

Envisioning Excellence

IAQ Strategies in Action

The Framework for Effective School IAQ Management

***Accelerating Action to Create Healthier
and Safer School Environments***



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Accelerating Action to Create Healthier and Safer School Environments

In the following pages you will find step-by-step actions that successful school districts have taken to build effective and enduring IAQ management programs. This tremendous knowledge base — built on the accumulated learning of accomplished school IAQ management programs and *IAQ Tools for Schools* National Award winners — exists to help schools take action to create healthier, safer learning environments. The Framework for Effective School IAQ Management synthesizes this knowledge base, and EPA’s *Envisioning Excellence* materials provide in-depth access to it. The *Envisioning Excellence* materials include actionable guidance, program strategy suggestions, examples from leading programs, and detailed descriptions of approaches school districts can take to apply the Framework in their environmental, health and safety programs.

Envisioning Excellence Materials

Access all of the *Envisioning Excellence* materials to learn how to achieve success in your school district. Visit www.epa.gov/iaq/schools/excellence.html.

What is the IAQ Strategies in Action Resource?

IAQ Strategies in Action presents an overview of the Framework for Effective School IAQ Management: Six Key Drivers — the building blocks of sustainable health or wellness programs, including IAQ management programs. This resource gives examples of the step-by-step strategies that any school district can apply to incorporate the Six Key Drivers into their programs.

What Is “The Framework” and How Can I Use It?

Years of research led to the discovery of a clear program Framework that underlies successful IAQ management programs. This resource highlights a diversity of schools that are using the Framework to take action to achieve IAQ excellence — proving that the Framework is highly flexible and adaptable. Any school, regardless of location, size, budget or facility conditions, can follow it to launch and sustain an effective IAQ program. The Framework for Effective School IAQ Management: Six Key Drivers presents the system for success and provides a common language for discussing the Six Key Drivers that contribute to effective IAQ management programs:

- Organize for Success
- Communicate with Everyone, All the Time
- Assess Your Environments Continuously
- Plan Your Short and Long-Term Activities
- Act to Address Structural, Institutional and Behavioral Issues
- Evaluate Your Results for Continuous Improvement

The Framework for Effective School IAQ Management is a self-reinforcing system. As school districts incorporate each Key Driver into their programs, overall program effectiveness increases. In addition, the strategies that support the Six Key Drivers are complementary; working to develop one Key Driver will support and contribute to the development of another. It is important to remember that effective school IAQ management programs are works in progress and most districts put the components of success in place over time. Effective IAQ management is a marathon, not a sprint.

The Framework for Effective School IAQ Management: Six Key Drivers



KEY to ABBREVIATIONS:

Blue Valley School District (BVSD)

West Carrollton School District (WCSD)

Hartford Public Schools (HPS)

Katy Independent School District (KISD)

School Board of Broward County, Florida

(Broward)

Saugus Union School District (SUSD)

Visalia Unified School District (VUSD)

Organize

KEY DRIVER #1 — ORGANIZE FOR SUCCESS

Strategy 1.1 — Develop Systematic Approach

- **Apply a systematic approach to coordinate and enhance existing activities and build a sustainable IAQ initiative.**
 - Follow the *IAQ Tools for Schools* Program model to tie disparate facility functions together, and to get the right people talking about environmental management.

Strategies In Action — Develop Systematic Approach

- BVSD used the *IAQ Tools for Schools* Program to identify which procedures, resources and personnel to coordinate to improve their facilities management. By integrating disconnected pieces, BVSD created a stronger program from existing parts.
- WCSD used the *IAQ Tools for Schools* Program model as a leaping-off point for designing an environmental, safety, health and wellness program.

Strategy 1.2 — Identify Existing Assets

- **Assess your assets and build your IAQ management program around what already works.**
 - Integrate IAQ management into effective management processes, reporting and response protocols, staff functions, resource allocations, etc.

