

Factors For Success in Developing Use Attainability Analyses

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UAA Challenge

- UAA is explicit in CWA
- Many situations best resolved by UAA
- UAA experiences not widely publicized
- Limited guidance on UAA
- Permittees, regulators and stakeholders avoid UAAs

WERF Research Goals – UAA Research

- Inventory UAA success stories
- Analyze their process
- Identify factors promoting success
- Identify obstacles to success
- Base findings on case studies

WERF Research Team

■ Principal Investigators

- Paul L. Freedman, LimnoTech
- Thomas Dupuis, CH2M Hill

■ Team Researchers

- Hans Holmberg, LimnoTech
- Wendy Larson, LimnoTech
- Michele Koehler, LimnoTech
- Virginia Breidenbach, LimnoTech
- Sherrill Doran, CH2M Hill
- Lori Terry, Foster Pepper PLLC
- Patricia McGovern, Patricia McGovern Engineers

■ WERF Program Director: Margaret Stewart



WERF Project Subcommittee

- Fred Andes, Barnes & Thornberg
- Tom Grovhoug, Larry Walker Associates
- Keith Linn, NE Ohio Regional Sewer Dist.
- Jodi Perras, Perras & Associates
- Lynn Sisk, Alabama DEM

Overview

- Problem context
- Research methodology
- Research outcome
- Workshop preview

UAA Problem Context

- CWA goal: Swimmable & fishable...
where attainable
- State WQ standards often unattainable
- List of Impaired Waters huge
- 40% waters not meeting uses
- Hundreds of CSO communities
- Urban & rural wet weather pollution is hard to control

ASSESSED RIVERS AND STREAMS

Supporting Uses (EPA 841-R-02-001)

Good

61%

8%

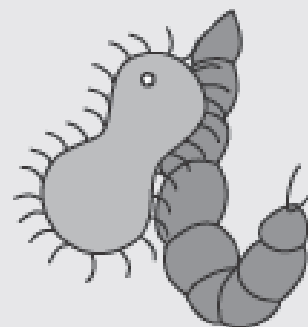
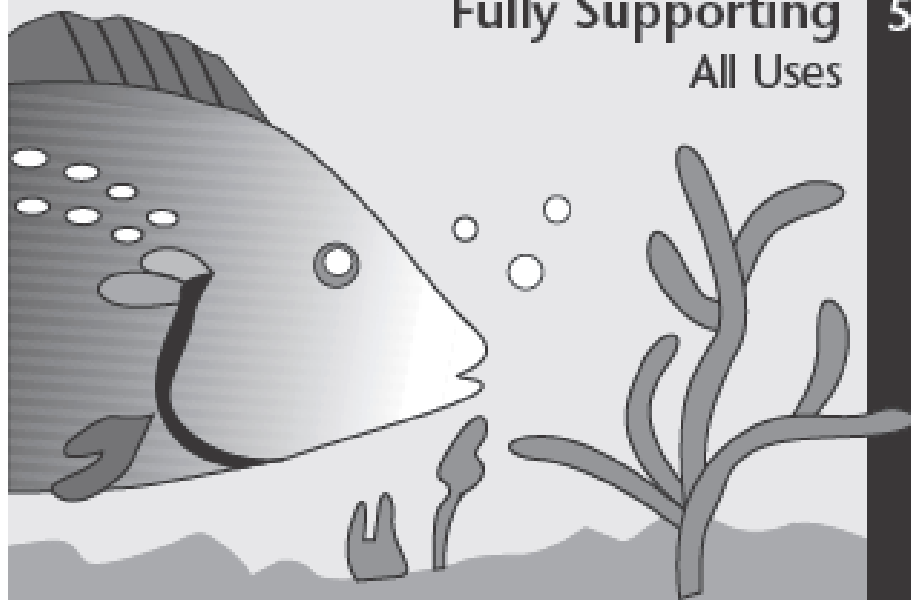
Fully Supporting
All Uses

