



Great Lakes  
**WISE**  
Water Innovation and  
Stewardship Exchange

# Great Lakes WISE Water Stewardship Toolkit.



Toolkit Prepared By:





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Great Lakes WISE

# Corporate Water Stewardship Toolkit

*Developed to influence and motivate companies, demonstrating best practice examples and the business case for corporate water stewardship*



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# Great Lakes WISE

## Water Innovation and Stewardship Exchange

Great Lakes WISE is a peer-to-peer network of cross-sector stakeholders operating in the Great Lakes economic region, committed to advancing corporate water sustainability performance and best practices.

- A **forward looking, multi-stakeholder initiative** created to ensure the region's water resources are used wisely, to protect them for future generations and to sustain long-term economic success of the region.
- Great Lakes WISE has a vision for the region to continue to thrive, with **clean, resilient, and plentiful fresh water** that sustains its people, its businesses, and its natural heritage.
- A peer-to-peer forum for accelerating **corporate water stewardship**, developing **effective water solutions**, and collectively actioning projects that address regional water challenges and opportunities across key sectors in the region.



# Great Lakes WISE Regional Gap Analysis

**Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, New York, Ontario & Quebec**

A Regional Gap Analysis was published in 2025 to assess the opportunities and challenges for corporate water stewardship and watershed protection in the North American Great Lakes region. Top 10 Opportunities:

1. Technology demonstration projects

2. Regional collaboration

3. Incentives and financing tools

4. Training and technical assistance

5. Integration of circular economy principles

6. Leverage innovative ecosystems

7. Incorporate metering and integrated digital technologies

8. Stakeholder engagement

9. Identify synergy between projects

10. Address perceived vs actual water issues



# Corporate Water Stewardship Toolkit

## Knowledge Sharing and Educational Outreach

The Corporate Water Stewardship Toolkit, which is comprised of this slide deck and a series of informational brochures, builds on the findings of the Regional Water Gap Analysis and is intended to serve as a communication and education tool to support stronger adoption of corporate water stewardship.

### 1. Water Stewardship and Best Practices



- Operational Efficiencies
- Wastewater
- Stormwater Management
- Value Chain Assessment
- Circular Economy
- Third Party Evaluation

### 2. Current Landscapes



- Water Quantity
- Water Quality
- Climate Change
- Policies
- Water Energy Nexus

### 3. Advanced Water Stewardship



- Water Cost vs Value
- Collective Action
- Volumetric Water Benefits Accounting
- Habitat Restoration



# **Water Stewardship and Best Practices**



# Water Stewardship

## Economic, Social, Environmental

Effective water stewardship must be context-based and incorporate C-suite support and site level actions that act on local share water challenges, regional water context, and governance outcomes.

### 1. Water Is a Shared Risk and Shared Responsibility

Water challenges affect entire watersheds, not just individual sites. Stewardship requires collaborative action beyond the fence line.

### 2. Corporate Water Stewardship Is Maturing

Companies are moving from water efficiency to regenerative water strategies. Standards like AWS, GRI, WAVE, WSR, and CDP Water Disclosure are driving transparency and accountability.

### 3. Climate Change Is Intensifying Water Risks

Increased variability in precipitation, droughts, and extreme weather events are stressing water systems. Climate resilience must be integrated into water planning and infrastructure investment.

### 4. Data Gaps Limit Effective Action

Inconsistent monitoring of groundwater, streamflow, and contaminants hinders decision-making. Tools like WRI Aqueduct, WWF Water Risk Filter, and Ecolab Water Risk Monetizer help fill these gaps.

### 5. Policy and Governance Are Critical Enablers

Strong frameworks exist (e.g., GLWQA, GLRI), but enforcement, funding, and cross-jurisdictional coordination are lacking. Community engagement are essential for equitable stewardship.



# Water Stewardship Initiatives

A critical and evolving business approach for managing water responsibly and building long-term resilience

- Shifting from site-based actions to shared basin outcomes
- Expanding the definition of water risk (quality, governance, climate, and social factors)
- Integrating water with climate, biodiversity, and ESG priorities
- Addressing water risks across the full value chain, not just operations
- Investing in collective action and multi-stakeholder partnerships
- Improving transparency, disclosure, and decision-useful reporting
- Building business resilience and long-term value creation through basin health





# Water Stewardship Actions

## High-impact actions businesses can take to strengthen basin resilience

A Regional Gap Analysis was published in 2025 to assess the opportunities and challenges for corporate water stewardship and watershed protection in the North American Great Lakes region.

### Corporate Actions

Strategic integration of water stewardship

- Circular economy of water
- Value chain assessment
- Third party validation

### Site Actions

Practical application of priority risk avoidance/stewardship opportunities

- Stormwater management
- Operational efficiencies
- Wastewater management

### Engagement Actions

Accelerate progress towards resilient freshwater systems

- Meaningful regional and supply chain partnerships
- Value chain assessment
- Capacity building

### Watershed Actions

Accelerate progress towards resilient freshwater systems

- Monitoring and data sharing
- Planning and governance participation
- Resource mobilization



# Integrated Strategies

## Elevate your organization

Move from functional improvements to integrated strategies that proactively address shared water risks. Adopt best practices and lead with decisive investments that safeguard water resources and secure business viability in the Great Lakes region.

- **Operational Efficiency**

Streamline processes and reducing water resource consumption, to lower direct and indirect costs and minimize environmental impact and meet stakeholder expectations for responsible growth.

- **Wastewater Management**

Adopt advanced treatment technologies and resource recovery solutions, to transform waste into assets, reduce costs, and demonstrate leadership in sustainable practices.

- **Stormwater Management**

Invest in innovative solutions and green infrastructure that treat stormwater as a resource, companies can reduce operational disruptions, protect community health, and demonstrate clear environmental leadership.

- **Value Chain**

Implement clear reporting and traceability practices, to demonstrate accountability, strengthen partnerships, and reduce reputational risk.

- **Circular Economy**

Treat water as a renewable resource, reducing waste, recovering valuable resources, and regenerating natural systems companies transform risk into resilience and waste into value.

- **Third-Party Validation**

Engage independent experts to verify performance, to strengthen stakeholder confidence, meet disclosure requirements, and differentiate your brand in a competitive marketplace.



# Current Landscapes



# Current Vulnerabilities in the Great Lakes

Increasing pressure from climate, economic, and population growth

The Great Lakes Region faces a widening vulnerability landscape.

Rising water stress, deteriorating quality, and escalating demands on shared freshwater systems are exposing weaknesses in regional resilience, testing the capacity of institutions, utilities, and industries to adapt

## Recommendations for Business in the Great Lakes:

- Use the Great Lakes Compact as an operational baseline
- Build adaptive capacity across sites and supply chains
- Invest in modernizing infrastructure
- Advance corporate water stewardship beyond the fence line
- Enhance data and monitoring systems
- Promote awareness and incentives internally





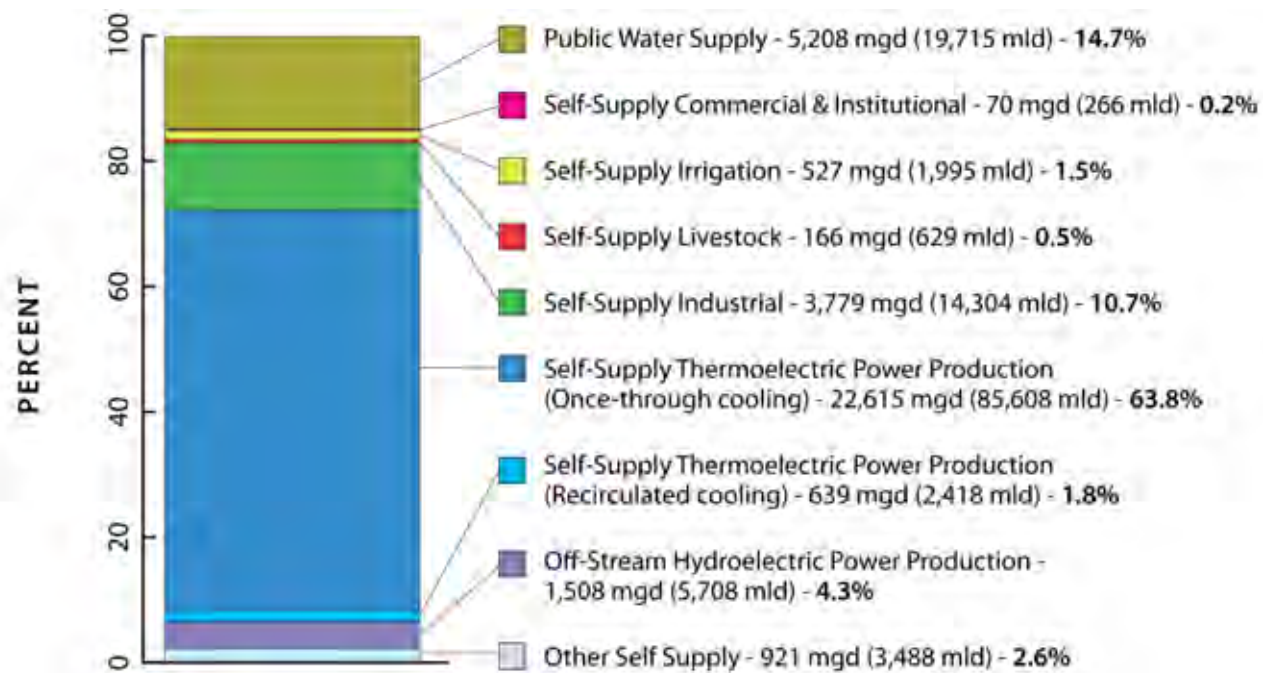
# Water Quantity

## Water quantity and allocation pressures are rising in the Great Lakes

As localized water demand grows, adaptive management strategies are needed to balance industrial needs and sustainability goals

### Business movements and utility trends

1. Rising and uneven water/wastewater rates
2. Growing uncertainty in corporate long-term planning
3. Mainstreaming water stewardship frameworks
4. Shift beyond site-level efficiency toward basin impact
5. Stronger demand for utility–business collaboration





# Water Quality

Shaped by complex interplay of natural and human factors

## Persistent Basin-Wide Pressures

Across the Great Lakes, pollutants move through stormwater, farm runoff, and emerging and legacy industrial pathways, cycling into lakes, rivers, and groundwater where they drive operational, regulatory, and reputational risks

## What needs to be done?

- Reduce pollutants at the source: filtration, closed-loop systems, stormwater controls
- Invest in restoration: wetlands, riparian buffers, floodplains, and green infrastructure
- Advance transparency: share discharge data and participate in monitoring
- Strengthen supply chain stewardship: nutrient management, precision agriculture, water-risk screening tools
- Align with regional frameworks: GLWQA, Clean Water Act, Canada's Freshwater Action Plan, local watershed plans



NASA image courtesy Jeff Schmaltz, MODIS Rapid Response Team at NASA GSFC



# Climate Change Impacts

## Fundamentally reshaping the Great Lakes Region

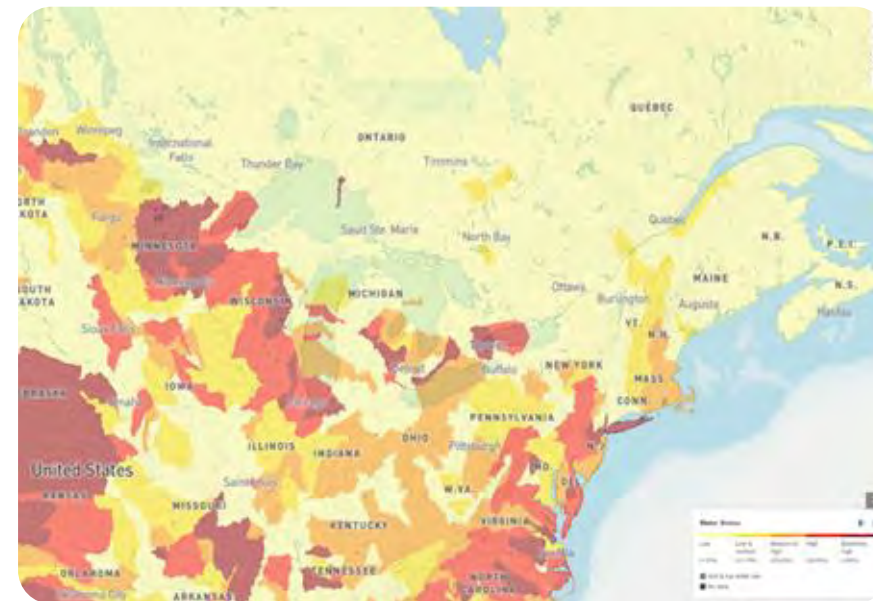
### Climate change is contributing to:

- Water stress and seasonal variability
- Increasing extreme weather and major flood risk events
- Changes in surface water quality
- Burden on aging and vulnerable infrastructure
- Increasing financial and operational pressures

Businesses in the Great Lakes are uniquely positioned to lead. By reducing withdrawals, investing in shared watershed resilience, and aligning growth with water availability, companies can protect their long-term operations while strengthening the region's economic and ecological future.

*“The amount of precipitation falling in the heaviest 1% of storms increased by 36% in the U.S. Great Lakes region between the periods of 1951-1980 and 1991-2020.”*

Climate Trends in the Great Lakes Region. GLISA, NOAA's Great Lakes Climate Adaptation Partnerships (CAP) Team. 2025.



*Water Stress, an indicator of competition for water resources, and is defined informally as the ratio of demand for water by human society divided by available water. World Resource Institute Aqueduct Risk Atlas for the Great Lakes region*



# Policy and Need for Policy

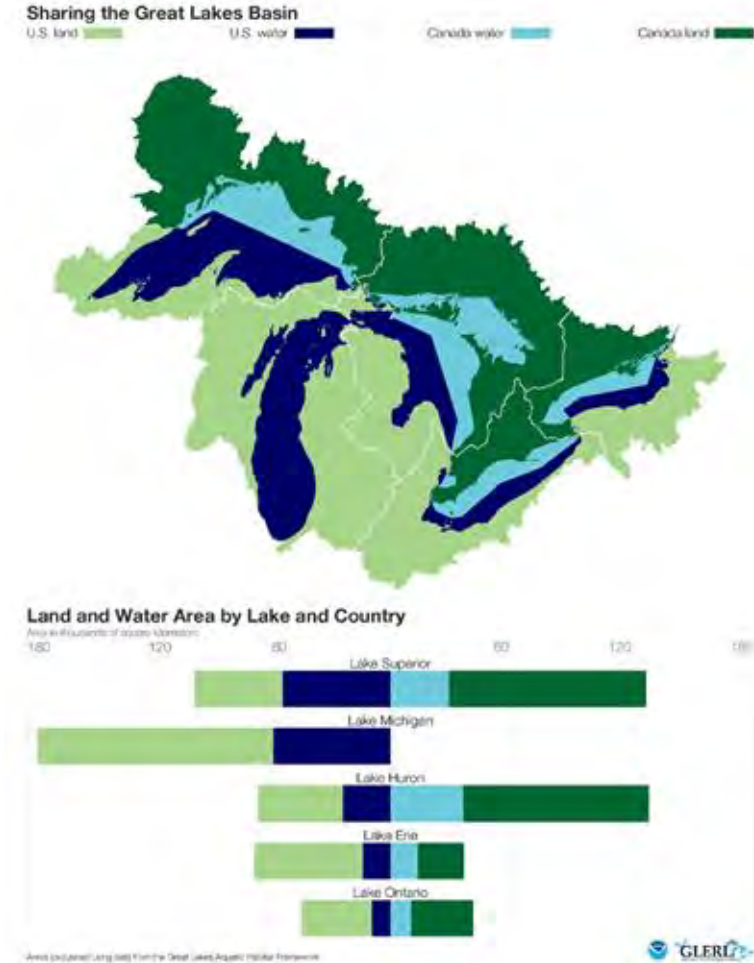
## Long standing water agreements are fragmented

To safeguard long-term water security, ecological health, and economic resilience, Great Lakes governance requires modernized regulations, harmonized standards, and active corporate participation to keep pace with future water challenges

## Emerging Policy Pressures

- Climate volatility increasing drought, flooding, and variable lake levels
- Water-intensive industries (data centers, EV/battery manufacturing, food processing) escalating local demand and scrutiny
- Aging infrastructure and affordability challenges putting utilities and compliance at risk
- Energy–water nexus impacts, including thermal discharges and high cooling-water use
- Uneven binational policy evolution, creating coordination gaps across jurisdictions

These pressures reveal where policies remain strong, and where they are increasingly insufficient



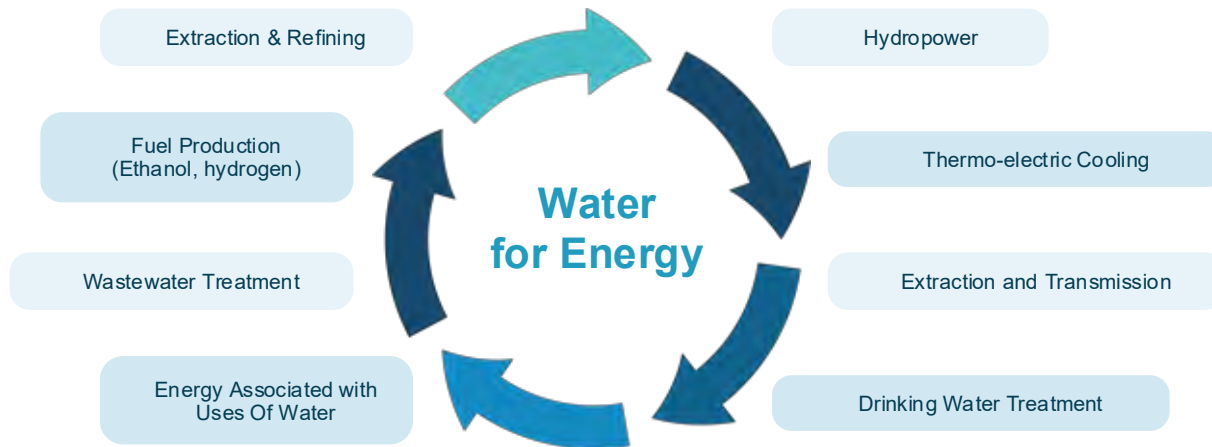


# Water-Energy Nexus

## Growing Competition for Resources

Water and energy systems are deeply interconnected. Water is essential for energy production and cooling, while energy is required for water treatment, distribution, and reuse. There is growing competition for water among sectors, underscoring the urgency of integrated resource management.

