

ELICIT-ing Water Loss Interventions Across Utilities

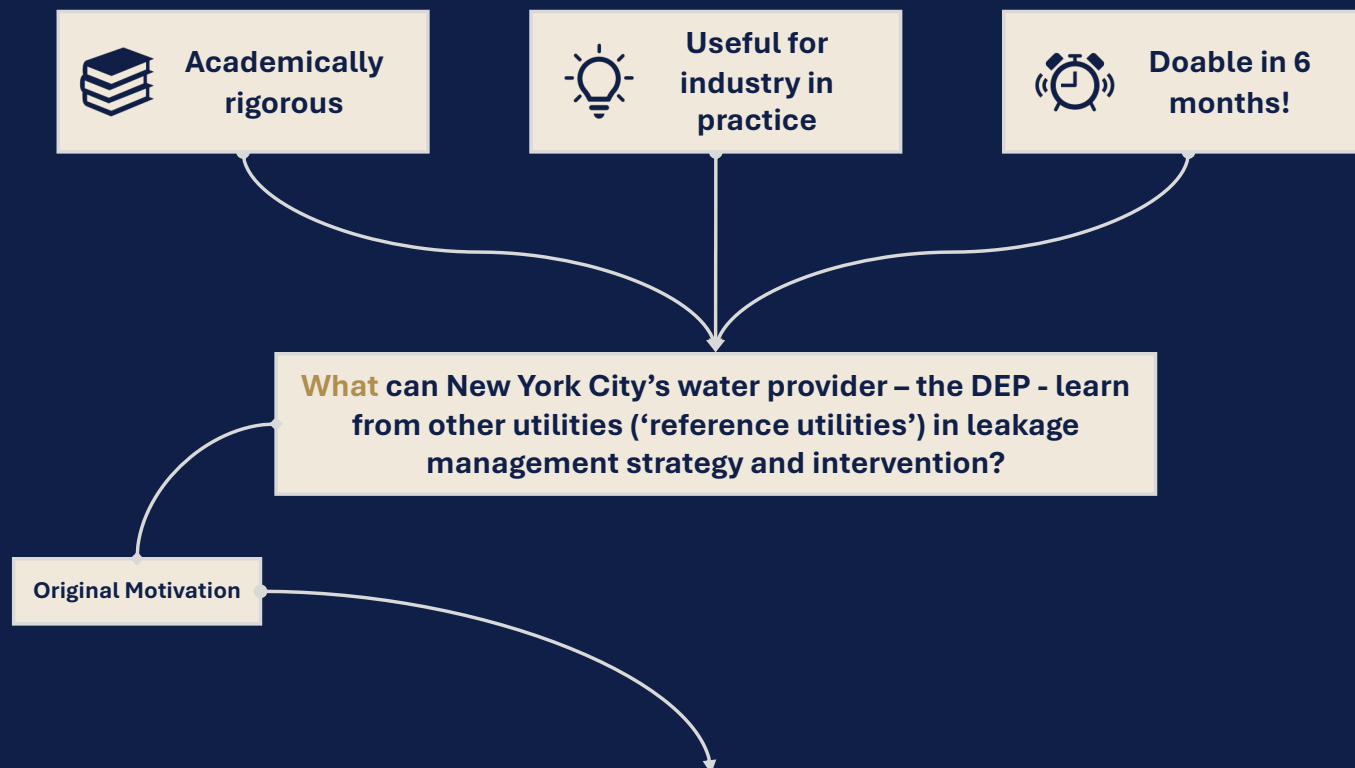
A Framework for Context-Sensitive Assessment of Intervention
Transferability

Joelle Solowiejczyk, MSc



How can one water utility learn from the successful leakage management strategies of another in a manner that recognizes both contexts as distinct?

Arriving at the Research Question



Early Literature Review & Discussion

Fundamental Assumptions

Utilities learn from one another [with respect to water loss]

