NPDES Permitting Program Review Situation Assessment, May 6, 2016

MWH
BUILDING A BETTER WORLD

Abbreviations and Terms

List of Abbreviations and Terms

- DEQ = Oregon Department of Environmental Quality
- NPDES = National Pollutant Discharge Elimination System
- Review Team = The MWH and subcontractor team conducting the third party Permitting Program Review

Context - Problem

- Oregon DEQ and the Legislature have actively pursued improvements to its NPDES permitting program for over a decade. Efforts included:
  - *Blue Ribbon Committee*
  - *Internal work teams*
  - *Independent audit*
  - *Quality improvement efforts*
- Permitting goals still elude the department.
- Oregon Legislature has authorized consulting assistance.

NPDES Program Review Purpose and Goals

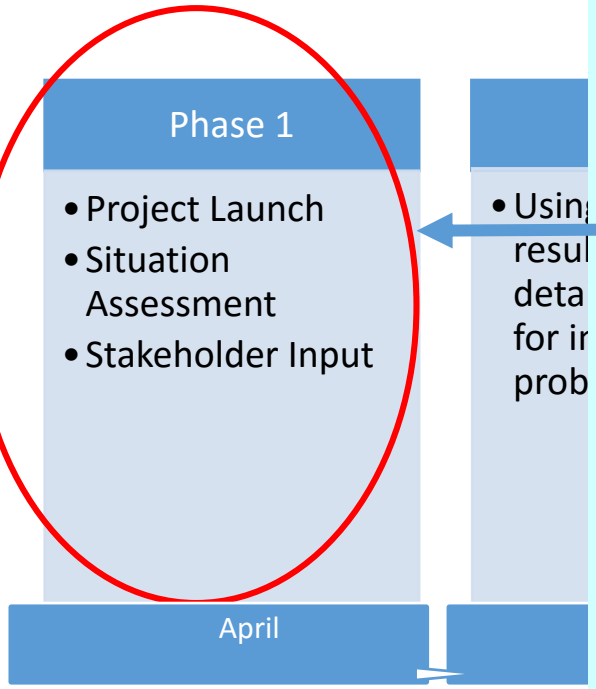
Assist DEQ in implementing changes that will facilitate:

- Regulating discharges so Oregon's waters meet state water quality standards
- Issuance of environmentally relevant permits
- Reissuance of permits before the existing permit expires
- Reduction of the number of administratively extended permits to less than 10 percent

Project Overview

Phase 1	Phase 2	Phase 3	Phase 4
• Project Launch • Situation Assessment • Stakeholder Input	• Detailed work plan for investigation of problem	• Conduct investigation, prepare recommendations, identify options, and describe trade offs. • Stakeholder input • Revise as needed	• Prepare implementation Plan • Stakeholder input • Revise as needed
April	May	June – Sept.	Fall 2016

Project Overview



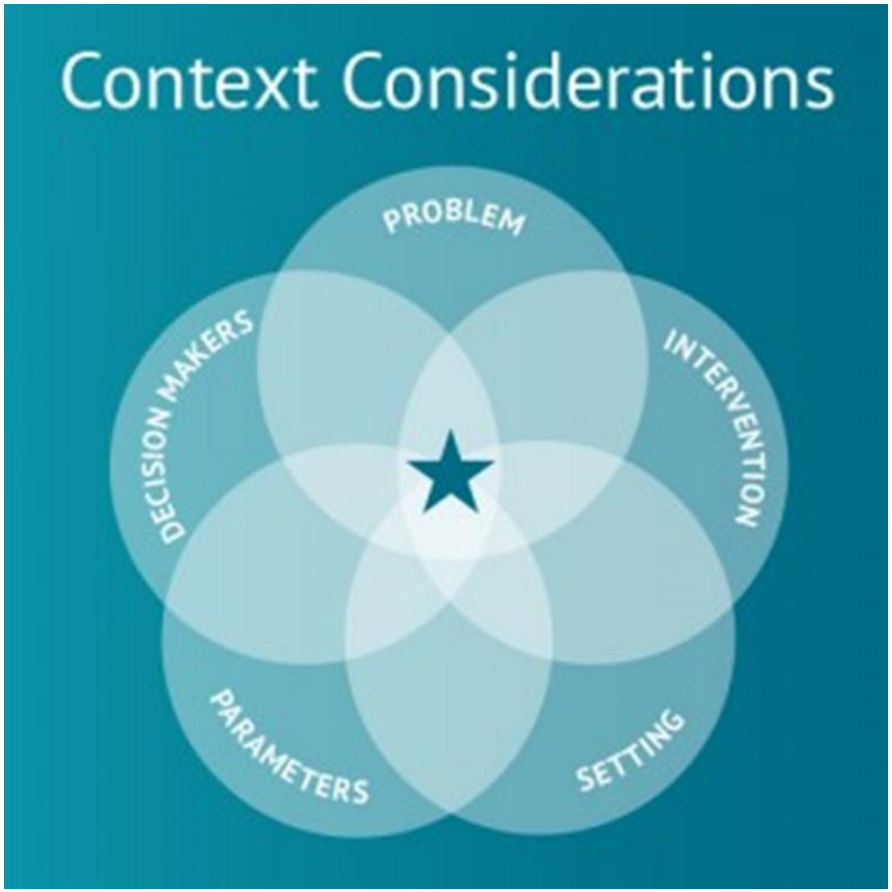
Notes:

- The Permitting Program Review is being conducted in Spring-Fall of 2016.
- This presentation features Phase 1 of the project, the completion of a situation assessment.
- The second phase of work is to complete a work plan detailing how the problems identified in the assessment can be further explored.
- In the third phase of work, findings and recommendations will be developed.
- In Phase 4, an implementation plan that outlines necessary steps for achieving desired changes is developed.

Situation Assessment Topics

- Definitions
- Context
- Background Research
- Interview Process
- Demographics
- Findings
- Results & Implications

Situation Assessment



- A situation assessment frames the context in which a problem, issue or opportunity is occurring.
- Assessment questions are designed to help refine problem statements, determine the bookends or parameters of issues, and identify the range of decision makers.
- An assessment also signals that some form of intervening action is being considered.

Why an Assessment?

- Engage the full system (there are many parts to the NPDES process and many situational drivers)
- Serve as an initial point of contact with the key stakeholders that will likely be needed to eventually resolve the situation
- Identify priorities and flash points
- Use results to establish the appropriate plan of work

Situation Assessments are an intervention (forming and asking questions disrupts the current situation)

Why an Assessment?

- Notes:
- Engaging the full system is particularly important for complex problems as a "fix" in one part of the system can aggravate problems in another.
- One goal is to engage interested parties early to allow them to help construct positive changes rather than be asked to react to them after the fact.
- Given that much effort will be required to address the permit backlog issue, learning stakeholder priorities will help the review team in creating focus on high value activities.
- The team also needs to understand stakeholder "flash points" (points of high conflict or topics that are highly charged).
- Results are used to focus work for the next project phase.

