



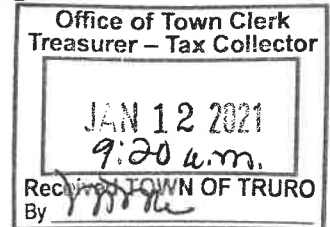
Town of Truro

P.O. Box 2030, Truro, MA 02666
Tel: 508-349-7004 Fax: 508-349-5505

ZONING BOARD OF APPEALS

Agenda

DATE OF MEETING: Thursday, January 14, 2021
TIME OF MEETING: 6:30 pm
LOCATION OF MEETING: Remote Meeting
www.truro-ma.gov



Open Meeting

This will be a remote meeting. Citizens can view the meeting on Channel 18 in Truro and on the web on the "Truro TV Channel 18" button under "Helpful Links" on the homepage of the Town of Truro website (www.truro-ma.gov). Click on the green "Watch" button in the upper right corner of the page. Please note that there may be a slight delay (approx. 15-30 seconds) between the meeting and the television broadcast/live stream.

Citizens can join the meeting to listen and provide public comment via the link below, which can also be found on the calendar of the Board's webpage along with the meeting Agenda and Packet, or by calling in toll free at 1-877-309-2073 and entering the following access code when prompted: 766-750-293. Citizens will be muted upon entering the meeting until the public comment portion of the hearing. If you are joining the meeting while watching the television broadcast/live stream, please lower or mute the volume on your computer or television during public comment so that you may be heard clearly. Citizens may also provide written comment via postal mail or by emailing the Town Planner at planner1@truro-ma.gov.

Meeting link: <https://global.gotomeeting.com/join/766750293>

Hearing materials can be found at the following web address:
www.truro-ma.gov/zoning-board-of-appeals/pages/cloverleaf-40b-application

Public Hearing – Continued

2019-008 ZBA – Community Housing Resource, Inc. seeks approval for a Comprehensive Permit pursuant to G.L. c. 40B, §§20-23 to create 40 residential rental units, of which not less than 25% or 10 units shall be restricted as affordable for low or moderate income persons or families, to be constructed on property located at 22 Highland Road, as shown on Assessor's Map 36 and Parcel 238-0 containing 3.91 acres of land area.

Public Comment

The Commonwealth's Open Meeting Law limits any discussion by members of the Board of an issue raised to whether that issue should be placed on a future agenda. Speakers are limited to no more than 5 minutes.

Adjourn

Appendix 5

BioMicrobics BioBarrier® Submission

Westport Noquochoke Village – Westport, MA

In Appendix 5 please find MBR Treatment System case studies and operational data. You will note that the MBR Technology is used for a variety of applications; and is, in many cases, the best option for an onsite treatment solution.

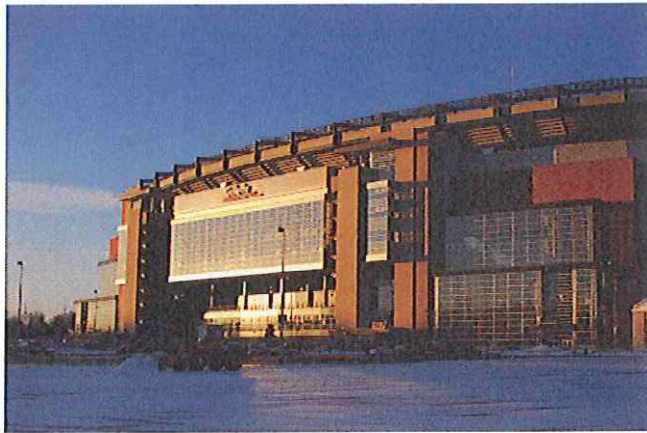
CASE STUDY: GILLETTE STADIUM

SYSTEM DESCRIPTION

Location: Foxborough, Massachusetts (latitude: 42° 05' 07.72" N; longitude: 71° 16' 16.34" W)

Collection: A gravity collection system brings all wastewater to several low points on the properties where pump stations transfer sewage to the treatment plant, which is located behind the stadium in a separate utility building.

Treatment: Wastewater equalization tanks buffer wide variations in flow because of scheduled stadium events, which can change the population served by the system by more than 75,000 on a given day. The treatment plant is a membrane bioreactor that uses the Modified Ludzack-Ettinger (MLE) biological anoxic-aerobic process and ozone and ultrafiltration for polishing and disinfection. A 1900 m³ (600,000 gal) ground-level tank and an elevated 1900 m³ (500,000 gal) water storage tank provide water distribution pressure control and help mitigate the wide fluctuations in daily flow.



Photos licensed under Creative Commons 2.0 License. Photo credit: www.flickr.com/photos/jkgreenstein/4243828385/

Product disposition: Nonpotable water is supplied to the toilet facilities for use as flush water. As flush water demand increases because of increasing use, there is an increase in wastewater flow. While processing this flow over varying flow conditions, the system first satisfies the demand for nonpotable reuse water. As the nonpotable water demand is fulfilled, excess water is recharged to groundwater via subsurface infiltration chambers located beneath the parking lots. Residuals are hauled for offsite disposal as a liquid sludge.

Flowrate: 4900 m³/d (1.3 mgd) peak flow; design includes a 3800 m³ (1 million gal) equalization tank to buffer wide flow variations because of stadium events.

Service area: Commercial community that consists of a 68,000-seat NFL Stadium and surrounding commercial properties that consist of outlet stores, hotel, restaurants, movie theatres, and other retail.

Case study type: Development-scale cluster reuse system for commercial redevelopment and NFL stadium.

Management type: Private, with long-term O&M contract

DESCRIPTION

Gillette Stadium, located in Foxborough, Massachusetts, and the surrounding commercial development is served by a water reuse system that provides treatment of all wastewater that is produced from within its service area. The system currently has a capacity of 4900 m³/d (1.3 mgd) peak flow and includes 3800 m³ (1 million gal) of equalization tanks to buffer wide flow variations during stadium events. All wastewater is treated to Massachusetts' direct water reuse standards and the treated water is currently used for toilet flushing. Excess treated water is recharged to the groundwater via subsurface recharge fields located beneath the parking lots. Treated water is stored in an elevated water tank that provides storage and pressure control for the nonpotable water distribution system.



Elevated 1900 m³ (500 000 gal) water storage tank for reclaimed water at Gillette Stadium.

The wastewater treatment system consists of a membrane bioreactor with denitrification and UV disinfection. Given the commercial nature of the properties served, the water reuse system supplies approximately 75% of the total water used with the balance provided via a publicly owned potable well. The wastewater system is completely independent of any regional wastewater management infrastructure and serves as a standalone decentralized utility. The water supply is owned by the municipality and is derived from a confined aquifer with limited capacity.

The project was intended to both replace existing non-performing infrastructure and to allow for expansion to serve new economic development in the area. Wastewater at the old stadium was managed via an extended aeration plant with discharge to surface water. The property existed as an older stadium, which was demolished and rebuilt along with other commercial support services. The town of Foxborough allowed the service area to include the stadium property plus some adjoining properties along Route 1, which were zoned for commercial development. The town controls the service area, which is limited by available expansion area for the water reuse plant and at the time, the Town of Foxborough's willingness to allow the expansion.

PROJECT GOALS

The overarching system objective was to provide water and wastewater infrastructure to allow reconstruction and expansion of the stadium, while providing for economic growth in the area.

TIMELINE

Project planning, design, and permitting were conducted over a period of 18 months that ended in 1999 when construction broke ground. The facility was completed and became operational in 2000 and has operated since that time. Cooperation of the Massachusetts Department of Environmental Protection was instrumental in moving the permit process along, and a design-build-operate contracting method was used to expedite the project delivery schedule and manage costs.

DECISION MAKING

The most important factors in selecting a decentralized approach for Gillette Stadium were the inability to extend the regional infrastructure, the limited water resources, and the lack of public support at that time for a centralized system to serve a wider area of the town.

Residential development in this area is well-served by onsite septic systems and there was no public mandate for a centralized wastewater system. In addition, the centralized water supply is sourced from a limited capacity confined aquifer, thereby placing another constraint on development and economic growth. Ultimately, water reuse was the only way to viably provide the required water resource services.

Because of the high quality designation of potential receiving waters, which would have limited the potential to discharge treated wastewater effluent, water reuse and groundwater recharge were considered at a relatively early stage in the development planning and were adopted once feasibility analysis proved the site's viability. The water reuse approach was able to solve both the water supply and wastewater discharge limitations by reducing the water supply and wastewater discharge demands by 75%, making a groundwater recharge system viable. In addition to recharging the water supply aquifer, this system provides benefits associated with supplementing base flow to the local streams, supporting the natural water cycle within the service area.

Given the extensive economic investment in the stadium and surrounding commercial development and the environmentally sensitive nature of the area, the absolute highest quality performance was necessary. There was zero tolerance for any system performance failure due to the resulting loss of millions of dollars in revenue should use of the facilities be interrupted for any reason. Accordingly, membrane bioreactor technology was selected as a means of assuring high quality nonpotable water even under conditions where the flow quantity and strength would be highly variable.

The MBR technology was preferred because it provided the confidence necessary to assure safe and successful performance. The developer made the final decision about the technology to be used based on the recommendation of the design engineer, Applied Water Management, Inc. The decision to use a water reuse system with groundwater recharge backup was supported by an engineering feasibility analysis and data from the nearby Wrentham Factory Outlet Mall facility, which had been operating for several years with a similar system in place. Overall cost was an important factor, and the MBR water reuse approach emerged as the lowest cost approach that yielded the best outcome by allowing economic development while protecting delicate water resources.

Other alternatives were originally considered, including extension of regional water and wastewater lines from the Massachusetts Water Resource Authority (MWRA). This extension, however, was not desirable because it would have resulted in more sprawling development in rural areas. It also would have been very expensive and complex, involving eight different towns and multiple approvals. Construction of a Sequencing Batch Reactor (SBR) system to serve the town was also considered, but rejected, in the analysis of alternatives. Although these alternatives were politically untenable, most political forces desired to have the stadium and team remain at this location and the Town of Foxborough desired the economic growth along the Rt. 1 corridor. There was overall widespread support for the project if the negative impacts could be avoided.

Final infrastructure decisions were made by the developers of the Gillette Stadium property together with the municipal officials of the Town of Foxborough. However, the project went through a public review for land development which involved actions by the Foxborough Board of Water and Sewer, the Planning Board and Board of Selectmen. Public hearings were conducted on the proposed development and on the water reuse system service area. The Town of Foxborough is governed by the traditional Open Town Meeting form of government that is typical for New England and tends to provide direct public input to key decisions. A Town Meeting vote was held to approve this project which included some broader municipal improvements including the construction of elevated water supply tanks. Economic growth was important to the town and the vote passed.

The Massachusetts Department of Environmental Protection administers the Pollution Discharge Elimination Permitting program and the Massachusetts Office of Energy and Environmental Affairs administers the Massachusetts Environmental Policy Act (MEPA), which is the process for environmental assessment and review for new developments. Both the MADEP permits and the MEPA review process were favorable to the project and supported the water reuse concept.

CHALLENGES

This project serves as a good example of how innovative solutions can move ahead when all parties work together in identifying constraints and concerns and to work out appropriate mitigating measures.

Strong cooperation from the regulatory agencies involved allowed the system to readily be constructed as envisioned. However, subsequently, MADEP developed water reuse standards to provide clear guidelines for future water reuse infrastructure. It was also important to have the cooperation of the regulatory authorities who allowed performance standards implemented at an earlier and smaller facility (Wrentham Outlet Mall) to apply to a much larger and more significant project.

FINANCING

The project was funded by the developer and the town. Through public finance bonds, the town provided funding for portions of the system that provided direct benefits beyond Gillette Stadium. The town's portion included a new potable water storage tank and other associated appurtenances. The Kraft Group, developers of the stadium, privately financed the water reuse plant and associated distribution piping and recharge fields.

Other funding alternatives were not considered because the project was complex and had to be approved in a timely manner. Other sources of funding were not readily available and would have possibly caused delays.

