

Identifying and Analyzing Opportunities for Expansion and Optimization in Solar Salt Works

Matthew S. Hickenlooper



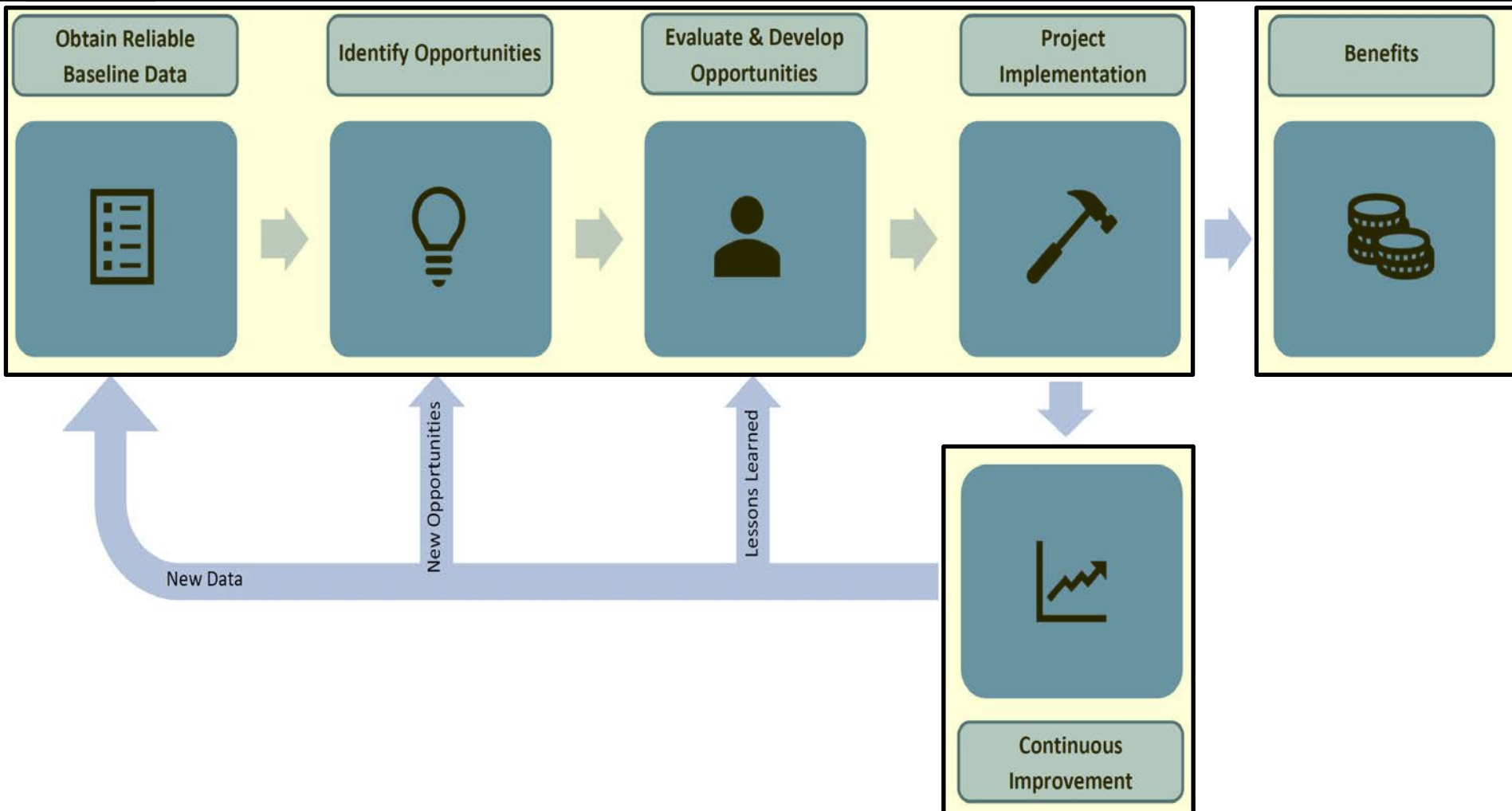
**REDD Engineering
& Construction, Inc.**

Outline

- I. The Engineering Method & Why To Use It
- II. Obtain Reliable Data
- III. Identify Opportunities
- IV. Evaluate & Develop Opportunities
- V. Project Implementation
- VI. Conclusion



The Engineering Method



Why Use The Engineering Method?

