

NSF Water Sustainability Standards

Our Speakers Today



- Jenny Oorbeck, Program Development Manager, NSF Sustainability



- Paul Olson, Senior Manager, Standards at AWWA

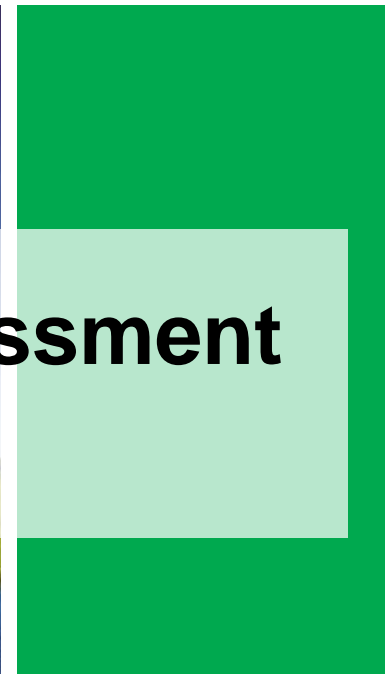


- Clyde Dugan, Manager, East Lansing-Meridian Water & Sewer Authority

Agenda



- Overview of NSF sustainability services
- Overview of NSF/AWWA/ANSI Standard 416
 - Certification Requirements
 - Certification Process
- Other possible applicable services
 - NSF/AWWA/ANSI Standard 375
 - Performance Plus
- AWWA on Sustainability Standards for Water – Paul Olsen
- The Municipal Utility Perspective on the Standard – Clyde Dugan



NSF/AWWA Sustainability Assessment Standard 416



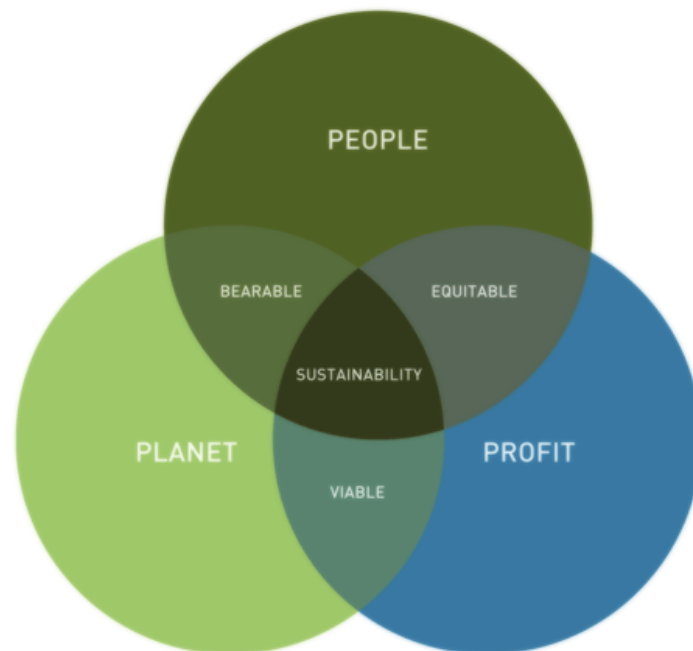
Jenny Oorbeck, Program Development
Manager, NSF Sustainability

What is Sustainability?



- Meeting the needs of the present without compromising the ability of future generations to meet their own needs

Brundtland Commission of the United Nations, 1987



Three legged stool analogy:

- People (social responsibility)
- Planet (environmental responsibility)
- Profit (economic responsibility)

NSF's Sustainability Strategy



- Provide a range of services that help all companies better understand, develop and implement sustainability into their organizations and products



Purpose of NSF Sustainability Standards



- To provide a standardized approach to sustainability
- To ensure consistent reporting of sustainability metrics
- To assist in creation of a future pathway for sustainability
- To promote and substantiate market claims



Value of Certification



- **Product manufacturer**
 - Clear demonstration of a company's commitment to and achievements in sustainability
- **Buyer/regulator/utility**
 - Ability to impact sustainability through purchasing decisions
 - Utilities: impact beyond operations only; suppliers have a significant environmental, economic and social impact

