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Cost and Financing of Phosphorus Removal Systems in Wisconsin

Wisconsin Government Affairs Seminar

February 27, 2014

Presented by:

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Strand Associates, Inc.®



Outline of Presentation

- **Options Available to Point-Source Dischargers of Phosphorus Under Current Wisconsin Law**
- **Cost of Phosphorus Removal Systems—Background**
- **Financing—Traditional Municipal Borrowing Instruments or Sources of Funds in Wisconsin**
- **Financing—Responsible and “Creative” Funding Alternatives in Wisconsin**
- **Financing Costs**
- **Closing Thoughts**

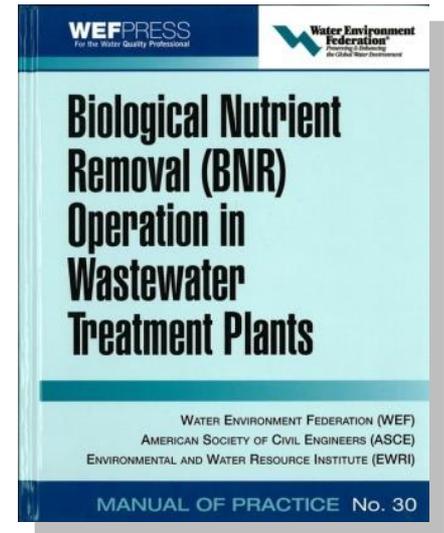
The presentation herein of financing alternatives is for general informational and educational purposes only, and should not be deemed a recommendation or approval by Strand Associates, Inc.® with regard to the specific and unique needs of a particular municipal entity. Further consultation with a financial advisor and/or bond counsel is recommended.



Options Available to Point-Source Dischargers of Phosphorus Under Current Wisconsin Law

Treatment plants have several options to comply with phosphorus (P) limits:

- Install new technology to remove more P from wastewater (WW).
- Utilize a watershed option like adaptive management or water quality trading.
- Seek a traditional variance or a proposed legislative watershed variance.



Under proposed “watershed variance” legislation, the permittee would:

- a. Reduce P concentrations to an interim limit for several permit terms.
- b. Pay \$50/lb of P for the difference between the permittee’s actual discharge and a target value (~0.2 mg/L).
 - This incentivizes point-source dischargers to achieve the most reductions possible from their existing technology.

Cost of P Removal Systems—Background

Design Average Flow, mgd	TERTIARY TREATMENT			VARIANCE			
	Capital Cost	Total Present Worth	Approx. Total Present Worth, if Delayed 9 Years	Annual Cost	Present Worth of Annual Cost	Present Worth of Future Capital Project (Year 20)	Total Present Worth
1	\$7,650	\$12,000	\$8,160	\$61	\$660	\$3,250	\$3,910
5	\$21,800	\$36,900	\$25,100	\$304	\$3,290	\$9,300	\$12,600
10	\$34,200	\$59,900	\$40,700	\$609	\$6,600	\$14,500	\$21,100

Notes:

1. Costs in Thousands.
2. Based on Municipal Environmental Group studies in 2008 and 2010, with costs updated to February 2014 dollars.
3. Present worth is 20-year at discount rate of 4.375%.
4. Basic assumptions for tertiary treatment: current effluent P concentration averages 0.6 mg/L; new effluent P concentration is 0.05 mg/L annual average; peak-to-average ratio of 3 or less; no special subsurface conditions; tertiary membrane treatment assumed; reactive filtration would be similar cost for larger systems.
5. Basic assumptions for variance: actual effluent P concentration averages 0.6 mg/L over 15 years; payment is \$50/lb for reduction from 0.6 to target of 0.2 mg/L for 15 years; cost of eventual tertiary treatment stays essentially the same.

Cost of P Removal Systems—Background (continued)

- **\$2 to \$4 Billion (or more) in Statewide Compliance Costs**

- Aggregate cost to Wisconsin municipal entities to comply with the “phosphorus rules.”

- **Fiscal Challenge to Fund Compliance**

- Many Wisconsin municipal entities are concerned about removal costs and the availability of financial resources to fund compliance.



- **Financing Options**

- Help is out there.