### Understanding the Mutual Dependence of Water and Energy Systems



## When Energy Demand Drives Water Risk: The Great Lakes Data-Center Boom

Growing datacenter development in the Great Lakes amplifies the energy–water nexus, increasing water use both directly (cooling) and indirectly (power generation), raising risks for regional water and energy systems.



Map data and visualization provided by Data Center Map (<https://www.datacentermap.com/>)



# **Advanced Water Stewardship**



# Advanced Stewardship

## Address Regional Pressures

Advanced water stewardship requires collaborative, scalable solutions to address climate impacts, pollution and aging infrastructure. Aligning efforts through collective action strengthens long-term freshwater resilience.

### Collaborate at Scale

Unite water stewardship actors beyond organizational boundaries to implement collective action in priority catchments, leveraging shared governance and innovative funding models.

### Invest in Data and Infrastructure

Strengthen monitoring systems, close critical data gaps, and modernize infrastructure to enable adaptive, evidence-based water management.

### Adopt Measurable Practices

Apply credible frameworks such as VWBA 2.0 to ensure water stewardship activities deliver quantifiable benefits aligned with catchment needs and corporate commitments.

### Engage Broad Stakeholders

Include Indigenous peoples, local communities, governments, businesses, and NGOs in transparent, inclusive decision-making to build trust and shared ownership



# Water Cost vs. Value

## Water costs often overlooks non-market impacts

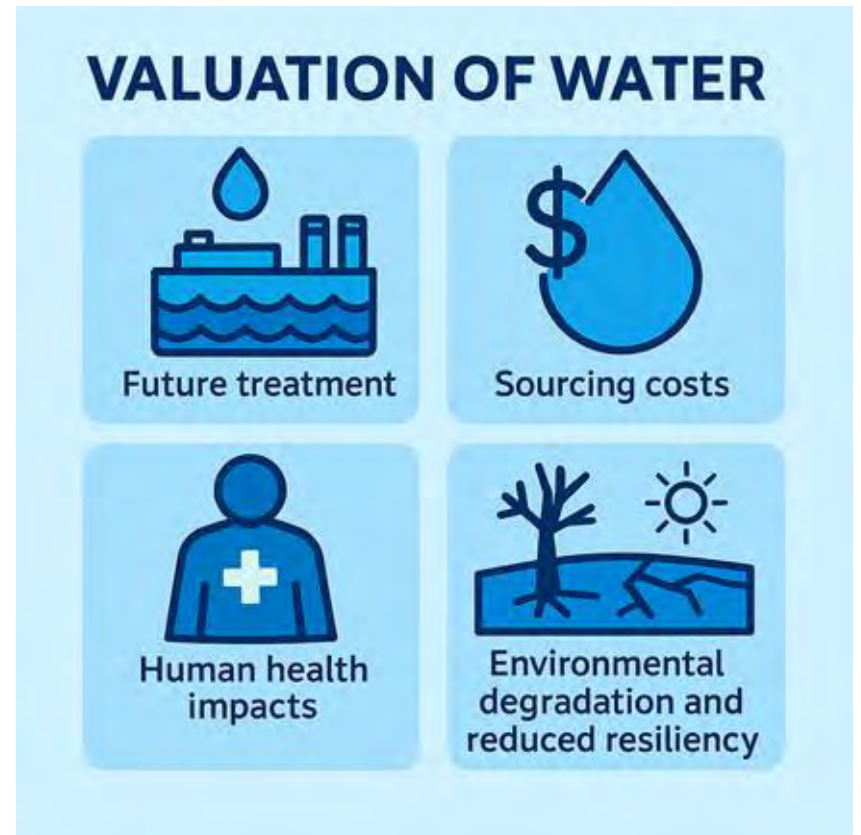
Water is consistently undervalued, and market price generally fails to encompass the full cultural, social, ecological, and economic value, even in a region with the water abundance of the Great Lakes

### Alternative non-market value of water:

- Future treatment
- Sourcing costs
- Human health impacts
- Environmental degradation and reduced resiliency

### Remember:

- Comprehensive valuation is critical for thorough risk assessment
- Societal value extends beyond volumetric benefits
- “Net positive water” concepts can be misleading
- Water is local and multi-dimensional
- Clear, relatable communication is vital for building public support



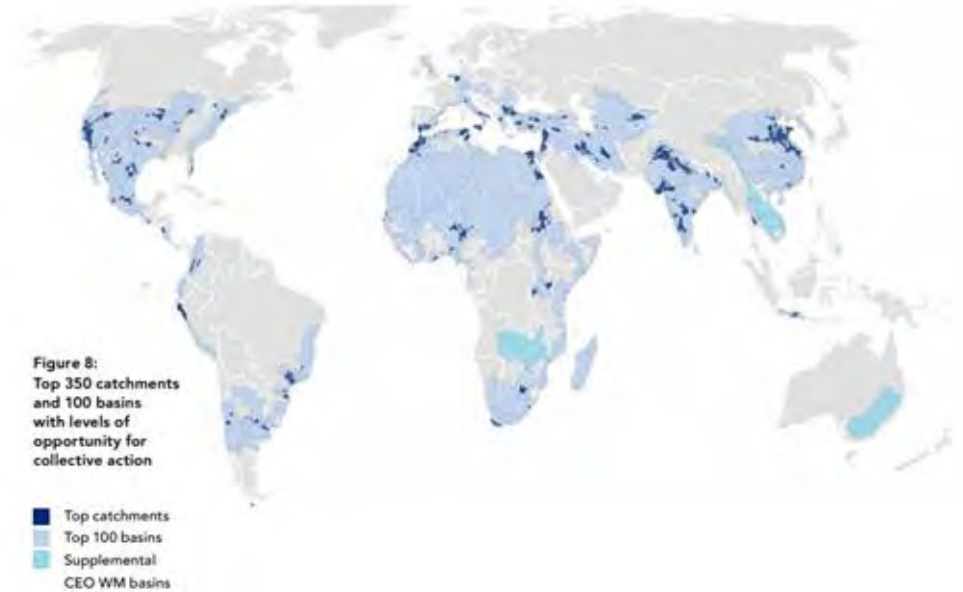


# Collective Action and Stakeholder Engagement

Water is inherently local and interconnected, a single river or lake may serve multiple communities, industries, ecosystems, and jurisdictions. Water issues don't respect political boundaries or corporate property lines, and thus, demand shared solutions and engagement.

## Lessons learned:

- Commit dedicated resources to make collective action work
- Establish clear roles and responsibilities to establish and support a shared goal
- Support credible convening led by trusted actors
- Align basin efforts with formal government water governance
- Engage in basins where both the need and the opportunity are strong
- Contribute to the full set of functions needed for basin success
- Use adaptive, locally grounded approaches that evolve with conditions.



*Alliance for Water Stewardship (2024). Unpacking collective action in water stewardship shared solutions for shared water challenges*



# Volumetric Water Benefit Accounting

## Quantify contributions to shared water challenges

Volumetric Water Benefit Accounting (VWBA) provides a consistent, science-aligned method for companies to quantify and communicate the real water benefits of their stewardship actions. By converting efficiency upgrades, water reuse, green infrastructure, or watershed restoration into measurable volumetric outcomes

By complementing global frameworks, AWS, SBTN, and the Water Resilience Coalition, VWBA strengthens corporate reporting and supports more informed, accountable decision-making.



## Using VWBA Effectively

1. Identify Shared Water Challenges and Understand Local Context
2. Identify and Evaluate Potential Project Activities and Partners
3. Quantify the VWBs of Project Activities
4. Develop a Shared Understanding of the VWB Attribution Plan
5. Implement Project and Track the Progress
6. Confirm and Prepare for VWBA Claims Communication





# Habitat Restoration and Riparian Buffers

## Nature-based solutions that provide systemic benefits

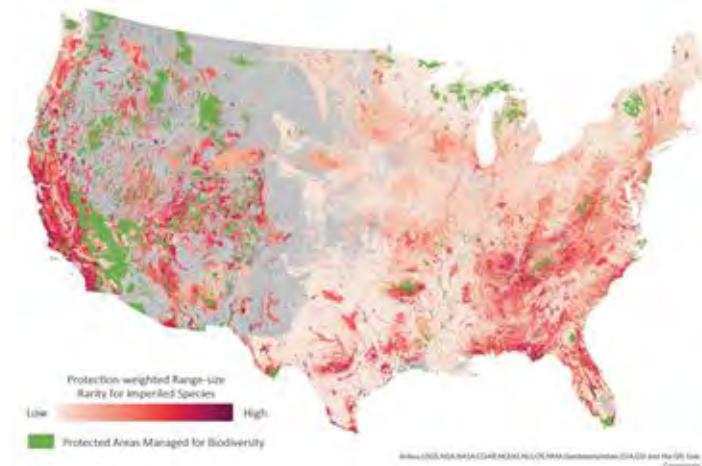
Habitat restoration and establishment of riparian buffers restore degraded ecosystems, enhance biodiversity, and improve hydrology, water quality, and climate resilience

### Common restoration approaches include:

- Wetland restoration or rewetting to improve water storage, filtration, and aquifer recharge
- Riparian buffer establishment using native vegetation to reduce erosion, shade streams, and trap pollutants
- Floodplain reconnection to restore natural flows and reduce flood peaks
- Reforestation, prairie restoration, and invasive species removal to stabilize soils and improve habitat quality
- Green infrastructure to complement natural systems in developed areas

### Advantages:

- Improved business resilience and risk reduction
- Reduce long-term operational costs
- Provides holistic co-benefits
- Support basin-level collective action



*Map of Biodiversity Importance (Protection-Weighted Range Size Rarity for Imperiled Species Summed for All Species). This map displays richness of at-risk species outside of existing protected areas using modeled distributions for 2,216 of the most imperiled plants and animals in the United States. Deeper reds indicate where land and water protection will most benefit the least protected yet most threatened biodiversity in our nation.*



# Great Lakes WISE

Water Innovation and  
Stewardship Exchange

Businesses have the power to lead by example. They can often move swiftly and with impact, but they cannot solve water issues and risks alone.

Join the growing group of partners who share a commitment to water stewardship in the Great Lakes region.

The following partners of Great Lakes WISE share a vision for fresh water to be used responsibly with forward-looking management that strengthens the region's economy, supports sustainable business and ensures the Great Lakes and their watersheds are protected.

To learn more and get involved in Great Lakes WISE, visit: <https://councilgreatlakesregion.org/our-programs/great-lakes-wise-program/>





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# Thank You



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# Introduction to Water Stewardship



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In a competitive, purpose-driven marketplace, ignoring water risks is not an option. By prioritizing water stewardship, businesses unlock strategic value, reduce costs, mitigate risks, and strengthen stakeholder trust. Lead boldly and turn vulnerabilities into opportunities for growth.

Water stewardship is more than a sustainability initiative; it is a cornerstone of corporate resilience and reputation. Companies signal leadership, integrity, and long-term vision by taking decisive action to manage water responsibly. These qualities resonate deeply with customers, investors, and employees in an era where climate volatility and resource constraints demand proactive solutions. Leading on genuine water stewardship strategies can elevate your brand and position your organization as a trusted innovator in a purpose-driven marketplace.



## A Business Imperative for the Great Lakes

Corporate water stewardship is entering a new era. It recognizes water as a shared, finite resource and calls for responsible use that is socially equitable, environmentally sustainable, and economically resilient. In the Great Lakes, where climate volatility, aging infrastructure, and growing industrial demand are reshaping water availability, stewardship is no longer optional. Risks across the Great Lakes basin, such as quality degradation, stormwater surges, shifting hydrology, and governance gaps, extend beyond the boundaries of individual facilities. Water stewardship is fundamental to long-term business stability and regional well-being.

## Water Stewardship as a Business Strategy

Traditional approaches to water management focused on internal efficiency goals which no longer match the scale of basin challenges. Modern stewardship requires a shift in mindset and practice.



Treat water as a shared resource, understanding that operational decisions must align with basin hydrology, climate trends, and local priorities.



Prioritize transparency and accountability, creating credible reporting and shared data systems that are essential to building investor trust and improving basin outcomes.



Integrate water with climate, nature, and biodiversity goals with recognition that water cannot be separated from climate resilience, habitat health, community well-being, or long-term economic value.



Support collective governance with multi-stakeholder efforts, such as CGLR's Great Lakes Water Innovation and Stewardship Exchange (WISE), that accelerate basin-wide solutions by connecting utilities, industry, municipal leaders, and NGOs.

Meaningful progress requires businesses to engage beyond the fence line and co-invest in resilient freshwater systems.

# Business Benefits of Water Stewardship

Water stewardship is a strategic investment that delivers measurable benefits across the organization, workforce, community, and brand, including:

## 1. Employee Engagement & Retention



**Engagement:** Employees feel empowered, driving higher engagement scores.

**Retention:** Corporate responsibility fosters trust and loyalty, reducing turnover costs.

**Talent Attraction:** Publicly showcasing stewardship differentiates the company and appeals to purpose-driven talent.

## 2. Community Relations & Social License



**Active Engagement:** Initiatives like river cleanups, stormwater projects, and water donations build trust.

**Benefits:** Strong relationships ease permitting, enable collaboration, and may unlock incentives.

**Impact:** Community goodwill enhances brand loyalty and operational flexibility.

## 3. Reputational Advantage



**Brand Strength:** Stewardship signals leadership to customers, suppliers, community and stakeholders.

**Product Connection:** Linking water savings to products boosts perceived value.

**Credibility:** Third-party validation amplifies trust.

## 4. Quantifiable Outcomes



**Metrics:** Engagement scores vs. retention costs; community engagement vs. operational efficiency.

**Reputation Indices:** Track correlation with revenue growth and brand equity.

**The Bottom Line:** Water stewardship drives profitability and resilience.

# How Businesses Can Lead in the Great Lakes

## 1. Move from Efficiency to Basin Impact

Improve internal water efficiency while anchoring stewardship efforts to the watersheds that your operations and supply chains rely on. Invest in nature-based solutions, stormwater infiltration, floodplain reconnection, and riparian restoration to reduce operational risk and improve ecological function at scale.

## 2. Set Context-Based Water Targets

Develop targets that reflect local hydrology, water stress, climate projections, regulatory conditions, and community needs. Generic “water positive” or volumetric-only goals overlook the basin-specific realities that shape business risk.

