

Starting a Sustainable Cycle Finance & Commerce Webinar

May 25, 2021



What you'll learn today.

- The why behind each panelist's sustainability efforts.
- How each began their sustainability endeavor.
- The business case behind these actions.
- The expected and current outcomes.
- The emerging opportunities on the horizon.

Forge ahead.

WSB is a design and consulting firm specializing in engineering, community planning, environmental, and construction services. Our staff of over 550 improve the way people engage with communities, transportation, infrastructure, energy and our environment. We offer services in over 30 complementary areas that seamlessly integrate planning, design and implementation. Our coast-to-coast client base is served from 15 offices in five states.

We share a vision to connect your dreams for tomorrow to the needs of today – the future is ours for the making.





COMMERCIAL



Asset Management Systems | Community Planning | Construction Administration | Design-Build | Economic Development | Energy | Environmental Planning & Natural Resources | Environmental Compliance | Geographic Information Systems | Geohazard Risk Assessments | Geotechnical Engineering | Intelligent Transportation Systems | Landscape Architecture | Land Development | Management Analysis & Development | Municipal Engineering | Pavement Management/Forensics | Project Controls | Project Funding | Right of Way | Site Validation | Structures | Surveying | Transportation/Traffic | Visualization | Water Resources | Wastewater

How we define sustainability.

At WSB, as well as for many other thought leaders, sustainability simultaneously advances economic, social, and environmental outcomes, thereby meeting the needs of current and future generations.

Each aspect – economic, social and environmental – is like a leg on a three-legged stool. If one leg is shorter or weaker than another, the stool is not stable. No part of the stool exists in a silo, but instead is connected as a system to serve any number of purposes.

ECONOMIC | SOCIAL | ENVIRONMENTAL

Why sustainability matters.

Sustainability services.



Community Planning



Water Reuse



Vegetation



Walkways



Energy



Natural Resources

Today, we'll discuss:

- How the city of Hugo is using less water and reducing costs despite its growing population
- How a dairy farm is increasing their revenue by making and selling biogas
- You'll also learn how mitigating invasive carp is leading to improved water quality in the Prior Lake-Spring Lake Watershed District.



Introducing today's panelists.









BRYAN BEAR City Administrator *City of Hugo*

STEVE COMPTON CFO & EVP Sevana Bioenergy

BRUCE LONEY Board Manager Prior Lake Spring Lake Watershed District Moderated by: AMY FREDREGILL Dir. of Sustainability WSB

Bryan Bear, City Administrator City of Hugo

Reduce, Reuse, Replenish: Implementation of water conservation strategies

Bryan Bear 5-25-21

F&C



Integrated Water Management



Hugo – Water Usage



Water Sustainability Efforts

- We use all traditional conservation methods
- Stormwater re-use is king...
 - Over 30,000,000 gallons saved last year
 - More than all other methods combined
- People love to irrigate!
- No need to use drinking water....
- Use stormwater

Oneka Ridge Golf Course





Beaver Ponds Park



Beaver Ponds Park





Residential Re-use Retrofit

Water's Edge Development Phase 1











Waters Edge

- 1100 homes with HOA
- At their peak usage: \$120,000 water bill
- Retrofit all irrigation from groundwater supply to surface water supply
- City owns pumps, pipes and delivers stormwater to HOA
 - We charge them for it but they pay less
- Reduces peak demand on city water system

Clearwater Cove









CSAH 8 Landscaping



ILLUSTRATIVE NEIGHBORHOOD PLAN



Sustainable water use

- 1. Reduces groundwater use
- 2. Puts water back into the ground
- 3. Improves Water Quality
- 4. Reduces Downstream Flooding
 - Volume Control
- 5. We can sell it
- 6. Lower priced water for residents
- 7. Reduces infrastructure costs
- 8. There are barriers
 - It is harder to do than it should be