- Increases Profit
- Decreases Risk
- Improves Overall Schedule
- Is Systematic and Comprehensive



Obtain Reliable
Baseline Data

The Engineering Method

Identify Opportunities



Evaluate & Develop
Opportunities



Project
Implementation



Benefits



Continuous
Improvement

New Data

New Opportunities

Lessons Learned

Obtain Reliable Baseline Data

Site Data

General Site Conditions

Pond Size & Layout

Seepage

Weather

Operating Parameters

Production Data

Project Data

Financial

Maintenance Records

Market, Political and
Legal Data

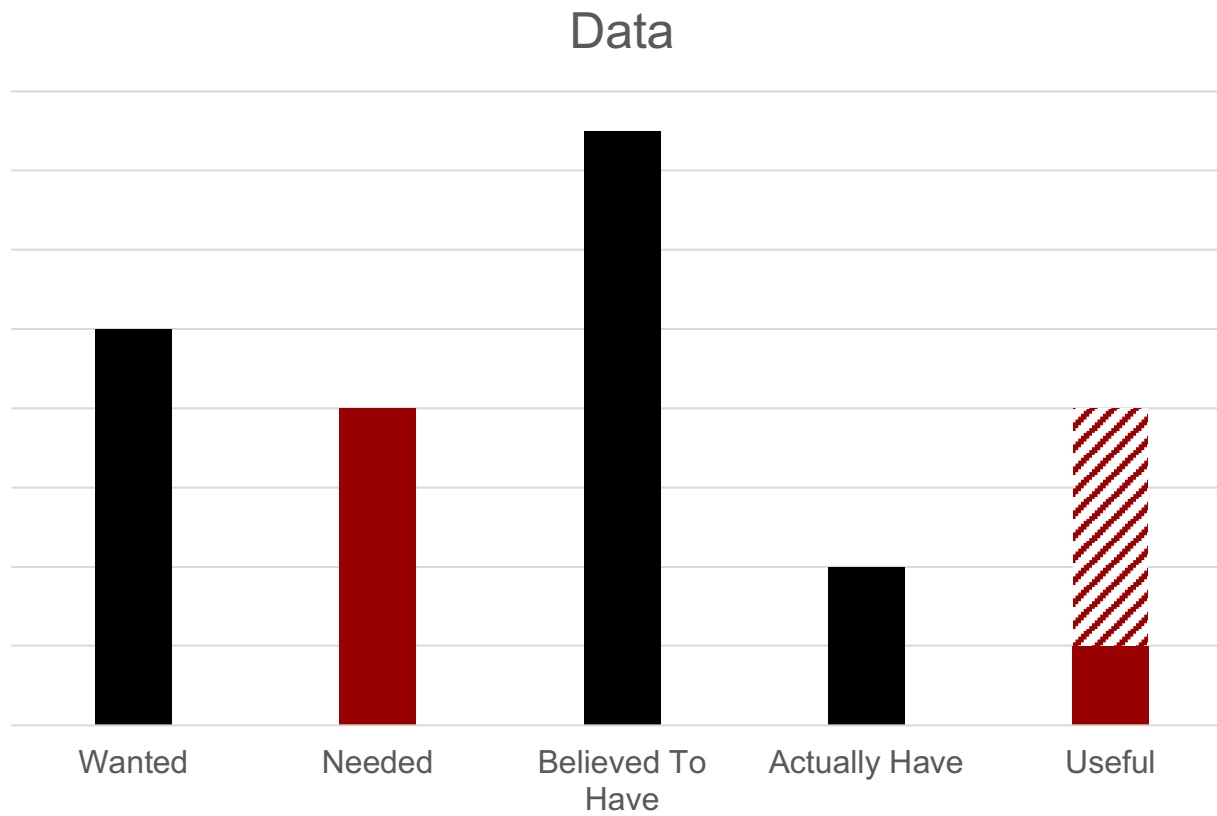
Purchase Records

Equipment Cost
Estimates

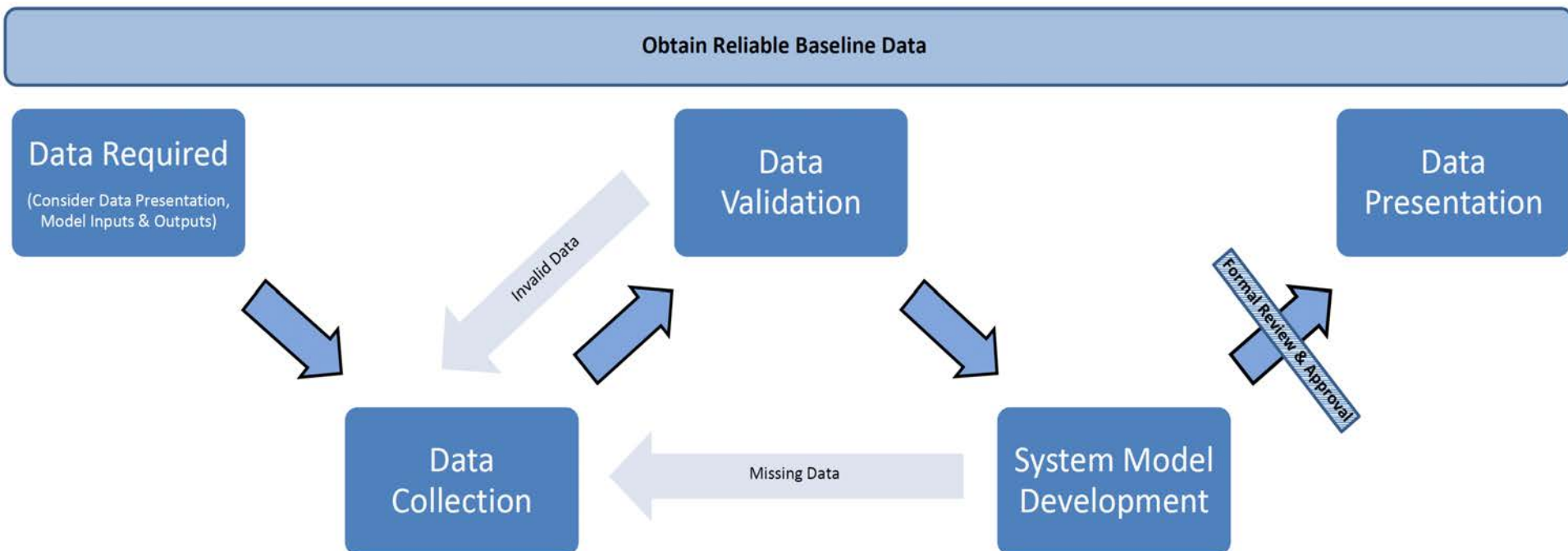
Environmental

Construction Cost
Estimates

Obtain Reliable Baseline Data



Obtain Reliable Baseline Data

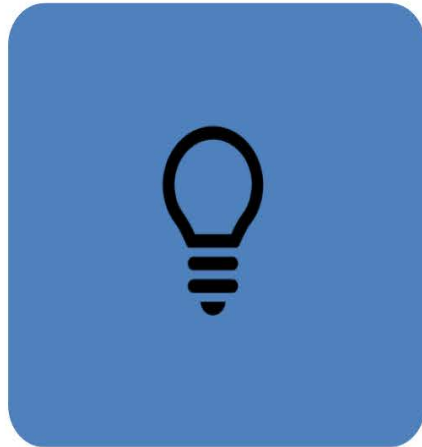




Identify Opportunities

Engineering Method

Obtain Reliable
Baseline Data



Evaluate & Develop
Opportunities



Project
Implementation



