THE NEXUS OF CORPORATE AND MUNICIPAL WATER CHALLENGES

IDENTIFYING OPPORTUNITIES FOR COLLABORATION

LimnoTech

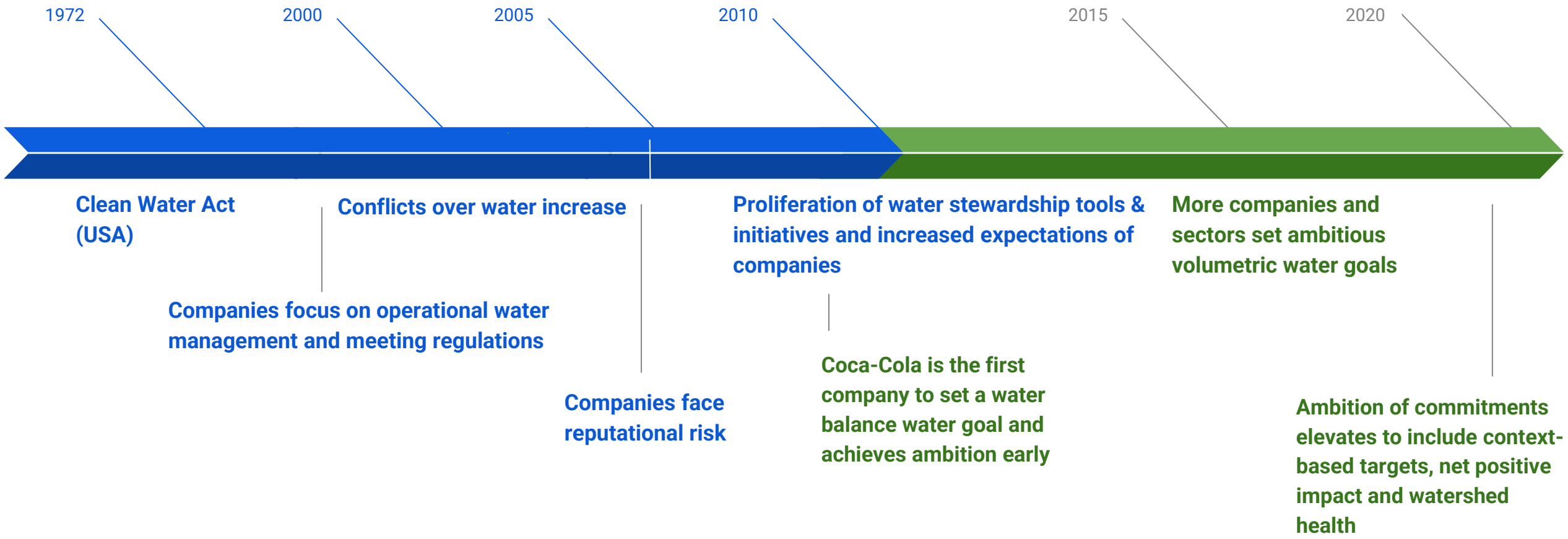
AGENDA

- Evolution of the corporate water landscape
- Municipal and corporate water management
  - Challenges faced
  - Synergies in addressing shared water challenges
- How potential projects are evaluated
- Examples applications & DOEE case study
- Summary and questions

WHY?

