



2012–2013 Envision Participation Survey Report



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Introduction

Poor indoor air quality (IAQ) in schools has been linked to decreased student and teacher performance, increased absenteeism, acute symptoms such as eye, nose and throat irritation, headache, nausea and lethargy, and chronic conditions such as asthma and allergy.

In 2000 the Vermont legislature passed Act 125, charging the Departments of Health and Buildings and General Services and the Agency of Education to address indoor air quality and environmental health issues in school buildings. The “Envision – Promoting Healthy School Environments” program was born out of this legislation to serve as a model environmental health management plan for all Vermont schools.

The Envision Program is administered by the Vermont Department of Health’s Environmental Health Division. Envision provides environmental health walkthrough assessments where physical, chemical and biological hazards, including asthma triggers, are identified and corrective and best practice recommendations are provided. Technical assistance to schools on specific environmental health concerns is also provided. The Envision Coordinator position is funded by the CDC-supported Vermont Asthma Program. Competitive funding opportunities are available to select schools that express interest in creating environmental health plans.

Current levels of participation in the Envision Program are unknown because a sustained method of tracking school participation in the voluntary program was never instituted. A survey during the 2012 – 2013 school year was conducted to gauge school participation in the Vermont Envision Program, and to characterize environmental health and IAQ efforts independent of the Envision Program.

On March 8, 2013, Secretary of Education Armando Vilaseca sent a memo by email to all Vermont public schools asking them to participate in a “Survey Monkey” internet survey created by the Health Department. The survey was closed at the end of the 2012 – 2013 school year.

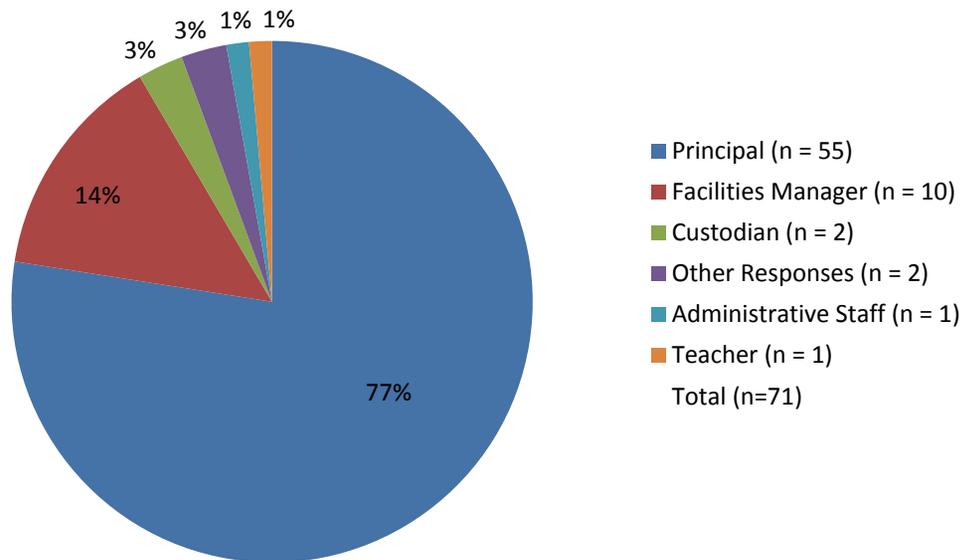
Section One: School and Respondent Demographics

Of the 325 public Vermont schools, the following 71 schools participated in the survey:

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|------------------------------------|----------------------------------|---------------------------------------|
| Addison Central School | Hazen UHS #26 | Richmond Elementary School |
| Alburg Community Education Center | Highgate Elementary School | Robinson School |
| Barnet Elementary School | Irasburg Village School | Rochester School |
| Barton Graded School | Jamaica Village School | Roxbury Village School |
| Berkshire Elementary School | Lunenburg/Gilman Schools | Sheldon Elementary School |
| Braintree School | Lyndon Town School | South Royalton Elementary/High School |
| Bridgewater Village School | Malletts Bay School | Stowe Middle/High School |
| Cabot School | Mettawee Community School US #47 | Summit Street School |
| Castleton Hubbardton US #42 | Middlebury Union High School | Swanton Schools |
| Chamberlin School | Mill River US #40 | Tinmouth Elementary School |
| Colchester High School | Monkton Central School | Townshend Village School |
| Cold Hollow Career Center | Mt. Abraham UHS #28 | Tunbridge Central School |
| Currier Memorial US #23 | Mt. Anthony Senior UHS #14 | Underhill Central Elementary School |
| Deerfield Valley Elementary School | Mt. Anthony Union Middle School | Union Street School |
| Dorset School (The) | Neshobe School | Vergennes UHS #5 |
| Dover Elementary School | Newark School | Waitsfield Elementary School |
| Edmunds Elementary School | Newbrook Elementary School | Wallingford Village School |
| Elm Hill School | Northfield Middle/High School | Washington Village School |
| Essex High School | Orange Center School | Waterford Elementary School |
| Fair Haven UHS #16 | Orleans Elementary School | Westford Elementary School |
| Fayston Elementary School | Porters Point School | Whitcomb Junior/Senior High School |
| Fisher School | Proctor Elementary School | Williamstown Middle/High School |
| Grand Isle School | Putney Central School | Woodstock Elementary School |
| Green Mountain UHS #35 | Randolph Elementary School | |

Of these 71 participating schools, three schools submitted more than one survey response. The complete survey response for the school was kept for analysis, and the incomplete survey response was deleted. Of the 71 schools that submitted a survey, some questions may have been skipped, so the response rate / number for each question will be provided. All percent values presented are rounded to the nearest whole percent, and therefore all questions may not add up to 100 percent.

Most survey respondents were principals, but facilities managers were also well represented:



The high rate of response from principals in this survey is encouraging because principals generally know what policies, programs and initiatives their schools are participating in. However, principals may not be as informed about the practices and procedures – such as cleaning practices or maintenance schedules – that facilities staff engage in.