Project Perspective

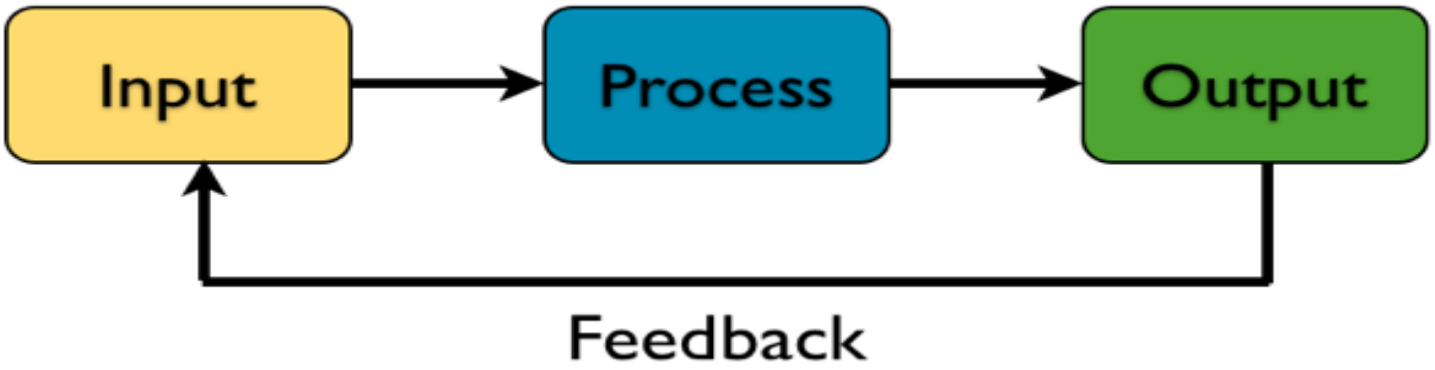
Seek Cause

Not Blame

The Review Team enters the project with several foundational beliefs about approaching the problem. These include:

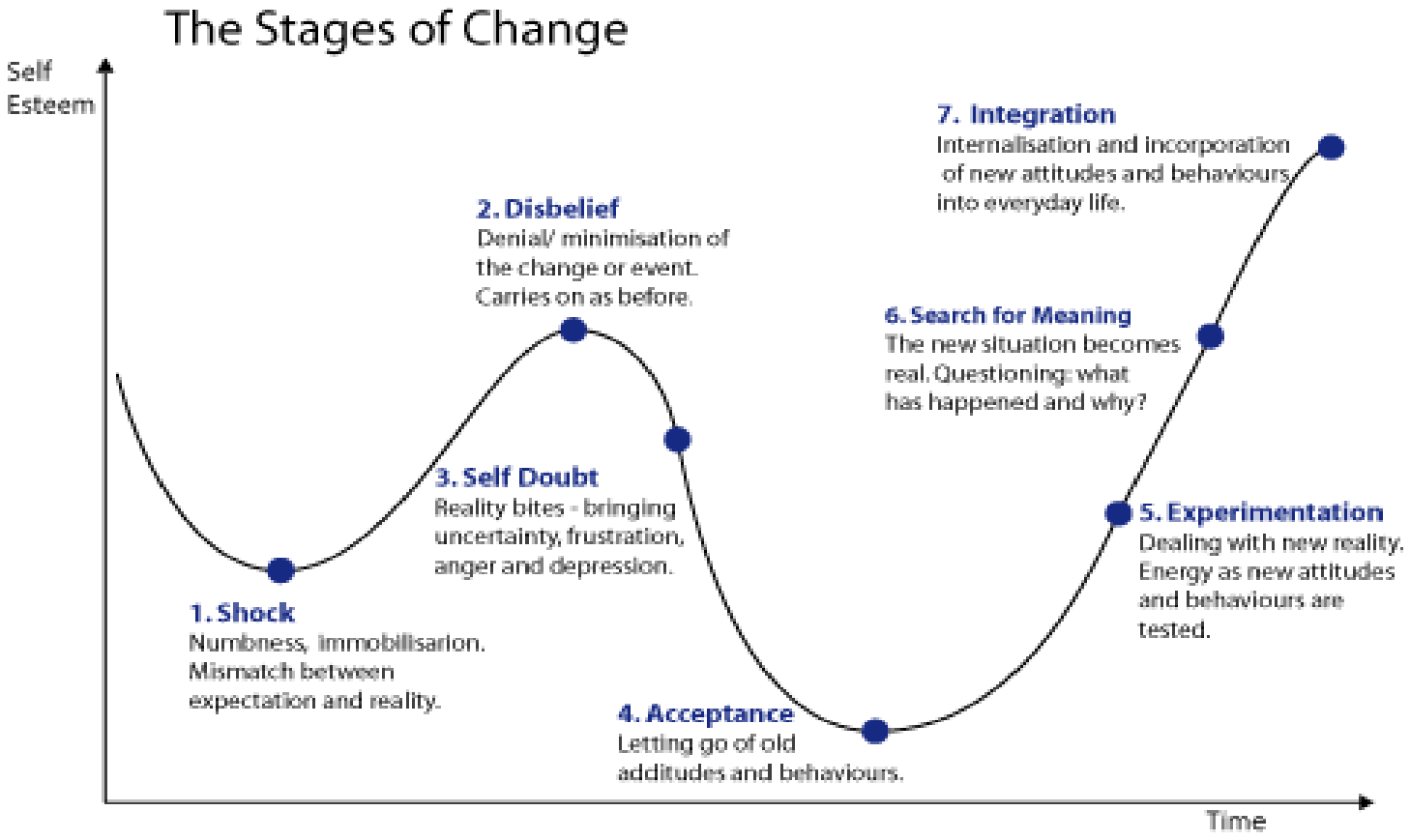
- Fault finding is not useful to solution creating
- Resolution will require a systems orientation
- A large emphasis will be needed on change management
- Successful NPDES Permit Backlog improvement will require changes by all stakeholders.

A systems orientation is necessary as systems produce what they are designed to produce.

