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June 26, 2026

VIA EMAIL & HAND DELIVERY

Town of New Lebanon Zoning Board of Appeals
14755 Route 22
New Lebanon, NY 12125

To: Members of the Zoning Board of Appeals

Re: Proposed Tilden Commons Project – July 2026 Submission

As you know, our firm represents Tilden Project LLC, and its partner Hudson River Housing, Inc. (Applicant), with its efforts to develop the Tilden Commons (Project) at 538 Route 20 New Lebanon, New York 12125 (Tax Map ID 19.2-1-69) in the Town of New Lebanon, New York. The Applicant was last before the Town of New Lebanon Zoning Board of Appeals (ZBA) in September 2025 regarding its application for an area variance (ZBA Application), which was filed in May 2025. Since September 2025, the Town of New Lebanon Planning Board, as Lead Agency pursuant to the State Environmental Quality Review Act (SEQRA), has conducted a thorough environmental review of the Project, culminating in approval of a Negative Declaration of Environmental Significance (Negative Declaration) at its meeting on June 17, 2026. With a SEQRA determination issued by the Lead Agency, the ZBA, as an Involved Agency pursuant to SEQRA, may move forward with its review of the ZBA Application and issue a determination thereon.

To assist with this effort, please see attached a legal justification letter supporting the ZBA Application, included as Exhibit A. This was originally submitted with the application, but has been revised following completion of the SEQRA process. Moreover, the Applicant received an inquiry from the ZBA regarding the Project's wastewater system. Please see attached manufacturer information regarding the proposed wastewater system, included as Exhibit B. The Applicant respectfully requests the ZBA issue a determination on the ZBA Application at its July meeting.

Please contact me with any questions or concerns. We look forward to seeing you at the July 2026 meeting.

Very truly yours,

Alicia R. Legland

ARL
Enclosures
cc: Courtney Potter, *Zoning Board of Appeals Clerk*, Town of New Lebanon
Andrew E. Clark, Esq., *Attorney*, Town of New Lebanon Zoning Board of Appeals (*via email*)
Tilden Project LLC (*via email*)

Exhibit A

Revised June 2026

Alicia R. Legland, Esq.
Direct Dial: 518.433.2416
alegland@hodgsonruss.com

July 1, 2025

Town of New Lebanon
Zoning Board of Appeals
14755 Route 22
New Lebanon, NY 12125

Re: Tilden Commons – Area Variance Application

To: Members of the Zoning Board of Appeals

Our firm represents Tilden Project LLC, and its partner Hudson River Housing, Inc. (Applicant), in connection with its efforts to develop the Tilden Commons (Project) at 538 Route 20 New Lebanon, New York 12125 (Tax Map ID 19.2-1-69) (Property) in the Town of New Lebanon, New York (Town). The Project will replace the abandoned building currently on the Property with a mixed-use building comprising a grocery store and 41 affordable housing apartment units. The Property is located in the Central Commercial (CC) District. The Applicant submitted an area variance application (Application) to the New Lebanon Zoning Board of Appeals (ZBA) on May 19, 2025, requesting relief from the requirement in Section 205-13(E)(10)(a) of the Zoning Law of the Town of New Lebanon, New York (Zoning Law) that multifamily dwellings be sited on property with a minimum lot size of 5,000 square feet per dwelling unit. This letter is in support of the Application.

Following the ZBA's review of the Application, the New Lebanon Planning Board (Planning Board) conducted its environmental review of the Project pursuant to the State Environmental Quality Review Act (SEQRA) and, after many months of review, approved a Negative Declaration of Environmental Significance (Negative Declaration) at its meeting on June 17, 2026. Because that determination had to be made before the ZBA could act on the Application, the Applicant is now returning to the ZBA so it may finalize its review and issue its determination.

I. The Project meets the area variance test under New York Town Law and the Zoning Law.

Pursuant to New York Town Law § 267-b(3) (McKinney 2013), and reiterated in Zoning Law § 205-12(C)(3), the ZBA performs a balancing test when considering an area variance application, taking into consideration the benefit to the applicant if the variance is granted, as weighed against the detriment to the health, safety, and welfare of the neighborhood or community if the variance is granted. *See* Zoning Law § 205-12(C)(3)(b). In doing so, the ZBA shall also consider the following factors: "Whether an undesirable change will be produced in the character of the neighborhood or a detriment to nearby properties will be created by the granting of the area variance;" "[w]hether the benefit sought by the applicant can be achieved by some method, feasible for the applicant to pursue, other than an area variance; "[w]hether the requested area variance is substantial;" "[w]hether the proposed variance will have an adverse effect or impact on the physical or environmental conditions in the neighborhood or district;" and "[w]hether the alleged

difficulty was self-created, which consideration shall be relevant to the decision of the [ZBA] but shall not necessarily preclude the granting of the area variance." *Id*. For the reasons outlined below, the Applicant respectfully requests that ZBA grant the area variance.

a. Granting the area variance will not result in an undesirable change to the character of the community or impose a detriment to nearby properties.

The Project will not create an undesirable change to the character of the community, since it is a specially permitted use in the CC District, as Mixed Uses and Multifamily Dwellings are specially permitted, and Retail Uses, including grocery stores, are permitted with site plan approval. *See* Zoning Law Use Table. The Town Board made a very specific legislative determination when it enacted the Zoning Law that these land uses are appropriate in this district and in harmony with the character of this area of the Town. *See North Shore Steak House, Inc. v. Bd. of Appeals of Incorporated Vill. of Thomaston*, 30 N.Y.2d 238, 243 (1972) ("[i]nclusion of the permitted use in the ordinance is tantamount to a legislative finding that the permitted use is in harmony with the general zoning plan and will not adversely affect the neighborhood."). The Project is well-suited for a mixed-use neighborhood consisting of a multifamily residential building, restaurants, stores, a brewery, strip malls, a barbershop, a church, a self-storage facility, a gas station, an auto parts store, and residences. The Project is also fully consistent with the stated goals for the CC District, *i.e.*, the "Town Center," including creation of "vibrant, customer intensive commercial activity in order to attract residents and visitors" and "[r]esidential and community-oriented uses." Zoning Law § 205-4(B)(3). Further, rather than an undesirable change, the Project will *enhance* the character of the community. The Property and the existing building thereon are currently abandoned. This building will be removed, and the Property will be improved with a brand new, mixed-use building with 41 apartments and a grocery store and landscaping, making the Property significantly more attractive than its current state. The building has been designed to incorporate Shaker-style architectural elements, consistent with the architecture in the Town and surrounding area.