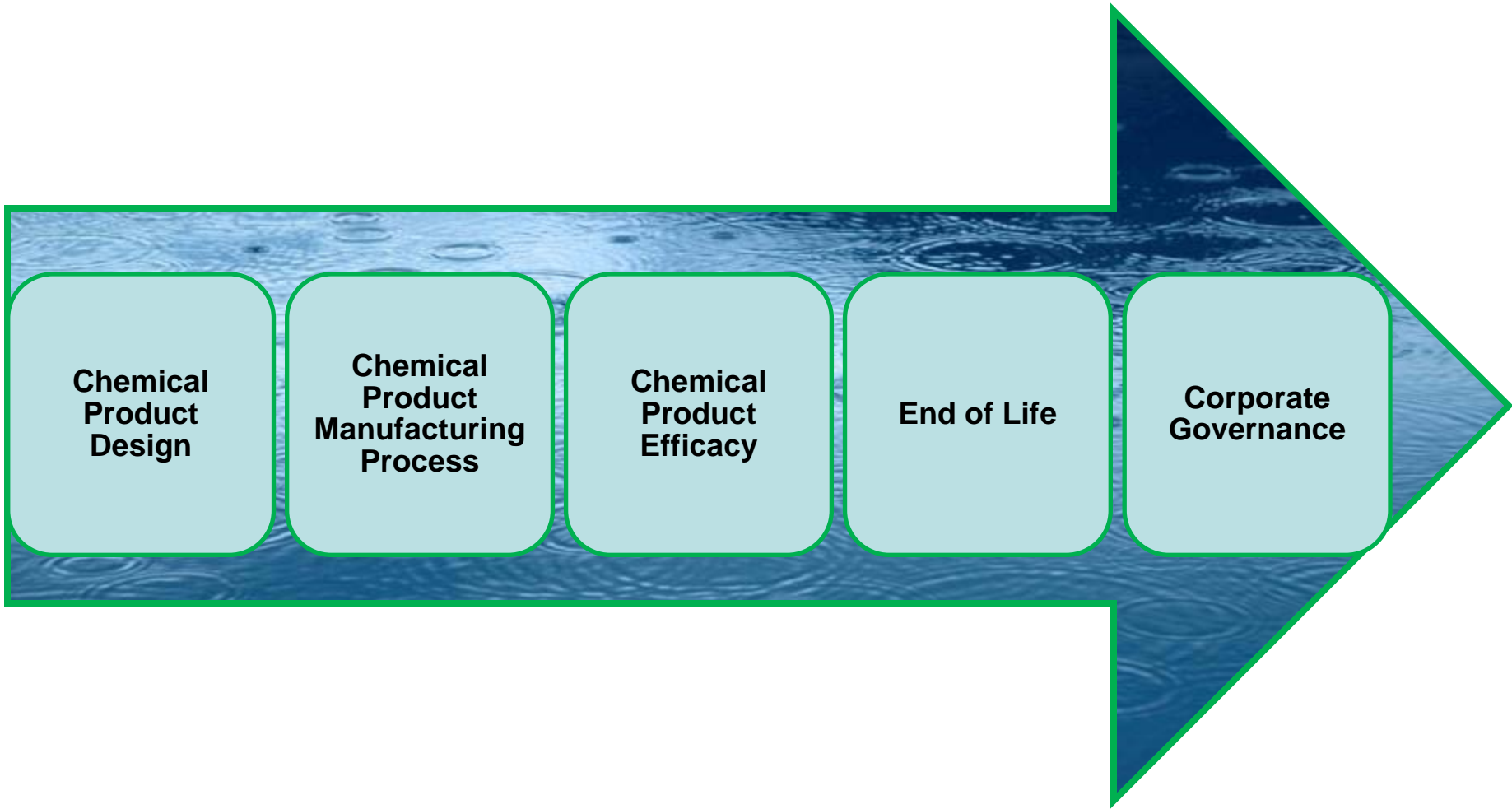


New Sustainability Standard: NSF/AWWA/ANSI 416



- **Manufacturers and distributors**
 - Including repackagers and relabelers
 - For distributors to qualify, manufacturer must be certified
- **Water treatment chemicals**
 - Drinking water treatment chemicals
 - Required Std. 60 certification
 - Wastewater treatment chemicals
 - Pool and spa treatment products
 - Boiler and cooling water treatment chemicals
- **Launched 4/15/2015**
- **Partnership with AWWA**
 - Served on Joint Committee
 - Advocate for utility sustainability

NSF/AWWA/ANSI 416 for Water Treatment Chemical Products



Standard 416 Certification



Conformance shall be achieved when the company meets all prerequisites and requisite criteria as well as 30% of optional criteria



1. Chemical Product Design



- Prerequisites

- Environmental considerations in design; product, packaging and delivery; efficacy, longevity, reusability, recyclability
- List of all major suppliers of all ingredients, reactants and processing aids

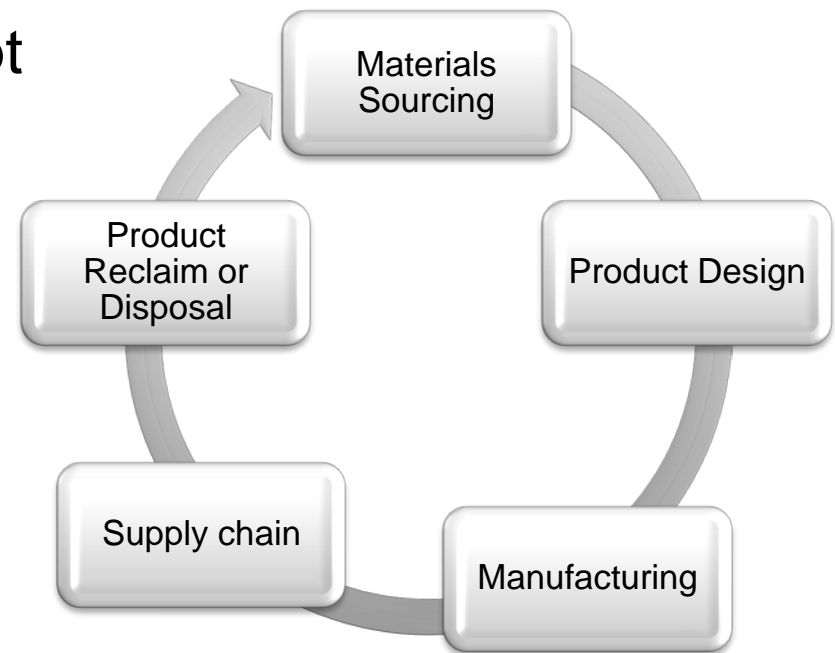


1. Chemical Product Design



- **Optional**

- Life cycle inventory; 1 pt
- Life cycle assessment; 2 pt
- Life cycle assessment improvement; 2 pt
- Contribution to life cycle inventory; 1 pt
- Environmental product declaration; 1 pt
- Supplier environmental disclosure process; 1 pt
- Supplier audits; 2 pt



2. Chemical Product Manufacturing Process



- Prerequisites

- Environmental policy
- Energy inventory
- Transportation efficiency
- Energy management program
- Water use inventory
- Water reduction and reuse program
- Waste generation
- Safe handling of water treatment chemicals in post-manufacturing
- Air emissions inventory
- Air emissions reduction program