There is a broad analytical framework that can be used

Utility decisions and priorities are impacted by context

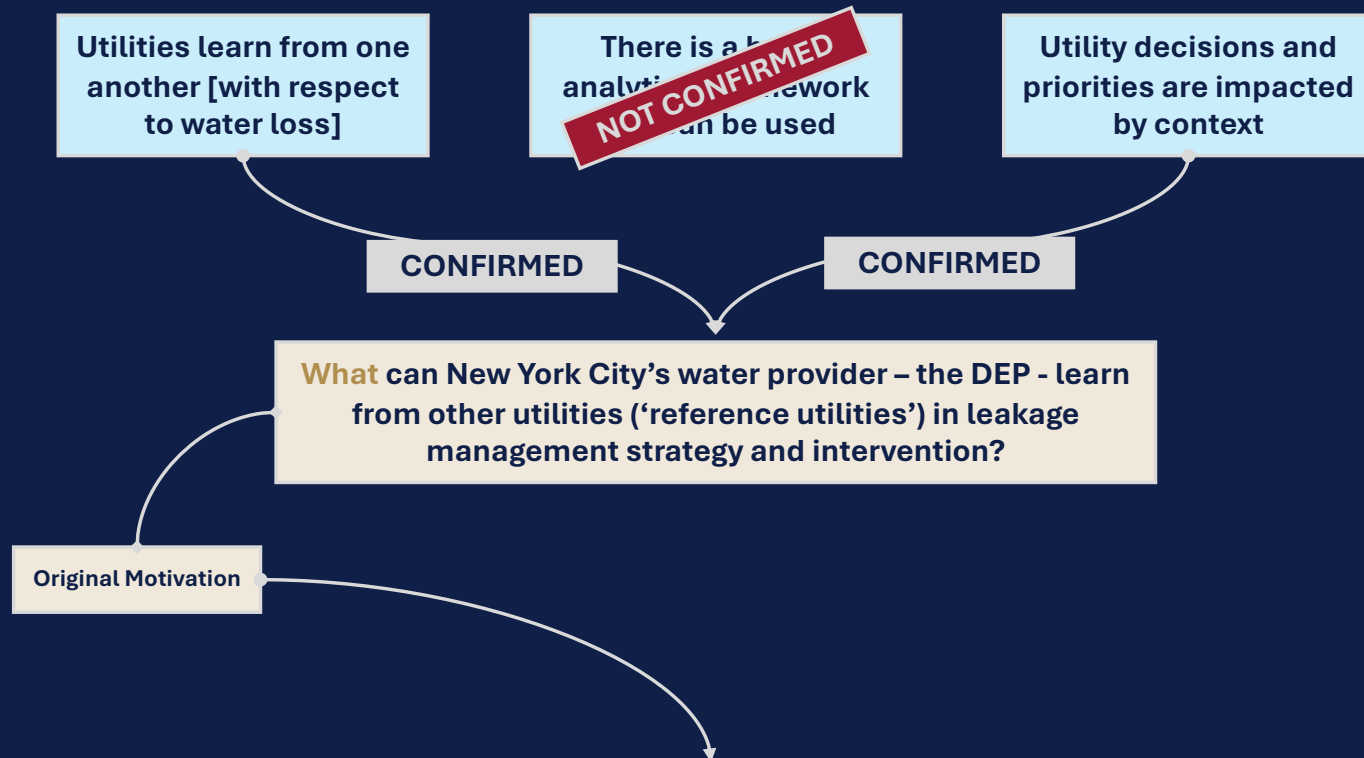
What can New York City's water provider – the DEP - learn from other utilities ('reference utilities') in leakage management strategy and intervention?

Original Motivation

```
graph LR; A[Original Motivation] --> B[What can New York City's water provider – the DEP - learn from other utilities ('reference utilities') in leakage management strategy and intervention?];
```

