

## Summary of Public Comments on Proposed Bridgeport Greenhouse Project

Received April 22, 2022 from Phil Venable:

1. We have not been provided information regarding noise levels.

Response: The greenhouse vendor was not accustomed to responding to noise issues for greenhouses with any definitive data. Therefore it was not available for the public meeting. The fans that are specified for this greenhouse are Quietaire CS2450. Neighbors Nourishing Communities contacted the fan vendor on behalf of Bridgeport Elementary School. Quietaire was asked for sound levels at various distances. They were also asked if there were quieter fan options. Quietaire indicated that the CS2450 is really their quietest option for this application. The sound level modeling results provided by Quietaire are attached. The fans will be mounted on the east or west end of the greenhouse, most likely the west end, pointing toward the parking lot. Quietaire indicated that the noise levels provided are for someone standing directly in the path of the fans. Similar distances to the north of the greenhouse (the neighborhood) would experience even lower sound levels at the same distance because they are not in the direct path of the fans. Regardless, the sound levels (in decibels) are quite low. Directly in front of the fans the sound level (for two fans) is 68 db, which is the level of noise of a dishwasher. However, at 25 feet the sound level is down to 54 db, which is similar to the level of noise of a refrigerator. At 50 feet, the sound level is down to 48 db, which is similar to a moderate rainfall. Here are some links to sound level charts:

<https://decibelpro.app/blog/decibel-chart-of-common-sound-sources/>  
<https://www.chem.purdue.edu/chemsafety/Training/PPETrain/dblevels.htm>

The houses to the north of the greenhouse will be approximately 50 feet from the fans, but not in the direct path of the fans. The sound should be quite soft at that distance and direction.

2. An unheated greenhouse is a major concern. Oregon State and U of O Extension have researched and documented a number of problems growing vegetables in an unheated greenhouse. It will be cold, damp, and moldy. It will require chemical sprays that could create health issues for students.

Response: Neighbors Nourishing Communities (NNC) has been providing support to Bridgeport Elementary School (Bridgeport) on the selection of a greenhouse that would help extend the growing season, accommodate a full class size (up to 35 people with aids), that is low maintenance, and is securable. NNC has relied on the expertise of a former farmer who has raised produce in unheated greenhouses for the Portland restaurant scene year-round. No mold issues were encountered and chemical sprays were never used. It has been suggested that an

annual pressure washing may or may not be needed, depending upon whether soil gets splashed onto the walls.. To reduce moisture issues, the Bridgeport greenhouse is designed with a circulation fan and exhaust fans. Additionally, overhead sprays are not used, which could lead to excess moisture. Any watering will be done by hand or with a drip irrigation system.

Proper air circulation takes care of stagnation that might lead to moldy conditions, which is why fans are an excellent addition to the greenhouse structure. Bridgeport will not be using any chemical sprays. If disinfection is ever needed, a mild bleach solution may be used by hand and by adults. Students will not be subjected to chemicals.

3. One stated purpose of the greenhouse is to use it as a classroom. “What is wrong with classrooms” that have lights, heat and proper tools to teach the class?

Response: Classrooms are great for learning, however classrooms do not provide the hands-on opportunities that a greenhouse space can provide. In a greenhouse students will be able to work and learn with and from natural materials in addition to reading about these subjects in their traditional classrooms. Benefits go beyond being able to do hands-on lessons; researchers at Portland State performed a quantitative study on garden-based education, which found that students who were more engaged with the garden program also performed better in school (Skinner, 2010).

The largest grant received for this project is from Grinnell College (Wall Grant). The Wall Grant selection committee was inspired by the efforts of the teachers and volunteers at Bridgeport Elementary by their efforts to introduce new ways of teaching STEM education and the positive benefits of providing students with alternative educational opportunities while also giving back to the community through food production. This could not be accomplished in a traditional classroom due to space limitations and the types of materials used.

4. The article in the Tualatin Life paper (February/March) does not accurately represent the proposed greenhouse or the problems we have seen in the past five years.

Response: Bridgeport Elementary School and Neighbors Nourishing Communities are not aware of what was reported or of any inaccuracies. The commenter has not provided specific inaccuracies to address. Nonetheless, this is not a substantive comment that addresses the Development Code criteria.

5. The garden has 18 irrigated raised beds set on timers that over water the area to the point of water runoff onto the sidewalk and parking lot.