We will share some financing options available to Wisconsin WW systems and/or municipal entities to fund P, nitrogen (N), and other nutrient removal equipment/facilities.



Financing—Traditional Municipal Borrowing Instruments or Sources of Funds in Wisconsin

Wisc. Stat. Chapter 67:

“Municipal Borrowing and Municipal Bonds”

- Enables issuance of governmental debt
 - Pursuant to Chapter 67 and related Wisconsin statutes, rules and regulations.
- Bonds and notes
- Revenue Anticipation Note
 - A note is issued “in anticipation” of revenue (grant funds, reimbursement funds, or other one-time revenue source).
 - Often overlooked debt instrument.
 - Provides funds to the municipal entity earlier than generally available.
 - Paidoff once grant/reimbursement funds are delivered to the municipal entity.

Wisc. Stat. Chapters 60 and 66:

“Towns” and “General Municipality Law”

- Tax Increment Financing
- See Wisconsin Department of Revenue’s:
 - *A Guide to Wisconsin’s Tax Increment Law*



Financing—Traditional Municipal Borrowing Instruments or Sources of Funds in Wisconsin (continued)

Wisconsin Clean Water Fund Program (CWF)



- Subsidized low-interest loans for qualifying WW system projects.
- May provide “principal forgiveness”, although limited.
- May provide “hardship grants” and “zero interest loans” in some cases.
- May fund watershed compliance options under new pilot project program.

Target Runoff Management Grant Program (TRM)

- Competitive grants to local governments for controlling nonpoint source pollution.
- Cities, villages, towns, regional planning commissions, tribal governments, and special purpose lake, sewerage, and sanitary districts may apply.
- Cost-share rate for TRM projects is up to 70% of eligible costs.

Financing—Traditional Municipal Borrowing Instruments or Sources of Funds in Wisconsin (continued)

Urban Nonpoint Source and Storm Water (UNPS) Management Grants



- Competitive grants to local governments.
- Reimburse costs of planning or construction projects controlling urban nonpoint source and storm water runoff pollution.
- City, village, town, county, and tribal governments; regional planning agencies; and special purpose lake, sewerage and sanitary districts may apply.

Great Lakes Restoration Initiative (GLRI)

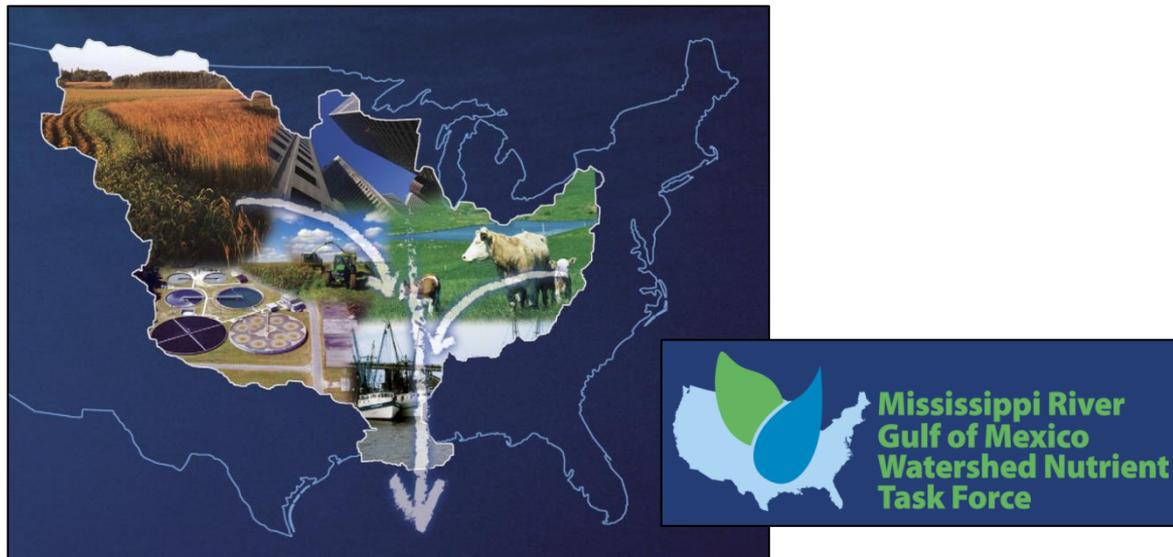


- Federal funding for protection and restoration efforts on the five Great Lakes.
- State and local governments and nonprofit organizations are eligible for grants from the U.S. Environmental Protection Agency (EPA) for projects addressing:
 - Toxic substances
 - Invasive species
 - Nonpoint source pollution
 - Habitat protection and restoration
 - Accountability, monitoring, evaluation, communication, and partnership building