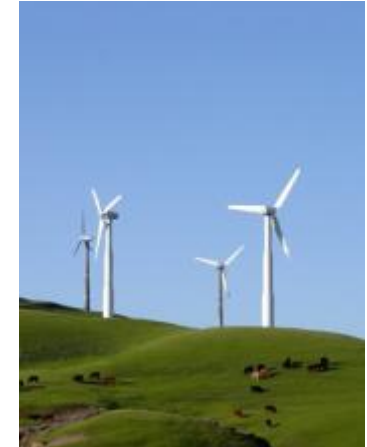


2. Chemical Product Manufacturing Process



- **Optional**

- Environmental management system; 3 pt
- Third party verification; 3 pt
- Onsite energy generation; 1 pt
- Energy source (non coal/oil); 1 pt
- Water quality discharge; 4 pt
- Wastewater management; 2 pt
- Manufacturing hazardous waste minimization; 2 pt
- Manufacturing non-hazardous waste minimization; 2 pt
- Recycling and reuse of materials; 1 pt
- Global sustainability of water resources; 3 pt



3. Chemical Product Efficacy



- Prerequisites
 - Chemical content; meets or exceeds AWWA applicable standards
- Optional
 - Chemical efficacy improvements; 2 pt



4. End-of-life Management



- Prerequisites; none
- Optional
 - Water treatment chemical re-purpose, reuse, or reprocess; 2 pt
 - Collection of packaging; 1 pt



5. Corporate Governance

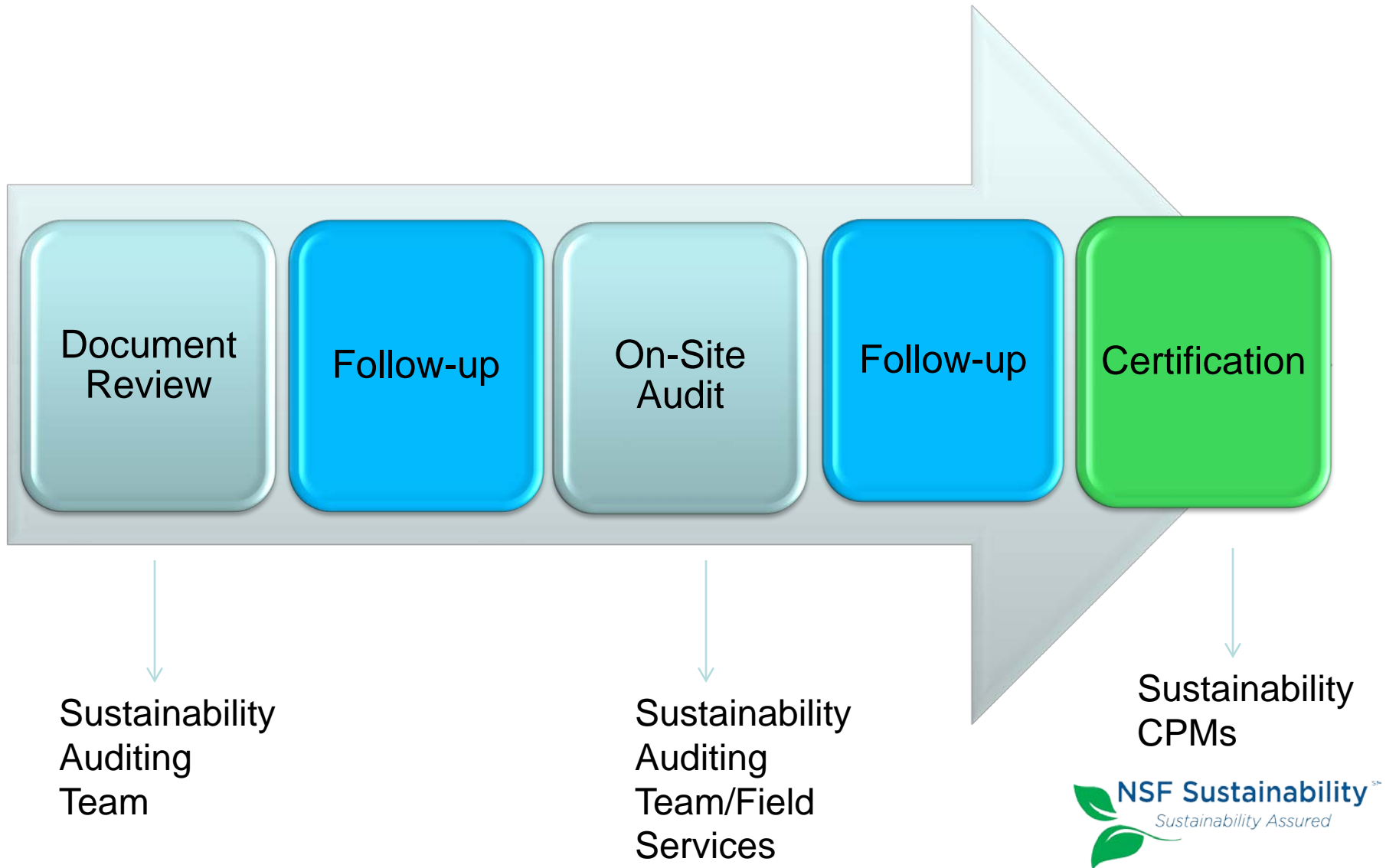


- **Optional**

- Social accountability; 4 pt
- Employee injury minimization; 1 pt
- Major suppliers; 2 pt
- Community financial investment; 4 pt
- Stakeholder public meetings; 3 pt
- Corporate engagement; 2 pt
- Corporate profitability; 1 pt
- Investment in research and development; 1 pt
- Supplier satisfaction; 1 pt



Certification Process Flow



Document Review



- A detailed document review is conducted for each credit applied for
- Results are documented by NSF and sent to the client prior to the on-site audit
- Facility audit based on the document review results



