

STATE OF VERMONT
SUPERIOR COURT – ENVIRONMENTAL DIVISION

Goddard College Conditional Use	{	Docket No. 175-12-11 Vtec
	{	
Goddard College Act 250 Reconsideration	{	Docket No. 173-12-12 Vtec
	{	

Decision on the Merits

The two matters pending before the Court relate to a proposal by Goddard College (Goddard) to replace its current 23 independent heating systems for 23 college buildings with a single woodchip heating system on Goddard’s property in the Town of Plainfield, Vermont. This proposed development requires both local and state (Act 250) approval. In the first matter, Rhea Wilson appeals a decision of the Town of Plainfield Development Review Board (DRB) finding that the site plan approval criteria were satisfied and granting Goddard a conditional use permit to construct a central woodchip heating system and building (Municipal Appeal). In the second matter, Karen Bouffard, Yvonne Byrd, Sam Davis, Rick Levy, Ken Smith, Dan Towner, and Rhea Wilson (Act 250 Appellants) appeal a September 10, 2012 District 5 Environmental Commission decision approving the construction of a woodchip heating system at Goddard, including a 2,469 square foot building, a woodchip storage area, distribution piping to 23 campus buildings, and an access roadway off of Vermont Route 214 (Act 250 Appeal). We considered the two pending matters in a coordinated single merits hearing to promote expeditious and fair proceedings pursuant to Vermont Rules for Environmental Court Proceedings Rule 2(b).

The Court conducted a site visit at the subject property and surrounding area on the morning of October 1, 2013, followed by a merits hearing at the Environmental Division in Berlin, Vermont. Appearing at the site visit and merits hearing were Appellants and their attorney, Erick E. Titrud, Esq., and Goddard and its attorneys, Elizabeth H. Catlin, Esq. and Geoffrey H. Hand, Esq. Although the Town of Plainfield (the Town), represented by Robert Halpert, Esq., was active in pre-trial proceedings, it did not attend or participate in the site visit or merits hearing.

Based upon the evidence presented at trial, including that which was put into context by the site visit, the Court renders the following Findings of Fact and Conclusions of Law.

Findings of Fact

1. Goddard is a private educational institution approved by the Vermont Department of Education.
2. Goddard's campus is located on a single lot of land, comprising approximately 117 acres, within the Town's Rural Residential Zoning District.
3. Goddard proposes to construct a woodchip heating system, primarily housed in a new standalone building, to provide heat and hot water to the existing campus buildings (the Project).
4. As proposed, the woodchip boiler building will be approximately 2,500 square feet in size. The building will be 25 to 29.5 feet wide and 90 feet long. The building will have a pitched or hip roof with asphalt shingles and vertical wood siding.
5. The Project has an 82-foot east side setback from the center of Route 214 and a 161-foot setback from the north property line. Both the southern and western parcel boundaries are considerable distances from the Project.
6. Two large overhead doors, both 12 feet wide by 15 feet tall, are located toward the eastern end of the south-facing side of the building.
7. The building is otherwise residential in character.
8. No outdoor storage areas are associated with the proposed building.
9. The building will be dark or medium brown and is generally south facing. As viewed from the south, the western end of the building will be 20 feet high and the eastern end will be 23 feet high.
10. A 35-foot-tall corten steel chimney, 24 inches in outside diameter, will be located at the back, or north side, of the building. The chimney will be dark brown.
11. The proposed building will only house the woodchip heating system, including the woodchip storage bins; it will not be used for classrooms, office space, storage space, or any other institution uses.
12. The Project will burn woodchips to heat water that will be circulated through underground pipes to 23 other existing buildings on campus.
13. The 23 buildings are presently heated by individual oil fired systems.
14. The woodchip fired boiler is manufactured by Messersmith, which has a good reputation.
15. The Project's boiler has a thermal efficiency of approximately 80%.

16. Operation of the boiler is automated. The air/fuel ratio is continually adjusted to achieve thorough combustion. The unit uses a high temperature burn with both under fire and over fire successive stage burns, resulting in heightened thermal efficiency.
17. The Project will include an electrostatic precipitator (ESP) for added pollution control. Weise Environmental makes the ESP for Messersmith.
18. Ultrafine particles are less than 0.1 micron in size and are commonly generated by combustion, friction, and cooking.
19. The ESP equipment controls ultrafine particles.
20. The Project will accept deliveries of woodchips by tractor-trailer truck roughly once per week during colder seasons, with up to two deliveries per week during the coldest periods and less frequent deliveries during the summer. In total, Goddard expects the heating system to require roughly 36 tractor-trailer trips per year to supply woodchips. Woodchip deliveries will not take place on weekends or after 5:00 p.m. daily. Offloading of woodchips will take less than one-half hour to complete.
21. There are 10 to 15 other trucks presently on campus weekly, including kitchen supply delivery trucks, garbage trucks, and other supply trucks.
22. Woodchips will be delivered to one of the two overhead doors in the eastern section of the building. Trucks will unload chips using a "live bed" system that moves the chips off the truck without raising the truck bed. The trucks will leave the site after unloading the chips.
23. Chips will fall into a 14-foot-deep bin within the building. Chips will then be moved by conveyors to the boiler.
24. The Project will be accessed from Goddard's main parking lot off Pitkin Road and Route 214. The Project's access drive will take the place of an existing fire truck access clearing off of Route 214. The fire truck access will be permanently closed if the Project is constructed.
25. Existing trees will be retained to the east and north of the building. This will result in approximately 40 to 50 feet of treed buffer along most of Route 214.
26. Goddard will plant new trees and shrubs around three sides of the building and in the existing fire truck access area. Goddard will plant 50 evergreen trees along Route 214. These trees will range from 5 to 12 feet tall at planting. An additional 16 evergreens will be planted to the west of the building. Around the building, Goddard will plant 11 deciduous trees and 19 native shrubs which will mature at 8 to 10 feet in height.