## 3. Engage in Collective Governance

Join multi-sector collaborations with municipalities, Indigenous Nations, water authorities, utilities, and NGOs. Shared risks require co-designed and co-funded solutions, particularly in basins facing stormwater surges, aging infrastructure, or groundwater strain.

## 4. Invest in Shared Watershed Resilience

Partner with watershed councils, conservation districts, Tribal and First Nations stewardship groups, and municipal stormwater programs. High-impact investments include:

- Wetland restoration
- Permeable infrastructure
- Riparian buffers
- Nutrient reduction strategies
- Urban stormwater retrofit

These projects offer dual value: operational risk reduction and measurable basin improvement.

## 5. Report Transparently & Demonstrate Progress

Use GRI 303, CDP Water Security, SBTN Water Targets, AWS or WAVE verification, and TNFD-aligned disclosures to communicate performance and risk exposure. Highlight basin outcomes, not just corporate metrics.



# Navigating Water Stewardship

Businesses face growing pressure to manage water responsibly across operations and supply chains. Effective water stewardship delivers risk mitigation, resilience, and reputational value. Success depends on three pillars:

- **Strategic Partners:** Engage with leading organizations for expertise, collaboration, and verification.
- **Standards & Frameworks:** Adopt globally-recognized guidelines to ensure credible governance and reporting.
- **Decision-Support Tools:** Use tools to assess risk, prioritize actions, and quantify benefits.

Aligning with standards, leveraging partners, and applying data-driven tools position companies as sustainability leaders while safeguarding shared water resources.

## A Simple Path to Water Stewardship

1. Assess basin risks across operations and supply chains.
2. Set science-based targets and context-based goals that reflect local watershed needs.
3. Act with partners through shared restoration and resilience projects.
4. Report transparently using frameworks, such as WAVE: Water Stewardship Verified; Alliance for Water Stewardship (AWS); CDP Water (formerly Carbon Disclosure Project); and Global Reporting Initiative (GRI).

# Navigating Water Stewardship: Frameworks & Tools

## Frameworks Guiding Water Stewardship

Framework	Description
Alliance for Water Stewardship Standard	The leading global framework for site-level and basin-level water stewardship. It guides companies through a structured, stakeholder-inclusive process to improve water governance, water balance, water quality, important water-related areas, and WASH access. AWS certification provides credible verification recognized by investors, regulators, and NGOs.
WAVE: Water Stewardship Verified	An enterprise-level program helping companies assess water risks, strengthen governance, and build credible water stewardship roadmaps across operations and supply chains. WAVE verification demonstrates that a company has a comprehensive, baselined, and prioritized water strategy aligned with global best practices.
Net Positive Water Impact	An ambition supported by the CEO Water Mandate and WRC, which encourages companies to ensure their contributions to a healthy basin exceed their negative impacts, particularly in water-stressed areas.
GRI 303: Water and Effluents	A global reporting standard that guides transparent disclosure of water withdrawals, discharges, and impacts across operations. Helps companies demonstrate responsible water management and builds trust with investors, regulators, and communities.
EcoVadis	A global sustainability ratings platform that helps companies manage ESG risk and compliance, improve sustainability performance, and drive impact across their value chains.
CDP Water Security Disclosure	A widely recognized reporting platform that evaluates how companies assess, manage, and mitigate water-related risks. CDP scores provide visibility into corporate preparedness and influence investor decision-making.
Water Resilience Coalition Framework	A corporate action platform under the CEO Mandate that supports companies in developing and implementing basin-level targets and participating in collective watershed restoration initiatives to advance Net Positive Water Impact outcomes.
Science Based Targets for Nature (SBTN) – Freshwater Pathway	Provides science-aligned guidance for identifying water dependencies and impacts, prioritizing basins, and setting context-based freshwater targets across operations and supply chains. Highly relevant for companies building basin-aligned water strategies.

TCFD/TNFD Water-Related Disclosures	Climate (TCFD) and nature (TNFD) reporting frameworks increasingly require companies to disclose water-related physical, transition, and systemic risks. Both are becoming key expectations for investors and regulators.
ISO 14046 – Water Footprint Assessment	International standard that supports quantification and reporting of water use impacts across a product, process, or organization. Useful for supply-chain-heavy sectors.

## Available Decision-Support Tools for Water Stewardship

Tools	Description
WWF Water Risk Filter	A basin-level risk assessment platform that evaluates physical, regulatory, and reputational water risks under current and future climate scenarios. Includes scenario planning modules and sector-specific guidance.
WRI Aqueduct Water Risk Atlas	A widely used global database and mapping tool for identifying regions facing water stress, drought risk, flood exposure, and projected future hydrologic change. Useful for facility siting, procurement strategy, and value chain screening.
Volumetric Water Benefit Accounting	A standardized method for quantifying the volumetric water benefits of stewardship actions, such as reuse, restoration, efficiency, or green infrastructure. Complements Water Quality Benefit Accounting (WQBA) and WASH Benefits Accounting to capture quality and accessibility outcomes.
Smart Water Navigator	A user-friendly platform that helps companies assess water risk, benchmark site performance, and build context-based water stewardship plans. Supports goal-setting, investment decisions, and internal prioritization.
Water Risk Monetizer	A decision-support tool developed by Ecolab and Microsoft that quantifies the true business value of water risk, incorporating local scarcity, quality impacts, and financial exposure. Supports capital planning and resilience investment justification.

## Call to Action

### Commit to Frameworks



- Approve adoption of recognized frameworks for credible site-level and basin-level performance.
- Endorse alignment with frameworks to meet investor and regulatory expectations.

### Invest in Decision-Support Tools



- Allocate resources for Smart Water Navigator and Water Risk Monetizer to quantify risk and ROI.
- Integrate WWF Water Risk Filter and WRI Aqueduct into enterprise risk management for proactive planning.

### Champion Strategic Partnerships



- Engage with the Council of the Great Lakes Region and get involved in Great Lakes WISE for regional leadership and collaboration.
- Collaborate with groups like The Water Council, CEO Water Mandate, and WWF to strengthen governance and collective action.

### Embed Stewardship in Corporate Strategy



- Mandate water stewardship goals in sustainability and supply chain strategies.
- Require reporting of measurable benefits using Volumetric Water Benefit Accounting.

### Lead Through Transparency and Influence



- Approve public disclosure of water stewardship progress in sustainability reports and digital channels.
- Position the company as an industry leader in water resilience and community engagement.



# Water Stewardship Best Practices



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Implementing water stewardship best practices is critical to reducing operational and reputational risks. By proactively managing water resources through established standards, companies can safeguard supply chains, ensure regulatory compliance, and avoid costly disruptions. Acting now on best practices strengthens resilience and positions your organization for sustainable growth.

## Emerging Best Practices

Modern water stewardship is shifting from a narrow focus on site-level efficiency to a holistic approach that extends beyond the four walls of operations. Leading companies are embracing strategies that ensure water use is socially and culturally equitable, environmentally sustainable, and economically beneficial, achieved through inclusive, catchment-based action.

For organizations operating in the Great Lakes region, leadership means:

- ❖ Implementing circular water management practices—reduce, reuse, and recycle.
- ❖ Setting context-based water targets aligned with local water challenges.
- ❖ Investing in partnerships and collective action to strengthen watershed governance and resilience.

By adopting these practices, companies can drive meaningful impact, mitigate risk, and position themselves as champions of sustainable water management.

## Scale of Landscape Action

### Corporate actions

Establish the vision, targets, and investment signals that allow water stewardship to be prioritized across the business.

- Executive Advocacy: Leadership commitment to water goals.
- Water Quality Targets: Focus on withdrawal intensity and quality metrics.
- R&D Investment: Support innovation in water treatment technologies.
- Advanced Measures: Use verification tools like WAVE to prioritize sites and actions.

### Engagement actions

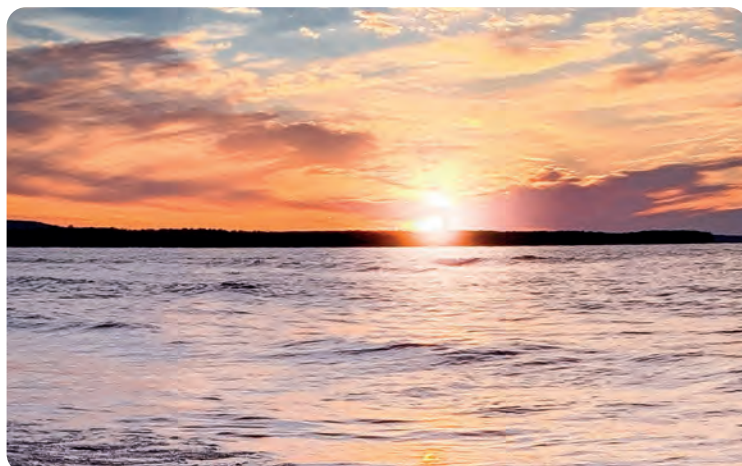
Extend water stewardship into the value chain and watershed, scaling impact.

- Public-Private Partnerships: Shared data and coordinated strategies.
- Supply Chain Engagement: Track water use across operations.
- Stakeholder Canvassing: Community input for project planning.
- Local Community Engagement: Transparency and trust-building.

### Site-level actions

Translate strategy into operational performance.

- Baseline Water Use: Metering and monitoring for informed decisions.
- “Turn It Off” Programs: Automated systems to reduce waste.
- Engineering Team Engagement: Operational improvements from the ground up.
- Digital Technologies: Real-time monitoring and analytics.



## Understanding of the Great Lakes Region

- 1. Water Use & Availability** - Water use by major sectors (thermoelectric, public supply, and industrial/agricultural) faces high uncertainty, with consumptive use projections potentially increasing up to 235% under high-growth and drier climate scenarios.
- 2. Water Quality Challenges** - Water quality in the Great Lakes remains "Fair" and "Unchanging" due to significant pollutant loads.
- 3. Governance & Policy Frameworks** - The region utilizes a robust, hierarchical framework of international agreements (like the GLWQA), federal initiatives (like the GLRI in the US and the GLPI in Canada), and regional compacts to manage water, yet effectiveness is challenged by inconsistent enforcement and policy gaps.
- 4. Corporate Water Stewardship** - Corporate water stewardship requires companies to move beyond internal efficiency to adopt culturally equitable, environmentally sustainable, and economically beneficial water use through site and catchment-based actions.
- 5. Emerging Contaminants** - Emerging Contaminants of Mutual Concern, including PFAS, microplastics, pharmaceuticals, and persistent, bioaccumulative, and toxic chemicals pose a growing health and environmental threat as they enter the water systems via wastewater effluent, agricultural runoff, and industrial discharge.
- 6. Data Tools & Gaps** - Despite the existence of robust tools like the Great Lakes Observing System (GLOS) and the USGS Water Resource Mission Area data, the region faces significant data gaps, particularly the lack of groundwater quantity/quality information, insufficient tributary water quality data (particularly in the US), and irregular monitoring intervals that inhibit effective hydrological and climate-impact modeling.

## Why Act Now?

- **Risk Mitigation:** Reduce exposure to regulatory, reputational, and operational risks in a region where consumptive use could significantly increase under high-growth, drier climate scenarios.
- **Resilience Building:** Prepare for climate-driven extremes and infrastructure vulnerabilities that threaten water security.
- **Brand Leadership:** Position your company as a champion of sustainable water management in one of the world's most critical freshwater regions.

## Call to Action for Businesses in the Great Lakes

The Great Lakes region faces mounting challenges: aging infrastructure, climate-driven variability, emerging contaminants like PFAS and microplastics, and persistent water quality issues. Leadership today means moving to transformative, catchment-based action.

Here's how your organization can lead:

- **Adopt Circular Water Management:** Reduce, reuse, and recycle water across operations to minimize withdrawals and protect freshwater resources.
- **Set Context-Based Targets:** Align water goals with local watershed realities—addressing both quantity and quality challenges.
- **Invest in Collective Action:** Partner with communities, NGOs, and industry peers to strengthen governance and build climate resilience.
- **Advance Innovation:** Support R&D for next-generation water treatment technologies and leverage digital tools for real-time monitoring.
- **Engage Beyond the Fence Line:** Extend stewardship into your supply chain and local communities to scale impact and build trust.

Commit to emerging best practices and become part of a collaborative network driving measurable impact for the Great Lakes. Your leadership today ensures water security, economic vitality, and ecological health for generations to come.



Operational efficiency is a cornerstone of corporate sustainability and long-term resilience. By streamlining processes and reducing water resource consumption, companies not only lower direct and indirect costs but also minimize environmental impact and meet stakeholder expectations for responsible growth. Leading on efficiency today signals a commitment to innovation and a sustainable future.

## Efficiency as the First Step Toward Stewardship

Operational water efficiency forms the foundation of effective corporate water stewardship. By reducing waste, optimizing use, and maintaining discharge quality, companies can significantly lower their environmental footprint while improving financial and operational performance.

Implementing these principles yields multiple benefits:

- ❖ **Cost savings:** Reduced water and energy bills, lower wastewater treatment costs, and fewer regulatory fines.
- ❖ **Competitive advantage:** Enhanced brand reputation
- ❖ **Risk mitigation:** Reduced exposure to water scarcity, supply disruptions, and climate-related risks.
- ❖ **Sustainability outcomes:** Significant short-term gains in environmental performance and resource conservation.

These benefits make operational water efficiency a high-impact, high-feasibility lever for corporate sustainability.

## Recommendations for Improving Water Efficiency

Getting started with water efficiency doesn't require major capital. Begin small, build momentum, and scale solutions that deliver operational and financial value. The following table highlights a range of practical, high-impact actions that companies can take to strengthen operational water efficiency.

Recommendations	Description	Recommendations	Description
Upgrade systems and fixtures	Install low-flow fixtures and efficient appliances to reduce baseline consumption.	Adopt smart technologies	Deploy sensor-based leak detection, smart irrigation, automated controls, and heat-recovery systems.
Reuse water where feasible	Treat and repurpose water for cooling, irrigation, or other non-potable uses.	Strengthen onsite water management	Reduce waste from treatment processes and explore opportunities for by-product reuse.
Improve measurement and insight	Use meters and monitoring tools to track use, detect leaks, and validate savings.	Upgrade high-use equipment	Replace washers, dishwashers, sterilizers, and other water-intensive equipment with high-efficiency models.
Optimize cooling and process systems	Enhance recirculation, blowdown management, and system maintenance for major efficiency gains.	Reduce outdoor water demand	Use native landscaping, drip irrigation, and soil-moisture sensors to minimize irrigation needs.

Recommendations	Description	Recommendations	Description
Improve chemical and rinse management	Optimize chemical dosing and rinse cycles in cooling and industrial systems.	Develop a structured water plan	Assess current use, set practical targets, identify priority actions, and track progress with simple KPIs.
Use low-water or dry alternatives	Consider air-cooled systems, dry sweeping, or closed-loop cleaning where feasible.	Strengthen preventative maintenance	Repair leaks, valves, and sensors promptly; schedule routine inspections to prevent hidden losses.
Lower hot-water demand	Insulate pipes, maintain heating systems, and optimize temperature settings to reduce water and energy use.	Use recognized frameworks to guide progress	Apply AWS, WAVE, NPWI, VWBA, or CDP to benchmark performance and demonstrate credible stewardship.

## Call to Action on Water Efficiencies

The Great Lakes region faces increasing water challenges due to climate change, population growth, aging infrastructure, and emerging contaminants. As a result, corporations in the region are recognizing the critical need to improve water use efficiency and stewardship across their operations and supply chains.

## Key Operational Efficiency Strategies:

### Water Efficiency and Reuse Initiatives:



**Restroom Fixture Upgrades:** Installing low-flow toilets, faucets, and urinals significantly reduces water consumption with relatively low capital investment.

**On-site Water Treatment and Reuse:** Capturing and treating stormwater or process water for reuse in irrigation, cooling, or industrial processes reduces freshwater withdrawals and mitigates runoff impacts.

**Policy Development:** Emerging regulations and building codes increasingly require or incentivize water reuse systems, supporting broader adoption.

### Best Management Practices (BMPs):



**Corporate Actions:** Executive advocacy is essential to integrate water efficiency into strategic goals and secure resources. Setting water quality targets alongside efficiency goals ensures sustainable water use. Investing in R&D for advanced treatment technologies (e.g., membrane filtration, biological treatment) supports long-term efficiency gains.

**Site Actions:** Establishing baseline water use through metering enables targeted conservation. Automated “turn it off” programs reduce unnecessary water use. Continuous metering and monitoring (e.g., Advanced Metering Infrastructure) provide real-time data to identify leaks and inefficiencies. Engineering and maintenance teams play a pivotal role in implementing and sustaining BMPs. Digital technologies and data analytics optimize water management.