Section Two: School Participation in IAQ Programs

Of the schools that responded to the survey, 35 percent reported participating in a program that manages indoor air quality. This program could be the Envision Program, the EPA “Tools for Schools” program (upon which the Envision Program is based) or some other program.

Survey Question: Does your school participate in any program that manages environmental health / indoor air quality?

	Percent	Number
“Yes”	35%	25
“No”	65%	46
Total		71

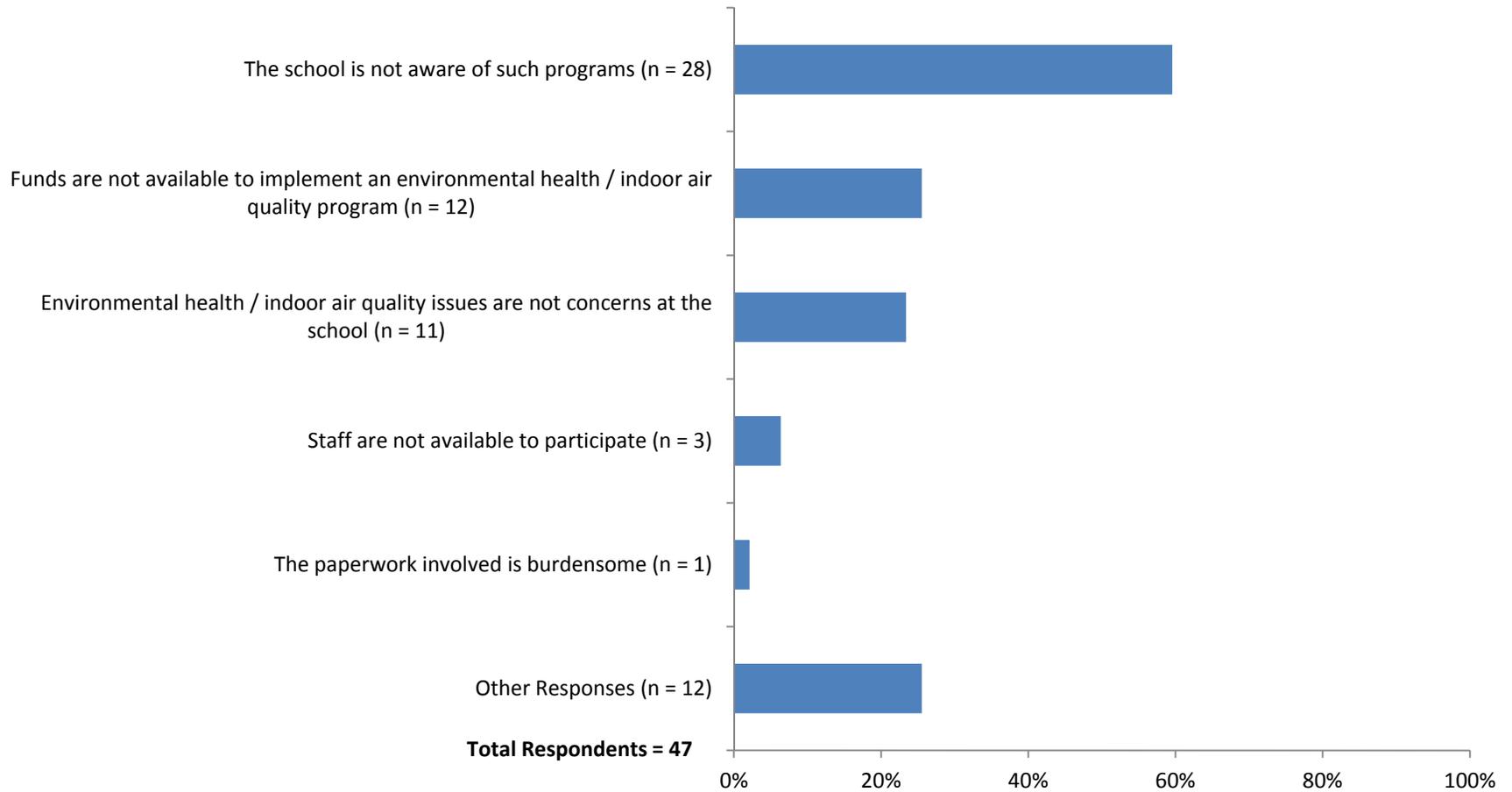
The survey indicated that of the 65 percent of responding schools that did not participate in an indoor air quality program, the top three selected answers were:

- The school is not aware of such programs
- Funds are not available to implement an environmental health / indoor air quality program
- Environmental health / indoor air quality are not concerns at the school

Respondents also had the opportunity to provide written answers to the question, and some common themes to the question about participation in an IAQ program included:

- Lack of awareness of indoor air quality programs
- A feeling that no indoor air quality problems exist at the school
- The school engages in practices that eliminate the need for an Indoor air quality program

Survey Question: If you do not participate in any program that manages environmental health / indoor air quality, please check all statements below that apply:



Schools were also asked if they specifically participated in the Health Department’s Envision Program, as opposed to any indoor air quality program.

Survey Question: Does your school participate in the Vermont Department of Health’s Envision Program?

	Percent	Number
“Yes”	21%	15
“No”	79%	56
Total		71

Twenty-one percent (21%) of responding schools reported participating in the Envision Program. Compared to the number of schools participating in any IAQ program (25), about 10 schools, or about 14 percent of the respondents reported participating in an indoor air quality program other than the Envision Program.