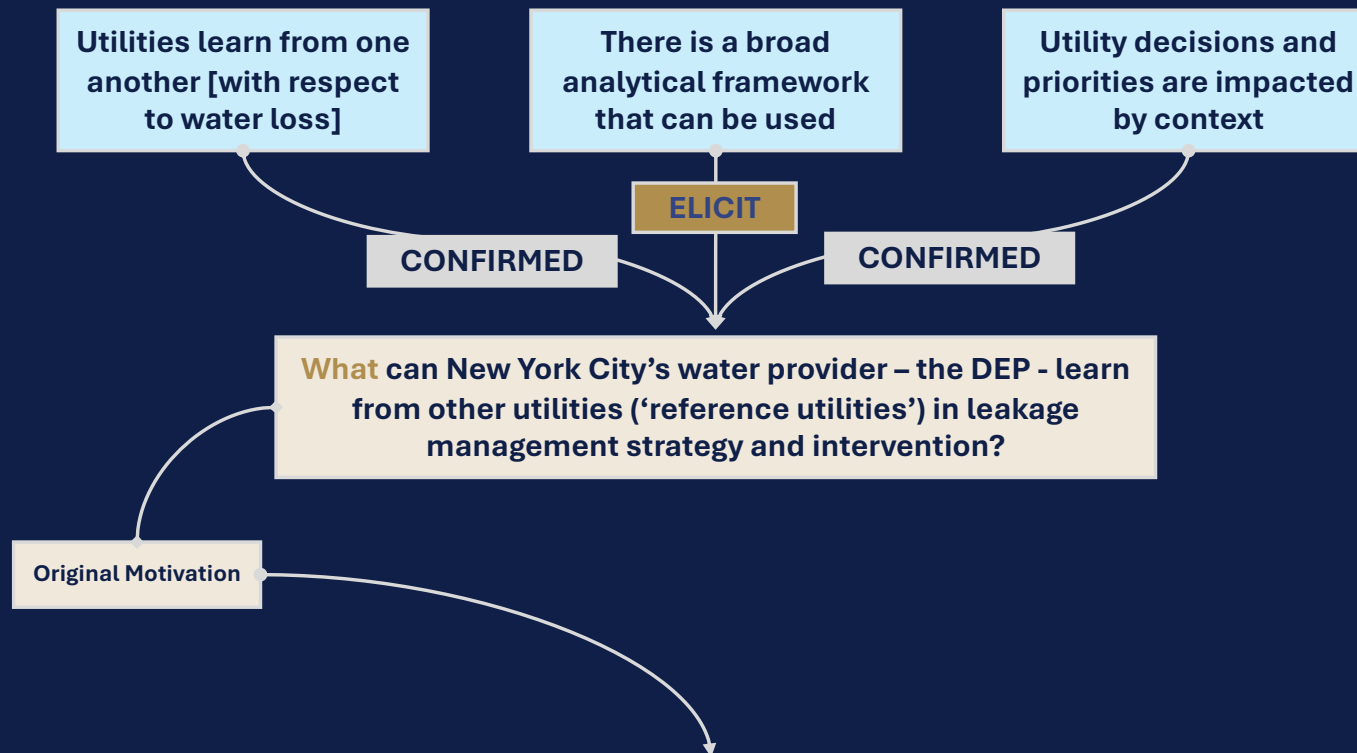
Early Literature Review & Discussion

Fundamental Assumptions



Early Literature Review & Discussion

Fundamental Assumptions



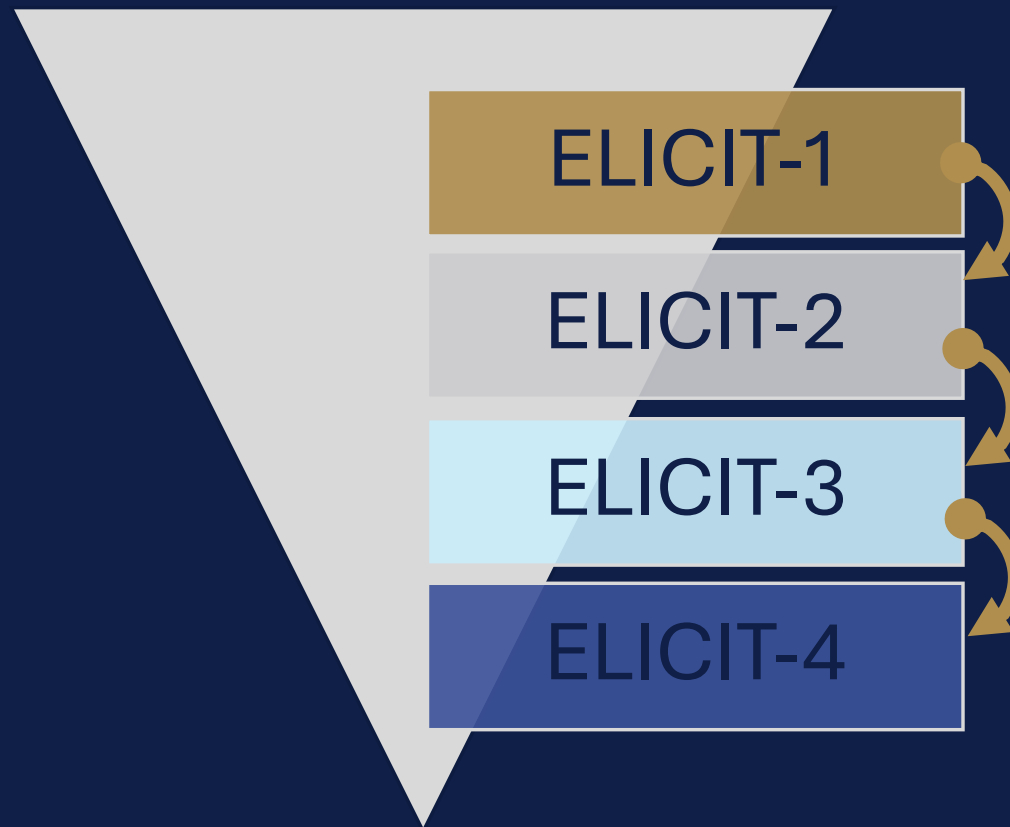
ELICIT

Evaluating
Leakage
Interventions *for*
Context
Informed
Transferability

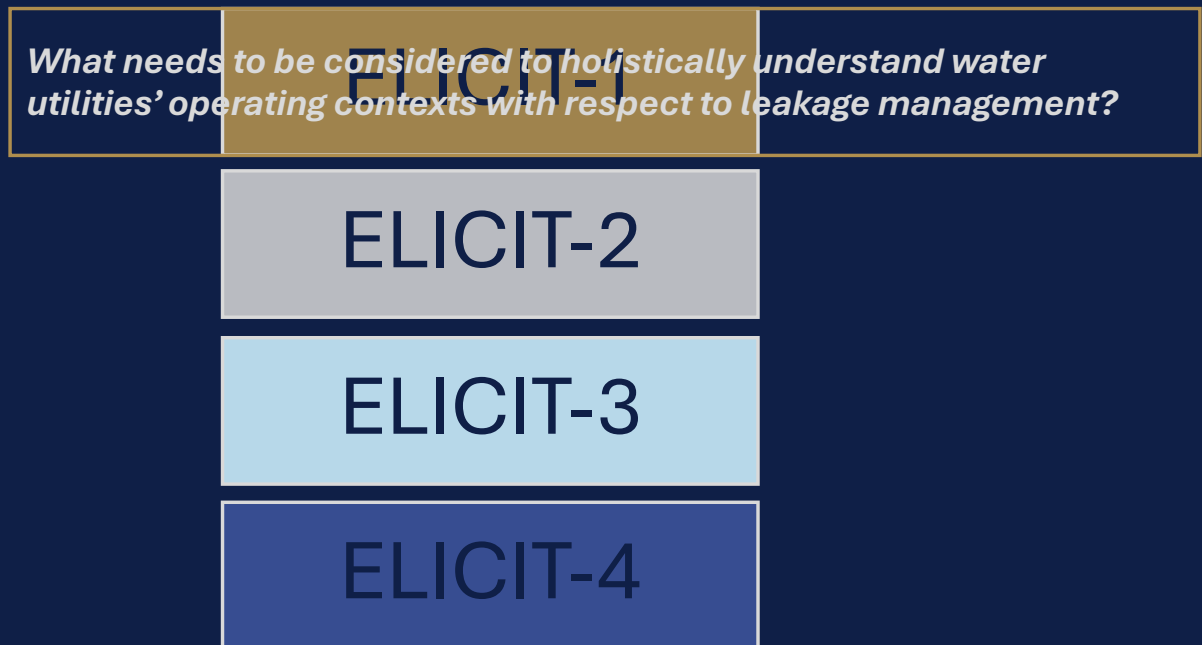
ELICIT

How can one water utility (the **adopting utility** 🌟) learn from the successful leakage management strategies of another (the **reference utility** ⭐) in a manner that recognizes both contexts as distinct?