27. Aboveground electric service will be provided to a pole approximately 20 feet east of the building. A 24-foot-wide-by-50-foot-long clearing in the trees will be required for this aboveground electric service. This clearing will be planted with Arrowwood, Nannyberry, Viburnum, and Serviceberry.
28. Underground electric lines will connect the pole to the building. Spruce, Fir, and Hemlock trees, 8 to 10 feet tall at planting, will be planted between the last power pole and the building in the area of the underground electric lines.
29. The Project will not require any new employees.
30. During cold weather a vapor plume may be visible from the chimney.
31. Vermont is in attainment with all National Ambient Air Quality Standards (NAAQS).
32. The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) was used to model air quality for the Project. This modeling accounted for the topography of the Project area, meteorology, and building geometry, including air turbulence. Modeling also accounted for surrounding land uses and land cover. Additionally the modeling accounted for stack location, height, diameter, and volume, stack flow data obtained from the vender¹, temperature, and fuel type (woodchips with bark). Finally, the model considered particulate pollutants PM10 and PM2.5 and NAAQS to protect human health and welfare.
33. Goddard modeled the Project operating at 100% capacity every hour of the year even though the Project is expected to typically operate at a lower capacity.
34. Meteorological data from the Edward F. Knapp State Airport in Berlin, Vermont was used for air quality modeling. The Vermont Air Quality and Climate Division would have required the use of this data for any modeling performed to satisfy state regulations; however, no such modeling is required pursuant to Vermont regulations.
35. The Project area may experience temperature inversions.
36. Noise from a similar facility having the same equipment manufacturer was monitored by Goddard's noise impact expert.
37. Noise level data was collected near the woodchip storage room and boiler room.
38. Noise level data was also collected at an approximate distance of 75 feet from the side of a similar truck while the "live bed" system was operating. The majority of the noise from

¹ This equipment has had actual stack testing.

offloading woodchips comes from the truck's engine which is revved to power hydraulics for the "live bed."

39. This noise data was then used to model noise for the Project. The noise modeling software accounted for the architectural design of the Project building, USGA topographic data of the area, and the Project's driveway location and gravel surface.
40. Modeling indicated noise levels for noise originating from the boiler plant itself of 15 dB(A) Lmax (highest sound level measured during measurement time) at the eastern property line adjacent to Route 214 and 13 dB(A) Lmax at the north property line.
41. Modeling resulted in noise levels for noise originating from woodchip offloading of 61 dB(A) Lmax at the east property line and 46 dB(A) Lmax at the north property line.
42. Background noise levels were monitored at the Project location. The typical background noise level is 46 dB(A) Leq (average sound pressure level/second).
43. The typical noise for a vehicle passing the Project site on Route 214 is 61 dB(A) Lmax.
44. Ken Smith lives to the east of the Project across Route 214 near Sugarwood Road. Mr. Smith's exterior deck is approximately 70 feet from Route 214, and his house and exterior deck are approximately 180 to 225 feet from the Project.
45. Views from the Smith house across Route 214 toward the Project will include the front or south side of the Project building. The driveway and trucks will be partially screened from view. The Smith house presently has views of other campus buildings in this same general direction.
46. Daniel Towner and Yvonne Byrd live off Sugarwood Road east of the Project and immediately east of the Smith property. Their house is approximately 250 feet from the area of woodchip unloading.
47. The Towner/Byrd residence will have views of the Project from their property, but only from outside of the residence. Similar views are likely as one drives west on Sugarwood Road, especially viewing the project through the overhead power line clearing.
48. Karen Bouffard and Sam Davis live on Route 214 immediately north of the Project.
49. The Bouffard/Davis residence will also have views of the building through trees and other vegetation looking south from the residence.
50. Views of the Project building while traveling north on Route 214 are fairly limited in duration and occur through openings in vegetation. Goddard proposes to leave substantial tree cover in place and to install considerable supplemental plantings to soften views.

51. The most substantial view of the Project building is across Goddard's main parking lot as one travels north on Route 214. Typical views include windows on the west end of the south-facing wall and the overhead doors on the eastern end of the building. The overhead doors are larger features and have an industrial character; however, the proposed landscaping will soften views of the doors. Landscaping will also soften the view of the east side of the building. These views presently include existing campus buildings.

Conclusions of Law

I. Scope of Review

Because we decide two coordinated appeals in this decision, we first identify the scope of our review in each matter. Our review is established by an appellant's statement of questions. V.R.E.C.P. 5(f). The Act 250 Appellants raise four questions for our review:²

1. Will the Project result in undue air pollution under Criterion 1?
2. Will the Project's emissions include ultrafine particulates in amounts dangerous to human health?
3. Will the Project have an undue adverse effect on the aesthetics of the area under Criterion 8?
4. Will the Project be in harmony with its surroundings and fit the context in which it is to be located, and if not, will its impact on the neighborhood be unduly adverse?