Response: While it is true that 3 years ago there was a short period (about a week) that the garden was being overwatered, this was remedied quickly with adjustments to the programmed irrigation and has not been a problem since.

6. There is a volunteer cleanup twice per year (Spring/Fall). That leaves time for weeds that dry out and create a fire hazard. Damaged tree branches from the ice storm are still there.

Response: The branches in question were promptly removed at the neighbors first request. The small amount of green matter that grows in the garden's perimeter does not pose a fire hazard.

7. We have asked the school to seriously consider a smaller greenhouse that would benefit the garden club with head starting plants, be easier to maintain a healthy setting, and give students hands-on knowledge of horticulture. They are against that.

Response: Bridgeport Elementary School has heard this comment both at the public meeting and in written form and has previously responded. It is not clear what the specific objection to the size of the greenhouse is. The greenhouse has been designed from the outset to accommodate a full classroom of children while still having space for plants, plant starts, tables, and equipment. That's potentially 35 people at a time (with teachers and aids included). Teachers do not have the support needed to split classes up and teach only a portion of a classroom at a time.

The greenhouse will be used for multiple and equally important purposes. It will be used as a place for plants to be started, food to be grown, and for students to do STEM education lessons. It will give students a different learning environment where they can move around and be creative in new ways and will give them more time outside in the daylight while preventing them from getting rained on. The greenhouse serves as a location where students can do environmental experiments that would take too much space or be too messy for an indoor classroom setting. This could include, but is not limited to, trying to grow plants in a wide variety of media with different fertilizers and temperatures or designing and building simple water filters and learning how stormwater filtration works. This space will accommodate many new types of lessons.

Not all students learn in the same way or are engaged by the same type of classroom setting. We think the greenhouse will serve important agricultural and nutrition needs, but will also allow us to engage more students that need more physical, hands-on learning opportunities.

A smaller greenhouse for starting plants from seed was briefly discussed, but it would not accommodate a full class comfortably with work spaces. Additionally, seed starting is an activity that would largely take place February to April. That would not provide a year-round learning activity or environment. Below are recommendations from the greenhouse vendor with regard to packages they sell. As you can see, a smaller greenhouse would be for 20 students or less. The

greenhouse being proposed will be 960 sq. ft., which is smaller than some of the school greenhouse recommendations. The Northern Starter Greenhouse (shown below) is for 10-40 students and would be over 1,200 square feet.



#### **Junior Teaching Greenhouse Package**

Recommended for:

- Cold or Mild Regions
- 20 Students or Less
- 20 - 30k Budgets
- Under 650 Sq Ft



#### **Northern Starter Greenhouse Package**

Recommended for:

- Warm or Cold Regions
- 10-40 Students
- 30 - 40k Budgets
- 1200 Sq Ft and Up

8. We have asked for a copy of the floor plan and what classes are planned. They do not have that information because they are not the ones initiating the project. The proposal has been initiated and controlled by Chad Darby from Neighbors Nourishing Communities. So the question being asked, is a \$45,000 unheated greenhouse really in the best interest of the students?

Response: Bridgeport Elementary School (Bridgeport) and Neighbors Nourishing Communities (NNC) have been asked for a floor plan already and have previously responded to the commenter that one does not currently exist and may not be static anyway. The layout will have

an ADA compliant floor and metal nursery tables for working on. However, the layout may change based on activities, and seasonally as different plants are grown.

The proposed greenhouse has been a cooperative effort between NNC and Bridgeport Elementary School. Bridgeport's community garden has been a partner with NNC for many years in donating food to families in need. NNC approached Bridgeport when grant funding was identified that could help with developing a greenhouse. NNC helped with fundraising and is lending project management support to see the greenhouse built and will be lending support as needed with curriculum and agricultural expertise. However, Bridgeport has full ownership of the greenhouse, its maintenance, and how it is used (curriculum and how the students will be scheduled). Bridgeport was instrumental in helping identify the multiple purposes and needs. This would be a huge asset to the school to give students an alternative learning space for teaching STEM education. Very few elementary schools are lucky enough to have a learning space like this. Most greenhouses have been at the high school or collegiate level with fewer at middle schools and elementary schools. Due to the demographics of the school, (i.e., the number of students on free and reduced price lunches), the food insecurity in the community, and the already demonstrated success of the community garden, the Bridgeport greenhouse project was able to win the prestigious grant over the many deserving projects that were competing.