Strategies in Action — Identify Existing Assets

- When launching their IAQ program in the wake of a mold crisis, the Broward team asked an institution that the community viewed as effective and trustworthy for help. The Facilities Task Force — composed of staff, parents and community leaders — led the initiative.
- Elementary school principals in VUSD are responsible for school health and safety issues. When launching the IAQ initiative, VUSD added IAQ issues to principals' responsibilities and trained them on what to look for and how to report their findings through the same channels already in use for other safety and health issues.

Strategy 1.3 — Design Standard Operating Procedures

- **Create standard operating procedures to ensure regular facility assessments, preventive actions and swift problem response for IAQ.**
 - Publicize the links between your IAQ standard operating procedures and the educational mission so decision-makers and staff support your processes.

Strategies in Action — Design Standard Operating Procedures

- BVSD adapted standard operating procedures for facility design and capital construction, building envelope, and major mechanical replacement programs to establish new IAQ protocols. BVSD also made sure that staff understood how adhering to the IAQ standard operating procedures would contribute to outstanding learning environments that promote student success.
- Broward established standard operating procedures that enable immediate remedial action in response to IAQ problems that cost less than a threshold amount. If actions cost more than the threshold, the problems are automatically elevated to decision-makers.

Strategy 1.4 — Empower an IAQ Leader

- **Put someone in charge of the program and empower that person to make decisions.**
 - Choose a strong leader who is committed to facility health and occupant wellness, and who has the influence required to hold people accountable for progress.
- **Communicate with staff, teachers, parents and others to make sure everyone knows who is in charge.**

Strategies in Action — Empower an IAQ Leader

- KISD designated an Environmental Assistant Director position within the Maintenance and Operations (M&O) Department to direct IAQ management, hire a team, conduct assessments, oversee prevention and response activities, and communicate with other department heads.
- BVSD chose a coordinator for its IAQ initiative whose role as Safety Manager had prepared him in many of the relevant issues (facility management, pollution prevention, etc.). He became the face of the District's IAQ program — the “go-to guy” critical to its success.

Strategy 1.5 — Build an Effective Team	Strategies in Action — Build an Effective Team
<ul style="list-style-type: none"> • Build a team that represents your district and community. <ul style="list-style-type: none"> • In large districts, consider a district-level team to coordinate activities with IAQ teams at each site. • Recruit members whose job functions, passions, interests and knowledge equip them to: <ul style="list-style-type: none"> • <i>Act</i> on IAQ management issues (e.g., facility managers, custodial supervisors, HVAC technicians, business officials); • <i>Communicate</i> the importance of IAQ management efforts (e.g., nurses, public health officials, principals, concerned parents); • <i>Influence</i> decision-makers or make required decisions, such as staff and resource allocations (e.g., department heads, board members); and • <i>Provide expertise</i> on IAQ issues and the interactions among facilities management, occupant behaviors and IAQ outcomes (e.g., industrial hygienists, environmental health specialists). • Consider “unusual suspects”: Critics and people who do not initially trust the district can be great additions to the team. <ul style="list-style-type: none"> • Include union representatives, disgruntled parents and teachers who have lodged IAQ complaints. 	<ul style="list-style-type: none"> • Broward learned a powerful lesson about building a representative IAQ team in the wake of a mold and public relations crisis. The facilities staff had previously avoided unions, teachers and parents as much as possible but found that by bringing them onto the IAQ planning team, they turned them from adversaries into allies. Broward also recruited IAQ Committees at each school to serve as trainers, survey administrators and communications channels and to coordinate IAQ work with the district-level oversight team. • HPS’ district-level health and safety team, which took ownership of the IAQ program, augmented their resources with team members from city, state, non-profit and local university communities. Outside experts provide training, assist with walkthroughs and help secure grant support. • WCSD’s team includes school board members, the Superintendent, teachers, administrators and once-skeptical parents. WCSD invited the parents who were most vocal during the IAQ problems onto its committee and gave naysayers a chance to contribute constructively. • After facing an early IAQ crisis, SUSD created a Parent Oversight Committee, comprising some of the district’s most vocal critics, to help plan the IAQ program and conduct walkthroughs.
Strategy 1.6 — Create Champions	Strategies In Action — Create Champions
<ul style="list-style-type: none"> • Create IAQ champions (on your team and in the community) to promote program success. <ul style="list-style-type: none"> • Find champions by broadcasting the link between healthy IAQ and student performance, staff health and morale, and facility health, and see who responds with energy. • Look for passionate, energetic risk-takers who will communicate the program’s mission, goals, objectives, activities and results. 	<ul style="list-style-type: none"> • In BVSD, “Everyone knew how they could contribute to healthy school environments that lead to student success ... principals saw that the program could keep students healthy; and custodians felt pride about being the first line of IAQ defense.” • KISD looked for “someone with energy, a self-starter, team-focused, a risk-taker, a model of exemplary behavior and an effective communicator,” when hiring its Environmental Assistant Director. KISD credits its IAQ success, in part, with “the force of the team leader’s personality and persistence, which have helped ... to secure leadership buy-in and community trust and to motivate colleagues.”
Strategy 1.7 — Secure Senior Buy-In	Strategies in Action — Secure Senior Buy-In
<ul style="list-style-type: none"> • Secure executive-level support for your program. <ul style="list-style-type: none"> • Tie the IAQ program’s goals, plans and expected results to improved student health, wellness and performance. • Use crisis moments as opportunities to build buy-in and secure investments from decision-makers, school boards and parents. 	<ul style="list-style-type: none"> • HPS secured senior-level buy-in by presenting the IAQ program as part of the solution to its high asthma rates and by describing how <i>IAQ Tools for Schools</i> could improve student and staff attendance and performance. • When the Director of M&O first arrived in KISD, he found a mold infestation crisis, public mistrust and staff outrage. He seized the moment to secure superintendent support for an IAQ program and institutionalized the program by creating a new M&O Environmental Assistant Director position.