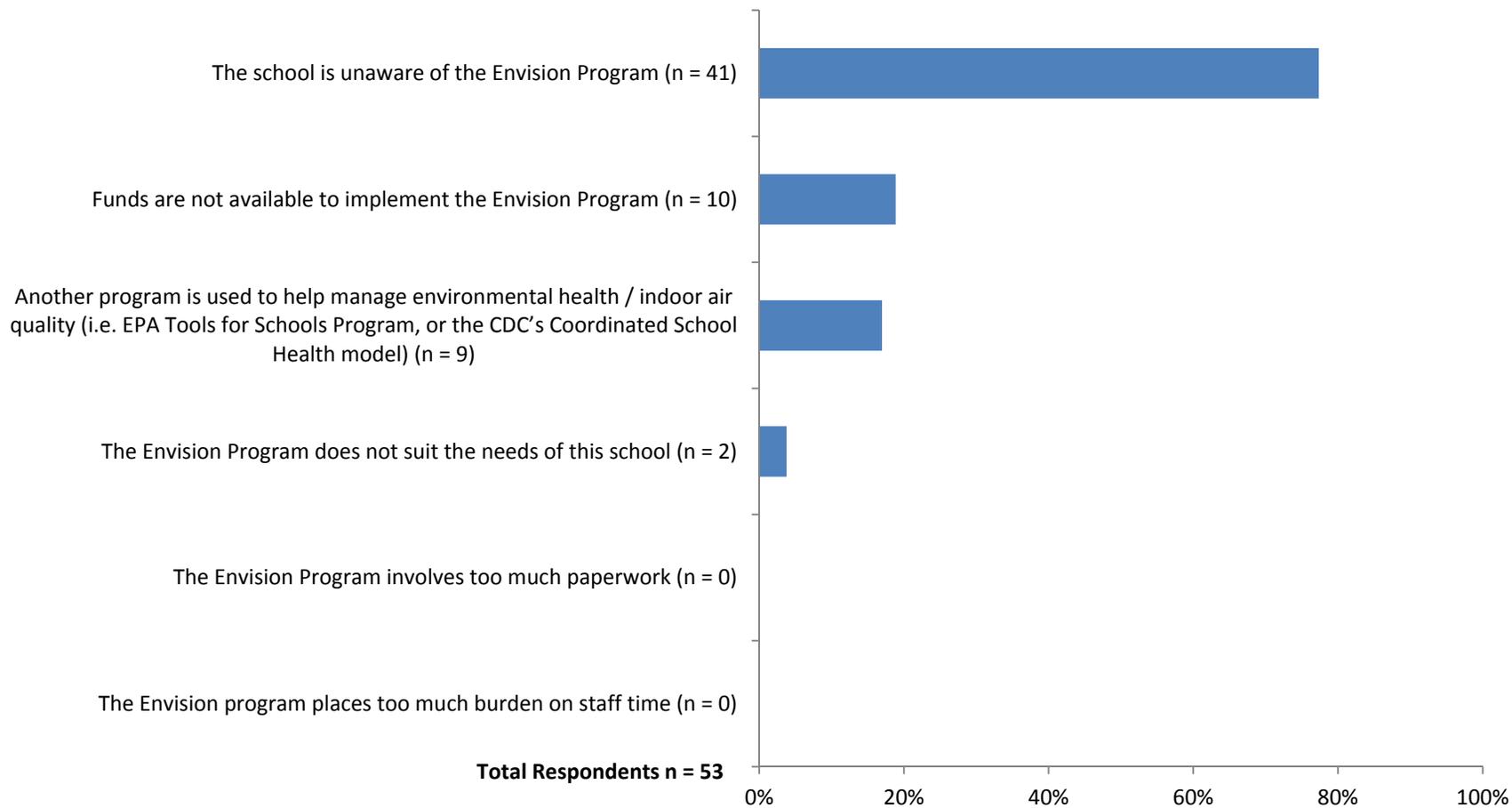
There are similar barriers to participating in the Envision Program as there are with any indoor air quality program. The top survey responses for not participating in the Envision Program were:

- The school is unaware of the Envision Program
- Funds are not available to implement the Envision Program
- Another program is used to manage IAQ at the school

In the open answer to this survey question, there were several similar responses:

- The school used to participate in Envision but no longer does for various reasons including loss of engagement and change in personnel.
- More information / training about the program is needed

Survey Question: If your school does not participate in the Vermont Department of Health’s Envision Program, what are the barriers to participation? Please check all that apply:



Section Three: School Environmental Health Policies and Plans

One of the main goals of the Envision Program is to encourage schools to manage environmental health and indoor air quality by adopting of a school policy and plan. Envision provides a model environmental health management policy and plan.

Survey Question: Has your school adopted an environmental health management policy or plan? Please check all that apply:

	Percent	Number
Yes, an environmental health management policy	9%	6
Yes, an environmental health management plan	24%	17
Yes, both an environmental health management policy and plan	1%	1
No, the school has adopted neither a policy or plan	66%	46
	Total Responses	70

The responses to this survey question show that schools are not readily adopting school policies relating to environmental health management, and the majority of responding schools have neither a policy or plan for managing indoor air quality in their schools.

In the previous question, 15 schools reported participating in the Envision program, and 25 reported participating in any indoor air quality program. In this question, 24 schools report having one or both of the major components of the Envision Program.

Section Four: School Practices and Procedures and Related Policies

It's important to describe the extent of schools utilizing best practices, whether or not they identified participating in a program or had reported adopting a school environmental health management policy or plan. The practices of the school are what really translate into environmental conditions, whereas the policy and plan provide the long-term commitment and organizational framework for these best practices.

Heating Ventilation and Air Conditioning (HVAC)

The heating ventilation and air conditioning (HVAC) system in a school is vital for maintaining high indoor air quality, providing fresh outdoor air, and removing indoor pollutants. It is encouraging that almost all schools report performing some kind of regular HVAC maintenance.