Moreover, the Project meets several goals as stated in the Town of New Lebanon Comprehensive Plan Update 2021 (Comp Plan). One of the stated weaknesses in the Town is the lack of a grocery store and limited affordable rental housing, and one of the stated opportunities is that "[v]acant commercial spaces can be repurposed to meet resident needs." *See* Comp Plan at 13-14; *see also* Comp Plan at 19 ("Survey respondents and focus group members identified a grocery store as the single most important need for the Town. Despite considerable efforts over several years, it has not been possible to attract a store … Focus group members envisioned a smaller, independent grocery as a more likely possibility."). Some of the housing concerns include a desire to attract younger residents as well as the need to support an aging population and low-income families. *See id*. at 16-17; *see also id*. at 55 ("Sub-goals … Expand housing options for seniors … Expand housing options in order to retain and attract younger and low income individuals and families"). Another major goal in the Comp Plan is to increase economic development "through constructive growth of existing businesses and attracting appropriate new businesses[.]" *Id*. at 52. This includes using "un- and under-utilized properties, in commercial zones[.]" *Id*. at 53. The Project consists of renovating an abandoned property in the center of Town with a newly constructed mixed-use building with a new business—a highly desired grocery store—and much needed affordable housing.

The Project will also not adversely affect any nearby properties. There will be no significant impacts from the Project (*e.g.*, erosion, wetlands impacts, glare, etc.) on surrounding properties that would result from granting the area variance. The Applicant is seeking to turn an abandoned building on a main road in the Town into a well-designed, well-maintained mixed-use building with affordable apartments and grocery store, enhancing the curb appeal of a major thoroughfare in the Town. *See* Comp Plan at 19 ("the Routes 20/22 corridor, which has been considered the 'center of Town' for the last few decades."). The Project will be sited in a mixed-use area, with commercial and residential land. And, following an extensive, one-year-long environmental review by the Planning Board as Lead Agency under SEQRA, it determined that the Project will not result in any significant adverse environmental impacts and approved a Negative Declaration. As an involved agency in the coordinated SEQRA process, the ZBA is bound by that determination. *See* 6 NYCRR § 617.6(b)(3)(iii) ("The determination of significance issued by the lead agency following coordinated review is binding on all other involved agencies."); *see also Gordon v. Rush*, 100 N.Y.2d 236 (2003) ("the Board was bound by the negative declaration issued by the lead agency, the DEC.").

As such, granting the area variance will not create an undesirable change to the community, but will instead enhance this area of the Town. Nor will the Project produce any negative impact on neighboring properties.

b. There is no other feasible method for the Applicant to pursue.

Evaluation of this factor requires consideration of whether an applicant can achieve its objective without the requested area variance. As indicated to the ZBA previously, the building must have 41 apartments in order to be economically viable. With fewer apartments, the Project is much less likely to receive the necessary funding from the State, which is critical to how the Project will be financed. The Project could be larger, with more units, but it cannot be made smaller with fewer units. The Applicant cannot change this about the State's process or request it be waived. The funding for these types of projects is extremely competitive, and if this Project does not meet all of the requirements, the funding simply will not be allocated to this Project. Thus, without the area variance, this Project cannot go forward. And an alternative that does not allow the applicant to achieve the desired benefit is not truly a feasible alternative to obtaining an area variance. *See Baker v. Brownlie*, 248 A.D.2d 527 (2d Dep't 1998) (granting an area variance where the board's determination that the applicant had alternative means of achieving the benefit was "clearly erroneous," because the applicant's objective was to face the proposed patio toward the water, not merely to build a patio). Ultimately, there is no other feasible option for the Applicant to develop the Project than to seek this area variance.

c. The area variance is not substantial.

As noted, Zoning Law § 205-13(E)(10)(a) requires that multifamily dwellings be sited on property with a minimum lot size of 5,000 square feet per dwelling unit. This would require 205,000 square feet for 41 units. The Property is approximately 3.2 acres, or 140,000 square feet. As a result, the Applicant is requesting an area variance for a lot size deviation of roughly 32 percent. This is not a significant deviation. This is particularly true given the fact that

the maximum lot coverage in the CC District is 75 percent, while the Project will have approximately 19 percent lot coverage. In other words, although the Project requires a deviation from the minimum required lot *size*, the lot *coverage* is well below the maximum allowed. It must also be noted that the requirement for a minimum lot size of 5,000 square feet per dwelling unit was created when the setback requirements were larger, and the maximum building height requirement was lower. At the time, buildable area on a given lot was smaller due to those restrictions, leading to the requirement for a minimum amount of lot area per dwelling unit. Now, there is more building area as a building can be sited closer to the lot lines and can be taller, including additional stories with more units. This allows for more units on less land.

In any event, a variance that will not produce a detrimental impact to the health, safety, and welfare of the community will not be considered substantial, even if the deviation is significant (though here it is not). *See Corporation of Presiding Bishop of Church of Jesus Christ of Latter Day Saints v. Zoning Bd. of Appeals of Town/Village of Harrison*, 296 A.D.2d 460 (2d Dep't 2002) (overturning denial of variance that requested 77% increase over the maximum height permitted by code—a much more significant deviation than what is being requested here—as there was no evidence in the record indicating that the variance would be detrimental to the health, safety, and welfare of the neighborhood or community.). Additionally, the totality of relevant circumstances must be evaluated in determining whether the variance sought is, in actuality, a substantial one. This is a fact-based determination. *See* 2 N.Y. ZONING LAW & PRAC. § 29:15 (2021); *see also Wambold v. Vill. of Southampton Zoning Bd. of Appeals*, 140 A.D.3d 891 (2d Dep't 2016) (where the court upheld the Zoning Board of Appeal's grant of the area variance even though it was substantial *since the court found no evidence that the variance would have a detrimental effect* on the character of the neighborhood, or physical and environmental conditions, nor would the variance impose a detriment to the health, safety, or welfare of the community.") (emphasis added).