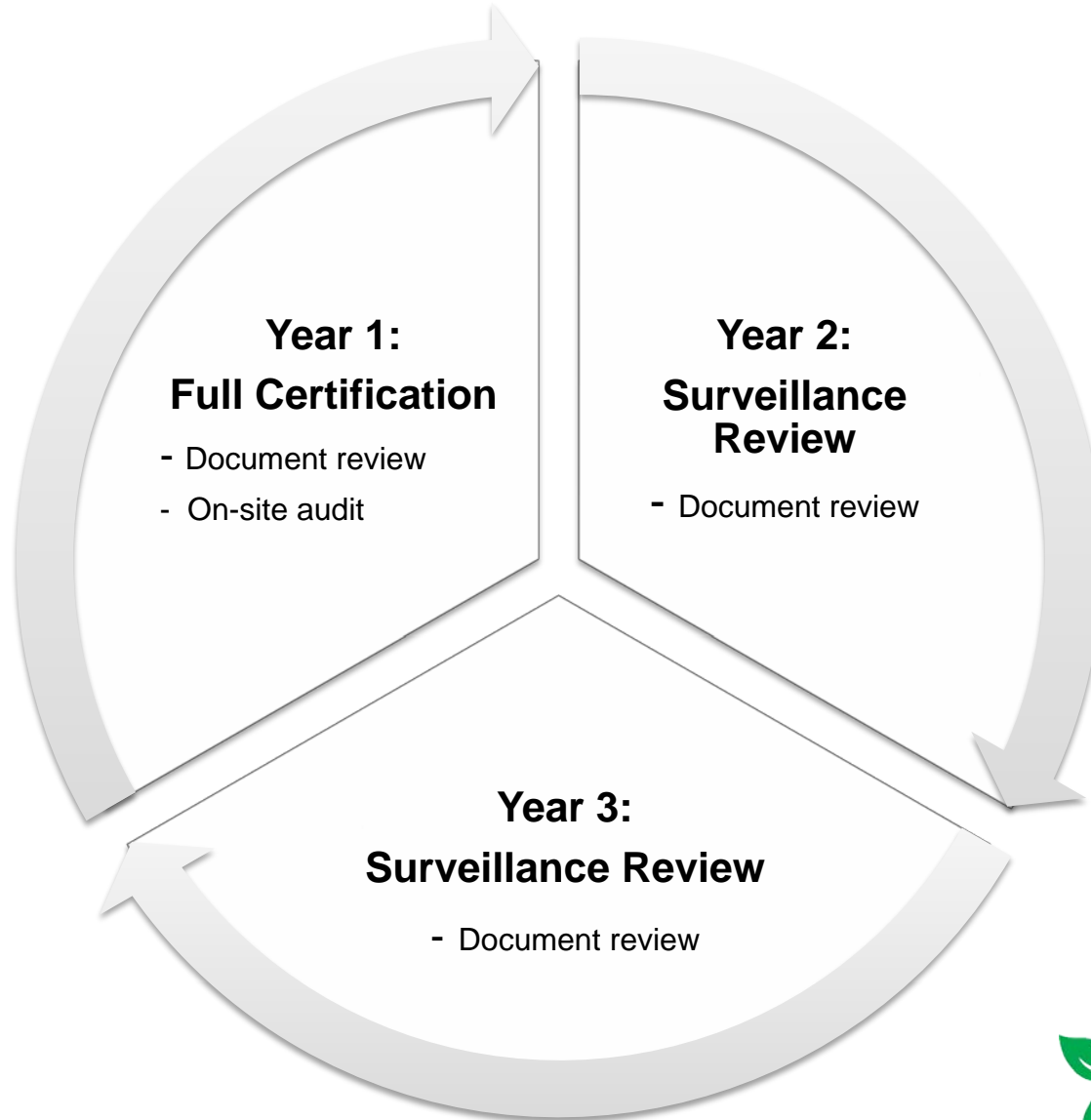
On-Site Audit



- Confirmatory, not exploratory
 - Announced
 - Confirm if what we see on-site matches what was submitted
 - Audit to requirements that can only be audited on-site
- Interviews with those involved in documentation
- Auditor provides overview of the process and findings
- Sustainability project manager provides a report of items following the audit



Certification Audit Cycle



Certification Benefits



- Third party verification
- NSF Sustainability Mark
 - Product
 - Marketing/sales materials
- An official listing on NSF's website
- A likely reduction in operational costs
- Differentiation in the marketplace
- Preferred status from governments, utilities, and corporations interested in sustainable products