- Construction cost = \$3,510,500
- Each new well > \$1,500,000

Steve Compton, CFO & EVP

Sevana Bioenergy

Serving the transition to **Renewable Natural Gas**

Steve Compton: CFO & EVP steve@sevanabioenergy.com

Sevana Bioenergy Overview

- Sevana Bioenergy is a team of national and international experts in biogas technology and RNG markets
- We develop large-scale anaerobic digestion projects in the US
- We build value-add partnerships in agricultural communities where our facilities produce organic based soil amendments and RNG
- Our mission is to be a market leader in accelerating the production of renewable natural gas derived from anaerobic digestion facilities

Renewable Natural Gas 101 – sustainable production process

- Production of RNG is closely integrated with organic waste feedstock source
- Provides circular benefits, including solids for dairy bedding
- Nutrient management enhanced through liquid co-product

Circular and Sustainable Benefits Integrated with Dairy Farms

Source: American Biogas Council

What are the lifecycle carbon benefits of RNG?

- On a lifecycle RNG can be a negative-carbon intensity fuel
- Depends on the source feedstock, particularly methane avoided
- Used as a substitute for diesel in CNG and LNG vehicles, among other uses
- RNG's carbon intensity is recognized and eligible for carbonreduction credits under federal and state policies

Source CARB published pathways May 2021

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RNG Impact

Put into Perspective, Last Year RNG as a Transportation Fuel ...

Lowered GHG	Reduced CO2	Eliminated CO2	Sequestered	or
emissions	emissions	emissions	carbon equal	4,288,221
equivalent to	equal to	associated with	to growing	acres of
8,796,396,117	393,842,804	425,759,115,664	57,874,580	U.S. forests for one year
miles driven by the	gallons of gasoline	smartphone	tree seedlings	
average passenger car	consumed	charges	for ten years	

Note: Assumes 3,500,081 metric tons of CO2e eliminated in 2020 through RNG usage calculated using CARB's LCFS carbon intensity numbers. GHG equivalency calculated using the U.S. EPA's calculator.

Source: RNG Coalition

Thank You

Bruce Loney, Board Manager

Prior Lake-Spring Lake Watershed District

Integrated Pest Management Plan (IPM Plan) for Common Carp

wsk

Carp Management Lakes

LAKES	CARP BIOMASS ESTIMATE	ESTIMATED TOTAL WEIGHT	PHOSPHORUS
(IN ORDER OF PRIORITY)	(кс/на)	(LBS)	(LBS/YEAR)
Upper Prior Lake*	250.4	87,441	1,431
Spring Lake*	242.1	128,114	1,220
Pike Lake**	287.2	12,792	100
Arctic Lake**	62.0	1,094	7
Fish Lake	88.7	13,886	47
Lower Prior Lake	8.9	7,593	24
Jeffers Pond	unknown	unknown	unknown
Buck Lake	unknown	unknown	unknown

* Top Priority Lake (goal = 30 kg/ha) ** Secondary Priority (SMSC is the lead)

GOALS:

- 1) < 30 kg/ha on Upper Prior Lake
- 2) < 30 kg/ha on Spring Lake

Secondary Priority: Provide support to SMSC (lead partner) for carp management in Arctic and Pike Lakes.

UPPER PRIOR LAKE GOAL: 30 kg/ha

SPRING LAKE GOAL: 30 kg/ha

CARP MANAGEMENT STRATEGIES:

- 1) Comprehensively TRACK carp to improve the understanding of carp dynamics, behavior, and movement that will inform effective management decisions.
- 2) Effectively **<u>BLOCK</u>** all identified carp spawning areas connected to Upper Prior & Spring Lakes.
- **3)** <u>REDUCE</u> carp down to management goal levels (30 kg/ha) in priority lakes.