Here, given the location of the Property in a mixed-use area and the lack of negative impacts on the neighborhood and surrounding properties, the requested area variance is not substantial. As discussed above, there will be no significant impacts from the Project on surrounding properties. Instead, the Project will *improve* the neighborhood as the Applicant is seeking to convert an abandoned building on a main road in the Town into an attractively designed and landscaped mixed-use building with affordable apartments and grocery store, enhancing the curb appeal of a major thoroughfare in the Town. *See* Comp Plan at 19 ("the Routes 20/22 corridor, which has been considered the 'center of Town' for the last few decades."). The Project will be sited in a mixed-use area, with commercial and residential land. And, as noted, following an extensive, one-year-long environmental review by the Planning Board as Lead Agency under SEQRA, it determined that the Project will not result in any significant adverse environmental impacts and approved a Negative Declaration. As an involved agency in the coordinated SEQRA process, the ZBA is bound by that determination. *See* 6 NYCRR § 617.6(b)(3)(iii) ("The determination of significance issued by the lead agency following coordinated review is binding on all other involved agencies."); *see also Gordon*, 100 N.Y.2d 236 ("the Board was bound by the negative declaration issued by the lead agency, the DEC.").

Thus, even if the requested area variance was substantial (which it is not), given the complete lack of significant negative impacts on the surrounding properties or on the overall

character or condition of the community, as determined by the Planning Board in its Negative Declaration, the requested area variance should be deemed insubstantial and granted.

d. The area variance will not have any negative impact on the physical or environmental conditions of the neighborhood, and will instead have a net beneficial impact.

The granting of the area variance will not have a significant undesirable effect or impact on the physical conditions in the neighborhood or district. As explained above, it would not change the allowable use. The Property is zoned in the CC District, which permits Mixed Uses, Retail Uses, including grocery stores, and Multifamily Dwellings. Further, the Project does not pose any significant environmental impacts on the community. The building is proposed to be sited in the area of Town with the highest density, comprising various types of commercial and residential uses. Noise from residents, patrons, and daily delivery trucks will not be significant as it will be sited on a highway that generates the same type of noise; there will be a highly sophisticated wastewater treatment system installed as part of the building construction; any potential erosion or stormwater impacts will be fully mitigated with the proposed stormwater design and adherence to the approved Stormwater Pollution Prevention Plan (SWPPP); the water from the water supply well will be sufficiently treated; adequate parking and vehicle entrances are included in the design to address the increase in traffic and parking from the current baseline level; and there will be no impacts related to wetlands or streams, emissions, odors, use or disposal of hazardous wastes, flooding, protected species or habitats, or archaeological or historical resources. Moreover, as noted, following an extensive, one-year-long environmental review by the Planning Board as Lead Agency under SEQRA, it determined that the Project will not result in any significant adverse environmental impacts and approved a Negative Declaration. As an involved agency in the coordinated SEQRA process, the ZBA is bound by that determination. *See* 6 NYCRR § 617.6(b)(3)(iii) ("The determination of significance issued by the lead agency following coordinated review is binding on all other involved agencies."); *see also Gordon*, 100 N.Y.2d 236 ("the Board was bound by the negative declaration issued by the lead agency, the DEC.").

Further, the Project actually presents *positive* impact on the community. The Applicant will be turning an abandoned, rundown property into a grocery store in a central location of the Town and affordable housing that is desperately needed in the area. The Project will likely become the largest taxpayer in the Town, generating over $50,000 per year in revenue for the local taxing jurisdictions. Thus, granting the area variance would not adversely impact the physical or environmental conditions in the neighborhood, and the Project will present a significant benefit to the Town.

e. The alleged difficulty was not self-created.

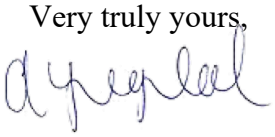
Although the difficulty in meeting the 5,000 square feet per unit minimum lot size requirement is self-created in the sense that the Applicant is choosing to pursue the Project on this specific Property, the requirement that there be 41 units in order to be financeable is beyond the Applicant's control. The Project is simply not viable without the State funding, which is highly unlikely to be granted without at least 41 units included in this Project.

Here, strict application of the Zoning Law here will not serve a valid public purpose because it does not outweigh the injury to the Applicant—namely, that without the area variance, the Project cannot be developed. No valid public purpose would be served by the denial of the area variance, particularly given the overwhelming benefit this Project would bring to the Town. And regardless, even if the ZBA found this hardship to be self-created, given the overwhelming weight of the first four factors in favor of the Applicant, such a finding would not preclude the ZBA from granting the area variance. *See Matter of Young v. Beales*, 42 A.D.2d 833, 833-34 (4th Dep't 1973) ("The fact that the practical difficulty may have been self-created does not, in and of itself, deprive the board of its discretionary power to grant an area variance."). Finally, the ZBA, "shall grant the minimum variance that it shall deem necessary and adequate and at the same time preserve and protect the character of the neighborhood and the health, safety and welfare of the community." N.Y. TOWN LAW § 267-b(3)(c) (McKinney 2013). As noted above, the area variance is the minimum necessary to develop the Project—41 units is the fewest number of units the Project can accommodate while remaining financially viable. Without the area variance, the Project cannot go forward.

II. Conclusion

Given the facts presented above, the Applicant respectfully requests the ZBA grant the requested area variance as it meets the variance standard under New York law and the Zoning Law. We thank you for your consideration of this letter and request.