In the Municipal Appeal, Rhea Wilson raises nine questions, however, in an April 20, 2013 decision we concluded that within the Municipal Appeal our review is limited by how the Project is classified under the Plainfield Zoning Regulations (PZR) for the purpose of DRB review. The DRB reviewed Goddard's project both as a commercial use, requiring site plan review, and as a light industry use, requiring conditional use review. We concluded that the Project is properly classified only as a light industry use under PZR § 2.8. The parties then stipulated that the only remaining issue in the Municipal Appeal is:

Does the proposed wood chip heating system satisfy the requirements for approval as a Conditional Use – Light Industry under §§ 1.7 and 2.8 of the Town of Plainfield Zoning Regulations?

² We have rephrased the questions to conform to the Court's *de novo* review.

The parties further agreed to strike from the Court's review general standards 1, 3, 4, and 5 and specific standards 4 and 5 under PZR § 2.8, with qualifications on evidence that may nonetheless be presented. Thus, our review within the Municipal Appeal is limited to general standard 2 of PZR § 2.8, requiring that "the proposed use will not have an undue adverse effect on the character of the area affected, as defined by the purpose or purposes of the district in which the proposed project is located and the specifically stated policies and standards of the municipal plan," and the following three specific standards of PZR § 2.8:

1. The Development Review Board may require the installation, operation and maintenance of such devices and/or such methods of operation as may in the opinion of the board be reasonably required to prevent or reduce fumes, gas, dust, smoke, odor, noise, vibration, excessive light, or similar nuisance. Performance standards shall be as specified by the appropriate state regulatory agencies.
2. The Development Review Board may impose such conditions regarding the extent of open spaces between the proposed use and surrounding properties as will tend to prevent injury which might result from the proposed use to surrounding properties and neighborhoods. The board shall not require more than double setback or double yards for the particular zoning district.
3. Landscaping and fencing may be required to maintain district character and to screen the use from view from a public way.

The parties then disputed whether 24 V.S.A. § 4413 further limits the Court's review. Under § 4413, municipal regulation of educational institutions is limited to "location, size, height, building bulk, yards, courts, setbacks, density of buildings, off-street parking, loading facilities, traffic, noise, lighting, landscaping, and screening requirements." The Court asked the parties to brief this issue, and the Town and Goddard submitted timely memoranda. In a September 19, 2013 Entry Order we concluded that although the Court will review Goddard's proposal as a light industry conditional use as narrowed by the parties' agreement, our review is further limited by § 4413(a).

II. Act 250 Review

Question 1 - Criterion 1 Undue Air Pollution:

Criterion 1 requires that a development "[w]ill not result in undue . . . air pollution." 10 V.S.A. § 6086(a)(1). Act 250 review of air pollution considers airborne contaminants, dust, fumes, and noise. Re: Pike Indus., Inc., No. 5R1415-EB, Findings of Fact, Conclusions of Law,

and Order, at 31 (Vt. Env'tl. Bd. June 7, 2005) ("Noise, fumes, airborne contaminants, and dust are considered to be air pollution under Criterion 1."). Determining whether a project's resulting air pollution is "undue" is a fact-specific inquiry that may depend on a series of factors, such as:

the nature and amount of the pollution, a proposed project's location and topography, prevailing winds, whether the pollutant complies with certain standards or recommended levels, and whether effective measures will be taken to mitigate the pollution.

Id. Thus, the Project's woodchip burning emissions, noise, and related air pollution factors, such as those listed above, must be considered.

a. Emissions

Goddard's Messersmith woodchip fired boiler has a thermal efficiency of approximately 80%. Operation of the boiler is automated, and the air/fuel ratio is continually adjusted to achieve thorough combustion. The unit also uses a high temperature burn with both under fire and over fire successive stage burns, resulting in heightened thermal efficiency. Messersmith has a good reputation in its industry, and operators of Messersmith boilers tend to be satisfied with equipment performance.

Goddard proposes to include an electrostatic precipitator (ESP), not required by regulations, for added pollution control. An ESP is the best available control technology. Exhaust from the boiler enters the ESP, where an electric charge is introduced. Oppositely charged collection plates cause particulate material to fall out of the exhaust. The estimated ESP cost is between \$100,000 and \$150,000. Thus, the proposal to include the ESP significantly enhances the Project from an air pollution control perspective.

The Project must comply with the National Emission Standards for Hazardous Air Pollutants (NESHAPS). These federal regulations require placing the Project on the Environmental Protection Agency's (EPA) inventory of air sources and tuning the boiler every 24 months. As detailed more fully below, based upon the credible, uncontroverted testimony of Goddard's air expert, the Project will comply with the NESHAPS.

The Project need not comply with the National Ambient Air Quality Standards (NAAQS). Again, based upon the credible, uncontroverted testimony of Goddard's air expert, Vermont is in attainment with all NAAQS and will continue to be so considering Vermont's present background levels and the addition of the Project.