Communicate

KEY DRIVER #2 — COMMUNICATE WITH EVERYONE, ALL THE TIME

Strategy 2.1 — Share Your Goals

- **Publicize your program’s goals, plans and expected activities.**
 - Communicate the connection between your IAQ activities and program goals so stakeholders know what you are doing and why it is important.

Strategies in Action — Share Your Goals

- BVSD recorded its IAQ goals in its strategic plan, communicated them to people across the District and explained the rationale behind them.
- A KISD parent reports that “the whole district, from students, to staff, to administrators and parents ... is well informed about IAQ and its health effects. The maintenance department, new building department and administrators take a proactive approach to maintaining our buildings ... We have to be aware that keeping a building in top shape costs money, but we know that it saves money in the long run.”

Strategy 2.2 — Make IAQ Meaningful

- **Communicate the link between your program’s plans, activities and results and the issues that matter most to your audience.**
 - Talk to parents about how your work safeguards their children; tell staff and administrators how it promotes health, productivity, attendance and performance; share with facilities and operations and maintenance staff how their work affects student success and reduces facilities’ wear and tear and maintenance costs.
- **Consider all avenues for communication.** Hang up posters to describe the mission; use websites, parent newsletters and other channels to reinforce the message; communicate your IAQ mission at every opportunity.

Strategies in Action — Make IAQ Meaningful

- When marketing their program, HPS’ team always described the relationship between IAQ management, improved asthma control, attendance outcomes and clean and healthy schools.
- To recruit school nurses to lead site-based IAQ programs, KISD’s team leaders spoke passionately about how effective IAQ management could improve nurses’ jobs and student health.
- BVSD generated support for the IAQ program by emphasizing how it would manifestly support the district’s goal of “creating outstanding learning environments.” The IAQ team also mailed newsletters to all households in the district, to share the message that “Each day we wait to improve IAQ, money is lost.” The public got the message and now supports the IAQ activities through bond initiatives and volunteerism.
- VUSD sought help from a local asthma coalition and its school nurses to educate teachers about the links between non-approved chemicals (such as air fresheners and cleaning products) and asthma problems in students.

Strategy 2.3 — Be Transparent & Inclusive

- **Be transparent when communicating assessment findings, responses and prevention plans.**
 - Invite parents, media, health department officials and others to examine problems and be part of the solution.
- **Be inclusive when planning your IAQ program to build understanding, trust and support.**
 - Invite a broad group of people to the planning table, including those who are most critical of your management, to help you plan and implement your IAQ program.