Very truly yours,



Alicia R. Legland

ARL

cc: Courtney Potter, *Zoning Board of Appeals Clerk*, Town of New Lebanon
Andrew Clark, Esq., *Attorney*, Town of New Lebanon Zoning Board of Appeals
Tilden Project LLC

Exhibit B

Orenco SYSTEMS

Commercial and Community Applications

- Municipalities
- Subdivisions and planned communities
- Manufactured home parks
- RV parks, campgrounds
- Truck stops, rest areas, visitor centers
- Schools, churches
- Resorts

RELIABLE, ECONOMICALLY SUSTAINABLE

WASTEWATER TREATMENT

WWW.ORENCO.COM

AdvanTex AX-Max Treatment System

Why AdvanTex AX-Max?

SIMPLE
Easy to install.
Minimal operation and maintenance needs.

SCALABLE
Modular, easy to expand as flow increases.

COMPLETE
All-in-one, fully plumbed package in a fiberglass tank.

AFFORDABLE
Low energy consumption, low life-cycle costs.

TRUSTED
Backed by Orenco's decades of expertise.

Let us make wastewater management easy – so you can get back to what matters.

Sustainable Solutions for a Cleaner Future

Need advanced treatment?

Discovering you need a more complex wastewater treatment system than initially thought can leave you wondering how to meet tough regulations.

And a hassle-free fix?

You want a solution that lasts without constant headaches, but you may not know what options are available or how to choose between them.

What's the best pick?

With so many options floating around, choosing the right one can feel like a guessing game.

Orenco's AdvanTex AX-Max Treatment Systems provide reliable, energy-efficient wastewater treatment for small communities and commercial sites, consistently meeting stringent regulatory standards with exceptional nitrogen reduction.

A single AdvanTex AX-Max handles average daily flows of up to 15,000 gallons per day (56,781 L/day) and can be installed in multi-unit arrays to treat larger flows.

AdvanTex AX-Max Treatment System

An AdvanTex AX-Max Wastewater Treatment System – with its low life-cycle costs and small footprint – was chosen as the best replacement for a failing treatment plant in the community of Pinebrook, New York. Photo courtesy of Julie Barown.

A Simple Path Forward

Knowing the right questions to ask is the first step toward choosing a wastewater treatment technology.

Ensure Your Return on Investment

- How much will this system cost me to operate every year?
- What are the long-term, life-cycle costs of this system?
- Which system can I rely on to avoid shutdowns and bad odors that will hurt my business?

Keep It Sustainable

- How long will the main components (tanks, pumps, treatment media, and controls) last?
- How hard is it to replace these components, and what do they cost?
- Can this system be expanded as my business or property needs grow?

Meet the Requirements

- How do I know if I need advanced wastewater treatment?
- Can this system meet the regulations and be adapted to a change in regulations?
- How do I avoid costly regulatory fines?

Know Who to Trust

- Does this system's manufacturer have a long, successful track record?
- How many systems has this manufacturer sold and installed?
- What product support will this manufacturer provide me after the sale?

No Guesswork

With Orenco Systems, you don't have to guess. We've thought through all the problems, so you don't have to. Our time-tested systems protect your investment by ensuring you don't face costly repairs, fines for noncompliance, or unnecessary complications.

At Orenco, we provide simple solutions that last. Whether you're in the early planning stages or need ongoing support following your installation, we're here to ensure that your system runs smoothly, year after year.

WHY CHOOSE ORENCO?

- Over 40 years in the wastewater business
- Expert staff to guide you through every decision
- Comprehensive support from design to long-term maintenance
- A reputation for excellence and reliability

WHY CHOOSE ADVANTEX?

- Minimal operation and maintenance needs
- Low life-cycle costs for a strong return on investment
- Technology built to grow with you and meet regulatory changes
- Peace of mind through consistent, reliable performance

AdvanTex AX-Max Treatment System

Carefully Engineered by Orenco

With a deep respect for the environment and a long tradition of innovative problem-solving, Orenco designs and builds the world's best decentralized wastewater systems with pride in Southern Oregon. Our products help ensure the health and safety of people, neighborhoods, and communities everywhere by protecting the world's water.

We maintain an environmental lab and employ dozens of civil, electrical, mechanical, and manufacturing engineers, as well as wastewater treatment system operators. Orenco's technologies are based on sound scientific principles of chemistry, biology, mechanical structure, and hydraulics.

Founded in 1981, Orenco has become an industry leader, with about 400 employees and some 330 points of distribution around the world. Our systems have been installed in more than 70 countries.

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Orenco® WATER
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Use the AX-Max for Properties Like These ...

MUNICIPALITIES

The village of Dupont, Ohio, found itself under orders from the Ohio EPA to install a new wastewater collection and treatment system that would protect the Auglaize River from septic runoff. The system would need to be reliable, affordable, and robust enough to handle the entire wastewater flow generated by the village. To qualify for financial assistance from the Ohio EPA, Dupont partnered with the nearby village of Cloverdale to apply for funding and create the Cloverdale Dupont Wastewater Authority. After analyzing their options, village leaders chose a Prelos® Sewer (pressurized, liquid-only sewer) followed by an AdvanTex AX-Max Wastewater Treatment System, both manufactured by Orenco Systems.

COMMUNITIES

A deluxe community in California's Sierra Nevada Mountains was having problems with both the collection and treatment of its wastewater. On-lot grinder pumps at each household had a high rate of failure, and the sequencing batch reactor (SBR) for wastewater treatment had never even been turned on, due to low seasonal flows. Grizzly Ranch began replacing failed grinder pumps with liquid-only systems, while the SBR was replaced by an AdvanTex AX-Max Wastewater Treatment System. AdvanTex systems can be installed in phases to accommodate both the low flows that are common in the early stages of a development and, later, the increased flows at full buildout. The AdvanTex system can operate year-round, even through the winter, and was available for immediate operation after being installed.

CAMPGROUNDS

Existing wastewater treatment equipment for the campground at Glendhu Bay Holiday Park in New Zealand wasn't meeting discharge requirements. Because the nearby lake is a source of drinking water for the local region, a new system was needed that could consistently meet treatment requirements, despite variable flows and a cold climate. An AdvanTex AX-Max Wastewater Treatment System was chosen as an economical option that would reliably meet the given discharge limits while leaving only a small environmental footprint. Completely prepackaged and built inside a durable, insulated, fiberglass tank, an AX-Max unit is also easy to ship, either by truck, rail, or cargo container.

