrations of harmful volatile organic compounds that derive from building products and building materials used indoors.

### **EQ P6.0 FLOORING SYSTEMS**

Applicable to all resilient flooring and carpet systems installed in the project's interior. **75% or more** of the installed area of such products shall be tested for emissions of VOCs of concern with respect to chronic inhalation exposures following the specifications of the CDPH Standard Method V1.2, dated January 2017, and shall be compliant with the Standard Method when modeled to the school classroom scenario described therein.

## **EQ C6.1 ADDITIONAL LOW EMITTING MATERIALS**

### **EQ C6.1.2 FLOORING SYSTEMS**

Flooring systems include but are not limited to: carpet with or without an integral cushion, carpet with an integral adhesive system, and separate cushion; resilient flooring; wood flooring with the exception of solid wood flooring; ceramic tile flooring; other mineral-based flooring (either natural or manmade) without any organic component, and concrete flooring. For the purpose of this option, it is assumed that ceramic tile, organic-free mineral-based flooring, and concrete flooring are negligible sources of VOCs and are available for credit without testing requirements. Site applied flooring adhesives are treated under Option 1 for Adhesives & Sealants, and site applied flooring stains, sealers and coatings are treated under Option 2 for Paints & Coatings.

All flooring systems installed in the project's interior **totaling 90%** of the total flooring area shall be tested for emissions of VOCs of concern with respect to chronic inhalation exposures following the specifications of the CDPH Standard Method V1.2 2017. The test results shall be compliant with the Standard Method when modeled to the school classroom scenario using the classroom flooring area. For systems consisting of more than one distinct layer (e.g., carpet with separate cushion), all layers shall individually meet the requirements of the CDPH Standard Method.

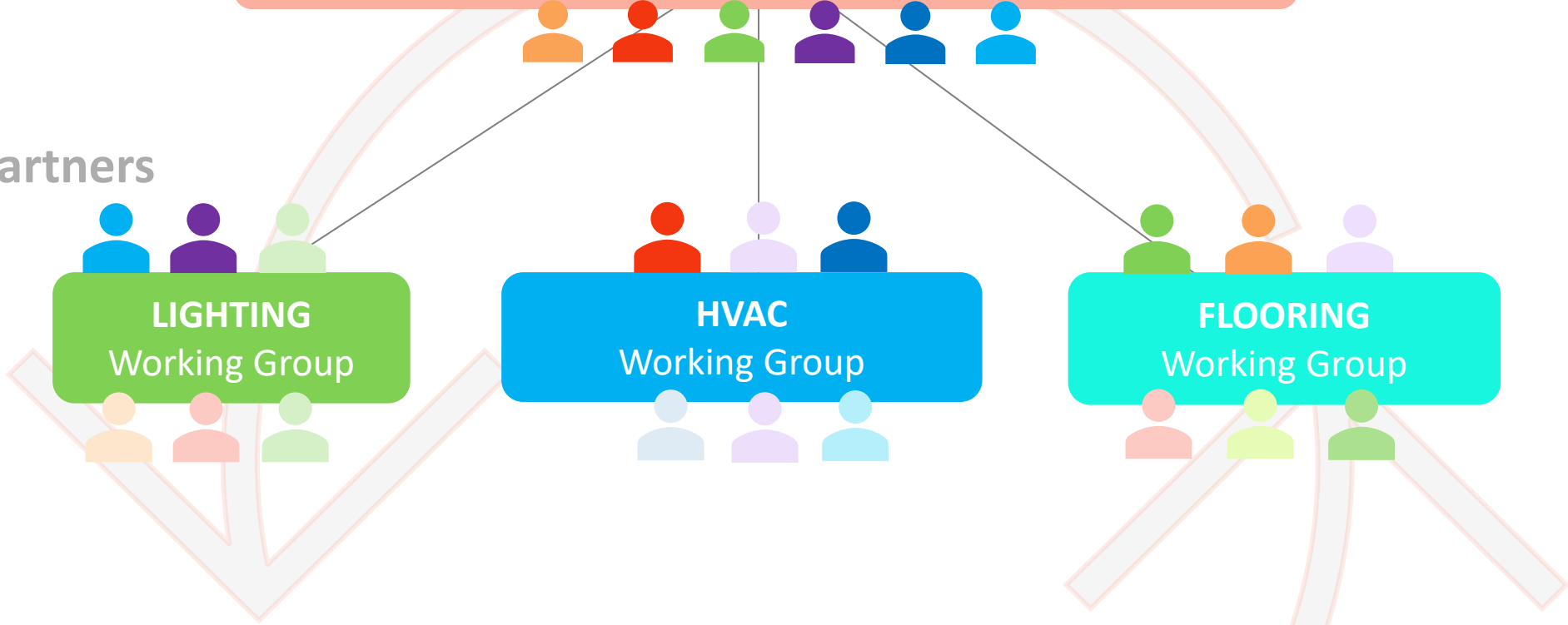
**VISIONARIES**



**CHPS &  
Supporting Partners**



**CATALYZERS**



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Events, webinars, case studies, article placements, projects, demonstrations, etc.

