



Seeking Success: MnTAP's Approach to P2 in the Food and Beverage Sector

EPA Region 7 P2 Roundtable - November 17th, 2022

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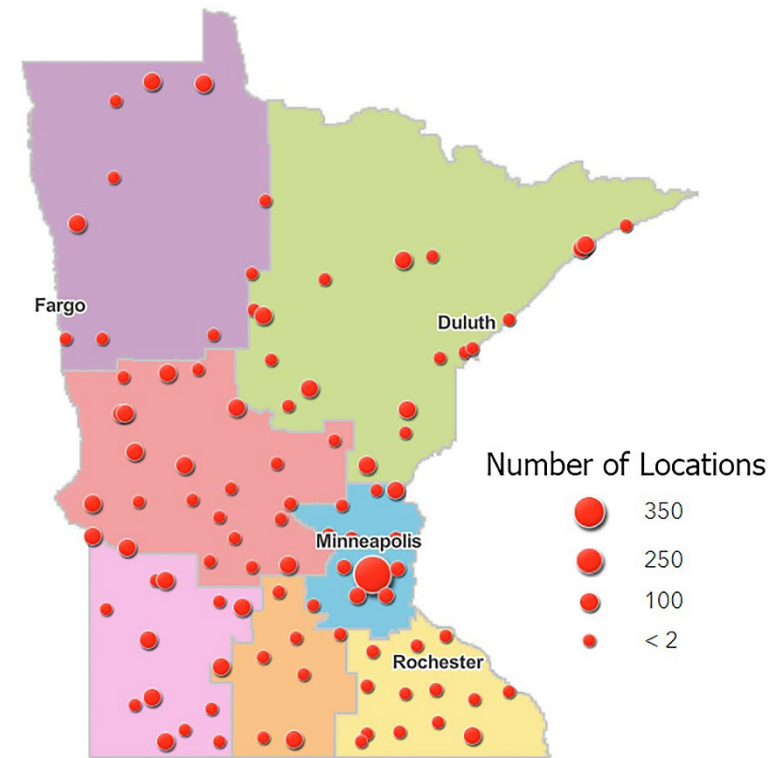
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Minnesota Technical Assistance Program

- **Confidential, grant-funded environmental support for MN businesses**
 - Prevent pollution at the source
 - Optimize resource consumption
 - Reduce waste and energy use
- **12 engineers and professionals**
- **Based in School of Public Health at University of Minnesota**



Supported Facilities 2017-2021

Minnesota Technical Assistance Program

MnTAP is...

- **On-site and remote technical assistance**
 - Water and waste evaluations
 - Energy efficiency studies
 - Pollution prevention training and guidance
- **Website with source reduction case studies and best practices**
- **Summer internships**

MnTAP is *not*...

- **Minnesota state government**
 - Publicly and privately funded
- **Regulatory authority**
 - No fines, fees, or surcharges
- **For-profit engineering firm**
 - No shareholders or profit goals

A grayscale photograph of industrial machinery, featuring a prominent pressure gauge on the left with a scale from 0 to 1.0. The machinery consists of various pipes, valves, and metal components, some of which are wrapped in white insulation. The background is slightly blurred, emphasizing the mechanical details.

Business Engagement

How do we get in the door?



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MnTAP Business Development

Direct Activities:

- **Internships**
 - Annually for college students
 - In place in MN businesses
- **Public Presentations**
 - Industry conferences
 - Minnesota State Fair
- **Touch Base Tuesday**

Indirect Activities:

- **Relationship-building**
 - Government partnerships
 - Trade organizations
 - Other P2 providers
- **Marketing**
 - Monthly email newsletter
 - Minnesota Materials Exchange

Business Development

- **Identify your audience**
 - Mergent Intellect
 - ECHO/Public data
- **Make a connection**
 - Relevant experience
 - Reference/mutual partner
- **Ask lots of questions!**
 - General – “Pain points”
 - Specific – Technical/process
- **Build and maintain trust**