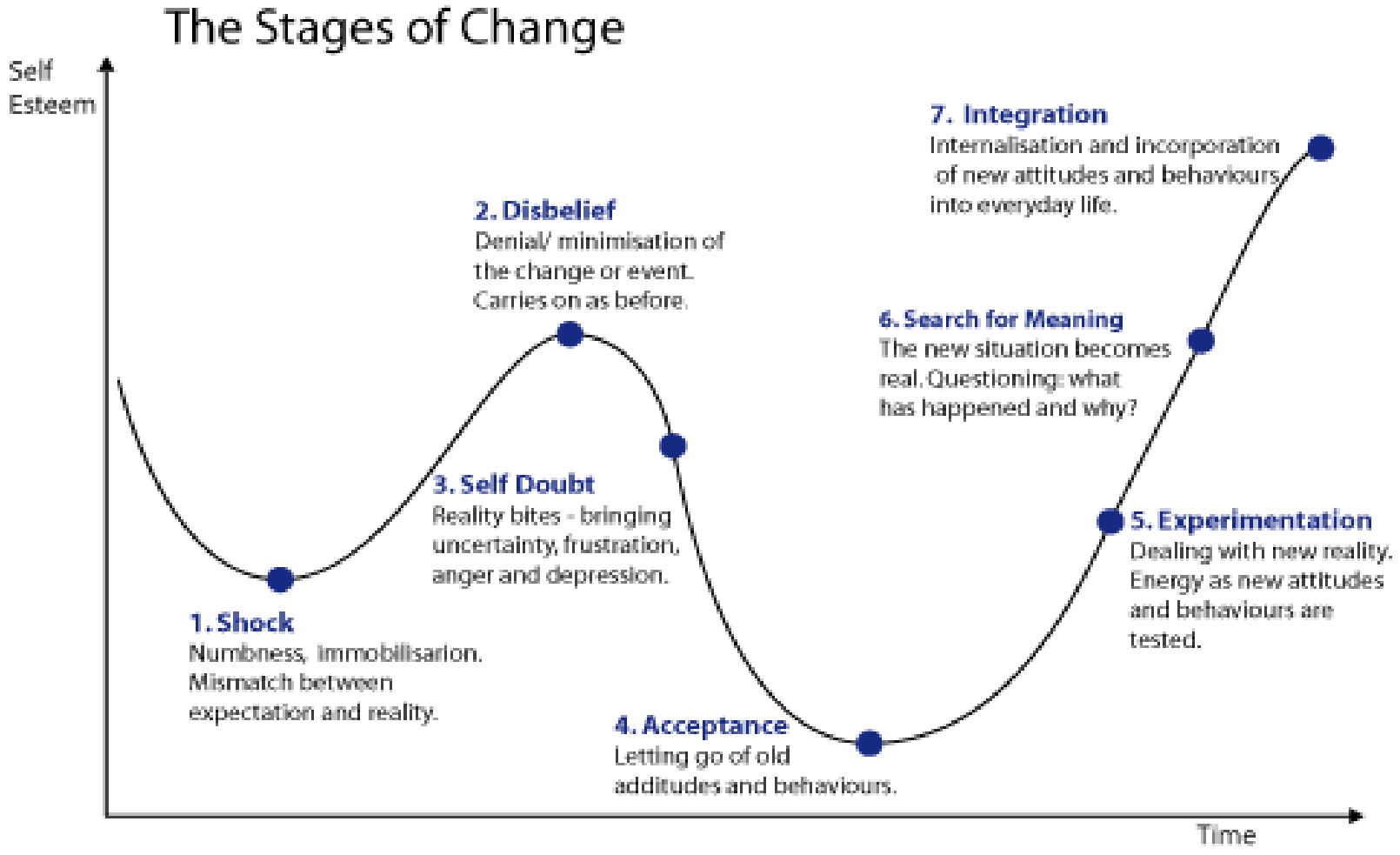


- The key to improvement is understanding the system(s).

Change management is also key. Understanding the normal trajectory of human behavior in change is critical.



Change Management

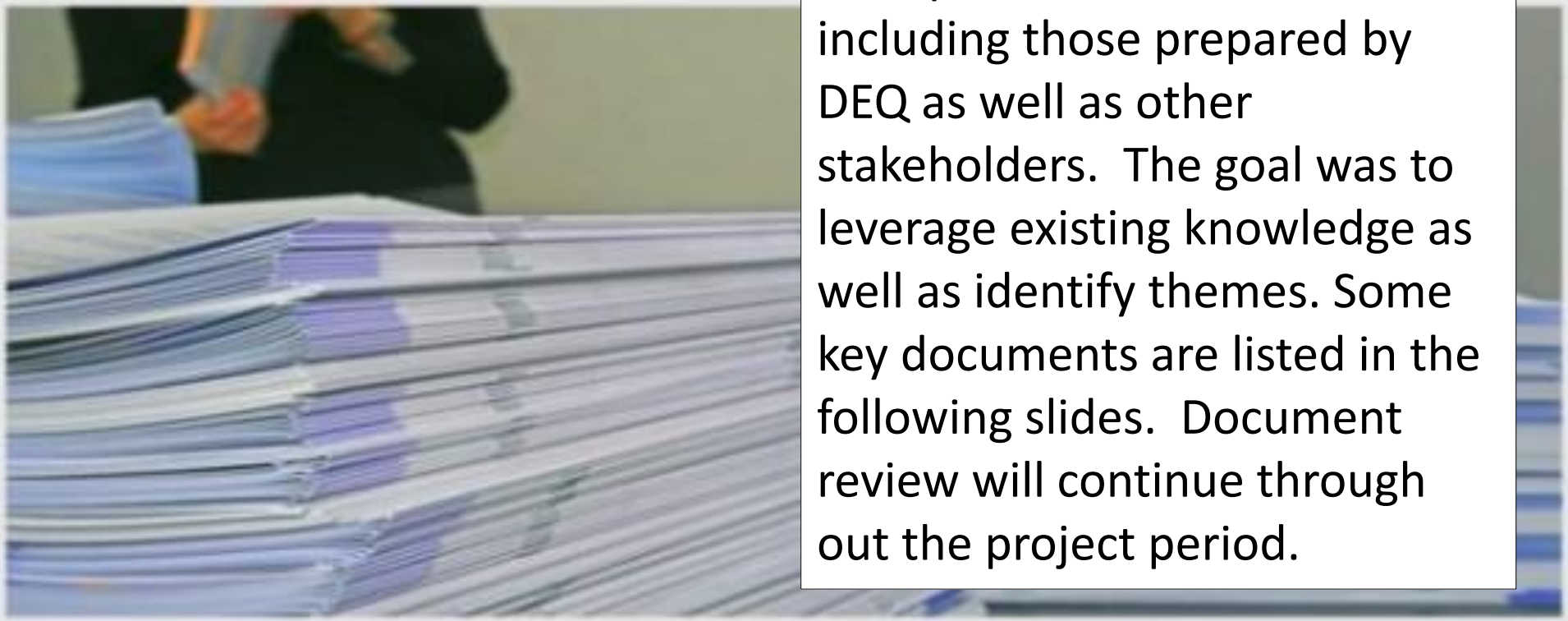


The need for change management applies to everyone, not just DEQ

Assessment Steps

Problem Definition	Construct and refine a Problem Statement
Conduct Background Research	Review relevant documents and identify stakeholders
Receive Stakeholder Input	Conduct Interviews
Synthesize Results	Compile information and validate with stakeholders
Utilize Results	Develop the project plan using assessment information and findings

Document Review



Notes:
The Review Team evaluated multiple relevant documents including those prepared by DEQ as well as other stakeholders. The goal was to leverage existing knowledge as well as identify themes. Some key documents are listed in the following slides. Document review will continue through out the project period.

Document Review

- Blue Ribbon Committee (BRC) initial report (2004)
- Various BRC meeting minutes
- Compliance Schedule Settlement Agreement between Plaintiffs and Oregon DEQ (2007)
- Senate Bill 45: Water Quality Permit Program Improvements – Fact Sheet (Feb 2010)
- NPDES MOA between State of Oregon and USEPA (Apr 2010)
- Summary of Internal Program Review of Water Quality NPDES/WPCF Permitting Program (Jan 2015)
- Service Quality Pledge to Oregon Wastewater Permit Holders
- Statewide Permit Issuance Plan for Federal Fiscal Year 2016 (Oct 2015)
- Outcome-based Management and Strategic Goals (Nov 2015)
- Various DEQ Audits

Document Review

- Internal Review of Water Quality NPDES/WPCF Permitting (Dec 2014)
- Summary of Active and Backlogged Individual Permits (Jan 2016)
- Survey of State NPDES Programs (Jan 2016)
- USEPA Final Permit Quality Review for Oregon (Mar 2016)
- Various TMDL documents
- Various Oregon Water Quality Standards documents
- Wastewater Permitting Program – Improvements and Measures (Jan 2011)
- Various Internal Management Directives (IMDs)
- Charter for Wastewater Permit Managers Team (Nov 2014)
- Charter for Senior Permit Group (Jan 2015)
- Anti-Backsliding and Water Quality Permits (Mar 2015)

Interview Process

Interview Process

- MWH and DEQ worked together to identify key NPDES stakeholders
- Review Team conducted 60-90 minute interviews, primarily in person but some via phone
- Project background and interview questions were provided in advance

Interview Participants

- **16 Interviews,* 39 Participants included:**
- Environmental /Non-governmental Organizations
- Regulated Community
- EPA Region 10
- DEQ
  - Regional Managers, Permit Managers, Senior Permit Writers, Legal/Enforcement (including Attorney General's Office), Permit Coordinators, and Standards & Assessments staff

* Primarily in-person, April 2016

Interview Questions

8 General Questions

- Background of Interviewees
- Problem Definition
- Assessment of Previous Efforts
- Potential Areas of Focus
- Barriers
- Definition Success
- Chances of Success
- Other

Results and Findings

Stacked, Complex Problem

- There is no single problem – it is multi part and involves complex issues
- Perspectives about the problem are directly linked to the participants' place in system

Notes: A holistic and bundled solution is required given the number and variety of identified concerns. Multiple changes are needed.

Backlog is a Compounding Problem

- The more it grows, the worse it becomes
- Significant intervention needed to reverse the trend

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Notes:
Delays in permit issuance exponentially increase the number of hours required to process a permit. This is the result of variety of issues that may include some or all of the following:

- Need new data to reflect the current situation
- Changes in personnel (requiring reorientation)
- New regulations may be promulgated (changing what was originally required)
- Etc.