Distributed by:

Orenco WATER

ENVIRONMENTAL PROFILE

AdvanTex®

Wastewater Treatment Systems

The Cedar Springs Apartments have LEED for Homes Platinum Certification. An AdvanTex Treatment System handles greywater from sinks, showers, and laundry to meet 100% of non-potable demand for toilet flushing and landscape irrigation at this California development. AdvanTex systems are also designed to treat raw sewage for beneficial reuse.

Environmental Profile
AdvanTex Wastewater Treatment Systems

Background

Many designers, builders, and homeowners want products for residential and commercial construction that reduce impacts on the environment. Wastewater treatment products are no exception. The need for environmentally sound wastewater treatment products is especially great on sensitive building sites, small or isolated sites, sites with high groundwater, and sites with inadequate access to infrastructure. Orenco's AdvanTex Treatment Systems are an environmentally sustainable wastewater treatment technology for both residential and commercial applications.

Product

Orenco's AdvanTex Treatment Systems are compact, pre-packaged, and pre-engineered products for onsite and decentralized treatment of wastewater to reuse levels. They operate with minimal noise or odor.

Onsite Treatment & Reuse

Excellent treatment: AdvanTex Treatment Systems consistently achieve effluent quality equal to or better than that of municipal treatment plants. AdvanTex effluent averages 5 mg/L or less BOD_5 and TSS when loaded at the same hydraulic loading rate used during NSF Standard 40 testing.[1] The effluent is ideal for further treatment for nonpotable reuse applications, depending on local regulations. And by reusing the effluent, potable water is preserved for other uses.

Water conservation: Onsite treatment and dispersal allows for subsurface irrigation and reuse applications. It also recharges the local aquifer, replenishing water resources.

Energy Efficiency & Sustainability

Energy efficiency: Pumps that recirculate effluent to AdvanTex Residential Treatment Systems rarely exceed 1/2 hp (0.37 kW) and only run about 30 minutes per day. Pumps for AdvanTex Commercial Treatment Systems rarely exceed 1 1/2 hp (1.12 kW). Consequently, power usage for treatment is very low, especially compared with power usage for membrane bioreactors (MBRs) or blowers in suspended-growth treatment systems.[2]

Long pump life: The pumps used in AdvanTex Treatment Systems can last longer than 25 years,[3] far longer than other pumps, especially grinder pumps.[4] Orenco's pumps can be easily disassembled and have a repairable liquid end, making total pump replacement unnecessary in most cases.

Low power usage: AdvanTex Treatment Systems can reliably treat domestic-strength raw sewage to advanced standards using about 3.17 kWh of electricity per 1000 gallons (3.8 m^3).[5] Power usage is affected by waste strength and the level of disinfection required for a specific reuse application.

Health and Safety

Groundwater safety: AdvanTex Treatment System packages incorporate strong, durable, watertight equipment that prevents wastewater from leaking and surfacing, which can pollute groundwater. Also, AdvanTex systems typically don't require the use of chemicals and are especially safe for areas with high water tables.

Nitrogen reduction: Multiple tests have shown that AdvanTex wastewater treatment reduces nitrogen by 55-70% under real-world conditions with no additional equipment needed.[6]

Installation Impacts on the Environment

Minimal site impact: Smaller AdvanTex systems can be installed with a backhoe, eliminating the need for cranes or other heavy equipment that can disturb the building site.

Modular construction: For the commercial designer and builder, the modular design of larger AdvanTex systems allows additional treatment capacity to be added as needed while avoiding oversized, unneeded infrastructure. Orenco's pre-manufactured components reduce site impact while saving money for developers.

LEED Profile — AdvanTex Wastewater Treatment Systems

Background

The Leadership in Energy and Environmental Design (LEED) Green Building Certification for new construction and major renovation is an important accreditation for today's environmentally aware engineers, designers, and builders. Orenco's AdvanTex Treatment Systems can help a project qualify for LEED points in several categories.

Sustainable Sites

Construction Activity Pollution Prevention: AdvanTex Treatment Systems are smaller than many wastewater filtration systems, so they don't require heavy-duty equipment to transport. And AdvanTex installation requires minimal excavation, which means less soil erosion and airborne dust.

Open Space: When combined with a neighborhood collection system, AdvanTex Treatment Systems enable developers to cluster homes more closely together than is possible with typical septic systems – and with minimal noise and odor. This conserves existing natural areas and allows for a high ratio of open space to development.

Water Efficiency

Outdoor Water Use Reduction: Treated effluent from an AdvanTex Treatment System can be used for irrigation,* providing an alternative water source that reduces outdoor consumption of potable water.

Indoor Water Use Reduction: Using AdvanTex-treated effluent as an alternative water source for toilet flushing* reduces the indoor use of potable water, which can be reserved for drinking and cooking.

Cooling Tower Water Use: Treated effluent from an AdvanTex Treatment System can be recycled for use in cooling towers.*

Water Metering: Reclaimed water from an AdvanTex Treatment System can be used for irrigation* and monitored via telemetry control panel.

Energy & Atmosphere

Optimize Energy Performance: Pumps that circulate effluent to AdvanTex Treatment Systems rarely exceed 1/2 hp (0.37 kW) for residential systems and 1 1/2 hp (1.12 kW) for commercial systems. These pumps run for just minutes per day and use far less energy than aerobic blowers.[7]

Renewable Energy Production: Off-grid solar panels have been used to power Orenco's low-horsepower (1/2 hp or 0.37 kW) recirculation pumps, like the ones at the LEED Platinum-certified Audubon Education Center in Los Angeles.

Innovation Catalog

Sustainable Wastewater Management: AdvanTex Treatment Systems consistently achieve effluent quality equal to or better than that provided by municipal treatment plants.[8] The effluent is ideal for further treatment for nonpotable reuse applications, when local regulations allow.