**Engagement Actions:** Public-private partnerships facilitate data sharing and coordinated water management. Engaging stakeholders, including local communities and supply chains, ensures responsible water use throughout operations and sourcing.



## Regulatory and Economic Incentives:



Financial incentives such as subsidies, tax breaks, and grants encourage investment in water-efficient technologies.

Adjusting wastewater disposal rates to favor reclaimed water use promotes recycling.

Mandating circular economy water practices ensures compliance and drives innovation.

Implementing operational efficiencies reduces water consumption and costs, mitigates regulatory and reputational risks, and supports corporate sustainability commitments.

These efforts contribute to protecting regional water resources and building resilience against climate and population pressures.



Wastewater management is no longer just a compliance requirement, it's an opportunity for innovation and value creation. By adopting advanced treatment technologies and resource recovery solutions, companies can transform waste into assets, reduce costs, and demonstrate leadership in sustainable practices. Acting now positions your organization at the forefront of environmental innovation and competitive advantage.



## Wastewater Management

Effective wastewater management is essential to protecting public health, maintaining ecosystem integrity, and building long-term water resilience across the Great Lakes region. As pressures from climate change, aging infrastructure, and growing water demands increase, organizations have a critical opportunity to shift from a linear “use-and-dispose” approach to one that treats wastewater as a recoverable resource.

Modern wastewater practices align closely with broader stewardship frameworks such as the Circular Economy of Water (CEW) and Net Positive Water Impact (NPWI), helping companies reduce risk while contributing to regional sustainability goals.

By adopting best-in-class wastewater strategies, organizations can:

- ❖ Protect public health by preventing contaminants from entering drinking water sources.
- ❖ Preserve aquatic ecosystems by reducing nutrient loads, chemicals, and emerging pollutants.
- ❖ Strengthen operational resilience through improved compliance, reduced liabilities, and cost-efficient treatment systems.
- ❖ Support regional water goals by contributing to shared stewardship and healthier Great Lakes communities.

## Context-Specific Considerations

Water-related impacts vary widely across the Great Lakes region, making wastewater management inherently location-dependent. Effective strategies must reflect the unique conditions and priorities of each basin, including:

Local water stress and seasonal variability, which influence both treatment needs and discharge sensitivity.

Community and stakeholder priorities, such as Indigenous water rights, public health concerns, and ecological values.

Regulatory expectations and enforcement capacity, which shape compliance requirements and operational responsibilities.

Recognizing these local factors ensures that wastewater practices are both effective and aligned with broader regional water stewardship



# Call to Action: Elevate Wastewater Management

Water stewardship is a strategic imperative. Businesses must lead in reducing pollutant loads, embracing circular practices, and strengthening transparency to protect local waterways and secure long-term operational resilience.



## 1. Reduce Pollutant Loads at the Source



- Proactive action starts upstream:

**Identify Risks:** Assess pollutants of concern based on site activities, sector-specific risks, and discharge profiles.

**Prevent Before Treating:** Minimize pollutant volume and concentration through process optimization and material substitution.

## 2. Integrate Circular Approaches



- Turn waste into value:

**Recycle Treatment Byproducts:** Reuse internally or explore safe external market opportunities.

**Advance Reuse Models:** Evaluate feasibility of innovative approaches, including potable reuse, where technically sound.



## 3. Strengthen Monitoring & Transparency



- Data drives accountability:

**Meter Discharges:** Track volumes, detect anomalies, and verify system performance.

**Monitor Effluent Quality:** Ensure treatment systems meet compliance and sustainability goals.

**Leverage Digital Tools:** Use platforms like WWF Risk Filter Suite to assess risk, prioritize investments, and inform decisions.

**Report Transparently:** Share withdrawals, consumption, and discharge data in watershed context to build trust with regulators, communities, and partners.

## 4. Plan for Long-Term Resilience



- Future-proof your operations:

**Integrate Climate Risk:** Factor changing precipitation patterns and aging infrastructure into planning.

**Collaborate Locally:** Engage municipal utilities, watershed groups, and Indigenous communities to align goals and strengthen shared outcomes.

Implementing these strategies reduces regulatory risk, enhances brand reputation, and positions your company as a leader in sustainable water management. Acting now ensures compliance-resilience, and competitive advantage in a resource, constrained future. Champion wastewater management as a strategic priority.

Mobilize cross-functional teams, invest in innovation, and lead the transition toward circular, transparent, and resilient water practices.



# Stormwater Management



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Stormwater management is a strategic priority for mitigating flood risk, protecting water quality, and ensuring regulatory compliance. By investing in innovative solutions and green infrastructure that treat stormwater as a resource, companies can reduce operational disruptions, protect community health, and demonstrate clear environmental leadership.

## Stormwater as a Shared Resource

Stormwater management is becoming a cornerstone of corporate water stewardship in the Great Lakes region, where aging infrastructure, intensifying rainfall, and growing impervious surfaces are increasing pressure on local water systems. For companies operating across the region, this means moving beyond site-level efficiency and toward integrated, forward-looking strategies that reduce runoff, improve water quality, and strengthen ecosystem resilience.

Traditionally viewed as a compliance obligation, stormwater management is now being recognized as a strategic asset that can drive resilience and value creation. Outdated sewer systems and climate-driven rainfall extremes pose significant physical, regulatory, and reputational risks to businesses in the Great Lakes Region. Treating stormwater as a shared resource and responsibility enables companies to:

- ❖ Reduce operational and regulatory risks by mitigating flooding, combined sewer overflows (CSOs), and water quality violations
- ❖ Lower long-term costs through green infrastructure and integrated water efficiency approaches.
- ❖ Build trust with communities, regulators, and investors by demonstrating measurable contributions to regional water health.

By embedding stormwater management into broader sustainability and risk management frameworks, companies can align environmental responsibility with business performance.

## Green Infrastructure Actions

Stormwater management falls under green or gray infrastructure activities designed to capture, store, and treat runoff to improve water quality and mitigate flood or drought risks.



### Green Infrastructure

- Rain gardens and bioswales: Vegetated areas that capture and infiltrate stormwater.
- Bioretention basins: Engineered depressions with soil and plants to filter runoff.
- Constructed wetlands: Treat stormwater and improve water quality.
- Permeable surfaces: Pavements that allow water infiltration.

### Gray Infrastructure

- Stormwater detention or retention ponds: Capture runoff for gradual release or infiltration.
- Drainage water management systems: Control flow and reduce pollutant loads.
- Blind inlets and check dams: Slow water movement and promote infiltration.

# Improve Stormwater Management



## Modernize Site and System Readiness



Aging municipal infrastructure and Combined Sewer Overflow risks expose companies to operational disruption, compliance challenges, and reputational pressure.

- Businesses should assess how local system vulnerabilities intersect with their sites, invest in onsite stormwater controls, and integrate climate-informed design standards into new builds and retrofits.

## Invest in High-Performing Green Infrastructure



Green roofs, bioswales, permeable pavements, and rain gardens reduce pressure on municipal systems and improve site resilience.

- Businesses can justify these investments through long-term savings in maintenance, reduced flooding, lower treatment costs, and stronger ESG performance.

## Collaborate Across Watersheds



Stormwater management works best when aligned with local watershed needs.

- Companies should partner with utilities, local governments, Indigenous nations, NGOs, and community groups to leverage shared funding, streamline permitting, and support basin-wide improvements.

## Measure What Matters



Quantifying outcomes builds internal and external confidence.

- Companies can use tools such as the Runoff Reduction Method or Volumetric Water Benefit Accounting (VWBA) to measure runoff avoided, pollutants captured, and co-benefits delivered, and report them transparently through CDP, AWS, and other ESG disclosures frameworks.



## Build Climate-Resilient Operations



Changing rainfall patterns demand adaptive, forward-looking planning.

- Companies should integrate climate scenario modeling, redundancy, and flexible management into site strategies to maintain operational continuity and reduce long-term risk.



# Value Chain Assessment



Great Lakes  
**WISE**  
Water Innovation and  
Stewardship Exchange



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Building transparency across the value chain is essential for earning stakeholder trust and meeting rising disclosure expectations. By implementing clear reporting and traceability practices, companies can demonstrate accountability, strengthen partnerships, and reduce reputational risk. Acting now positions your organization as a trusted leader in sustainable and ethical business.

## Value Chain of Water in Business Operations

Water stewardship in the Great Lakes demands more than operational efficiency; it requires a clear understanding of water-related impacts and dependencies across the entire value chain. From raw material extraction to supplier operations and product use, each step interacts differently with water quantity, quality, and accessibility.

To manage these interdependencies effectively, organizations must conduct materiality assessments that identify where water issues are most significant and prioritize actions that strengthen long-term basin resilience.

Globally recognized stewardship frameworks, such as the Alliance for Water Stewardship (AWS) Standard and the Science Based Targets for Nature (SBTN), offer the structure and guidance needed to assess risks and dependencies and translate them into credible water strategies.

## Finding Materiality of Water

Materiality refers to topics that meaningfully influence an organization's ability to create, preserve, or erode value. In water stewardship, materiality is determined by evaluating:

- ❖ **Dependencies:** How reliant a section of the value chain is on water quantity and quality.
- ❖ **Impacts:** How much a sector contributes to shared water challenges, such as pollution or depletion.



## Key Business Priorities for Water in the Value Chain

### 1. Map the Full Value Chain



Begin by identifying all stages that interact with water, from raw material extraction to suppliers, transport, manufacturing, distribution, product use, and end-of-life. A complete map ensures that no significant water dependencies or impacts are overlooked.

### 2. Identify Water Dependencies



Determine where each stage relies on water quantity, quality, infrastructure, or ecosystem services. Dependencies help reveal where business continuity may be at risk due to basin health or supply reliability.

### 3. Identify Water Impacts



Begin by identifying all stages that interact with water, from raw material extraction to suppliers, transport, manufacturing, distribution, product use, and end-of-life. A complete map ensures that no significant water dependencies or impacts are overlooked.

#### 4. Assess Risk Holistically



Effective stewardship requires evaluating risks at three levels:

- Operational: withdrawals, discharges, quality, compliance, and system reliability.
- Basin: local stress, variability, water quality, and governance conditions.
- Value Chain: upstream supplier hotspots and downstream product-related impacts.

A comprehensive view ensures that actions address the real drivers of water risk and contribute to basin-wide improvement.

#### 5. Conduct a Materiality Assessment



Use science-based materiality methods to determine which value-chain stages are most significant to business resilience and basin health. Materiality helps companies set context-based targets, direct resources effectively, and prioritize stakeholders that matter most.

#### 6. Align with Global Stewardship Frameworks



Frameworks ensure credibility, consistency, and basin-aligned action. Integrate findings with recognized frameworks such as:

- WAVE Verified for risk and dependencies alignment.
- SBTN for science-based freshwater targets.
- TNFD integrates water dependencies, impacts, and basin risks into decisionmaking.
- AWS Standard for site-level and basin-level stewardship.
- NPWI for improving availability, quality, and accessibility.
- CEO Water Mandate corporate-level guidance for policy commitments, supply-chain action, disclosure, and collective action.
- CDP Water Security supports transparency, identifying financially material water issues.

#### 7. Develop Action Pathways



Translate findings into targeted interventions, supplier engagement, procurement updates, site-level improvements, basin partnerships, and long-term investment plans.

## Driving Water Stewardship Across the Value Chain

### ❖ Map the Full Value Chain

Gain visibility into all water touchpoints from raw materials to end-of-life to uncover hidden risks and opportunities.

### ❖ Identify Critical Water Dependencies

Understand where operations and suppliers rely on water resources to protect business continuity and resilience.

### ❖ Assess Water Impacts

Quantify how your activities contribute to withdrawals, pollution, and ecosystem stress to mitigate reputational and regulatory risks.

### ❖ Evaluate Risk Holistically

Address water risk at three levels:

- Operational (compliance, reliability),
- Basin (local stress, governance),
- Value Chain (supplier and downstream exposure).

### ❖ Prioritize Through Materiality

Apply science-based methods to focus resources on the most significant risks and opportunities for both business and basin health.

### ❖ Align with Global Frameworks

Ensure credibility and investor confidence by integrating frameworks, such as AWS, SBTN, TNFD, NPWI, CEO Water Mandate, and CDP Water Security into strategy.

### ❖ Activate Action Pathways

Move from insight to impact: supplier engagement, procurement updates, site-level improvements, basin partnerships, and long-term investments. business and basin health.



# Circular Economy



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Embedding circular water economy principles across operations positions your brand as a leader in innovation and sustainability. By treating water as a renewable resource, reducing waste, recovering valuable resources, and regenerating natural systems, companies transform risk into resilience and waste into value. Designing for resource efficiency and closed-loop water cycles demonstrates forward-thinking leadership that resonates with customers, investors, and employees. Leading on circularity today positions organizations at the forefront of a purpose-driven marketplace, where environmental stewardship and economic performance go hand in hand.

## Circular Water Strategies: a Model for the Great Lakes Region

The Circular Economy of Water (CEW) offers a transformative approach to water stewardship that emphasizes reducing waste, preserving quality, and regenerating natural systems. By applying circular economy principles to water management, companies in the Great Lakes region have the opportunity to enhance sustainability, resilience, and long-term economic value. The CEW model is scalable, from individual facilities to enterprise-wide planning, and supports both operational and regional sustainability goals.

Grounded in the principles of designing out waste, keeping resources in use, and regenerating natural systems, CEW reframes water as a recoverable asset rather than a linear input. In practice, this means minimizing withdrawals, maximizing reuse, improving water quality, and recovering valuable resources across operations and the value chain.



## Business Benefits of Circular Water Strategies

Circular water practices offer high-impact, high-feasibility pathways for companies seeking to strengthen sustainability performance:

### Reputational Value

Demonstrating leadership enhances brand credibility and stakeholder trust.

### Cost Savings

Efficiency and reuse lower utility and treatment expenses.

### Operational Resilience

Reduced dependence on external water sources lowers exposure to supply disruptions and regulatory changes.

### Regulatory Preparedness

Early adoption positions businesses ahead of evolving water policies and reuse standards. As water stress grows globally, CEW provides a timely and scalable opportunity for businesses to lead in both sustainability and innovation.

# Business Benefits of Circular Water Strategies

## Start Small, Scale Smart

Begin with low-cost efficiency upgrades and build toward reuse.

## Lean on Partnerships

Work with municipalities, NGOs, and peers to navigate policy and technical gaps.

## Communicate Early

Engage employees and communities to build trust and educate around reuse and circular practices.

## Align with Local Context

Tailor goals to watershed conditions and regulatory expectations.

## Strengthen Governance

Embed water stewardship into procurement, capital planning, and executive oversight.

## Call to Action: Incorporate the Circular Economy of Water

A circular approach is the foundation for best practice and provides companies with practical actions to reduce risk, improve efficiency, and enhance water quality across operations and supply chains.

- ❖ **Improve Water Efficiency:** Upgrade fixtures, appliances, and detection systems to prevent avoidable losses.
- ❖ **Reuse Water On-Site:** Treat and repurpose water for non-potable uses such as cooling, irrigation, or industrial processes.
- ❖ **Engage the Value Chain:** Extend water stewardship beyond the fence line by collaborating with suppliers on water risks and dependencies.
- ❖ **Recover Resources:** Capture minerals and materials from wastewater streams to create new economic value.
- ❖ **Adopt Context-Based Targets:** Shape water goals around local watershed conditions and community needs.
- ❖ **Integrate Water into Corporate Strategy:** Ensure executive leadership and cross-functional teams embed water stewardship into decision-making.

Together, these practices reduce consumption, lower energy demands, and cut operational costs, delivering environmental and economic benefits while strengthening long-term resilience.



Third-party validation is a powerful way to build credibility and trust in your sustainability commitments. By engaging independent experts to verify performance, companies can strengthen stakeholder confidence, meet disclosure requirements, and differentiate their brand in a competitive marketplace. Acting now on external validation signals transparency, accountability, and leadership.

## A Cornerstone of Credible Water Stewardship

Third-party validation provides an objective assessment of a company's water data, methodologies, and performance claims. It ensures transparency, builds stakeholder trust, and aligns corporate reporting with recognized international standards.

In a region as interconnected and visible as the Great Lakes, independent verification is not simply a compliance exercise; it is a cornerstone of credible, accountable, and impactful water stewardship.