Financing—Traditional Municipal Borrowing Instruments or Sources of Funds in Wisconsin (continued)

Mississippi River Basin Healthy Watersheds Initiative

- Purpose is to improve the Mississippi River Basin.
- The Natural Resources Conservation Service (NRCS)—part of the United States Department of Agriculture (USDA)—will help producers in selected watersheds in the Mississippi River Basin to voluntarily implement conservation practices that avoid, control, and trap nutrient runoff, improve wildlife habitat, and maintain agricultural productivity.



Financing—Responsible and “Creative” Funding Alternatives in Wisconsin

Securitizing New Revenue Stream - *Sale of Nutrients*

Recovery of P, N, and other nutrients for use in other products may save a WW system money or create a new revenue stream.

- By removing polluting nutrients:
 - The WW stream may meet or come closer to meeting nutrient discharge limits (possibly creating “credits”).
 - Avoids operational issues caused by the buildup of struvite in plant equipment.
- “Earns revenue” from the sale of nutrients.
 - This revenue stream can be “**securitized**” and can serve as a source for payment of debt service (principal and interest) on revenue bonds or notes by or on behalf of the WW system.



Nutrient Removal System.
Source: Ostara

Financing—Responsible and “Creative” Funding Alternatives in Wisconsin (continued)

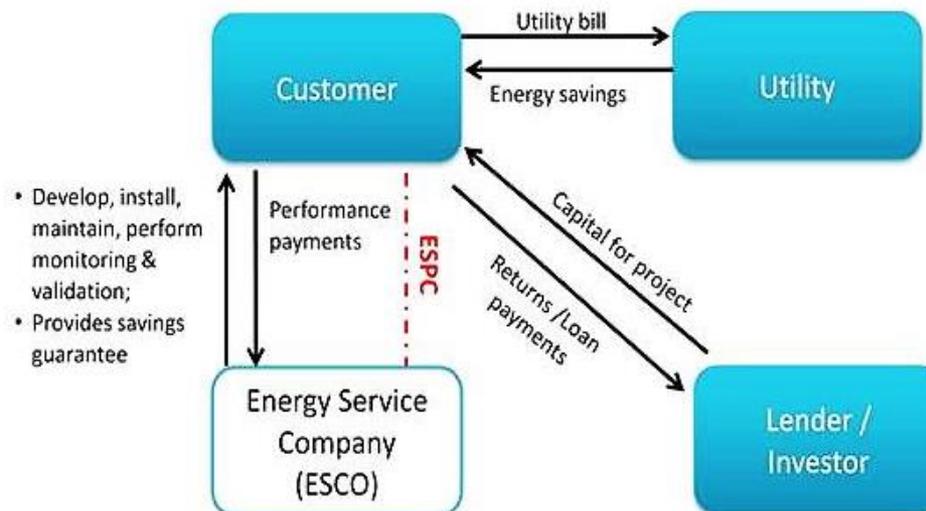
Securitizing New Revenue Stream – *Water Quality Trading Credits*

- Water Quality Trading (WQT) may be used by Wisconsin Pollutant Discharge Elimination System (WPDES) permit holders to demonstrate compliance.
- WQT is a voluntary exchange of pollutant (not just P) reduction credits.
 - A facility with a higher control cost can buy a reduction “credit” from a facility with a lower control cost, thus reducing its cost of compliance.
 - Trading can be done through a third-party “broker” (such as a watershed organization or county conservation office) and be between 2+ point sources, point and nonpoint sources, or 2+ nonpoint sources.
- This revenue stream, or funds obtained through WQT, can be “**securitized**” and can serve as a source for payment of debt service (principal and interest) on revenue bonds or notes by or on behalf of the WW system.
- See WDNR’s:
 - *Water Quality Trading How-To Manual*
 - *Guidance for Implementing Water Quality Trading in WPDES Permits*

