

# Applied Lean Problem-Solving: A State and Local Partnership to Restore Shellfish in Samish Bay

---

Karen DuBose

Dept. of Public Works

Skagit County



Stew Henderson

Results Washington

Office of the Governor







World Class  
Education



Prosperous  
Economy



Sustainable Energy  
and a Clean Environment



Healthy and  
Safe Communities



Efficient, Effective and  
Accountable Government

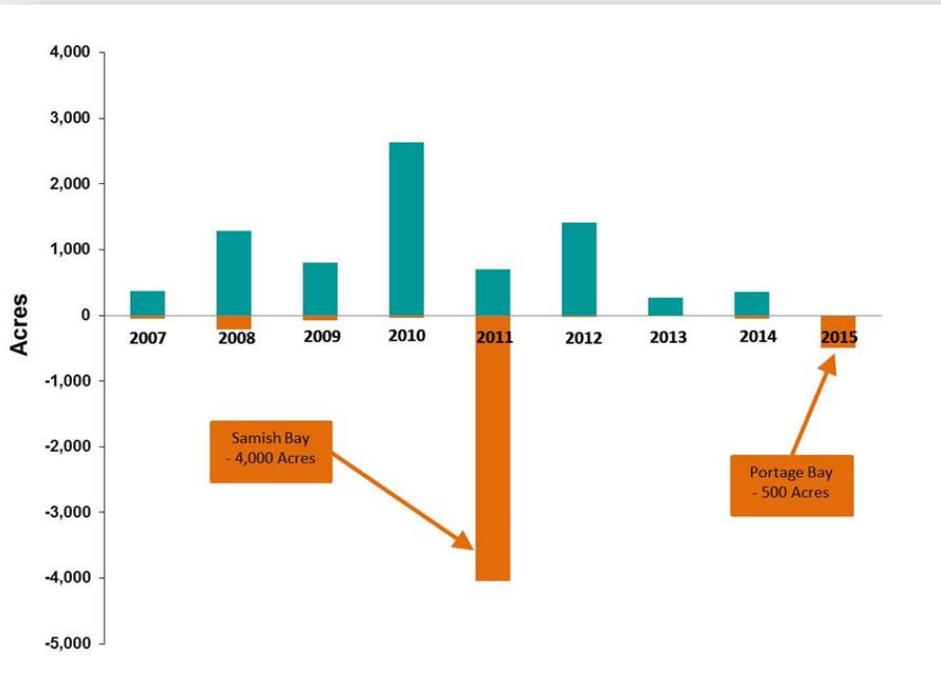
## **A healthy shellfish industry means:**

- Jobs and income
- Clean water & healthy habitat
- Public safety

**No other state has done what we have!**

# Background: *Overall water quality is improving*

Puget Sound Areas  
Improved or Declined  
2007 – March 2015

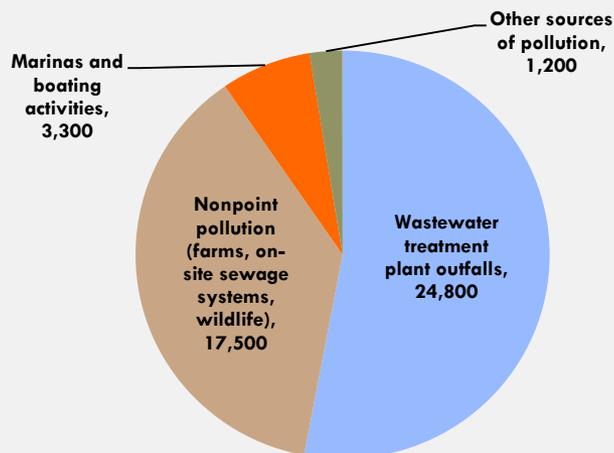


- Long term trends show improved water quality
- Poor water quality in Samish Bay and Portage Bay have masked this success