## Why Validation Matters

As companies increasingly report water-related performance through sustainability reports, ESG disclosures, or public commitments, stakeholders expect a level of rigor that goes beyond self-reported claims. Independent validation helps prevent:

- Greenwashing - overstating or misrepresenting environmental performance
- Double counting - attributing the same water benefit to multiple entities
- Over-claiming - reporting benefits that exceed measurable impact

Third-party validation builds trust and demonstrates additionality with:

- Investors, who depend on accurate data for ESG assessments.
- Regulators, who oversee compliance and environmental impacts
- Communities and stakeholders directly affected by corporate water use
- NGOs and advocacy groups that scrutinize sustainability claims

## An Advantage, Not a Burden

When companies prepare effectively, validation becomes faster, more cost-efficient, and far more impactful. It strengthens organizational credibility and accelerates the adoption of high-quality stewardship practices across the Great Lakes region.

The following four pillars outline how businesses can unlock the full value of an independent review.

### 1. Build a Strong Foundation (Prepare Your Evidence) - Third-party validation works best when companies have:



- Reliable baseline data
- Clear documentation
- Defined boundaries and assumptions
- Maps, logs, and traceable metadata

**Value unlocked:** Faster audits, fewer corrections, lower costs, and stronger credibility.



## 2. Align with the right framework for your goal - Validation gains power when companies align with recognized frameworks like:



- **WAVE:** Water Stewardship Verified – enterprise-level risk, use, and dependency screening
- Alliance for Water Stewardship (AWS) Standard – site- and basin-level water stewardship
- Science Based Targets Network (SBTN) Freshwater – science-based target setting
- Global Reporting Initiative (GRI) 303/CDP Water Security (formerly Carbon Disclosure Project) – consistent disclosure

**Value unlocked:** Comparable, externally credible results that meet global expectations.



## 3. Connect to basin reality - Validation carries the most meaning when global tools are grounded in real watershed conditions, including:



- Local hydrology
- Watershed conditions
- Indigenous knowledge
- Utility data
- Watershed community priorities

**Value unlocked:** Results reflect actual basin needs and demonstrate both impacts to and impacts on local water systems.



## 4. Design for measurable outcomes - Validation demonstrates impact when companies can show:

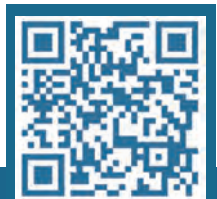


- Reductions in withdrawals or pollutant loads
- Basin-aligned restoration outcomes
- Clear attribution in collective actions
- Demonstrable improvements over time

**Value unlocked:** Strong investor confidence, regulatory readiness, and business differentiation.

## Implement Third-Party Validation

- ❖ Mandate Independent Verification for water stewardship claims to ensure credibility and transparency.
- ❖ Audit Current Data and Processes to identify gaps and prepare for external review.
- ❖ Adopt Recognized Standards for consistency and global alignment.
- ❖ Engage Accredited Auditors and hydrogeological experts to validate methodologies and outcomes.
- ❖ Define Clear Attribution in collective projects to prevent double counting and misrepresentation.
- ❖ Establish Continuous Monitoring with periodic third-party reviews to maintain integrity and adapt to changing conditions.
- ❖ Communicate Verified Results in sustainability reports and stakeholder disclosures to build trust and strengthen brand reputation.



# Current Landscape Vulnerabilities



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In a competitive, purpose-driven marketplace, ignoring water risks is not an option. By prioritizing water stewardship, businesses unlock strategic value, reducing costs, mitigating risk, and strengthening stakeholder trust. Lead boldly and turn vulnerabilities into opportunities for growth.

The Great Lakes region is an economic powerhouse, generating over US\$8 trillion in activity across the U.S. and Canadian economies. Home to 84% of North America's surface freshwater, it supports a wide range of industries, from manufacturing and agriculture to emerging sectors, driven by its abundant water resources, reliable energy, and highly skilled workforce.



## A Growing Resilience Gap in the Great Lakes

The Great Lakes region faces a widening vulnerability landscape as climate change, economic growth, and population pressures intersect with aging infrastructure and uneven governance. Rising water stress, deteriorating quality, and escalating demands on shared freshwater systems are exposing weaknesses in regional resilience, testing the capacity of institutions, utilities, and industries to adapt.

- Intensifying pressures from development and climate change are straining limited water resources
- Persistent water quality risks show minimal improvement across the basin.
- Limited corporate and cross-border coordination weakens collective resilience.
- Data and monitoring gaps undermine effective risk management.
- Insufficient transparency and efficiency policies in emerging sector heighten exposure to water stress, energy strain, and community conflict.

### Climate Change Impacts



Climate change is amplifying stress across the Great Lakes system, driving changes that disrupt hydrological patterns and leave ecosystems and communities increasingly vulnerable to extreme weather events.

Climate change touches all aspects of the Great Lakes and will continue to amplify pressures in the region.

### Economic and Population Expansion



Population growth and rapid economic development in the region is straining freshwater resources, with higher withdrawals and more wastewater entering already stressed systems.

### Aging Grey Infrastructure



Changes in the Great Lakes precipitation patterns is driving pressure on aging infrastructure, along with increased rates of dumping polluted stormwater/sewage into tributaries and nearshore zones; fixes are capital-intensive and slow.

### Emerging Contaminants of Concern



Increasing occurrence of emergent and legacy pollutants in the Great Lakes waters threatens human health, biodiversity, and long-term water security.

Regulation and mitigation lag behind the scale of the problem, with significant pressure and gaps in policy coverage increasing uncertainty.

## Data Centers, AI, and the Water-Energy Nexus



The rapid growth of data centers and AI infrastructure introduces sharp, periodic spikes in water and energy demand across the Great Lakes region. During peak stress periods, power needs can intensify local water withdrawals, increase thermal pollution, strain grid capacity, and heighten competition with municipal and industrial users. Without coordinated planning, transparency, and efficiency measures, these sectors risk amplifying existing vulnerabilities in an already pressured freshwater basin.

## Key Takeaways on Great Lakes Vulnerabilities

Climate change is a "crisis multiplier" that amplifies every water and infrastructure vulnerability in the Great Lakes region.

### Water Scarcity and Stress



Shifting rainfall and periodic droughts increase competition for limited water supplies, raising operational and treatment costs.

### Extreme Weather



Floods, storms, and heat waves disrupt supply chains and expose gaps in infrastructure and emergency preparedness.

### Water Quality Decline



Warmer temperatures and nutrient runoff degrade ecosystems, increasing regulatory, reputational, and compliance risks.

### Infrastructure Strain



Aging water and energy infrastructure is ill-equipped for modern climate extremes, heightening risks of service disruptions.

### Regulatory and Financial Risk



Climate variability strains utility revenue models and regulatory frameworks, creating uncertainty for business investment.

### Health and Service Disruption



Declining water quality and service interruptions pose health risks that ripple into the workforce, community, and operational stability.

## Key Recommendations for Business in the Great Lakes

Strengthening water resilience in the Great Lakes requires companies to step into a proactive, collaborative role. The actions below outline where industry can lead, reduce exposure, and contribute to basin-wide stability.

Use the Great Lakes Compact as an operational baseline

- Align corporate water use, reporting, and new facility siting decisions with Compact principles to maintain consistency and credibility in the basin.
- Use the Compact's definitions, threshold and priorities, target setting, policy language, and voluntary disclosure expectations.

Build adaptive capacity across sites and supply chains

- Stress-test operations for drought, flooding, and extreme weather; integrate climate scenarios into facility planning; and embed resilience criteria into capital investment.

Invest in modernizing infrastructure

- Upgrade aging onsite systems (cooling, treatment, conveyance) and collaborate with utilities to improve shared infrastructure reliability.

Advance corporate water stewardship beyond the fence line

- Conduct basin-level risk and dependency assessments, participate in collective action through WISE or local watershed groups, and co-fund restoration or green infrastructure.

Enhance data and monitoring systems

- Deploy real-time sensors, metering, and shared dashboards to improve detection of water risks and drive faster decision-making.

Promote awareness and incentives internally

- Train staff, set site-level goals, and use procurement or performance metrics to reinforce responsible water use and circularity.



# Water Quantity



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Having an adequate quantity of water is a cornerstone of business continuity and risk management. By implementing strategies to reduce water use and secure sustainable supply, companies can mitigate operational disruptions, lower energy costs, and meet growing regulatory and stakeholder demands. Acting now on water quantity ensures resilience, competitive advantage, and long-term value creation.

## Water Quantit and Demand in the Great Lakes

### Industrial and Economic Growth

The Great Lakes region is North America’s economic engine, contributing over \$8 trillion to the combined U.S. and Canadian economies. Traditional industries such as steel, automotive, and agriculture have long relied on the region’s water resources. More recently, emerging sectors, including semiconductors, data centers, and biopharma are intensifying water demand, particularly in Ontario, Michigan, and Quebec. As industrial and technological development accelerates, water quantity and allocation pressures are rising, making responsible management, efficiency, and watershed stewardship increasingly critical for long-term economic resilience.

### Climate Change Impacts

Climate models for the Great Lakes basin reveal troubling trends including rising surface water temperatures, declining ice cover, and more frequent extreme weather events such as storms and droughts. These changes exacerbate soil erosion, stormwater runoff, and sewage overflows, power generation potential via hydro power systems placing additional stress on aging water infrastructure and widespread availability to water resources.

### Population Expansion

Rapid population growth is transforming the landscape of the Great Lakes region. This urban and agricultural expansion leads to higher water withdrawals, increased pollution, and greater strain on infrastructure. Without strategic planning, this growth could outpace the region’s capacity to sustainably manage its water resources.

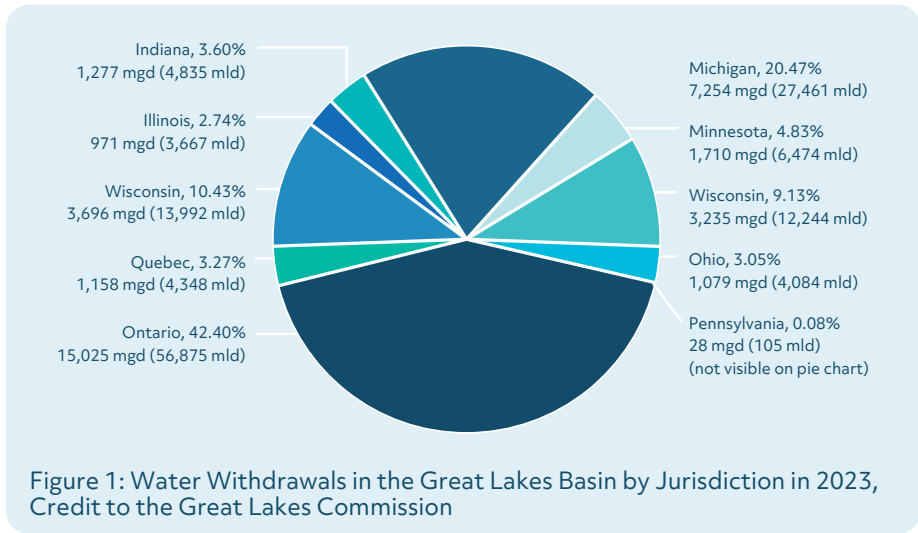


Figure 1: Water Withdrawals in the Great Lakes Basin by Jurisdiction in 2023, Credit to the Great Lakes Commission

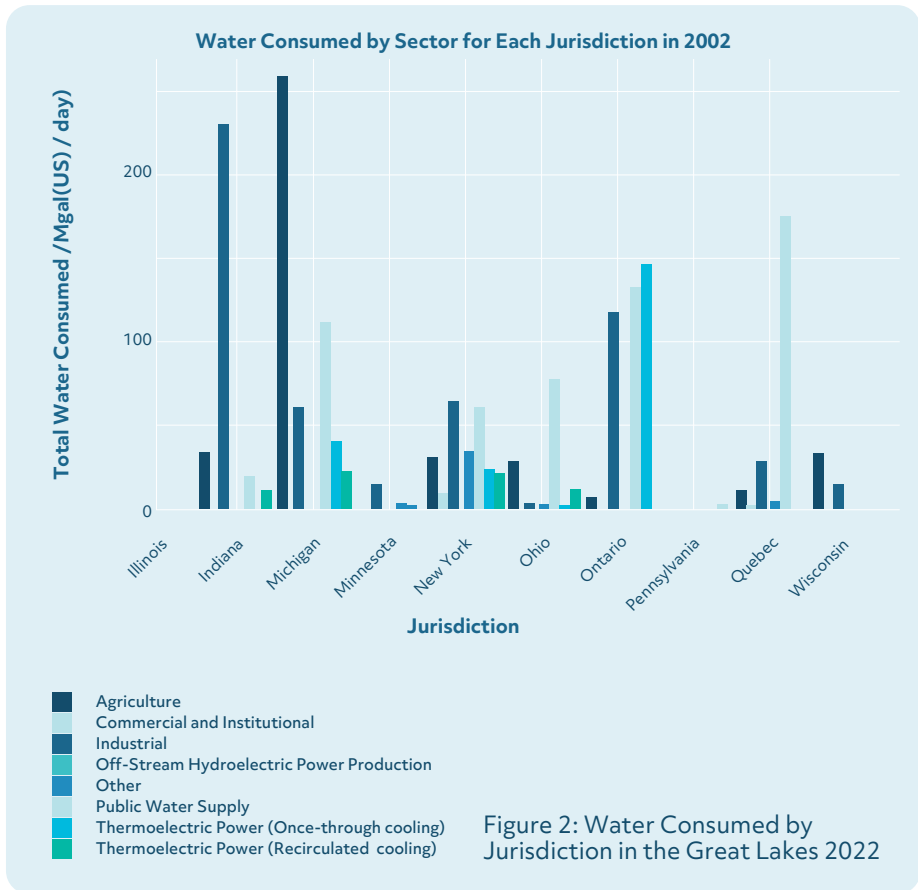


Figure 2: Water Consumed by Jurisdiction in the Great Lakes 2022

# Business Movement and Utility Trends

## Water Pricing and Escalation



Water and wastewater rates are rising unevenly across the region. The lack of standardized reporting and oversight creates uncertainty for businesses attempting long-term planning, impacting investment decisions and complicating efforts to implement water-efficient technologies.

## Corporate Water Stewardship



Companies across the Great Lakes are adopting corporate water stewardship frameworks and Circular Economy of Water practices to reduce freshwater withdrawals, stabilize supply under climate variability, and support shared watershed resilience.

# Strategic Implications

## Infrastructure Investment



To meet the challenges posed by climate change and population growth, adaptive infrastructure investment is essential. Investment in wastewater treatment plants, stormwater systems, and shoreline protection must be prioritized, especially in high-risk and high-growth areas.

## Cross-Border Collaboration



Given the shared nature of the Great Lakes, cross-border collaboration is critical. Harmonizing data collection and reporting standards will improve decision-making and resource management. Joint efforts can also enhance resilience and ensure equitable access to water.

## Business Alignment with Stewardship Goals



Businesses must align with regional stewardship goals to secure long-term water availability. This includes adopting BMPs, engaging in supply chain sustainability, and advocating for policy reforms that support water conservation and reuse.

# Building Resilience in the Great Lakes

As industrial growth, climate variability, and population expansion accelerate across the Great Lakes Basin, businesses face new pressures on water availability and cost stability. The following actions provide practical pathways for companies to reduce freshwater withdrawals, secure reliable supply, and strengthen resilience in a changing water environment.

## Reduce freshwater withdrawals at the facility level

- ❖ Implement water reuse and closed-loop systems for cooling, rinsing, and process water.
- ❖ Deploy advanced metering and real-time monitoring to identify inefficiencies and loss points.
- ❖ Transition from once-through to recirculating systems where feasible to reduce consumptive use.

**Benefit:** Lowers operational water dependency and reduces exposure to future allocation or pricing constraints.

## Integrate water availability into growth and location decisions:

- ❖ Use water availability and withdrawal intensity mapping when planning new facilities or expansions.
- ❖ Prioritize investment in sub-watersheds with demonstrated resilience and avoid areas where demand is already outpacing capacity.
- ❖ Include long-term water pricing scenarios in financial planning to account for utility rate escalation.

**Benefit:** Protects future operational continuity and reduces permitting or community conflict risks.

### Strengthen water stewardship across the supply chain:

- ❖ Work with material suppliers to adopt water stewardship BMPs in process.
- ❖ Include water performance criteria in procurement policies for high-water-footprint inputs.
- ❖ Participate in watershed-scale partnerships that restore riparian buffers, wetlands, and headwater recharge zones.