[CLICK HERE](#)

# FLOORING PILOT

COULD BE APPLICABLE TO ALL PROJECTS

KEY

MUST

MAYBE

SOMEWHERE IN THE MIDDLE

PROJECT [FLOORING] SPECIFIC

II C3.1 DISTRICT LEVEL COMMITMENT

II P2.0 CENTRAL EDUCATIONAL DISPLAY

Intent: Promote environmental awareness and eco-literacy by utilizing the high performance features of the school to demonstrate the basics and benefits of sustainable, healthy buildings.

II C8.1 BIOPHILIC & RESPONSIVE DESIGN

Intent: To contribute to occupant health and wellness by providing an experience that is grounded in place, connected to nature, and promotes a sense of calmness and wellbeing.

OM P1.0 FACULTY STAFF & OCCUPANT TRAINING

Intent: Training is the foundation of effective maintenance programs and is an essential tool to maintain and receive the high performance benefits such as protecting indoor air quality, thermal and visual comfort and maintaining superior energy performance.

OM C5.1 INDOOR ENVIRONMENTAL MANAGEMENT

Intent: Protect student and staff health and the environment by monitoring and correcting indoor air quality problems, reducing the risk of exposure to hazardous cleaning products and practices, and reduce the risk of pesticide exposure.

MW C2.1 CONSTRUCTION SITE WASTE MANAGEMENT

Intent: Divert construction and demolition waste from landfills.

II P1.0 INTEGRATED DESIGN

Intent: Establish the district's high performance goals early in the conceptual design phase and work collaboratively as a team to ensure these goals are incorporated. Goals identifying building efficiencies, site impacts, indoor environmental health and well-being should be captured in this early planning process.

OM P1.0 FACULTY STAFF & OCCUPANT TRAINING

OM C5.1.2 GREEN CLEANING

OM C4.1 HIGH PERFORMANCE OPERATIONS & SYSTEMS MAINTENANCE PLAN

Intent: Ensure that the school project meets its design intent in providing a healthy, efficient, and environmentally responsive place to learn and work. Keep key building systems properly maintained over time and ensure ongoing performance and system life.

EQ C2.1 POLLUTANT & CHEMICAL SOURCE CONTROL

Intent: Achieve good indoor air quality to protect student, educator, and staff health and increase the potential for improved performance and attendance.

EQ C5.1 POST-CONSTRUCTION INDOOR AIR QUALITY

Intent: Improve indoor air quality by minimizing the amount of indoor pollutants that are distributed and retained by the surface materials and ventilation systems during construction.

EQ P6.0 LOW EMITTING MATERIALS

Intent: Minimize air concentrations of harmful volatile organic compounds that derive from building products and building materials used indoors.

EQ P15.0 ACOUSTICAL PERFORMANCE

Intent: Provide classrooms with adequate acoustical environments

MW C3.1 CERTIFIED WOOD & RECYCLED CONTENT MATERIALS

Intent: Reduce the environmental impacts associated with harvesting or extraction and processing of wood and virgin materials.

MW C5.1 ENVIRONMENTAL PRODUCT DECLARATIONS

Intent: Specify materials that have been evaluated for their lifecycle impacts on the environment.

EQ C7.1 MATERIAL HEALTH DISCLOSURES

Intent: Specify products and materials with publicly available health related information of their ingredients.

# PROJECT [FLOORING] SPECIFIC

## **EQ C5.1 POST-CONSTRUCTION INDOOR AIR QUALITY**

Intent: Improve indoor air quality by minimizing the amount of indoor pollutants that are distributed and retained by the surface materials and ventilation systems during construction..