Goddard used the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) and meteorological data from the Edward F. Knapp State Airport in Berlin, Vermont to model air quality for the Project.³ Goddard modeled the Project at 100% capacity every hour of the year, however, the Project is expected to regularly operate at a much lower level, such as at 75% or 50% capacity. The 100% capacity modeling determined the maximum emissions level. Goddard's modeling with AERMOD accounted for the Project area's topography, meteorology, and building geometry, including air turbulence. Modeling also accounted for surrounding land uses and land cover, as well as stack location, height, diameter, and volume, stack flow data obtained from the vender⁴, temperature, and fuel type (woodchips with bark). Finally, the modeling considered particulate pollutants PM10 and PM2.5 and NAAQS to protect human health and welfare. Results of the modeling showed that the addition of this Project to the area would not result in exceeding the NAAQS.

Appellants are concerned about the effect of temperature inversions on air quality. The Project area may experience temperature inversions. Based upon the credible, uncontroverted testimony of Goddard's air expert, Goddard's modeling accounted for the possibility of temperature inversions and the NAAQS will not be exceeded in the event of such an inversion.

Lastly, the Project may result in visible emissions from the stack during start up and on cooler mornings. The ESP will remove particulates that may be visible, so pollutants in the form of particulates will not be a component of emissions. Thus, visible emissions are limited to steam comprised of water vapor and will not contain pollutants.

Goddard's expert credibly opined that the emissions from the Project will be an overall improvement over the existing 23 oil boilers on campus. For these reasons, we conclude that the Project will not result in undue air pollution from emissions.

b. Noise

Noise from a proposed project can be so significant as to constitute air pollution under Criterion 1. Re: Bull's-Eye Sporting Ctr., No. 5W0743-2-EB, Findings of Fact, Conclusions of Law, and Order, at 14 (Vt. Env'tl. Bd. Feb. 27, 1997). "The test for undue air pollution caused by noise is whether the noise has 'impacts rising above annoyance and aggravation to cause adverse health effects such as hearing damage.'" Id. (quoting Re: Talon Hill Gun Club Inc., No.

³ The Vermont Air Quality and Climate Division would have required this data for any modeling, however, the Project is not subject to Vermont air regulation.

⁴ This equipment has had actual stack testing.

9AO192-2-EB, Findings of Fact, Conclusions of Law, and Order, at 8 (Vt. Env'tl. Bd., June 7, 1995)). Noise analysis under Criterion 1 focuses primarily on the health and safety impacts of noise, rather than on its welfare and aesthetic impacts, which are considered under Criterion 8. Re: City of Montpelier and Ellery E. & Jennifer D. Packard, No. 5W0840-6-WFP, Findings of Fact, Conclusions of Law, and Order, at 21 (Vt. Env'tl. Bd. May 22, 2000).

The former Environmental Board reviewed many Act 250 applications for land use permits where noise was at issue. The resulting Environmental Board decisions established noise level thresholds or limits evidencing compliance or non-compliance with Criterion 1. We give prior Environmental Board decisions the same weight and consideration as prior decisions of this Court. 10 V.S.A. § 8504(m).

When evaluating noise impacts under Criterion 1, the Environmental Board relied on the Environmental Protection Agency report, "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety," No. 550/9-74-004, dated March 1974. See Re: Paul and Dale Percy, No. 5L0799-EB, Findings of Fact, Conclusions of Law, and Order, at 7-8, 17 (Vt. Env'tl. Bd. Mar. 20, 1986). Specifically, the Environmental Board adopted EPA's established adverse health impact standard of 70 dB(A) for 24 hours each day, 365 days a year, over a lifetime, as the level at which noise constitutes an unacceptable level of air pollution under Criterion 1. Re: Pike Indus., Inc. No. 5R1415-EB, Findings of Fact, Conclusions of Law, and Order, at 32 (Vt. Env'tl. Bd. June 7, 2005). Furthermore, the Environmental Board has noted that "unsafe noise levels begin at around 90 decibels" and that maximum noise levels considerably below that level do not constitute air pollution under Criterion 1. Re: Wildcat Constr. Co., No. 6F0283-1-EB, Findings of Fact, Conclusions of Law, and Order at 7, 10 (Vt. Env'tl. Bd. Oct. 4, 1991), *aff'd*, In re Wildcat Constr. Co., 160 Vt. 631 (1993).

Goddard completed noise modeling for the Project and provided its results. For noise originating from the boiler plant itself, modeling indicated noise levels of 15 dB(A) Lmax at the eastern property line adjacent to Route 214 and 13 dB(A) Lmax at the north property line. For noise originating from woodchip offloading, modeling indicated noise levels of 61 dB(A) Lmax at the east property line and 46 dB(A) Lmax at the north property line. Appellants did not provide any noise data or other measurements to contradict Goddard's evidence. Appellants testified as to their own perception of noise generated at other woodchip boilers and from trucks offloading woodchips at other sites. Appellants testified that such noise was "offensive" and "deafening," but provided no evidence of adverse health effects such as hearing damage.

We conclude that while noise from the Project operations might be apparent to Appellants, the noise will be less than the EPA-established adverse health impact standard of 70 dB(A) for 24 hours each day, 365 days a year, over a lifetime. Several aspects of the Project will further reduce or eliminate any potential adverse health effects from noise. First, the woodchip deliveries, the loudest element of the Project, will occur approximately 36 times per year, will take an estimated 30 minutes or less to complete, and will be limited to weekdays before 5:00 p.m. The noise levels in close proximity to the boiler equipment itself are estimated to be less than present background noise levels. As the distance from the equipment increases, sound levels decrease. Appellants' houses are approximately 200 feet or more from the Project. Thus, the proposed Project noise will not cause adverse health effects and will therefore not constitute undue air pollution in violation of Criterion 1.