53%

39%

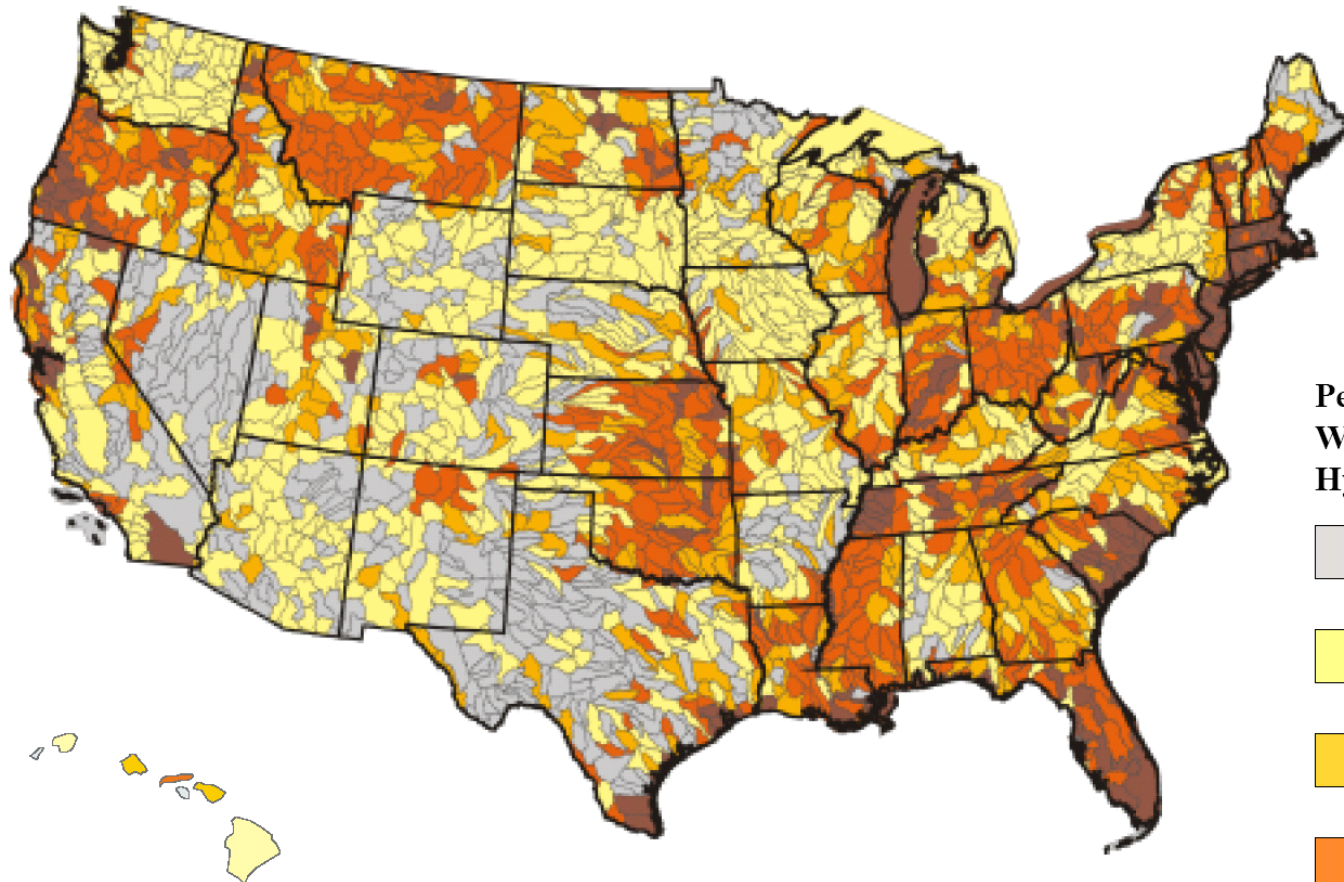
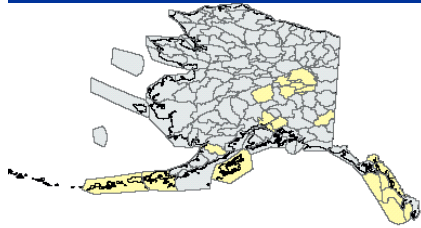
Not
Attainable

<0.05%








National Inventory of Impaired Waters, 2003

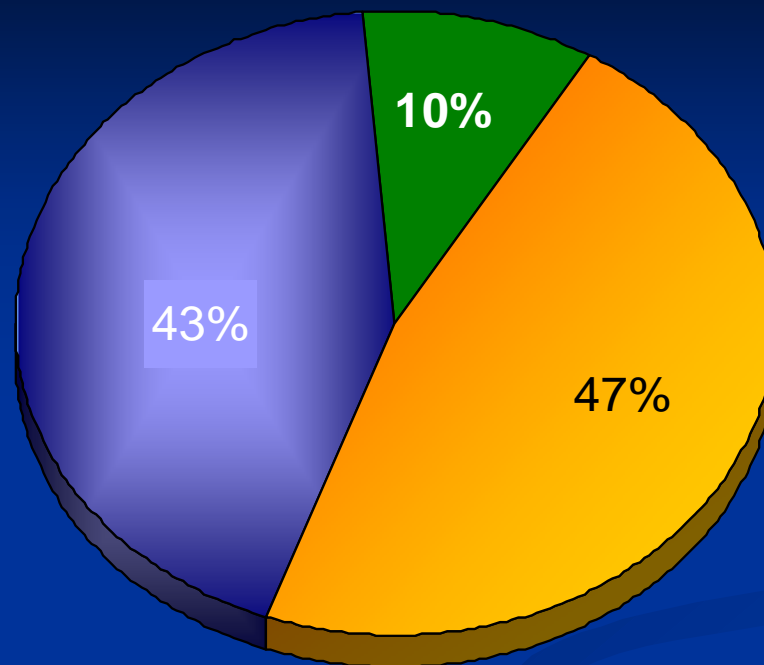
<http://www.epa.gov/owow/tmdl/atlas/>



Percent of Impaired Waters by 8-digit Hydrologic Unit Code

-  No Waters Listed
-  < 5%
-  5-10%
-  10-25%
-  > 25%





- Nonpoint Sources Only
- Point Sources Only
- Combination of Point & Nonpoint Sources