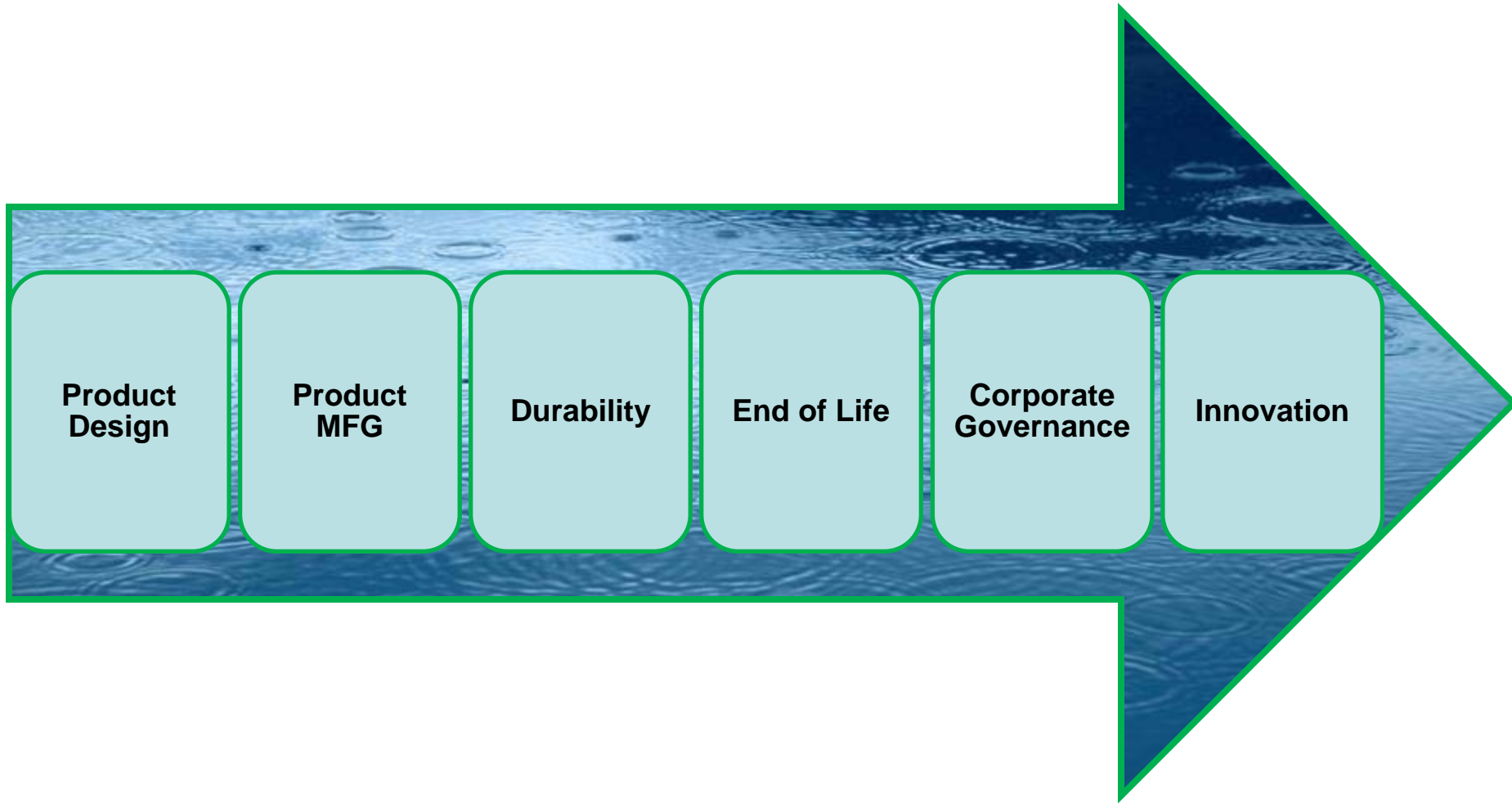


New Sustainability Standard: NSF/AWWA 375



- Manufacturers
- Any water contact product:
 - Drinking water treatment products
 - Wastewater treatment products
 - Pool and spa related products
 - Fittings and other components
- Planned launch for early summer

NSF/AWWA 375 for Water Contact Products



NSF Performance Plus

Sustainability Reporting Dashboard



For any organization looking for an automated data collection and reporting solution:

- Optimize operational performance
- Align reporting to buyers and suppliers, certification or compliance requirements and other information reporting needs



NSF Performance Plus Data Collection



- **Energy**
 - Direct Non-renewable
 - Indirect Energy
 - Renewable Energy Credits
 - Self Generated Energy
 - Direct Stationary Energy
 - Electricity Grid-Mix
 - Green Electricity
 - Total Energy Consumption
- **GHG**
 - Total GHG Scope 1 & 2
- **Health & Safety**
 - Total Workforce
 - Absentee Rate
 - Fatalities
 - Injury Rate
 - Lost Day Rate
 - Occupational Diseases Rate
- **Materials – Total Materials**
- **Waste**
 - Hazardous
 - Non-Hazardous
 - Non Recycled Materials
 - Recycled Materials
 - Total Waste
- **Water**
 - Total Water Consumption
 - Total Water Discharged
- **Air Emissions – Hazardous Air Pollutants**
- **Product Distribution**
- **Labor & Discrimination**
- **Packaging**