ELICIT Framework Structure



ELICIT Framework Structure



ELICIT Framework Structure

ELICIT-1

ELICIT-2

ELICIT-3

ELICIT-4

Map the utility operating contexts
**Both the adopting and reference utilities*



ELICIT Framework Structure

ELICIT-1

Map the utility operating contexts
**Both the adopting and reference utilities*



ELICIT-2

How can a utility's leakage management challenges be determined once we understand it's operating context?

ELICIT-3

ELICIT-4

ELICIT Framework Structure

ELICIT-1

Map the utility operating contexts
**Both the adopting and reference utilities*



ELICIT-2

Determine where the points of intervention are
**Only the adopting utility (seeking intervention)*



ELICIT-3

ELICIT-4

ELICIT Framework Structure

ELICIT-1

Map the utility operating contexts
**Both the adopting and reference utilities*



ELICIT-2

Determine where the points of intervention are
**Only the adopting utility (seeking intervention)*



ELICIT-3

How can the retrospective value generated by a successful leakage intervention be understood?

ELICIT-4

ELICIT Framework Structure

ELICIT-1

Map the utility operating contexts
**Both the adopting and reference utilities*



ELICIT-2

Determine where the points of intervention are
**Only the adopting utility (seeking intervention)*



ELICIT-3

Identify leakage-reducing strategies; Dissect their value
**Only the reference utility (seeking intervention)*



ELICIT-4

ELICIT Framework Structure

ELICIT-1

Map the utility operating contexts
**Both the adopting and reference utilities*



ELICIT-2

Determine where the points of intervention are
**Only the adopting utility (seeking intervention)*



ELICIT-3

Identify leakage-reducing strategies; Dissect their value
**Only the reference utility (seeking intervention)*



ELICIT-4

How can ELICIT-1 through ELICIT-3 be bridged to form an assessment of transferability FROM the reference utility TO the adopting utility?

ELICIT Framework Structure

ELICIT-1

Map the utility operating contexts
**Both the adopting and reference utilities*



ELICIT-2

Determine where the points of intervention are
**Only the adopting utility (seeking intervention)*



ELICIT-3

Identify leakage-reducing strategies; Dissect their value
**Only the reference utility (seeking intervention)*