Timeline of Corporate Water Landscape

Evolution from **operational water management** to **water stewardship**



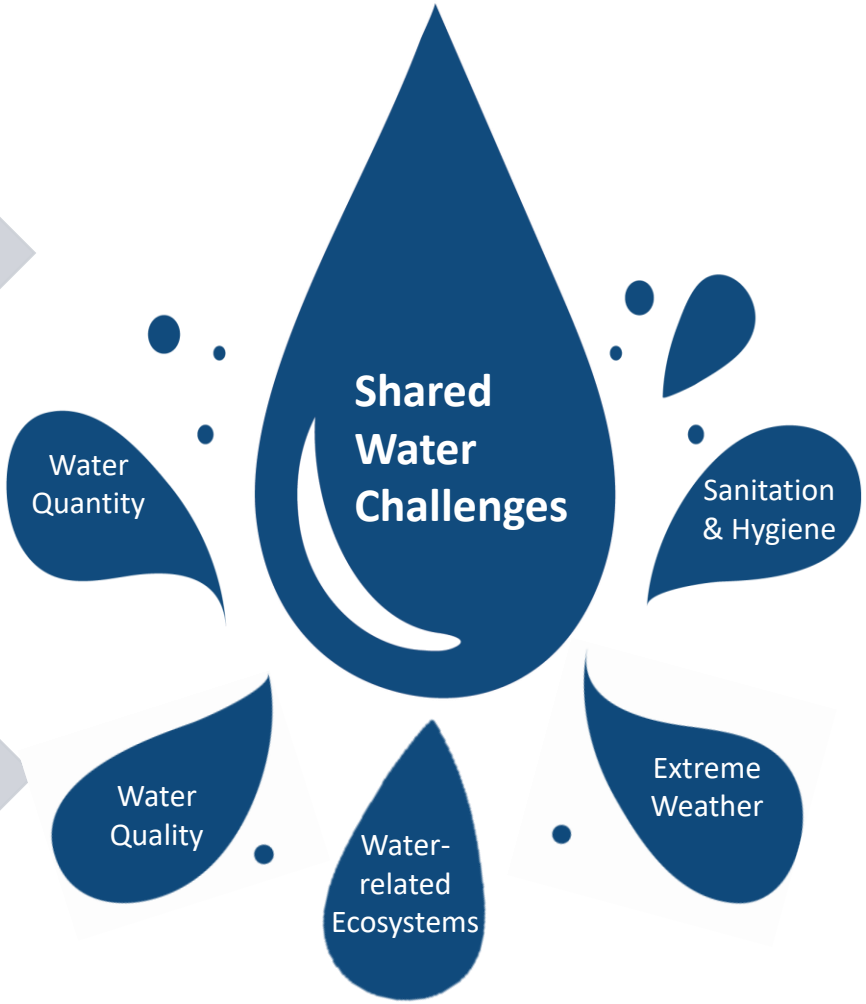
Municipal & Corporate Water Management

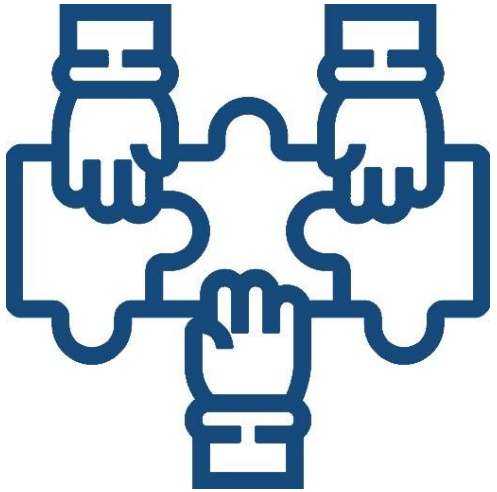
Government

- Have regulatory & other goals to achieve
- Funding is often scare

Corporations

- Have set water stewardship goals
- Challenge identifying projects to achieve these goals by 2030

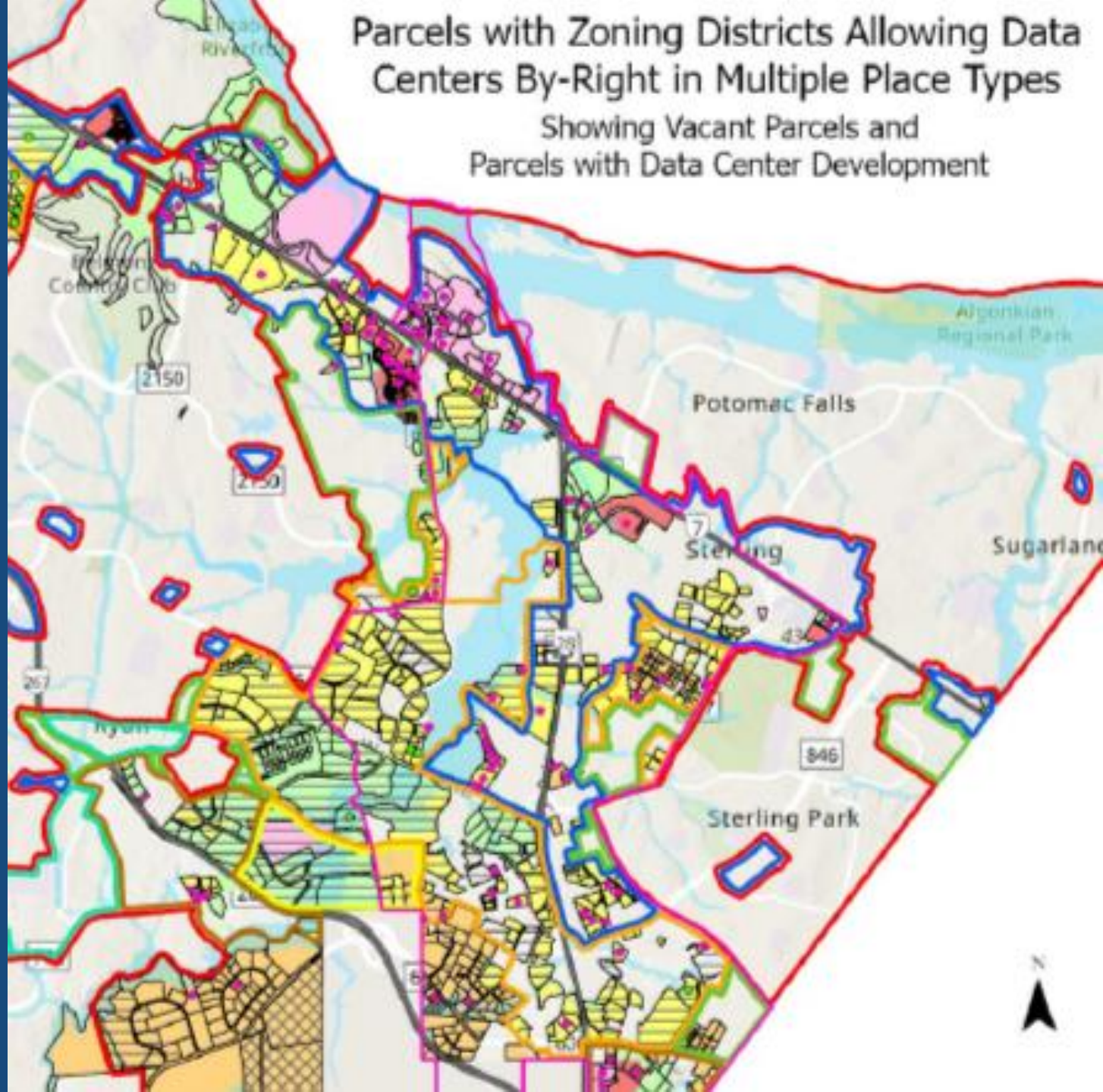




Collaboration!

