



Engineering | Design | Planning | Construction Management

Bridge Preservation & Bridge Management for the Local Bridge Owner

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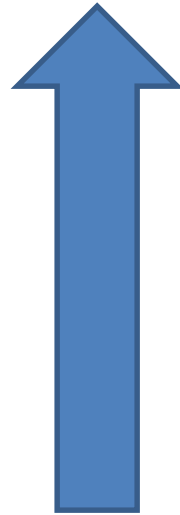
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Introduction

Bridge Preservation make sense



Bridge Management System (BMS)

The case has been made and you're here today...

Introduction

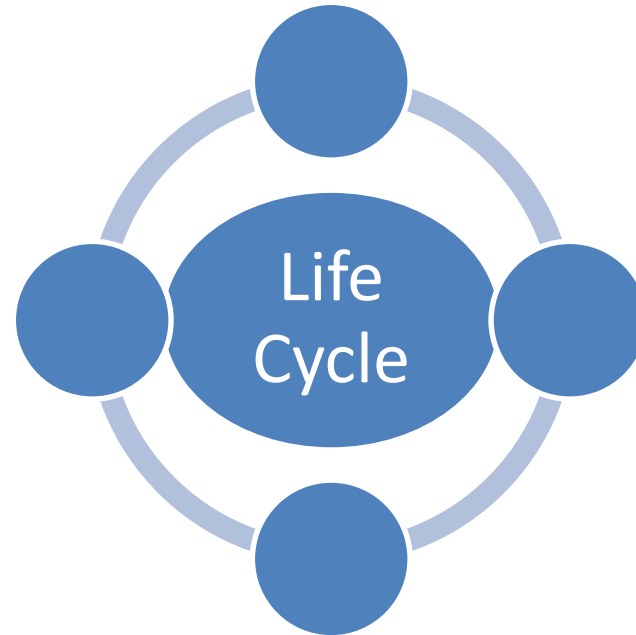
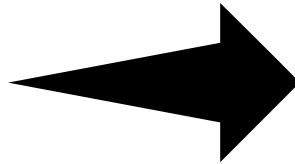
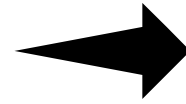
Bridge Preservation

- Changing the oil in your car
- Fixing a leaking roof
- Children's braces

fix small problems = less costly = economic sense

Introduction

Worst First



GPI

Bridge Preservation & BMS

Everyone has a...

...successful Bridge Preservation Program?

...functioning Bridge Management System?

If it makes sense, then...

...why do we struggle to implement BP?

...why does a BMS seem overwhelming?

...why unfunded preservation activities?

...why is this so difficult?

...why is it more difficult for local owner?

Who is Local, and who is not?

> 150 Bridges \neq Local



Who is Local, and who is not?

>150 but < 500

You want to be a local, but you're not.

Technology

Spreadsheet

Database

Right person

Who is a Local, and who is not

>500 bridges

Definitely not a Local

Formal BMS

Allocated Resources

Positioned for Success

Bridge Owners

Size of Bridge Inventory

< 150

150 - 500

> 500



Challenges for Bridge Owners 500+

- ✓ Have a BMS
- ✓ Dedicated Staff
 - Institutional Inertia
 - Culture
 - Change Management

Challenges 150 - 500 Bridges

- Resource constrained
- Consumed by day to day operations
- Life is hard enough
- New initiatives
- Attract and retain talent

Challenges for Locals <150 Bridges

- Overwhelmed
- Misconception of BMS
 - Specialized software
 - Complex rules
 - Equations & algorithms

Robust offers more functionality

Not an all or nothing proposition!

Challenges for Locals <150 Bridges

- Resource constrained:
 - Self Perform
 - Contracting
 - Skill set
 - Financial

How do we help?

- ✓ Want to be successful
- ✓ Practical solutions

Path forward:

- Start at the beginning
- Simple Steps



Inventory

- ✓ Can't manage what you don't know
- ✓ Inventory is the foundation of your BMS

What is inventory?