## **EQ P6.0 LOW EMITTING MATERIALS**

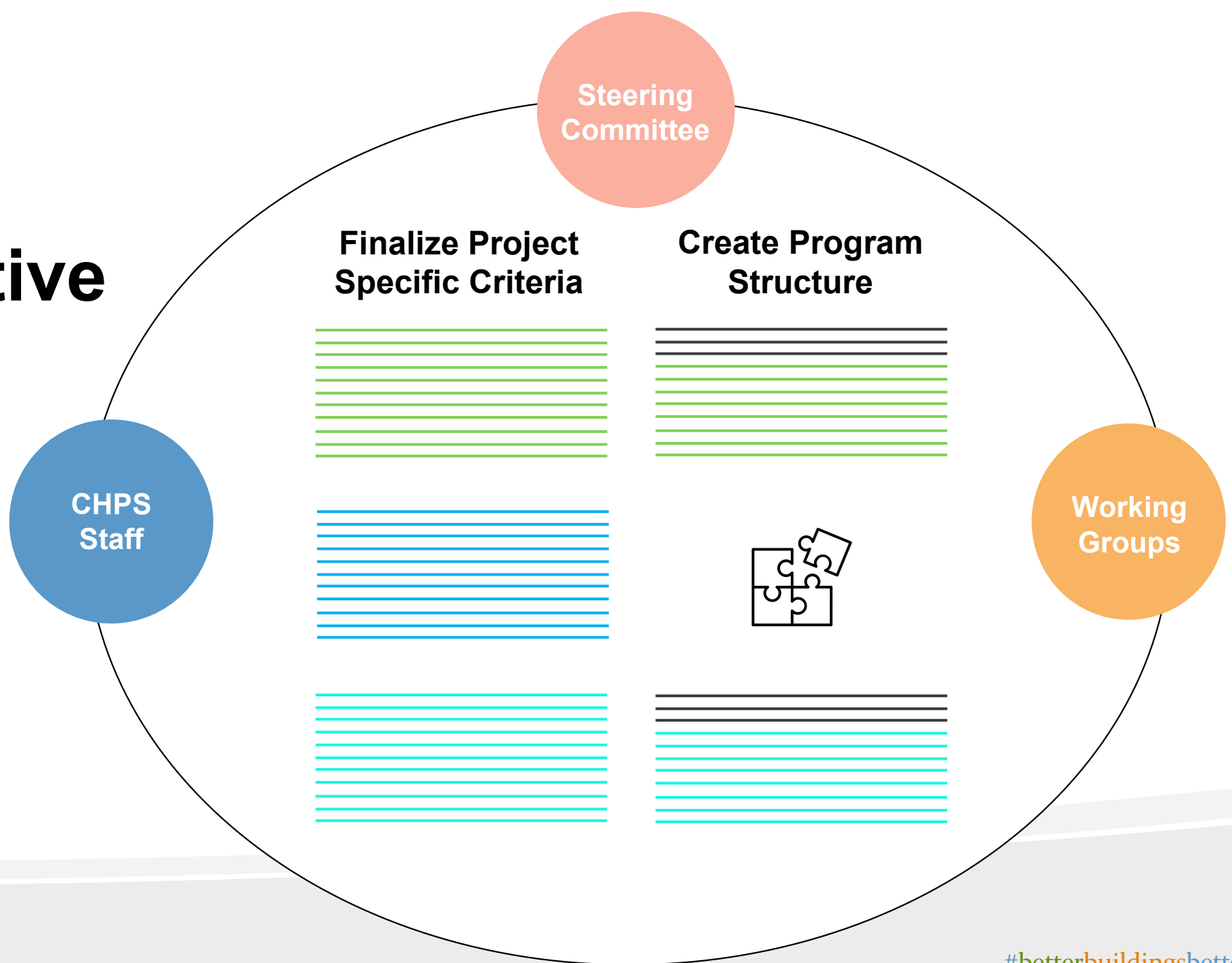
Intent: Minimize air concentrations of harmful volatile organic compounds that derive from building products and building materials used indoors.