Understanding Values – ESG and CSR



Understanding Values – ESG and CSR



- **Community**
 - Safety
 - Trust
 - Partnerships
- **Environment/Resources**
 - Food
 - Animals
 - Planet
- **Regulations**
 - Compliance
 - Governance

TA Focus Area	Discussion Points	Corporate Value
Water	Permitting	Regulations
	Water conservation, long-term supply	Community, Environment
Wastewater	Strength charges (BOD, TSS, nutrients)	Regulations
	Effluent volume	Regulations, Environment
	Pretreatment scheme	Regulations
Solid/Hazardous Waste	Chemical replacement	Community, Environment
	Generator size reduction	Regulations, Environment
	Worker safety	Community
	Waste reduction	Regulations, Environment
Energy Efficiency	Best management practices	Regulations
	Air emissions reduction	Community, Environment

Six “Rights” to Consider

- **Right Time:** Company has “bandwidth” and resources available
- **Right Person:** Company has a decision maker who wants success
- **Right Focus:** TA addresses current priorities and issues
- **Right Action:** Next step (meeting, site visit, intern project) fits need
- **Right Vision:** Goals and picture of success are clearly defined
- **Right Size:** Scope of project is attainable

A grayscale photograph of industrial machinery, likely a water tap or valve assembly. A prominent pressure gauge is visible on the left side, with a needle pointing to approximately 0.4. The machinery consists of various pipes, valves, and metal components, some of which are wrapped in white insulation. The background is slightly blurred, focusing attention on the mechanical details.

Best Practices

What solutions that have been implemented?



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Best Practice Determination

- **Experience**

- MnTAP founded in 1984 for air pollution reduction
- Thousands of sites and hundreds of intern projects across MN

- **Varying Focus Areas**

- Grant-specific – currently PFAS and food/beverage TA
- Regulation-specific – Varying focus for MN environmental health

- **Business/Management Trends**

- Wide range of professional experience and certifications (PE, CEM, 6 σ)
- Growing focus on continuous improvement practices

Varying P2 Needs

- **Facility-based P2**

- Building heating/cooling – Any facility
- Refrigeration – dairy, meat, fruit/vegetable
- Process heating – bakeries, distilleries/breweries

- **Industry-specific P2**

- Breweries/distilleries – Spent grain waste
- Milk/juice/beverage producers – Organic waste
- Packaged food manufacturers – Edible oil disposal



Best Practices – Water/Wastewater

Facility Type	Recommendation	Resource Savings	Cost Savings
Ice cream manufacturer	Install liquid sugar pump in intake to prevent loss to drain	112,000 lbs sugar	\$23,000
Brewery	Build anaerobic digester for wastewater pretreatment	99% reduction of BOD, TSS, and TP	\$225,000 17% ROI
Packaged food manufacturer	Install condensate pump to recycle cooling water	7,000,000 gal water 34,000 therms	\$74,000

Best Practices – Waste Minimization

Facility Type	Recommendation	Resource Savings	Cost Savings
Meat processor	Remove meat scraps by hand instead of by hose	15,000 lbs of meat	\$13,500
Prepared foods manufacturer	Optimize frequency and volume of foot foamers	5,000 lbs of chemical	\$11,000
Vegetable processor	Optimize vegetable sorting process equipment	33 tons vegetables	\$33,000

Best Practices – Energy Efficiency

Facility Type	Recommendation	Resource Savings	Cost Savings
Cereal manufacturer	Install boiler economizer	95,000 therms	\$32,000
Candy manufacturer	Install occupancy sensors Install LEDs Implement lights-out policy	279,000 kWh	\$26,000
Distillery	Regulate air use during equipment shutdown	186,000 kWh	\$18,100

Thank You!

*Strengthening Minnesota businesses by improving efficiency
while saving money through energy, water, and waste prevention*

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