This means that the more backlog grows the amount of time it will take to resolve it will exceed the amount of time that would otherwise be required.

Notes:
No single solution will resolve the backlog nor can DEQ alone change the situation. Changes by all of the stakeholders maybe required.

As Described by Stakeholders

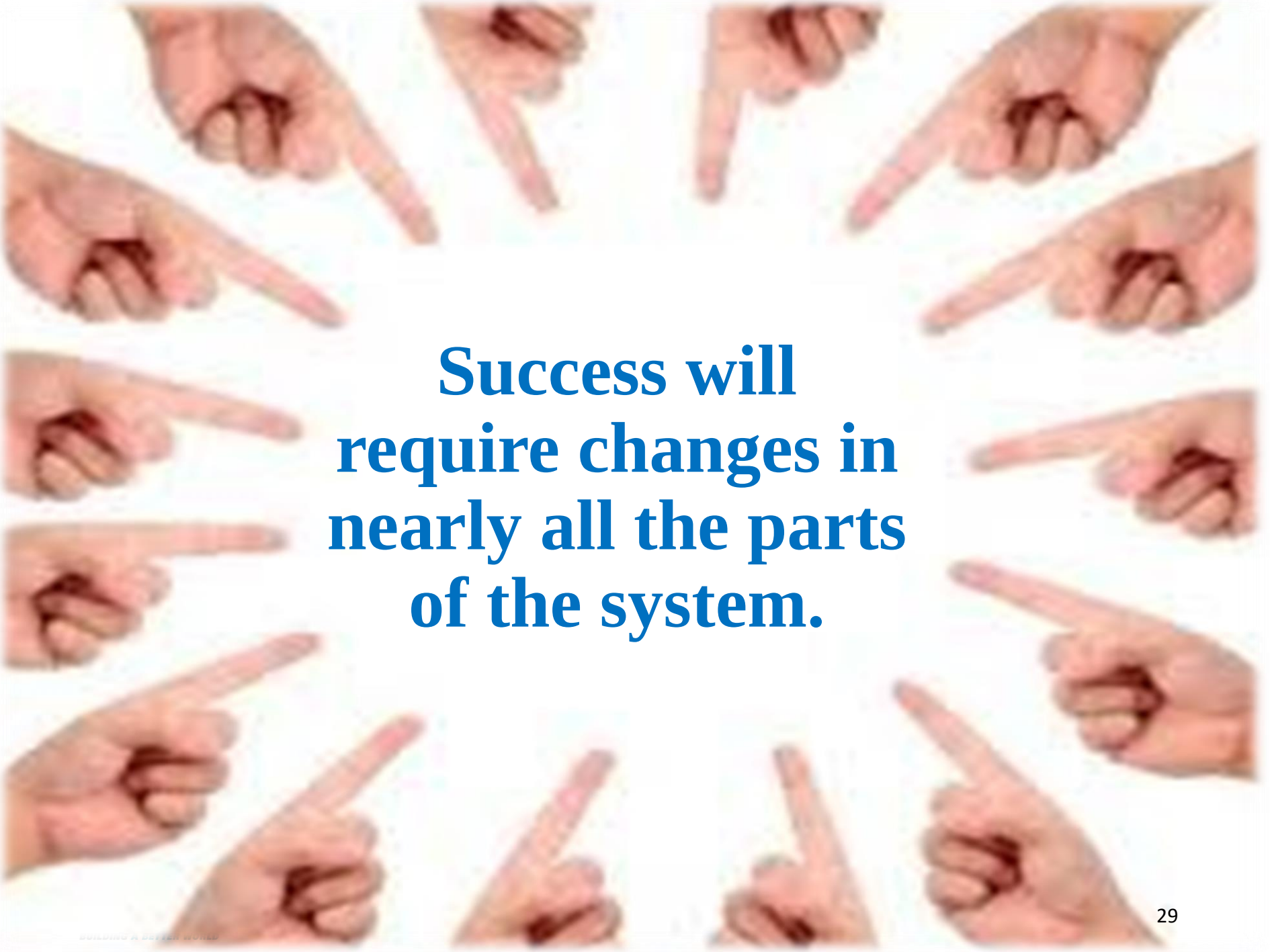
- Backlog is both an issue and a symptom
- Efficiency alone will not resolve the problem
- Each Stakeholder views healthy water quality and a working NPDES process as beneficial and in the interest of the individual stakeholders

As Described by Stakeholders

- Backlog is bc
- Efficiency alc problem
- Each Stakeho quality and a beneficial an individual sta

Notes:

- While backlog is the presenting problem, it was also described as a symptom of larger problems that included staffing profiles and the underlying regulatory structure.
- Because a variety of external factors impact timely issuance of permits, efficiency alone will not resolve the backlog.
- One promising finding was that all the stakeholders viewed healthy water quality as beneficial and in their interest. While the definition of water quality may vary, the shared value creates some common ground for moving forward.


Success will
require changes in
nearly all the parts
of the system.

Results & Implications

- Structural
- Capabilities
- Resources
- Cultural
- Legal/ Policy

Notes:
The results of the assessment tended to fall into five general categories with some issues spanning more than one category.

Structural

- Adequacy of the systems in place
  - Tools, records and tracking
  - Input process (permit and monitoring information)
  - Decision making structures/ Integration of Decision Processes
  - Standardized procedures and directives
  - Funding
  - Multi-tasking
  - Performance metrics

Notes:
Structural issues related to the adequacy of the tools in place including the listed issues.

Structural - Tools, Records and Tracking

Permit Template

Notes:
The permit template was identified as a good tool but not as functional as desired. This led to some errors and variability in how it was used by the permit writers.

Data from Monitoring

Notes:
The lack of access to and the quality of some data was seen as a barrier to success. A number of issues were identified:

- Data is not centrally located or integrated, resulting in permit writers and applicants needing to visit multiple sources to develop information
- Data may be old or not adequate due to changing requirements
- Some necessary information may not be compiled or available

General Tracking

Notes:

- A number of tracking methods related to permits have been implemented over the years. While some appear to have had short term benefits the nexus between the tracking of progress and implementation of changes to improve results is less clear.
- For example, logs are kept on the status of permits identified in organizational permit issuance plans. These plans have successfully prioritized activities and improved accountability. At the same time the categories of review may not be sufficient to address larger system issues.
- One large category of delays is designated “litigation.” There is not sufficient information in that designation to make system interventions.
- Litigation tracking was reported as not fully systematized. Field personnel were advised of potential issues but there was no tracking of how that information was deployed or refreshed.