Municipalities:

- Must meet regulatory requirements by set deadlines
- Have limited funding to implement projects
- May have already identified potential projects or needs in previously developed plans (e.g., Master Plan, CIP, MS4 Program Plan, Needs Assessments)



Corporations:

- Technology, food and beverage, pharmaceutical, textile, and other companies located around the United States and around the world have set sustainability goals
- Are looking for projects to:
  - To help “offset” (replenish) water used in manufacturing, operations, etc.
  - Address other co-benefits (public need, ecological, etc.)
- Often have funding for projects

2030: Aim to return a cumulative total of **two trillion liters** of water to nature and communities globally.

Work with partners to help improve the **health of 60 watersheds** identified as most critical for the company's operations and agricultural supply chains.

2030: Replenish 120% of the fresh water they consume, on average, across all Google offices and data centers, and **improve the health of the local watersheds** where office campuses and data centers are located.

2025: **100% of communities** in high-stress operating areas will have measurably improved water availability and quality and 100% of our direct farmers will have **measurably improved water availability and quality.**

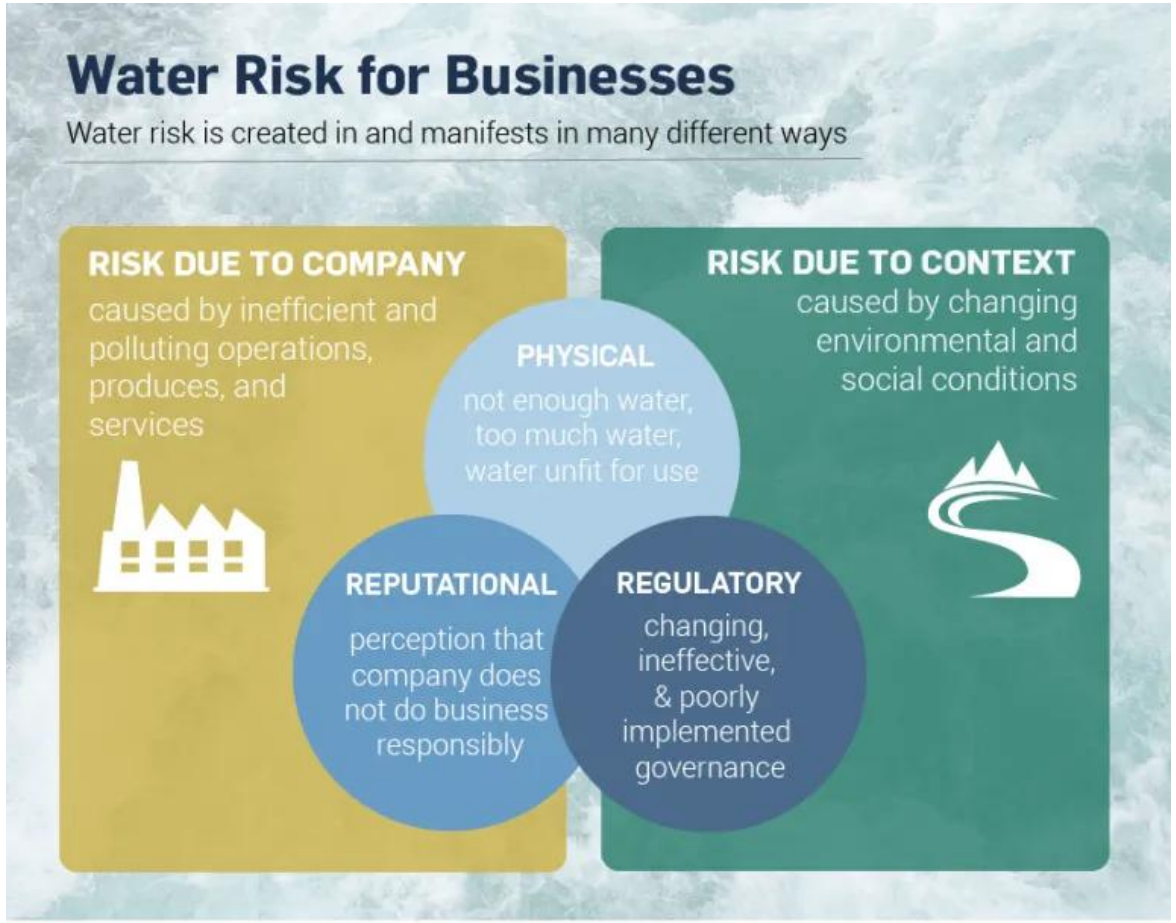
2030: Enable **restoration of 600 billion liters of water** and **reduction of 5,000 metric tons of water pollutants** in water-stressed regions and enable improved access to safe drinking water and sanitation, reaching 500,000 people in priority communities.

2030: Achieve a **net-positive water impact** in our operations. Replenish greater than 50% of water withdrawal at sites that operate in high-risk watershed and r**educe water withdrawal by 40%** per unit of production across our enterprise.

