Leveraging Utility Performance with Effective Utility Management and Lean/Six Sigma

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Stewardship HARMONY Future Sustainable

Clean Water Services

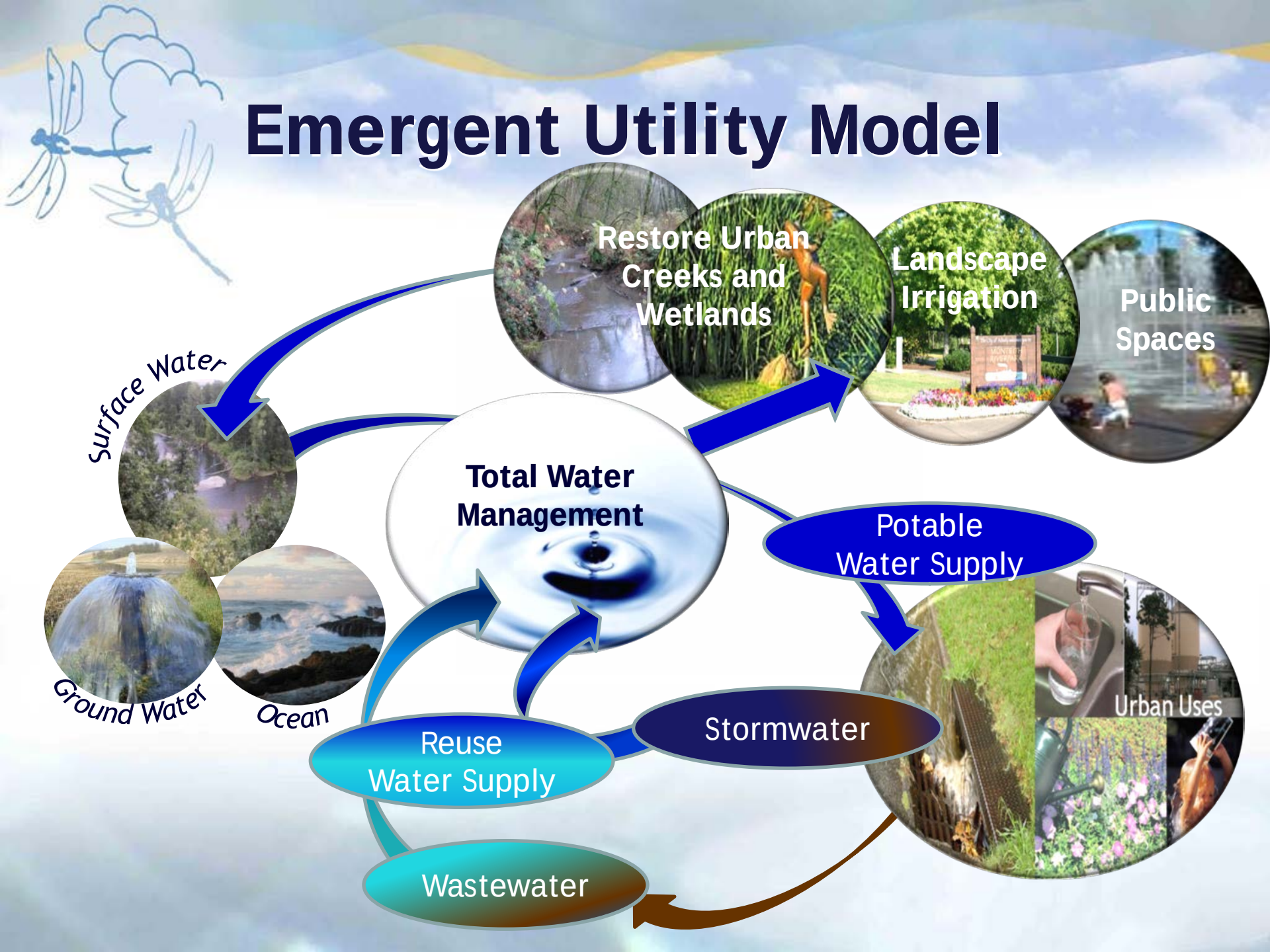
Traditional Utility Model

Cohesive Strategy

Declining Resources
Water Resources and Ecosystem Services

Increasing Demand
Water Resources and Ecosystem Services

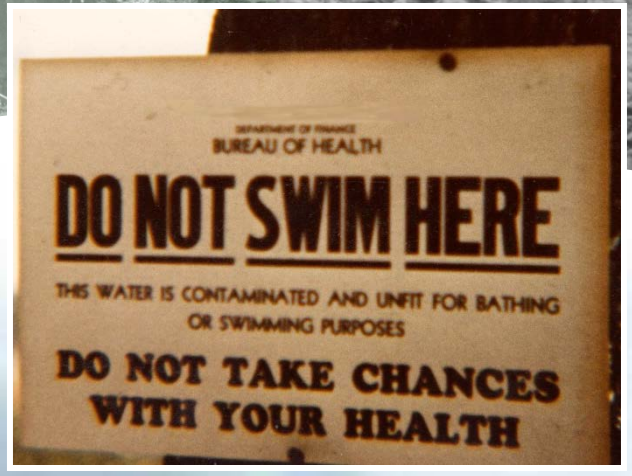
Emergent Utility Model



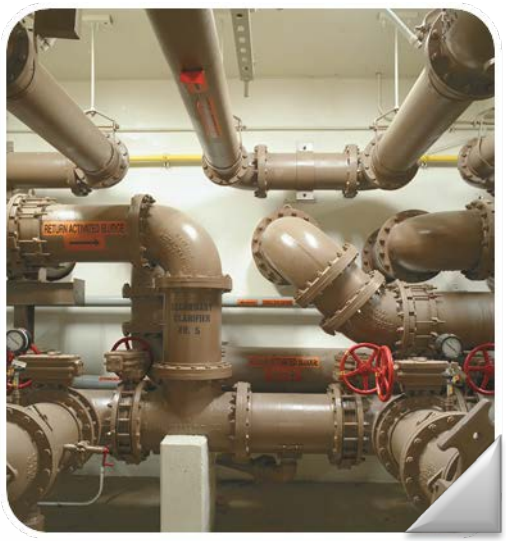
Transformative Business Model