Strategies in Action — Be Transparent & Inclusive

- The KISD team takes community members on walkthroughs to demonstrate how their IAQ program functions and shares information on problems and planned solutions.
- After a very public mold crisis, Broward revamped its communications approach. Issues were once addressed quietly, but the district now broadcasts information — problems and all — on the Web, cable television and through parents’ groups and unions.
- WCSD involved the community in program planning and implementation. “Involving everyone helped convince them of our sincere commitment to protecting their health and safety.”

Strategy 2.4 — Communicate Results

- **Communicate your results to everyone in the community.**
 - Share information on your efforts and their results so the community can understand the full circle of IAQ management — risk identification, action, prevention and improvement — and see why IAQ investments and behavior/policy changes are worth supporting.

Strategies in Action — Communicate Results

- At WCSD, “Folks know that ... things get done because we make sure to follow every issue and we communicate what we’re doing, why we’re doing it and what to expect next.”
- KISD delivers assessment reports to school principals summarizing findings and responses. Over time, principals have paid increasing attention to the reports because they have seen the response and concluded that the reports must contain important information.
- BVSD shares IAQ program progress by reporting on daily, weekly and monthly improvements to the school board and community.
- Every office manager in SUSD schools maintains an “IAQ File Box” that is accessible to the parents and community. The box includes completed checklists and walkthrough results.

Assess

KEY DRIVER #3 — ASSESS YOUR ENVIRONMENTS CONTINUOUSLY

Strategy 3.1 — Walk the Grounds

- **Conduct regular walkthrough assessments to identify pollutant sources, contributors and IAQ risks.**
 - Teach on-site staff to conduct walkthrough assessments.
 - Look for structural, mechanical, environmental or occupant behavior issues that can lead to poor IAQ.
 - Describe to occupants the issues you are looking for, listen to their concerns and describe your response plans.
- **Regularly review walkthrough results to identify responses and preventive actions to avoid future problems.**

Strategies in Action — Walk the Grounds

- HPS trained school-based teams by walking them through example areas at a school site. They learned to spot a variety of IAQ issues and other conditions that could compromise health or create a hazard. The team members also learned to link findings with reported health symptoms and report findings to the district for resolution.
- KISD’s environmental team conducts regular walkthroughs of all 10+ million square feet of their facilities. The team leader trained her staff to conduct effective walkthroughs, capture baseline and annual assessment data, process work orders promptly and route work orders according to KISD protocols to ensure swift response to any pending issues and regular preventive actions to head-off problems.

Strategy 3.2 — Listen to Occupants

- **Survey occupants to collect information on the health of the facility and assess their satisfaction.**
 - Use the survey to educate occupants about common IAQ problems, what to look for and steps they can take to safeguard the environment.
- **Create a standard format or system for collecting information from occupants to make it easy for them to share with you.**

Strategies in Action — Listen to Occupants

- Broward uses a technology solution to collect data from occupants at 253 schools. A simple, anonymous, online form for reporting facility conditions generates valuable data.
- Once per year, building occupants in WCSD receive a survey on everything from chemical usage to cleanliness. The Environmental Health & Safety (EH&S) Committee uses occupant surveys to design walkthroughs. “In the beginning, we received surveys without names or room numbers. Now that we have increased trust and credibility, the staff puts detailed information on the surveys because they know we will examine their concerns and take action.”

Strategy 3.3 — Use Technology

- **Use technology to simplify assessments and collect data.**
 - Use monitoring equipment to assess facilities. Many school districts use tools such as digital psychrometers (reads temperature and relative humidity, dew point, wet-bulb and moisture content), anemometers (measures airflow), data loggers (records temperature, humidity, illumination and other inputs), CO₂ monitors and other devices.
- **Use technology to manage data and track response and prevention activities.**
 - A coordinated system can manage occupant survey data, feed into a work order system and track pending, completed and planned activities.

