



**LIFT IWS Challenge 2022**  
**Guidance for Solution Submission**



## **The LIFT Intelligent Water Systems Challenge: Judging Criteria**

### ***An Opportunity for Utilities, Vendors, Civic Hackers, and Students***

Today's water industry operates complex treatment, collection, and distribution systems to protect public and ecological health. These systems are increasingly instrumented to monitor key process indicators and other parameters to facilitate operations. The Water Research Foundation (WRF) and Water Environment Federation (WEF) LIFT program is holding the LIFT Intelligent Water Systems Challenge to demonstrate the value to utilities of these "intelligent water systems". The Challenge seeks to foster the adoption of smart water technologies by showcasing the ability of intelligent water systems to effectively leverage data for better decisions.

Solution Goals:

- Demonstrate the value of intelligent water systems
- Leverage data using the best available tools to better understand and make decisions.

Prizes: The Challenge will recognize the best solutions developed by Challenge participants, offering a top prize of \$10,000 and an elegant solution of \$2,500. Recognition will also be given to innovative approaches and to outstanding contributions from students or young professionals.

The Challenge will work with water utilities around the world to identify individual challenges. Teams will work to address these individual challenges through innovative analytics applied to data from utilities' intelligent water systems. Some utilities may have capacity and interest to participate directly on teams, while other utilities may limit their involvement to furnishing a problem statement and relevant data. The Challenge will therefore distinguish between two types of solvers:

- Teams will select a Challenge problem statement provided by a utility and develop and implement a solution approach with minimal interaction with the utility. Multiple teams can select the same challenge and independently implement a solution.

## **Eligibility**

Open to any individual that has completed registration. Participation by utility members, technology providers, consultants, academia, and students is encouraged. There is no participation limit for any single organization.

Teams can consist of a minimum of 2 and a maximum of 6 people. Each team member must complete an individual registration form.



## 2022 Challenge Timeline

<b>January 17</b>	Challenge Launch
<b>April 4</b>	Webcast for Interested Participants in the IWS Challenge
<b>April 15</b>	Team Registration Deadline
<b>May 16</b>	Challenge Plan Deadline
<b>May 16 – June 13</b>	Optional check-in with Steering Committee
<b>August 15</b>	Challenge Solution Deadline
<b>August 29</b>	Judges' scoring completed
<b>September 2</b>	Finalists notified
<b>October 10</b>	Finalist presentations and awards ceremony at WEFTEC 2022

## Requirements

Team Lead registering for all the team members with contact information is required on Alchemer by April 15 - <https://survey.alchemer.com/s3/6688676/LIFT-IWS-Challenge-2022>. Each team member will be required to submit a Conflict of Interest form. If an individual is on multiple teams, they must disclose to all teams their participation and role in each team for transparency and clarify participation expectations.

Each team will have one identified Team Lead.

Submission of Challenge Plan and Challenge Solution will be done via WEF's online platform by 11:59 PM EST on the associated deadline. Each team will receive a link to the WEF online platform in order to submit the solution. Materials submitted via another format or to another Steering Committee member will not be accepted. No additions or modifications to the submitted materials will be accepted after the deadline.

If previous work has been done on the proposed problem, teams must clearly articulate the existing work and the intended scope of work to be done under this Challenge period in the Challenge Plan.

If a proprietary technology or software is part of the Challenge Solution, teams must indicate in the submission materials and request signed NDA forms from steering committee members and judges. The Challenge is not responsible for managing intellectual property rights.



## Challenge Plan Submission

Each team should submit a Challenge Plan that will be provided to the Steering Committee and judges. The Challenge Plan must be submitted via via WEF's online platform by 11:59 PM EST on the associated deadline. Each team will receive a link to the WEF online platform in order to submit the solution.