## **EQ P15.0 ACOUSTICAL PERFORMANCE**

Intent: Provide classrooms with adequate acoustical environments



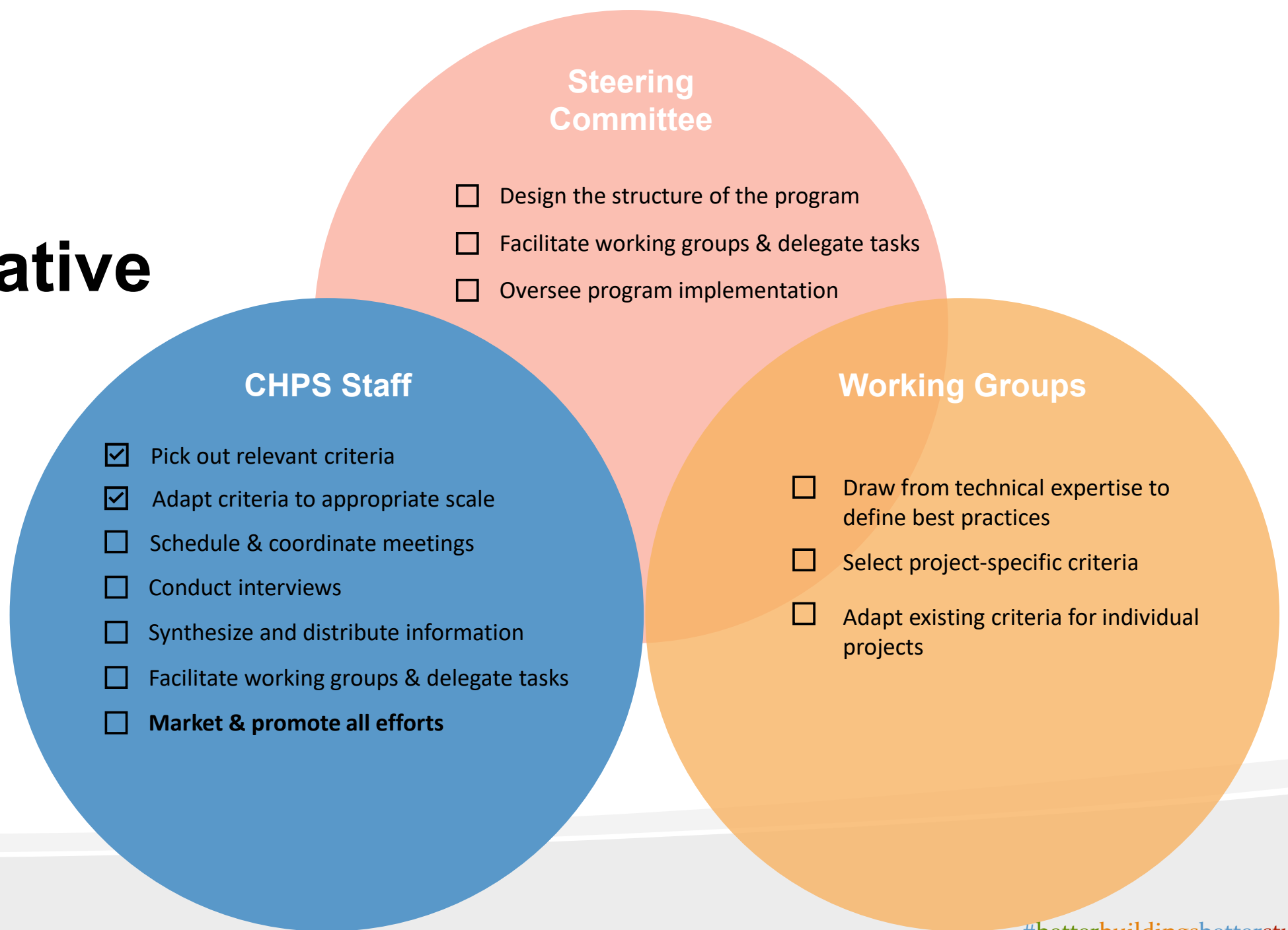
# Collaborative Process







# Collaborative Process





# Sponsorship Opportunity

- **Visionaries - \$25,000**
  - 1 Seat on Steering Committee
  - Included in CHPS press materials/media pitches - with bespoke opportunities to engage with our media partner(s)
  - All of the below
- **Catalyzers - \$15,000**
  - 1 Seat in a Working Group
  - 1 Year CHPS membership
  - Company profiled in CHPS website and newsletter
  - All of the below
- **Sponsors - \$8,000**
  - Logo on Webinars
  - Logo on CHPS website and newsletter

## Collaborating Partner

- ❖ School Districts
- ❖ Public Agencies
- ❖ Nonprofits
- ❖ Subject Matter Experts





# The Value to You

- ★ Position yourself as a leader in the school community
- ★ Establish yourself as a leader in the industry by creating ‘best practices’
- ★ Access to the data & feedback from the pilot projects
- ★ Connect the dots between turnkey solutions, key stakeholders, and industry visionaries
- ★ Present at industry events and in media with CHPS and Pilot Districts



# The Value to You

## And most of all...

- ★ Help close the equity gap in school performance and design
- ★ Help all students gain access to better, healthier schools





# Thank You to Our Staff



**Bill McIlwrath**  
COMMUNICATIONS &  
MEMBERSHIP  
OUTREACH



**Alex Buchanan**  
TECHNICAL LEAD



**Natalie Van Dreal**  
IMPACT  
COORDINATOR



**Janell Weihs**  
DIRECTOR OF PROGRAMS  
& PARTNERSHIPS



**Jocelyn Groom**  
PROJECT REVIEWER



**Kelly Vaughn**  
MARKETING  
DIRECTOR



# Discussion Questions (15 min)

- How would this program help your work with districts?
- Where do you currently find guidance for best practices?
- How do you envision this type of program working with financial incentives from utilities and/grants?



**Thank you.**

[info@chps.net](mailto:info@chps.net)

<https://chps.net/minor-renovations-program>