In many senses, the overall project was a public-private partnership where the developer and municipality worked cooperatively with regards to funding aspects of the project, but the developer provided the bulk of the financing and all of the project design and construction management.

MANAGEMENT

The treatment facility and water reuse piping is owned by the developer while the Town owns the water reuse tank and all water supply infrastructure. Operating and management risks were shared with the designer-builder, Applied Water Management, under a 20-year performance contract. The town owns the potable water system. Applied Water Management provided the feasibility analysis, design, and construction and operates the system. Operating and maintenance costs are covered under a 20-year operating agreement.

The Town of Foxborough preferred that the developer take responsibility for system construction and operation, but reserved capacity in the system for expansion as other commercial development occurs. The initial system was constructed for the stadium only and had an average flow capacity of 946 m³/d (250,000 gpd). Subsequently, the system has been expanded to the current 4900 m³/d (1.3 mgd) capacity to serve additional commercial development by adding treatment trains as planned in the design.

All operating costs are paid for by the stadium complex owners who assess property tenants accordingly. Applied Water Management is fully responsible for the system operation.

PERMITS

The system was permitted through the MADEP under the State Pollution Discharge Elimination System program. It is administered and enforced by the MADEP, which requires monthly monitoring, and the completion of Discharge Monitoring Reports.

Permitting the complete system required integration of groundwater discharge permits together with water reuse requirements. Water reuse provisions were not formally defined at the time of this project, but precedent had been established through the implementation of several previous water reuse projects. Overall support for the project helped the regulators feel comfortable moving forward with the required permits. Subsequent adoption of statewide water reuse standards should facilitate the implementation of future decentralized water reuse projects in Massachusetts.

PERFORMANCE

The project is in compliance with all permits and is meeting water quality objectives. The system has produced reclaimed water of the quality required, and the stadium and surrounding commercial development have been successful in providing a solid economic base for the Town of Foxborough.

LINKS

www.amwater.com/products-and-services/about-us/applied-water-management-group.html

www.thekraftgroup.com/environment/#gilletteStadium

Better Water. Better World.

FOR IMMEDIATE RELEASE CASE STUDY

Title: **Onsite Residential Membrane Systems, Possible?**

Homeowners test the latest advancements for their wastewater treatment

Situation

Since early 2001, Alternative Wastewater Systems (AWS) of Idaho has distributed Bio-Microbics products. Very familiar with the MicroFAST® and other FAST® systems, they wanted to try out the new BioBarrier® Membrane Bioreactor (MBR) unit, also from Bio-Microbics.

Ryan Spiers of Spiers Construction identified a family needing a MicroFAST® 0.5 and asked them if they would be willing to upgrade at no additional cost to a BioBarrier® MBR system. With all of the benefits that this system promises, they agreed.

Solution

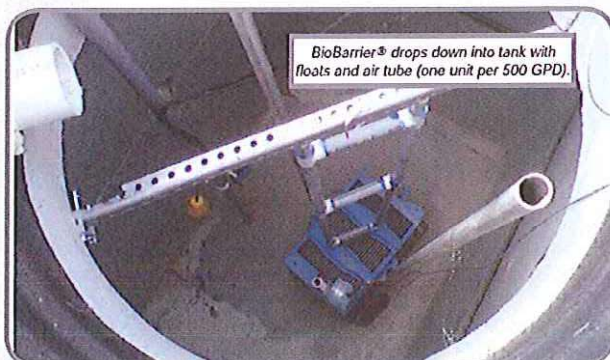
First of its kind in Idaho, to evaluate membrane treatment for



BioBarrier® System installed by Alternative Wastewater Systems, LLC. in Idaho.

the single family home, the NSF®/ANSI STD 40/245 certified system was installed and has been tested every other month to show the effluent being treated to direct discharge characteristics, i.e. effluent quality of BOD <2 mg/L, TSS <2, Ammonia <1 and reduces Fecal Coliform and E. Coli to less than 10 cfu.

With these advanced, biological nutrient removal capabilities, the BioBarrier® is engineered in a small footprint and immersed directly in the aeration process in the tank. Utilizing flat sheet membranes for a versatile design and robust process, the BioBarrier® has a high surface area of membrane material in a double plate configuration. The membranes and processes used in this advanced system act as a physical barrier for nearly all common pollutants found in wastewater. The treated water moves through the pores to the space between the films. A pump then extracts the clean water to discharge in to the environment. Using a completely automated control strategy, the unique operation sequence of the BioBarrier® system requires no complicated backwash.



BioBarrier® drops down into tank with floats and air tube (one unit per 500 GPD).

Better Water. Better World.

Results

The BioBarrier® MBR system, which received the 2009 Technology Award presented by the Environmental Business Journal (EBJ), provides new opportunities for wastewater recycling. After more than 8 months in operation, the test results have proven the system is capable for direct discharge.

"I really am amazed at what this little unit does, California standards on what class A effluent is can be easily attained by this unit all by itself. We've been testing the coliforms and I believe there is no need for further disinfection. The effluent is at acceptable levels for direct discharge to any where you would want to put it," says Mr. Spiers.

The BioBarrier® MBRs and HSMBR® systems are one of first MBR systems specifically designed for the onsite market. More than ever, onsite professionals and end users choose Bio-Microbics for their wastewater treatment requirements to help conserve natural resources, protect ground and surface waters, and overcome land constraints.



Suspended and other biological treatment occurs

About Bio-Microbics, Inc.

With a worldwide emphasis on environmental concerns and improving water quality, Bio-Microbics manufactures proven wastewater and storm water treatment systems for decentralized communities and commercial properties. Ideal for concrete, fiberglass, steel, or plastic tanks, the simple, pre-engineered, modular design of our FAST® [including the popular MicroFAST®] wastewater treatment systems deliver consistent high performance. Successfully used for over 35 years in municipal, industrial, marine, commercial and residential properties located around the globe, the advanced FAST® (Fixed Activated Sludge Treatment) technology is easy to install and maintain. Our advanced wastewater and stormwater treatment products help treat the world's water better.

Bio-Microbics...Better Water. Better World.®

Contact: Jennifer Cisneros, Manager Marketing Communications
Phone: (913) 422-0707 • FAX: (913) 422-0808
E-mail: jcisneros@blomicrobics.com • Web: www.blomicrobics.com



Small footprint and landscape friendly design.

Design Considerations for the Complex Waste Streams of Wineries

WINERY WASTEWATER TREATMENT | By Sheldon Sapoznik, REHS



Complexity is a term often used in tasting rooms to describe a fine wine, although little thought and understanding is given to the complexity of treating winery wastewater. It is vital to understand not only the nature of winery wastewater, but the by-products produced during the wine making process, such as juice acidity, lees, and cleaning agents that dictate the various constituents and concentrations encountered. Beyond the romanticized season of harvest and the demands created by crush, other activities that generate wastewater throughout the year include barrel washing, fermentation tank washing, and equipment cleaning from racking and bottling operations.

Unlike residential wastewater, winery wastewater usually does not contain pathogenic bacteria in the waste stream; however, Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) are found in significantly higher concentrations. In fact, BOD and TSS concentrations can be forty times as high as household wastewater with 12,000 mg/L BOD and 6,000 mg/L TSS typical during harvest activities. At other times of the year, the various winemaking activities create fluctuating flows, which create system over-capacity concerns. The need for versatility in design and operation is key in selecting a winery wastewater treatment system.

There are several factors to consider in all winery wastewater treatment system projects. Determining the actual wastewater flows during crush (the highest wastewater generating operation at a winery) can be challenging. These flows are based on industry experience, regulatory agency calculations, as well as input and data from the winery itself. Misjudging the maximum design flow and pollutant concentrations can be devastating to a winery treatment system. However, oversizing a system can equally create functional problems and add unnecessary cost. A winery wastewater treatment system should have the flexibility to handle the high and low flows and loads. Most successful winery wastewater treatment systems include proper primary screening, a robust active aeration system followed by a clarifier, or membrane barrier to separate the treated effluent from the biological process. Additional key considerations include proper sizing and material selection of the treatment tanks to provide required biological retention time, surge capacity and sludge storage capability.

The Bio-Microbics BioBarrier® HSMBR® winery wastewater treatment system takes the complexity out of treating winery wastewater with its simple, award-winning design and fully certified treatment process.

Utilizing superior aeration capabilities in conjunction with durable flat sheet membrane technology, the modular and scalable design provides flexibility to wineries, ensuring optimum treatment throughout the year and lower operating costs. These proprietary units assure all effluent passes through the membrane making it virtually impossible to bypass the treatment process along with providing microfiltration and ultrafiltration resulting in consistent high quality effluent ready for water reuse.

Introduced to the Northern California wine region of Napa/Sonoma County in 2013, the BioBarrier HSMBR winery wastewater treatment system's recent installations have generated tremendous optimism and interest due to its treatment capabilities, ease of installation, and low operating costs. As the Pacific Northwest Wine Region continues to address winery wastewater concerns, the BioBarrier HSMBR system will surely be a solution to provide vital water reuse opportunities such as quality irrigation water for vineyards, recycled water for dust control, processing area wash-down water, or just highly treated effluent for disposal where untreated or poorly treated winery wastewater threatens vital habitats or groundwater resources.




Author Bio: Sheldon Sapoznik, REHS is the Owner of Wine to Water Sales Group. With his 20 years' experience in winery wastewater treatment as a Registered Environmental Health Specialist for Napa County, California, Mr. Sapoznik left the public section to help promote and expand the use of Membrane BioReactor technology for winery wastewater filtration.

BIO MICROBICS
BETTER WATER. BETTER WORLD.

Sheldon Sapoznik, REHS

Winery Wastewater Specialist
Receiving BS in Environmental & Occupational Health Science (CSUN), Mr. Sapoznik has 20 years experience in the winery market and authored wastewater regulatory & design standards. He has presented on winery wastewater treatment. Side Note: Owner of Wine to Water Sales Group - an authorized Sales Rep for the BioBarrier® HSMBR® Winery Wastewater Treatment System.



E: sheldon.sapoznik@gmail.com web: www.biomicrobicswinery.com

WASTEWATER TREATMENT SYSTEM Southborough, Massachusetts



Client

Fay School

Description

The Fay School is a private day and boarding school for elementary and middle school students in Southborough, Massachusetts. Construction of a 26,500 gallon per day membrane bioreactor wastewater treatment facility was completed in 2009. A portion of the treated effluent is reused for toilet flushing in five new dormitory facilities and a new maintenance building. Wastewater is treated by fine screens, a membrane bioreactor and ultraviolet disinfection. As a school facility, The Fay School experiences significant fluctuations in wastewater flow rate over the course of a day and throughout the year. Careful planning was required to ensure that adequate pre-treatment and post-treatment storage capacity was provided and that the treatment capabilities of the equipment would be able to handle such fluctuations.

Tighe & Bond designed the treatment facility and assisted the School with the permit application process, which included working closely with the Massachusetts Department of Environmental Protection on the water reuse system permitting, effluent testing and quality requirements. This project was part of a campus expansion that included LEED certification of buildings and use of "green" technologies and construction practices.