Structural - Input Process

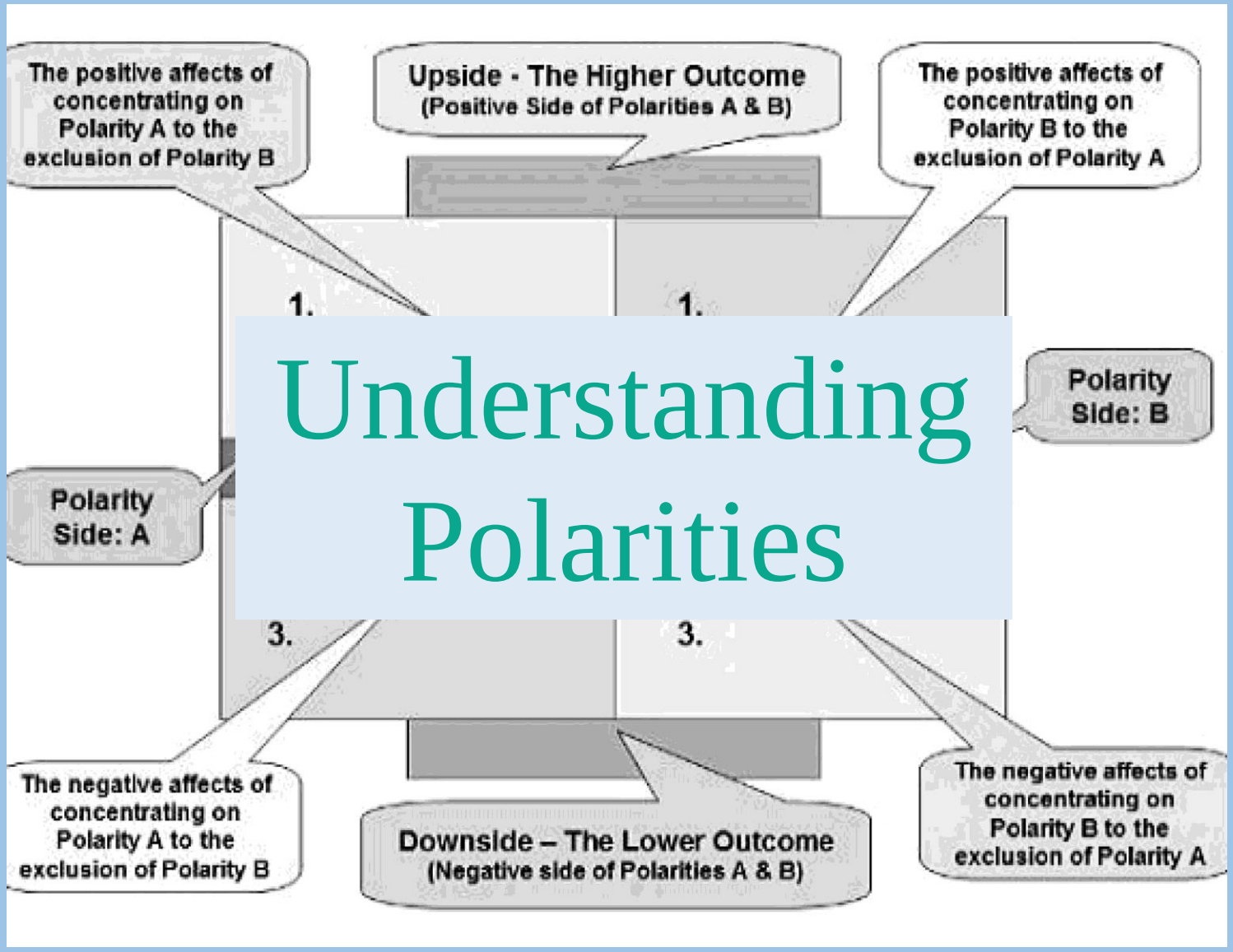
- Applicant responsibility / DEQ responsibility
  - Notes: In some states, applicants are more engaged in inputting information into the permit systems. In Oregon that responsibility rests with DEQ personnel.
- Required information/ Timeliness
  - Notes: One identified permit delay factor was a lack of required information and/or timeliness of information. In some cases this resulted in significant delay as new information had to be compiled.

Structural - **Decision Making**

DECENTRALIZATION

- DEQ utilizes decentralized management structures. Some view this as contributing to backlog issues as it may be difficult to identify decision makers and/or decision makers do not have sufficient expertise to make some required decisions.
- Decentralization itself is not an issue but how the negative effects of decentralization are managed may be.

This tension can be described as a polarity.



Understanding Polarities

Structural – Chain of Command

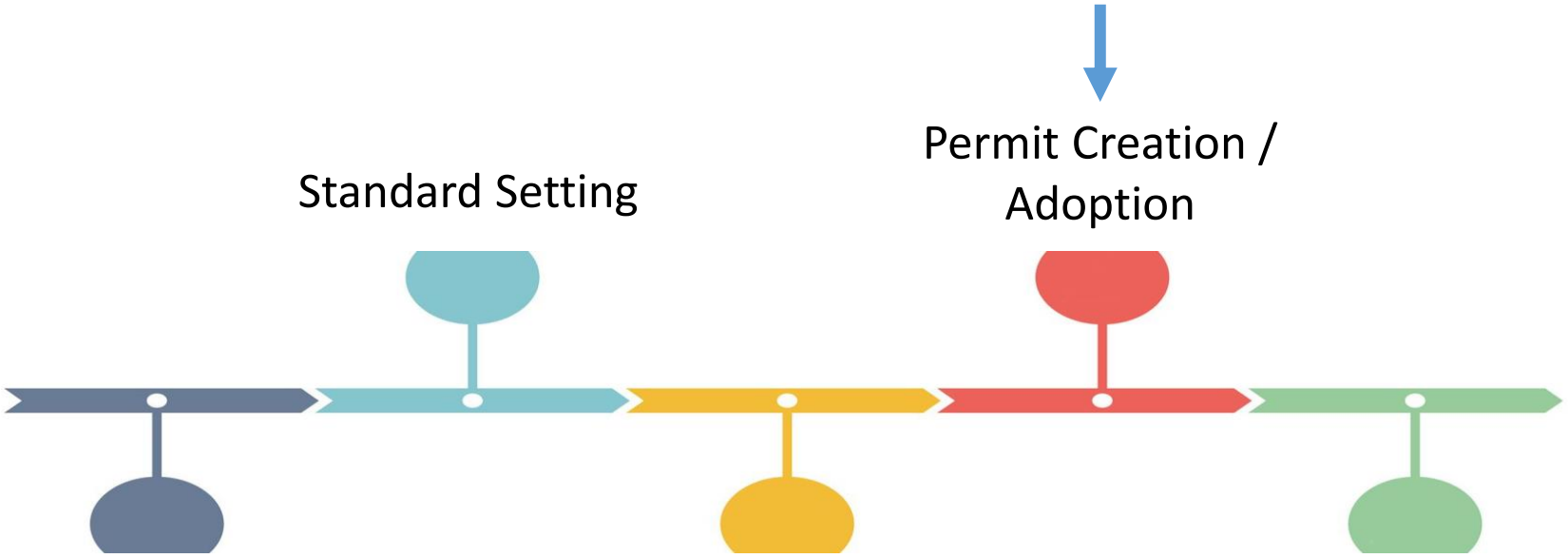
Notes:

- Consistent with the discussion of decentralization, some identified the lack of clarity in the chain of command as a problem.
- They said it was unclear WHO was the final authority and this reduces accountability.
- In some cases decision making was aligned by expertise, in others it was hierarchal.

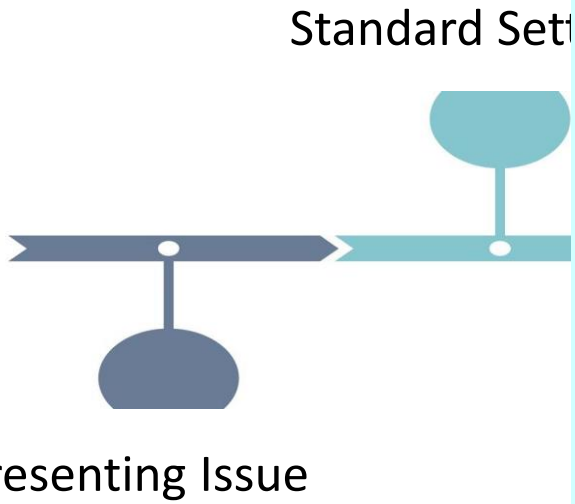
This type of cross boundary management is known to add time to a process.

Structural - Integration of Decision Processes

Permit development is one step in a series of regulatory activities.