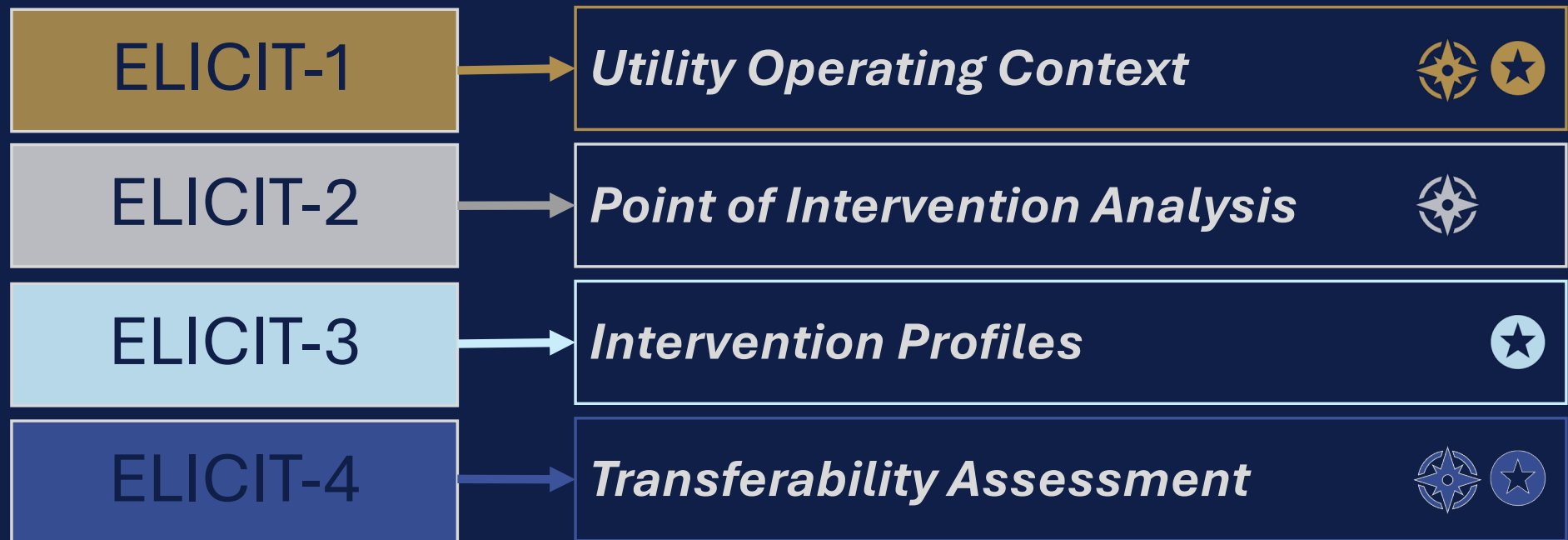


ELICIT-4

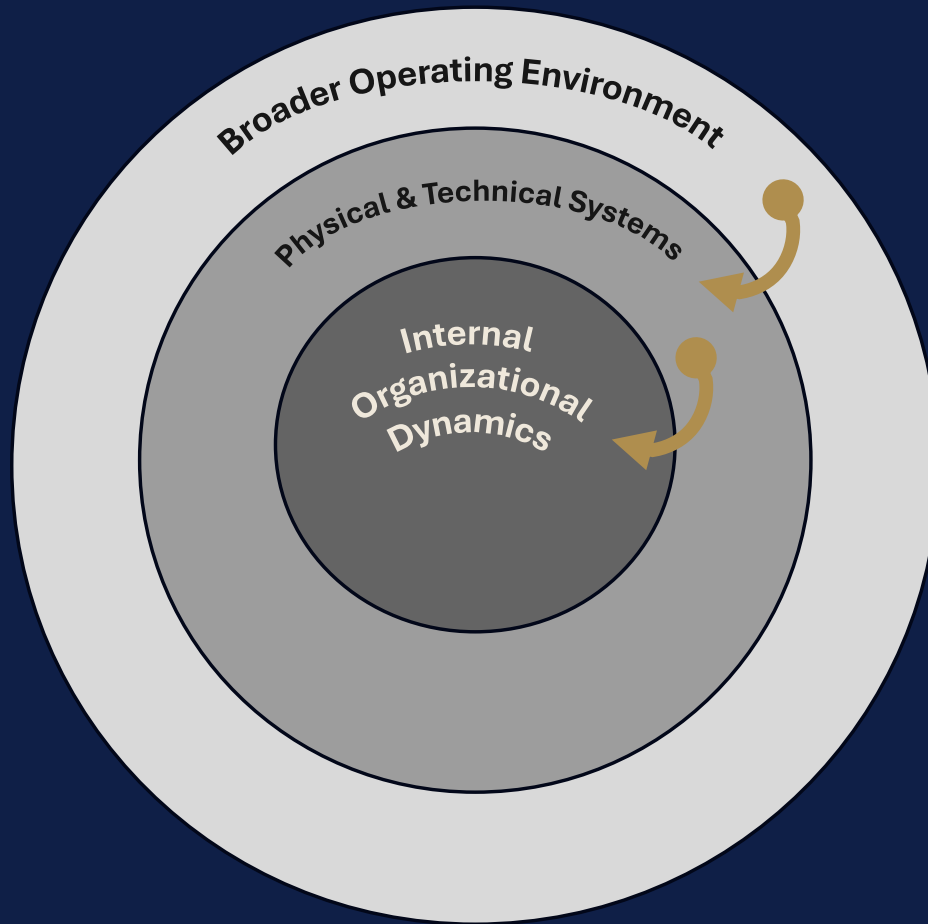
Reflect on the data with a question-based fit assessment
** Both the adopting and reference utilities*