MicroC™ Performance Example

Brass Castle Estates



Satellite image of property



Typical home served by wastewater treatment facility



Wastewater treatment plant building

* Average GPD from Oct. '04 to Sept. '05

** Mixture of four pounds of table sugar per gallon of water

Facility Name: Brass Castle Estates

Facility Location: Pittstown, New Jersey

Facility Description: Subdivision of residential properties

Flow: Average flow* = 12,963 GPD. Design flow = 22,000 GPD

Denitrification technology: Zenon Zeeweed® 500 Membrane Bioreactor (MBR) with anoxic compartment for denitrification

Previous carbon source: Sucrose solution**

Date MicroC™ started: December 11, 2004

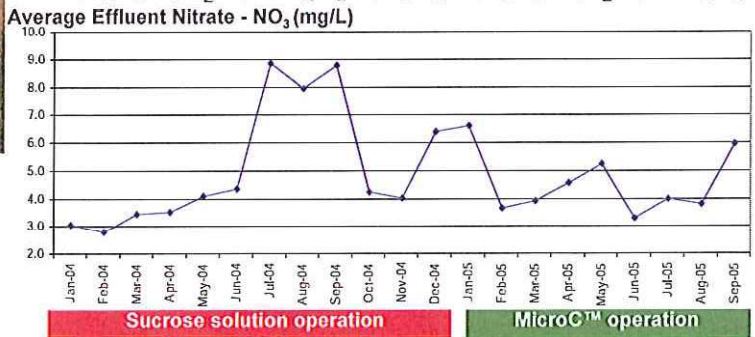
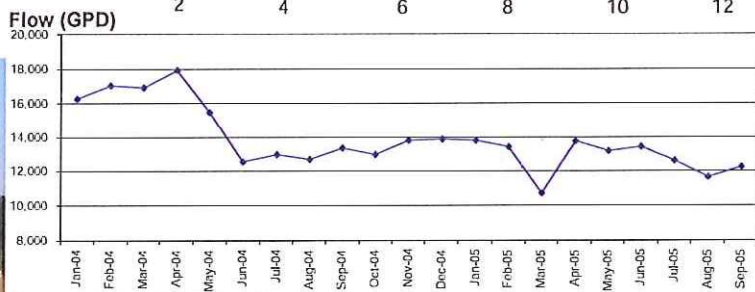
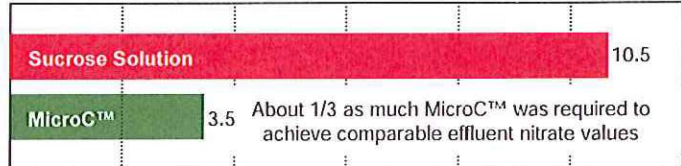
Operations & Maintenance firm: Applied Water Management
Operator – Roger Parr

Discharge permit : NJ DEP Permit Number NJ0068829

Permit limits : Flow – 22,000 GPD, pH - report
Total Nitrogen – 10mg/L, Volatile Organics – report
Fecal Coliform – 200 col/100ml

MicroC™ performance narrative: Plant switched from sucrose solution to MicroC™ in December of 2004 and demonstrated consistent performance in terms of nitrate removal vs. prior carbon source. About one third of the volume of MicroC™ was required to achieve comparable effluent nitrate concentrations.

Gallons of external carbon required per day



For more information, contact: Environmental Operating Solutions, Inc.
(508) 495-3300 ~ www.eosenvironmental.com ~ info@eosenvironmental.com

MicroC™ Performance Example (continued)

Brass Castle Estates

Brass Castle Estates						
	Flow GPD	Carbon Source	Carbon GPD	Avg. Effluent NO3 (mg/L)	Avg. Effluent NH4 (mg/L)	Max. Effluent NO3+NH4 (mg/L)
Jan-04	16,285	Sucrose	10.2	3.0	0.1	3.3
Feb-04	17,042	Sucrose	10.9	2.8	0.1	3.6
Mar-04	16,933	Sucrose	10.2	3.4	0.1	3.2
Apr-04	17,934	Sucrose	10.1	3.5	0.2	4.3
May-04	15,506	Sucrose	9.5	4.1	0.2	6.7
Jun-04	12,578	Sucrose	6.0	4.3	0.2	6.9
Jul-04	12,961	Sucrose	5.3	8.9	0.2	9.0
Aug-04	12,702	Sucrose	3.9	7.9	0.3	0.7
Sep-04	13,363	Sucrose	4.3	8.8	0.3	7.8
Oct-04	12,973	Sucrose	9.6	4.2	0.2	2.0
Nov-04	13,823	Sucrose	10.4	4.0	0.3	6.9
Dec-04	13,887	Transition	3.5	6.4	0.3	5.3
Jan-05	13,791	MicroC™	3.5	6.6	0.3	3.4
Feb-05	13,393	MicroC™	3.6	3.7	0.3	9.3
Mar-05	10,756	MicroC™	3.4	3.9	0.3	4.7
Apr-05	13,746	MicroC™	3.5	4.6	0.2	5.3
May-05	13,203	MicroC™	3.4	5.2	0.1	5.8
Jun-05	13,401	MicroC™	3.5	3.3	0.2	7.2
Jul-05	12,656	MicroC™	3.4	4.0	0.2	6.8
Aug-05	11,677	MicroC™	3.4	3.8	0.2	5.6
Sep-05	12,247	MicroC™	3.5	6.0	0.2	5.4

May-Sept. '04
Sucrose usage
low due to air-
bound
pump/sucrose
fermentation.
PHS* used, but
usage data not
available.

Source data from New Jersey Department of Environmental Protection DMR data and Applied Water Management.

* PHS is a peat humic substance made from highly humified peat

Satellite image of Brass Castle Estates

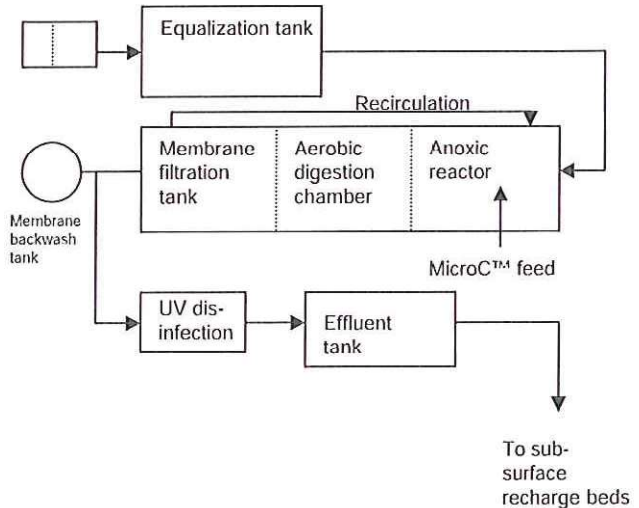


Sub-division
entrance

Wastewater
treatment
plant building

Wastewater treatment process schematic

Two compartment
septic tank at each
house

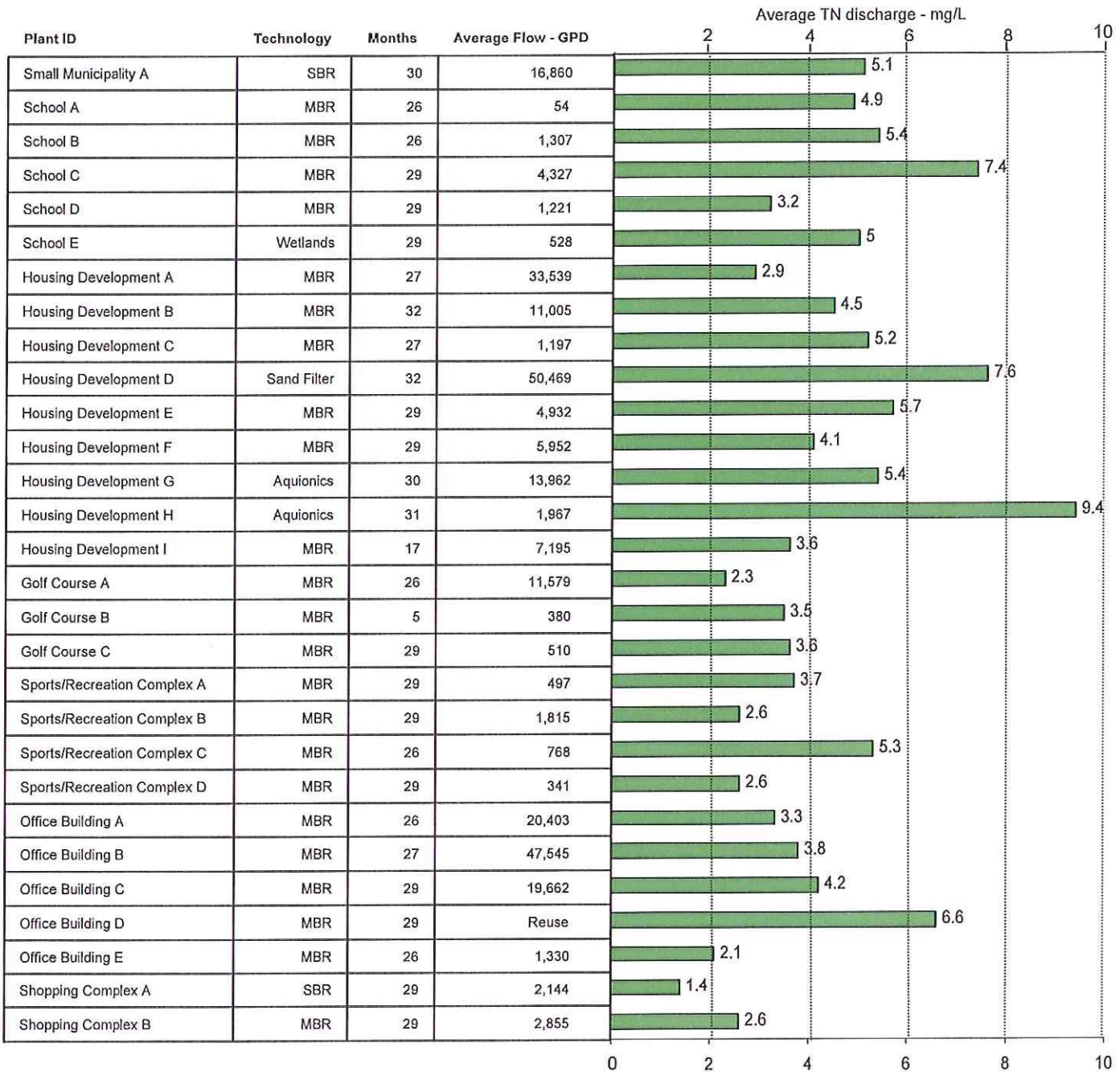




MicroC™ and MicroC G™ Case Study

New Jersey Decentralized MicroC™/MicroC G™ Performance History

MicroC™ and MicroC G™ have been used extensively in the New Jersey decentralized wastewater treatment market since 2004. The figure below provides information for several plants on average Total Nitrogen (TN) and flow through August 2007 obtained from the NJPDES online database. The “months” column refers to the number of months that the plant has been using EOS products. MicroC™ and MicroC G™ are ideal carbon sources for decentralized facilities due to safety, handling and cost concerns. Plants are able to achieve their TN goals with EOS products.



For more information, contact: Environmental Operating Solutions, Inc.
 508-743-8440 ~ www.eosenvironmental.com ~ info@eosenvironmental.com

CLOVERLEAF

APPENDIX B – DECISION ON WAIVERS

The Board GRANTS and DENIES the requested waivers as follows:

Board of Health Regulations

Applicant's request: Relief from specific requirements of Article 14 of the Truro Board of Health regulations in excess of MA DEP Title 5 regulations. Article 14 provides:

Article 14: Nitrogen Loading Requirements

“The Truro Board of Health hereby requires that all properties within the Town of Truro meet the loading restrictions set forth in 310 CMR 15.214 and contain at least ten thousand (10,000) square feet of Buildable Upland (as defined in Article 1 hereunder) for every 110 gallons per day of design flow and that all systems designed to serve said facilities meet the same restrictions and requirements contained in Title 5 as the “Nitrogen Sensitive Areas” defined in 310 CMR 15.215 irrespective of whether the properties are located within Nitrogen Sensitive Areas as so defined.”

The Board's peer reviewer, Mark Nelson of Horsley Witten Group, has noted that this regulation limits wastewater flow to 440 gallons per day per acre. The Cloverleaf site contains a total of 3.91 acres or 170,320 square feet. Under Article 14, the maximum wastewater discharge permitted would be 1,874 gallons per day. The proposed system for this project has a design flow of 7,480 gallons per day. Waiver of Article 14 is required to allow this discharge in excess of the 1,874 gpd limit for a parcel of this size.

Mr. Nelson found that the Applicant's original wastewater disposal system did not comply with Title 5 or Article 14 of the Truro Board of Health regulations. The Applicant then submitted a revised proposal utilizing the BioMicrobics treatment system, an Innovative/ Alternative technology system. Mr. Nelson reviewed the system in several reports to the Board.