2030: Reduce water consumption across our global operations and be water positive, **replenishing more water than we use.**

2030: 50% of water withdrawal will be **conserved or replenished** across their direct operations, stores, packaging, and agricultural supply chain from FY19, prioritizing action in high-risk water basins while **supporting watershed health, ecosystem resilience, and water equity.**

Business Case for Corporate Water Stewardship: Water Risk



Water risk stems from watershed context:

- Companies face water-related risks that **cannot be resolved solely through operational** water management.
- Many companies invest in both **technology and watershed health** projects in the watersheds they rely on to mitigate risks

A responsible business should:

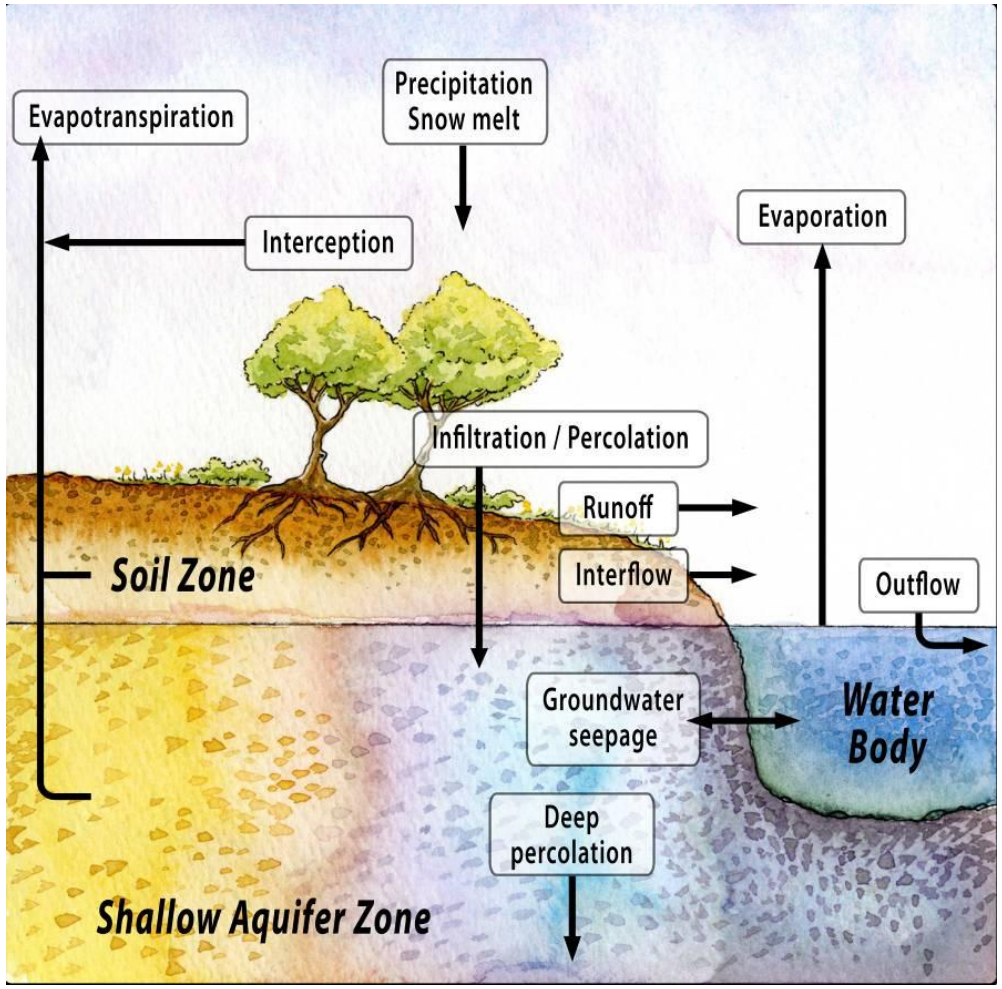
- Use the resource **as sustainably as possible**
- **Look beyond the fence line** for collective action initiatives that are impactful at the watershed scale
- **Engage with stakeholders** to address shared water challenges
- Aspire to achieving a **net positive impact**

HOW?

WHAT IS “REPLENISH”?

- Companies commonly set targets that **“balance”** their consumptive water use
- Typically achieved through off-site water stewardship projects that yield **volumetric water benefits** (VWBs), along with on-site efficiency projects that reduce consumptive water use
- Volume benefit that is counted against the corporate target is often referred to as a “replenish benefit”

