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# Small Community Sewage Solutions

## 2008 NNECAPA Conference

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## **The Problem:**

“Inadequate public infrastructure is viewed as the most significant roadblock to economic development in small town and rural America.”

-- *The Pulse of Small Town and Rural America*, Report from the National Association of Development Organizations Research Foundation eForum (August 30, 2004 national focus group of 210 regional development professionals supported by the Kellogg Foundation)



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The way we address our infrastructure challenges will affect not only our economic future, but our environmental future as well.

*That's why we call it*

**Green Community Technologies®.**

Better economically, environmentally  
and socially.



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**Green Community Technologies is a participatory and educational process that...**

- ✓ begins with your community's goals
- ✓ provides an objective assessment of a full range of alternative approaches
- ✓ incorporates systems thinking
- ✓ introduces local governments to life cycle costing
- ✓ helps local governments find and communicate effectively with contractors to get the results they want



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## **Green Solutions are multi-faceted:**

- **Design:** System-wide impacts
- **Hardware/Equipment/Technology:** Biological treatment, Highly Efficient Equipment/Machinery
- **Behaviors:** Conservation, Operations, Management, Maintenance
- **Policy:** Zoning, pricing, local, state, and federal regulations



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## Principles for “Green” Water Systems

**We believe that water systems designed to meet human needs should:**

- Interfere as little as possible with natural water processes
- Encourage replenishment and maintenance of the water table
- Add as few chemicals/pollutants as possible
- Use conservation and efficiencies to minimize volume
- Treat only as needed; do not over treat
- Reuse water rather than bring in fresh water whenever possible
- Use natural processes to clean and treat water whenever possible
- Minimize the transport of water from one place to another; keep uses close to sources
- Be energy efficient.



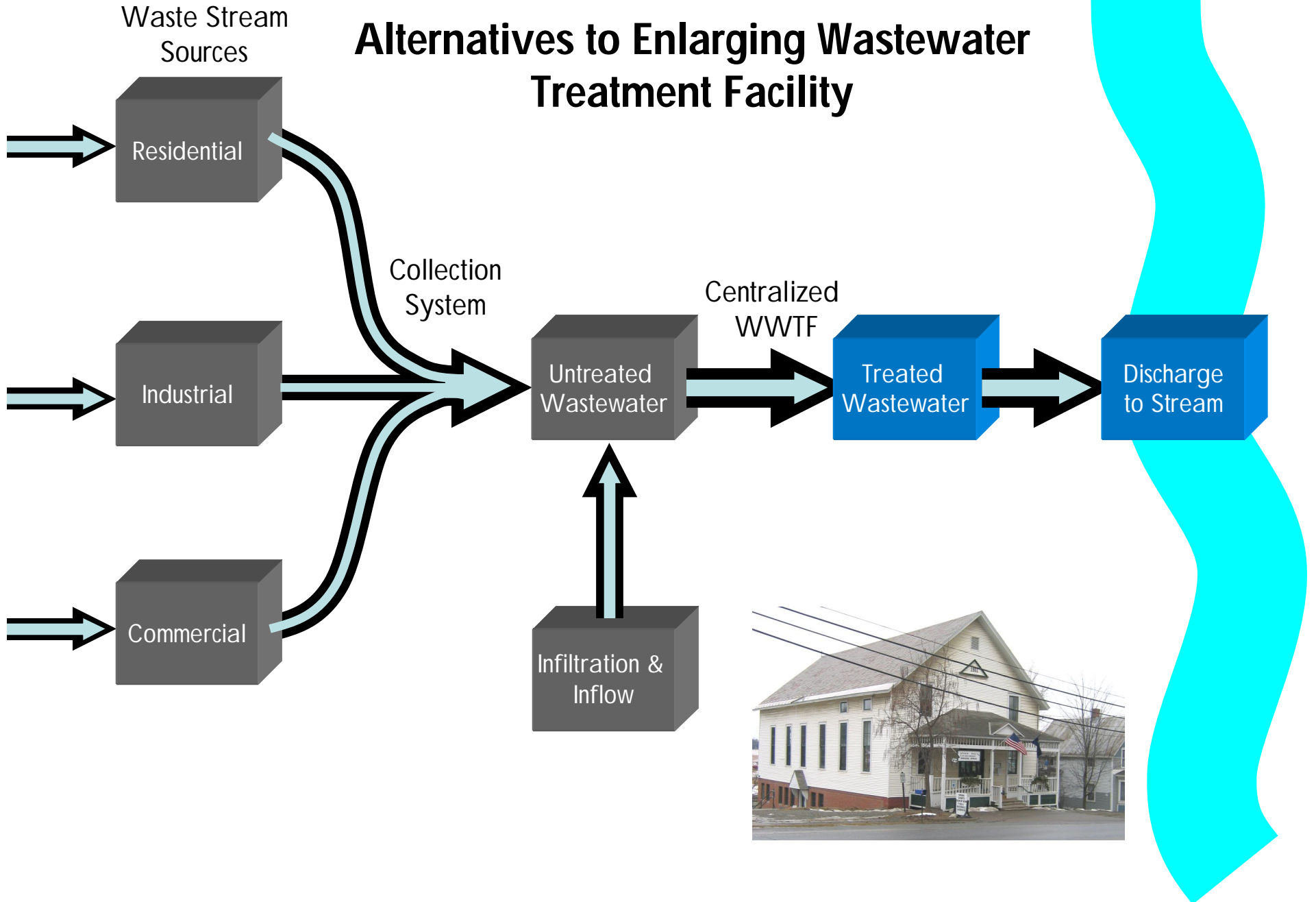
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## Approaches to “Greening” Centralized Wastewater Systems

