

Middlebury Wastewater Treatment Facility Upgrade

Hoyle Tanner Experience & Approach



Introduction



Hoyle Tanner Overview



Multi-disciplined engineering firm
with 100+ professionals in 5 offices
strategically located throughout
New England



17 multi-disciplined
professionals located in our
Burlington office.

- New England Municipal Engineering (NEME) Department with staff of 25
 - 9 located in Burlington Office
 - 13 of the 25 have over 15 years of experience
 - Majority of our wastewater treatment team is in Burlington

Your Project Team



Middlebury WWTF Upgrade Team



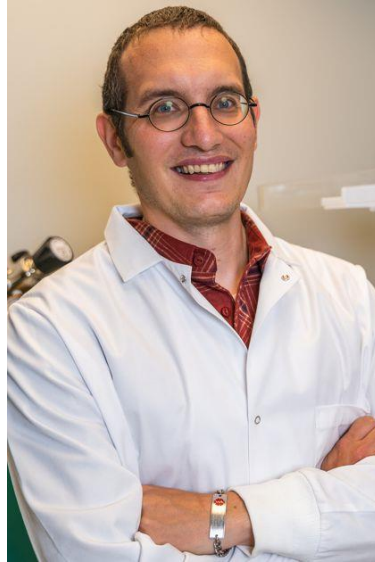
Team Leaders *(all located in Burlington)*



**Jennie
Auster, PE**
*Project Manager,
Technical & Funding Lead*



**Kirstin DiPietro-
Worden, PE**
*Senior Engineer & Detailed
Design Lead*



**Matthew
Scarborough, PE, PhD**
*Senior Engineer,
Wastewater Process
Modeling, Anaerobic
Digestion*

Support Team



John Reilly, PE
*Senior Engineer
(Burlington, VT)*



**Patrick McLee,
PE, PhD**
*Project Engineer
(Portsmouth, NH)*



**Joe Ducharme,
PE, BCEE**
*Senior Vice President
(Manchester, NH)*

Wastewater Treatment Experience



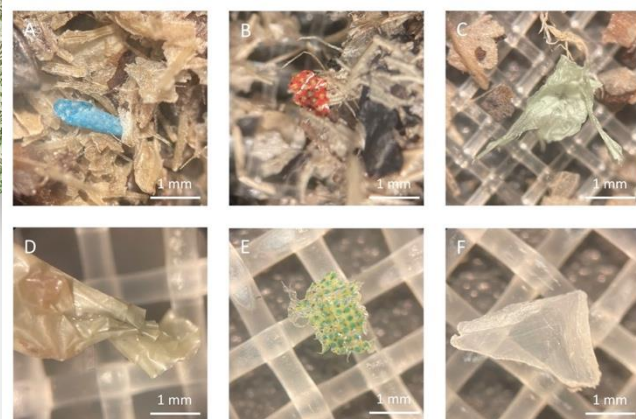
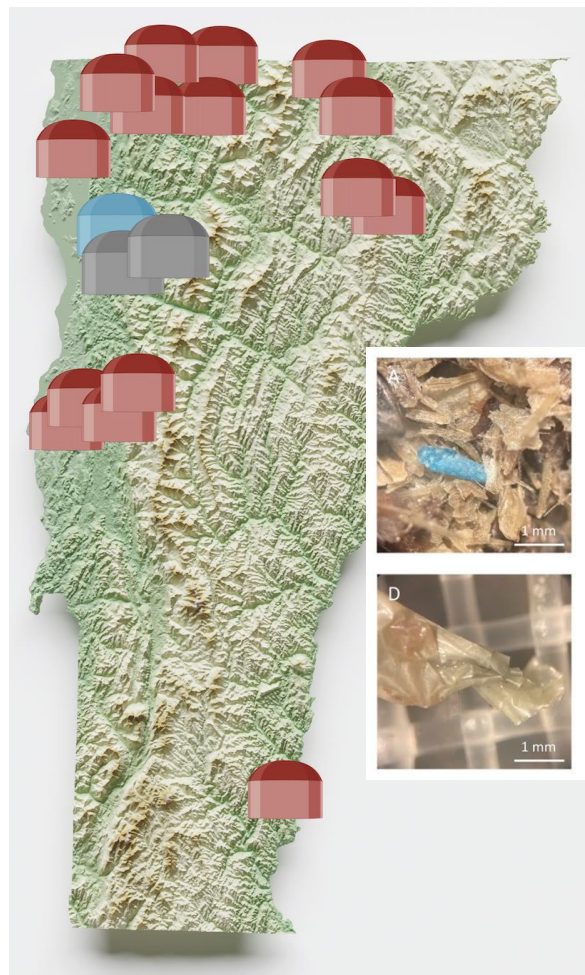
Biological Process Selection and Design



- Team has experience with evaluation of activated sludge alternatives, including completely-aerated, Ludzack Ettinger, Modified Ludzack Ettinger, and Anaerobic/Anoxic/Oxic and SBR processes for organics and nutrient removal.
- Alternatives developed using both spreadsheet calculations and process simulation software (SUMO).
- Current biological process alternatives development include Milford NH looking at alternatives using existing tankage and Woodstock Main WWTF where new process tankage is being designed.