The Project as proposed conforms to Act 250 Criterion 1.

Question 2 - Ultrafine particles:

Ultrafine particles are less than 0.1 micron in size and are commonly generated by combustion, friction, and cooking. In its ESP literature, Weise Environmental, the ESP manufacturer for Messersmith, states that its equipment controls ultrafine particles. Goddard's air expert also testified that ultrafine particles are controlled by the ESP, and Appellants provided no evidence to contradict this.

Based upon the limited evidence before the Court, we conclude that the Project's emissions will not contain ultrafine particulates in amounts dangerous to human health.

Questions 3 and 4 - Criterion 8 Aesthetics:

To receive an Act 250 land use permit, an applicant must provide evidence sufficient to enable the Court to find that the proposed project "[w]ill not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas." 10 V.S.A. § 6086(a)(8). If an applicant satisfies the initial burden of production, then the ultimate burden of proving that a project does not conform to Criterion 8 rests upon the project's opponents. 10 V.S.A. § 6088(b); In re Rivers Dev., Nos. 7-1-05 Vtec and 68-3-07 Vtec, slip op. at 33 (Vt. Env'tl. Ct. Mar. 25, 2010) (Durkin, J.) (citing In re Route 103 Quarry, No. 205-10-05 Vtec, slip op. at 8 (Vt. Env'tl. Ct. Nov. 22, 2006) (Durkin, J.), *aff'd*, 2008 VT 88, 184 Vt. 283).

The cornerstone of the Criterion 8 analysis is the question: "[w]ill the proposed project be in harmony with its surroundings—will it 'fit' the context within which it will be located?"

Re: Quechee Lakes Corp., Nos. 3W0411-EB and 3W0439-EB, Findings of Fact, Conclusions of Law, and Order, at 18 (Vt. Env'tl. Bd. Nov. 4, 1985).

We received no evidence of historic sites or rare or irreplaceable natural areas at the Project site or in the surrounding area. Furthermore, no suggestions were made at trial that the Project as proposed will interfere with any areas of scenic or natural beauty. We therefore limit our review under Criterion 8 to the Project's aesthetic and noise impacts.

A general analysis of aesthetic impacts can be subjective, but the Environmental Board established the two-part "Quechee test" to evaluate a project under Criterion 8. Quechee Lakes Corp., Nos. 3W0411-EB and 3W0439-EB, at 17 (quoting Re: Brattleboro Chalet Motor Lodge, Inc., No. 4C0581-EB, Findings of Fact, Conclusions of Law, and Order (Vt. Env'tl. Bd. Oct. 17, 1984)). First, we examine whether a proposed project may cause an adverse impact on the character of the area. Id. If so, the Court then determines whether that impact will be "undue." Id. The Vermont Supreme Court has approved the use of the Quechee test and we therefore employ it here. In re Rinkers, Inc., 2011 VT 78, ¶ 9, 190 Vt. 567.

a. The character of the area.

When considering the Project's aesthetics and noise, the baseline "character of the area" includes existing buildings, noises traditionally emitted from the college and other nearby uses, and background noise from traffic on Route 214. The Project site will continue its historical use as a college institution. Goddard's campus currently contains more than 23 buildings. Several properties in the area of the Project contain single family residences which are sparsely situated in relation to each other. Large trucks, including heating oil delivery trucks, currently make deliveries to the buildings on campus. The current heating oil delivery trucks delivering to the 23 campus buildings will be replaced with woodchip delivery trucks delivering to the one woodchip boiler building. Additionally, 10 to 15 other trucks are presently on campus weekly, including kitchen supply delivery trucks, garbage trucks, and other supply trucks. The area also experiences loud noises, including lawn mowing and chain sawing. Considerable truck traffic also travels Route 214.

Noise from the Route 214 traffic permeates the neighborhood, especially for the homes and college campus properties adjoining the highway. While the Project area may be considered rural, it encompasses the well established college with buildings of varying sizes and Route 214 with its significant traffic. It is within this context that we consider whether the Project will cause an "adverse" impact on the character of the area.

b. Whether the aesthetic impact is “adverse” to the area’s character.

The Project building is similar in scale, material, and form to existing college dormitories and buildings and residences in the area. The building is 23 feet high at its highest point and has a pitched or hipped roof. Its brown color and vertical wood siding will help the appearance of the building recede into its background of trees. Landscaping will also mitigate or soften visibility of the Project from public areas and decrease visibility of the building and its two overhead doors. Appellants assert that these overhead doors, each measuring 12 feet wide by 15 feet tall, are out of context. Based on the building’s other residential characteristics and its institutional setting, however, we conclude that the overhead doors are not out of context.

The chimney meets the maximum building height of 35 feet and it is fairly narrow at 24 inches in diameter. The brown chimney is also lower in height than surrounding trees. Nevertheless, the chimney is out of character, because no other large chimneys or stacks are located in the area.

Views of the Project building while traveling north on Route 214 are fairly limited in duration and occur through small openings in vegetation. The most significant of these limited views is across the college’s main parking lot. Typical views include windows on the west end and the overhead doors on the eastern end of the building. These doors are more noticeable for their larger size and tend toward an industrial impression, however, landscaping will soften their visibility. Views of the building’s east side are also softened with landscaping. These views presently include existing campus buildings. Views of the Project while traveling south on Route 214 will be further limited and obscured by vegetation.