Financing—Responsible and “Creative” Funding Alternatives in Wisconsin (continued)

Securitizing Energy and Maintenance Savings - “Performance Contracting”

- Utilize for-profit energy and maintenance corporations that guarantee savings in energy and maintenance costs resulting from the work of the corporation and attributable to the WW system.
- Resulting savings (over a period of time and, again, guaranteed by the corporation) can be “**securitized**” and may then be used to pay debt service (principal and interest) on a revenue note or bond issued by or on behalf of the WW system.



Financing—Responsible and “Creative” Funding Alternatives in Wisconsin (continued)

Public Private Partnerships (PPP)

- PPP is a contractual cooperation between the public and private sectors in one or more of the development, construction, operation, ownership or financing of infrastructure assets, or in provision of services.

Example: City X (City) maintains a WW system (System) that currently requires capital improvements to maintain compliant and efficient operation. In a rising interest rate environment, traditional financing (governmental tax-exempt bonds or notes) supported by user rates would require significant and immediate user rate increases.

The City approaches ABC Water Services, LLC, a private corporation specializing in WW services and management (Concessionaire). The Concessionaire agrees to sponsor financing, the proceeds of which will be used to fund capital improvements, develop necessary new infrastructure, and provide lease payments back to the City (the City retains ownership of the System).

The Concessionaire agrees to provide all labor, supplies, and materials necessary to operate, maintain, and manage the System for 20 years (period corresponds to the amortization of the financing).

Financing—Responsible and “Creative” Funding Alternatives in Wisconsin (continued)

PPP Example Notes:

- Often in the financing, the “gross revenues” supporting the financing are structured as “special revenues” and do not flow through the City’s or the System’s general fund.
- Legal documents provide, among other things:
 - i. Limits on user rate increases over the concession period.
 - ii. Range of quality, timing, and delivery of services required to be maintained by the Concessionaire.
 - iii. Environmental and regulatory compliance.
 - iv. Retention of existing key personnel.
 - v. Revenue sharing mechanisms should profits be realized from the sale of credits or nutrients.



Financing—Responsible and “Creative” Funding Alternatives in Wisconsin (continued)

Interfund Borrowing

- Under Wisconsin law, a municipality may complete an interfund “loan” to finance short- or long-term needs of the municipality’s WW system or other things.
- The loan would require proper documentation that would state, among other things:
 - i. The right of the WW system to prepay the loan at any time without penalty.
 - ii. The right of the municipality to “call” the loan, with proper notice and time for the WW system to develop another financing mechanism to pay-off the loan.
 - iii. The need, if any, for debt service coverage.
 - iv. The need, if any, for a debt service reserve fund.
 - v. The minimum and maximum term of the loan.
 - vi. A market interest rate.
- Any such borrowing is subject to any restrictions imposed by existing debt documents that also have a claim on the revenue designated for loan payoff
 - Unless the prior debt is “defeased” or the new loan is subordinate to existing debt.

Financing—Responsible and “Creative” Funding Alternatives in Wisconsin (continued)

Certificates of Participation (COPs)

- Secured with revenue from an equipment or facility lease between the municipality and the COP issuing trust. Features include:
 - COP proceeds are used to purchase equipment or a facility.
 - Certificate maturities match the lease term of the equipment or facility.
 - Lease payments are passed through to the certificate holders.
 - Enables governmental entities to finance capital projects without technically issuing long-term “debt”.
- COPs have been used by municipalities to pay for prisons, municipal facilities, vehicles, and even parks.
- The State of Wisconsin has express statutory authority to issue COPs.
- Although no express statutory authority, many Wisconsin local governments have the legal authority to issue COPs.
 - See *Dieck v. Unified School District of Antigo*, 165 Wis. 2d 458 (1991)



Financing Costs—Tax-Exempt Private/Public Sale (as of February 17, 2014)