In his November 30, 2020 letter, Mr. Nelson recommended that the Board require the Applicant to adjust design of wastewater treatment system to achieve higher level of nitrogen removal, in particular, to meet goal of achieving average nitrogen concentration of 5 mg/L and should not, after first six months of operation, exceed a nitrogen concentration of 10 mg/L. Designing the system to meet a 5 mg/L average concentration and setting a maximum threshold of 10 mg/L provides added protection to downgradient private wells.

Mr. Nelson concluded that where the enhanced BioMicrobics system treatment is anticipated to reduce nitrogen concentration to these levels, waiver of Article 14 is appropriate, conditioned on an Operation and Maintenance Agreement; monthly sampling of wastewater effluent for one year (reduced to quarterly if warranted); a contingency plan; and groundwater monitoring downgradient of the leaching field.

The Board GRANTS this waiver.

Article 9: Innovative/Alternative Technology

The proposed BioMicrobics treatment system for the project is an Innovative/Alternative technology certified for enhanced nutrient removal by the Department of Environmental Protection. Article 9 limits the use of I/A Technology treatment systems to “Remedial Use Situations” arising from failed or nonconforming systems:

“(2) Standards. Innovative/alternative (hereinafter, “I/A”) technologies, as defined herein, will only be permitted in Remedial Use situations, and as defined herein (see article 3). I/A technology will not be permitted in any other situations.”

Use of the I/A BioMicrobics system for the project, which is not a Remedial Use Situation, requires a waiver from this Bylaw.

The Board GRANTS this waiver

Zoning Bylaw

Section 30: Use Regulations

30.1(A): General Requirements

Allows “single-family dwelling or single-family dwelling with accessory apartment use” only. Waiver required to allow multi-family and two-family use.

30.2 Use Table. Does not allow two-family or multi-family use. Waiver required to allow these as principal uses.

30.2. Use Table. Does not allow on-site management office, community room or storage as accessory uses. Waiver required to allow these uses as accessory uses in conjunction with multi-family use.

The Board GRANTS the above waivers.

Section 40.6: Growth Management

B. Residential Development Limitation

“1. There shall be no more than forty (40) building permits for new single family dwelling units authorized within any calendar year, beginning January 1 and ending December 31. . .”

Other portions of Section 40.6 limit the issuance of permits to any one applicant during a single month or year.

This section limits residential building permits issued within any calendar year to 40, and further limits the total number to any one applicant to 4.

The Board GRANTS the above waivers.

Section 50: Area and Height Regulations

50.1 Regulations

A. Table: Dimensional Requirements: Minimum Lot size

Minimum lot size is a limit on density; only five lots/dwelling units would be permitted on a parcel of 170,320 square feet. A waiver is required to construct 39 dwelling units on the project parcel.

The Board GRANTS this waiver.

50.1.A. Table: Dimensional Requirements: Side Setbacks and Height

<u>Dimensional Requirements</u>	<u>Required</u>	<u>Provided</u>
Minimum Sideyard Setback	25 feet	see chart for buildings requiring waivers**
Maximum Building Height	2 stories; 30’/23’ flat	see chart for buildings requiring waivers**

Relief Required Building Number	Minimum Sideyard Setback – 25 feet Required	Maximum Building Height (definition of building height to ridge above existing grade) – 30’ max	number of stories – two story maximum
1-3	conforming at 40.8 feet	conforming at 21.7 feet	conforming at two stories
5-7	**waiver required for setback at 12.3 feet	conforming at 24 feet	conforming at two stories
2-4	conforming at 91.2 feet	conforming at 28 feet	conforming at two stories
6-8	conforming at 34.2 feet	conforming at 28.5 feet	conforming at two stories
9-11	conforming at 33.3 feet	conforming at 25.25 feet	conforming at two stories
13-15	**waiver required at 24 feet to foundation excl. egress porch	conforming at 23.75 feet	conforming at two stories

10-12, 14-16, 18-20	**waiver required at 20' to foundation excl. egress porch	conforming at 27.25 feet conforming at 26.5 feet conforming at 28.5 feet	conforming at two stories conforming at two stories conforming at two stories
17-19	**waiver required at 14.8 feet to foundation excl. egress porch	conforming at 25.75 feet	conforming at two stories
22-24 23-25	conforming at 51.5' **waiver required at 14.6 feet to foundation	**waiver required at 36'11" **waiver required at 31'11" due to fill placed at rear of site above existing grade; appears 24'8" at roadway	**waiver required at three stories; definition of basement in terms of foundation exposure on more than one side will classify this basement as a third story; relief required
21	conforming at 61' west side and 40' east side	**waiver required at 31.5' that exceeds 23' limit for flat roof; based on def of building height above existing grade; visible height from road is 22.5' at front and 31.5' at rear	**waiver required at three stories; definition of basement in terms of foundation exposure on more than one side will classify this basement as a third story; relief required

The Board GRANTS these waivers.

50.2: Building Gross Floor Area for the Residential District

“B. Applicability and Exceptions:

1. Total Gross Floor Area Allowed by Right: [B]uilding permits for new construction . . . shall be issued only where, on completion of the construction or project, the Total Gross Floor Area of the new or expanded structure(s) does not exceed 3,600 sq.ft. for a Residential District Minimum Lot Size of 33,750 square ft. and prorated to 3,668 sq.ft. for one acre of land:

a. Plus 300 sq.ft. for each additional contiguous acre of land, or fraction thereof prorated.

..

2. Special Permit to exceed the Total Gross Floor Area limit: The Total Gross Floor Area limit for a dwelling and accessory buildings on a lot established in subsection 50.2.B.1 may be exceeded up to a maximum established by this subsection, by Special Permit. No Special Permit may be issued for any construction if the construction would result in the Total Gross Floor Area exceeding 4,600 sq.ft. for a Residential District Minimum Lot Size of 33,750 (or .775 acre) and prorated to 4,600 sq.ft for one acre of land:
- a. plus 300 sq.ft. for each additional contiguous acre of land, or fraction thereof prorated.
...

At 3.91 acres, the Total Gross Floor Area allowed as of right on the project site would be 4,568 sq. ft. (3,668 for the first acre + 300 sq ft. for each additional acre or fraction). The Total Gross Floor area allowed by Special Permit would be 5,568 sq ft (4,668 for the first acre + 300 sq. ft for each additional area or fraction). As calculated by the Applicant, the Total Gross Floor Area of the project is 46,172 sq.ft. A waiver is required for construction of all Floor Area in excess of 5,568 sq. ft.

The Board GRANTS this waiver.

Section 70: Site Plan Review

70.3. Commercial Development

A. Commercial Site Plan Review is required for:

1. Any construction, alteration, expansion, or modification of any properties, structures and uses other than that of single or two-family residences and their accessory uses and structures.

Under G.L. c. 40B, a separate site plan review process cannot be required. This Board's review of the comprehensive permit application substitutes for Site Plan Review under Section 70. The Board finds that its exhaustive review of this project, with the benefit of peer review and comment by Town departments, is consistent with the provisions of Commercial Site Plan Review. The Board waives any remaining requirements of Section 70.3, *with the express exception of Section 70.3.I, "Performance Guarantee."*

With the above-noted exception of Section 70.3.I, "Performance Guarantee," the Board GRANTS his waiver.

Subdivision Rules and Regulations

Although the project is not a subdivision, it is residential development of a scale, and having design features akin to those of a subdivision. Waivers from standards contained in the Subdivision Rules and Regulations are required. The following waivers are sought:

Section 3. Design Standards

Section 3.6. Street Design

Section 3.6.6. Dead-end streets

a. “The length of dead-end streets should not exceed one thousand (1,000) feet.”

Waiver is required: Loop roadway is 1,060 +/- feet long.

The Board GRANTS this waiver.

Section 3.6.7. Adjacent properties

“Proposed subdivision roads shall be separated from subdivision boundaries by a screening buffer of twenty-five (25) feet width or more. . . .”

Waiver is required: Access road is within 25 feet of side line, adjacent to Unit 21 (east), 13 feet provided.

The Board GRANTS this waiver.

Section 3.6.8. Design Standards: Table 1 in Appendix 2 – Type C

- Minimum Roadway width: 20 feet

Waiver is required: loop road has 14 foot travel way, with 1 foot berms provided (one-way traffic)

The Board GRANTS this waiver.

- Minimum Radius at street centerline: 290 feet

Waiver is required: 100 feet provided at Highland Road entrance; 50 feet provided within the site.

The Board GRANTS this waiver.

- Maximum Grade: 8%

Waiver is required: Main Access Road 10% proposed

The Board GRANTS this waiver.

- Minimum curb radius: 30 feet
30 feet required; 30 foot radius provided on main access road
25 feet lane provided for internal island

The Board GRANTS this waiver.

- Dead-end Street maximum length: 1000 feet

Waiver is required: loop roadway is 1,060 feet +/- long

The Board GRANTS this waiver.

Section 4: Specifications for Construction

4.1.8 Berms

“Berms shall be provided on both sides of all paved roads where the grade is 3% or greater. Bituminous concrete berms, eighteen (18) inches in width on rolled asphalt base or binder course, shall be constructed. . .”

Waiver is required: 12 inch berms proposed

The Board GRANTS this waiver.

4.1.10 Vegetation:

“Existing trees of over six (6) inches in diameter, measured at four and one-half (4-1/2) feet above existing grade, outside the travel surface of any proposed or existing roads and on proposed building lots should be preserved. . . .”

Waiver is required: Trees within the proposed limit of work line shall be removed as needed to allow for the construction of the development, beyond the edge of clearing for the roadway.

The Board GRANTS this waiver.

2.5.4(c) Performance Guarantee

Requires a performance guarantee in the form of a bond, deposit, or covenant to secure construction of ways and installation of municipal services.

The Board DENIES this waiver.

General Bylaws

Chapter 1, Section 8: Soil Removal

1-8-1. “The removal of topsoil, loam, sand, gravel, clay, hardening, subsoil and earth from any parcel of land not in public use in the Town of Truro except as hereinafter provided, shall be allowed only after a written permit therefore is obtained from the Building Commissioner.

Under G.L. c. 40B, a separate permit cannot be required for the earth removal involved in this project, but the Board may secure, through a permit condition requiring administrative review, compliance with any reasonable standards and conditions that would be applied to a non-40B project. For this project, the DPW Director will have oversight of soil removal activity during

the Town's part of the project. For the Applicant's portion of the project, earth removal will be subject to review and approval by the Board's consultant.

The Board GRANTS this waiver subject to the review and approval above.

Curb Cut Permit (Selectmen's Policy 28)

Curb cut permits are granted by the Select Board following review by the DPW Director and Chief of Police. The proposed project will have curb cuts on Highland Road (main entrance) and Route 6 (emergency access). The Highland Road curb cut has effectively been reviewed by DPW and the Police Chief as part of the comprehensive permit process. The DPW will apply for the MassDOT curb cut approval.

The Board GRANTS this waiver

Waiver of Fees

The Applicant requests relief from any requirements for paying fees for any regulatory review or for any permits related to the development of this project, including but not limited to fees for building permits and septic system installation permits.

The Board GRANTS this waiver

DECISION OF THE ZONING BOARD OF APPEALS

Comprehensive Permit

**Cloverleaf Truro
Rental Housing**

Applicant: Community Housing Resource, Inc.
Owner: Town of Truro
Locus: 22 Highland Road
Assessor's Map 36, Parcel 238
Sitting: Arthur F. Hultin, Jr., Chair; Fred Todd, Vice Chair; John Dundas; John Thornley; Chris Lucy, Heidi Townsend[*alternate, note voting*]

Public Hearing Dates:

November 21, 2019; December 5, 2019; December 12, 2019; December 19, 2019; January 16, 2020 (procedural); February 24, 2020 (procedural); March 12, 2020; April 2, 2020 (procedural); May 28, 2020 (procedural); June 25, 2020; July 9, 2020 (adjourned early due to technical difficulties); July 16, 2020; July 30, 2020; August 20, 2020; September 3, 2020 (procedural); September 10, 2020; September 24, 2020; October 1, 2020; October 8, 2020; October 22, 2020; November 5, 2020; November 12, 2020 (adjourned early due to GoToMeeting Outage); December 3, 2020; December 17, 2020; [January 7, 2021](#); [January 14, 2021](#).