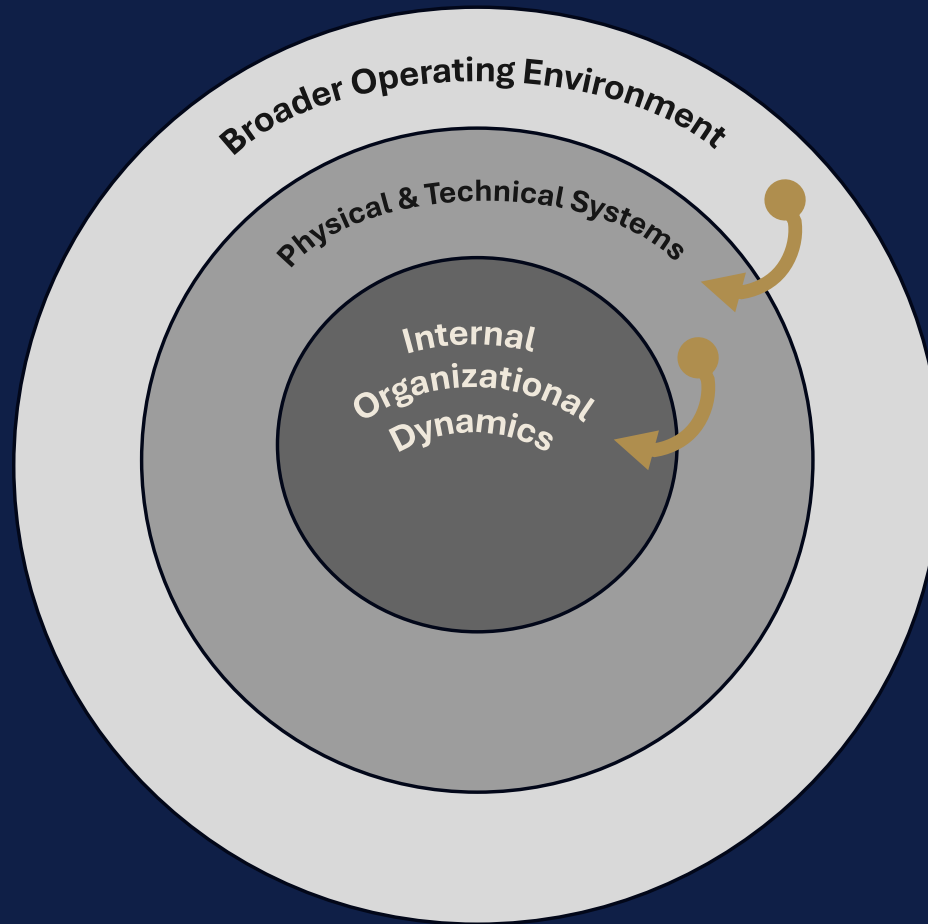
ELICIT Framework Summary



ELICIT-1: *Utility Operating Context*



ELICIT-1: *Utility Operating Context*



Broader Operating Environment

Regulation & Politics

The Economy

Landscape & Hydrogeology

Hydroclimate

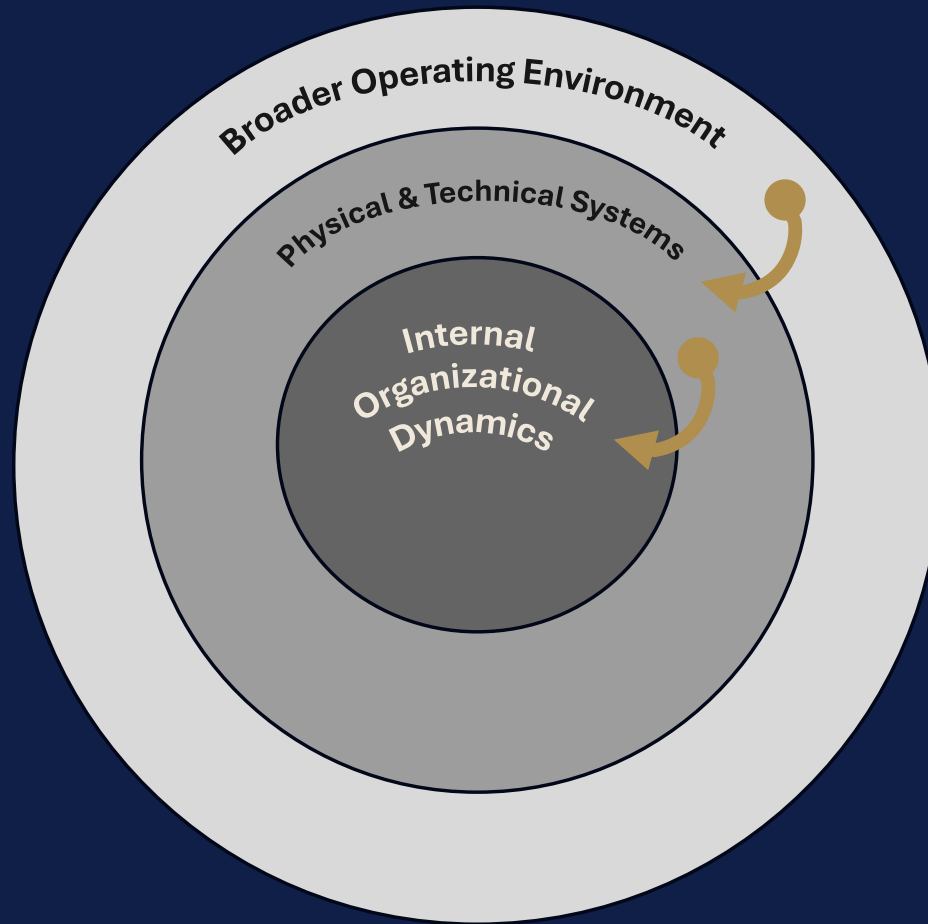
Population & Demography

Behavior & Culture

Uncertainty



ELICIT-1: *Utility Operating Context*



Physical & Technical Systems

Water Balance & 'Beyond'