**Benefit:** Reduces watershed stress beyond the facility fence line and protects supply chain reliability.

### Align corporate water targets with regional stewardship goals:

- ❖ Align reduction and reuse goals with basin objectives and provincial/state water allocation strategies.
- ❖ Track evolving regulations on discharge, stormwater controls, consumptive-use reporting, and groundwater withdrawals.
- ❖ Actively engage in watershed advisory committees, municipal planning processes, and binational collaboration forums.

**Benefit:** Reduces watershed stress beyond the facility fence line and protects supply chain reliability.



Water quality is a critical driver of operational resilience and corporate responsibility. By prioritizing clean, sustainable water practices, organizations safeguard supply chains, protect community health, and meet rising stakeholder expectations. Leadership on water quality today positions your company as an innovator committed to long-term value and environmental stewardship.

## Water Quality in the Great Lakes Region

Despite the ecological and economic importance of one of the world's largest freshwater systems, the Great Lakes, water quality across the basin faces persistent threats from urbanization, agriculture, industrial activity, and climate change. Water quality in the Great Lakes is shaped by a complex interplay of natural and human factors.

Key indicators such as toxic chemicals, nutrient levels, algae blooms, and watershed health are generally rated as Fair, as reported in the 2022 State of the Great Lakes, with trends showing little to no improvement over time. Groundwater quality fares better, typically rated as Good, though long-term data is insufficient to confirm trends.

### Chemicals of Concern in the Great Lakes Basin

Under the U.S. - Canada Great Lakes Water Quality Agreement (GLWQA), governments have identified key Chemicals of Mutual Concern (CMCs) that continue to impact water quality and aquatic life. These include mercury, PCBs, PBDEs, classes of PFAS, and short-chain chlorinated paraffins, legacy industrial pollutants that persist in sediments and food webs despite decades of control efforts.

New classes of contaminants, such as newly identified PFAS classes, microplastics, and pharmaceuticals are gaining attention through ongoing research and evolving EPA and provincial monitoring programs. These emerging pollutants are directly linked to industrial and agricultural practices and locations of intense activity, and they present a growing operational, regulatory, and reputational risk for companies operating in or sourcing from the Great Lakes basin.



### Data Collection and Benchmarking Challenges

#### Gaps in Monitoring and Assessment

- Sparse hydrological data: Limited streamflow and groundwater data restrict the accuracy of nutrient and hydrological models.
- Irregular monitoring: Nearshore and tributary surveys are conducted inconsistently, hindering trend analysis.
- Climate change integration: Existing water quality models inadequately account for climate-related impacts.
- Jurisdictional fragmentation: Data sharing across federal, state/provincial, tribal, and private sectors remains inconsistent.

#### Benchmarking Limitations

- Enforcement variability: Water quality standards are unevenly enforced across jurisdictions.
- Funding constraints: Infrastructure and monitoring programs suffer from limited financial support.
- Lack of standardized metrics: Cross-border comparisons and progress tracking are hampered by the absence of unified indicators.

# Point and Nonpoint Source Pollution - How Pollutants Travel

## Urban Runoff

Stormwater flowing across impervious surfaces, roads, rooftops, and parking lots, picks up oil, metals, microplastics, salts, and pathogens before discharging into rivers and nearshore zones. During heavy rainfall, Combined Sewer Overflows (CSOs) release untreated sewage and industrial waste directly into waterways, increasing bacterial contamination and nutrient loading. As urban areas expand, storm intensity and impermeable coverage amplify pollutant pulses, especially in legacy industrial corridors like the Detroit and Cuyahoga Rivers.

## Industrial Legacy & Atmospheric Deposition

Even as point-source discharges have declined, legacy contaminants in sediments, including PCBs, PAHs, mercury, and PFAS, continue to circulate through resuspension and storm-driven erosion. In addition, airborne deposition from industrial and transportation emissions remains a key pathway for mercury and organic pollutants entering the lakes from the Great Lakes region.

## Agricultural Runoff

Runoff from cropland and livestock operations carries phosphorus, nitrogen, sediments, and pesticides into tributaries. Excess nutrients trigger harmful algal blooms (HABs) that degrade water quality, threaten fisheries, and raise drinking-water treatment costs. Climate change magnifies these effects; more intense storms increase runoff volumes, while warmer waters promote algal growth.



## Regulatory Response

While the Clean Water Act (U.S.) and the Great Lakes Water Quality Agreement (GLWQA) have successfully reduced point-source pollution, they are less effective in addressing nonpoint sources. Canada's Freshwater Action Plan and Great Lakes Freshwater Ecosystem Initiative support phosphorus reduction and monitoring, but broader coordination is needed.



Satellite Image of 2024 Lake Erie Algal Bloom via NASA Earth Observatory



## Great Lakes Water Quality

- Improved coordination, infrastructure investment, program support and cross-sector collaboration are essential for improving resiliency in the Great Lakes region.
- Nonpoint source pollution remains the most significant unresolved threat to water quality.
- Data collection is robust in some areas but fragmented and inconsistent across the basin.
- Benchmarking progress is hindered by data gaps, inconsistent enforcement, and lack of integrated climate modeling.

# Call to Action: Take Business Action to Safeguard Water Quality

Improving water quality and ecosystem resilience in the Great Lakes requires collaboration across industry, municipalities, agriculture, and community partners. Forward looking corporate actors are actively integrating chemical management, supply-chain transparency, and source-reduction initiatives into their sustainability strategies.

## Reduce pollutants at the source:

- ❖ Phase out or substitute priority Chemicals of Mutual Concern and identify emerging CMC in the value chain where feasible.
- ❖ Strengthen stormwater and spill prevention controls at industrial and distribution sites.

## Support nature-based solutions and watershed restoration:

- ❖ Invest in wetland restoration, riparian buffers, floodplain reconnection, and shoreline rehabilitation in priority sub-watersheds.
- ❖ Support urban green infrastructure initiatives on production sites and beyond four walls (e.g., bioswales, permeable pavements, rain gardens) to reduce runoff.
- ❖ Partner with local environmental NGO's, land trusts, municipalities, or tribal nations on shared challenge identification and local habitat projects with measurable outcomes.



## Advance data transparency and shared monitoring:

- ❖ Participate in standardized sectoral benchmarking initiatives to improve comparability across the basin.
- ❖ Contribute to regional monitoring efforts where gaps have been identified (nearshore, tributaries, groundwater).

## Strengthen agricultural supply chain stewardship:

- ❖ Integrate water-risk screening tools (e.g., WRI Aqueduct, WWF Water Risk Filter) into procurement and sourcing policies.
- ❖ Work with suppliers and growers to implement nutrient stewardship programs and advanced efficiency and resiliency strategies (cover cropping, precision fertilizer application, water-use efficiency mapping).

## Align organizational strategy with regional policy frameworks:

- ❖ Connect corporate water stewardship goals with the GLWQA, the U.S. Clean Water Act, Canada's Freshwater Action Plan, and local RAP/Watershed Plans.
- ❖ Track regulatory momentum on PFAS restrictions, CSO controls, and agricultural nutrient limits to stay ahead of compliance shifts.



Climate change poses material financial risks that can disrupt operations, increase costs, and erode shareholder value. By embedding climate resilience into core business strategies, companies can protect assets, future proof supply chains, and unlock cost efficiencies. Acting now ensures long-term profitability and positions your organization as a leader in sustainable value creation.

## Climate Change is a Risk Accelerator in the Great Lakes

Climate change is fundamentally reshaping the Great Lakes basin, intensifying existing water, infrastructure, and ecosystem pressures. Warming temperatures, shifting precipitation patterns, and declining ice cover are altering hydrological cycles and ecosystem dynamics, while more extreme storms expose weaknesses in aging infrastructure and water management systems. Understanding and addressing these water-climate related risks requires basin-wide collaboration, adaptive planning, and coordinated corporate action.

Key climate-related vulnerabilities affecting the region include:

### Water stress and variability



Shifting rainfall and prolonged droughts are tightening water availability and driving growing competition among agriculture, energy, and industrial sectors and agricultural sectors.

### Extreme weather and runoff



More frequent and intense storms are overwhelming stormwater systems, increasing erosion, and introducing pollutants into waterways.

### Elevated regional risk



The southern Great Lakes, particularly Lakes Erie and Ontario, and Lake Michigan are most exposed due to dense urban development, intensive agriculture, and nutrient-heavy runoff.

### Declining water quality



Warmer waters, nutrient loading, and pollutant runoff are fueling harmful algal blooms and degrading freshwater ecosystems that underpin regional economies.

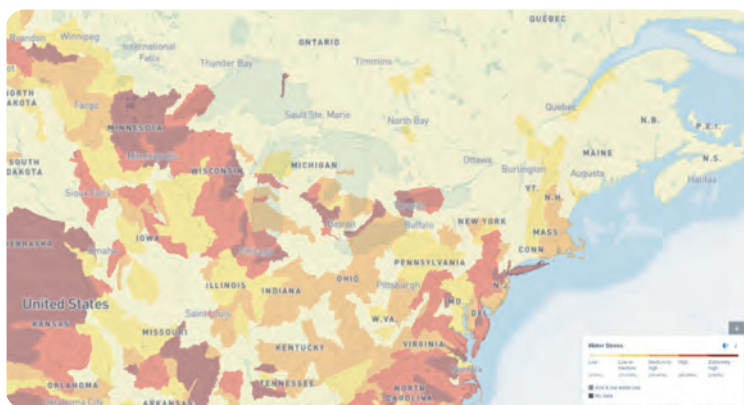


Figure 1: Water Stress, an indicator of competition for water resources, is defined informally as the ratio of demand for water by human society divided by available water. World Resource Funds Aqueduct Risk Atlas for the Great Lakes region.

### Aging and exposed infrastructure



Outdated water and energy systems are increasingly vulnerable to flooding, combined sewer overflows, and shoreline erosion.

### Financial and operational pressures



Rising utility costs, regulatory shifts, and supply-chain disruptions are increasing the cost of doing business in climate-sensitive basins.

# Incorporate the Circular Economy of Water

Businesses in the Great Lakes are uniquely positioned to lead. By reducing withdrawals, investing in shared watershed resilience, and aligning growth with water availability, companies can protect their long-term operations while strengthening the region's economic and ecological future.

## Reduce consumptive use at facilities:



Expand water recycling, reuse, and closed-loop cooling to maintain return flow requirements under the Great Lakes Water Resources Compact and reduce exposure to future allocation constraints.

## Co-invest in local watershed resilience:



Partner with local stewardship groups, watershed councils, and research projects to restore wetlands, floodplains, and infiltration systems that stabilize supply and reduce runoff.

## Align growth and procurement with basin water risk:



Use sub-basin water availability and withdrawal intensity mapping to inform where (and how) facilities expand, source materials, and operate, particularly in more stressed regions like the Western Lake Erie and Southern Lake Ontario basins.



Embedding water stewardship policies into governance structures ensures accountability, consistency, and long-term impact. By integrating clear standards and oversight into decision-making, companies can align leadership priorities, mitigate risk, and drive enterprise-wide sustainability performance. Acting now positions your organization as a model of responsible governance and strategic foresight.

## Great Lakes Policies

The Great Lakes are governed by a complex system of U.S., Canadian, Tribal/First Nations, state, and provincial policies. Foundational agreements, such as the Great Lakes Water Quality Agreement (GLWQA) and the Great Lakes–St. Lawrence River Basin Water Resources Compact, have long protected the region from major diversions, pollution, and uncoordinated development. Binational oversight from the International Joint Commission (IJC) further supports monitoring, accountability, and shared decision-making.

Existing governing frameworks were shaped by past conditions and offer valuable platforms for future progress. Today, climate variability, aging infrastructure, emerging contaminants, and new industrial water demands are outpacing existing regulations. Fragmented enforcement and uneven state/provincial policies make basin-wide planning difficult.

## Policy-Relevant Stressors Affecting the Great Lakes

Despite strong agreements, the Great Lakes continue to face stressors that stretch the limits of current policies and enforcement systems.

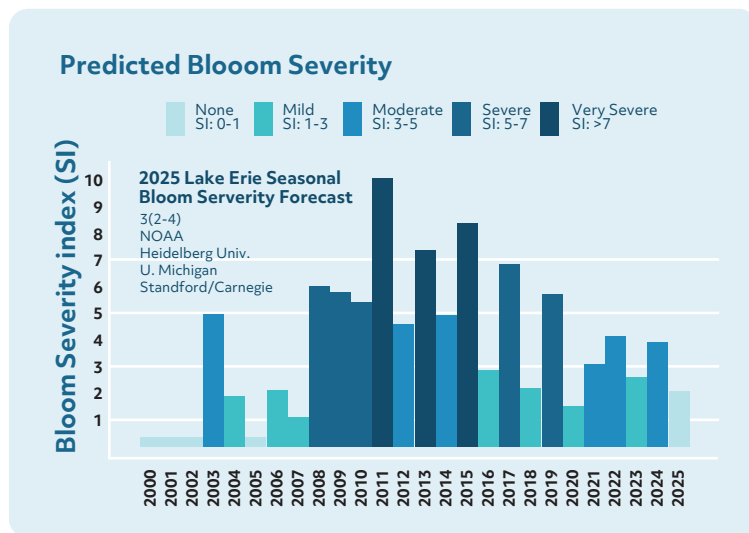
### Persistent Stressors

- ❖ Toxic and legacy contaminants driving costly cleanup programs and new regulatory expectations.
- ❖ Invasive species and habitat loss threatening restoration and monitoring efforts.
- ❖ Emerging contaminants (PFAS, pharmaceuticals, microplastics) that move faster than regulatory updates.
- ❖ Combined sewer overflows (CSOs) from aging infrastructure and severe storms.
- ❖ Nutrient pollution and harmful algal blooms (HABs), underscored by events like the 2014 Toledo Drinking Water Crisis (considered a moderate year according to NOAA's Predicted Bloom Severity Index).

### On the Horizon: Emerging Policy Pressures

- ❖ Climate volatility increasing drought, flooding, and variable lake levels.
- ❖ Water-intensive industries (data centers, EV/battery manufacturing, food processing) escalating local demand and scrutiny.
- ❖ Aging infrastructure and affordability challenges putting utilities and compliance at risk.
- ❖ Energy–water nexus impacts, including thermal discharges and high cooling-water use.
- ❖ Uneven binational policy evolution, creating coordination gaps across jurisdictions.

These pressures reveal where policies remain strong, and where they are increasingly insufficient. The region will need modernized regulations, harmonized standards, and active corporate participation to keep pace with future water challenges.



"Predicted Harmful Algal Bloom Severity in Lake Erie for 2025, National Oceanic and Atmospheric Administration"

## Where to Start?

### 1. Scale Corporate Stewardship Beyond Individual Projects

Many companies engage in voluntary water initiatives, but basin-wide conditions require far broader action. Businesses can lead by integrating water risk into core strategy, supporting basin priorities, and accelerating change across their supply chains.

### 2. Champion Modern, Effective Water Governance

The most impactful business actions lie outside the facility boundary. Companies can support policy reforms that improve water allocation, regulate land use, strengthen monitoring, and protect ecosystems. Strong governance across jurisdictions ensures long-term water security, operational certainty, and economic stability.