Benefits



Continuous
Improvement

New Data

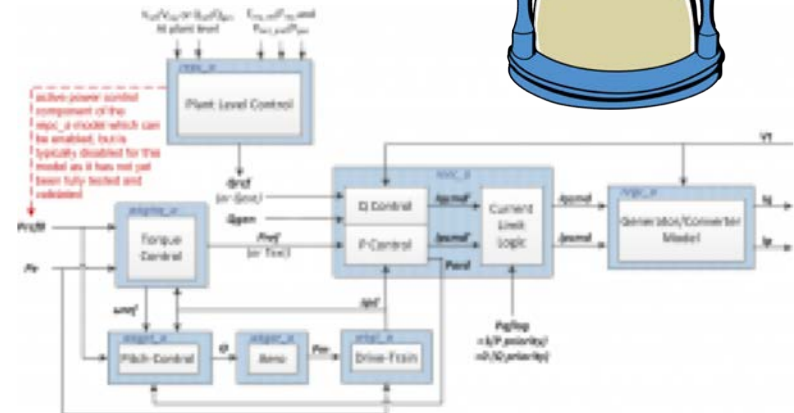
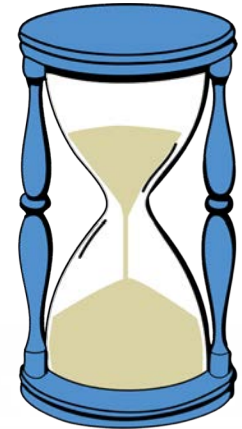
New Opportun

Lessons Learned

Identify Opportunities

Types of Projects

- Problems
- Long-discussed improvements
- Less obvious projects requiring expertise and/or models



Identify Opportunities

Sources

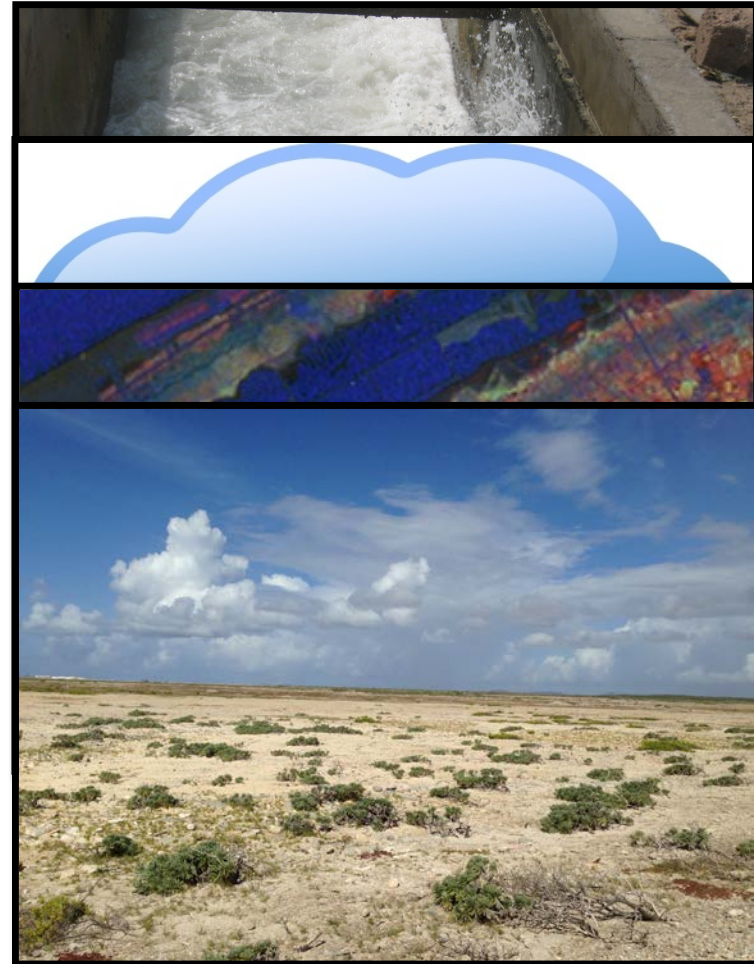
- Operations
- Maintenance
- Management
- Engineering
- Outside consultants
- Previous reports and projects