Transformative Business Model

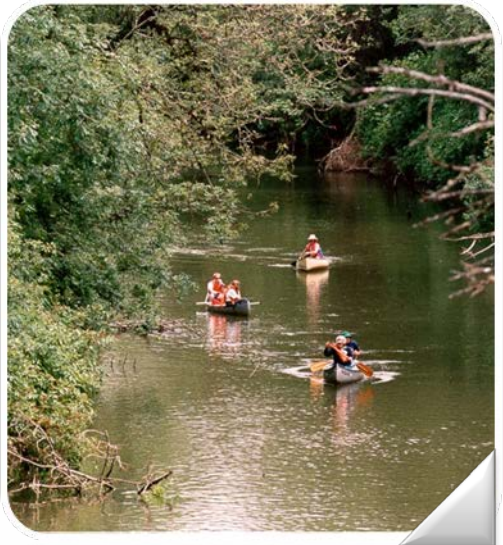
Where We Started



Where We Are Going

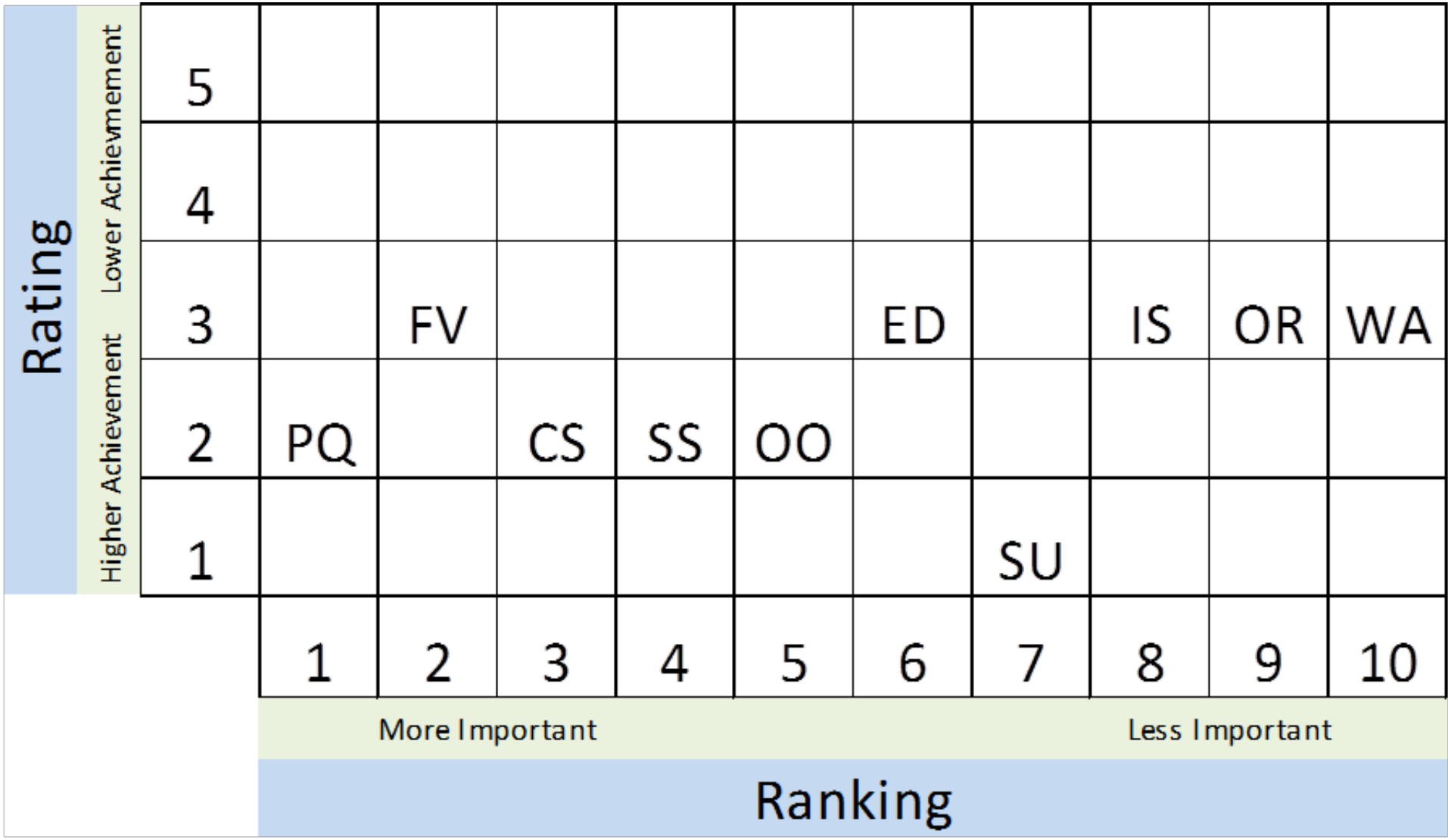


Pumps, Pipes, & Plants



Public & Environmental Health

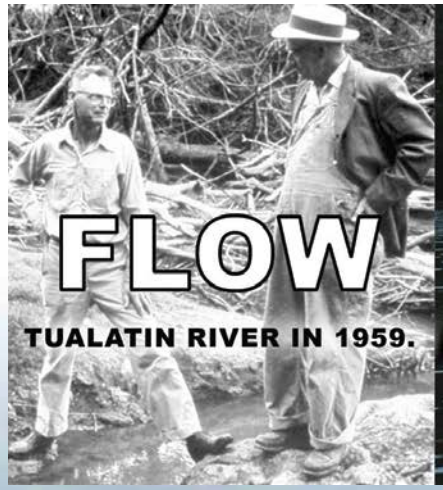
Resource Recovery



CS	Customer Satisfaction	OR	Operational Resiliency
ED	Employee & Leadership Development	PQ	Product Quality
FV	Financial Viability	SS	Stakeholder Understanding & Support
IS	Infrastructure Stability	SU	Community Sustainability
OO	Operational Optimization	WA	Water Resource Adequacy