### 3. Invest in Cross-Sector Collaboration and Shared Data

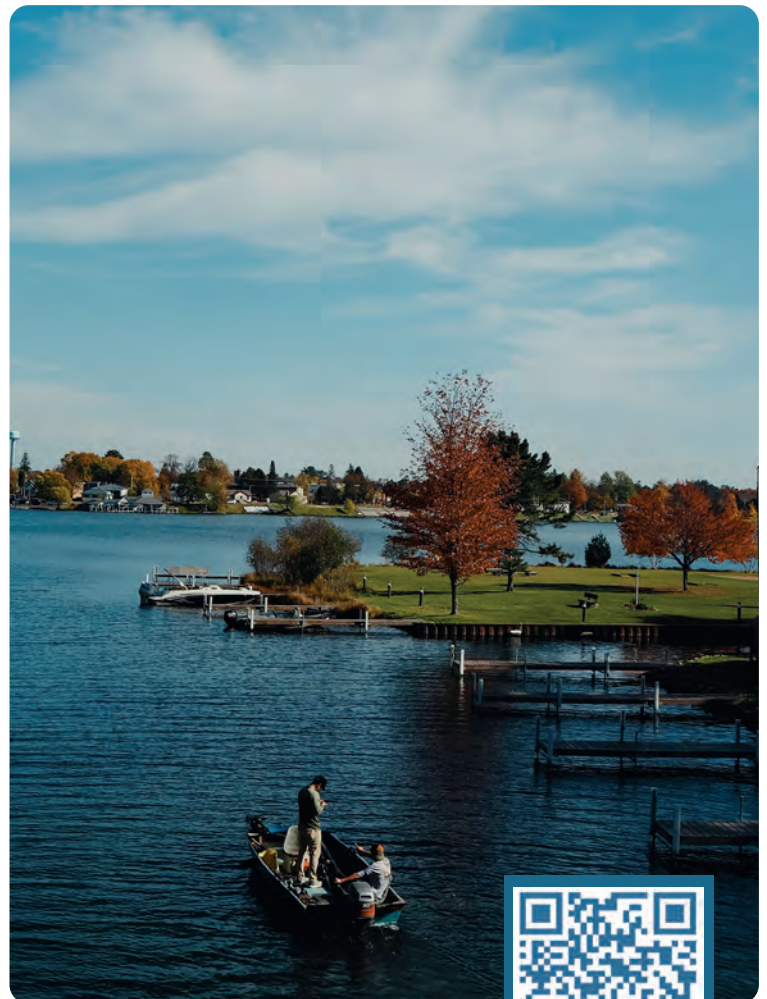
Water challenges overlap with climate, agriculture, energy, transportation, and land development. Businesses can amplify their impact by joining basin partnerships, supporting shared monitoring networks, and working with governments, utilities, and Indigenous nations on watershed priorities.

### 4. Support Consistent, Enforced Policy Frameworks

Uneven enforcement creates uncertainty and undermines progress. Businesses benefit from clear, harmonized, well-enforced regulations that create a level playing field and reduce compliance risk.

## Water Stewardship for Resilient Futures

- ❖ **Integrate Water Risk into Core Strategy**  
Move beyond site-level projects—embed water stewardship into corporate governance, supply chains, and investment decisions.
- ❖ **Champion Modern Water Governance**  
Advocate for policy reforms that strengthen allocation, monitoring, and ecosystem protection across jurisdictions.
- ❖ **Invest in Cross-Sector Collaboration**  
Join basin partnerships, share data, and work with governments, utilities, and Indigenous nations to address interconnected water challenges.
- ❖ **Support Harmonized, Enforced Regulations**  
Push for consistent, well-enforced policies that reduce compliance risk and create a level playing field for all stakeholders.
- ❖ **Accelerate Innovation for Emerging Threats**  
Fund solutions for PFAS, microplastics, and aging infrastructure to stay ahead of regulatory and operational risks.
- ❖ **Prepare for Climate and Industrial Pressures**  
Incorporate climate volatility and water-intensive industry trends into long-term planning and resilience strategies.



In a competitive, purpose-driven marketplace, ignoring water risks is not an option. By prioritizing water stewardship, businesses unlock strategic value, reducing costs, mitigating risk, and strengthening stakeholder trust. Lead boldly and turn vulnerabilities into opportunities for growth.

Only 1% of the Great Lakes' water is replenished annually, and unchecked growth in energy and cooling demand could lead to groundwater depletion, ecosystem impacts, and regulatory risk. Lead the way in water stewardship by investing in strategies that cut water use and unlock energy savings. By implementing energy-efficient water systems and leveraging resource recovery, companies can significantly cut emissions while improving operational performance. Proactive planning positions your organization as a leader in sustainability and resilience.



## The Water–Energy Nexus in the Great Lakes

Water and energy are inseparable; every drop of water requires energy to move, treat, and heat, while nearly every form of energy production relies on water for cooling or processing. In the Great Lakes region, where industries, utilities, and communities draw from the same shared systems, this interdependence creates both risk exposure and major opportunities for innovation.

Historically, corporate water strategies in the region have focused on site-level efficiency. But hidden water use embedded in energy systems, particularly in electricity, heating, and cooling, means businesses often underestimate their true water footprint. As climate variability, industrial growth, and energy transitions put new pressure on the basin, companies must adopt a more integrated approach that considers the water–energy nexus at both operational and basin scales.

### A Region at a Turning Point

Great Lakes industries are entering a period of rapid technological change. Data centers, AI infrastructure, grid expansions, renewable energy, and electrification all carry different water demands and thermal impacts. In the Great Lakes region, the interdependence between water resources and energy production is particularly significant.

**Electric Power Generation Dominates Water Use -** About 70% of reported Great Lakes water withdrawals in 2023 were for thermoelectric power generation, primarily for cooling at coal, gas, and nuclear plants. While most of this water is returned to the watershed, some is lost through evaporation.

**Data Centers Drive Indirect Energy Demand -** Hyperscale data centers require massive amounts of electricity and water for cooling. Their growth increases energy demand, which in turn drives water use at power plants. Hyperscale centers can use millions of gallons per day for evaporative cooling, most of which is consumptive.

**Feedback Loop -** More data centers with higher electricity demand leads to more water needed for power generation which increases stress on water resources. This creates a cumulative water footprint that includes both direct associated with cooling and indirect water use for power generation.

**Efficiency and Risk -** While consumptive water use for power generation has declined since 2015, this trend is at risk as energy demand surges. Some states are reopening nuclear plants and building new gas plants to meet data center-driven load growth. Seasonal peaks, specifically hot summers, amplify water and energy needs simultaneously.

These trends raise the stakes, but also unlock opportunities. Finland's district-heating model, where waste heat from data centers now warms entire city districts, offers a powerful blueprint. Similar innovations in the Great Lakes, recovering waste heat, switching to air-cooling, or co-locating facilities with circular energy systems, could reduce withdrawals, cut emissions, and strengthen grid and water resilience.

# Why the Nexus Matters for Business

Water stewardship is a strategic investment that delivers measurable benefits across the organization, workforce, community, and brand, including:

## 1. Water and Energy Are Inseparable

Cooling, processing, and electricity generation all rely heavily on water, while energy powers treatment, pumping, and reuse. Treating them as separate issues limits savings and blindsides risk planning.

## 2. Data Centers Highlight Both the Risk and the Opportunity

Data centers are growing water users, but they also offer unique circular opportunities. Waste heat recovery can reduce cooling needs, support district heating, cut emissions, and lower overall water demand in surrounding communities.

## 3. Integrating Water, Energy, and Climate Goals Unlocks Co-Benefits

Water stewardship aligned with climate adaptation, emissions reduction, and circular economy planning delivers larger returns:

- Lower operational costs
- Reduced business risk
- Improved resilience
- Stronger alignment with Great Lakes policy priorities

## 4. Efficiency Delivers Immediate Cost and Performance Gains

Water-efficient cooling, closed-loop systems, smart meters, and optimized pumping schedules reduce both water withdrawals and energy demand, a dual savings opportunity often overlooked.

## 5. Competition for Shared Resources Is Increasing

Industrial users, public water systems, agriculture, and the energy sector all draw from the same basin. Integrating water-energy planning helps businesses anticipate pressures, reduce conflict risk, and support long-term Great Lakes resource security.

# Strengthen the Water–Energy Nexus in Your Strategy

The Great Lakes region faces mounting pressure from energy-intensive industries and climate variability. With 70% of water withdrawals tied to power generation and hyperscale data centers driving unprecedented demand, integrating water–energy thinking into your planning is no longer optional—it's essential for resilience and compliance.

- 1. Quantify Embedded Water in Energy Use**  
Map water dependencies across cooling systems, heating, and your electricity mix to reveal hidden risks and costs.
- 2. Evaluate Waste-Heat Recovery & Energy Reuse**  
Identify opportunities to capture and repurpose heat from industrial processes or data centers to reduce both water and energy footprints.
- 3. Align Cooling & Energy Upgrades with Basin Conditions**  
Design systems that reflect local hydrology and seasonal variability to avoid stressing aquifers during peak demand.
- 4. Prioritize Clean Energy Sources with Lower Water Footprints**  
Shift toward renewables and technologies that minimize water consumption compared to coal, gas, or nuclear generation.
- 5. Engage in Regional Planning with Utilities & Municipalities**  
Collaborate on integrated water-energy strategies to ensure sustainable supply and avoid conflicts over shared resources.
- 6. Integrate Water–Energy Nexus Thinking into Sustainability, CAPEX & Resilience Planning**  
Embed these considerations into investment decisions, sustainability reporting, and risk management frameworks.



# Advanced Stewardship



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In a competitive, purpose-driven marketplace, ignoring water risks is not an option. By prioritizing water stewardship, businesses unlock strategic value, reducing costs, mitigating risk, and strengthening stakeholder trust. Lead boldly and turn vulnerabilities into opportunities for growth.

Water stewardship faces escalating challenges globally and regionally, including biodiversity loss, water scarcity, pollution, climate impacts, and infrastructure stress. Addressing these complex, shared water challenges requires innovative, collaborative, and measurable approaches that operate at multiple scales—from local catchments to global sectors.



## Insights from the Great Lakes

The Great Lakes region exemplifies the complexity of water stewardship, with pressures from climate change, population growth, industrial and agricultural water use, and emerging contaminants like PFAS and microplastics. Despite strong binational governance frameworks, water quality and quantity challenges persist. Corporate stewardship efforts focus on best management practices, water efficiency, reuse, and circular economy principles. Addressing data gaps, upgrading aging infrastructure, and fostering cross-sector partnerships are essential to build resilience and sustainability.

Freshwater ecosystems are in crisis, with biodiversity declining, driven by climate instability, water scarcity, and pollution. These trends underscore the urgent need for systemic solutions that go beyond isolated efforts. Traditional siloed approaches cannot address the complexity of shared water challenges, which require coordinated, science-based strategies to restore ecological health and secure water resources for people and nature. Advanced water stewardship combines collective action, multi-stakeholder collaboration at catchment scale, with robust measurement frameworks to ensure accountability and impact.



## Collective Action as a Foundation for Scale and Impact

Collective action, which is coordinated engagement among diverse stakeholders, is critical to achieving Sustainable Development Goal 6 on freshwater. Effective collective action requires trust, inclusive governance, clear roles, and alignment with formal water governance. Mapping high-opportunity catchments globally enables prioritization of efforts. New funding and governance models, such as catchment basket funds and a river system model of fund aggregation and redistribution, are proposed to enhance sustainability and scale. Conveners, often NGOs, must overcome competition by embracing transparent, multi-organizational collaboration.

## Accelerate Water Stewardship

### Collaborate at Scale

Unite water stewardship actors beyond organizational boundaries to implement collective action in priority catchments, leveraging shared governance and innovative funding models.

### Invest in Data and Infrastructure

Strengthen monitoring systems, close critical data gaps, and modernize infrastructure to enable adaptive, evidence-based water management.

### Adopt Measurable Practices

Apply credible frameworks such as VWBA 2.0 to ensure water stewardship activities deliver quantifiable benefits aligned with catchment needs and corporate commitments.

### Engage Broad Stakeholders

Include Indigenous peoples, local communities, governments, businesses, and NGOs in transparent, inclusive decision-making to build trust and shared ownership.

## VWBA Supports Collective Action Benefits

Volumetric Water Benefit Accounting (VWBA) has emerged as a global best practice for quantifying and claiming water benefits. VWBA provides a standardized, scientifically defensible method to measure outputs such as groundwater recharge, reduced withdrawals, improved water quality, and enhanced habitat conditions. By linking corporate water goals to catchment-level outcomes, VWBA enables organizations to credibly demonstrate progress toward replenishment and resilience targets while supporting biodiversity recovery. When integrated with collective action platforms and innovative financing models, VWBA ensures that interventions deliver measurable hydrological benefits and contribute to reversing ecosystem decline. Together, these approaches create a pathway for scaling water stewardship that is transparent, collaborative, and aligned with global sustainability objectives, and nature-positive commitments.



# Water Cost vs. Value



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Lead the way in water stewardship by investing in strategies that cut water use and unlock energy savings. Embed water valuation into corporate risk and sustainability frameworks, invest in water stewardship and nature-based solutions, and advocate for policies that reflect water's true value. Acting now will safeguard operations, unlock resilience, and position your organization as a leader in climate and resource security.

## Closing the Water Value Gap

Water is priced far below its true worth, creating an illusion of abundance. Water is essential to life, ecosystems, and economies. It underpins nearly every product and service, yet its market price rarely reflects its full value. This disconnect is especially visible in the Great Lakes region, where water is plentiful but increasingly strained by climate change, pollution, aging infrastructure, and population growth.

Despite its central role in regional prosperity, water remains consistently undervalued, both in financial accounting and in public perception. Addressing this gap requires a more holistic view of water's full value. Integrating that value into planning, investment, and policy decisions is essential to sustaining the Great Lakes and ensuring long-term resilience for communities and businesses alike.

### Business Decisions Overlook Real Risk

Most business decisions rely on visible costs, utility rates, treatment fees, and infrastructure charges. But the true value of water is far broader. When companies rely solely on market prices, they miss critical risks that shape long-term competitiveness and resilience.

This disconnect leads to underinvestment, missed risks, and water strategies that fall short of basin needs. It prevents businesses from fully accounting for:

- Environmental impacts: habitat loss, pollution, declining biodiversity
- Human health risks: contamination, reduced access to safe water
- Operational exposure: future scarcity, regulatory tightening, rising treatment costs
- Cultural and social value: especially for Indigenous communities
- Long-term economic impacts: climate pressures, infrastructure strain, basin-wide water stress

Understanding these dimensions is essential for credible corporate stewardship.

## Core Gaps For Businesses to Better Understand The Value Of Water:

To align corporate strategy with the real value of water, companies need to close several persistent gaps:

### Water is systemically undervalued



Utility prices overlook scarcity, climate risk, and the true cost of degradation. This makes it harder to justify investments in conservation, reuse, or pollution prevention.

### A full valuation is essential for risk planning



Real business risk comes from non-market impacts: ecosystem decline, rising treatment costs, human health pressures, regulatory change, and future scarcity. Ignoring these leads to higher operating costs and reduced resilience.

### Societal value extends beyond "volumetric benefits"



The impact of one gallon saved depends on context. The aim is to try to quantify broader benefits, community health, avoided pollution, and local ecosystem value.

## “Net positive water” can be misleading



Without clear definitions, many projects overstate benefits or focus on small, short-term gains. WWF and others recommend more precise, context-based terms that reflect real basin outcomes.

## Water is local, variable, and multi-dimensional



Unlike carbon, each watershed has its own challenges, quality, accessibility, seasonality, governance. Generic goals fail unless customized to basin conditions.



# Call to Action: Take A More Complete View of Water Value

Leading companies are moving beyond utility bills to incorporate water’s intrinsic and contextual value into planning, investment, and governance engagement. This shift strengthens business resilience, reduces long-term costs, and positions companies as responsible partners in the region.

Best practice includes:



**Context-based water valuation:** Assessing water importance and risks based on local basin conditions



**Accounting for non-market impacts:** Integrating ecosystem services, community benefits, and regulatory exposure into strategy and financial planning



**Scenario planning:** Modeling how future scarcity, climate variability, and policy changes influence operations and supply chains



**Investing in basin health:** Supporting restoration, infrastructure upgrades, and nature-based solutions that benefit shared water resources



**Aligning with leading frameworks:** Using AWS, NPWI, and SBTN freshwater guidance to connect corporate actions to basin-wide needs

By valuing water more realistically, businesses can make smarter decisions, reduce long-term risk, and contribute to a more resilient Great Lakes region.



# Collective Action



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Collective action creates shared value for businesses, communities, and ecosystems alike. By partnering across sectors to address shared water challenges, companies can drive innovation, strengthen stakeholder trust, and deliver benefits that extend beyond individual operations. Acting now positions your organization as a catalyst for sustainable growth and collaborative impact.

## Collective Action: A Cornerstone of Basin Stewardship

Water challenges in the Great Lakes are local, shared, and cross boundaries. Nutrient pollution, algal blooms, aging infrastructure, and CSOs affect multiple communities, industries, and jurisdictions. Because these pressures extend far beyond any single site or property, meaningful progress depends on collective action, coordinated efforts among governments, Indigenous Nations, businesses, utilities, NGOs, and communities to achieve basin-level outcomes.

Effective collective action depends on strong stakeholder engagement. This ensures water decisions reflect local priorities, cultural values, and the rights of those most impacted, especially Indigenous Peoples and historically marginalized groups. Engagement must be ongoing, transparent, and grounded in shared accountability.