Identify Opportunities

Common Project Areas

- Pond management
- Rainwater mitigation
- Seepage
- Utilization of unused land



WORLD SALT SYMPOSIUM

June 19-21, 2018

Park City UT, USA



The E

Evaluate & Develop Opportunities

Method

Obtain Reliable
Baseline Data

Identify Opportunities

Project
Implementation

Benefits



New Data

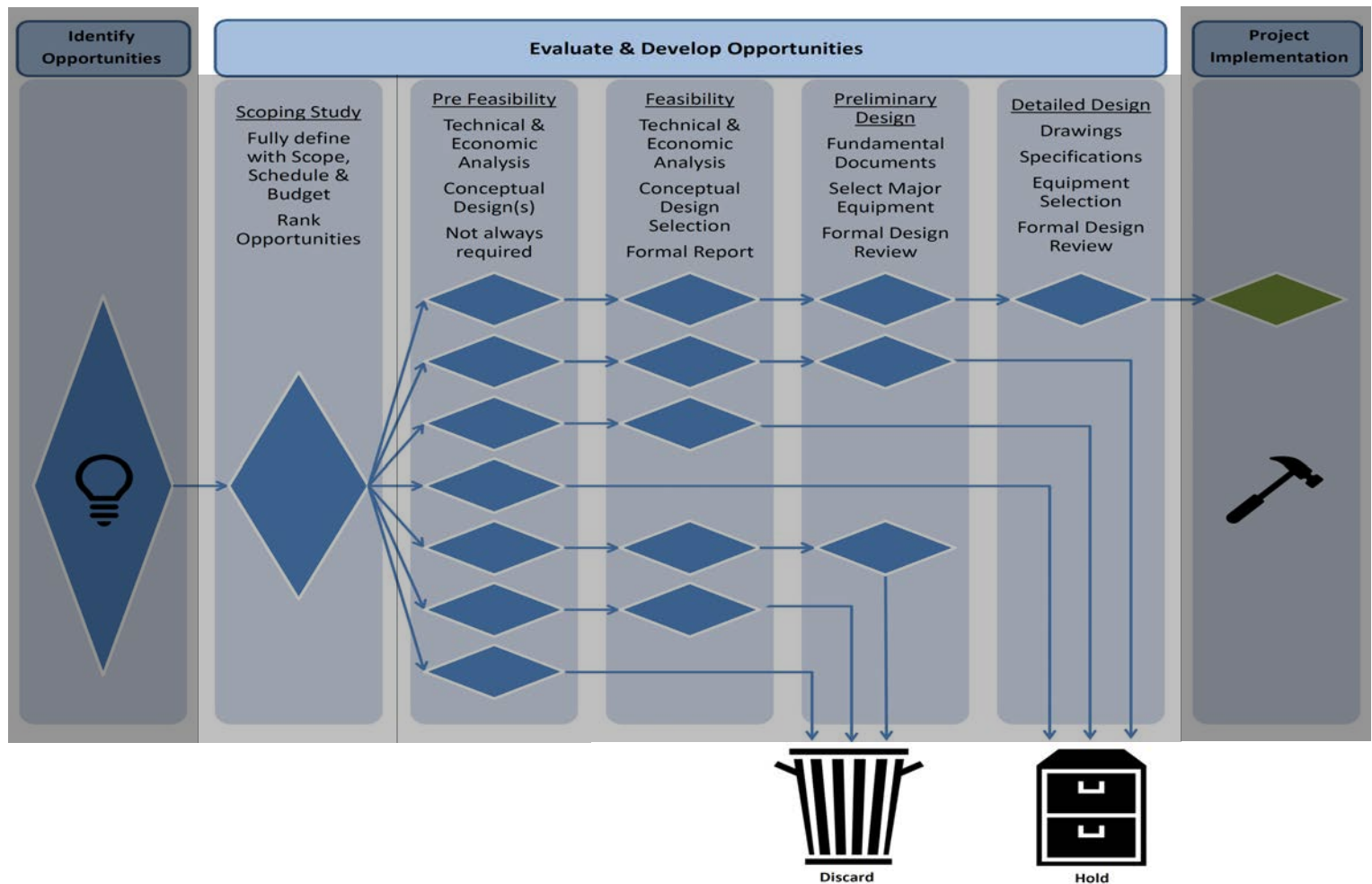
New Opportunities

Lessons Lear



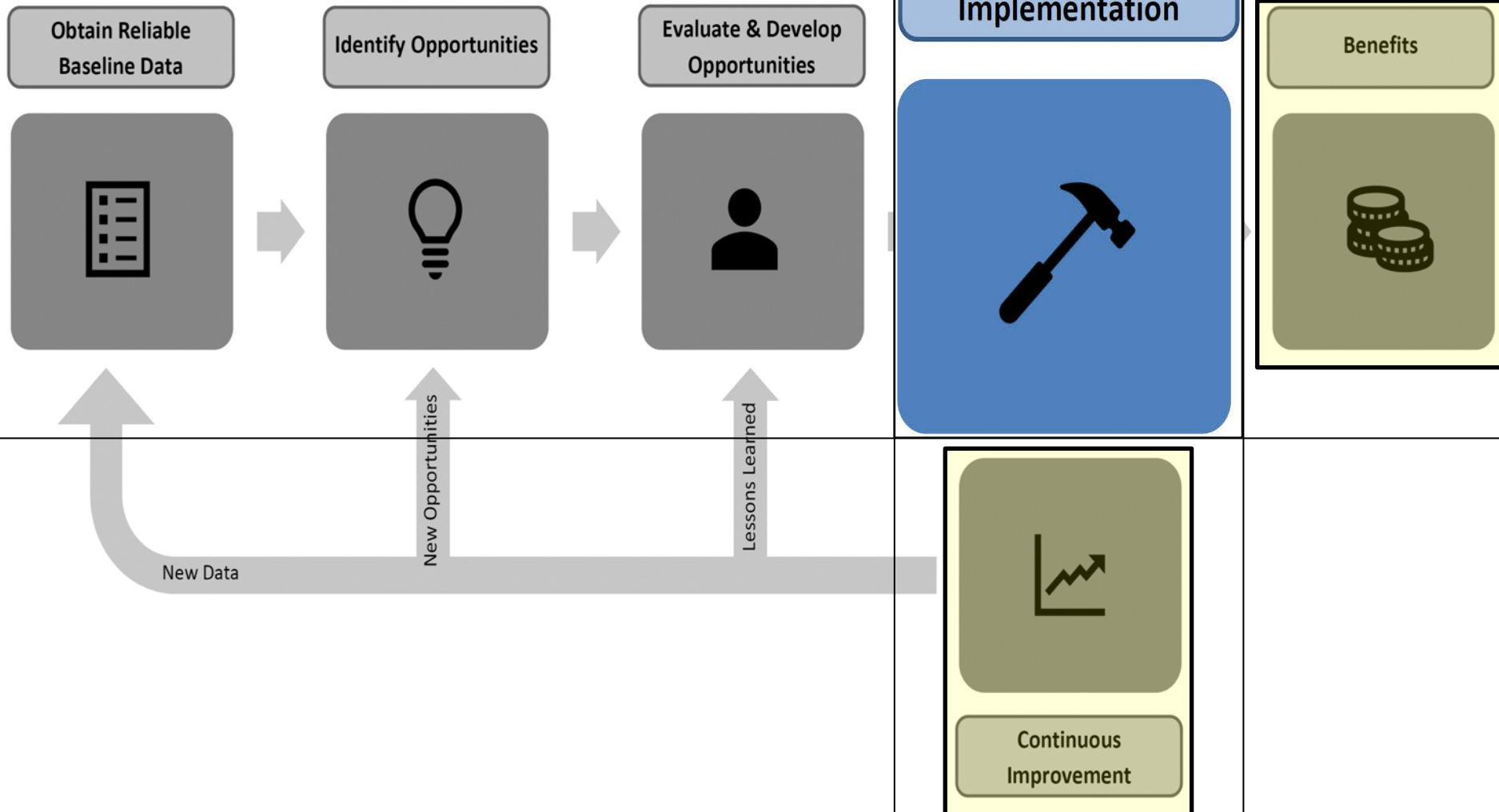
Continuous
Improvement

Evaluate & Develop Opportunities

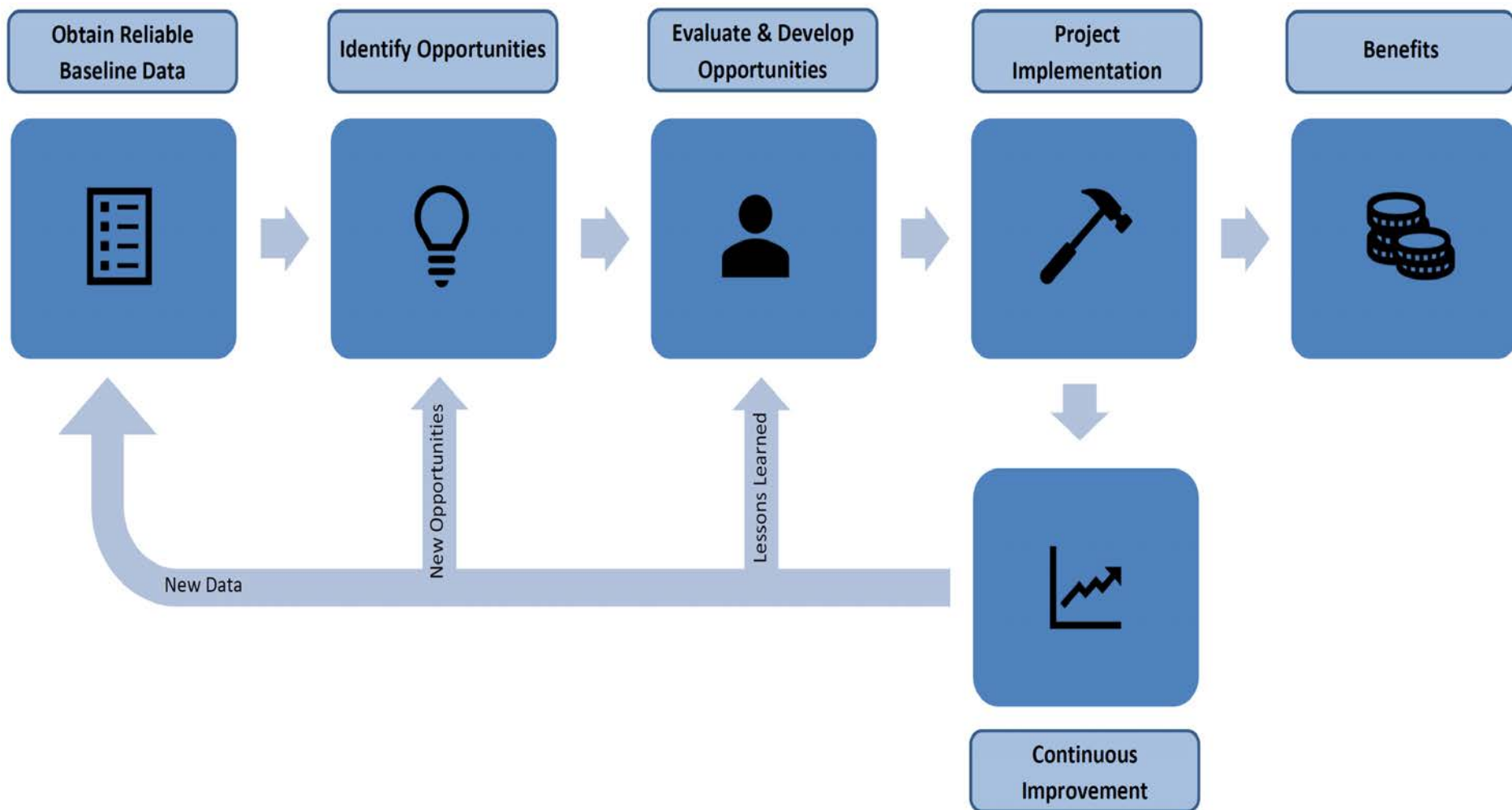




The Engineering



Conclusion



Thank You

to

The Salt Institute for this opportunity

QUESTIONS?

Feel free to contact us with any comments,
questions or inquiries:

REDD Engineering

Matthew Hickenlooper, ChE

Salt Lake City, USA

salt@reddengineering.com

www.reddengineering.com