Impaired Waters – Sources of Pollutants

Need for UAA

- Many waters not meeting uses & can't
- NRC/NAS TMDL Report
- National CSO Policy
- EPA Guidance on Rev/Rev
WQ standards for LTCP

Special Needs for UAA

- Wet weather
- Intermittent streams
- Effluent dominated
- Urban streams

WERF UAA Research Plan

- Identify & screen case studies
- Examine research questions on success
- Compile findings
- Develop recommendations

UAA Case Studies

Key Characteristic	Description	Total (#)	Total (%)
Setting	Effluent Dominated	27	50%
	Wet-weather impacted	16	30%
	Urban	18	33%
	Other	23	43%
Pollutant Source Category	Agricultural runoff	19	35%
	CSOs	9	17%
	Industry	14	26%
	Natural background	14	26%
	POTWs	22	41%
	Urban stormwater	16	30%
	Mining	6	11%
	Other	9	17%

UAA Case Studies

Key Characteristic	Description	Total (#)	Total (%)
UAA Factor - 131.10(g)	1	14	26%
	2	22	41%
	3	27	50%
	4	15	28%
	5	16	30%
	6	11	20%
	Undetermined	3	6%
Designated Use Assessed	Aquatic life	36	67%
	Recreation	23	43%
	Drinking water	11	20%
	Other	3	6%

UAA Case Studies

Key Characteristic	Description	Total (#)	Total (%)
Parameters of Concern	Bacteria	14	26%
	Metals	6	11%
	Nutrients	14	26%
	Organic hydrocarbons	0	0%
	Pesticides/Herbicides	0	0%
	Solids	5	10%
	Temperature	10	19%
	Ammonia	4	7%
	BOD	5	9%
	Chloride	3	6%
	Dissolved oxygen	12	22%
	Other	19	35%

UAA Case Studies

Key Characteristic	Description	Total (#)	Total (%)
Status	Completed and adopted	29	54%
	Completed and rejected	8	15%
	Considered but never developed	4	7%
	Started but then abandoned	1	2%
	On-going	13	24%
	Not started but under consideration	6	11%
	Completed and under U.S. EPA review	2	4%
Outcome	Use upgrade	6	11%
	Use downgrade	28	52%
	No change in use	15	28%
	Other	25	51%

Research Topics & Questions

- General: Classifications
- Categories: 5 criteria
 - e.g. Adequacy of technical information
 - Effectiveness of public involvement
- Screening questions:
 - identify key factors
- Detailed questions:
 - explore key factors

Research Topics & Questions - Categorize

- Scientific & Technical
- Financial Needs & Impacts
- Legal & Regulatory Requirements
- Regulatory Agency Preparedness
- Public Involvement & Awareness

Research Outcomes

- Factual findings
- Findings → Recommendations
- Integrated Process
- Case Studies & State Protocols

Overview of Recommendations

1. Getting Started
2. Conducting the UAA
3. Involving Stakeholders
4. Resolution

UAAs: Getting Started

- Identify & involve all stakeholders
- Develop consensus, workplan & strategy
- Develop a decision pathway
 - Factors
 - Terms
 - Data, methods, analyses, modeling. . .
 - Decision criteria

UAA Decision Path

1. Agree on stakeholders & issues
2. Agree on schedule
3. Agree on existing uses & conditions
4. Agree on technical issues
5. Agree on 131.10(g) UAA factor
6. Agree on key definitions
7. Agree on data & modeling
8. Agree on how results are used
9. Agree on process for decisions
10. Agree on outcome

UAAs: Conducting the Analysis

- Sound Science
- Follow the Rules
- Document the process, findings & decisions
- Conduct Economic Analysis

UAAs: Involving Stakeholders

- Fully engage throughout process
- Go beyond minimum
- Use smaller, face-to-face approaches as appropriate
- Keep decision makers in the loop

UAAs: Resolution

- Focus on problem resolution
 - not a specific solution
- Be open to alternative outcomes
- Alternative Solutions
 - UAA
 - Variance
 - Use refinement
 - Public acceptance
 - Site-specific criteria
 - Compliance schedule
 - Consent Orders

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