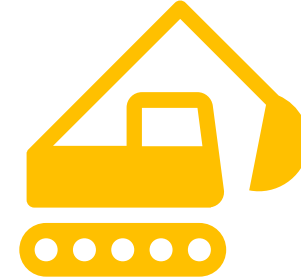
- Complex attributes & condition states
- Basic information
- Anything in between

Common Attributes

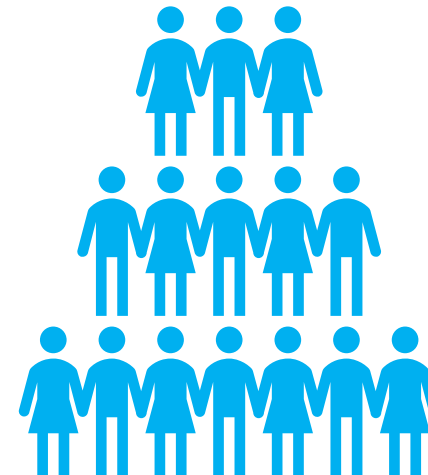
- Location (route, functional class, traffic)
- Age (when was it built)
- Type of structure (steel girder, truss, arch, prestress)
- Repair history (previous work performed)
- As built or repair plans
- Current condition (NBIS condition assessment)
- Photographs (only worth 500 words)

Resources

People & equipment



- Number of employees, crews
- Skill sets (engineers, equipment operators, laborer's)
- Align skill sets with tasks
- Assign responsibilities



Resources

Funding

- Total Annual Allocation
- Trend for last 5 years

How much can be invested in the network this year?

What if there is no budget or dedicated budget?

Bridge Management System

A list of actions

A set of treatments

A list of projects

BRIDGE PRESERVATION



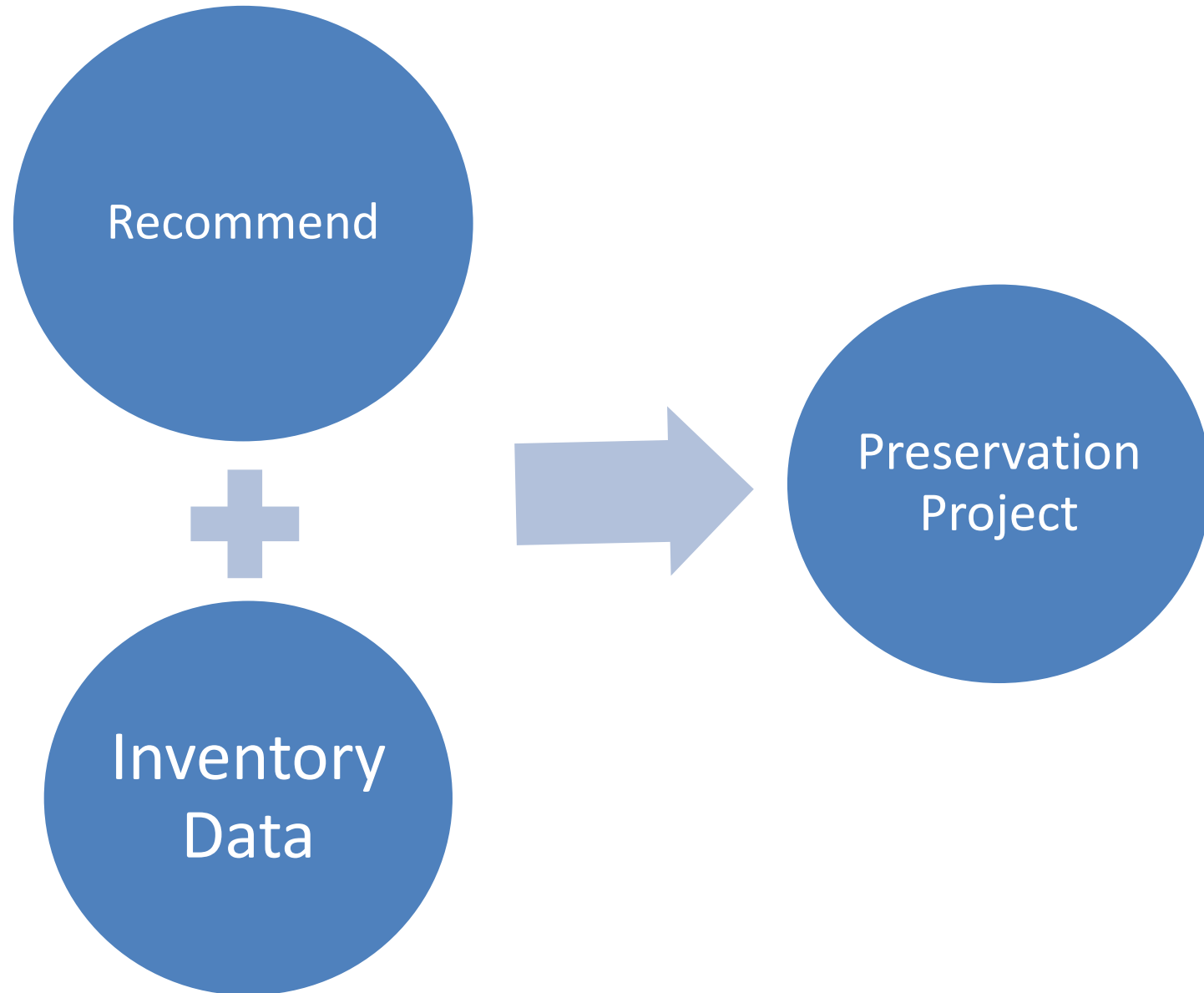
List of Actions

NBIS Condition Assessment Report Narrative

- *Expansion joint plugged and needs cleaning*
- *Bearing seats full of debris; preventing movement*
- *Spalled concrete on deck; needs patching*

Capture these recommendations!