Performance Plus Dashboard



https://nsf.sofi-hosting.com/module.php

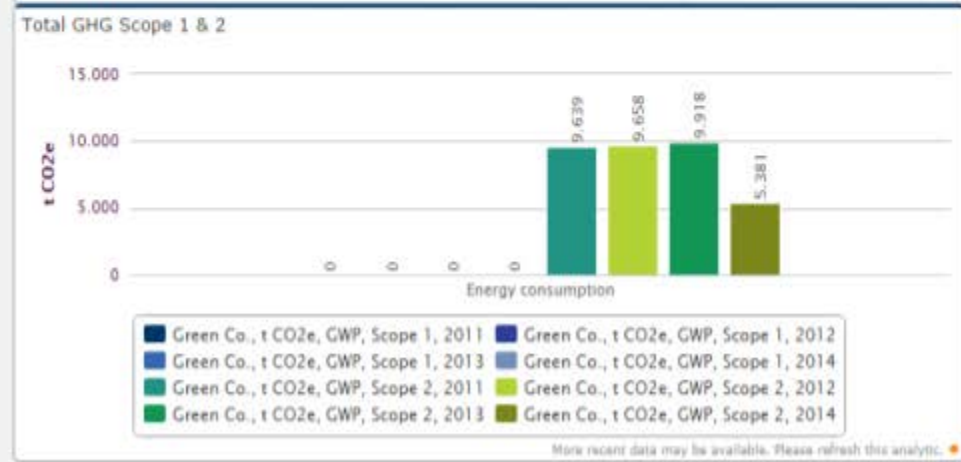
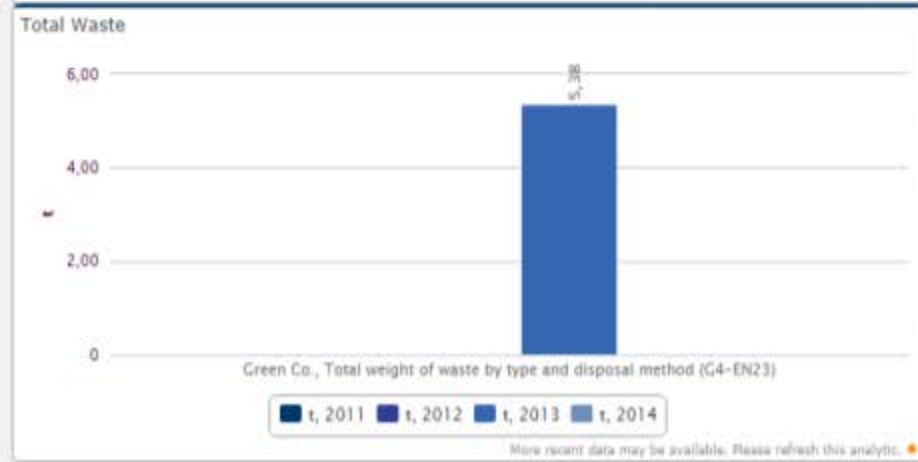
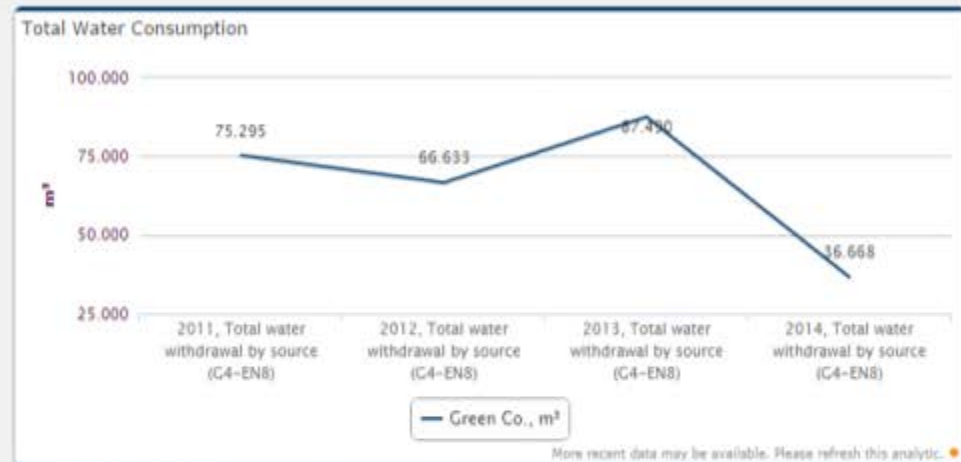
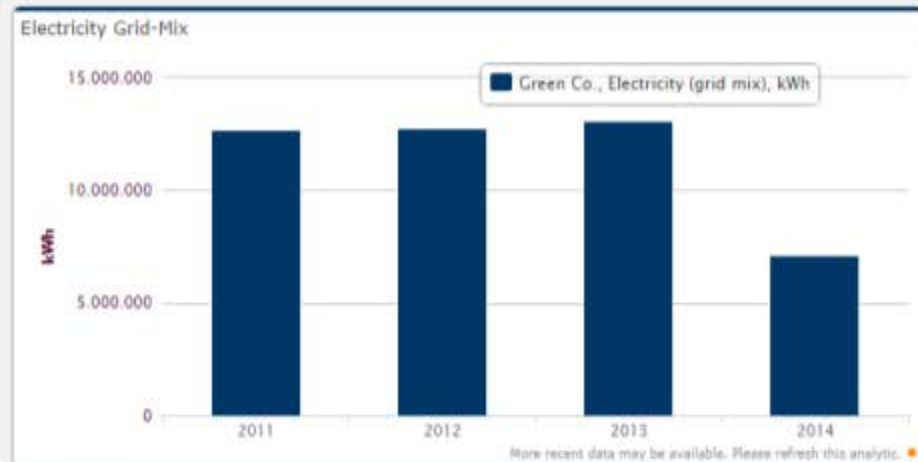
NSF Performance Plus Software

Powered by PE International Soft

Data Entry • Analytics • Help

Green Company

Summary



For More Information



To locate more information on water product sustainability, or to view or purchase NSF/AWWA/ANSI 416 for water treatment chemicals, visit:

www.nsf-sustainability.org



Sustainability Standards for Water AWWA Perspective



Paul J. Olson, P.E.
AWWA Sr. Manager of
Standards

American Water Works Association (AWWA)



- Nonprofit scientific and educational association dedicated to managing and treating water
- Founded in 1881
- 50,000 members
- Oldest and largest organization of water professionals in the world
- “Dedicated to the World's Most Important Resource”



Role of AWWA



- **Supporting Partner on NSF 416**
 - Included in the Designation of the Standard
 - Promoting Awareness of the Standard
 - Distributor of the Standard
- **Volunteer Chair of NSF Joint Committee**
- **Additional Active AWWA Members Participating on the NSF Joint Committee**



Dedicated to the World's Most Important Resource®

Additional AWWA Support



- March 2015 AWWA Webinar – “Specify Sustainable Products for Water Treatment”
- NSF Presenter at the AWWA Sustainable Water Management Conference – “Water Contact Products Sustainability Assessment”
- Joint Press Release

 **American Water Works Association**

Dedicated to the World's Most Important Resource®

Importance of Sustainability to AWWA



- **AWWA Core Principles Include:**
 - Protect Public Health
 - Safeguard the Environment
- **Sustainability Reflected in all Aspects of AWWA Operations**



Dedicated to the World's Most Important Resource®

AWWA Policy Statement: Sustainability



- The American Water Works Association (AWWA) urges water utility staff and governing boards to strive for increased sustainability as they fulfill their missions as water providers. AWWA supports an approach to sustainability that takes into account economic, environmental, and social elements. Sustainability should be considered with regard to the total water supply including drinking water, wastewater, reuse and stormwater, and be integrated with meaningful metrics to demonstrate progress in all aspects of management from water supply options to infrastructure, financing decisions, and everyday operational choices

EPA Sustainability Initiatives



- “Effective utility management practices must address all aspects of a system’s operations and maintenance for it to be on a path to sustainability.”