Structural - Integration of Decision Processes



Notes:

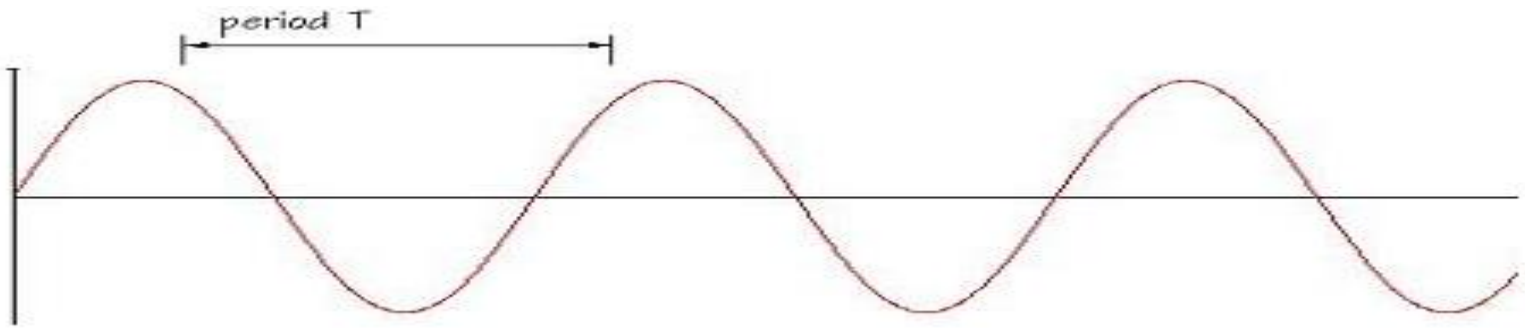
- As described by stakeholders, analysis and decision making occurs at many points in the DEQ programs.
- Even though the various elements are inter-dependent they are managed as separate functions.
- This results in some standards and TMDLs being viewed as difficult to implement, and thus difficult to permit.
- This in turn results in delays in permitting.

Structural - Standardized Procedures

- Consistency vs. Tailored Solutions
  - Notes: the permitting process is expected to be consistent (leading to fairness) AND tailored (reflecting the unique circumstances of the time and location). Standardization vs. customization is also a polarity and needs to be managed as such. Failure to do so leads to difficulties with permits.
- Refresh / Shelf-life
  - Notes: Staff identified a need for updated procedures and manuals. While materials were available they were often dated, and/or changes over time had occurred and it was unclear what was still relevant.
- Uncertainty
  - Notes: Both the regulated community and staff viewed uncertainty as a significant issue.

Structural - Funding

- Philosophical
- Punitive
- Uncertainty
- Diminishing return

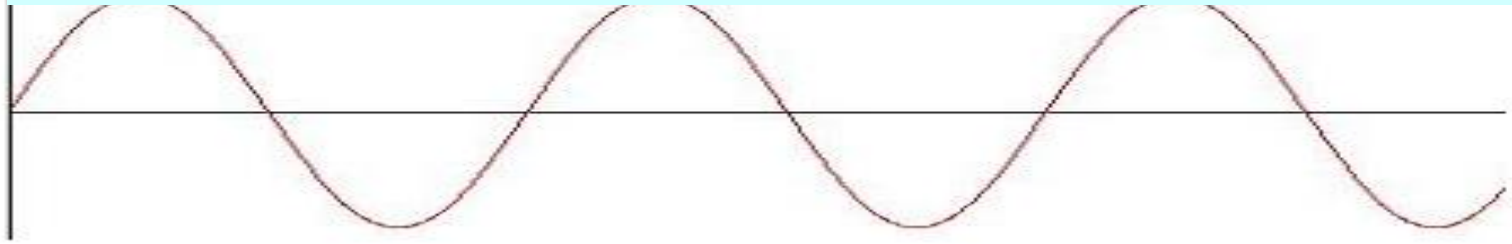


Structural - Funding

Philosophical

Notes:

- DEQ is co-funded by the regulated community and public funds (state general fund and federal funds). This bifurcated funding stream is associated with a philosophical perspective that the general public benefits from the program and that DEQ should not be financially tethered to only the community it regulates.
- With this structure, in difficult economic times, permit programs receive reduced funding along with all of the other DEQ programs, regardless of workload.
- Uneven funding associated with normal ups and downs in the state funding process leads to permit issuance delays in two ways:
    1. Reduction of personnel and resources to write permits
    2. Increased transactional time due to reprioritizing workload to reflect changed resources.



Structural - Funding

Uncertainty / Diminishing Return

Notes:

- Uncertainty in funding streams is disruptive and results in an inability to do long-term planning. Given the permit backlog is unlikely to be resolved in one budget cycle, the inability to plan may be problematic.
- Uneven funding results in the funds received being sub optimized.
  - With funding certainty, funds and plans can be leveraged to achieve broader, long-term results.
  - While the same amount of funds may eventually be granted, the lack of efficiency in planning for expenditures results in a reduced return on investment.

Punitive

Notes:

- Multiple stakeholders indicated that funding was sometimes used to "punish" DEQ when actions or approaches resulted in angering various stakeholder segments.
  - In some cases this was described a method to increase DEQ accountability
  - In other cases it was described as one or more of the communities being unhappy with decisions or approaches and using a political process to achieve a change in the outcome.
  - Some suggested that staff would prefer to not take action rather than create a negative reaction.

Structural – Multitasking

Notes:
In an attempt to create a more holistic approach in permit development and implementation, the permit writers' job was designed to include multi-tasking between related/linked activities. With ongoing reductions in staffing, the permit writers are now required to manage additional tasks, including broader office responsibilities.

Multi-tasking is known to reduce efficiency.

Current **Job Design** Requires Multitasking

Multitasking Basics

Three Types*

1. Performing two tasks simultaneously. (E.g. talking on the phone while driving or answering email during a webinar.)
2. Switching from one task to another without completing the first task.
3. Performing two or more tasks in rapid succession. (Minds need time to change gears in order to work efficiently.)

May result in up-to 40% in lost productivity

Source: American Psychological Association

Source: https://www.wrike.com/blog/high-cost-of-multitasking-for-productivity

Structural - Performance Metrics and Capacity

- System capacity, inputs, and potential for improvement not necessarily linked.
- Metrics may not match realistic targets.

Notes:
One well known organizational practice is to develop aspirational goals. Many of the DEQ improvement efforts, as well as the guidance provided by the Blue Ribbon Committee included such goals. Even so, the capacity and/or resources needed to achieve goals may not be adequate. This has led to some viewing efforts as unrealistic. An unintended outcome may be increased organizational cynicism and a reluctance by staff to even attempt new changes.

Annotated Version

Capacity Basics

- There is no one best way to measure capacity.
- Output measures are easier to understand. With multiple products, inputs measures work better.

Measures of Capacity

Business	Inputs	Outputs
Auto manufacturing	Labor hours, machine hours	Number of cars per shift
Steel mill	Furnace size	Tons of steel per day
Oil refinery	Refinery size	Gallons of fuel per day
Farming	Number of ha , number of cows	Bushels of grain per ha per year, litres of milk per day
Restaurant	Number of tables, seating capacity	Number of meals served per day
Theater	Number of seats	Number of tickets sold per performance
Retail sales	Square feet of floor space	Revenue generated per day

Goals and metrics need to be aggressive but achievable.

Capabilities

- **Expertise**
- **Recruitment and Retention**
- **Performance**

Capabilities - Expertise

Expertise is a critical element of successful permit writing. Stakeholders identified a series of expertise issues including:

- Time needed to become proficient in permit writing
- Managers are managers vs. experts in Clean Water Act policy complexities
- Proper utilization of tools

Expertise Basics

10,000 Hour Rule

- To become an expert in something requires 10,000 hours of practice
- 10,000 hours = 3 hours/day 10 years
- There are no prodigies

Source: Malcom Gladwell - Outliers

Capabilities - Expertise

- To become an expert in something requires 10,000 hours of practice
- 10,000 hours = 3 hours/day 10 years
- There are no prodigies

Notes:

- DEQ Permit writers indicated that significant time and training, up to 5 years, was needed to become proficient in permit writing. Stakeholders also identified significant differences in performance based on experience.
- This observation is consistent with research on the amount of time required to become “expert.” Mozart (pictured) is often referred to as a prodigy and did have natural talent. However, the conditions in which he gained the expertise for which he was known were nurturing to his talent and the result of hours of observation and practice.
- If 5 years is the appropriate marker for expertise, there are significant implications for the backlog issues.