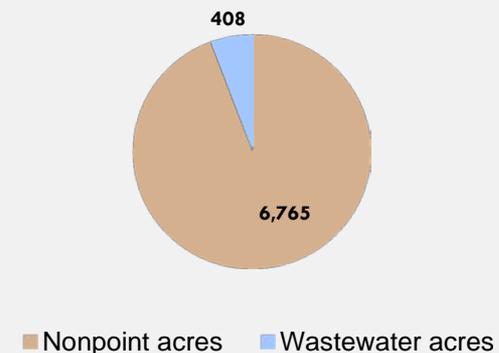
# Current State: *We have the opportunity to improve water quality if barriers are addressed*

- **Able to fix:** Non-complex watersheds (moving the needle)
- **Long-term fix:** Wastewater and stormwater outfalls
- **Opportunity:** Complex watersheds with nonpoint pollution sources (farms & septics)

**Pollution Sources Impacting Acreage**

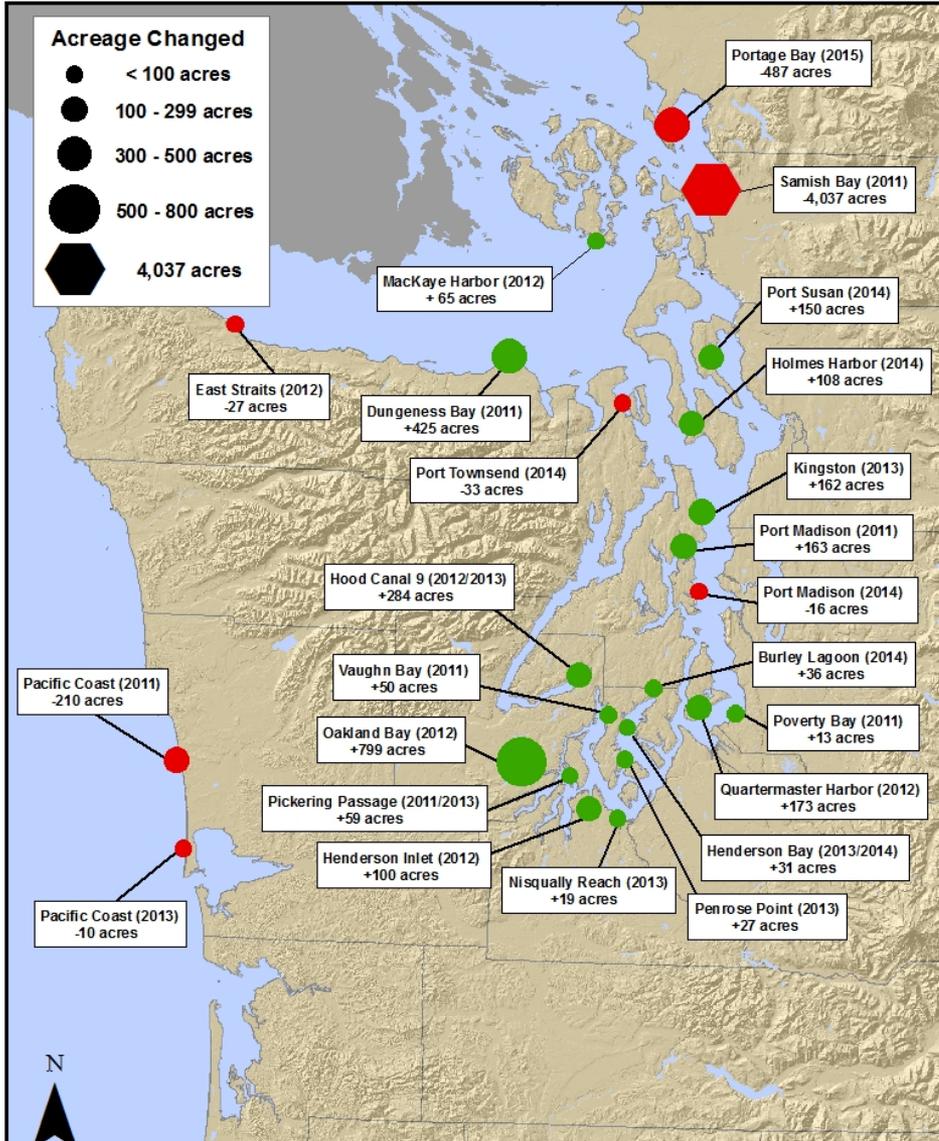


**Acres Opened by 2016 if Barriers Addressed**

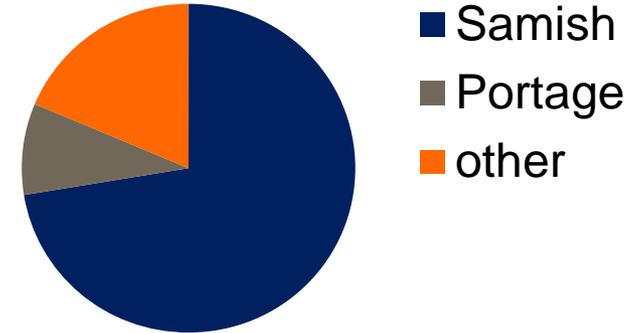


# Why focus on Samish?

Washington Shellfish Growing Area Reclassifications: 2011 - April 2015



## Total acres needed



- Local engagement
- No clear answers
- Focused effort could help us statewide