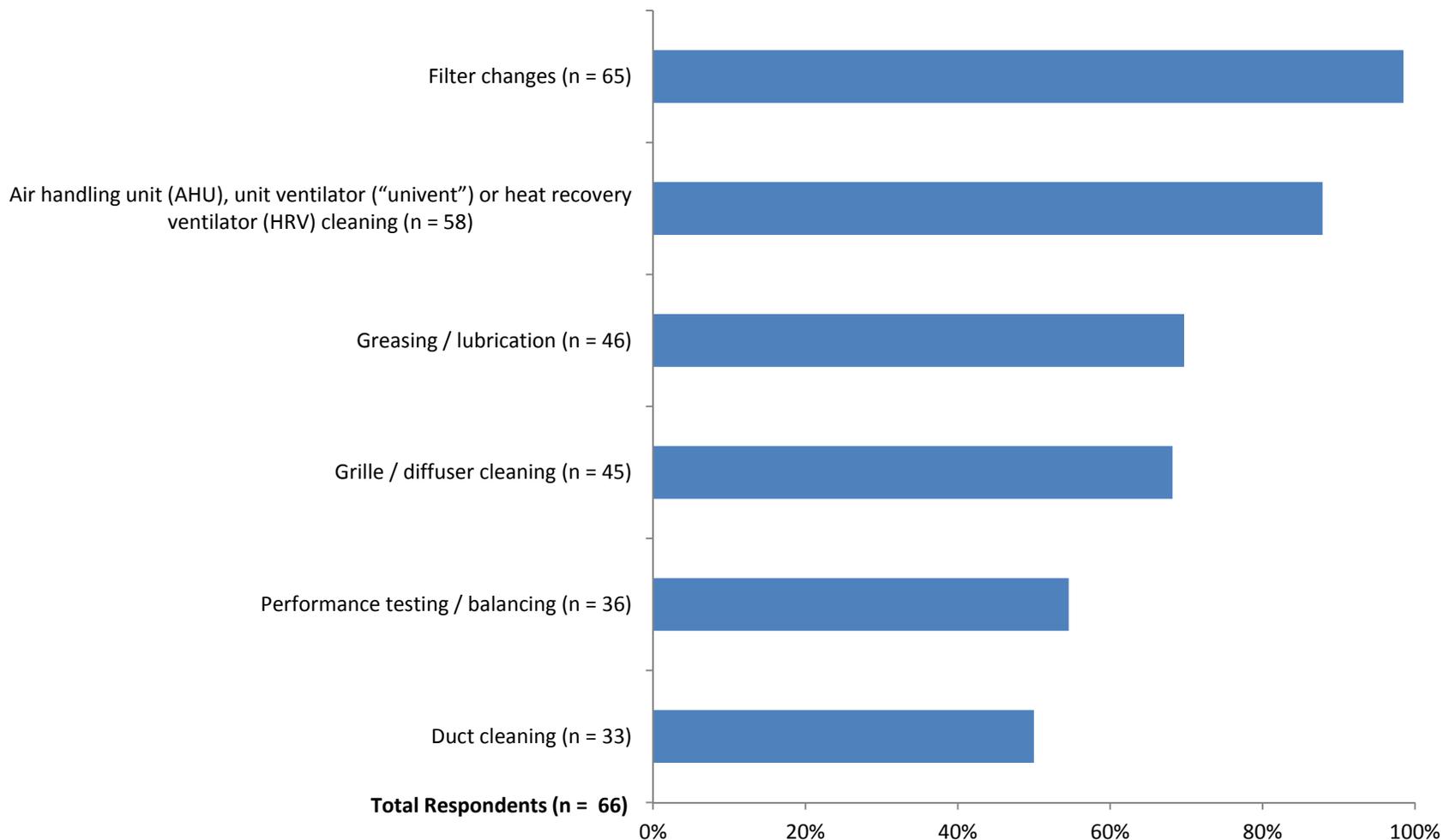
Survey Question: Does your school perform regular maintenance to the heating ventilation and air conditioning (HVAC) system, either in-house or by contract?

	Percent	Number
"Yes"	97%	68
"No"	3%	2
Total		70

The most common forms of HVAC maintenance reported were:

- Filter changes
- Unit cleaning (unit ventilators, air handlers, or heat / energy recovery ventilators)
- Greasing / lubrication
- Grille / diffuser cleaning