Capabilities - Recruitment & Retention, Performance (Statewide Issue)

2-year, 50% Retirement Window

- Notes: A vast number of senior and experienced DEQ personnel are expected to retire in the next two years. Given concerns about a need for expertise, this type of turnover may impact permit backlog.
- Succession planning will be needed.

Capabilities - Recruitment & Retention, Performance (Statewide Issue)

Labor Agreements

- Notes: The process to address the anticipated staffing gap will to some extent be influenced by labor agreements. The terms of the agreements may limit some of the options available for managing the permit workload. Conversely, more clearly understanding the agency needs may inform the collective bargaining process.

Morale

- Notes: The lack of apparent solutions for managing workload and addressing many of the other issues has impacted morale and driven turnover.

Resources

- Available resources (as deployed) are inadequate to resolve backlog
- Available resources are not always efficiently utilized
- Uncertainties in DEQ funding, and the funding structure limit resources
- Blue Ribbon Committee

Resources - **Available Resources**

- Concurrent with backlog increases, there was a documented reduction in hours available for permit processing while workload increased in volume and complexity
- Placement of personnel without expertise may result in short-term net loss of productivity
- Multitasking precludes fully accurate measurements of productivity

Resources - Efficient Use of Existing Resourc

- Inconsistent training
- Change fatigue
- Existing tools may not be user friendly

Notes: A variety of factors contribute to personnel resources not being as efficient as possible. Inconsistent training, change fatigue (too many initiatives that did not work), and reluctance to use some tools were listed factors.

Resources - Blue Ribbon Committee

- Chartering Questions
- Goal and role clarity
  - Membership
  - Working structure
- Executive sponsorship
- Committee leadership
- Ground rules

Notes:

- The Blue Ribbon Committee was convened as part of early efforts to reduce permit backlog.
- The Committee is composed of highly knowledgeable representatives that have offered many useful recommendations.
- Committee membership has become unsatisfying for some of its members.
- The relationship with DEQ is not as productive as it once was.
- There may be a need to revisit the charter, roles, goals and other group management issues with the Committee to ensure their time is used wisely.

Cultural

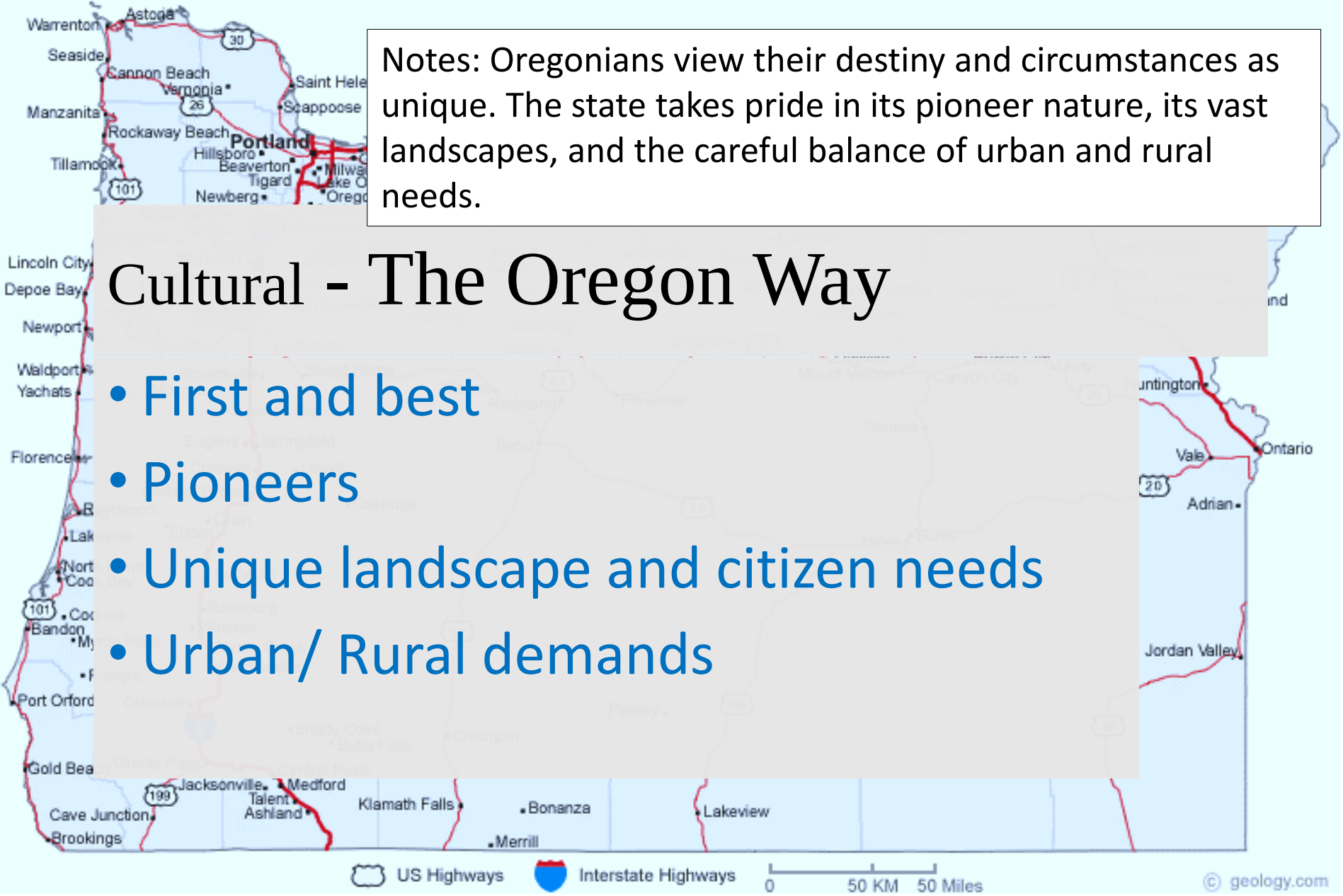
- The Oregon Way
- Customer service v Regulatory identity
- Reluctance to impose/Resistance to top down leadership
- Customization v Standardization of NPDES process

Notes: Some stakeholders identified cultural issues they believed drove permit backlog.

Notes: Oregonians view their destiny and circumstances as unique. The state takes pride in its pioneer nature, its vast landscapes, and the careful balance of urban and rural needs.

Cultural - The Oregon Way

- First and best
- Pioneers
- Unique landscape and citizen needs
- Urban/ Rural demands



Cultural - Leadership

Notes:

- Some stakeholders believed DEQ leaders were reluctant to impose direction and/or there was resistance to top down leadership.
- Leadership among the stakeholders was viewed as fragmented and not necessarily representative of larger interests.
- A lack of leadership was identified as a factor leading to permit backlog

Not Just a DEQ Issue

Cultural - Customer Service v. Regulator

- Assistance to small communities
  - Staff concerns for attainability and cost of NPDES requirements
- Balancing needs
- Scales favor Customer Service

Notes:

- The stated goals of DEQ staff to be customer service oriented were applauded by the regulated community. Still, some stakeholders criticized this perspective, restating that DEQ was charged with being a regulator. Concerns from both sides centered on the smaller communities unable to manage the cost of achieving NPDES requirements.
- There was a perception by some that permit writers were reluctant to write more stringent permits if the community impacts were too large.
- Some believed that the Legislature would intervene if the balance of regulator/customer service roles became too heavily weighted to one or the other.

Legal/ Policy

A wide variety of policy and legal issues were described as contributing to permit backlog. Litigation, increasing standards, and existing TMDL and other standards were all thought to contribute to difficulties in permit writing.