On November 6, 2019, Community Housing Resources, Inc. (~~Community Housing-CHR~~ or Applicant) submitted an application for comprehensive permit for a project known as "Cloverleaf," proposed to be constructed on Town-owned land off Highland Road on the east side of Route 6 ("Project"). Public hearing opened on November 21, 2019, and was continued to the dates above. Pursuant to extensions granted by the Applicant, and further continuances necessitated by the COVID-19 emergency declared by the Governor on March 13, 2020, the hearing closed on DATE. The Board deliberated on DATES. Pursuant to G.L. c. 40B, ss. 20-23 and regulations thereunder, the Zoning Board of Appeals voted to GRANT/DENY the application for a comprehensive permit for Cloverleaf, subject to certain conditions.

I. History of Project

The 3.91-acre project site is a parcel conveyed to the Town of Truro by the Massachusetts Department of Transportation in 2017 for the purpose of constructing a mixed-income housing development, with at least 25% of units affordable to persons or households earning 80% of the

Area Median Income.¹ The parcel was a portion of the State Highway layout and was made available to the Town through the Commonwealth's "Open for Business" initiative. Town Meeting approved the acquisition of the parcel for affordable housing purposes on April 26, 2016, ATM Article 20. The Release Deed was accepted by the Select Board on September 19, 2017.

Over the next six months, the Truro Housing Authority, working with Town staff and officials through a public process, developed a housing program for the property. Rental housing was selected to meet the Town's most acute housing needs. Density, unit size/mix, and levels of affordability were discussed. Following this process, the Board of Selectmen approved a Housing Program for 30 to 40 units, a density enabled by extension of the water line down Highland Road to the project site.² In 2019 the Town was awarded a MassWorks grant of \$2.1 million to fund the costs of the water line extension. In addition, Truro was designated a "Housing Choice Community" and was awarded a "Planning for Housing Production" technical assistance grant of \$75,000 for engineering costs relating to extension of the water line.³

The Town issued a Request for Proposals in August of 2018 for the development and management of an affordable and mixed-income rental development of 30 to 40 units, envisioned to be permitted under G.L.c . 40B. Among other design and construction guidelines indicated, the RFP included a suggestions of buildings clustered into small but multi-unit structures, and "a larger structure housing multiple smaller units with some common space, creating an independent living arrangement that would be appealing to senior citizens."

CHR submitted a proposal consistent with RFP criteria and was selected as the developer through the RFP process in January 2019. A Land Development Option Agreement was executed by the Select Board and CHR in September 2019. This Agreement provides, at CHR's option, and subject to the developer's obtaining all necessary permits, for CHR and the Town to enter into a 99-year ground lease under which the Applicant will construct and operate the housing development on the parcel. The Town will enter into such lease through the Select Board, which will negotiate certain terms and conditions governing construction and operation of the development.

¹ The parcel is described in a Release Deed recorded with the Barnstable County Registry of Deeds at Book 30796 Page 289, and is shown as "Parcel 1" on a plan entitled "Plan of Land in Truro Massachusetts" dated September 6, 2019, prepared by VHB, Inc., and recorded with the Barnstable County Registry of Deeds at Plan Book 672, Page 31.

² The Town of Provincetown approved the Cloverleaf water line extension in April 2019.

³ Prior to construction of the Project, the Town of Truro will extend the water line to 22 Highland Road and install the water line within the project site to serve the Project. Certain conditions in this permit are applicable prior to site disturbance (for example, the requirement of a Turtle Protection Plan approved in writing by the state's Natural Heritage and Endangered Species Program). To the extent applicable, the Town's work within the Project site must comply with the conditions in this Permit.

Project Site and Components

The pPProject parcel lies in a Residential Zoning District, abutting Route 6 to the west, the National Seashore and a single-family property to the east; Highland Road to the south, and a single family property to the north. It lies within an area mapped by the Natural Heritage and Endangered Species Program as Priority Habitat for Eastern Box Turtle. The parcel does not include or border on any wetlands under the Wetlands Protection Act or Truro Wetlands Bylaw.

The pPProject site is currently wooded and vacant. The front area of the parcel is fairly steeply sloped, from an elevation of 24' at Highland Road to an elevation of 63' within the parcel. The parcel slopes down to an elevation of 32' at the rear of the parcel. Site work will include considerable clearing, earth removal, and regrading in order to construct a safe roadway, and to create a level area for the project buildings and leaching field of the project's Title 5 system.⁴All traffic will enter and exit the project on a single roadway to Highland Road. A gated emergency access road (also to be used for construction) will provide access to Route 6 from the rear area of the parcel.

The pPProject in its final design consists of twelve townhouse-style duplexes and a fifteen-unit apartment building, for a total of thirty-nine rental units.⁵Ten of the duplexes and the three-story apartment building are sited around an oval loop roadway, within which is a landscaped common area; an additional two duplexes are located at the rear of the parcel behind the apartment building. The duplex buildings contain a mix of one-, two-, three- units. The architectural style is described as "variations on Cape Cod vernacular" and the exterior to be cedar shingles or clapboard.

The apartment building contains mostly one-bedroom units and an elevator, allowing for "single-level" living. Community space and an office are also located within the building. Design changes to the roof of the apartment building and townhouse buildings, discussed during public hearing, will allow for the installation of solar panels.

The project is proposed under the Low-Income Housing Tax Credit Program. As approved in the Project Eligibility letter issued by the Department of Housing and Community Development (DHCD), and as proposed in the application, 20 of the units will be affordable to households at no more than 60% of Area Median Income (AMI); and an additional 6 units will be affordable at no more than 80% of the AMI. An additional 6 units will be restricted to up to 110% of AMI, and 7 units will be market rate. The substantial proportion of affordable units in the project, as well as the deeper affordability of many, provides meaningful progress towards addressing the Town's rental housing needs. The considerable relief requested from the Town's Zoning Bylaw and other regulations is premised on this contribution.

⁴ As a condition of approval, the soils removed will be contributed to the Town, to be used for beach nourishment.

⁵ As originally proposed, the project contained forty units and included a seven-unit building near the front of the parcel. This building was eliminated from the design because its location did not permit sufficient and safe access to the project by emergency vehicles.

Commented [BHC1]: Project Eligibility letter approved plan for 40 units: 21 at 60%, 6 at 80%, , 6 at 110%, and 7 at market rate. See also application (same).

II. Record before the Zoning Board of Appeals

The materials identified in Appendix A comprise the record before the Board.

III. Findings of the Board

A. Findings on "Project Eligibility"

Based on the materials submitted by the Applicant, the Board makes the following findings with respect to the requirements of 760 CMR 56.04(1):

- (a) The Applicant shall be a public agency, a non-profit organization, or a Limited Dividend Organization

The Applicant to the Board is Community Housing Resources, Inc. As interpreted by DHCD, it is sufficient under G.L.c. 40B for an applicant to state an intention to form a Limited Dividend Organization at a later time in order to satisfy this requirement. The Applicant has stated that a qualifying single-purpose ownership entity, tentatively named "CHR Cloverleaf, LLC" will be formed and controlled by Edward Malone; this entity must limit profit and return on investment as required by the subsidizing agency and otherwise meet the general eligibility standards of the Low Income Housing Tax Credit Program.

The Board finds that this satisfies the requirement of 760 CMR 56.04(1)(a).

- (b) The Project shall be fundable by a Subsidizing Agency under a Low or Moderate Income Housing subsidy program.

The Project Eligibility Letter issued by DHCD on November 19, 2019, states that the project has been approved under the Low Income Housing Tax Credit (LIHTC) program. Under DHCD regulations, this approval letter is sufficient to establish "fundability" for purposes of 760 CMR 56.04(1)(b); although as noted by the Project Eligibility Letter, it is not a guarantee that LIHTC funds will be allocated to this Project.

The Board finds that this satisfies the requirement of 760 CMR 56.04(1)(b).

- (c) The Applicant shall control the site.

The Applicant entered into a Land Development Option Agreement with the Town of Truro, through its Select Board, on September 24, 2019. This Agreement has been extended by the parties through December 31, 2021. Under this Agreement, the Applicant has an option to develop and manage the pProject, pursuant to 99-year ground lease to be executed by the Town, which will retain ownership of the parcel.

The Board finds that the Applicant controls the site for purposes of 760 CMR 56.04(1)(c).

B. Findings on the need for affordable housing

1. The Board finds that there is a critical, unmet need for affordable housing in the Town of Truro.
2. The Board finds that the need for year-round, affordable rental units is particularly acute.
3. The Board finds that the production of affordable rental housing was identified as a priority in the Town's most recent Housing Production Plan (HPP).
4. The Board finds that the Town of Truro has not achieved the 10% threshold identified in G.L. c. 40B, ss. 20, or any other "safe harbor" under the statute and DHCD regulations. The Town currently has 25 housing units on the Department of Housing and Community Development's Subsidized Housing Inventory (SHI), or 2.3%.

IV Waivers

Massachusetts General Laws c. 40B, §§20-23 empowers local Boards of Appeals to grant waivers from local rules and regulations, where the waivers are "consistent with local needs" under the statute. The Board understands that reasonable waivers from local regulations should be granted if, but for the waiver, the development of the housing project would be "uneconomic," as that term is used in G. L. c. 40B, §§ 20-23.

The Applicant included its November 6, 2019 application to the Board a list of requested waivers. This List was updated during the hearing process.

Under existing law and regulation, the Applicant has an affirmative obligation to demonstrate the need for the requested waivers to avoid the proposed project becoming "uneconomic." Although the Applicant has not provided documentation to demonstrate that the pPproject would be rendered uneconomic *but for* the specifically requested waivers and exceptions, the Board has reviewed the Applicant's waiver requests and has granted those that are consistent with protection of the general health, safety and welfare. The Board finds, in the absence of any substantiation to the contrary, that the waivers not granted do not either alone, or in the aggregate, render the pPproject uneconomic.

In the event that the Applicant or any Town official, consultant or other agent determines that the final design of the pPproject necessitates further waivers, the Applicant shall submit a written request for such waiver(s) to the Board. The Board may grant or deny such additional waivers in accordance with applicable rules and regulations and the judgment of the Board.

The Board's decision as to each of the waivers and exemptions requested is set forth in **Appendix B, Decision on Waivers.** The only waivers granted are those expressly approved in Appendix B. If a waiver is not expressly approved in Appendix B, it is denied. All local regulations, other than those expressly waived in Appendix B, are applicable to this project, including regulations for which no waiver was requested. No "plan waiver" is granted.

TERMS AND CONDITIONS

Subject to the conditions set for hereinafter, the Board grants this comprehensive permit (the "Permit") to the Applicant for the ~~p~~Project proposed. The Board notes that 760 CMR 56.05(8)(d) provides that:

"The Board shall not issue any order or impose any condition that would cause the building or operation of the Project to be Uneconomic...."

In reaching this Decision, the Board has endeavored to ensure that the conditions herein do not render the ~~p~~Project uneconomic and that the conditions are consistent with local needs. If the Applicant should appeal this Decision to the Housing Appeals Committee and the Committee were to find that any particular condition or conditions render the ~~p~~Project uneconomic or not consistent with local needs, the Board requests that any order to the Board to remove or modify any condition in this Decision be limited to such particular condition or conditions and that all other conditions and aspects of this Decision be confirmed.