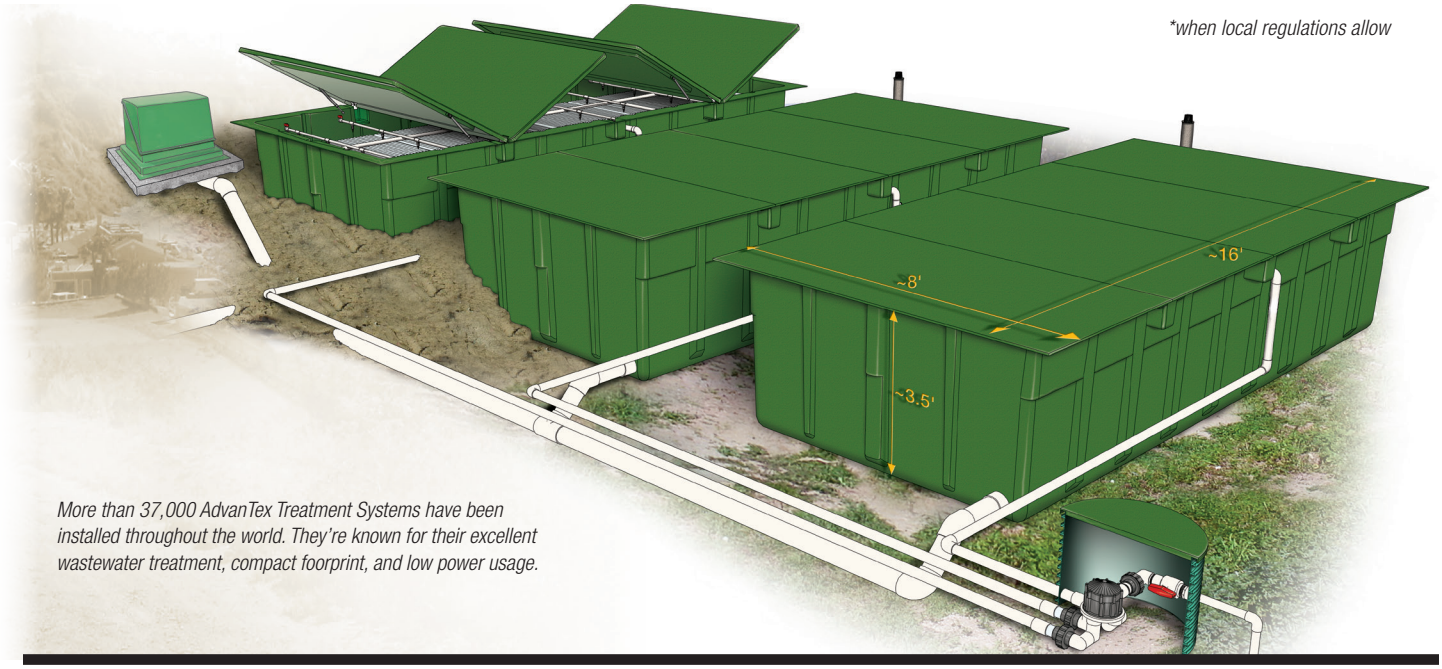
Pilot Credits

Whole Project Water Use Reduction: By reusing treated effluent from an AdvanTex Treatment System, whole-building water use can be significantly reduced as part of a proposed Water Balance Model for the project.

Green Infrastructure
(Neighborhood Development)

Wastewater Management: AdvanTex systems can easily be designed to retain and reuse on-site at least 25% of the average annual wastewater generated by a project, via applications like irrigation and toilet-flushing.

**when local regulations allow*



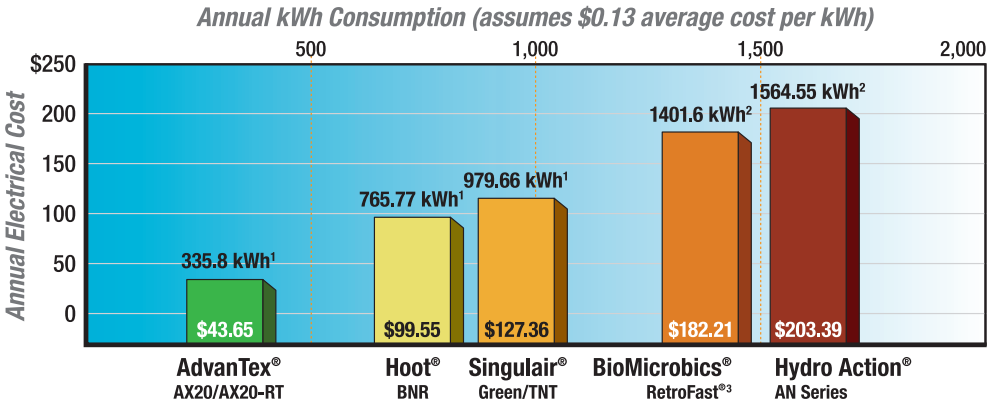
More than 37,000 AdvanTex Treatment Systems have been installed throughout the world. They're known for their excellent wastewater treatment, compact foorprint, and low power usage.

Energy Efficient Wastewater Treatment

Environmentally conscious consumers, designers, engineers, and construction professionals want wastewater treatment systems that use minimal electricity yet consistently produce high-quality effluent that's available for reuse. Long-term field trials in both the United States and overseas have proven that Orenco's AdvanTex Treatment Systems use significantly less electricity than other wastewater systems, while providing exceptionally high performance.[9]

Because AdvanTex systems use a media filter instead of a suspended-growth treatment system, they use very little power. The pumps that circulate effluent to residential AdvanTex Treatment Systems rarely exceed 1/2 hp (0.37 kW) and run for just minutes per day, using far less energy than the aerobic blowers required for aeration of suspended growth systems. The graph below shows how the annual power cost of AdvanTex compares to some other types of wastewater treatment systems.