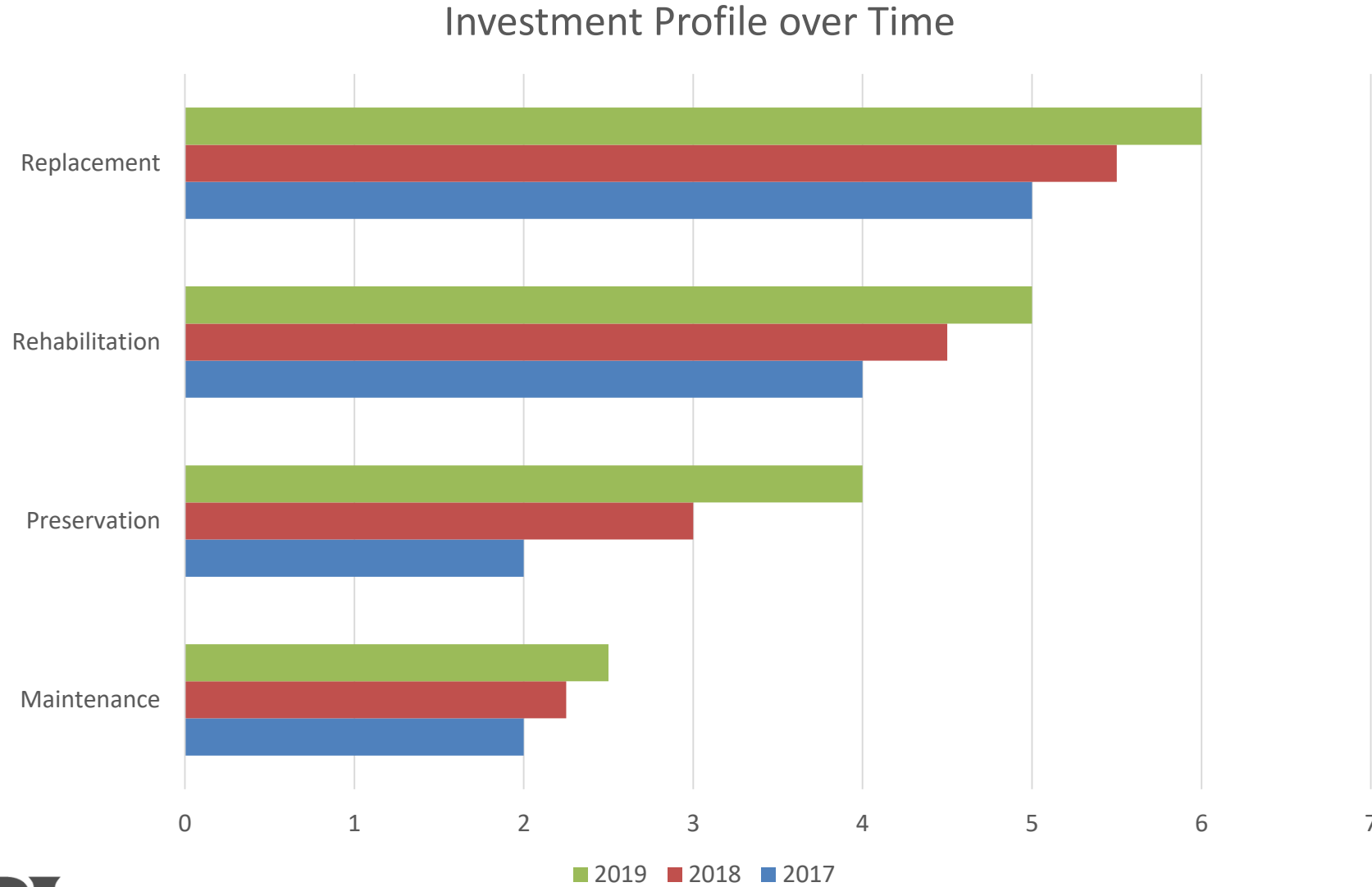
Compare Information



Field Review

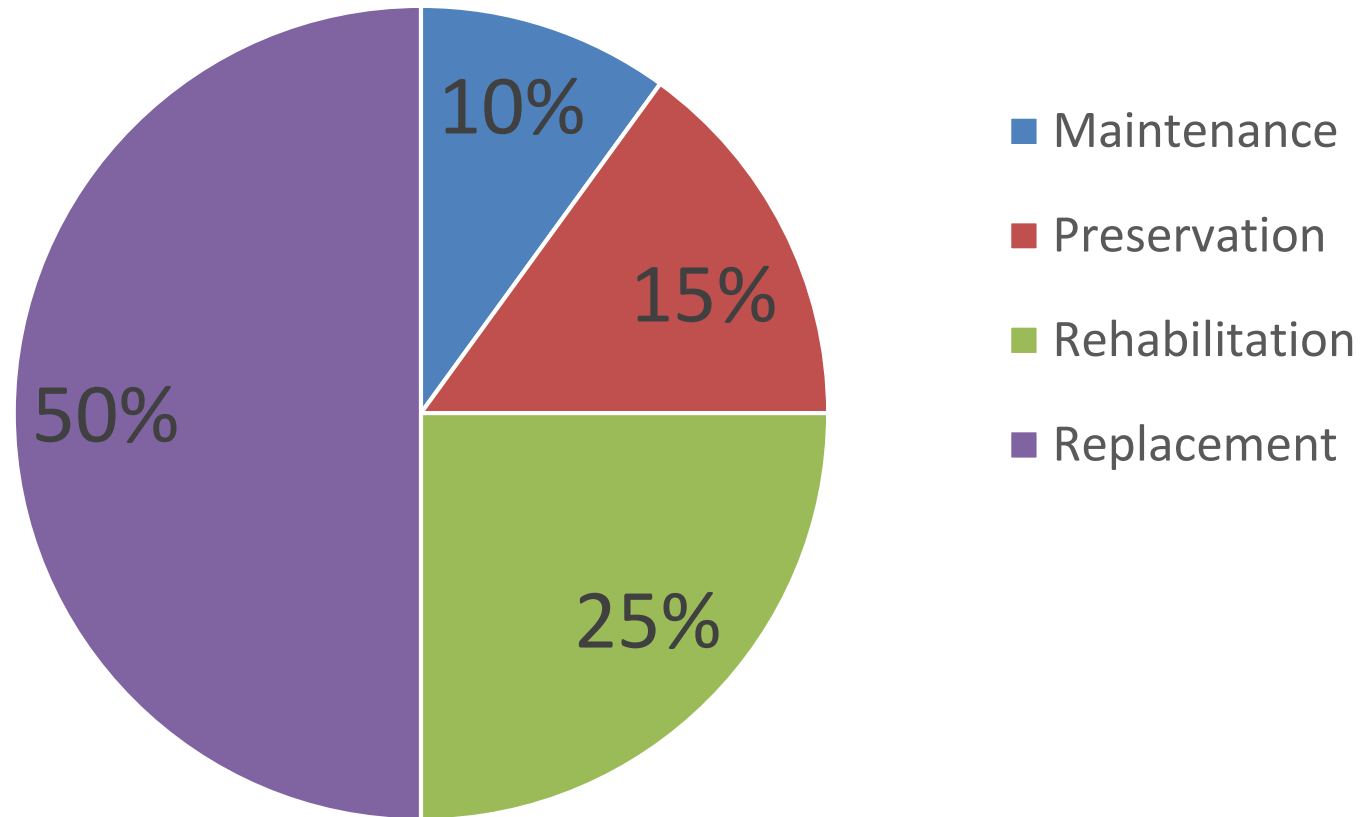
- ✓ Is this the correct treatment?
- ✓ Is there other work?
- ✓ Can the work be postponed?
- ✓ Is work on this bridge a priority?
- ✓ Accuracy of scope and estimate?
- ✓ Site constraints?