Chad Darby is the founder of NNC and helped secure the funding. However, Chad Darby and NNC do not control the project. The project was designed to meet the needs expressed by the school based on the sizes of classes and the potential uses of the greenhouse. NNC then consulted with a greenhouse vendor to identify the proper type and design for the greenhouse based on the needs expressed by the school.

An unheated greenhouse will work fine in Oregon. We have a mild climate and the greenhouse will have ventilation. Many farms and institutions work successfully with plastic sheeting covered hoop houses. The Bridgeport greenhouse will be designed for wind and snow loads with double walled polycarbonate panels for retaining heat. The students will not be able to grow tomatoes in January, but they will be able to grow cold weather crops and start plants from seeds in the colder months. They would also be able to add 1-2 months to the beginning and end of the growing season for warm weather crops like tomatoes and peppers if desired. While heating is not planned now, if it is determined to be necessary, this greenhouse is capable of accommodating an electric greenhouse heater in the future.

Received April 26, 2022 from Ted and Karen Alvstad:

1. The proposed greenhouse is excessively large for an elementary school. Research indicates a much smaller greenhouse footprint is the suggested norm for an elementary school.

Response: NNC has been assisting Bridgeport Elementary School with a greenhouse choice. Based on the design criteria expressed by the school leadership and Garden Committee, NNC worked with a greenhouse vendor to find a greenhouse that would accommodate up to 35 people plus work surfaces, would extend the growing season, would be low maintenance, and would be securable. Some schools have larger greenhouses, some have smaller ones. The choice is dictated by the needs of the educational institution and available budget.

2. The proposed siting seems an odd choice, in that it is “shoehorned” into a narrow space at the North end of the school, when there are large areas behind the school to the East, and to the South that are far away from existing houses.

Response: The greenhouse is sited based on a few design criteria. First and foremost, it is in the community garden where plants can be transitioned out into the garden and where a class of students can all participate together both indoors and out, weather permitting. This location is critical for seed starting because plants will need to be hardened off by spending some time outdoors each day before being planted. Being able to quickly move materials in and out of the greenhouse to the garden is very beneficial. Additionally, it is located very close to a paved exit of the school (north end), which will allow students to quickly get to the greenhouse despite rainy weather. This is important as the greenhouse is being designed to be ADA compliant and we want students of all abilities to have easy access. Lastly, the greenhouse will be near an electrical panel in the school that has space left for the circuits needed to provide security lighting and plug-ins for heating mats or lighting.

3. The nearby neighbors will most certainly be subjected to unwelcome exhaust fan noise throughout the day and night. This will not be just some time, but operating in a 24 x 7 environment.

Response: The greenhouse fans will be triggered by excessive heat in the greenhouse. They will primarily run in late afternoon. Fans will not be needed all night long and will be seasonally needed. There may be days when the exhaust fans will not run at all.

4. We are concerned that the turnover of Administrators and Teachers will lead to improper maintenance of the greenhouse.

Response: Bridgeport Elementary School is well aware of turnover and the need for continuity to maintain both the garden and the greenhouse. That’s why the garden and greenhouse are the responsibility of the Garden Committee, which will arrange the labor and materials needed to properly maintain the area. The Garden Committee realizes that there have been complaints about the garden the last few years. However, as was explained at the public meeting in response to this concern, the pandemic prevented the school from allowing volunteers onsite at times and at other times, volunteers did not always feel comfortable coming to a public space. That appears to be an issue that is resolved. It was not due to the turnover of staff at the school.

The good news is that the most recent cleanup was initiated following the public meeting comments and only dried branches, sticks, needles, and some grasses were requiring removal.

Many of the neighbors that commented at the public meeting expressed support for the community garden and the children at the school. This support is very much appreciated and as such we would invite any commenters to join us for cleanup parties and volunteer opportunities at the school.

Received April 26, 2022 from Sally Cangelosi:

1. In general I am not opposed to the Bridgeport greenhouse in the proposed location but I am concerned about security related issues. Will it be locked during non-business hours? Will there be lighting around it to deter graffiti and other mischief? We do have a significant issue with prowlers in the Fox Hills neighborhood. Sometimes there are beer bottles in the school yard from those who hang out there late at night. Whatever can be done to design with safety in mind would be good.