Electrical Usage of Residential Wastewater Treatment Systems*



** Data from the Maryland "Bay Restoration Fund Ranking Documentation" at http://mde.maryland.gov/programs/Water/BayRestorationFund/OnsiteDisposalSystems/Documents/BAT%20Ranking%20Document.pdf*

[1] Verified by third-party testing

[2] Reported by pump manufacturer

[3] RetroFast unit limited to households of 1-4 occupants with 3 or fewer bedrooms

The effluent sample on the left, discharged from an Orenco AX100 Treatment System, is as clear as the water sample on the right, taken from a nearby lake.

Company

Orenco Systems has been designing, manufacturing, and distributing leading-edge wastewater equipment since 1981. Most of the company's 400-plus employees work out of a 26-acre (10-ha) headquarters site in Sutherlin, Oregon, that includes sales, manufacturing, engineering, and research facilities. Orenco sells its products through more than 330 points of distribution in North and Central America, Australasia, Europe, and Africa.

For information about Prelos Sewer™, AdvanTex® Wastewater Treatment, or Orenco Controls™, contact Orenco Systems®, Inc.

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www.orenco.com

1. *Six-month cumulative average from NSF International testing on the AX20N at 500 gpd (1900 L/d), using composite sampling.*
2. *See Electric Power Research Institute (EPRI), "Electricity Use and Management in the Municipal Water Supply and Wastewater Industries," (EPRI: November, 2013), Table 5-2. Also, Maryland Department of the Environment, "Bay Restoration Fund Ranking Documentation" accessed June 29, 2018, http://mde.maryland.gov/programs/Water/BayRestorationFund/OnsiteDisposalSystems/Documents/BAT%20Ranking%20Document.pdf*
3. *As seen in the Elkton, Oregon, sewer system.*
4. *Henry S. Albro, "Ownership of Pressure Sewer Systems, a Tale of Two Towns" (Journal of the New England Water Environment Association, spring, 2015), 32.*
5. *Orenco Systems, Inc., "How to Compare Power Consumption of Advanced Treatment Systems," AHO-ATX-POWER-1, 2006.*
6. *Maryland Department of the Environment, "Bay Restoration Fund Ranking Documentation" and NSF/ANSI Standard 245 Testing Report, May 2015.*
7. *Ibid.*
8. *NSF International testing.*
9. *Maryland Department of the Environment, "Bay Restoration Fund Ranking Documentation" and Environment Bay of Plenty, "Nitrogen reduction trials of advanced on-site effluent treatment systems," accessed June 29, 2018, https://www.boprc.govt.nz/media/33112/Report-2006-OSETTrial1-2005-2006pdf.pdf*

Technical Data Sheet

AdvanTex® AX-Max Treatment Systems

Applications

Orenco's AdvanTex® AX-Max is a complete, fully-plumbed, AdvanTex Wastewater Treatment Plant for residential, commercial, municipal, and mobile applications with medium-to-large-flows and permits requiring secondary treatment or better. It can be used as a stand-alone unit or in multi-unit arrays under adverse conditions in a wide range of environments. The AX-Max is ideal for:

- Small sites and poor soils
- At-grade or above-grade installations
- Mobile and temporary installations
- Disaster response sanitation
- Remote locations
- Extreme hot or cold climates

General

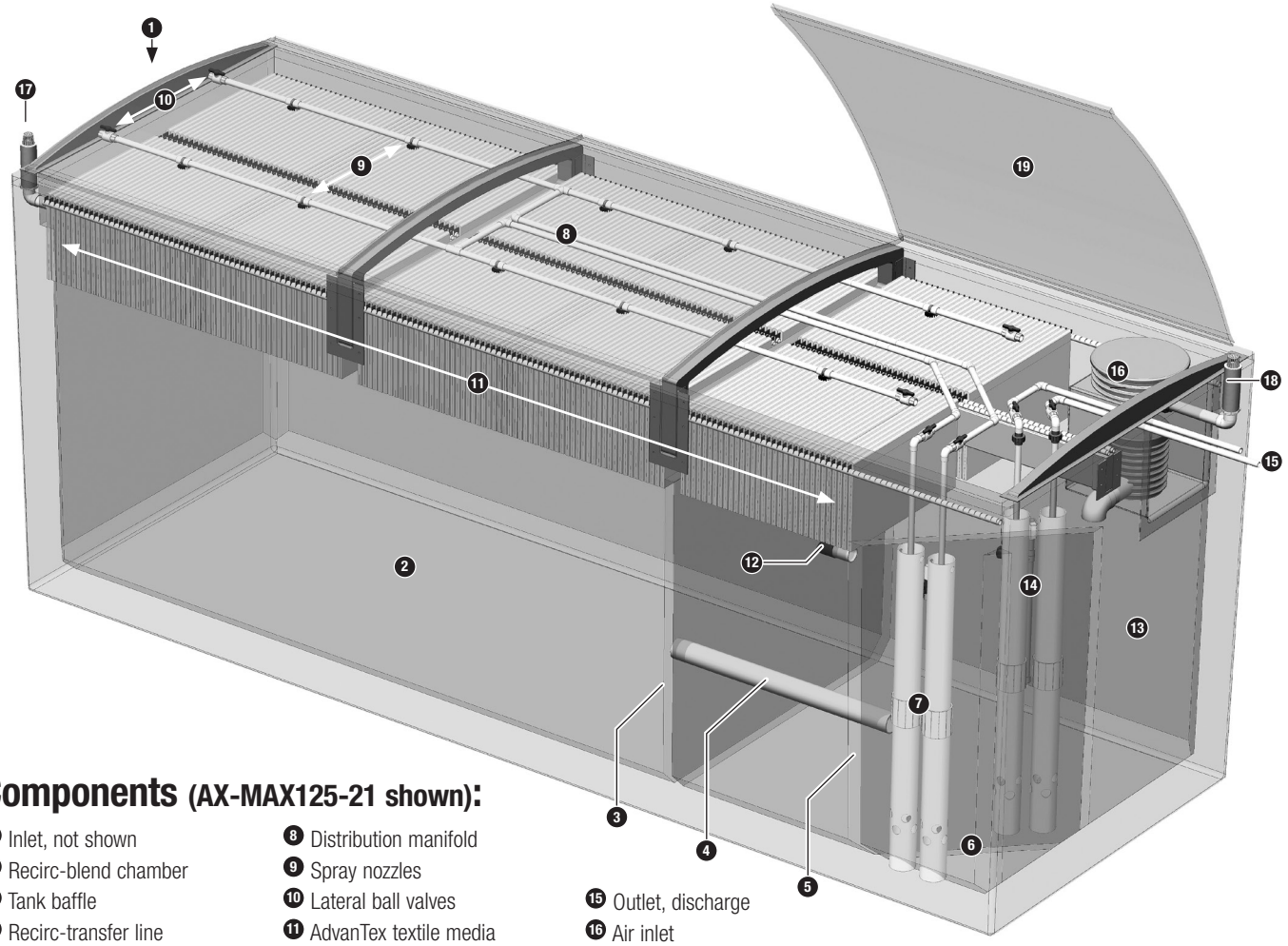
The AX-Max is a modular system that can be preceded by primary treatment or configured to incorporate primary, secondary, and tertiary wastewater treatment before reuse or dispersal.