- Hinesburg, Vermont
- Brattleboro, Vermont
- Brandon, Minnesota

# Hinesburg, Vermont

## Alternatives to Enlarging Wastewater Treatment Facility







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# Brattleboro, Vermont

## ***A. Old centralized system with significant grease problem***

### **Potential solutions**

#### **Standard**

Install expensive treatment equipment

#### **Green Community Technologies**

Reduce/remove grease at the source

#### Benefits:

Reduce municipal capital costs

Reduce municipal operating costs

Increase business profits

## ***B. System sized without respect to water conservation opportunities and impacts***



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## Brandon, Minnesota

Inflow and Infiltration adds unnecessary cost to wastewater treatment.

Municipal Pipes are under municipal jurisdiction – relatively easy to address.

Private Sewer Laterals are harder. No incentive to maintain. Private neglect = public cost.

### **Options:**

**Trenchless Technologies**

**Municipal or Cost-share Financing**

**Regulations – Assessment Districts**

Examples from Minnesota and elsewhere are helping Brandon reconsider what is possible.



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# Decentralized Management Systems

Municipal management of decentralized systems. Municipality assumes responsibility for care, maintenance, and replacement of systems on regular schedule. Homeowners pay an annual fee.

## Benefits:

- Avoids collection costs of centralized systems – up to 80% of total cost
- Municipality exercises responsible stewardship
- Acts like an insurance policy for homeowners
- Helps with property sales because all maintenance records available



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## **Decentralized Management Plans require:**

1. An ordinance, plan, and management capacity
2. Public education
3. Financing arrangements
4. Assessing and prioritizing failing systems in sensitive areas
5. Developing database for tracking inspections and upgrades
6. Developing requirements for periodic maintenance
7. Establishing rates and agreements for property owners



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## **Ottertail, Minnesota** Ottertail Management District

Since 1984

6 lakes, 4 townships, and portions of the City of Ottertail

Serves 1545 connections; 72% seasonal; 25% permanent residents; 3% Commercial

Includes 16 cluster systems; the rest are individual

Passive members maintain their own systems, District inspects and levies fines to pay for noncompliance.

Active members systems maintained by the District including repair and replacement.



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## **Decentralized Management Works If Four Things Align:**

1. Community understanding and commitment
2. Technologies appropriate to conditions
3. Governance and regulations
4. Management



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“I think it was money well spent. In our case, we settled on the wastewater upgrade project, but it could apply to a number of projects.”

*-Rocky Martin, Director, Department of Building and Facilities in Hinesburg, Vermont*

“We are very enthusiastic about setting an example for other communities in New York State. This is the first time we will undertake a comprehensive evaluation of our buildings. Green Community Technologies brought this all together for the town and provided recommendations for us to consider.”

*- Mary Ellen Keith, Franklin Town Supervisor*

“The benefits of a thorough technology assessment are significant when the right technology is chosen for public investments. In the sense of a positive outcome, it’s instilled a collective thought of at least asking these questions at those critical points when you’re making decisions whether they’re small or large about how things are done and is there a better way.”

*- Richmond Town Administrator Ron Rodjenski*



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A Narrated Presentation by  
**Yellow Wood Associates, Inc.**

10 minute narrated CDs for  
municipal audiences available by  
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Brochures  
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Select the infrastructure area of interest to you by clicking the type below the green circle