- Funding: 30-Year Amortization Options

	"A" Bond Rating (Stable) -- (Design Average Flow - 1 MGD) (Net Proceeds of \$7,650,000) -- (30 yr Amort)	"A" Bond Rating (Stable) -- (Design Average Flow - 5 MGD) (Net Proceeds of \$21,800,000) -- (30 yr Amort)	"A" Bond Rating (Stable) -- (Design Average Flow - 10 MGD) (Net Proceeds of \$34,200,000) -- (30 yr Amort)
Par Amount of Bonds	\$ 8,145,000	\$ 23,205,000	\$ 36,400,000
Project Fund Deposit	7,650,000	21,800,000	34,200,000
Debt Service Reserve Fund Deposit	505,150	1,433,250	2,246,575
Average Annual Debt Service	502,321	1,430,975	2,244,274
Ave. Annual Revs. for 110% Coverage Requirement	552,553	1,574,073	2,468,701
Total Interest	6,924,625	19,724,250	30,928,225
Average Coupon	4.5860%	4.5854%	4.5854%

Financing Costs—Tax-Exempt Private/Public Sale (as of February 17, 2014)

- Funding: 20-Year Amortization Options

	"A" Bond Rating (Stable) -- (Design Average Flow - 1 MGD) (Net Proceeds of \$7,650,000) -- (20 yr Amort)	"A" Bond Rating (Stable) -- (Design Average Flow - 5 MGD) (Net Proceeds of \$21,800,000) -- (20 yr Amort)	"A" Bond Rating (Stable) -- (Design Average Flow - 10 MGD) (Net Proceeds of \$34,200,000) -- (20 yr Amort)
Par Amount of Bonds	\$ 8,120,000	\$ 23,135,000	\$ 36,290,000
Project Fund Deposit	7,650,000	21,800,000	34,200,000
Debt Service Reserve Fund Deposit	606,525	1,724,675	2,702,925
Average Annual Debt Service	604,369	1,721,881	2,700,901
Ave. Annual Revs. for 110% Coverage Requirement	664,806	1,894,069	2,970,991
Total Interest	3,967,375	11,302,625	17,728,025
Average Coupon	4.1474%	4.1471%	4.1470%
Wisconsin Clean Water Loans at 2.625%*	\$ 8,120,000	\$ 23,135,000	\$ 36,290,000
Average Annual Debt Service	527,124	1,501,655	2,355,453
Total Interest	2,422,481	6,898,106	10,819,069

*Current rate for clean water fund loans as of July 26, 2012. This rate is subject to change whenever new Clean Water Revenue Bonds are issued by the State of Wisconsin. Such bonds were not issued in 2013, but they may be issued in 2014. If so, the interest rate for loans funded by 2014 Clean Water Revenue Bond proceeds is likely to be higher.

Closing Thoughts

What we discussed:

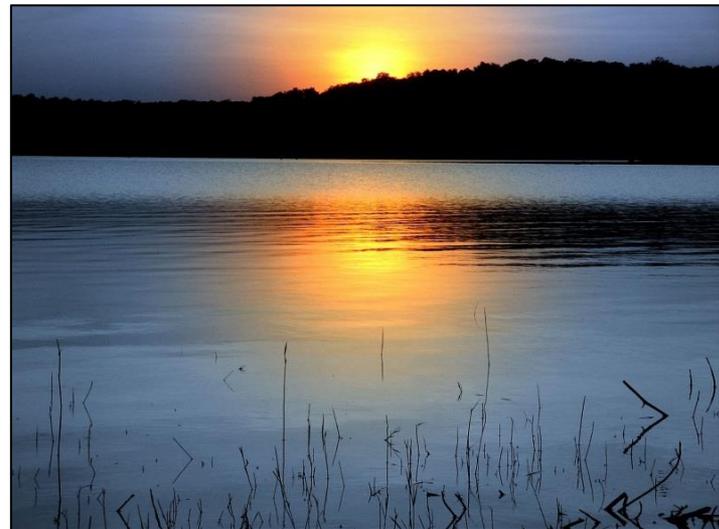
- Current and proposed Wisconsin law, rules, and regulations regarding P removal.
- Options and anticipated project costs to point-source dischargers (treatment plants).
- Financing options and costs (as of February 17, 2014).

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