1. The Comprehensive Permit application was based on a Project Eligibility letter issued to the Applicant by DHCD on November 19, 2019 under the Low Income Housing Tax Credit (LIHTC) program. This Permit is conditional upon receipt of Final Approval from DHCD and the grant of subsidy funding through the LIHTC program or other subsidy approved by DHCD. Grant of LIHTC funding (or other subsidy approved by DHCD) is a condition precedent to any grading, land disturbance, construction of any structure or infrastructure (except such work performed by the Town for installation of the water line), or issuance of any building permit.
2. ~~This~~ Permit is conditional upon the execution of a Regulatory Agreement for this Permit by DHCD and the Applicant, in form and substance as required by DHCD, to which the Town of Truro shall be made a party and beneficiary. The Town shall have enforcement rights under the Regulatory Agreement as to the affordability restrictions. The execution of ~~and compliance with~~ such Regulatory Agreement is a condition precedent to any grading, land disturbance, construction of any structure or infrastructure (except such work performed by the Town for installation of the water line), or issuance of any building permit. No building permit shall be granted until the terms and conditions of the Regulatory Agreement and project eligibility letter have been complied with in full, except for those which by their nature are to be complied with during and after construction of the project.
3. The Project shall conform to the following Plans ("Plans of Record"):
"Cloverleaf Truro Rental Housing, 22 Highland Road, Permit Set", Sheets 1-6, prepared by J.M. O'Reilly & Associates, Inc., consisting of:
Sheet 1, "Site Plan" dated November 1, 2019
Sheet 2, "Sewage – Drainage Site Plan – 40B Permit Set" dated Nov. 1, 2019

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Sheet 3, “Sewage Details – 40B Permit Set” dated November 1, 2019

Sheet 4, “Site Details – 40B Permit Set” dated November 1, 2019

Sheet 5, “Site Details – 40B Permit Set” dated November 1, 2019

Sheet 6, “Erosion Control Site Plan” dated July 28, 2020

“Cloverleaf Truro Rental Housing, Watershed Areas Plan,” prepared by J.M. O’Reilly & Associates, Inc., dated September 16, 2020

“Cloverleaf Truro Rental Housing, Swept-Path Analysis - Entrance,” prepared by J.M. O’Reilly & Associates, Inc., dated September 2, 2020

“Cloverleaf Truro Rental Housing, Swept-Path Analysis - Exit,” prepared by J.M. O’Reilly & Associates, Inc., dated September 2, 2020

“Cloverleaf Truro Rental Housing, Truro, Massachusetts, Buildings 1-3, 2-4 and 6-8,” prepared by Spring Hill Design, dated September 4, 2020, cover sheet and Sheets A1.1, A1.2 (scale 1/8”=1’), A.2.1 (scale 1/4”=1’)

“Cloverleaf Truro Rental Housing, Truro, Massachusetts, Building 5-7,” prepared by Spring Hill Design, dated September 4, 2020, cover sheet and Sheets A1.1, A1.2, A2.1 (scale 1/4”=1’)

“Cloverleaf Truro Rental Housing, Truro, Massachusetts, Buildings 9-11, 10-12, 13-15, 17-19, and 18-20,” prepared by Spring Hill Design, dated September 4, 2020, cover sheet and Sheets A1.0, A2.1 (scale 1/8”=1’)

“Cloverleaf Truro Rental Housing, Truro, Massachusetts, Buildings 13-15 and 14-6,” prepared by Spring Hill Design, dated September 4, 2020, cover sheet and Sheets A1.0, A2.1 (scale 1/8”=1’)

“Cloverleaf Truro Rental Housing, Truro, Massachusetts, Building 21,” prepared by Spring Hill Design, dated September 17, 2020, cover sheet and Sheets A1.0– A1.3, inclusive; A2.1-A2.2 (scale 1/8”=1’) and “Schematic Section of Building 21” dated September 25, 2020 (1 page)

“Cloverleaf Truro Rental Housing, Truro, Massachusetts, Building 22-24 and 23-25,” prepared by Spring Hill Design, dated September 4, 2020, cover sheet and Sheets A1.0 – A1.2, inclusive; A2.1-A2.2 (scale 1/8”=1’)

“Landscape Planting, Fencing, Trash/Bike Storage, Exterior Lighting Plan, Cloverleaf Truro Rental Housing” dated October 5, 2020

“Fence/Storage Images, Cloverleaf Truro Rental Housing,” Spring Hill Design, dated June 19, 2020

“Exterior Palette/Lighting, Cloverleaf Truro Rental Housing.” Spring Hill Design, dated October 5, 2020

“Interior Palette, Cloverleaf Truro Rental Housing.” Spring Hill Design, dated June 19, 2020

“Control Room Schematic Design, Cloverleaf Truro Rental Housing.” Spring Hill Design dated October 5, 2020

“Building Height Calculations – 1-3, 2-4, 6-8, Cloverleaf Truro Rental Housing.” Spring Hill Design, dated February 20, 2020

“Building Height Calculations – 5-7, Cloverleaf Truro Rental Housing.” Spring Hill Design, dated February 20, 2020

“Building Height Calculations – 9-11, 10-12, 17-19, and 18-20, Cloverleaf Truro Rental Housing.” Spring Hill Design, dated February 20, 2020, revised August 31, 2020

“Building Height Calculations – 13-15 and 14-16, Cloverleaf Truro Rental Housing.” Spring Hill Design, dated February 20, 2020, revised August 31, 2020

“Building Height Calculations – 21, Cloverleaf Truro Rental Housing.” Spring Hill Design, dated February 20, 2020, revised September 24, 2020

“Building Height Calculations –22-24 and 23-25, Cloverleaf Truro Rental Housing.” Spring Hill Design, dated February 20, 2020

“Illustrated Site Plan, Cloverleaf Truro Rental Housing” dated October 12, 2020

All of the above as further modified to comply with the requirements of this Decision; as well as any changes deemed necessary by the Building Inspector or the Board's consultant for compliance with this Decision.

4. Substantive revisions to the Project or the Plans shall not be permitted without the written approval of the Board. If, between the date that this decision is filed with the Office of the Town Clerk and the completion of the Project, Applicant seeks to change any details of the Project (as set forth in the Plans, or as required by the terms of this Decision) the Applicant shall promptly inform the Board in writing of the change requested pursuant to 760 CMR 56.05 (11). The Board will address such requests under the procedures set out in that regulation.
5. Where this Decision provides for the submission of plans or other documents to the Building Inspector, Department of Public Works, the Board, or its agent, a written response shall be provided the Applicant as to whether such plans or other documents are consistent with this Decision within forty-five days of receipt of such plans or other documents.

Regulatory Compliance: State, Federal and Local

6. Development of the Project shall comply in all respects with all terms and conditions contained in the Project Eligibility approval for the Project issued by DHCD dated November 19, 2019 and any modifications thereto
7. The Project shall conform to all applicable requirements of the Americans with Disabilities Act (ADA) and the Massachusetts Architectural Access Board (MAAB).
8. The Project shall comply with all rules, regulations, filing and permit requirements and certifications required by the regulations governing the Massachusetts Endangered Species Act, G.L. c. 131, s. 23 and 321 CMR 10.00 et seq. This includes but is not limited to compliance with the “Box Turtle Protection Plan for Cloverleaf Affordable Housing Project” approved by the Division of Fisheries and Wildlife on May 27, 2020, received from MassAudubon, and any amendments to this Plan or additional requirements imposed by the Division.
9. The Project shall comply with all rules, regulations, filing and permit requirements and certifications required by the regulations governing the Massachusetts Historical Commission.
10. The Project shall comply with all rules, regulations, filing and permit requirements and certifications required by the regulations adopted by the Executive Office of Environmental Affairs pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, § 61-62H).
11. The Project shall comply with all rules, regulations, permit and filing requirements, and certifications of the Massachusetts Department of Environmental Protection with respect to wastewater disposal, stormwater disposal, private wells, resource protection, water supply and low impact development best management practices
12. Stormwater management systems shall meet the Guidelines of the Department of Environmental Protection Storm Water Management Policy and Handbook (Vols. 1 & 2), as revised
13. The Project, including but not limited to site work, drainage, utilities, and construction of dwelling units and related improvements shall comply with all other applicable state and federal regulations.
14. Copies of all applications to, and approvals from State and Federal agencies shall be submitted to the Board or its designated agent prior to recording of Final Plans.
15. The Project shall comply with all rules, regulations, permit and filing requirements, and certifications of the Truro Board of Health, except as expressly waived in this Decision.
16. The Project shall comply with the Town of Truro Zoning Bylaw in effect at the time of the Application, except as expressly waived in this Decision

17. The Project shall comply with all Town of Truro rules, regulations, and other local bylaws and requirements not expressly waived by this Decision.

Dwelling Units; Affordability in Perpetuity

18. The project shall consist of thirty-nine units, twenty-four of which shall be contained in twelve duplex buildings and fifteen of which shall be contained in a three-story building (also containing community and office space) constructed in conformity with the Plans specified in Condition 3 above.

19. No fewer than twenty (20) of the Project units constructed and rented shall be affordable, in perpetuity, to individuals and/or families earning no more than 60% of Area Median Income (AMI) as calculated pursuant to formulas determined by the U.S. Department of Housing and Urban Development (HUD) or DHCD. No fewer than an additional six (6) units constructed and rented shall be affordable, in perpetuity, to individuals and/or families earning no more than 80% of the AMI; and no fewer than an additional six (6) units shall be affordable, in perpetuity, to individuals and/or families earning up to 110% of AMI (“affordable units”).

20. No dwelling unit identified as an “affordable unit” may be rented to anyone other than a qualified tenant as required by this Decision and consistent with the requirements of DHCD and other state agencies governing the rental of below market rate units in a comprehensive permit project; provided, however, if a tenant was income-eligible at initial occupancy, and tenant’s income has increased above eligibility limits, the Applicant shall comply with the Subsidizing Agency’s requirements for converting another unit into an affordable unit.

Commented [BHC3]: Added at Applicant’s request.

21. The affordable units shall be evenly distributed within the Project and shall be indistinguishable in architectural style, exterior finish materials, and exterior appearance from market units.

22. Each affordable unit shall be rented pursuant to an affordable housing restriction, more fully described below, ensuring that only income eligible individuals or families may rent the dwelling unit.

23. The affordable units shall permanently remain affordable units, for so long as the Property does not comply with the Town’s Zoning Bylaw without the benefit of this Comprehensive Permit, or for the longest period allowed by law, if longer, so that the Affordable Units shall continue to serve the public purposes for which this Comprehensive Permit was authorized under G.L. c. 40B, §§ 20-23.

24. An affordable housing restriction, enforceable by the Town of Truro requiring that the affordable units remain affordable in perpetuity, in a form approved by counsel for the Town, shall be recorded senior to any liens on the Project locus to protect the requirement for the affordable units in the event of any foreclosure, bankruptcy, refinancing or sale. This affordable housing restriction shall reflect the affordability levels stated in paragraph 19~~8~~ above.

25. All units shall be and shall remain eligible to be included in the Town’s Subsidized Housing Inventory, as maintained by DHCD. The Applicant shall cooperate with the preparation of request forms to add Project to the Town’s SHI. .

Management Documents and Agreements with Town

26. The Applicant shall prepare documents in a form that conforms to this Decision and applicable law, designed to manage the Project and ensure that the terms and conditions of this Decision are enforced.

27. Management Plan. The Applicant shall submit to the ~~Planning Department~~ Town of Truro Planning Department a Management Plan (similar to the “Cloverleaf Truro Housing Property Management Plan” submitted during hearing), stating the roles and responsibilities of the project Owner (“CHR Cloverleaf Limited Partnership” or other) and the Management Agent (Community Housing Resource, Inc. or other), and governs project operations, including marketing, leasing, financial operations, and compliance. All updates to the Management Plan shall be submitted to the ~~Planning Department~~ Town.

Commented [BHC4]: Applicant’s request; makes sense

28. Maintenance Plan. The Applicant shall submit to the ~~Planning Department~~ Town of Truro and the Department of Public Works a detailed Maintenance Plan governing repair and maintenance of the Project. The Maintenance Plan shall address Project buildings, ways, parking areas, landscaping, lighting, stormwater management systems, and other Project infrastructure and facilities. The Maintenance Plan shall ensure that the terms and conditions of this Decision are enforced. All updates to the Maintenance Plan shall be submitted to ~~the Planning Department as agent for the Board~~ Town and DPW.

29. The Applicant shall enter into a Lease Agreement, and any other Agreements deemed necessary by the Town, governing the rights and responsibilities of the parties with respect to the Project and the Project Site. Such Agreement(s) shall be approved by Town Counsel.

Profitability

30. The Project shall be limited to the profit allowed under the Regulatory Agreement (the “allowable profit”).

31. Any profit that is above the allowable profit pursuant to the Regulatory Agreement, shall be paid in accordance with 760 CMR 56.04(8)(c).