(Source: EPA Website- Sustainable Water Sector Systems)



 **American Water Works Association**

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AWWA Sustainability Initiatives



- Recommended improvements in Utility Management include focusing on measurable outcomes for water, energy, and sustainability



Water-Energy Nexus



- Interdependency of Water Use and Energy Use in a community has a direct Impact on ensuring sustainability of Water Sources, Treatment, and Supply
- Promoting sustainable sourced treatment chemicals contributes to overall community sustainability

 American Water Works Association

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NSF/AWWA/ANSI 416



- AWWA Participation promotes collaboration and involvement of our broad water sector membership: Utilities, Consultants, Academics, Regulators, Manufacturers, Distributors

 **American Water Works Association**

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NSF/AWWA/ANSI 416



- AWWA members benefit by having a new tool available to promote sustainable practices in their various roles
- Serves the AWWA core principles of protecting public health and safe guarding the environment

 **American Water Works Association**

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Sustainability Standards for Water The Utility Perspective



**Clyde R. Dugan, Manager
East Lansing – Meridian Water
& Sewer Authority**

East Lansing – Meridian Water & Sewer Authority



The Utility Perspective



- How does specifying sustainable chemicals or water contact products benefit your Utility and community?
- Can these tools be used within your utility to achieve greater sustainability?

Benefits of Certification



Their efforts will benefit the natural environment,



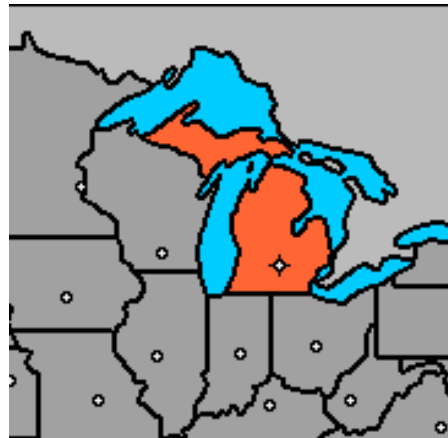
as well as the social and economic climate where they are located.

Sustainability Benefits



The next few slides provide examples of the positive impact of certification.

Many of these benefits go beyond a local community and may impact an entire region.



Water Use Inventory



- Reduce total water supply requirements,
- Switch or diversify water sources,
- Reduce the water discharge ratio; e.g. the ratio of water going to the POTW or receiving body as compared to the total water supplied,
- Return water to its source at equal or better quality than that withdrawn.

Solid Waste Minimization



- **Minimizing Hazardous Waste**
 - Establishing waste reduction targets for hazardous materials by eliminating their generation or reducing the amount generated
- **Minimizing Non-Hazardous Waste**
 - Establish waste reduction targets by reducing or eliminating the amount of waste generated,
 - Repurposing materials through recycling, reuse or returning materials from the customer

Water Quality Discharge:

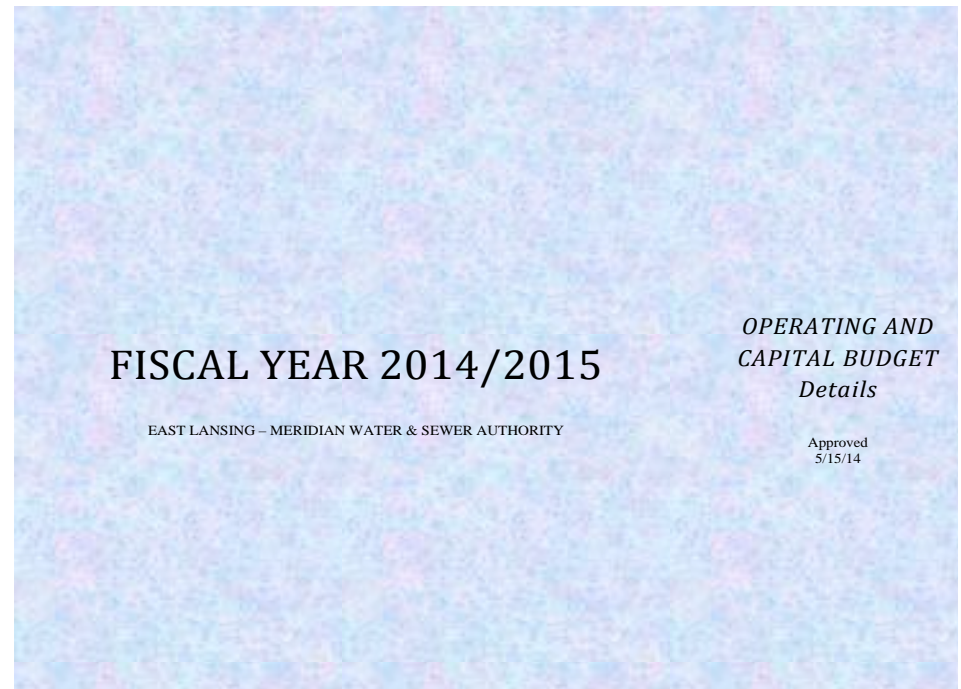


- this is a descending point value list, so the object is to move upward -
 - Zero Discharge
 - Quality exceeds drinking water standards
 - Quality exceeds receiving water conditions
 - Quality exceeds POTW discharge standards
 - Wastewater pre-treatment to surpass POTW influent quality requirements

Why specify certified chemicals or products?