CARP MANAGEMENT COSTS:

CARP PROGRAMS COSTS (2015 - 2019)

Cost-Benefit Comparison of District Projects

(Based on 10-Year Annualized Total Cost of a Project)

\$ / lb TP	
Removed Project	
\$81 Upper Prio	r Lake Allum Treatment
\$97 Carp Mana	gement Project
\$202 Ferric Chlo	ride System
\$252 Fish Point F	Park Iron-Enhanced Sand Filter
\$1,131 Indian Ridg	e Biofiltration Basin
\$1,136 Fairlawn Sł	ores Biofiltration Basin

COST-EFFECTIVENESS OF REMOVAL METHODS:

Total Pounds Removed	% of Total Lbs.	Ар	prox. Cost	\$ car	<u>2020</u> per lb of p removed	Est. carp	2021 \$ per lb of o removed
13,528	45%	\$	48,840	\$	3.61	\$	0.81
565	2%	\$	2,142	\$	3.79	\$	1.52
2,008	7%	\$	27,716	\$	13.80	\$	2.12
8,358	28%	\$	20,000	\$	2.39	\$	2.39
2,989	10%	\$	18,754	\$	6.27	\$	3.17
2,293	8%	\$	15,000	\$	6.54	\$	3.56
	Total Pounds Removed13,5285652,0088,3582,9892,293	Total Pounds Removed% of Total Lbs.13,52845%5652%2,0087%8,35828%2,98910%2,2938%	Total Pounds % of Total Lbs. Ap 13,528 45% \$ 565 2% \$ 2,008 7% \$ 8,358 28% \$ 2,989 10% \$ 2,293 8% \$	Total Pounds Removed% of Total Lbs.Approx. Cost13,52845%\$48,8405652%\$2,1422,0087%\$27,7168,35828%\$20,0002,98910%\$18,7542,2938%\$15,000	Total Pounds % of Total Lbs. Approx. Cost \$ 13,528 45% \$ 48,840 \$ 565 2% \$ 2,142 \$ 2,008 7% \$ 27,716 \$ 8,358 28% \$ 20,000 \$ 2,989 10% \$ 18,754 \$ 2,293 8% \$ 15,000 \$	Z020Total Pounds $$ 0 of Total Lbs.$ Approx. Cost $$ per lb of$ Removed $% of Total Lbs.$ Approx. Cost $carp removed$ 13,52845%\$ 48,840\$ 3.615652%\$ 2,142\$ 3.792,0087%\$ 27,716\$ 13.808,35828%\$ 20,000\$ 2.392,98910%\$ 18,754\$ 6.272,2938%\$ 15,000\$ 6.54	Total Pounds $\$ per lb of$ Est. Removed % of Total Lbs. Approx. Cost carp removed carp 13,528 45% \$ 48,840 \$ 3.61 \$ 565 2% \$ 2,142 \$ 3.79 \$ 2,008 7% \$ 27,716 \$ 13.80 \$ 8,358 28% \$ 20,000 \$ 2.39 \$ 2,989 10% \$ 18,754 \$ 6.27 \$ 2,293 8% \$ 15,000 \$ 6.54 \$

Seine Netting

Electrofishing

Baited Box Traps

Microhauls

Gill Netting

Spawning Traps

STRATEGIES: REDUCE: NEW CARP LEGISLATION

Minnesota Statutes 97C.815 COMMERCIAL FISHING AREAS

Prior to 2019, watershed districts were restricted to only working with the commercial fisherman assigned to their area to complete seines (large netting and removal of carp). If the fisherman was unwilling or unable to do a carp removal, the watershed district was required to get signed permission from their fisherman to work with ones outside of their area.

In 2019, Minnesota Statutes 97C.815 for Commercial Fishing Areas was updated to include:

(b) Area assignments must not restrict permits and contracts that the commissioner issues to governmental subdivisions and their subcontractors for **invasive species** control.

3) REDUCE

Thank you to our panelists!

BRYAN BEAR City Administrator *City of Hugo*

STEVE COMPTON CFO & EVP Sevana Bioenergy

BRUCE LONEY Board Manager Prior Lake Spring Lake Watershed District

Moderated by: AMY FREDREGILL Dir. of Sustainability WSB

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Join us | Fusion Land Use Conference

https://fusionlp.org/landuse/

July 21-22

THANK YOU