Legal/ Policy

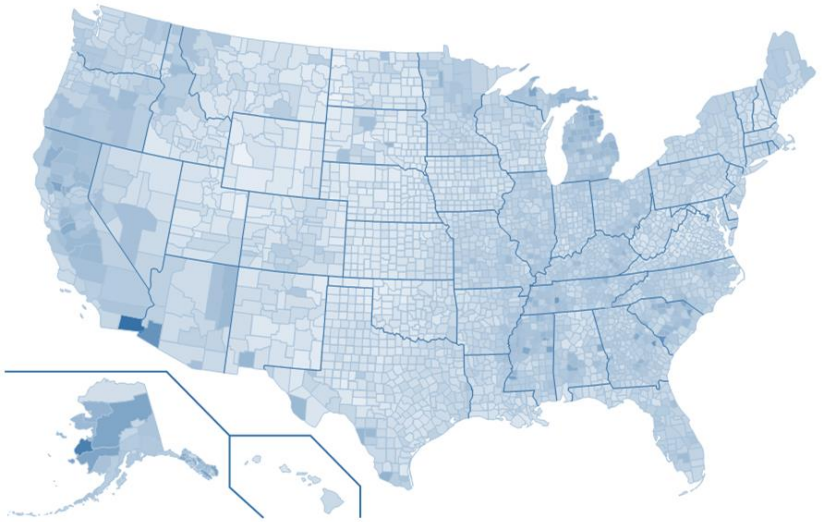
- Permits are increasing in complexity
- Substantive accuracy is an overarching requirement
- Need more proactive approaches to meet clean water act mandates
- Requirements may not result in desired outcomes
- Shift in EPA role and increasing oversight by EPA delays NPDES permit issuance
- Ramifications of implementing WQS, TMDLs in NPDES permits delays issuance
- Unattainable standards inhibit NPDES permit issuance
- Water Quality Trading approaches are not universally accepted
- Litigation uncertainty and existing cases restrict NPDES permit issuance / Workload issue

Legal / Policy

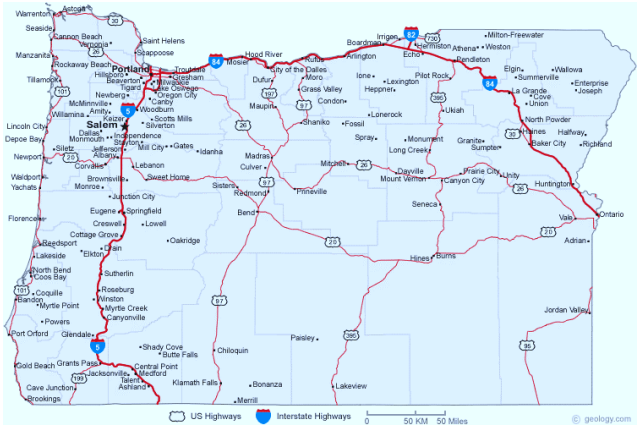
- Permits are increasing in complexity.
- Substantive accuracy is the overarching requirement.
- Requirements may not result in desired outcomes.

Notes: Some issues are national in scale – Oregon is not the only one to experience them. Solutions will need to be tied to an overarching vision for Clean Water Act Compliance

National Trends



Statewide Trends



Disapproval of standards by EPA was also identified as creating a significant disruption in the NPDES process.

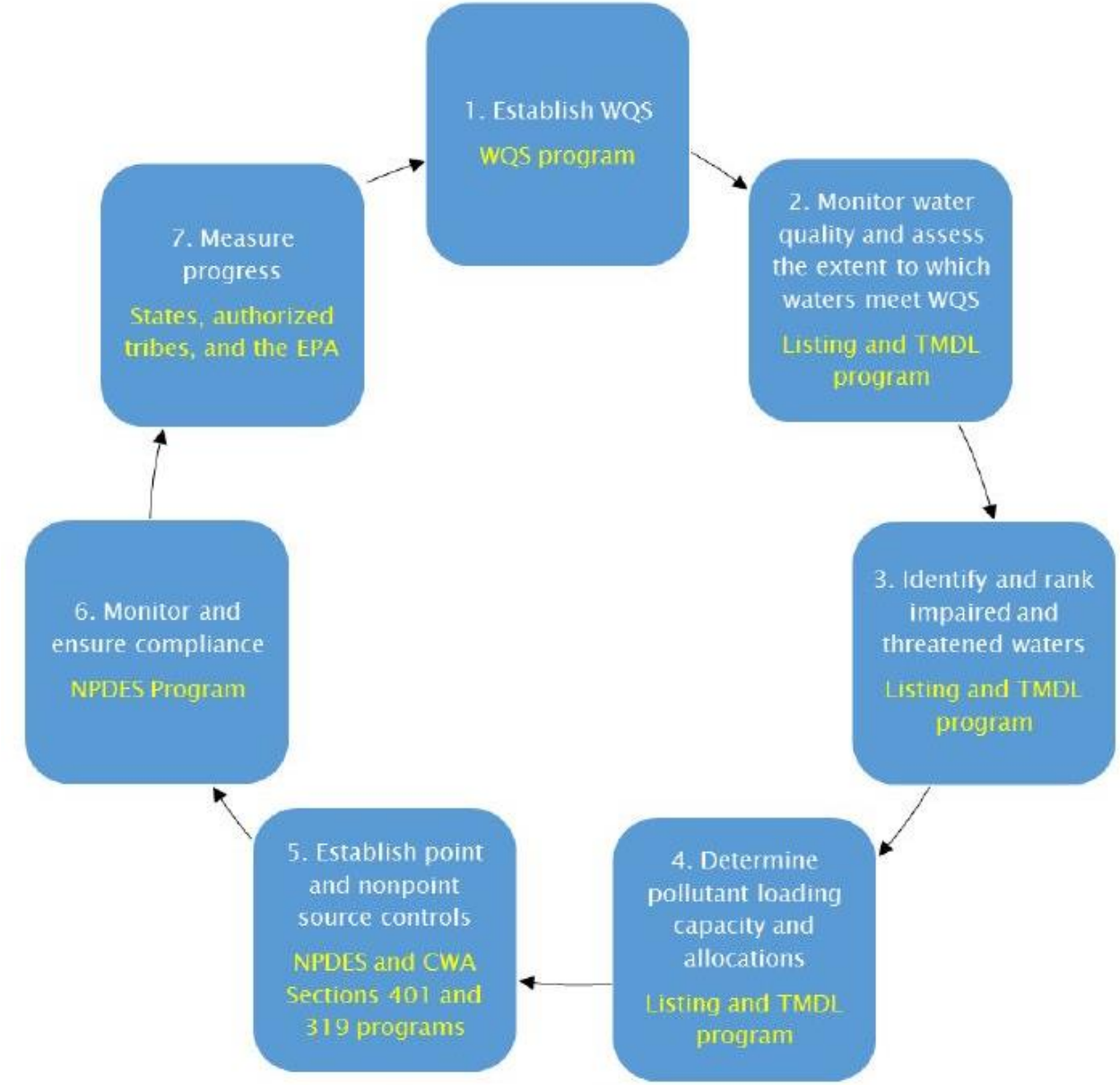


Figure 7.1: The Water Quality-based Approach to Pollution Control

Factors of Success

Annotated Version

32 Descriptions of Success

- At the end of each interview, participants were invited to offer their definition of success
- 32 different descriptions were offered
- Most of the definitions focused on addressing a factor not directly tied to the quantifiable degree of backlog reduction
- Many participants indicated that the most difficult part of improvement will be implementation of recommendations

Participants were asked to estimate the likelihood of the project being successful.

Many were not optimistic, citing the failure of past efforts

Following are results as presented on a scale of 0-100%, 100% being fully successful.

- Range 0-80%
- Mean 41%
- Median 40%
- Mode 50%