1. Stabilize or reduce your costs of treatment chemicals, pipe, valves, etc.



Why specify certified chemicals or products?



2. Support your community's goals for sustainability.

Mid-Michigan Program for Greater Sustainability and Housing

The Mid-Michigan Program for Greater Sustainability (MMPGS) is a regional partnership embracing sustainable development. More than twenty organizations working together to involve Clinton, Eaton, and Ingham counties in our effort to revitalize Michigan and guide us towards a healthy and livable future.

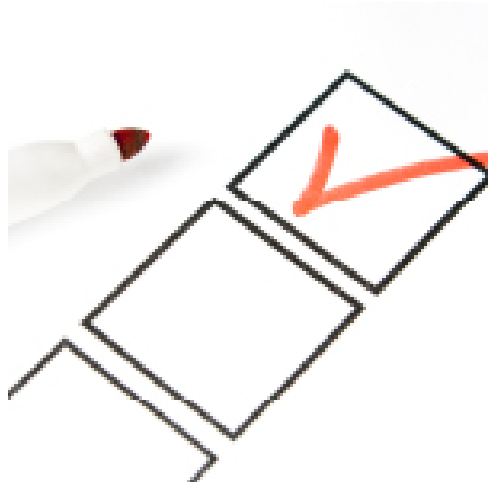
Transportation, Infrastructure & Environmental Sustainability Steering Committee

The Transportation, Infrastructure and Environmental Sustainability focuses on policies that recognize the communities motorized and non-motorized transportation needs relative to land use patterns, the physical structures that are needed for the city to function, and the long term effects of development on the environment.

Why specify certified chemicals or products?



3. Provide additional justification for select projects or budgets that include sustainability objectives.



Why specify certified chemicals or products?



4. Improved customer relations by demonstrating support for their environmental goals.



Benefits for utilities serving companies that certify:



- From a utility's perspective, this may be an excellent opportunity for you to work with their process improvement team to focus their attention on metrics that benefit you.



Drinking Water Utilities:



- Source Water Protection



Drinking Water Utilities:



- Reduced water demand requirements
- Extend the capacity of your existing sources or infrastructure
 - to improve resiliency for your community such as during extended drought,
 - to serve new customers and accommodate growth

Waste Water Utilities:



- Compliance parameters
- Stabilize discharge flowrates
- Control surge volumes
- Influence participation in water reuse programs
- Extend the capacity of your existing infrastructure to serve new customers and accommodate growth



Community:



The benefits of certification go beyond environmental parameters
Companies can earn points through economic and social metrics, too



Community:



This can translate into:

Good paying jobs

Worker safety

Community safety

Company-sponsored social programs

Contributions to community-based programs



Benefits for communities that are trying to bring new companies into their region:



- Companies that certify under these Standards will be intent on improvements through the design and operations of new facilities.
- This will mean that the environmental footprint of certified companies will be smaller.

Benefits for communities that are trying to bring new companies into their region:



- For the serving utility, you have an excellent opportunity to get in on the “ground floor”.
- Focus on water quality & service parameters that reduce your cost.
- Minimize the impact on existing infrastructure or new infrastructure required to serve.

Applying Sustainability Metrics to your Facilities:



The means of quantifying environmental improvements by companies striving for certification are equally valid for your facilities.

You will not be seeking “certification”,
but you can seek **sustainability**.

Applying Sustainability Metrics to your Facilities:



- If you incorporate similar improvement goals in your operations:
 - You will realize similar environmental benefits for your community,
 - Quite possibly reduce your cost of operation,
 - Support your customers goals for a healthy environment now and for future generations.

Applying Sustainability Metrics to your Facilities:



How can that be true? Let's look at some examples.

These next few slides illustrate strategies that are contained in the standards. If you follow these strategies in your operations, similar benefits will be realized.

Applying Sustainability Metrics to your Facilities:



Energy Initiatives:

- Reduction in energy consumption (conservation)
- Switching to renewable energy sources
- Supporting your supplying utility's green energy programs

Applying Sustainability Metrics to your Facilities:



- **Minimizing Hazardous Waste**
 - Establishing waste reduction targets for hazardous materials by eliminating their generation or reducing the amount generated
- **Minimizing Non-Hazardous Waste**
 - Establish waste reduction targets by reducing or eliminating the amount of waste generated,
 - Repurposing materials through recycling, reuse or returning materials to the supplier (note that this may support your supplier's strategies, too)

Applying Sustainability Metrics to your Facilities:



Treatment Chemical Repurposing

- Sometimes, treatment chemicals can become un-usable for various reasons.
- This objective is to re-purpose, re-use or re-process those chemicals rather than disposing of them as a waste product.
- Look to your supplier for assistance, as they may have a similar objective in their certification score-card

Applying Sustainability Metrics to your Facilities:



Safe Handling of Treatment Chemicals

- Have approved procedures in place for safe handling of chemicals
- Ensure chemicals are delivered to the right container and not inadvertently mixed
- Ensure employees are properly trained in safe handling practices
- Have emergency procedures in place for incidents involving chemicals

Applying Sustainability Metrics to your Facilities:



These are some of the ways you can apply the certification metrics to your operations.

Although you won't earn points, you will certainly earn benefits;

- Reduce cost of operations
- Maintain or improve employee safety
- Reduce your environmental footprint
- Support your customers and community





Summary



- ✓ How referencing these Standards in your purchase documents can:

- Benefit your utility.

- Benefit your community.



- ✓ How to extend sustainability metrics to your own facilities.



Questions?



Contact Information



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Thank you!