Views from the Smith house east of the Project across Route 214 will include the front, or south side, of the Project building. The driveway and trucks will be partially screened from this view. The Smith house presently has views of other campus buildings in this same general direction. The Towner/Byrd residence will have views of the Project looking west from the property, but only from outside the residence. Similar views are likely as one drives west on Sugarwood Road, especially viewing the Project through the overhead power line clearing. The Bouffard/Davis residence will also have views of the building through trees and other vegetation looking south from the residence.

Thus, because the Project will be visible from nearby residences and because the chimney stack is not in character with the area, we conclude that overall the Project will result in an adverse aesthetic impact to the area’s character.

c. Whether the aesthetic impact is “undue,” given the area’s character.

Having concluded that the Project will result in an adverse aesthetic impact on the area’s character, we must address whether the impact is undue and therefore in conflict with Criterion 8. 10 V.S.A. § 6086(a)(8).

The Environmental Board noted that “the word ‘adverse’ means unfavorable, opposed, hostile” to the character of the area. Quechee Lakes Corp., Nos. 3W0411-EB and 3W0439-EB, at 17. The Environmental Board also established that an adverse impact would be considered “undue” if any one of the three following questions is answered in the affirmative: (1) Does the project violate a clear, written community standard intended to preserve the aesthetics or scenic, natural beauty of the area?; (2) Does the project offend the sensibilities of the average person?; or (3) Has the applicant failed to take generally available mitigating steps that a reasonable person would take to improve the harmony of the proposed project with its surroundings? Quechee Lakes Corp., Docket Nos. 3W0411-EB and 3W0439-EB, at 19–20.

Based upon the evidence received at trial, we conclude that there is no clear written community standard intended to preserve the aesthetics of the Project area. The Town’s regulations establish three non-contiguous rural residential districts, one of which contains Goddard College. The rural residential districts are not governed by any aesthetic standards, and the goals and strategies within the Town Plan’s land use section contain no specifics for this location or use. Meanwhile, the Town Plan’s energy section contains a strong objective to move away from fossil fuels toward wood. The Project is a move in this direction. We therefore conclude that the Project does not violate any clear, written community standard.

We next conclude that the Project will not offend the sensibilities of the average person and that it will not be shocking or offensive. While neighboring Appellants testified as to how they expect the Project to be offensive and how potential views from specific locations may shock them, we must consider the Project’s impacts from the perspective of an average person. As discussed above, there will be brief views of the Project from Route 214 and some views from surrounding residences. Under present-day conditions, there are views of multiple campus buildings of different sizes and power lines in the area. The Project, and specifically the building, is similar in scale, material, and form to existing structures. Thus, we conclude that the sensibilities of the average person would not be offended or shocked by the addition of the Project.

Lastly, we conclude that the Project’s design is compatible with its surroundings. Again, although it is not an exact match to existing neighboring buildings, the overall design of the

Project building is similar to other campus buildings and surrounding residences. The Project building has two large overhead doors and a tall chimney, however, the building is otherwise residential in character. Its brown color will help the building appearance recede into its background of trees. Goddard has also taken reasonable steps in building design to address the context of the Project, including proposing to retain much of the vegetation while planting substantial supplemental landscaping. Landscaping will mitigate or soften visibility of the Project from public areas and decrease visibility of the building and its doors. We therefore conclude that Goddard has taken all reasonable generally available mitigating steps.

In sum, although we conclude that some of the Project's aesthetic impacts may be adverse, we also conclude that none of the aesthetic impacts will be "undue."

d. Whether the noise impact is "adverse" to the area's character.

Noise impacts are also evaluated using the two-step Quechee test for "undue" adverse impact on the character of the area. The question of whether noise produced by the Project is out of character with its setting is a qualitative determination, involving an examination of both the type of noise that the Project will generate and neighboring land uses. RE: Hannaford Bros. Co., No. 4C0238-5-EB, Findings of Fact, Conclusions of Law, and Order, at 16 (Vt. Env'tl. Bd. Apr. 9, 2002); Re: Barre Granite Quarries, LLC, No. 7C1079 (Revised)-EB, Findings of Fact, Conclusions of Law, and Order, at 79-80 (Vt. Env'tl. Bd. Dec. 8, 2000) (internal citations omitted).

First, we consider whether the Project would have an "adverse impact" by reviewing the nature of the Project's surroundings, the compatibility of the Project's design with those surroundings, and the locations from which the Project can be heard. See Hannaford Bros., No. 4C0238-5-EB, at 14-18 (analyzing a project under Criterion 8 for potential adverse effect of noise and signage on aesthetics); Barre Granite Quarries, LLC, No. #7C1079 (Revised)-EB, at 79-80. These factors must be weighed collectively in deciding whether the proposed project is in harmony with—or "fits"—its surroundings.

As detailed above, the area is comprised of a college campus, residential properties, Route 214, and rural wooded areas. Goddard's Project operations will generate noise from the boiler operations, truck traffic, and woodchip offloading, which will be the loudest noise. Considerable truck traffic is already present in the area, as delivery trucks use Route 214 and campus roadways. The current heating oil trucks that deliver to 23 campus buildings will be replaced by woodchip delivery trucks that deliver to one boiler building. Additionally, 10 to 15

other trucks are presently on campus weekly, including kitchen supply delivery trucks, garbage trucks, and other supply trucks.