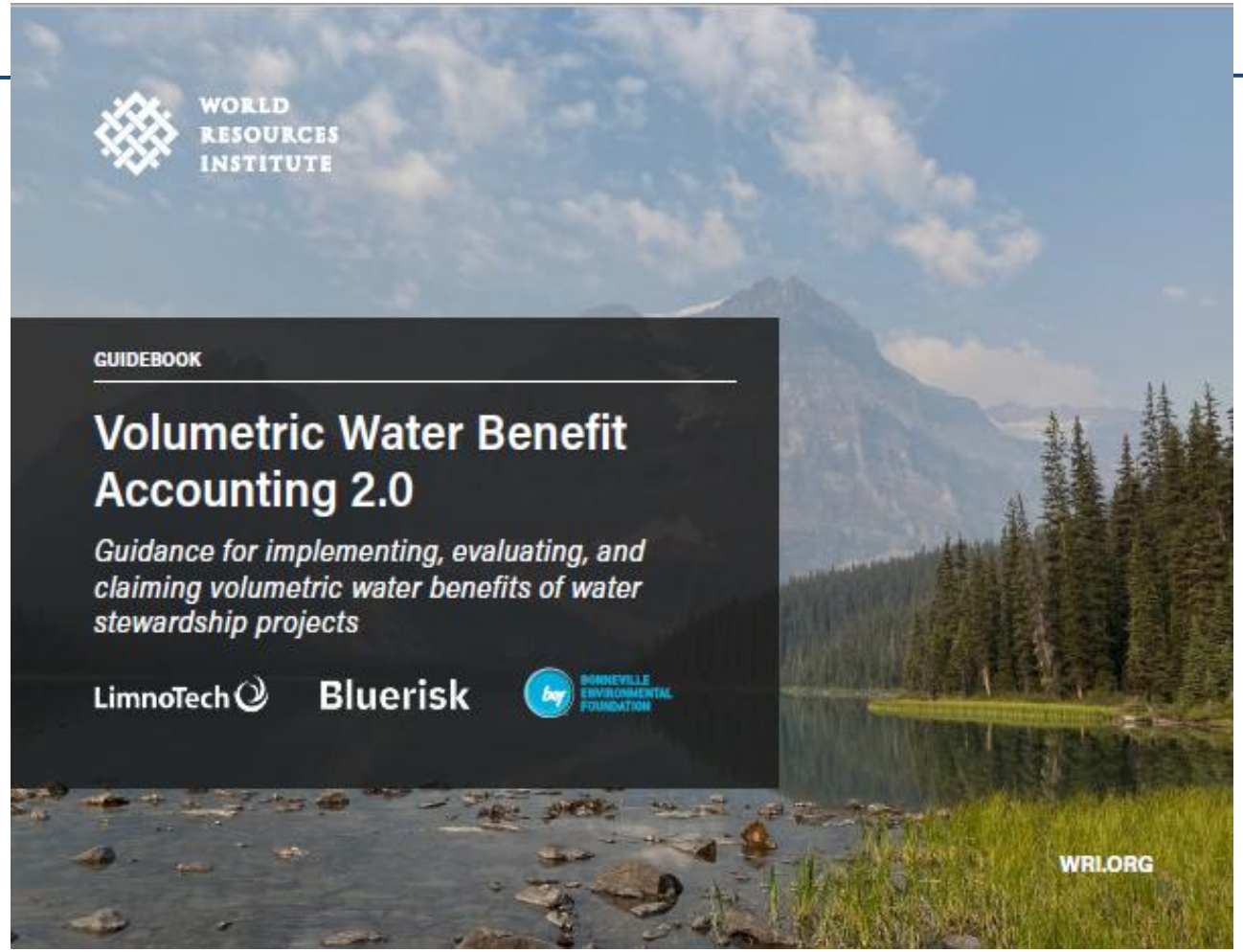
VWB: The volume of water resulting from water stewardship activities, relative to a unit of time, that **modifies the hydrology in a beneficial way** and/or **helps reduce shared water challenges**, improves water stewardship outcomes, and meets the targets of Sustainable Development Goal 6 *(Reig et al., 2019)*



QUANTIFYING PROJECTS

Guidance for implementing, evaluating, and claiming volumetric water benefits of water stewardship projects

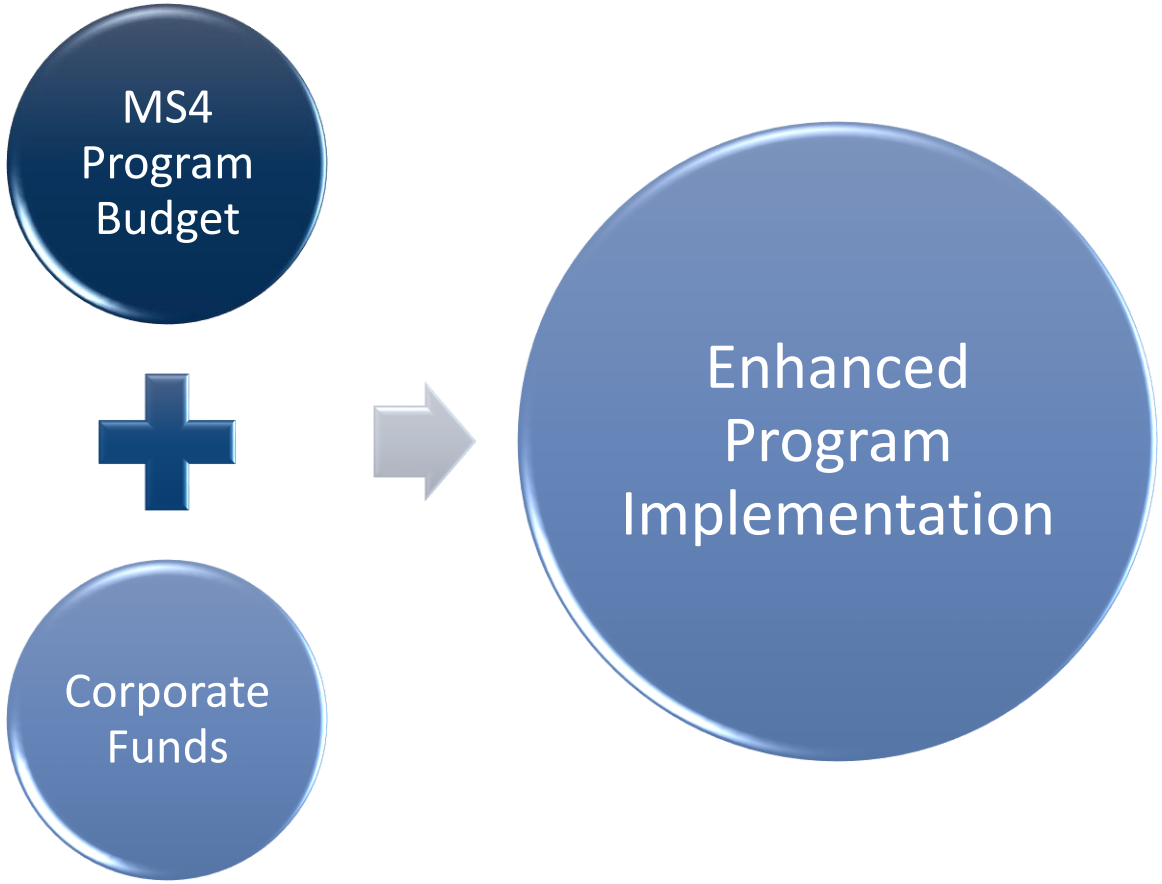
- Consistent methodology used across corporate replenish programs
- Applicable across a range of complex and diverse project types and geographies
- Project eligibility criteria and selection considerations
- Principles for making credible VWB claims and tracking and reporting
- Updated VWB calculation methods in 2025 release