Strategies in Action — Use Technology

- BVSD uses technology — including an Aircurity machine, a Forward Looking Infrared camera and an Environmental Management System — to measure facility parameters during walkthroughs; and to continuously monitor filtration, air flow, temperature and relative humidity in all facilities. BVSD’s tools help limit lost instructional time by heading off potential problems.
- The same system that Broward uses to collect survey data helps district staff to plan walkthroughs and manage corrective actions and preventive maintenance. Broward’s IAQ inspectors even have handheld devices with summarized occupant reports that guide their validation assessments.
- VUSD uses an electronic work order system to capture IAQ concerns. A special check box denotes IAQ issues, and the operations staff is able to begin its investigation to address the concern within 24 hours of receiving the work order. Staff can add pictures and comments in the system to create an online record of each concern and its resolution. In addition, VUSD uses an integrated electronic site checklist for IAQ and other issues.

Strategy 3.4 — Determine a Baseline

- **Establish your facility performance baseline.** Gather data on usual performance to identify areas for improvement and to establish metrics for tracking impact over time.
 - Examples of baseline data to collect include average IAQ complaints per month; average temperature, relative humidity, CO₂ and ventilation rates; frequency with which HVAC filters are changed; and more.

Strategies in Action — Determine a Baseline

- WCSD conducts room checks at least once per month to measure thermal comfort and CO₂ and tracks variations against the baseline.
- SUSD compiles an annual IAQ summary for each building that includes information on cleanliness, moisture, thermal comfort and ventilation. They compare annual data to identify problems, trends and successes.

Strategy 3.5 — Keep Customers Satisfied

- **Respond promptly to occupant concerns and demonstrate that you take their concerns seriously.**
 - Think of your occupants as customers and show them that their concerns matter because you value their health.
- **Engage occupants in your work to generate trust and support.**
 - Tell complainants what you plan to do in response to their concerns, share any data you have with them and inform occupants when and how concerns are resolved.

Strategies in Action — Keep Customers Satisfied

- BVSD’s IAQ team follows up within 24 hours of receiving an IAQ issue report by talking with the complainant and describing next steps. They also discuss work in progress. BVSD’s culture of customer service has built trust and created a joint sense of facility ownership.
- WCSD’s EH&S Committee lets people know how to report IAQ issues and ensures swift follow-up. “We educated the teachers about what types of health or comfort issues may be IAQ-related ... if there is a health complaint, we immediately get into the school building and monitor temperature, humidity, CO and CO₂.”

Strategy 3.6 — Identify and Prevent Risks

- **Identify IAQ risk factors and opportunities for improvement and take *preventive*, not just responsive, action.**
- Consider opportunities to educate occupants and custodians, update maintenance and policies, or take precautionary action, such as sealing foundation cracks to prevent moisture intrusion. Schedule these actions now to save time and money and reduce risks down the line.

Strategies in Action — Identify and Prevent Risks

- The BVSD team prioritizes custodian training. BVSD teaches custodians “to identify and report moisture leaks and mold growth and to take pictures and map leaks ... We aim for the root of the problem.”
- WCSD takes major preventive action as often as possible. For example, when the district received \$1 million because their insurer restructured its business, WCSD spent some money to replace carpets. It had been too difficult to ensure that carpets were not harboring dust mites, particulate matter, mold or other allergens, so they replaced the carpet with tile. In the next year, that school saw a nine percent improvement in attendance rates.



KEY DRIVER #4 — PLAN YOUR SHORT AND LONG-TERM ACTIVITIES

Strategy 4.1 — Prioritize Actions

- **Think strategically about the order and importance of your short and long-term activities.**
- Prioritize the most serious risks, such as CO and CO₂ build-up and chemical releases, and those that can lead to high-cost repairs, such as untended moisture leaks, as first-order activities.

Strategies in Action — Prioritize Actions

- KISD prioritizes IAQ activities in two ways: (1) After walkthroughs, each M&O supervisor reviews his or her action lists and ranks priority actions according to risk; and (2) Before spending money on major upgrades, KISD seals all areas of the building envelope, windows and doors to prevent moisture and mold.