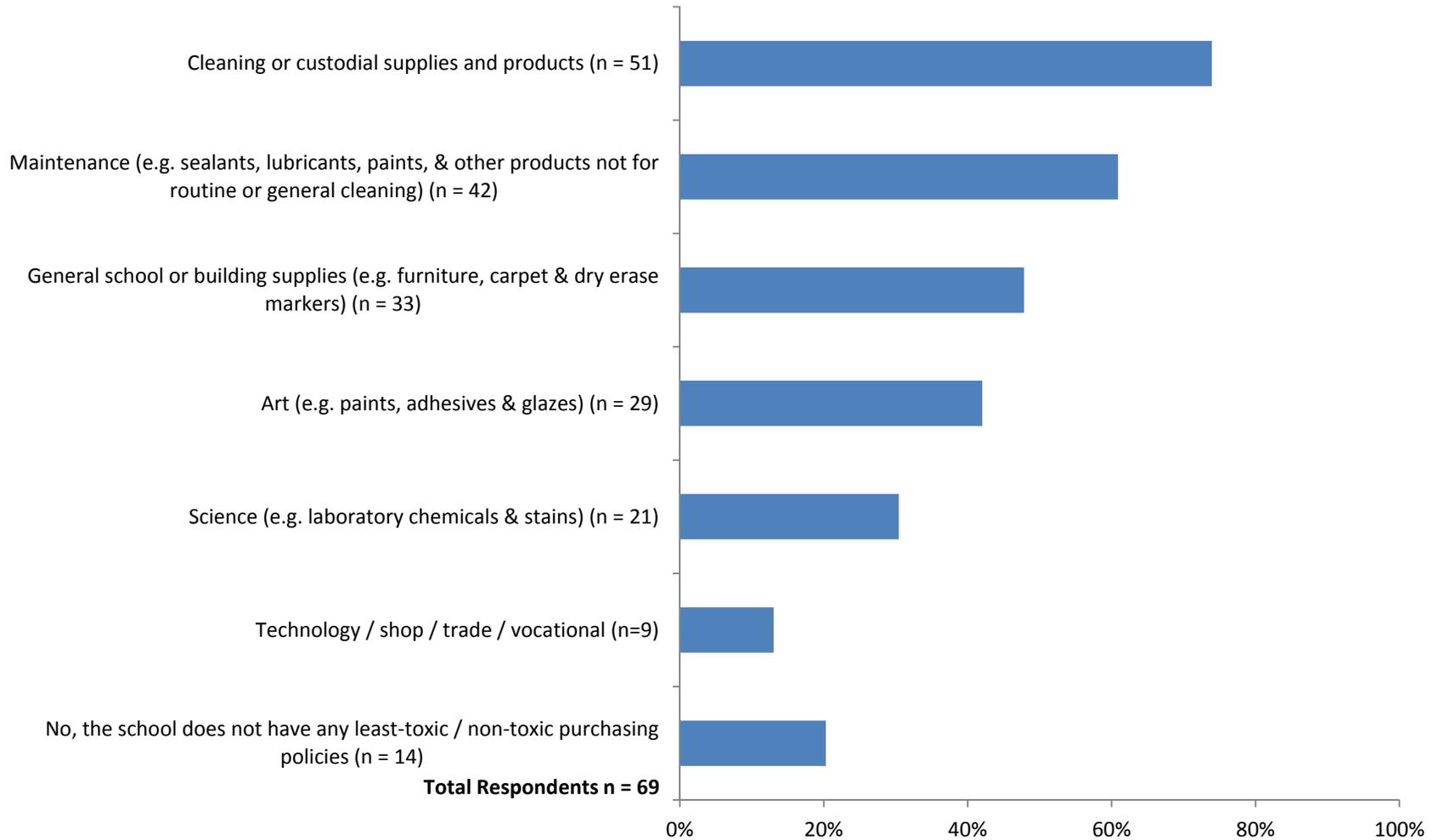
Survey Question: If your school does perform regular maintenance to the HVAC system, check all regular maintenance activities that are performed:



Chemical Management

Control of the chemicals a school has is generally very difficult. Centralized purchasing or purchasing policies help limit the amount of hazardous chemicals in the school and reduce risk of exposure to these hazardous chemicals. Another important component of chemical management is an accurate inventory. Survey respondents indicated that the most popular policy for chemical purchasing was for cleaning and custodial supplies, which may be a result of the 2012 legislation, Act 68, related to the sale of commercial cleaning products to schools. It is important to consider the areas that did not have purchasing policies, for example, science laboratories, which potentially have many hazardous chemicals and legal requirements. However, generally only high schools and some middle schools would have laboratory chemicals, and high schools and middle schools that would have sciences laboratories are a subset of the overall sample of respondents.

Survey Question: Does your school have least-toxic / non-toxic purchasing policies for the procurement of products or supplies for any of the following areas? Please check all that apply:



Traditional cleaning products may contain hazardous chemicals including asthma triggers, respiratory irritants, carcinogens, endocrine disruptors, and other classes of chemicals. In 2012 the Vermont Legislature passed Act 68, *an act relating to the protection of students' health by requiring the use of safe cleaning products in schools*, which governs the sale of cleaning products to schools. The law permits vendors and distributors of commercial cleaning products to sell only third-party certified environmentally preferable cleaning products to schools. Based on survey responses, it appears that traditional cleaning products may still be coming into schools because many schools allow staff to furnish their own cleaning supplies.

Survey Question: Does your school allow teachers and staff to provide and use outside cleaning products?

	Percent	Number
"Yes"	74%	51
"No"	26%	18
Total		69

Pest Control

Pests in a school building are both a hazard for occupants with asthma and allergies and the potential for occupants to be exposed to pesticides when pests are controlled through chemical means. Pest control practices can lead to potentially hazardous exposures when pesticides are applied indiscriminately or inappropriately. Approximately 86 percent of respondents reported using pest control practices.

Survey Question: Does your school currently use any pest control practices? Please check all that apply:

	Percent	Number
No	17%	12
Yes, pest control services are performed in-house.	45%	31
Yes, pest control services are performed by contract.	41%	28
Total Responses		69

Of those schools reporting use of pest control practices, the most popular strategies were non-chemical and included:

- Eliminating points of entry into the building
- Limiting pest access to food, water and harborage
- Trapping pests

Survey Question: If your school does currently use pest control practices, please indicate which methods are used / preferred.

Pest Control Method (n = number of respondents)	Used / preferred	Not used / not preferred
Exclusion from the building (eliminating points of pest entry) (n = 57)	96%	4%
Limiting access to food, water and harborage (n = 56)	93%	7%
Trapping (n = 55)	76%	24%
Baits, gels, or poison placed in bait boxes (n = 50)	28%	72%
Pesticide / rodenticide spraying or application on the interior or exterior of the building (n = 48)	29%	71%

These forms of non-chemical control are an excellent foundation to an integrated pest management program at the school. Integrated Pest Management (IPM) is a holistic, ecology based, environmentally sensitive approach to pest management that combines pest-specific information with a number of control techniques. The goal of IPM is to reduce pest populations in a cost effective manner with least possible negative consequences to people, property and the environment.

Survey Question: Does your school have an integrated pest management (IPM) policy or program (either in-house or contracted)?

	Percent	Number
"Yes"	26%	18
"No"	74%	51
Total		69

It is very encouraging that 26 percent of responding schools have an IPM policy or program.

Asthma and Allergy Triggers

Dander from warm-blooded animals is a significant trigger for people with allergies and asthma. Survey responses indicate that most schools do not allow warm-blooded animals in the building, but 38 percent of responding schools do.