https://www.wri.org/research/volumetric-water-benefit-accounting-2-0

Factors for Consideration

- Additionality (aka “added value”)
  - Going beyond what is required by regulations or “business as usual”
- Capital Stacking
  - Combining sources of funding
- Collaboration with NGOs
  - Opportunities for improved communication and relationships
  - Mechanisms for the flow of funding



Principles for Determining Water Stewardship Project Eligibility

Source: [Volumetric Water Benefit Accounting 2.0]

Eligibility Criteria: "Must Haves"

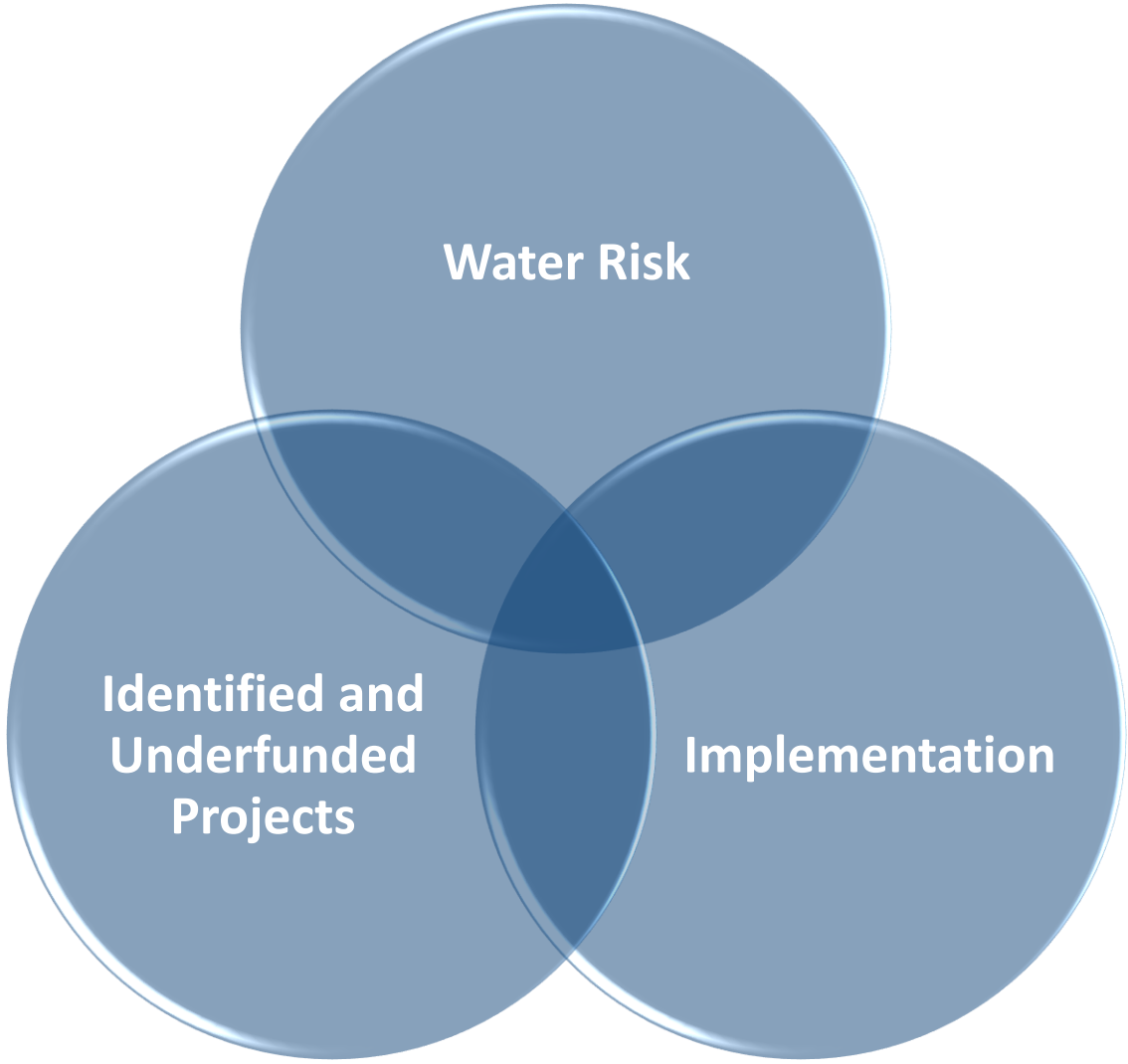
1. Established pathway for a **quantifiable** Volumetric Water Benefit
2. **Water challenges addressed** that are **relevant** to the catchment or area of interest
3. Internal **buy-in and general support** from external water resources entities
4. **Change delivered** beyond the without-project conditions that **would not have happened without the activity**
5. Established pathway to **track** project volumetric outputs
6. **Tradeoffs** assessed, understood and minimized

Project Selection Considerations: For Ranking and Prioritization

1. **Minimal risk** of project failure or underperformance
2. Project **implementer readiness** and capacity
3. Clarity on **project costs** and cost shares among funders
4. Feasible project **implementation timeline**
5. Anticipated **duration of VWBs** consistent with desired timeline
6. **Location relevant** to stewardship goals
7. Opportunity to deliver **multi-benefits**
8. **Enabling** projects
9. **Innovative strategies**
10. Opportunity for **collaboration**

CORPORATE-MUNICIPAL COLLABORATION

- Collaboration can happen multiple ways
  - Competitive RFPs from corporates
  - Direct collaboration with a corporate entity
  - Collaboration with non-profits
  - Project “scoping” by region



WHAT?