32. The Applicant shall provide to the Board or its designated agent a copy of all financial statements and documentation required by the Regulatory Agreement.

Marketing and Local Preference

33. Prior to construction of the Project, the Applicant shall submit to the Board copies of the Affirmative Fair Housing Marketing Plan and Tenant Selection Plan for the affordable units which will be submitted to DHCD and conforming to all requirements imposed by federal and state regulations.

34. To the extent allowed under G.L. c. 40B and other applicable law and in a form approved by the Subsidizing Agency and/or the Project's monitoring agent, the Project's Tenant Selection Plan shall provide a Local Preference category for up to seventy (70%) of the Affordable units at initial occupancy. The Town will be required to provide evidence satisfactory to the Subsidizing Agency of the need for the foregoing local preference. The Applicant shall provide reasonable and timely assistance to the Town in providing this evidence.

35. The maximum number of affordable units allowed by law and the applicable subsidy program, but not more than seventy percent of the units, shall be reserved for households that qualify for inclusion in the above Local Preference category. ~~A lottery shall be established in a form approved by the Subsidizing Agency and/or the Project's monitoring agent to effectuate this local preference, with an approved secondary lottery for all other Applicants~~

Commented [BHC5]: Applicant's edit. Presumably up to DHCD

36. This local preference shall be implemented by the Applicant and the Applicant shall maintain records of its marketing efforts, which records shall be open to review by the Town (subject to applicable state or federal law regarding privacy) for compliance with the local preference set forth herein, to the extent such local preference has been allowed by the Subsidizing Agency.

37. The local preference shall be implemented pursuant to procedures approved by the Subsidizing Agency. The costs associated with the marketing of units in the Project, including the advertising and processing for the Affordable Units shall be borne by the Applicant.

38. The Applicant shall submit to the Board a report on marketing activity at the Project demonstrating compliance with the local preference requirement pursuant to the plan approved by the subsidizing agency as set forth above, following the initial lease up, below

Conditions Precedent to Commencement of Project

The conditions below are conditions precedent to the Applicant's Project construction. In particular, and without limitation, no grading, land disturbance, or construction of any structure or infrastructure shall commence until the following conditions are satisfied:

39. The Building Inspector has reviewed and approved detailed construction drawings for the entirety of the Project, including all buildings, structures, ways, and underground utilities ("Final Plans"). The Building Inspector shall review the Final Plans for conformance with this Decision; for compliance with local requirements not waived in the Permit; and with state and federal codes. All construction plans shall be stamped by a registered architect or registered professional engineer, as may be applicable. The Board may engage, at the Applicant's expense and upon prior agreement to scope and cost of services, one or more agent to review the plan(s) and make recommendations for approval or disapproval to the degree that a plan or plans are inconsistent with this decision. Copies of the Final Plans shall be filed in hard copy and in digital form with

the Building Department; the Board; the Planning Department; and the Department of Public Works

40. The Board's consultant has reviewed and approved detailed and final plans of the Project's storm water management system. These plans shall be consistent with DEP's Storm Water Management standards, policies, and handbooks; shall address any effects on abutters; and assure that there will be no detrimental drainage or erosion impact on abutting properties
41. The Board's consultant has reviewed and approved a final Stormwater Operations and Maintenance Plan for the Project roadway, infrastructure and drainage systems, both during and post-construction
42. The Board's consultant has reviewed and approved an Operations and Maintenance Plan for the Project's wastewater disposal system
43. The Board's consultant has reviewed and approved an erosion control plan to be in effect for the duration of site disturbance and project construction. This Plan shall ensure that there is no erosion or sedimentation from the project site onto Highland Road, the Route 6 layout, or abutting properties. The Plan shall include measures for extreme weather events. During installation of the water line to and within the Project site, the Department of Public Works shall ensure compliance with the erosion control plan. Prior to commencement of the Applicant's construction of the Project, the Board's consultant shall inspect and approve the installed erosion control measures, and shall inspect the Project site as needed to ensure ongoing compliance with the erosion control plan
44. The Director of DPW has reviewed and approved 1) a plan showing areas of the site proposed for vegetative clearing; limit of construction activity, soil stockpiling areas, construction staging, and refueling and storage area(s); and 2) the Applicant's installation of limit of work construction fencing
45. ~~Performance Guaranty. The Applicant has provided to the Town Clerk a Performance Guarantee, in form and amount satisfactory to Town Counsel, to secure the completion of the Project's ways, utilities, and drainage systems~~
46. The Applicant has submitted to the DPW Director and the Building Inspector a construction schedule identifying the sequence and approximate dates of all key stages of construction
47. A Regulatory Agreement, similar in form to that published by DHCD, and revised for consistency with this Decision has been executed by the Applicant, DHCD, and the Town of Truro, and has been recorded in the Barnstable Registry of Deeds. The Regulatory Agreement shall:
 - A. Name the Town of Truro named as a party and beneficiary thereto;
 - B. Provide that 20 of the units will be affordable in perpetuity to households at no more than 60% of AMI; that an additional 6 units will be affordable in perpetuity to

Commented [BHC6]: Moving this to pre- building permit issuance conditions

households at no more than 80% of the AMI; and that an additional 6 units will be restricted to up to 110% of AMI;

C. ~~Provide for a Monitoring Agent for the Project. Designate a Monitoring Agent for the Project approved by the Town, such approval not to be unreasonably withheld.~~

D. Provide that the Project shall comply with profit limitations required under G.L. c. 40B;

E. Provide that any excess profit shall be paid in accordance with 760 CMR 56.04 (8)(c).

The Regulatory Agreement shall be subject to review and approval by the Board and its legal counsel as ~~to form and~~ consistency with this Decision, such approval not to be unreasonably withheld.

48. The Applicant, the Board and DHCD have executed a Monitoring Agreement, similar in form to the Monitoring Agreement published by DHCD and revised for consistency with this Decision. The Monitoring Agreement shall be subject to review and approval by the Board and its legal counsel as ~~to form and~~ consistency with this Decision, said approval not to be unreasonably withheld.

49. The Final Plans have been reviewed and approved by the Fire Chief for hydrant locations; access to each building for fire fighting purposes; and adequacy of the access roadway from Highland Road and emergency access roadway to Route 6 for fire truck ingress and egress.

50. A NPDES Storm Water Pollution Prevention Plan or Stormwater Pollution and Prevention Plan (SWPPP) has been prepared. The final SWPPP shall be provided to all contractors and subcontractors during construction. Copies of the SWPPP shall be submitted to the DPW Director and Planning Department.

51. A Disposal Works Construction Permit been obtained from the Board of Health under Title 5 of the State Environmental Code.

52. The Applicant shall provide the Town of Truro, in form and substance approved by Town Counsel, Applicant's agreement that the Town of Truro shall be free of any liability for any act, omission or negligence caused by the Applicant, its employees, agents, subcontractors, beneficiaries or trustees with relation to this Project, and that Applicant on behalf of itself and its successors and assigns has consented and agreed to indemnify the Town, its employees and officials for any harm, damage or injury caused by the Applicant, its employees, agents, subcontractors, beneficiaries or trustees with regard to this Project.

Conditions Prior to ~~Application for Issuance of~~ a Building Permit (Applicant's Project)

Commented [BHC7]: Changed at Applicant's request. Up to Board.

53. The Applicant shall obtain Final Approval from DHCD (or other subsidizing agency) and shall provide evidence of such Final Approval to the Building Department and the Board.
54. The Applicant shall record this Decision and the above-described Regulatory Agreement in the Barnstable Registry of Deeds with the Final Plans, and provide proof of such recording to the Board. No building permit shall issue until this condition is satisfied
55. The Applicant shall provide ~~to the~~ Board and ~~to the~~ Building Department ~~with six a~~ sets of full sized Final Plans (and any additional sets as requested by the Building Department) and a digital copy of the final endorsed set. No building permit shall issue until this condition is satisfied
56. A Project Manager, Project Superintendent, and Jobsite Foreman shall be identified by the Applicant. The name and phone numbers, including emergency phone numbers of these individuals, shall be provided to the Department of Public Works, the Building Inspector and the Planning Department as agent for the Board.

~~56-57.~~ Performance Guarantee. Prior to issuance of a Building Permit, the Applicant shall provide the Town with a performance guarantee in an amount satisfactory to Town Counsel in consultation with the DPW Director, and in a form approved by Town Counsel, such approval not unreasonably withheld, to secure the completion of the Project's ways, utilities and drainage systems. No performance guarantee shall be provided for any MassWorks grant work. The performance guarantee shall be released by the Board in increments upon request by the Applicant as corresponding to sections of the Project completed in a satisfactory manner.

Commented [BHC8]: Incorporates most of Applicant's requested language.

Conditions Relating to Construction

- ~~57-58.~~ 57-58. Prior to Applicant's commencement of work on the Project site, at a time designated by the DPW Director, a pre-construction kick-off meeting shall be held with the DPW Director, Project Manager, Project Superintendent, and Jobsite Foreman. Daily meetings shall be held with the DPW Director and Jobsite Superintendent. A meeting every two weeks shall be held with the Project Manager, Jobsite Superintendent, DPW Director and Town's consultant
- ~~58-59.~~ 58-59. During construction, the Applicant and its agents and employees shall conform to all local, state and federal laws regarding noise, vibration, dust, odor, and use of Town roads and utilities. The Applicant shall at all times use all reasonable means to minimize inconvenience to residents in the general area. No construction activity shall commence on any day Monday through Friday before 7:00 AM or on Saturday before 9:00 AM. Construction activities shall cease by ~~6~~7:00 PM on all days. No construction activity whatsoever shall take place on Sunday or federal holidays. For purposes of this condition, construction activity shall include, but not be limited to: start-up of equipment or machinery, removal of trees; grubbing; clearing; grading; filling; excavating; import or export of earth materials; installation of utilities; and removal of stumps and debris.

- ~~59-60.~~ The removal of trees, shrubs, and natural ground cover on the site shall be minimized to preserve the natural environment to the highest degree possible.
- ~~60-61.~~ Except as otherwise provided by this Decision, roadway design and construction standards shall conform to the requirements of the Truro Planning Board Subdivision Rules and Regulations. Roadway design plans and construction details shall be provided for approval by the DPW Director prior to roadway construction
- ~~61-62.~~ All electric, cable, and telephone utilities shall be underground and shall conform to the utility companies' requirements. Utilities plan and construction details shall be provided to the DPW Director.
- ~~62-63.~~ All stumps, brush, and other debris resulting from any clearing or grading shall be removed from the Project site. No stumps or other debris shall be buried on the Project site
- ~~63-64.~~ All staging areas, including without limitation parking areas for construction personnel, portable toilets, temporary work facilities, etc. shall be on the Property.
- ~~64-65.~~ If construction activity ceases for longer than 30 days, then written notice shall be provided by the Applicant to the Building Commissioner at least 48 hours before resuming work. The Building Commissioner may require that any foundation, trench, structure, equipment or other hazard be secured as necessary, in his opinion, including but not limited to installation of fencing and/or filling of trenches
- ~~65-66.~~ If construction is temporarily suspended during the growing season, all exposed areas shall be stabilized by seeding and/or mulching within 14 days of suspension of construction. If construction is temporarily suspended outside the growing season, all exposed areas shall be stabilized by mulching and tack within 14 days of suspension of construction. Slopes steeper than 3:1 shall be stabilized by netting and pinning during suspension of construction.
- ~~66-67.~~ Soils disturbed in earth removal on the Project site, not utilized elsewhere on the site, shall be retained for removal use by the Town, on such terms and by such means directed by the Conservation Agent and DPW Director.
- ~~67-68.~~ Invasive Plants. No plants on the Commonwealth's Department of Agriculture "Invasive Plants" list (see <https://www.mass.gov/service-details/invasive-plants>) may be used in the landscaping or any other area of the proposed project
- ~~68-69.~~ All residential buildings shall be constructed so as to allow for rooftop installation of solar panels. ~~The Applicant has committed to such installation on Building 21.~~
- ~~69-70.~~ The Applicant shall keep the site and the adjoining existing roadway area clean during construction. Upon completion of all work on the site, all debris and construction materials shall be removed and disposed of in accordance with state laws and regulations

Commented [BHC9]: Removed per Board

~~70,71.~~ Any damage to public roads incurred during construction of the Project shall be repaired and/or replaced to the satisfaction of the Department of Public Works.