# Pollution Identification & Control (PIC)

**FECAL COLIFORM BACTERIA**

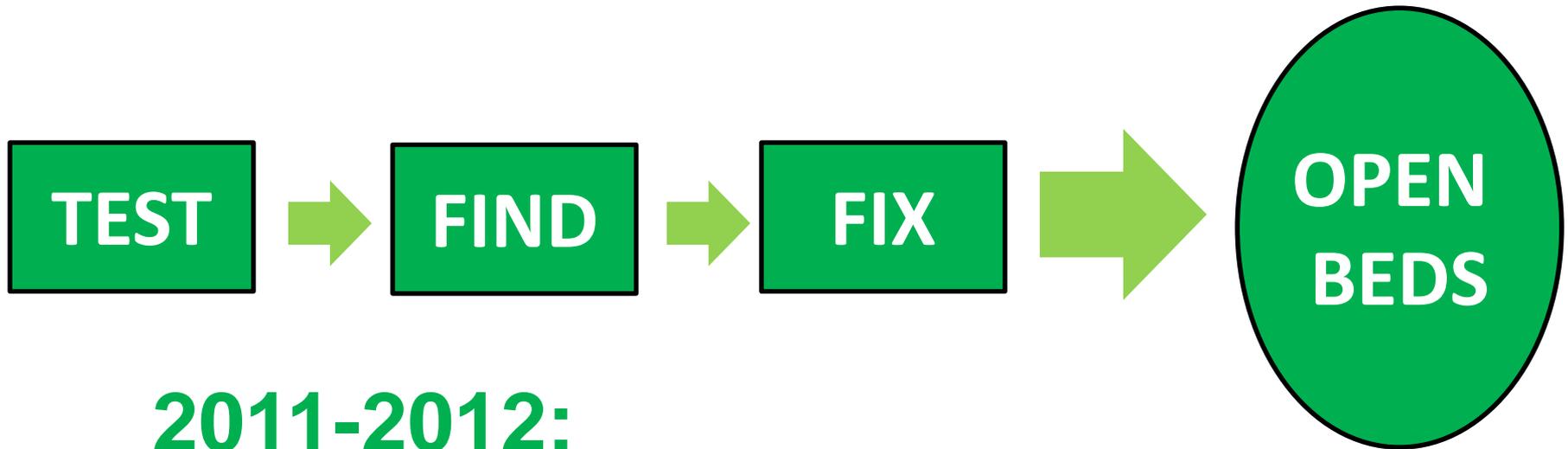
**MANURE**

**NATURAL SOURCES**

**SEPTICS & SEWERS**

2.5mi  
5km

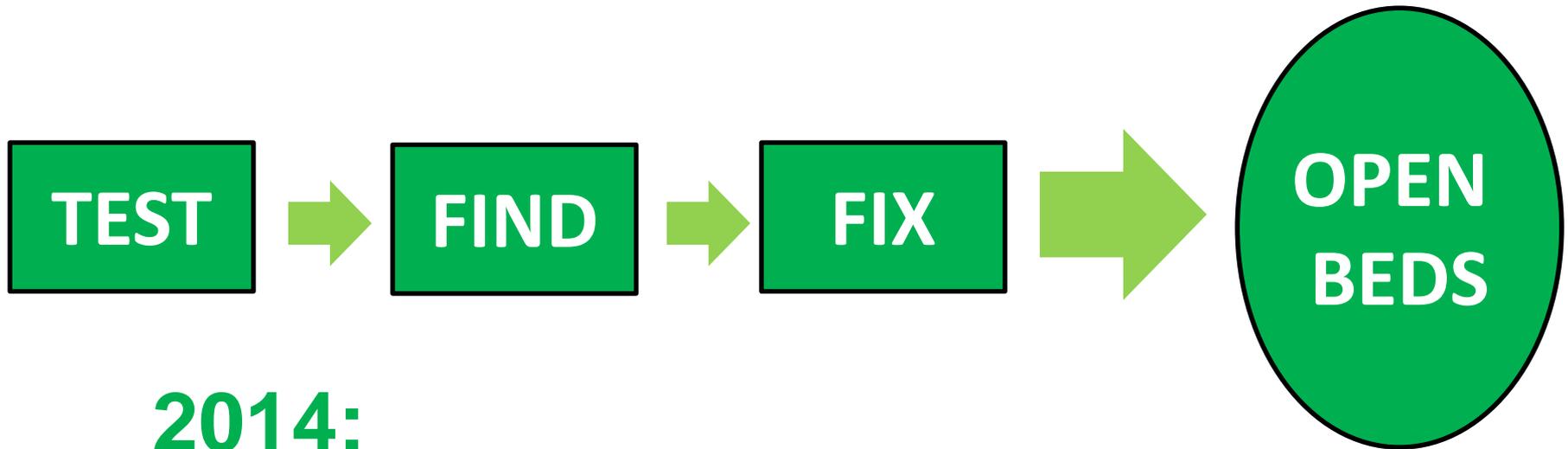
# Clean Samish Initiative



2011-2012:

- Fixed most of the problem

# Clean Samish Initiative



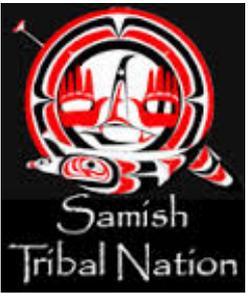
2014:

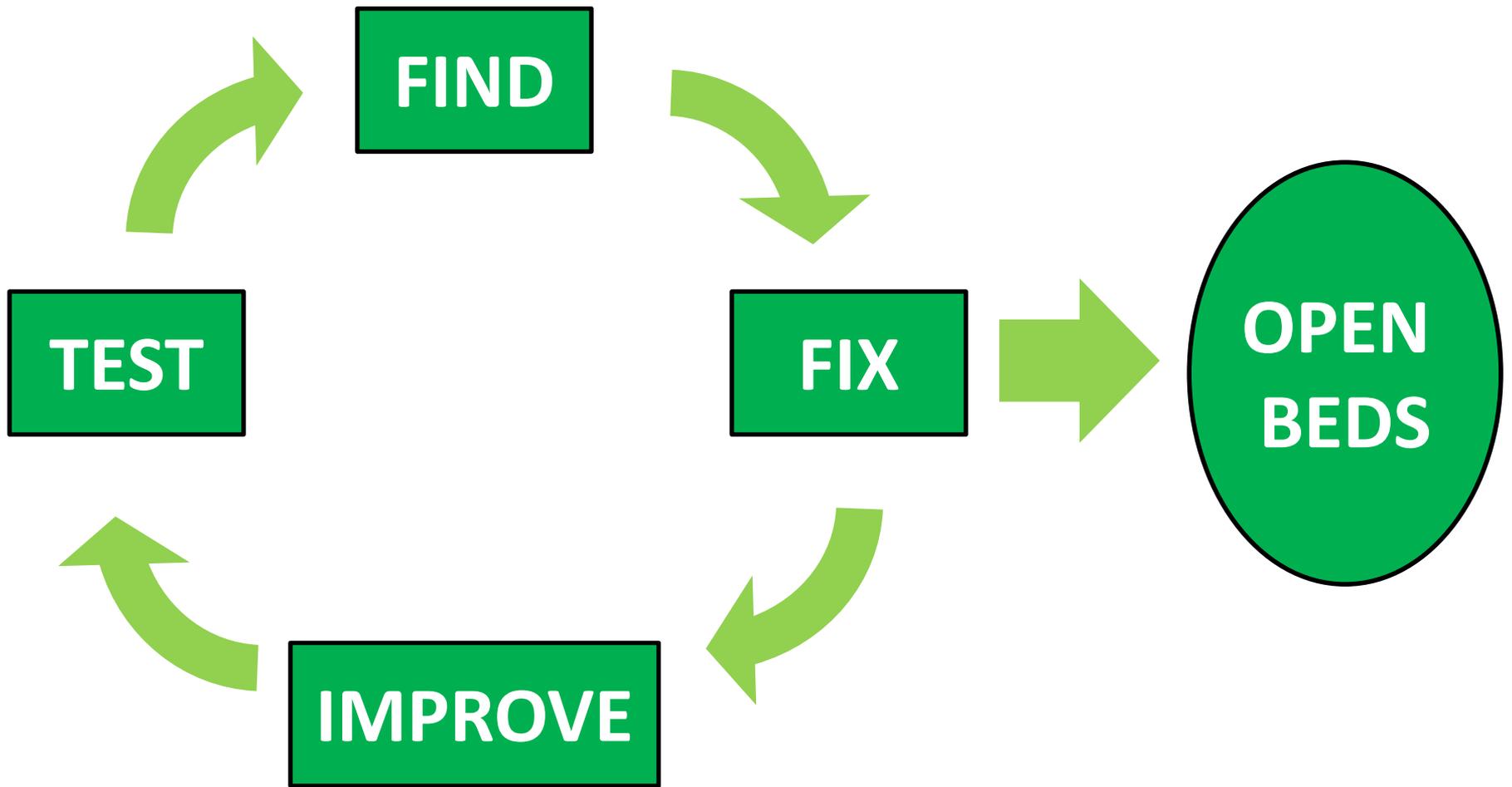
- Hardest problems left
- Little or no progress