EXAMPLE PROJECTS

Stormwater Capture Project

Location	Atlanta, GA (on city land)
Shared Water Challenge	Localized flooding in an area with fallow land and abandoned
Activity	Stormwater management including rain garden, bioswales, underground detention system, development of park
Partners	City of Atlanta, Corporate Environment & Sustainability Group, Park Pride
Project Funding Support	70% of funding provided by corporate partners
Co-benefits	Rejuvenation of the neighborhood, decreased pollutant loading to sewers/streams

Site-Scale Green Infrastructure Project

Location	Chicago, IL (on public park land)
Shared Water Challenge	Runoff causing flooding
Activity	Revitalizing a bioswale and addition of rain gardens
Partners	Center for Neighborhood Technology, Chicago FarmWorks and others providing technical support and volunteer labor
Project Cost	Approximately 50% of funding provided by corporate partners
Co-benefits	Reduced runoff and erosion, improved surface water quality, improved green space, climate adaptation/mitigation

TYPES OF QUANTIFIABLE PROJECTS

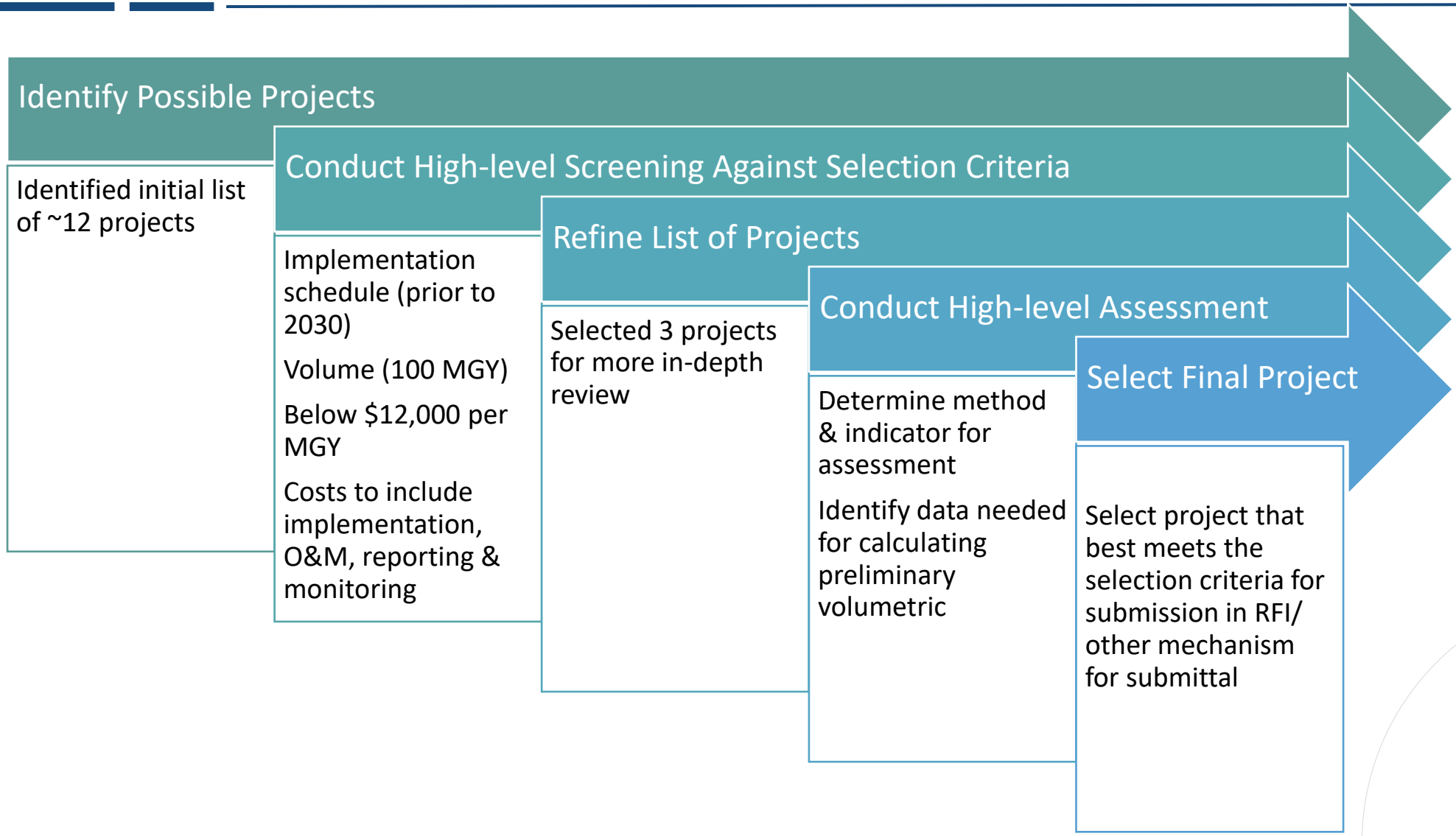
- Stream/wetland restoration
- Leak detection and repair
- Green infrastructure
- Dam removal
- Floodplain/side channel reconnection
- Flood mitigation (capturing volume)
- PS/NPS pollutant reduction
- Forest conservation / restoration
- Agricultural BMPs