## Five Key Benefits of Collective Action

### 1. Maximize Investment Impact



Pooling resources across brands and partners expands reach, reduces duplication, and accelerates basin-scale progress that no single company could achieve alone.

### 2. Accelerate Uptake of Stewardship Practices



Pre-competitive collaboration speeds adoption of water stewardship in shared sourcing regions by building communities of practice and mobilizing action more quickly.

### 3. Strengthen Industry Alignment



Collective action reduces the burden on suppliers by replacing scattered, one-off corporate requests with a harmonized, industry-wide approach to water-related expectations.

### 4. Make Credible, Verifiable Claims



Engaging through AWS-aligned programs enables companies to make trusted, third-party-supported claims about water stewardship performance.

### 5. Reduce Costs Through Shared Models



Shared project design, implementation, and monitoring lower overall costs and create scalable, replicable approaches across facilities and supply chains.



# Corporate Takeaways for Collective Water Action

## Shared Challenges Require Shared Solutions



Operational efficiency alone cannot influence basin conditions. Collective action allows companies to align priorities and address root causes, improving water quality, availability, and ecosystem health at a meaningful scale.

## Strengthen License to Operate Through Inclusive Engagement



Early, authentic engagement with communities, Indigenous Nations, and local stakeholders builds trust, reduces conflict, enhances permitting outcomes, and strengthens long-term business resilience.

## Move Beyond Efficiency to Basin Impact



Stakeholder-informed initiatives such as wetland restoration, green infrastructure partnerships, and WASH projects create measurable basin improvements that reinforce corporate leadership and align with regional goals.

## Better Decisions Through Shared Knowledge



Engaging rights-holders and local experts improves risk assessments, enhances the credibility of targets, and ensures initiatives reflect basin realities. Shared data and monitoring deliver stronger, more context-based outcomes.

Governance Matters, Support It. Stronger governance ensures collective action is durable, enforceable, and scalable. Businesses can strengthen collective action by aligning with and supporting basin authorities rather than creating parallel efforts. This includes:

- ❖ Watershed management plans
- ❖ Municipal/state/provincial initiatives
- ❖ Business networks
- ❖ Tribal/First Nations leadership
- ❖ Transboundary coordination

## Water Stewardship & Collective Action

Water is no longer just an operational issue. It's a strategic imperative tied directly to business continuity, climate resilience, and shareholder value. Leading companies are elevating water stewardship, investing in efficiency and innovation to reduce risk and unlock cost savings, and setting bold, measurable targets aligned with global standards. By integrating water into financial models and mobilizing the entire value chain, executives can turn a critical risk into a competitive advantage and position their organizations as sustainability leaders.

### ❖ **Champion Water as a Strategic Priority**

Elevate water stewardship to the C-suite agenda—link water risk management to business continuity, climate resilience, and ESG performance.

#### **Invest in Efficiency and Innovation**

- ❖ Commit resources to advanced water efficiency, reuse technologies, and circular water systems to reduce operational risk and costs.

#### ❖ **Set Ambitious, Measurable Targets**

Establish clear water quality and withdrawal intensity goals aligned with SDG 6 and Science-Based Targets for Nature.

#### ❖ **Engage in Collective Action Platforms**

Join multi-stakeholder initiatives in high-risk catchments to scale impact, share costs, and strengthen governance.

#### ❖ **Integrate Water into Risk and Finance Models**

Incorporate water risk into enterprise risk management and capital allocation decisions; explore shared funding mechanisms for catchment projects.

### ❖ **Drive Transparency and Accountability**

Require robust monitoring, reporting, and integrity standards across operations and supply chains to build trust and credibility.

#### ❖ **Advocate for Policy and Incentives**

Use your influence to shape regulations and economic incentives that promote water stewardship and resilience.

#### ❖ **Mobilize Your Value Chain**

Establish clear water quality and withdrawal intensity goals aligned with SDG 6 and Science-Based Targets for Nature.

#### ❖ **Engage in Collective Action Platforms**

Extend water stewardship beyond your operations—engage suppliers and partners to reduce shared water risks.



# Volumetric Water Benefits Accounting



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In a competitive, purpose-driven marketplace, ignoring water risks is not an option. By prioritizing water stewardship, businesses unlock strategic value, reducing costs, mitigating risk, and strengthening stakeholder trust. Lead boldly and turn vulnerabilities into opportunities for growth.

Implementing VWBA builds credibility by providing transparent, science-based metrics for water stewardship outcomes. Independent, volumetric accounting demonstrates accountability, strengthens stakeholder confidence, and differentiates your organization as a trusted sustainability leader. Acting now ensures your water initiatives deliver measurable impact and recognized value.



## VWBA: A Common Language for Measuring Water Impact

Volumetric Water Benefit Accounting (VWBA) provides a consistent, science-aligned method for companies to quantify and communicate the real water benefits of their stewardship actions. By converting efficiency upgrades, water reuse, green infrastructure, or watershed restoration into measurable volumetric outcomes, VWBA shows how corporate projects contribute to improved hydrology and reduced basin stress.

In the Great Lakes region, VWBA helps companies link site-level actions to basin-wide outcomes, strengthening transparency, comparability, and accountability across sectors. While centered on volumetric gains, the framework also emphasizes that meaningful impact requires sustained hydrological improvements and attention to social, ecological, and economic co-benefits during project design.

As interest grows in water credits, replenishment claims, and water-benefit markets, VWBA plays a critical governance role by:



Ensuring hydrological benefits are real, additional, and not overstated



Providing a credible basis for any participation in emerging water-credit or replenishment programs



Differentiating genuine basin improvement from accounting-only claims

By complementing global frameworks, such as AWS, SBTN, and the Water Resilience Coalition, VWBA strengthens corporate reporting and supports more informed, accountable decision-making.

## Measuring Impact through VWBA

VWBA 2.0 provides a standardized, science-based framework for quantifying, tracking, and communicating the volumetric water benefits of stewardship activities. It guides practitioners through understanding local catchment context, selecting and evaluating projects, quantifying benefits with robust methods, planning and implementing projects, and making credible claims. VWBA supports corporate water goals by providing transparent, comparable metrics that reflect positive hydrological changes and help mitigate shared water risks.

VWBA provides a clear, practical structure for designing credible water projects:

### Step 1 – Identify Shared Challenges

Assess local hydrology, water users, and basin priorities through data and stakeholder input.

### Step 2 – Choose the Right Activities and Partners

Select interventions that directly address basin needs, clarify partner roles, and avoid unintended impacts.

### Step 3 – Measure Benefits with Defensible Data

Set baselines, choose appropriate indicators, and calculate volumetric benefits using transparent, science-aligned methods.

**Select Projects That Truly Matter** - VWBA is most effective when projects respond to actual basin challenges and have community buy-in. Choose actions that advance multiple benefits such as better water quality, improved access, or restored ecosystems.

**Make Claims That Are Credible and Clear** - Ground volumetric claims in reliable data and transparent assumptions. Always document:

- How benefits were calculated
- How attribution was assigned
- The timeframe being claimed

Independent verification strengthens credibility and public reporting.

**Connect VWBA to Your Broader Water Strategy** - VWBA works best when paired with existing frameworks (such as AWS, CDP Water Security, GRI 303, and SBTN freshwater guidance), linking project outcomes to a company's larger water and nature strategy.

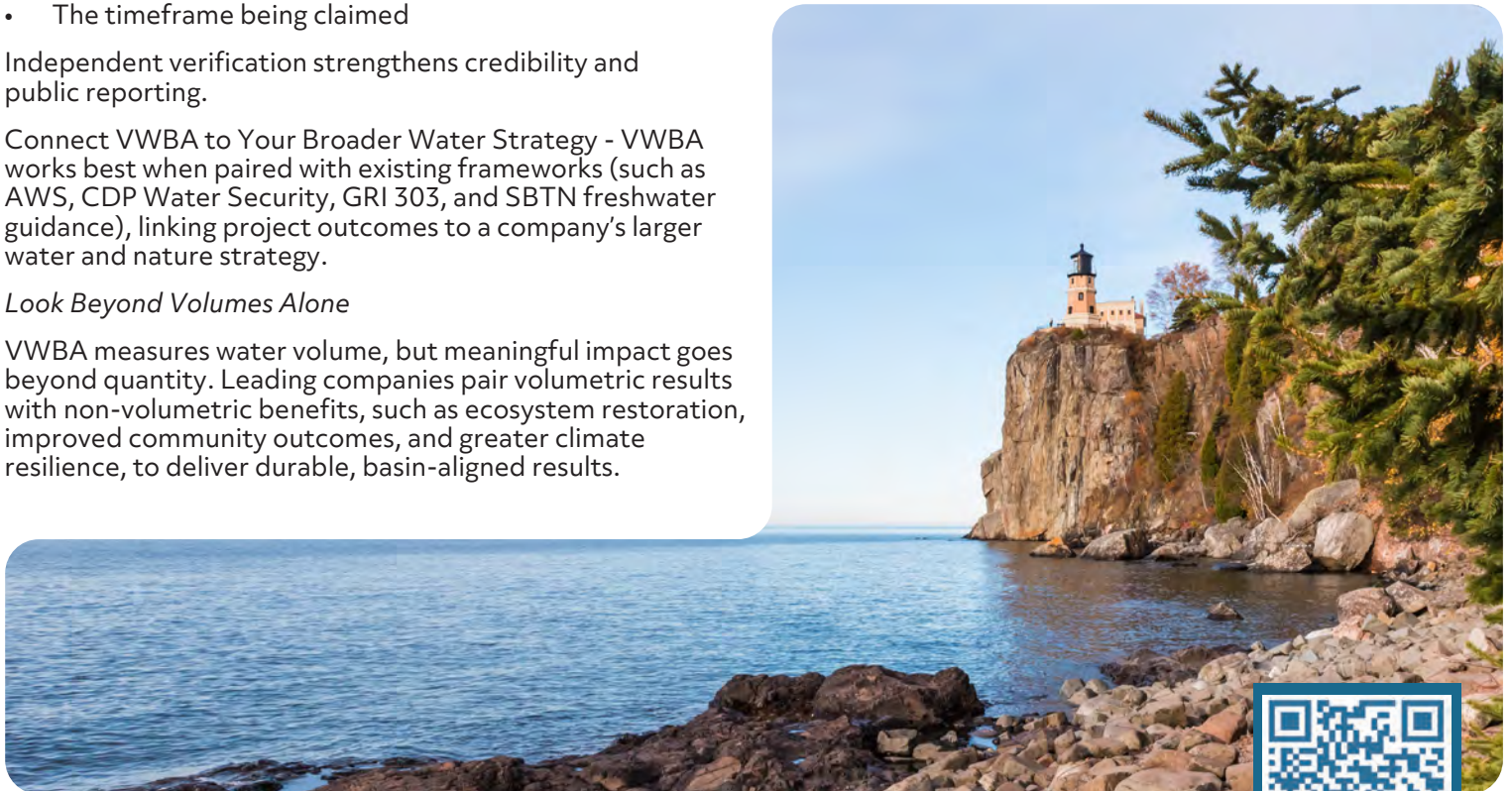
#### *Look Beyond Volumes Alone*

VWBA measures water volume, but meaningful impact goes beyond quantity. Leading companies pair volumetric results with non-volumetric benefits, such as ecosystem restoration, improved community outcomes, and greater climate resilience, to deliver durable, basin-aligned results.

## Adopt VWBA for Credible Impact

Water is a strategic business risk and a powerful lever for resilience and growth. To lead in a world where climate change amplifies water challenges, executives must act boldly and credibly. Here's how to set the standard for stewardship and deliver measurable impact:

- Adopt VWBA 2.0 as your benchmark for water stewardship accounting to ensure science-based, defensible claims that stand up to investor and stakeholder scrutiny.
- Integrate the VWBA process into your water strategy to align investments with shared catchment priorities and corporate objectives.
- Collaborate with trusted partners and fund projects that generate quantifiable volumetric benefits while delivering social, economic, and environmental value.
- Commit to transparent reporting and continuous improvement to build trust, demonstrate leadership, and accelerate progress toward SDG 6 and corporate water targets.
- Act now as water risks escalate, proactive stewardship is not optional; it's essential for resilience, reputation, and long-term business sustainability.



# Habitat Restoration Riparian Buffers



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Restoring riparian habitats is a strategic investment in resilience, water security, and biodiversity. By leading collaborative, science-based restoration projects, businesses can address root causes of basin degradation, reduce operational risk, and strengthen climate resilience. It's important to deliver credible, durable contributions to watershed health and long-term business value.

## Restoring Riparian Habitats to Benefit Basin Health and Corporate Water Stewardship

Healthy riparian zones and freshwater habitats are essential to the long-term resilience of the Great Lakes. Restoring wetlands, floodplains, and river corridors, or establishing vegetated buffers along waterways, is one of the most effective nature-based solutions (NbS) available to businesses. These actions strengthen water security, improve water quality, reduce flood risk, support biodiversity, and deliver visible climate and community benefits.

Unlike narrowly focused efficiency or replenishment projects, habitat restoration addresses the root causes of basin degradation. It improves hydrology, recharges groundwater, filters pollutants, stabilizes soils, and enhances ecological connectivity. These interventions align directly with leading frameworks, including the AWS Standard, Science Based Targets for Nature (SBTN), and global initiatives such as the Freshwater Challenge, positioning companies to deliver credible, durable contributions to basin health.

## Basin Realities That Shape Action

Riparian and habitat restoration is increasingly adopted by companies that recognize most water risks originate beyond the facility fence line. Successful projects reflect local watershed conditions and are developed in partnership with governments, Indigenous Nations, utilities, conservation groups, and community members.

Common restoration approaches include:



**Wetland restoration or rewetting to improve water storage, filtration, and aquifer recharge**



**Riparian buffer establishment using native vegetation to reduce erosion, shade streams, and trap pollutants**



**Floodplain reconnection to restore natural flows and reduce flood peaks**



**Reforestation, prairie restoration, and invasive species removal to stabilize soils and improve habitat quality**



**Green infrastructure (bioswales, rain gardens, permeable surfaces) to complement natural systems in developed areas**

Together, these interventions improve water quality, strengthen hydrologic function, enhance biodiversity, and increase resilience to climate impacts.

# Call to Action: Lead Through Restoration

To maximize impact and credibility, companies should:

- Collaborate with watershed groups, conservation districts, and Indigenous Nations
- Prioritize projects that address shared basin needs, not just corporate priorities
- Integrate restoration into facility planning, land-use decisions, and supplier engagement
- Pair restoration with AWS, SBTN, VWBA, and WRC frameworks for stronger governance and monitoring
- Support public funding and policies that protect wetlands, rivers, and critical habitats
- Restoration delivers the highest value when it is collaborative, science-based, and aligned with watershed priorities.

## Riparian Restoration in the Great Lakes Basin

Invest in riparian and habitat restoration to secure water resources, reduce risk, and deliver lasting business and community value.



### Reduce Operational & Compliance Risk

- Improve water quality and reduce treatment costs
- Stay ahead of tightening regulations on nutrients, sediment, and PFAS



### Strengthen Climate & Flood Resilience

- Use natural infrastructure to absorb stormwater and reduce flood peaks
- Lower insurance exposure and prevent costly service disruptions



### Protect Long-Term Water Supply

- Enhance groundwater recharge and maintain reliable baseflows
- Secure stable water availability for future operations

## Restoration Projects Make Strong Business Sense

Restoration is not just an environmental contribution, it is a strategic investment that reduces risk, strengthens resilience, and delivers long-term business value.

### Reduce Operational & Compliance Risk -

Wetlands and riparian buffers improve water quality, filter pollutants, and stabilize flows. This reduces treatment costs, minimizes downtime during storm events, and positions companies ahead of tightening regulations on nutrients, sediment, and PFAS.

### Strengthen Climate & Flood Resilience -

Restored habitats act as natural infrastructure, absorbing stormwater and reducing flood peaks. The result: fewer service disruptions, reduced asset damage, lower insurance exposure, and greater continuity across operations and supply chains.

**Protect Long-Term Water Supply -** Restoration enhances groundwater recharge, maintains reliable baseflows, and supports cleaner, cooler water. For water-dependent industries, this is a direct investment in stable long-term water availability and reduced future competition for resources.



Collaborate with watershed groups, Indigenous Nations, and conservation districts



Align projects with AWS, SBTN, VWBA, and WRC frameworks for credibility



Integrate restoration into facility planning and supplier engagement



Support policies and funding that protect wetlands and riparian zones