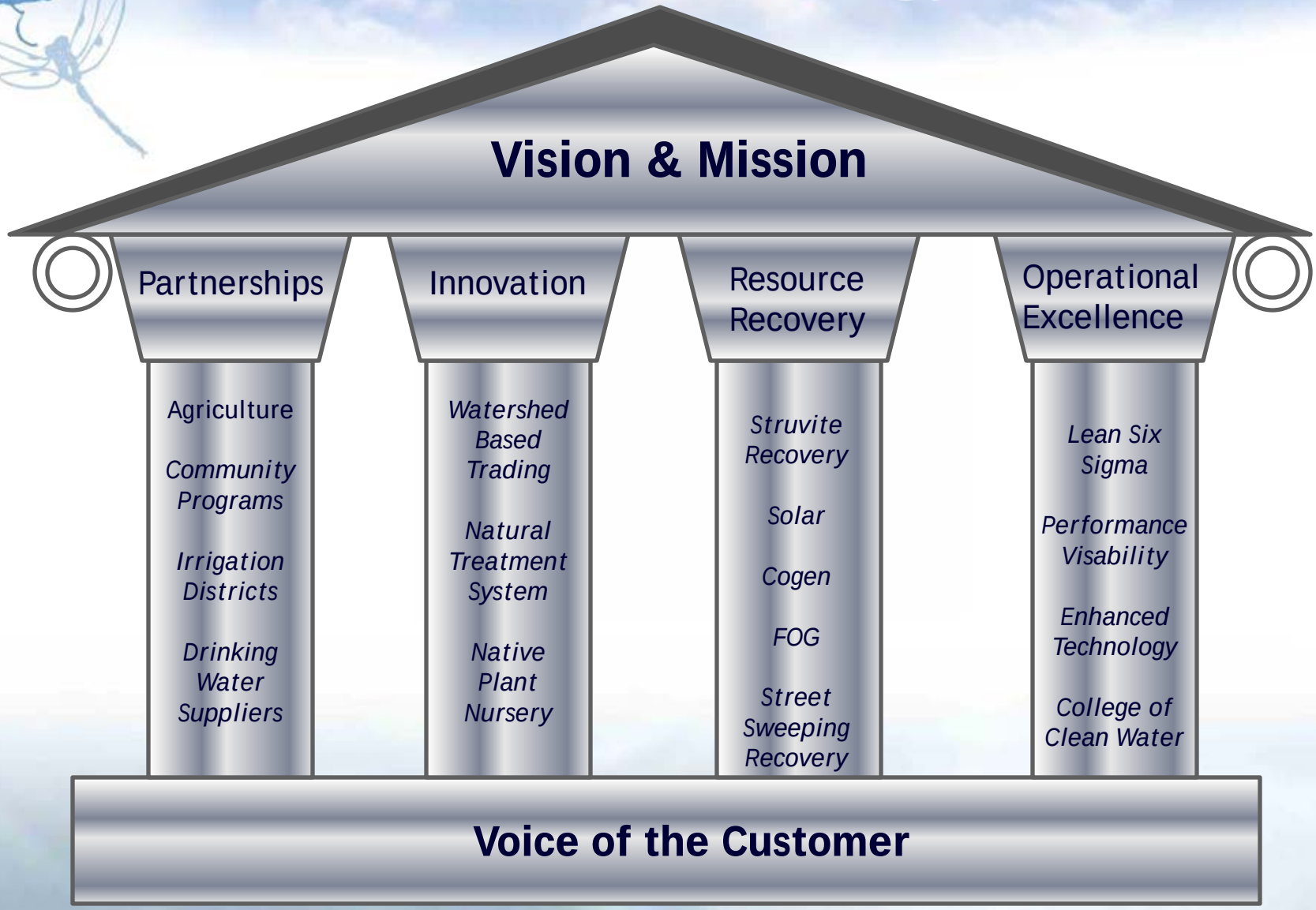
Transformative Business Model

Clean Water Services at a Glance



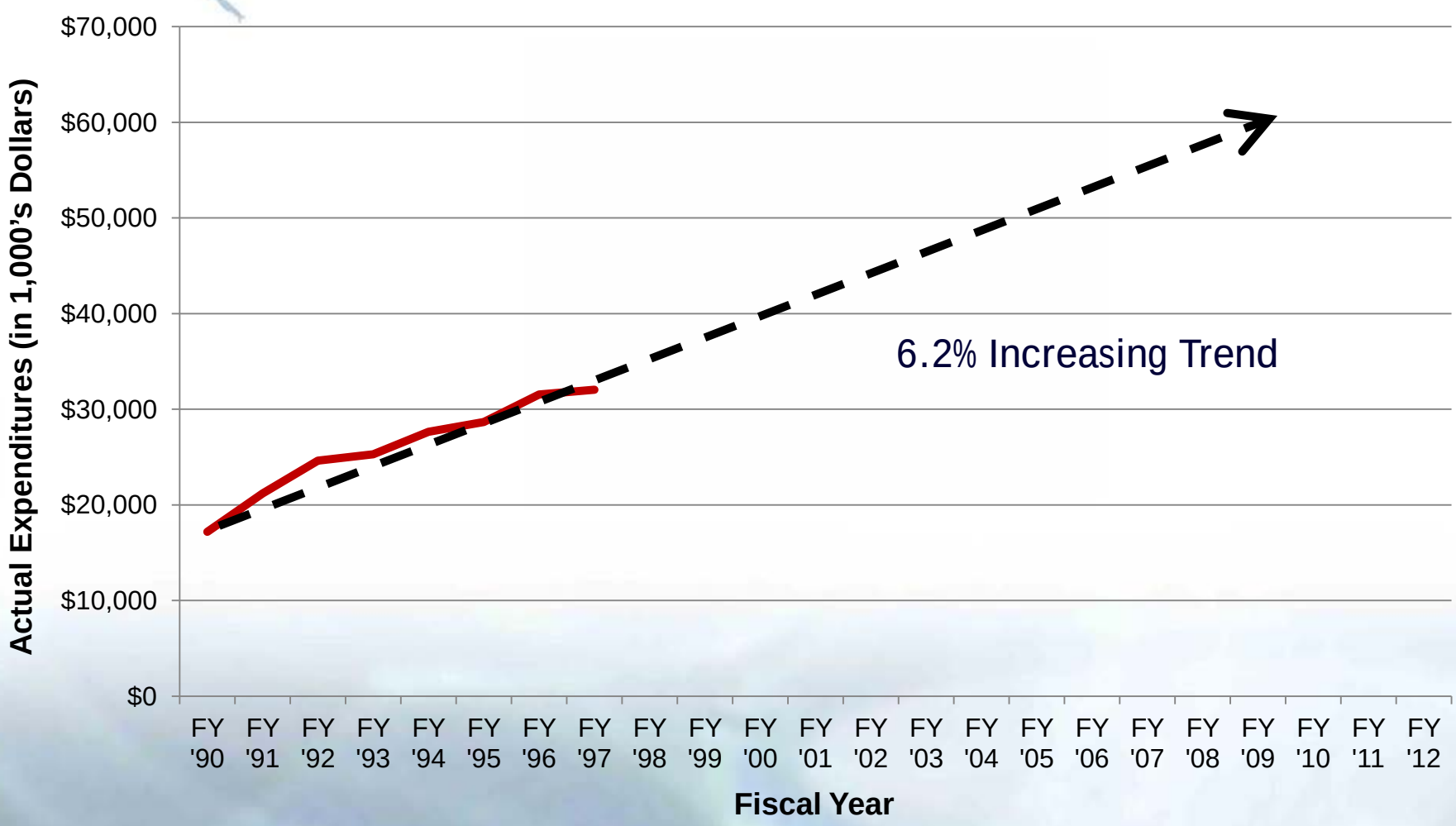
Program Service Levels

Business Strategy