The heart of the AX-Max system is the AdvanTex Recirculating Treatment Tank, a sturdy, watertight, corrosion-proof fiberglass tank that includes the same dependable, textile treatment media found in all AdvanTex products.

Standard Models

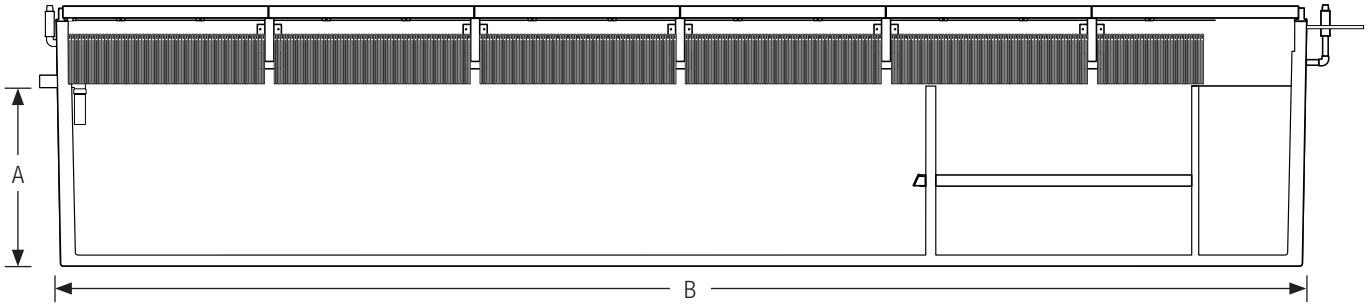
AX-MAX100-14, AX-MAX150-21, AX-MAX200-28, AX-MAX250-35, AX-MAX300-42 (Standard models without pump systems.)

AX-MAX075-14, AX-MAX125-21, AX-MAX175-28, AX-MAX225-35, AX-MAX275-42 (Standard models with pump systems.)

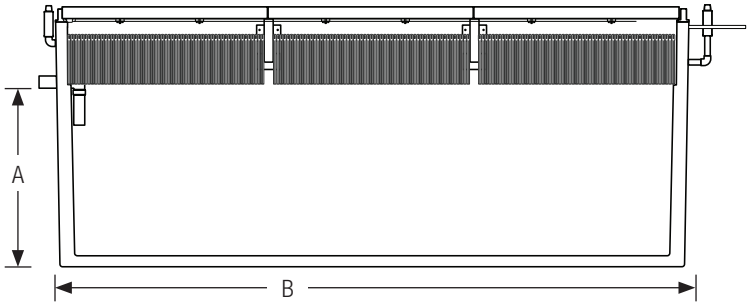


Components (AX-MAX125-21 shown):

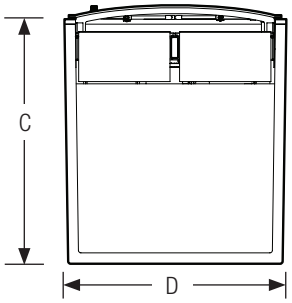
1. Inlet, not shown
2. Recirc-blend chamber
3. Tank baffle
4. Recirc-transfer line
5. Recirc-pump chamber baffle
6. Recirc-pump chamber
7. Recirc pumping assembly
8. Distribution manifold
9. Spray nozzles
10. Lateral ball valves
11. AdvanTex textile media
12. Recirc-return valve
13. Recirc-filtrate chamber
14. Discharge pumping assembly
15. Outlet, discharge
16. Air inlet
17. Vent fan assembly
18. Air outlet
19. Hinged lid, typical



AdvanTex AX-MAX275-42, side view



AdvanTex AX-MAX150-21, side view



AdvanTex AX-MAX, end view (all models)

Specifications

Nominal Dimensions*

Model	AX-MAX100-14	AX-MAX150-21	AX-MAX200-28	AX-MAX250-35	AX-MAX300-42
A, ft (m)	variable	variable	variable	variable	variable
B, ft (m)	14.0 (4.2)	21.0 (6.4)	28.0 (8.5)	35.0 (10.7)	42.0 (12.8)
C, ft (m)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)
D, ft (m)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)
Footprint, ft^2 (m^2)	112.0 (10.4)	168.0 (15.6)	224.0 (20.8)	280.0 (26.0)	336.0 (31.2)
Model	**AX-MAX075-14**	**AX-MAX125-21**	**AX-MAX175-28**	**AX-MAX225-35**	**AX-MAX275-42**
A, ft (m)	5.7 (1.7)	5.7 (1.7)	5.7 (1.7)	5.7 (1.7)	5.7 (1.7)
B, ft (m)	14.0 (4.2)	21.0 (6.4)	28.0 (8.5)	35.0 (10.7)	42.0 (12.8)
C, ft (m)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)	7.6 (2.3)
D, ft (m)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)	7.5 (2.3)
Footprint, ft^2 (m^2)	112.0 (10.4)	168.0 (15.6)	224.0 (20.8)	280.0 (26.0)	336.0 (31.2)

**See AdvanTex® AX-Max Treatment System drawings for exact dimensions and specific treatment configurations.*