The Challenge Plan must include (but is not limited to):

The team:

- Identify the Team Lead, who will serve as the primary point of contact for the Challenge
- For each team member include name, title, organization, email, and skill-set/area of expertise
- Description of each team member's role and responsibilities

The Problem Statement:

- Explanation of the problem/need faced by the utility that the team is solving for
- Explanation of the desired outcome for the solution. What is the target or goal that is trying to be met? What metrics will be used to evaluate progress and success?

The Intelligent Water System:

- Describe the current system (e.g. data source, technology used, networking, system architecture, O&M) that is relevant to the problem being solved.
- If previous work has been done on the proposed problem, please clearly articulate the existing work and the intended scope of work to be done under this Challenge period

The Plan:

- Description of proposed solution, level of effort and timeline; may include visuals or graphics. Teams should note if for the Challenge the solution is a pilot or a full-scale solution.
- Timeline to implement proposed solution.



## Challenge Solution Submission

Each team should submit a Challenge Solution that will be provided to the Steering Committee and judges. The Challenge Solution must be submitted via WEF's online platform by 11:59 PM EST on the associated deadline. Each team will receive a link to the WEF online platform in order to submit the solution.

The Challenge Solution must include (but is not limited to):

The Team:

- Names of Team Lead and members
- Identify if any changes to the team have occurred during the duration of the Challenge

Problem Statement:

- Concisely describe the problem/need the Team is solving for
- Describe key considerations and the desired outcome

The Solution:

- Recap the Intelligent Water System and any possible modifications or additions identified to meet the outcome goal
- Description of the implementation and whether any adjustments were made.
- Quantified and/or qualified value add of the solution
- Next steps for the solution beyond the Challenge
- Outline financial support needed or considerations
- Considerations of replication by other utilities to address a similar problem
- Description of any difficulties faced and how the team mitigated them
- How will the results of the solution be communicated and used by the utility
- Identify data streams and QA/QC considerations
- Analysis and interpretation to support the solution



## Judging Criteria

The following criteria will be used by the judges to evaluate materials submitted by teams.

Intelligent Water Systems Challenge Judging Sheet

<b>TEAM NAME</b>	<input type="text" value="(team name)"/>		
<b>JUDGE</b>	<input type="text" value="(judge name)"/>		
<b>SCORE</b>	<input type="text"/>	<b>out of 140</b>	
		<b>Raw (0-10) x Weight =</b>	<b>Score</b>
<b>TEAM</b>			
<b>1 Team</b> includes necessary skills and has appropriate utility input representation.	<input type="text"/>	x 1.0 =	<input type="text"/> out of 10
<b>PLAN</b>			
<b>2 Problem Statement</b> that shows understanding of how analytics can address utilities' challenges in utilities' terms.	<input type="text"/>	x 2.0 =	<input type="text"/> out of 20
<b>3 Characterization of the Intelligent Water System</b> by describing the existing system or its salient parts.	<input type="text"/>	x 1.0 =	<input type="text"/> out of 10
<b>4 Plan</b> that lays out a realistic timeline and approach for achieving the intended solution.	<input type="text"/>	x 1.0 =	<input type="text"/> out of 10
<b>IMPLEMENT</b>			
<b>5 Data</b> streams are clearly identified and <b>QA/QC</b> appropriately discussed.	<input type="text"/>	x 2.0 =	<input type="text"/> out of 20
<b>6 Analysis &amp; Interpretation</b> deliver results that clearly support the intended solution.	<input type="text"/>	x 2.0 =	<input type="text"/> out of 20
<b>7 Communication &amp; Use</b> provide actionable results supporting decisions.	<input type="text"/>	x 2.0 =	<input type="text"/> out of 20
<b>8 The Solution</b> meets utility expectations using appropriate tools.	<input type="text"/>	x 2.0 =	<input type="text"/> out of 20
<b>JUDGE'S IMPRESSIONS</b>			
<b>9 Recognition</b> of alignment with IWS Challenge goals, scalability and sustainability, lessons learned, and more.	<input type="text"/>	x 1.0 =	<input type="text"/> out of 10
<b>COMMENTS</b>			
<input type="text"/>			