~~71.~~ To ensure compliance with the terms and conditions of this Decision, prior to requesting any Certificate of Occupancy, the Applicant shall submit to the Building Inspector, DPW Director, and Planning Department as agent for the Board, complete and detailed "As-Built" Plans of the Project, including buildings, utilities, roadway and associated infrastructure. The As-Built Plans shall be submitted as full-size plans and in digital form. These plans shall be approved by the Board or its agent for consistency with this decision; such approval shall not be unreasonably be denied or delayed. No Certificate of Occupancy shall issue, nor shall any surety be released, unless the As-Built plans conform to this Decision

~~72.~~ No certificates of occupancy for any building shall be issued until the Board or its agent finds that all improvements required by this Decision have been constructed and installed so as to adequately serve the building for which the occupancy permit is sought, said Development.

~~73.~~ Prior to the issuance of a certificate of occupancy for any building, the Applicant shall submit a letter from the Project engineer certifying that the building for which the occupancy permit is sought, and any related improvements, have been constructed in conformity with the Plans of Record.

~~72,74.~~ To ensure compliance with the terms and conditions of this Decision, prior to issuance of the final Certificate of Occupancy, the Applicant shall submit to the Building Inspector, DPW Director, and Planning Department as agent for the Board, complete and detailed "As-Built" Plans of the Project, including buildings, utilities, roadway and associated infrastructure. The As-Built Plans shall be submitted as full-size plans and in digital form. These plans shall be approved by the Board or its agent for consistency with this decision; such approval shall not be unreasonably be denied or delayed. The final Certificate of Occupancy shall issue unless the As-Built plans conform to this Decision.

~~73,75.~~ Temporary certificates of occupancy will not be permitted. The Fire Department will not sign the occupancy permit until all required fire prevention and detection systems are installed and operating, carbon monoxide detectors are installed and operating, and all required inspections have been completed by the Fire Department

~~74,76.~~ Pursuant to an agreement reached between the Applicant and an abutter to the Project, the Applicant shall construct and maintain a stockade fence along the full length of the shared property line between the project parcel and Atlas Map 36 Parcel 170 as shown on the Landscaping, Planting and Fencing Plan; and shall supply, at the Applicant's expense, thirty (30) Leyland Cypress trees, 15 gallon container grown stock of 5 to 7 feet in height of agreed upon variety; 10 small trees of two-foot variety; drip irrigation tubing; planting soil, leaf compost and wood chip mulch.

Commented [BHC10]: Taken together, these paragraphs allow certificates of occupancy to issue as buildings are constructed, with certification by Project engineer as to conformity with the Plans of Record. As-Built Plans not required until completion.

Commented [BHC11]: Removed per Board

Commented [BHC12]: In last email from abutter; Applicant to confirm

Wastewater Treatment

As discussed in the Waiver Appendix, the proposed Project cannot be constructed without a waiver of Article 14 of the Board of Health regulations (“Nitrogen Loading Requirements”), which requires a minimum of ten thousand square feet of Buildable Upland for every 110 gallons per day of design flow, and requires wastewater disposal systems to meet the standards for Nitrogen Sensitive Areas defined in 310 CMR 15.215 irrespective of whether the properties are located within Nitrogen Sensitive Areas as so defined.” This results in a limitation of wastewater flow to 440 gallons per day per acre.

The Cloverleaf site contains a total of 3.91 acres or 170,320 square feet. Under Article 14, the maximum wastewater discharge permitted would be 1,874 gallons per day. The proposed system for this project has a design flow of 7,480 gallons per day. Waiver of Article 14 is required to allow this discharge in excess of the 1,874 gpd limit for a parcel of this size.

The Applicant proposes use of the BioMicrobics BioBarrier wastewater treatment facility to treat wastewater effluent generated by the Project. This is an Innovative/Alternative technology certified for enhanced nutrient removal by the Department of Environmental Protection. This system may be designed to achieve a level of nitrogen removal such that the concentration of nitrogen in effluent averages 5 mg/L. The following conditions are imposed to ensure protection of public health and safety, specifically, downgradient private wells:

77. The maximum total nitrogen concentration in the wastewater effluent allowed for this system 10 mg/L measured at any time following the first six months of operation. The six-month timeframe recognizes there is a startup period during which the system reaches its full treatment capacity. If, after three months of operation an effluent sample contains a total nitrogen concentration above 10 mg/L, the applicant shall follow the steps listed in the operation and maintenance condition (#3) below to inspect and repair the system and bring it back into compliance.

78. The system shall be designed and operated to achieve an average total nitrogen concentration of 5 mg/L. The 5 mg/L average will be calculated as a rolling average taking into account all measurements taken in the prior 12 months. The calculation of the rolling average will begin following the initial six-month start-up period.

79. The applicant shall finalize an Operation and Maintenance plan that will be reviewed and approved by the Board of Health prior to system startup to govern the management of the facility. This plan shall incorporate the requirements of the Pilot Approval granted by DEP for the BioBarrier system (DEP, July 11, 2016, Pilot Approval Renewal For BioMicrobics BioBarrier system). It shall also include the additional items listed below for the operation of the system, monitoring of influent and effluent, and monitoring of groundwater upgradient and downgradient of the disposal facility.

80. The applicant will hire a certified operator to inspect, maintain and monitor the facility. The agreement with the certified operator shall run for a period of two (2) years and will be renewed with the same or other certified operator in subsequent two-year periods.

81. Wastewater influent and effluent will be monitored monthly upon the system's start up and shall continue monthly for a period of one year after the development is fully occupied. Influent and effluent shall be monitored for the parameters contained in the DEP Pilot Approval of the BioBarrier system and any other parameters requested by the Board of Health. Notice of when the 12-month period begins, following full occupancy, shall be provided to the Truro Board of Health. Monitoring data will be submitted to the Board of Health and the Barnstable County Department of Health and the Environment within two weeks of receipt of the data.
82. Upon the completion of the 12-month period, the owner and operator may request approval from the Board of Health to adjust the monitoring to a quarterly schedule. Approval from the Board of Health is required to make this change.
83. Prior to the start-up of the system, two (2) proposed monitoring wells shall be installed as shown on the proposed Site Plans. These two monitoring wells, and one existing well downgradient of the Cloverleaf parcel shall be tested quarterly for total nitrogen, pH, specific conductance, and fecal coliform and any other parameters requested by the Board of Health. The first samples will be collected prior to system startup. The groundwater monitoring data will be submitted to the Board of Health within two weeks of receipt of the data.
84. The O&M plan shall include the As-Built Plan of the installed BioBarrier system.
85. The operator and owner will prepare an annual report summarizing the system's performance and submit it to the Board of Health. Within 30 days of the submission of the annual report, the owner and operator shall meet with the BOH or its agent, to review the previous year's O&M.
86. If the effluent concentration from the BioBarrier system exceeds 10 mg/L, the owner and operator will inform the Board of Health within one week and follow the recommended system modifications, procedures and treatment adjustments outlined in DEP's Pilot Approval Renewal to bring the system back into compliance. If the operator is not successful in bringing the system into compliance with the 10 mg/L total nitrogen maximum concentration within two months, the owner and Operator shall notify the DEP and the BOH of additional actions they will take to bring the system into compliance. The required repair/replacement timelines shall conform with the requirements outlined in the Pilot Approval or as required by the BOH upon the issuance of the Disposal Works Permit. During the noncompliance period the BOH, after a public hearing, may require the system to stop discharge of the effluent to the soil absorption systems.
87. If the effluent concentration exceeds 10 mg/L for more than one month, the owner will increase the frequency of groundwater monitoring at the three monitoring wells. Samples will be taken monthly for six months after the system is back in compliance and effluent concentrations are again below 10 mg/L.

88. Once the system is installed and operational, the continual O&M will address the replacement and/or repair of the various mechanical components within the system. The Operator shall review with the Board of Health the necessary mechanical components which should be inventoried and available onsite for immediate installation. These items will be listed in the approved O&M plan and inventoried at the site to make the necessary repairs to keep the system in compliance.

Administrative

~~75-89.~~ The fees for consultant reviews incurred in the Board's review of this project application shall be the obligation of the Applicant. All consultant fees incurred prior to the issuance of this decision are due sixty days after this Decision is filed with the Town Clerk. No site disturbance shall commence until all past fees are paid in full.

~~76-90.~~ The Applicant shall be responsible for fees incurred pursuant to consultant review of all project documents and all site inspections as provided for in the Conditions above

~~77-91.~~ This permit cannot be transferred without approval of the Board and modification of this Decision following public hearing.

~~78-92.~~ At the time the Applicant submits a Chapter 40B cost certification to DHCD, the Applicant shall provide copies to the Board and the Truro Select Board.

~~93.~~ Except for roadway snow removal, sanding and sweeping, the Applicant shall be responsible for the installation, operation, and maintenance of all aspects of the Project, including but not limited to structures; driveways and parking areas; landscaping; trash/recycling disposal and pickup; stormwater management system, and wastewater disposal system. The Town of Truro shall have no legal or financial responsibility for the installation, operation, and maintenance of the above

~~94.~~ If construction authorized by this Permit has not begun within three years of the date on which the Permit becomes final, except for good cause, the Permit shall lapse. This time period shall be tolled for the time required to pursue or await the determination on any appeal on any other state or federal permit or approval required for the Project.

~~79.~~

~~80-95.~~ Construction, once commenced, shall progress through to completion as continuously and expeditiously as possible and in accordance with the construction sequence and timetable provided.

~~81-96.~~ Funding provided by Town. The Applicant shall comply with any conditions associated with funding provided through allocation(s) by the Town, prior to or subsequent to issuance of this permit, including but not limited to allocations pursuant to the Community Preservation Act.

~~82-97.~~ The Applicant shall comply with all Final Approval requirements as determined by DHCD (or other subsidizing agency)

~~83-98.~~ If at any time it appears that the Applicant is in violation of an affordable housing restriction, then the Board may pursue such enforcement rights as it may have under the affordable housing restriction and/or applicable law.

~~84-99.~~ The Applicant shall provide the Board with copies of any and all documents and statements provided by the Applicant to DHCD (or other subsidizing agency) or its designated auditor of the Applicant's costs and revenues for informational purposes.

~~85-100.~~ The Town, by and through the Board or its designee, shall have continuing jurisdiction over the Project to ensure compliance with the terms and conditions of this Decision.

~~86-101.~~ The Applicant shall enter into a springing affordable housing restriction and regulatory agreement with the Town ("Town Regulatory Agreement"), which shall be signed by all necessary parties, including all mortgagees and lien holders of record for the property, and recorded at the Registry of Deeds prior to issuance of any building permit, and signed by all necessary parties, including all mortgagees and lien holders of record. The Town Regulatory Agreement shall become effective only if and when the Regulatory Agreement with DHCD or other subsidizing agency is terminated, expires, or is otherwise no longer in effect and is not replaced with another regulatory agreement with another subsidizing agency.

The Town Regulatory Agreement:

~~(i)~~ Shall require that the Project's Affordable Units shall remain affordable rental units at the levels designated in this Decision, as modified by DHCD and contained in the Subsidizing Agency's Regulatory Agreement, contain the same terms regarding Affordable Units as the Regulatory Agreement with DHCD or other subsidizing agency, and shall provide that the Affordable Units remain affordable at the designated levels in perpetuity, meaning in perpetuity, and for so long as the Project does not conform to local zoning, or the longest period allowed by law, whichever period is longer; and

~~(ii)~~ Shall restrict or limit the dividend or profit of the Applicant only if and as required under G.L. c.40B and 760 CMR 56.00, et seq., and no independent limitation on dividends or profits is imposed hereunder; and

~~(iii)~~ Shall constitute a restrictive covenant; shall be recorded against the Property; and shall be enforceable by the Town-

~~87-102.~~ Agents, successors and assigns. All terms and conditions of this permit shall be binding upon the Applicant and all agents, successors and assigns.