Strategy 4.2 — Put Goals in Writing

- **Include IAQ program goals and objectives in documents that codify standard operating procedures and institutionalize long-term programs.**
- List your program goals, plans and responsibilities in the district’s strategic plan, facility operations plans, staff training programs, operating manuals, etc.
- Articulate your program’s goals and objectives clearly and publicly so they become accepted yardsticks for district performance.
- **Tie your goals to the results you expect.**
- Target results might include decreased response time for IAQ concerns, decreased number of complaints, improved occupant satisfaction, decreased absences and improved student performance.

Strategies in Action — Put Goals in Writing

- BVSD institutionalized its program by including goals and measures for success in the district’s strategic plan. The IAQ team is publicly accountable *and* they have senior-level support for the program because the board, superintendent and others know the IAQ program’s focus is on significant environmental accomplishments.
- KISD’s IAQ program has a very public mission statement (on its website, the office walls, etc.) that makes the program’s goals clear and ties them to results: “Good IAQ is an important component of a healthy indoor environment and is necessary for schools to reach their primary goal of educating students.”

Strategy 4.3 — Start Small

- **Continuously plan your prevention and upgrade activities recognizing that you cannot do everything all at once.**
 - Effective IAQ management is a marathon, not a sprint.

Strategies in Action — Start Small

- BVSD launched an IAQ program by finding opportunities to improve IAQ without much new work. They “pushed the fly wheel forward” with small wins that continually generated momentum and support.
- HPS made upgrades at one site (e.g., repaired leaks, improved cleaning and maintenance protocols, removed old carpet, etc.) that contributed to reduced asthma visits to the school nurse, and used the early success to fuel a multi-year program roll-out.

Strategy 4.4 — Work in Stages

- **Do not try to do everything all at once: Make your goal strategic action, not immediate action.**
 - Some districts begin with a pilot project. Others act on all of the upgrades they can handle in-house at low cost and later move onto more complex tasks, like equipment replacements.
- **Identify your action steps, set a schedule, follow your work plan and track your progress.**

Strategies in Action — Work in Stages

- HPS put the components of success in place gradually. Initially, the district completed a pilot project, which it then used as an example to build support for a broader program. HPS then launched a district-wide training program and created school-based health and safety teams. The teams then assessed the facilities, and so on.
- Broward has a plan for rolling out *IAQ Tools for Schools* to all 253 schools in the district in stages, including prioritizing assessments and completing prevention and response activities.

Strategy 4.5 — Plan for the Future

- **Design operations to ensure future IAQ protection and continued best management practices.**
 - Planning should address everything from IAQ for renovation and new construction to training and communication plans to keep staff and district stakeholders up-to-date on IAQ policies and results.

Strategies in Action — Plan for the Future

- KISD faces rapid population growth (adding up to 3-5,000 students per year). The district has ensured that growth will not compromise IAQ by implementing a renovation and construction plan that safeguards IAQ.
- VUSD builds IAQ safeguards into its purchasing strategy. When a site submits a purchase order for new equipment, the purchasing department contacts maintenance to assess how the potential purchase may affect IAQ. Integrating IAQ considerations into purchasing plans allows VUSD to prevent IAQ problems.

Act

KEY DRIVER #5 — ACT TO ADDRESS STRUCTURAL, INSTITUTIONAL AND BEHAVIORAL ISSUES

Strategy 5.1 — Educate Staff About IAQ to Change Behavior

- **Educate staff on IAQ risks, signs of problems and how to report what they find.**
 - Give occupants knowledge of common IAQ risks and the power to act to protect their indoor environments. Turn them into IAQ guardians and champions.
 - Include leadership and stewardship messages in your education programs. Convey that facility health is a joint responsibility and that it takes a team of proactive occupants, staff and managers to prevent problems and deliver outstanding learning environments.
- **Act quickly on staff reports to teach them that their attentiveness is valued.**
 - Show occupants the fruits of their labors to ensure that they continue to serve as a first line of defense against IAQ risks.