Woodchip offloading noise will be intermittent and somewhat new to the area. Woodchip delivery trucks are tractor trailers. The trucks are equipped with a “live bed” which is comprised of three inch wide slats that move forward and backward in alternating directions, causing the chips to move toward the back of the truck bed until the chips fall off. The live bed is powered by hydraulics running off of the truck engine. When the truck is unloaded, the engine is revved up to power the hydraulics. A majority of the sound from unloading chips is from the power take-off of the engine and therefore the weight of the truck or woodchips during unloading is relatively immaterial. Even though the area already experiences institutional building noise and truck traffic noise from the college campus and Route 214, including oil deliveries, we conclude that the woodchip offloading noise would produce an adverse impact.

e. Whether the noise impact is “undue,” given the area’s character.

Having concluded that the Project’s noise will have an adverse impact, the Court must consider whether the adverse effect is undue. Hannaford Bros. Co., No. 4C0238-5-EB, at 15.

We again use the following factors to determine whether an adverse effect is undue: (1) Does the project violate a clear, written community standard intended to preserve the aesthetics or scenic, natural beauty of the area?; (2) Does the project offend the sensibilities of the average person?; and (3) Has the applicant failed to take generally available mitigating steps that a reasonable person would take to improve the harmony of the proposed project with its surroundings? Quechee Lakes Corp., Nos. 3W0411-EB and 3W0439-EB, at 19-20.

The parties did not provide any evidence of community standards related to noise or noise levels. As Appellants have the burden to show that a project does not conform to Criterion 8, we conclude that the noise from the proposed project does not violate any community standard.

We next consider whether the noise will be so out of character with its surroundings or so significantly diminish the qualities of the area as to be offensive or shocking to the average person. Re: Pike Indus., Inc., No. 1R0807-EB, Findings of Fact, Conclusions of Law, and Order, at 18-19 (Vt. Env’tl. Bd. June 25, 1998). As discussed above, adding more sporadic noise to an area that already experiences such noise would produce an adverse effect. We cannot say, however, that the adverse effect is “shocking or offensive to the average person.” Residents in

the area have previously been exposed to sporadic truck noise from Route 214 and the noise from existing campus activities, so any additional noise—although adverse—is not unduly so.

In reaching this conclusion we rely, in part, on prior Act 250 approvals that concluded that noise from a proposed project does not have undue adverse impacts on aesthetics where it is limited to no more than 55 dB(A) Lmax at surrounding residences and no more than 70 dB(A) Lmax at the property line. Barre Granite Quarries, LLC, No. 7C1079 (Revised)-EB, at 81-82; see also Re: Alpine Stone Corp., ADA Chester Corp. and Ugo Quazzo, No. 2S1103-EB, Findings of Fact, Conclusions of Law, and Order, at 32 (Vt. Env'tl. Bd., Feb. 4, 2002) (noise from a proposed quarry does not have undue adverse impact on aesthetics where the noise is limited to 55 dB(A) Lmax at areas of frequent human use).

Noise from a similar facility having the same equipment manufacturer and similar truck deliveries was monitored by Goddard's noise impact expert. The expert collected noise level data near the woodchip storage room and boiler room and also at a point approximately 75 feet from the side of a truck during operation of the "live bed" system. This noise data was input into noise modeling software to project noise for the Project. The noise modeling software accounted for the architectural design of the Project building, USGA topographic data of the area, and the Project's driveway location and gravel surface. Modeling indicated noise levels for noise originating from the boiler plant itself of 15 dB(A) Lmax at the eastern property line adjacent to Route 214 and 13 dB(A) Lmax at the north property line. Modeling resulted in noise levels for noise originating from chip offloading of 61 dB(A) Lmax at the east property line and 46 dB(A) Lmax at the north property line. Background noise levels were also monitored at the Project location, indicating that the typical background noise level is 46(A) dB Leq (average sound pressure level/second). Meanwhile, the typical noise level for a vehicle passing the Project site on Route 214 is 61 dB(A) Lmax. Thus, the building and plant operation noise is projected to be below background levels. Noise levels from woodchip deliveries are expected to be equal to traffic noise levels from Route 214. Furthermore, truck noise already exists in this area, and the woodchip trucks will be replacing the oil trucks.

Although backup alarms were recognized as a noise source, they were not evaluated for specific noise levels from woodchip deliveries. There will be a limited number of deliveries, estimated at 36 per year, and the deliveries and chip offloading events will be limited in duration. The amount of time that trucks will be backing up is even further limited. It is estimated that trucks will back up for approximately 10 seconds for each delivery. Assuming 36

deliveries annually, the backup alarm noise will sound a total of 360 seconds, or 6 minutes, annually.

Appellants testified to their observation of woodchip offloading by a similar truck at an electric generating plant and at a school in areas different from the proposed Project site. The unloading process took 18 to 20 minutes to complete. The noise of offloading was described as the revving of a large diesel engine. Although there was testimony of sound level measuring with an iPhone application, no noise level data was offered into evidence by Appellants.

From within the neighboring residence closest to the Project site, Mr. Smith presently hears trucks, including trash and oil trucks completing deliveries on the campus, and general traffic noise. Mr. Smith also presently hears oil truck deliveries when the truck's engines accelerate to offload oil.