Survey Question: Does your school allow warm-blooded animals (such as rabbits or dogs) in the building that may serve, for example, as “classroom pets” or “therapy animals?”

	Percent	Number
“Yes”	38%	26
“No”	62%	43
Total		69

Idling, especially of diesel engines, can supply an unnecessary burden of pollutants to both indoor and outdoor air. Diesel exhaust is associated with increased risk of cancer, cardiovascular events and exacerbation of asthma. The Vermont School Bus Idling Rule limits idling of school buses on school property, but does not apply to vehicles that are not school buses. It is excellent that 74% of responding schools reported their school had a no-idling policy for all vehicles on school property.

Survey Question: Does your school have an anti-idling policy for all vehicles on school property (not just school buses)?

	Percent	Number
“Yes”	74%	51
“No”	26%	18
Total		69

Radon

Radon is a naturally-occurring radioactive gas that enters buildings through soil and bedrock. It is the leading cause of lung cancer among non-smokers. The Vermont Department of Health offers schools free radon screenings through the Radon Program. To date, over 50 schools have been tested for radon through the Health Department. Of the survey respondents, 31 had been tested for radon by a certified radon measurement specialist or the Vermont Radon Program.

Survey Question: Has your school ever been tested for radon through the Vermont Department of Health or through a certified radon measurement specialist?

	Percent	Number
No	55%	38
Yes, the results were below the recommended action level, and mitigation was not necessary.	43%	30
Yes, and the results were above the recommended action level, but the school was not mitigated.	0%	0
Yes, the results were above the recommended action level and the school was mitigated.	1%	1
	Total Responses	69

Physical Factors

Indoor temperature is an important indoor air quality characteristic. Increasing average temperatures and more frequent high-temperature days due to climate change are important to consider for student and staff comfort. Forty-six percent (46%) of survey respondents had no cooling capacity at their school.

Survey Question: On hot days, is part of the school cooled using air conditioning (either central air or window units)?

	Percent	Number
No, none of the school is cooled using air conditioning.	46%	32
The school can accommodate SOME, but not all, students in spaces cooled using air conditioning.	48%	33
The school can accommodate ALL students in spaces cooled using air conditioning.	6%	4
	Total Responses	69

Environmental Health Management Team

A team is one of the most important features of an environmental health and IAQ program. The team concerned with health and safety should continue to meet and walk through the building regularly (at least once per year) to identify chemical, physical and biological hazards. Of survey respondents 36 percent had environmental health and IAQ teams.

Survey Question: Does your school have an environmental health / indoor air quality team or committee composed of a cross section of the school community (either stand alone or as part of another school health group, for example, the "School Wellness Team" or the "Coordinated School Health Team")?

	Percent	Number
"Yes"	36%	24
"No"	64%	42
Total		66

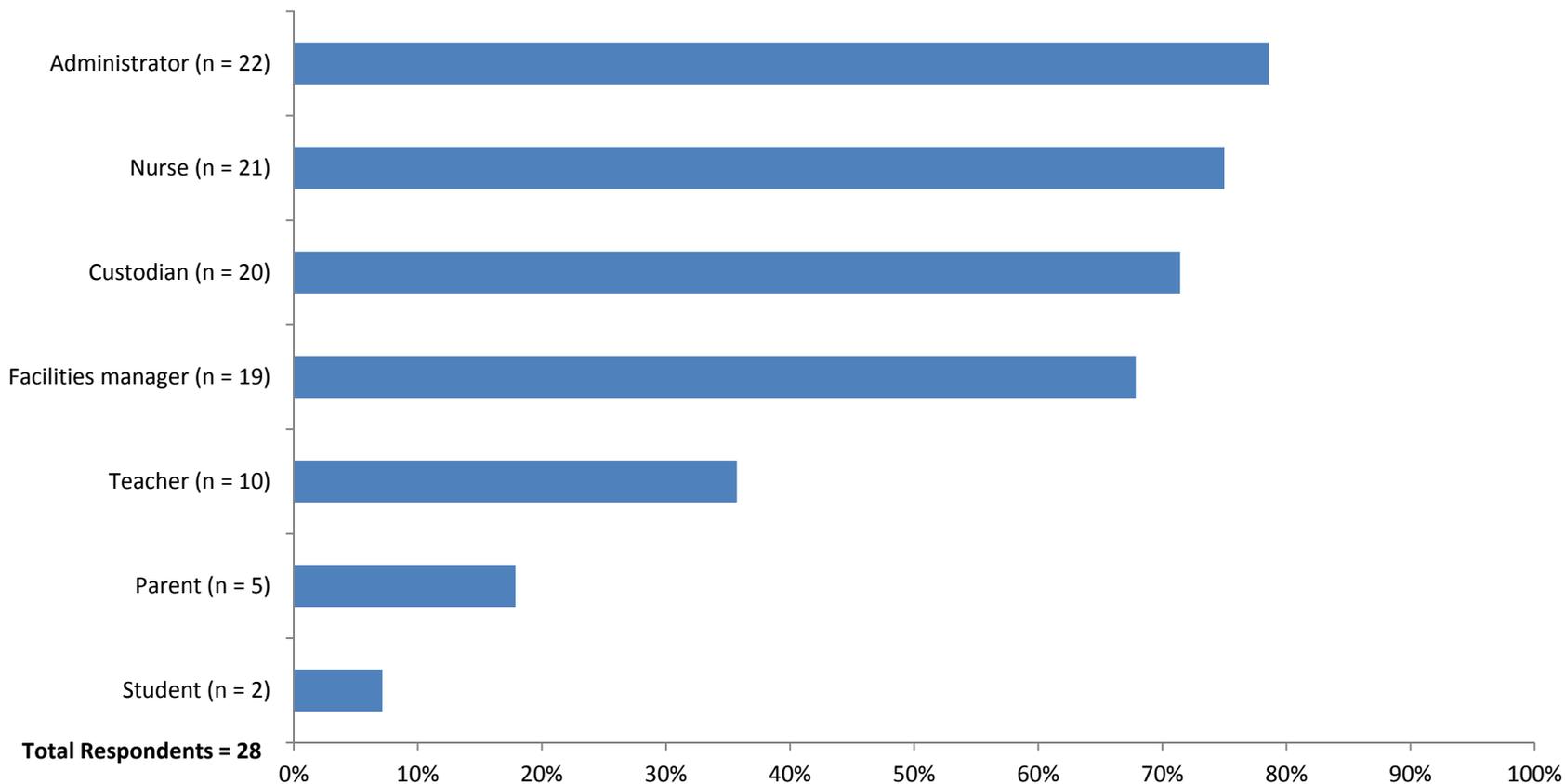
It is very important for the team to be composed of various members of the school community, as different members bring various experience and expertise that benefits the team. Survey responses indicate that, of the teams that exist, many are composed of a variety of school community members, the most common being administrators, nurses, custodians and facilities managers.