Response provided by Bridgeport Elementary School Garden Committee to Sally via email on May 4, 2022:

“Thank you for your engagement with us regarding the greenhouse at Bridgeport Elementary. Security certainly is a concern, here's how we plan to keep it a safe space; the greenhouse will be locked at all times unless it is in use by students/staff with keys available inside the school. We will have a motion sensor style light on the greenhouse to deter any unintended evening visitors. When we designed the garden we had security in mind as well, and I am happy to say that in the 5 years of the garden we've only had 1 instance of theft (a wheelbarrow, and now they are locked up) and no vandalism. We sincerely hope that the garden remains a safe space and if needed we will address any issues that come up. “

Received May 2, 2022 from John Hagan:

1. The greenhouse seems to be designed much larger than necessary...we have requested reconsideration of the greenhouse size from the beginning. We have heard and read the schools reasoning for the specified size but question many of the reasons.

Response: Having a smaller greenhouse would limit access to only afterschool garden club students (approximately 20 students) which would be very inequitable and not in line with what Bridgeport teachers want to provide for their students. Bridgeport wants all students to be afforded this rich learning opportunity. The size of the greenhouse will allow 1 whole class to participate in lessons in the greenhouse at a time. This could be up to 35 students, teachers, and aids.

2. Bridgeport has amazing facilities / classrooms, how is it that teaching cannot be done in classrooms designed for teaching and learning and then move to a smaller easier to maintain greenhouse for empirical garden experiences and experiments, vs having to have the teaching in the greenhouse... STEM training is not dependent on a greenhouse; this is the primary purpose of the classroom.

Response: Regarding greenhouse size, see the answer to comment #1 above. It is true that STEM education is not dependent upon a greenhouse, but it enhances education and provides opportunities that cannot be accomplished in a classroom due to the size of classrooms and the types of materials that may be used.

Not all students learn the same way, either. Some students are great at learning from books and others learn better when there are activities that engage them. The staff at Bridgeport want to reach all students with the methods that work best for them. That means providing a number of ways and settings in which to learn. This greenhouse will provide one of those settings.

3. If the primary purpose for the garden is to grow food for the community, why take so much outdoor growing space away...In the greenhouse that is specified it is difficult to understand how that will increase garden yields. I come from a family of farmers, so I have some confidence in my understanding of garden yields and the purpose of greenhouses.

Response: The greenhouse will displace only one growing box in the garden. However, the greenhouse would allow the garden to grow some crops year round. Cold weather crops (e.g., cabbage, garlic, broccoli) that may not actively grow in December, January, and February will still grow in a greenhouse. Additionally, the greenhouse will allow seed starting space. And for warmer weather crops (e.g., tomatoes, peppers) the growing season can be extended by 1-2 months on each end, potentially giving up to 4 more months of growing time. For something like peppers and tomatoes, that means a lot more produce than our climate generally allows.

4. Who is in charge of the community garden? Who is in charge of the greenhouse? Who will be in charge of the maintenance of both? What is the maintenance plan or schedule for maintenance? When the garden and greenhouse fall into disrepair and poor maintenance whom do we contact? What are the noise ratings of the fans that will be used in the greenhouse? We live next door and have concerns about noise pollution. In past discussions we are provided no clear explanation of who is responsible for the garden or greenhouse – the school passes us to Nourishing Neighbors and visa versa.

Response:



- a. The garden is run via committee at Bridgeport Elementary, it is comprised of staff and parents.
- b. The above mentioned committee will maintain the greenhouse and garden.
- c. The maintenance plan is: Annual washing of walls, surfaces and pots. Annual exchange of soil in pots. (additional advisement is welcome)
- d. If neighbors have concerns regarding conditions they should contact the school office at 503-431-4200.
- e. Noise: Information from the fan vendor is provided. The fans are some of the quietest in the industry. In the direction of residences and at those distances the sound level should be that of a moderate rain for someone standing outdoors. Please see answers provided above.

Received May 3, 2022 from Phil Venable:

1. The garden now has a mole problem and a Legacy Garden created by students has rotting fencing. If the school has a problem with current issues, what will happen with the maintenance of another building?

Response:

- a. The fencing and Legacy Garden in question is not part of the garden and is not maintained by the Garden Committee.
- b. In recent days there have been a few mole hole sightings in the front of the school. We have not found there to be a mole problem within the garden area. There is a commercial grade weedbarrior under the gravel in the garden space and it is likely that makes it difficult for moles to burrow in the garden area.