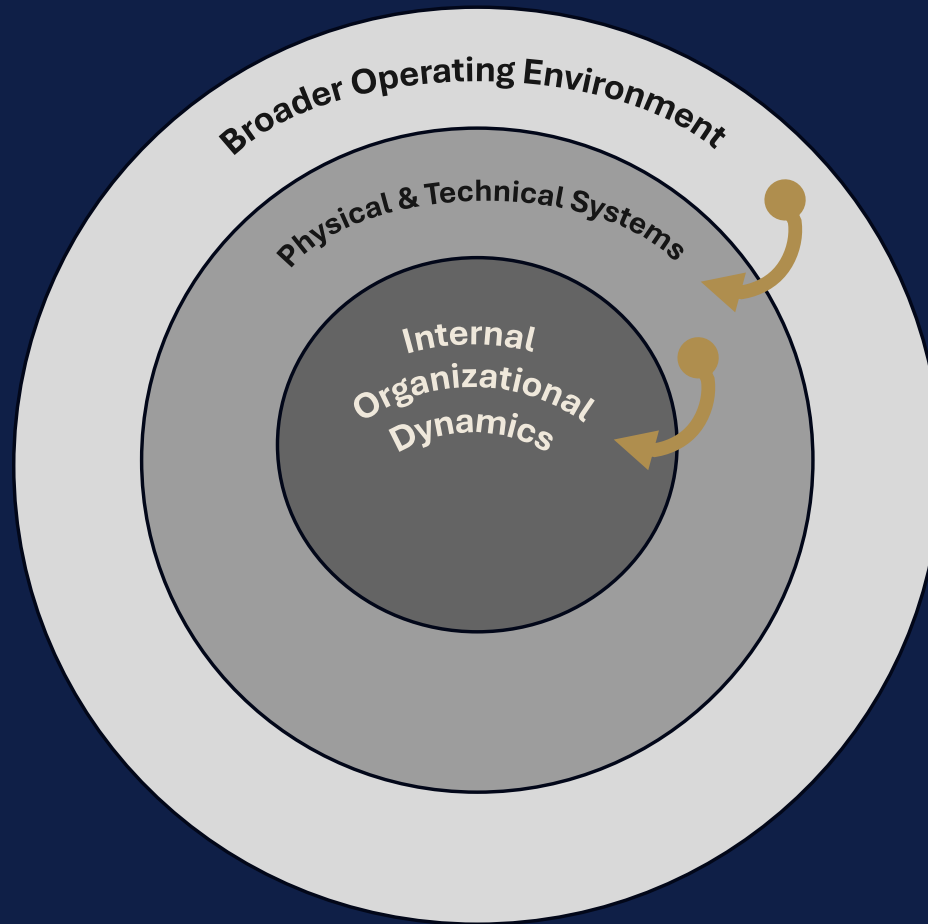
Operational Practices

Existing Physical Assets

Existing Digital Assets



ELICIT-1: *Utility Operating Context*



Internal Organizational Dynamics

Workflow

Inter-departmental Cohesion

Leadership

Utility Priorities

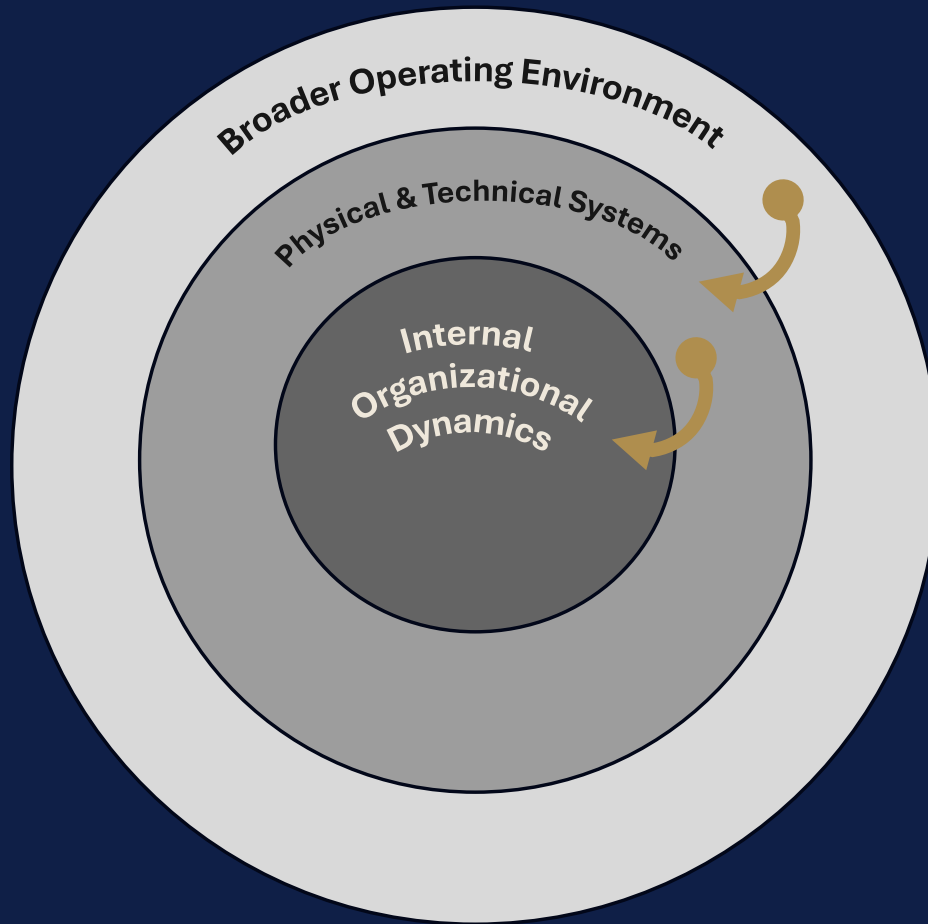
Culture

Non-financial Resources

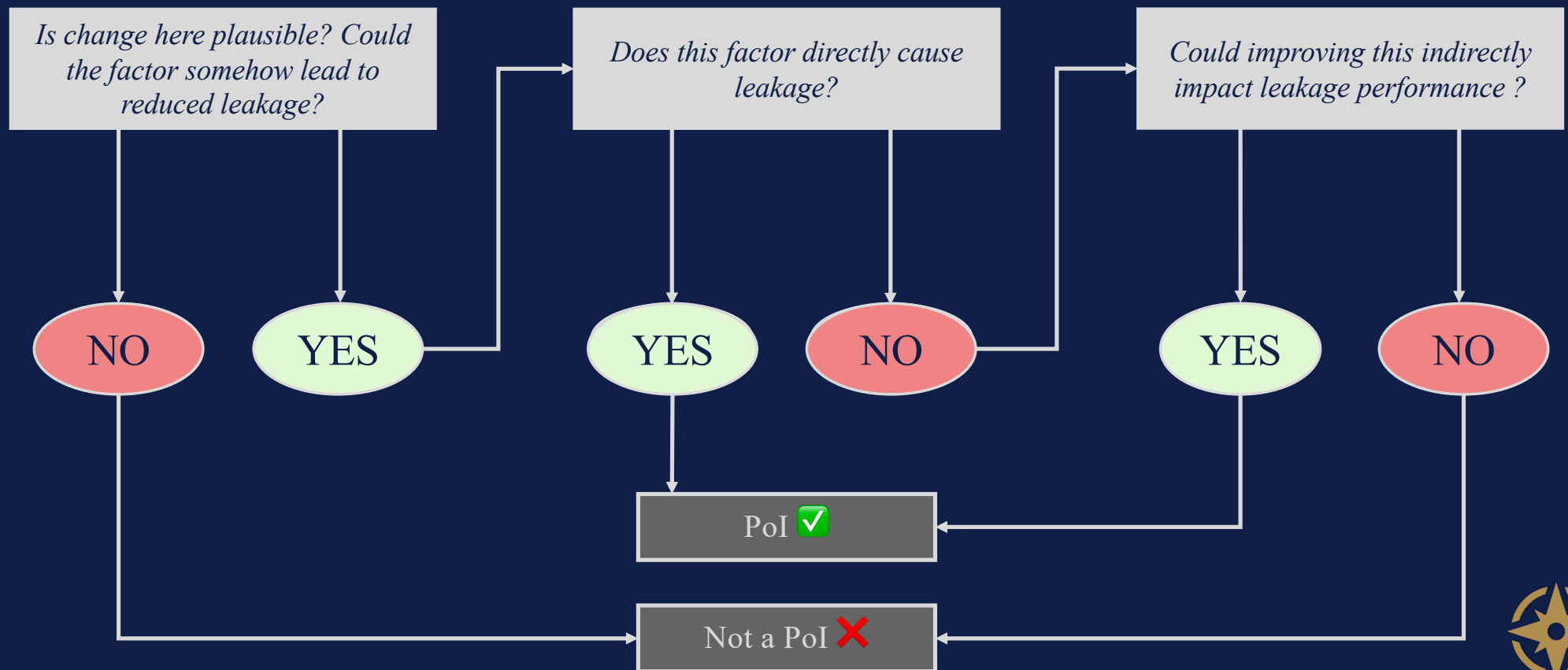
Ownership, Procurement & Finance



ELICIT-1: *Utility Operating Context*



ELICIT-2: *Point of Intervention Analysis*



ELICIT-3: *Intervention Profiles*

Purpose:

1. Determine which reference utility interventions **match** the adopting utility Pols
2. Gather and organize data about these successful interventions across 3 categories



Enabling
Context