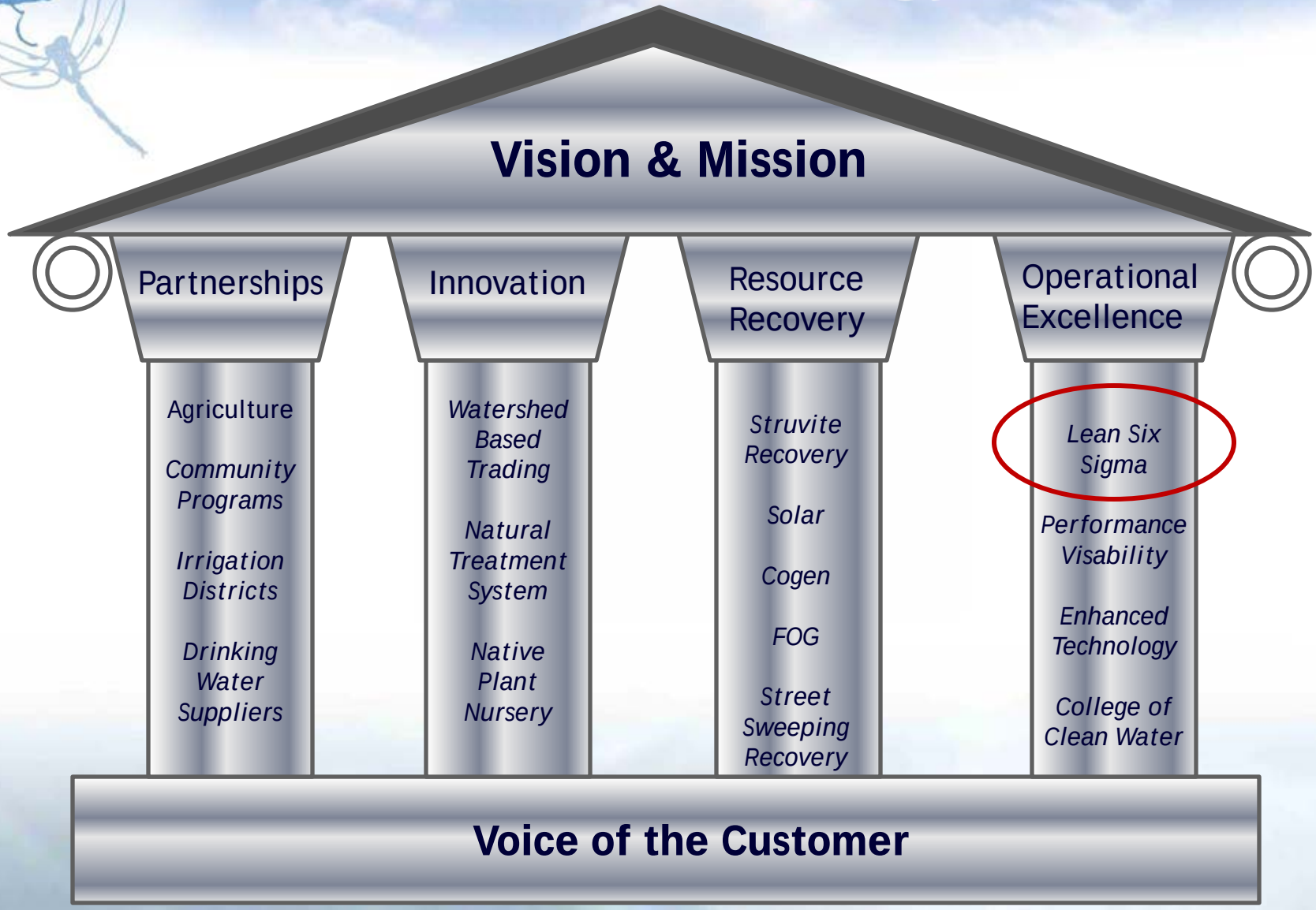
Transformative Business Model

Financial Trend

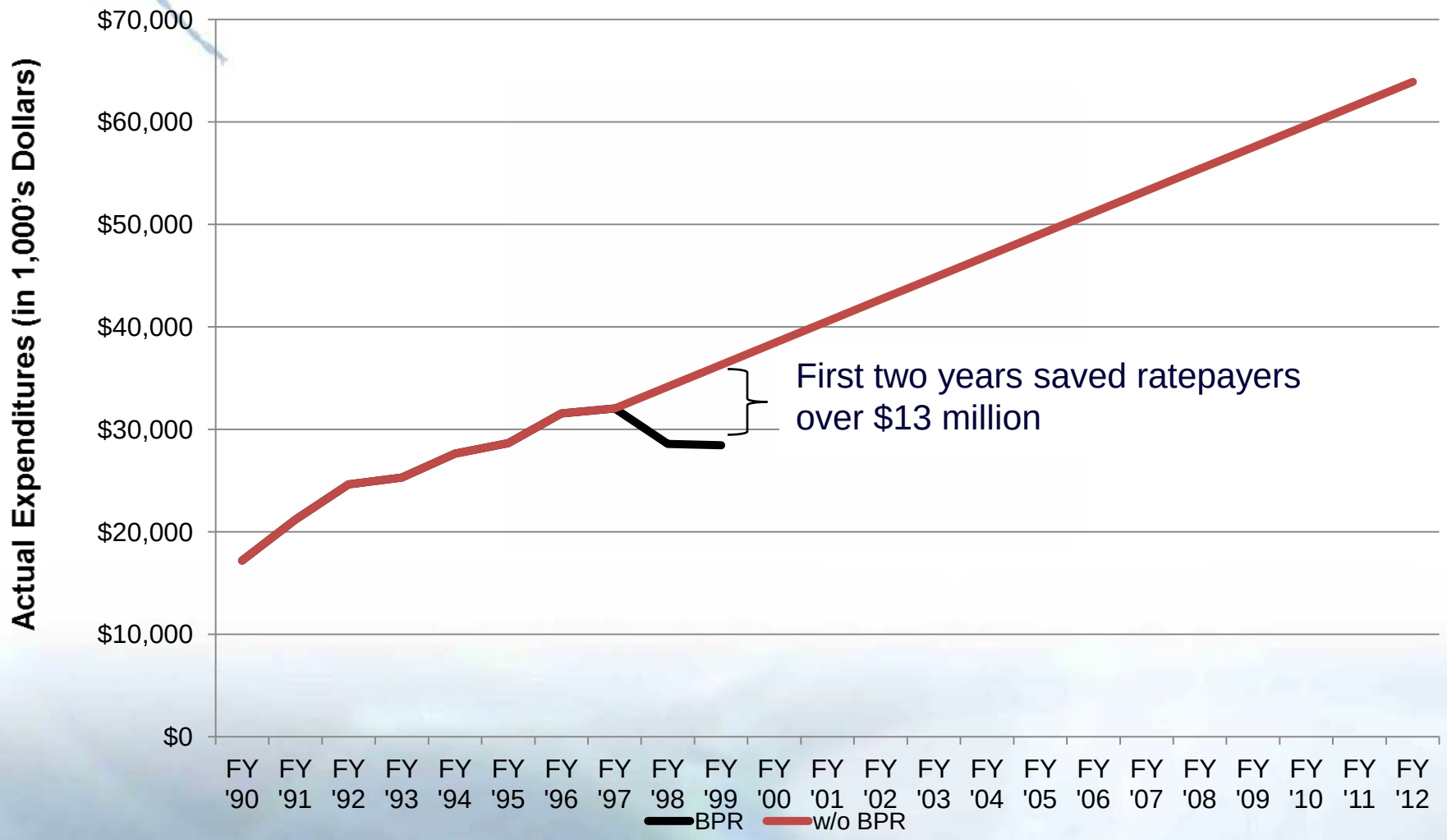


Transformative Business Model

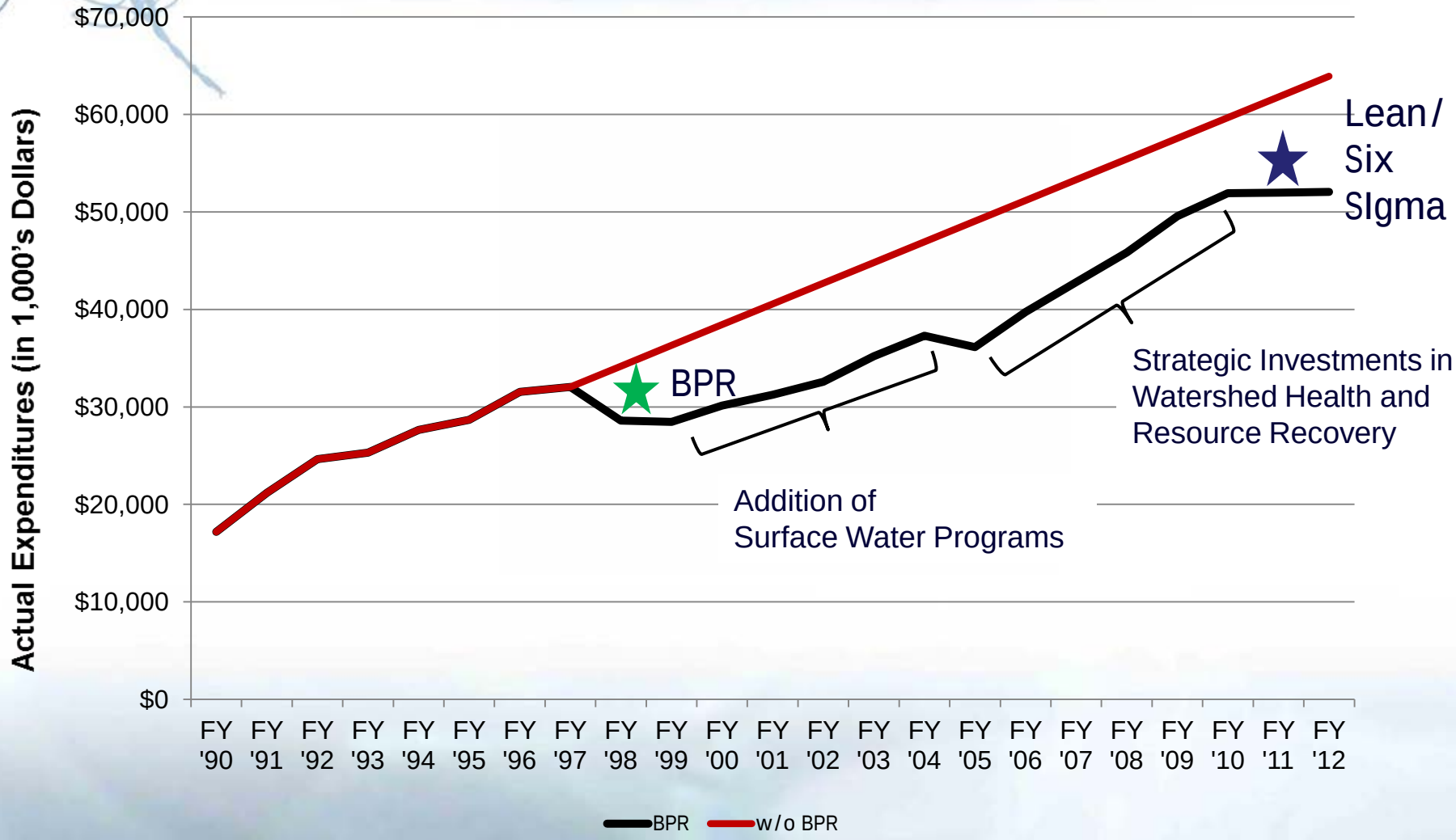
Business Strategy