DOEE CASE STUDY

GOOGLE RFI

- Constructed & operational by 2030
- At least 100 MGY
- Unit cost below $12,000 per MGY
- Project costs must reflect
  - Implementation
  - Operations & maintenance
  - Reporting (and monitoring)

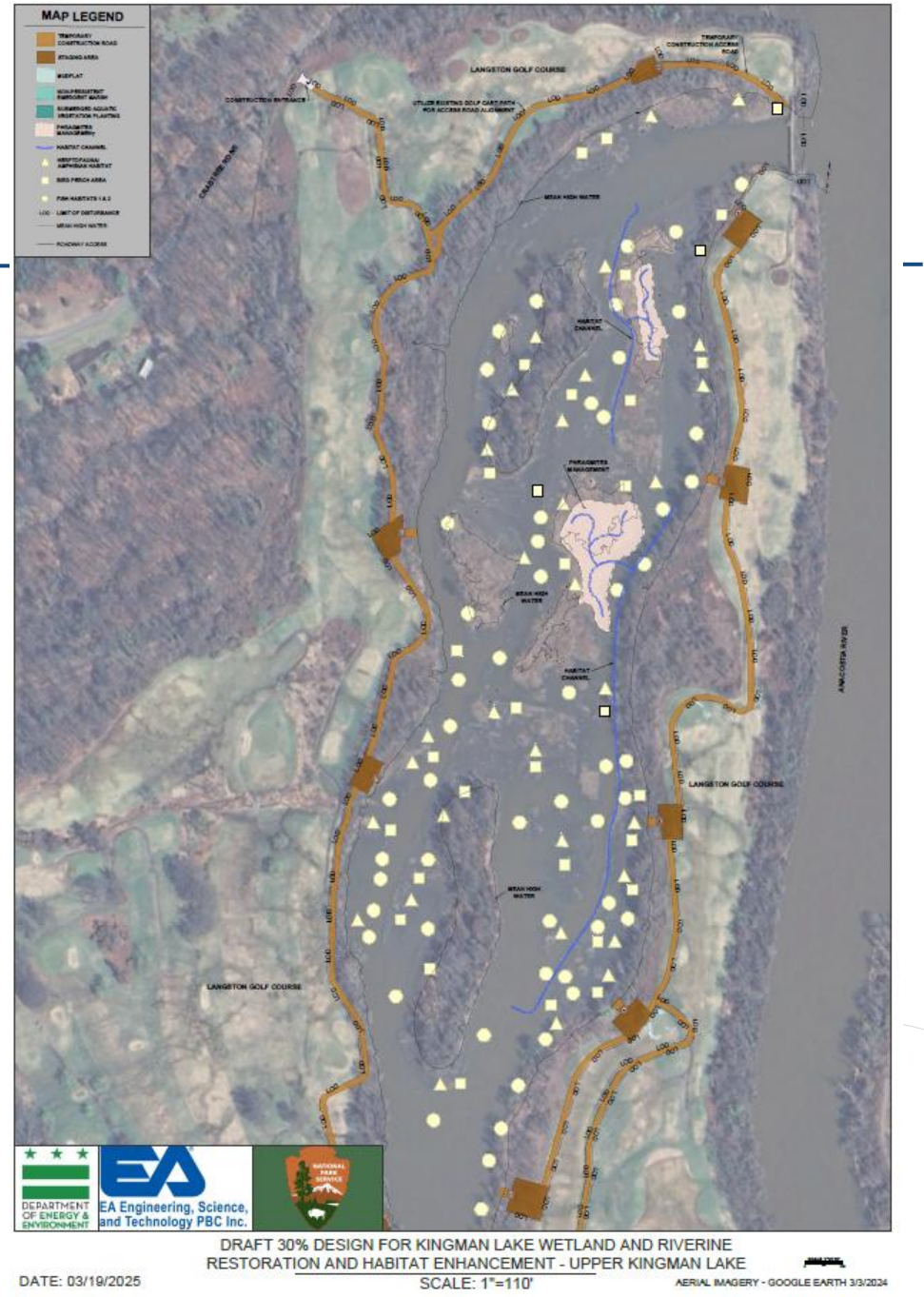
Project Evaluation Approach



Kingman Lake Project

Volume provided = Minimum flow during period of ecological significance for target species × Flow duration

- Volumetric Water Benefit is calculated as the in-stream habitat volume through the creation of habitat channels which are expected to benefit native river herring species (Alewife and Blueback Herring)
- Key inputs:
  - Minimum flow
    - 0.3-0.9 m/s (Greene et al, 2009) (Atlantic States Marine Fisheries Commission, 2009)
  - Period of ecological significance/flow duration
    - Assuming 90-day spawning period (Greene et al, 2009) (Atlantic States Marine Fisheries Commission, 2009)
  - Channel cross-sectional area (to determine total volume provided)
    - Assuming 0.75 ft average depth
    - Assuming average channel width by dividing channel area (30% design) by length for each channel



CONSIDERATIONS…

- Is this type of opportunity right for your community?
  - If so, what types of limitations might you have to fund such a project (e.g., contractual, legal, perceived conflict of interest, optics)?
- What support might you need to identify projects?
  - Do you already have connections/partnerships with any corporates? What about NGOs?
- Do you have any shovel-ready projects?
- Do you need support in quantifying potential projects?

QUESTIONS?

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