Fiscally Constrained



Set Goals

Budget



Bridge Management System

- ✓ Inventory
- ✓ Identified needs
- ✓ Formulated preservation treatments
- ✓ Fiscally constrained

Preservation Work

Bridge Cleaning & Waterproofing

- ✓ Remove winter sand and debris
- ✓ Clean bridge seats
- ✓ Substructures exposed to spray
- ✓ Waterproofing

A User's Guide to
**BRIDGE
CLEANING**



GPI

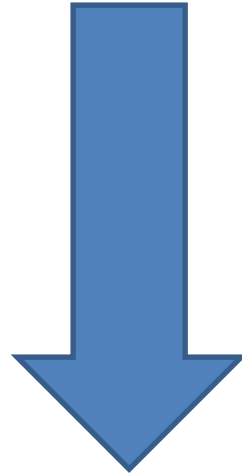
Set Goals

Time based actions:

- ✓ Remove sand and debris every year
- ✓ Clear drains every year
- ✓ Wash every bridge once every two years
- ✓ Waterproof bridge every four years

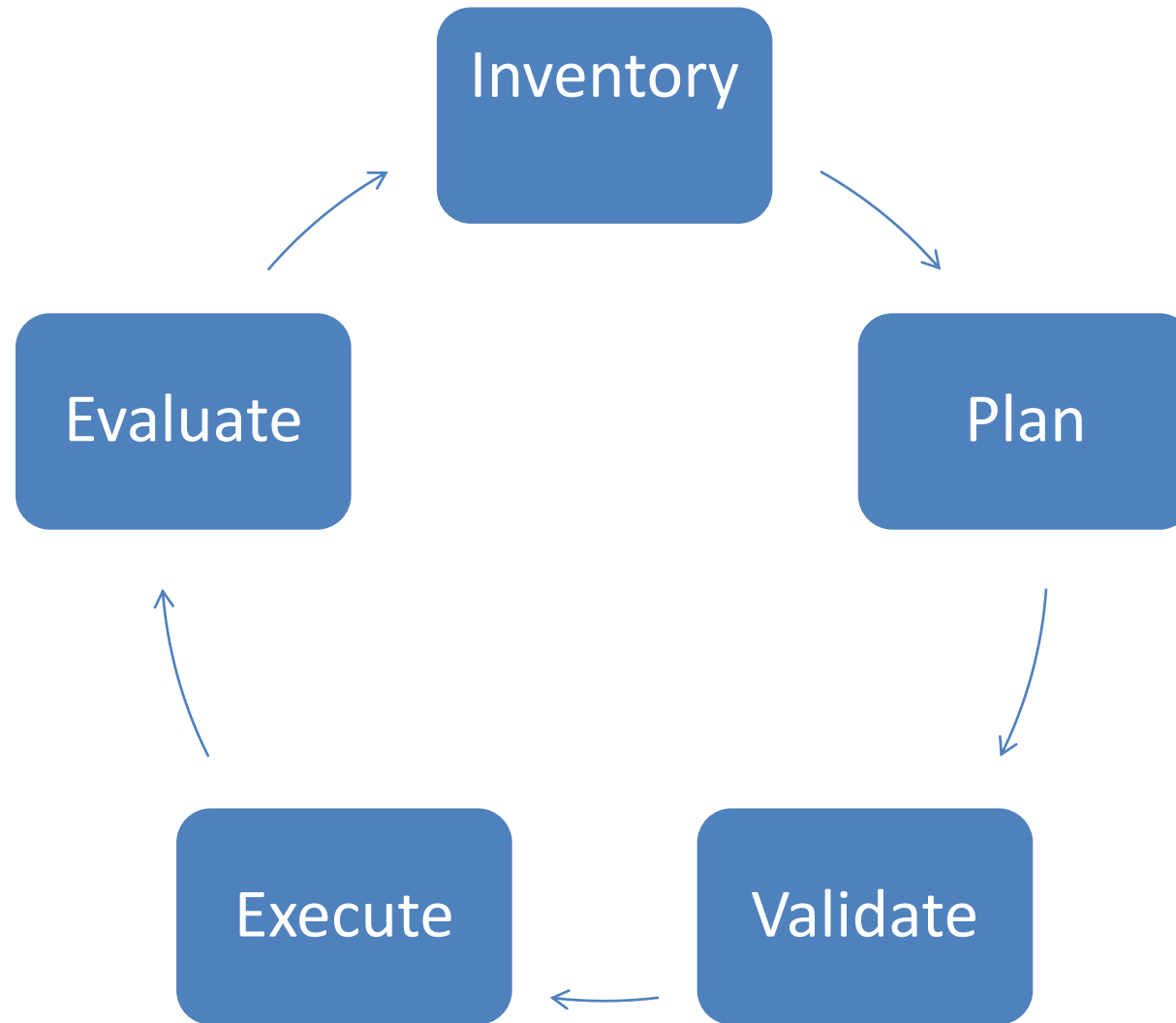
Final Step

Track your accomplishments



Feed the inventory

Close the Loop



Summary

Start small, start simple, be successful

Listen to the feedback & make improvements

**Avoid analysis paralysis, something better than
nothing**

Questions?

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