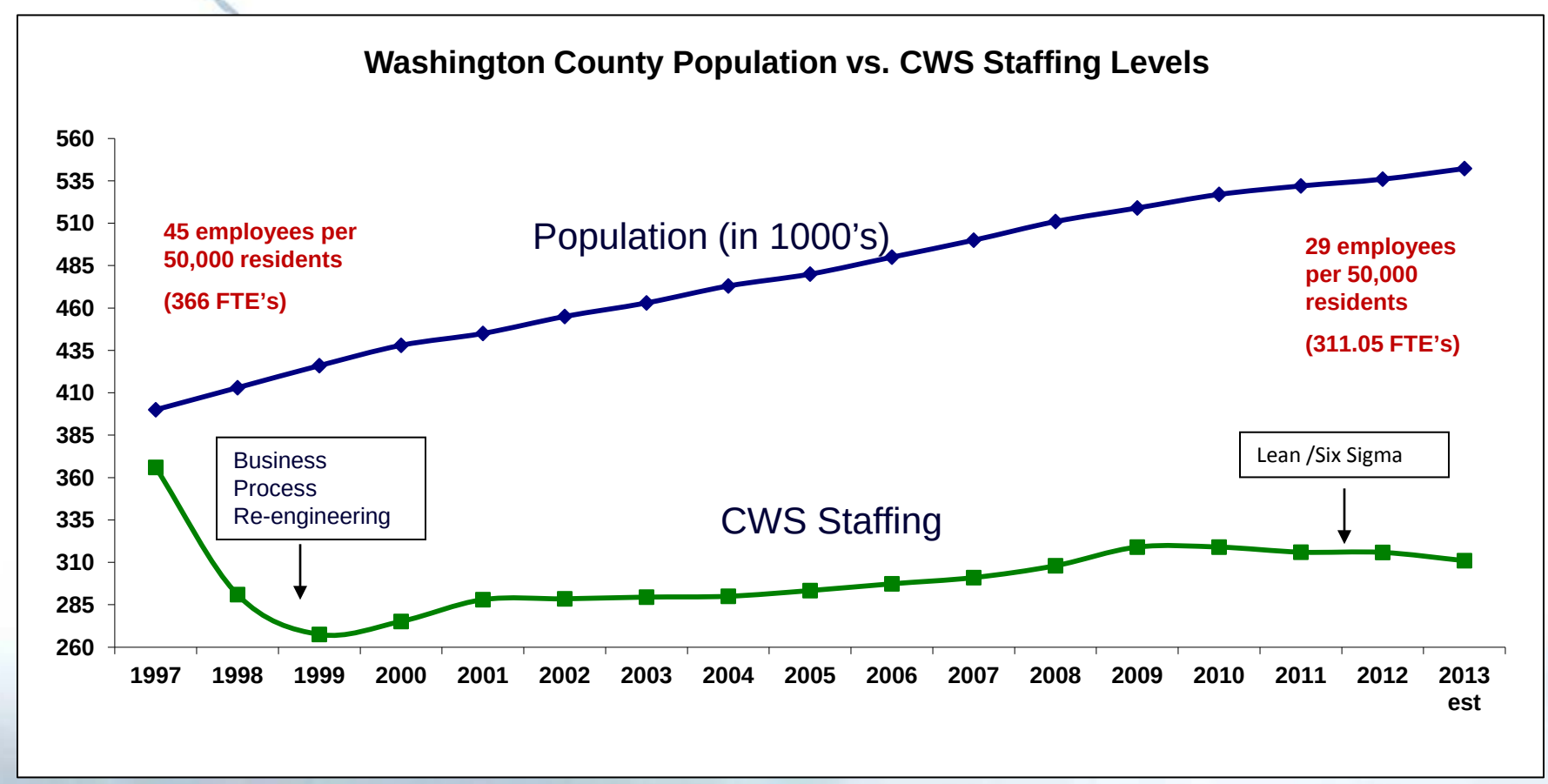
Business Process Re-engineering



Sustaining Performance
Lean/Six Sigma



Staffing Levels



366.00 Budgeted FTE's in FY 1996-97

311.05 Budgeted FTE's in FY 2012-13