# “Mud on their boots”



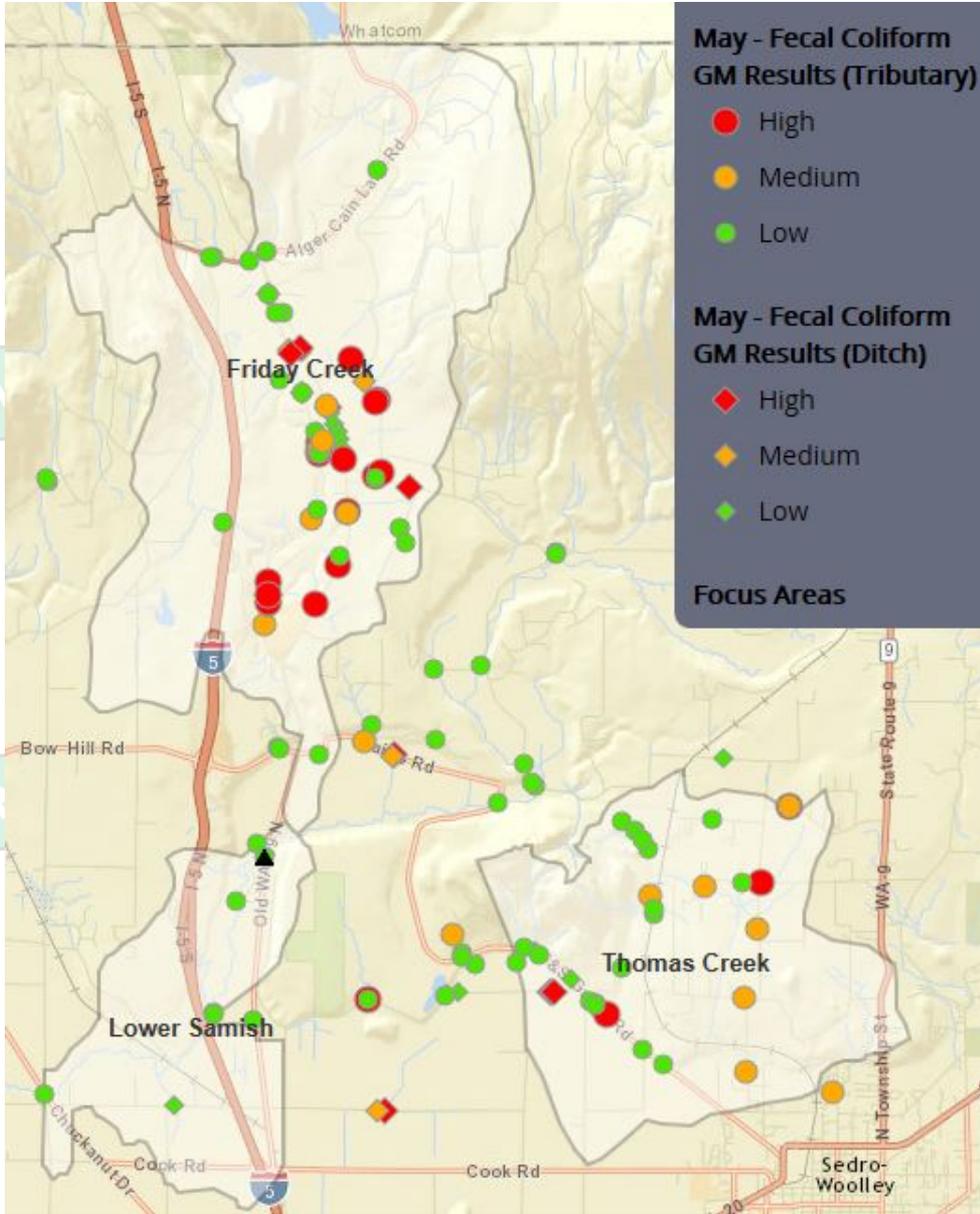
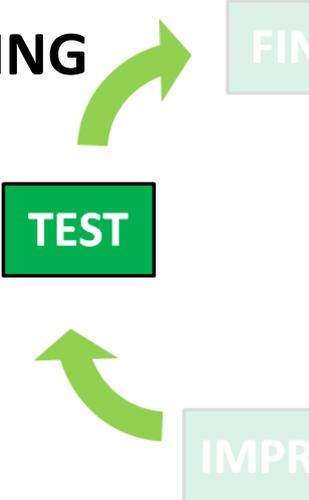
Skagit Conservation District





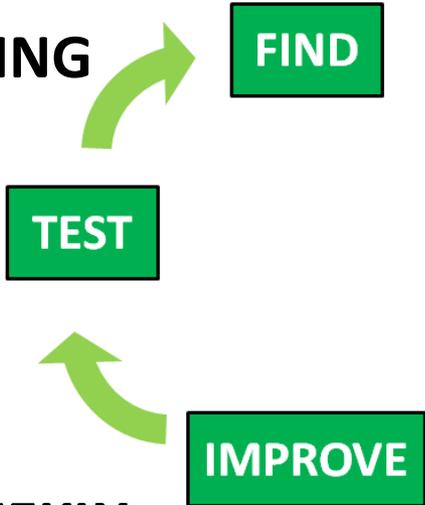
# What we did

- HOTSPOTS
- MORE TESTING
- NEW MAPS



# What we did

- ID HOTSPOTS
- MORE TESTING
- NEW MAPS



- WEEKLY IMPROVEMENTS
- BUSTING BUREAUCRACY

- STREAMWALKS
- APPROACH
- OUTREACH

FIX

- MORE FIXES
- FASTER FIXES
- BETTER FIXES

Progress towards

OPEN BEDS

# Initial Results

## Finding & fixing bacterial sources:

- BMP avoids 800,000 gallons of wastewater
- Problems identified in streamwalks
- Septic fixes

## Finding & fixing bureaucratic obstacles:

- Progress on access issues
- Beefed up approach on septics
- Faster turnaround on fixes (solar fencing idea)

# What did we learn?

- Opportunities for collaboration – and tough conversations – have improved our work
- Local teams welcome our involvement
- We can impact problems that initially seems “beyond our control”
- Lean problem-solving works

# Can this transfer to other areas?