Open-ended responses to this question showed other positions held by team members included administrative support staff, guidance counselor and school board member.

An important job for the team is to perform regular walkthroughs of the building to identify potential physical, chemical and biological hazards and to develop a course of action to correct problems.

The established health team in the building should meet as a group, and walk through the building (at least once per year) and engage stake holders (parents, students, teachers etc.) for an open and transparent process. Many "building problems" are in fact "people problems" and openness and occupant engagement can prevent some issues.

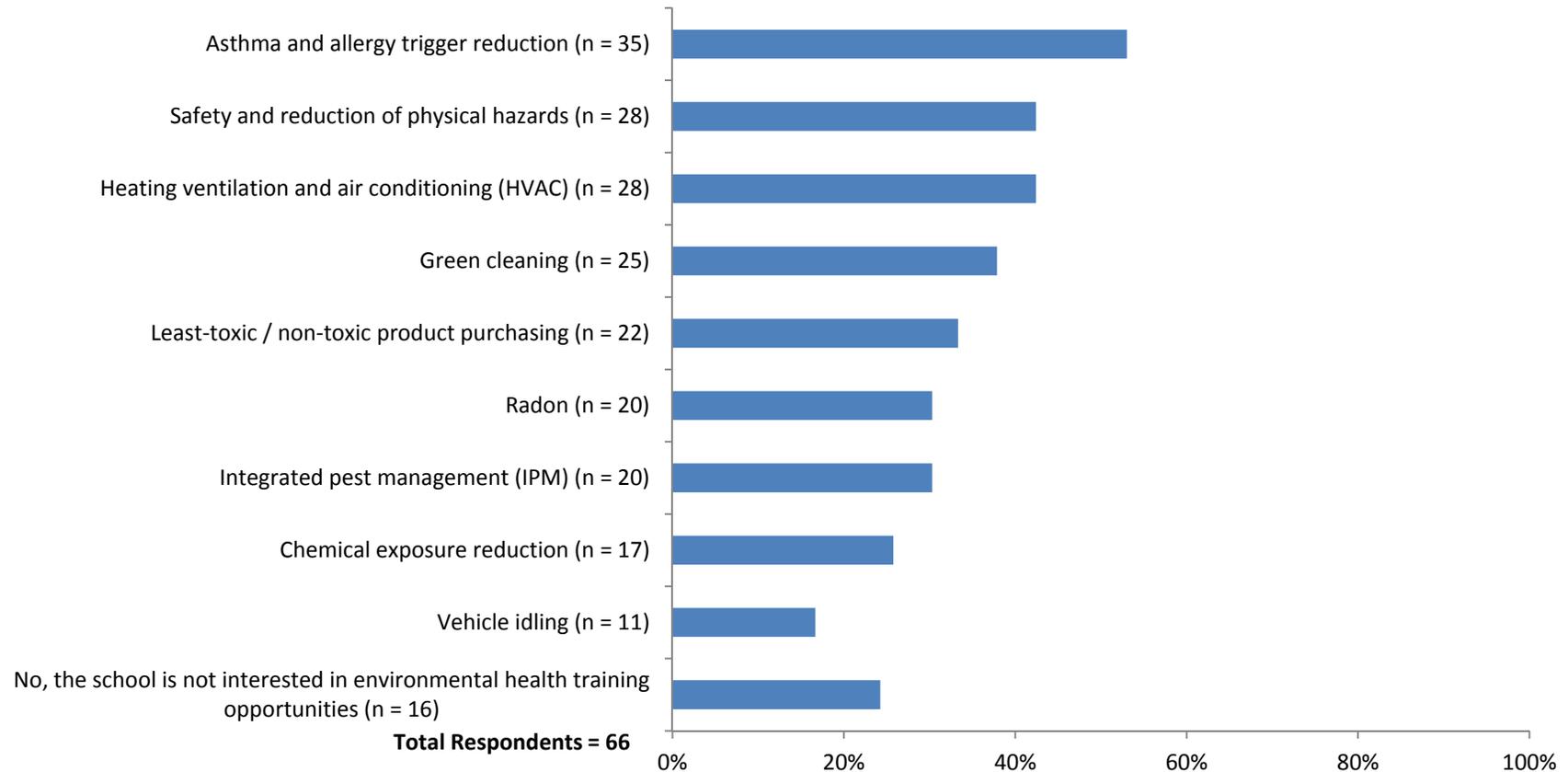
Survey Question: If your school does have a team or committee that addresses environmental health / indoor air quality, please check all members that belong to the school's team or committee:



Section Five: School Needs

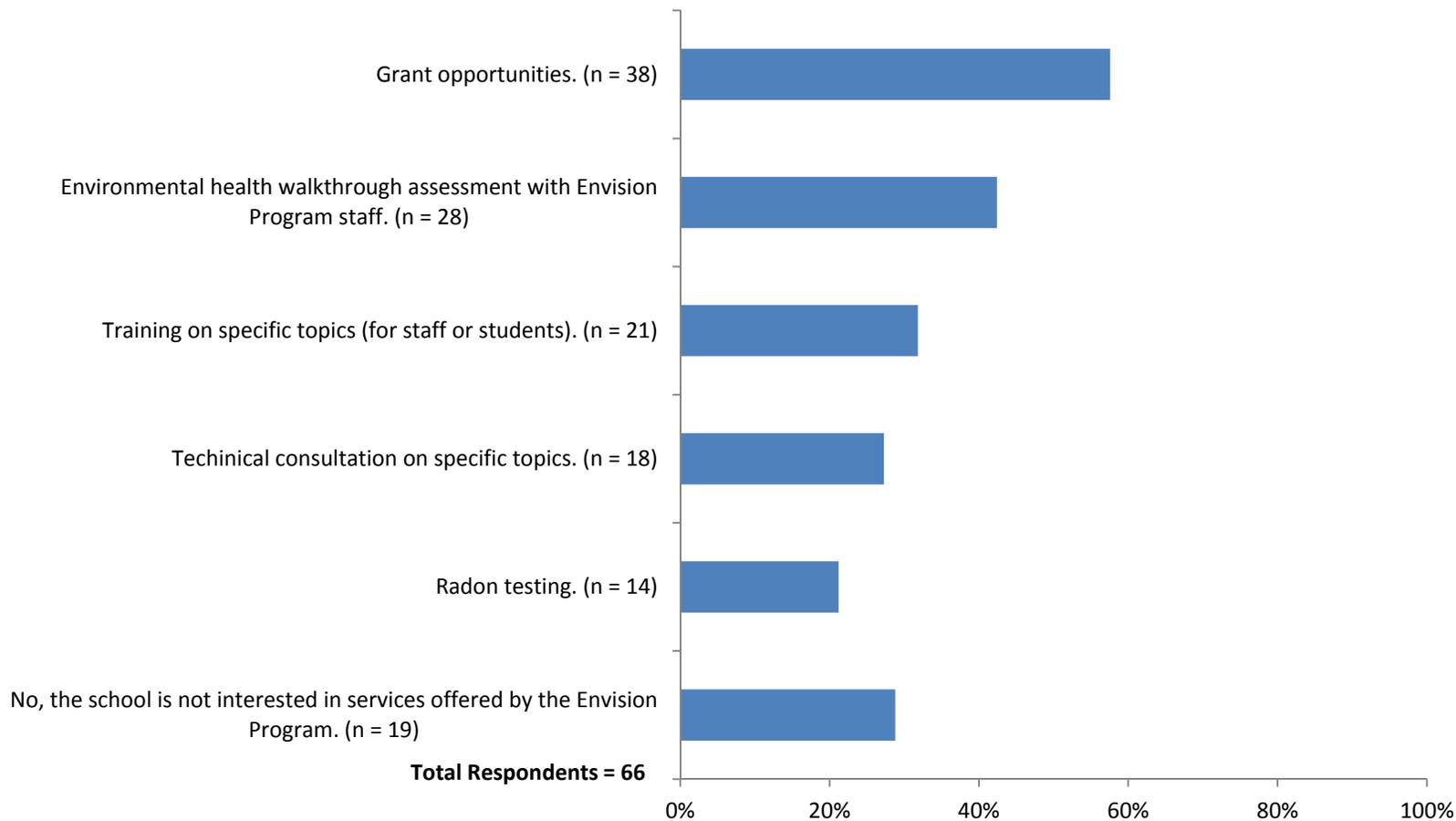
Survey respondents indicated a need for further information and training about environmental health and indoor air quality. The major areas of concern for responding schools included: asthma and allergy trigger reduction, physical safety, HVAC maintenance.

Survey Question: Is your school interested in receiving training about environmental health / indoor air quality? Please check all topics that would be of interest:



Many schools were interested in continuing or starting their engagement with the Envision Program, and receiving services the program provides including grant opportunities, walkthroughs and training opportunities.

Survey Question: Is your school interested in receiving any of the following services provided by the Envision Program? (Program staff will follow up with the school.)



Summary

It is also important to know that schools have had generally positive experiences with the program. Examples of this can be seen in the responses to open-ended survey questions:

- **“Envision has been very helpful for us. We did receive an award for participation in the past. We always welcome new techniques, information, and funding that Envision might provide.”**
- **“Program was helpful in identifying ventilation issue. New principal in the fall may desire services...”**
- **“We have had positive experiences with the program. We have taken advantage of some of the Grant programs and also training.”**
- **“We learned a lot when working with the Envision Team. Our Facilities Manager now oversees the program.”**
- **“My experiences with Envision have always been positive. Trainings for custodians and administrators was excellent. Thank you.”**
- **“The Envision Program helped us over a period of three years abate all of the asbestos in our building. We benefited from the grant opportunities. Without the grants, our community would not have been able to complete this important work.”**

The survey also generated interest among schools that took the survey:

- **“We have not been involved with the Envision Program, but I am interested. We have many good practices in place, but it would be good to better organize them.”**

The 2012 – 2013 Envision Participation Survey, which we hope to continue in the future either as part of the School Health Profile or independently, was successful in gauging the level of participation of Vermont schools in the Envision Program. Survey results also informed several future goals for Envision and environmental health in schools:

- From this survey, the Envision Program learned that schools are not readily adopting environmental health management policies and plans, and appropriate adjustments to this effort are needed.
- The Envision Program should encourage best practices that improve environmental health, even if it is outside the context of a formal environmental health management program at schools.
- Schools are not aware of the Envision Program possibly due to passing time, staff turn-over, or a lack of policies, and an effort to re-introduce this program to Vermont schools is necessary, perhaps within a larger coordinated school health effort.

- A reporting method that can be used to track school progress with environmental health goals is needed, preferably within a larger integrated effort to engage schools with Health Department initiatives and goals.