Relative Value
Proposition
Analysis



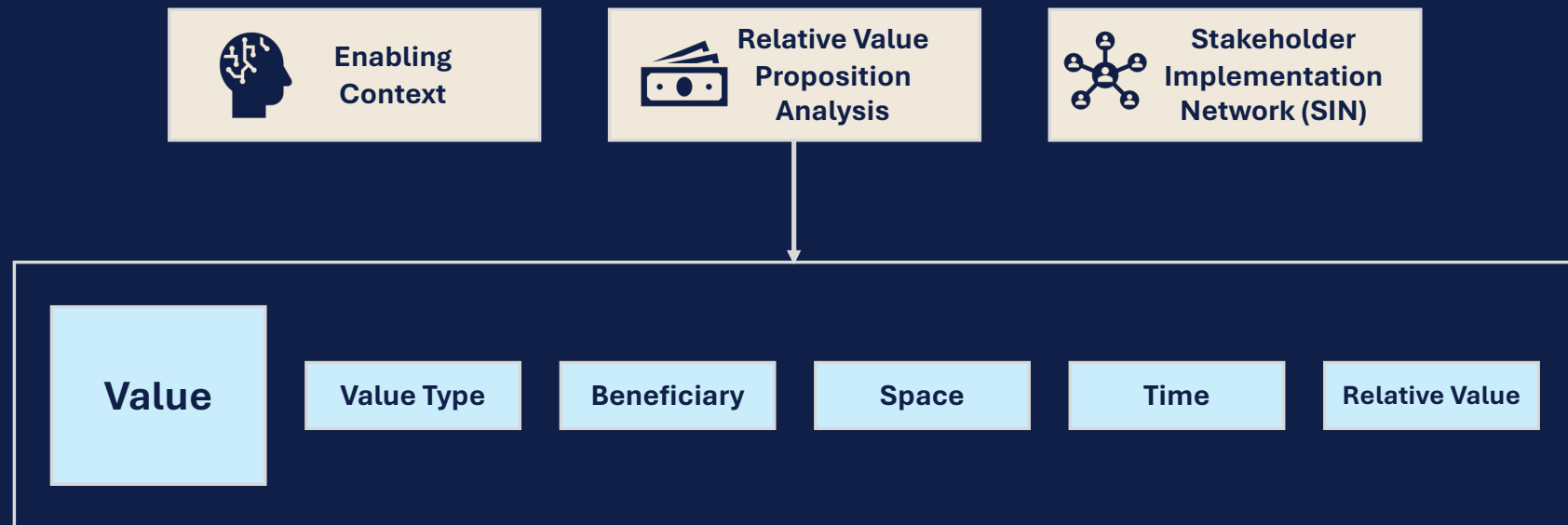
Stakeholder
Implementation
Network (SIN)



ELICIT-3: *Intervention Profiles*

Purpose:

1. Determine which reference utility interventions **match** the adopting utility Pols
2. Gather and organize data about these successful interventions across 3 categories



ELICIT-4: *Transferability Assessment*



**Feasibility
Gates**



**Enabling
Context Fit**



**SIN &
Culture Fit**



**Competence
Alignment**



**Value
Proposition
Translation**



**Path
Dependence**



ELICIT Value in Practice

1

Reproducibility

4

No minimum data requirement

2

User empowerment

5

Multi-stakeholder value

3

Valuable if done in part (ELICIT-1) and valuable if done in full (ELICIT)