- Jennie, John Reilly, and Matt experienced in mesophilic and thermophilic digester process
 - Jennie was technical lead for Bellow Falls WWTF mesophilic digesters with biogas for process and facility heat (gas cleaning, enclosed flare, biogas boiler, membrane gas storage cover). Also involved with Essex Jct and St. Albans WWTFs digester upgrades.
 - John Reilly was technical lead for the South Burlington Airport Parkway 2PAD thermophilic digestion system with CHP
 - Matt has worked on optimization of 7 digesters throughout Vermont and leads a research group at UVM studying anaerobic processes.

Vermont Anaerobic Digestion Considerations

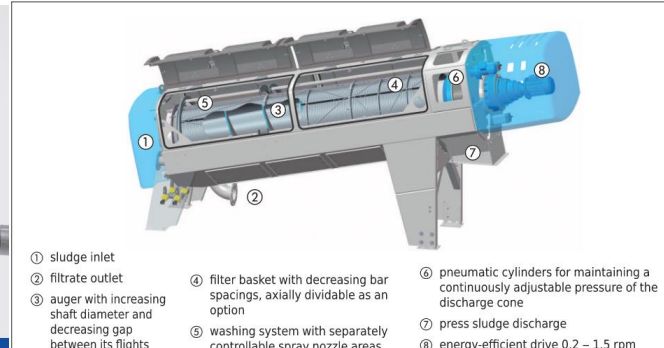


Hoyle Tanner will be partners to:

- Evaluate alternative anaerobic digestion and biogas use strategies
- Assess environmental life cycle impacts
- Design for uncertainty around feedstocks and biosolids management (e.g., PFAS, Plastics)
- Apply lessons learned from anaerobic digestion facilities across Vermont

Additional Related Experience

- Disinfection: new and refurbished UV disinfection as well as new and refurbished chlorine contact tanks
- Evaluation of dewatering and sludge drying alternatives including piloting experience and competitive pre-selection process



Approach



HOYLE
TANNER



Experience Transitioning Engineers for Design



- Build off work already completed:
 1. Review existing Preliminary Engineering Report for concurrence and additional recommendations for consideration and prepare Preliminary Engineering Report Addendum
 2. Refine recommended project based collaboration with Town after reviewing the Preliminary Engineering Report Addendum
 3. Complete VTDEC required Basis of Final Design document
- In the past 3 years, Hoyle Tanner has been competitively selected to transition after preliminary engineering/study phase by another engineer in Woodstock, Vergennes, Bolton Valley, Milford NH and Pittsfield NH.

Vermont Funding Experience



- VTDEC Administered Funding:
 - CWSRF Planning Loans – Loan forgiveness of 50% up to \$100k/project per FY
 - CWSRF Step III Loans – Understand the VTDEC requirements for approval
 - Pollution Control Grants – projects are eligible for up to 10% of the total project cost, dependent on VT legislative funding
 - ARPA/IIJA funds distributed by VTDEC WID generally not for age related upgrades and IIJA is focused on disadvantaged communities
- USDA Rural Development
 - In the past 3 years, HT has supported Vergennes, Brighton and Montgomery in applying for and receiving WEP loan/grant packages
- Congressionally Directed Spending (CDS)
 - Supported Vergennes and Montgomery in applying for and receiving CDS grants from Senator Leahy and Senator Sanders
- Northern Borders Regional Commission (NBRC)
 - Supported Montgomery in applying for and receiving NBRC grant

Conclusions



Why Hoyle Tanner?



- Vermont based team understands Vermont specific considerations
- Technical competency:
 - Extensive biological process selection and modeling experience
 - Vermont specific understanding of food waste variability and digestion landscape
 - Regional leaders in anaerobic digestion research and optimization
- Experience securing Vermont specific funding
- Local team will have a long-term investment in your community and project
- We partner with communities to make informed decisions specific to your unique needs