Goddard has also proposed mitigating steps likely to reduce the level or impact of noise from the Project. Specifically, the Project will be shielded by trees and vegetation to the north, east, and south. Woodchip deliveries will take place approximately 36 times per year and are expected to last less than a half hour each. Deliveries will only occur on weekdays before 5:00 p.m. This restricted delivery frequency, duration, and timeframe will mitigate the impact of noise.

Considering the evidence before the Court, including the type and frequency of Project noise and neighboring land uses, we conclude that the Project "fits" within the area and there will be no undue adverse noise impacts from the Project. As noted above, Appellants have provided no evidence of noise levels or other data demonstrating that noise levels from the Project will cause an undue adverse aesthetic impact. See 10 V.S.A. § 6088(b) (placing ultimate burden of showing a project's nonconformance to Criterion 8 on the project's opponents). We conclude that the Project as proposed conforms to Act 250 Criterion 8.

III. Municipal Review

As discussed above, our review within the Municipal Appeal is limited to general standard 2 of PZR § 2.8, requiring that "the proposed use will not have an undue adverse effect on . . . the character of the area affected, as defined by the purpose or purposes of the district in which the proposed project is located and the specifically stated policies and standards of the municipal plan," and the following three specific standards of PZR § 2.8:

1. The Development Review Board may require the installation, operation and maintenance of such devices and/or such methods of operation as may in the

- opinion of the board be reasonably required to prevent or reduce fumes, gas, dust, smoke, odor, noise, vibration, excessive light, or similar nuisance. Performance standards shall be as specified by the appropriate state regulatory agencies.
2. The Development Review Board may impose such conditions regarding the extent of open spaces between the proposed use and surrounding properties as will tend to prevent injury which might result from the proposed use to surrounding properties and neighborhoods. The board shall not require more than double setback or double yards for the particular zoning district.
 3. Landscaping and fencing may be required to maintain district character and to screen the use from view from a public way.

Pursuant to 24 V.S.A. § 4413, we further limit our Municipal review to the following:

location, size, height, building bulk, yards, courts, setbacks, density of buildings, off-street parking, loading facilities, traffic, noise, lighting, landscaping, and screening requirements.

As analyzed at length above, we conclude that the Project will not have an undue adverse effect on the character of the area affected, as defined by the purpose or purposes of the district in which the proposed project is located and the specifically stated policies and standards of the municipal plan. Thus, the Project complies with general standard 2 of PZR § 2.8.

The Project will include an electrostatic precipitator (ESP) as added pollution control for the Project, even though such equipment is not required by regulation. As such, we conclude that PZR § 2.8 specific standard 1, allowing the DRB, or this Court on appeal, to require devices to prevent or reduce fumes, dust, smoke and the like, is satisfied without additional devices.

We also conclude that additional open space is not appropriate or required for the Project to comply with PZR § 2.8 specific standard 2. Pursuant to the PZR, the required setback for the Project in this district is 50 feet. The Project has an 82-foot east side setback from the center of Route 214 and a 161-foot setback from the north property line. Both the southern and western parcel boundaries are considerable distances from the Project. Thus, the Project meets dimensional requirements and additional open space is not warranted.

Goddard proposes to retain significant tree cover and other vegetation and to install supplemental plantings. As analyzed above in our Act 250 review, we conclude that the character of the district is maintained and views from public ways are sufficiently screened. Therefore, specific standard 3 of PZR § 2.8 is satisfied.

We therefore conclude that the Project complies with PZR § 2.8, pursuant to our review as limited by the parties in this matter and as limited by 24 V.S.A. § 4413.

Conclusion

For all the reasons discussed above, we conclude that the Project emissions will not result in undue air pollution. Additionally, the proposed Project noise will not cause adverse health effects and is, therefore, not air pollution in violation of Criterion 1. Thus, the Project complies with Act 250 Criterion 1.

We also conclude that the aesthetic impacts from the Project will not be “undue,” even though we find that some of those aesthetic impacts may be adverse. On the whole, the woodchip offloading noise would produce an adverse effect; however, we conclude that the Project “fits” within the area and that there will be no undue adverse noise impacts from the Project. Thus, the Project conforms to Act 250 Criterion 8.

With respect to our Municipal review, we conclude that the Project will not have an undue adverse effect on the character of the area affected, and thus, the Project complies with general standard 2 of PZR § 2.8. We also conclude that PZR § 2.8 specific standard 1, allowing the DRB, or this Court on appeal, to require devices to prevent or reduce fumes, dust, smoke and the like, is satisfied without additional devices beyond the proposed ESP. Regarding PZR § 2.8 specific standard 2, we conclude that additional open space is not appropriate or required for compliance. Lastly, we conclude that the character of the district is maintained and views from public ways are sufficiently screened, and therefore, specific standard 3 of PZR § 2.8 is satisfied. In total, the Project complies with PZR § 2.8, pursuant to our review as limited by the parties and 24 V.S.A. § 4413.

Finally, we conclude that the Project’s emissions will not include ultrafine particulates in amounts dangerous to human health.

A Judgment Order accompanies this Decision. This completes the current proceedings before this Court.

Done at Berlin, Vermont this 6th day of January, 2014.

Thomas G. Walsh, Environmental Judge