Strategies in Action — Educate Staff About IAQ to Change Behavior

- BVSD’s IAQ team meets with principals annually to educate them about the IAQ program and to share a “cheat sheet” that lists the roles, responsibilities and contact information of facilities department staff. Most principals subsequently become active site managers.
- Each SUSD site elects a teacher to serve as IAQ Coordinator. The Coordinators receive training and then train site-based Committees. The Coordinators also provide program updates at weekly staff meetings to build awareness of the IAQ program across the district.
- KISD established an online work order system, and IAQ Coordinators became the hub for IAQ concerns at each site. The district-level team educated Coordinators and occupants about IAQ issues and reporting protocols. Now, they report issues using the online system because they have seen that their reports lead to action.

Strategy 5.2 — Train Occupants to Address IAQ Risks

- **Train staff and occupants to identify and prevent IAQ problems to change the way your institutions function.**
 - Turn occupants into on-site facility managers, inspectors and planners by training staff, administrators, teachers and even students to look out for IAQ risks and take simple actions to prevent problems (e.g., wipe up moisture spills immediately, store foods in tight containers, do not allow pets in classrooms, etc.).

Strategies in Action — Train Occupants to Address IAQ Risks

- HPS trained site-based health and safety teams to conduct assessments, report their findings and rank priority actions. In so doing, HPS empowered occupants with a role in facility protection, dispersed authority across the district and built a more sustainable program.
- During assessments, Broward’s IAQ team often identifies issues that are behavioral at their root and addresses them through training. For example, when investigating dust complaints, the team found cluttered, hard-to-clean classrooms, so they recommended that the site’s IAQ Committee convene custodial staff and occupants to talk about what it takes to keep a room clean.

Strategy 5.3 — Address the Source of Problems

- **Identify the underlying cause(s) of problems at the first sign of an IAQ issue and do not be satisfied with cosmetic fixes.**
 - Ground your preventive maintenance program in root cause analysis: Programs that see the biggest return on investment are those that address problems at the source.

Strategies in Action — Address the Source of Problems

- In BVSD, training for all lead custodians focuses on “the root of the problem” rather than superficial solutions. Lead custodians learn to conduct regular walkthroughs, effectively report potential problems (see it, map it, report it) and train their colleagues to do the same.



KEY DRIVER #6 — EVALUATE YOUR RESULTS FOR CONTINUOUS IMPROVEMENT

Strategy 6.1 — Solicit Feedback	Strategies in Action — Solicit Feedback
<ul style="list-style-type: none"> • Ask occupants for input on your program’s effectiveness to improve community relations <i>and</i> gather valuable data. <ul style="list-style-type: none"> • Ask occupants for feedback on their comfort with your IAQ program, the ease of reporting concerns, perceived effectiveness of response to reports and satisfaction with the indoor environment. 	<ul style="list-style-type: none"> • Occupants in WCSD facilities receive an annual survey, the results of which (in tandem with building walkthroughs) drive the district’s determination of the IAQ program’s performance and priorities. • BVSD asks occupants to score the school’s indoor environment on annual surveys and aims to receive scores of at least four out of five from 100 percent of respondents.
Strategy 6.2 — Capture Return on Investment	Strategies in Action — Capture Return on Investment
<ul style="list-style-type: none"> • Establish and track quantitative targets for your program wherever possible. <ul style="list-style-type: none"> • Identify measures that assess program implementation and your progress toward program goals. Consider tracking the number of school nurse visits, IAQ complaints, operating costs, training frequency and other metrics. • Measure return on investment across several benchmarks to identify accomplishments; recognize areas for more concentrated effort; distinguish effective from ineffective tactics; assess some of the financial value of your program; and demonstrate program merit. 	<ul style="list-style-type: none"> • WCSD tracked attendance rate improvements since the outset of the IAQ program. These data have helped to encourage the custodial staff and others who implement the program by showing them how their efforts pay off in very tangible terms. Based on the district’s demonstrable results, WCSD’s voters approved the conversion of fixed-term to continuing levies to provide continuous funds for long-term facility improvements and upgrades. • BVSD documented reduced operating costs associated with the IAQ program (e.g., energy savings from HVAC upgrades) and used the proof of savings to invest money back into the program. BVSD also documented a rise in test scores every year since the <i>IAQ Tools for Schools</i> Program began and fewer per capita IAQ complaints.