Misaligned Metrics, Priorities, and Policies

- Waste & Loss
- Inefficiency
- Defects/Re-do's
- Non-value adding activities or investments
- Obstructions to optimal process
- Highly variable outcomes

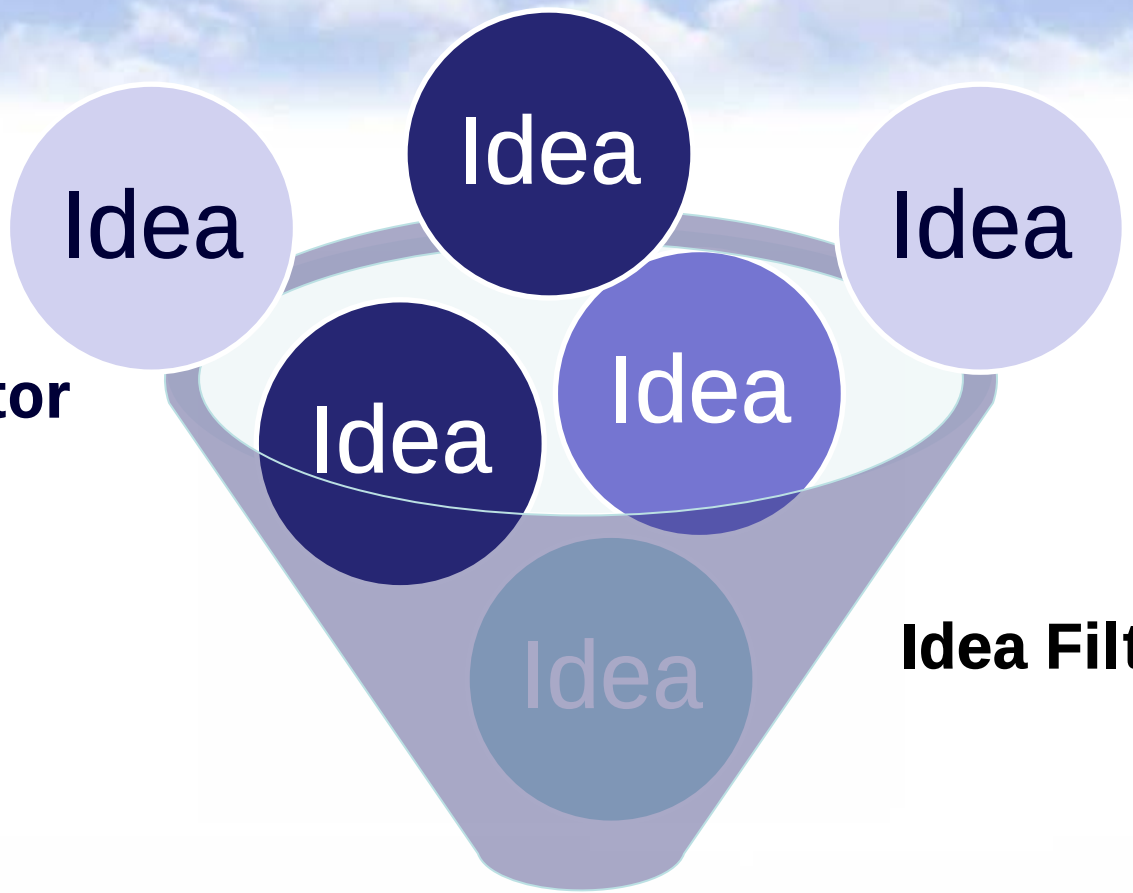
Business Improvement Tools

Six Sigma

Reduce process variation

Use the Right Tool for the Right Project

Glitches, Rattles, Gaps, & Giggles



Idea Generator

Idea Filter

High Impact Projects

Does it have a direct, line of sight connection,
to key EUM Attributes?

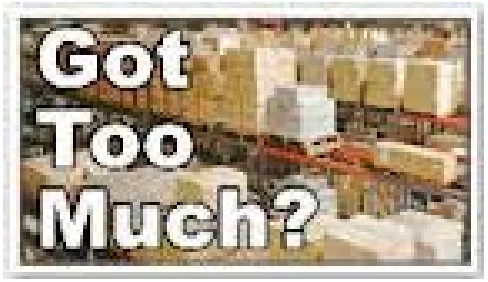
Lean Thinking

Reduce Wasted Time or Wasted Materials

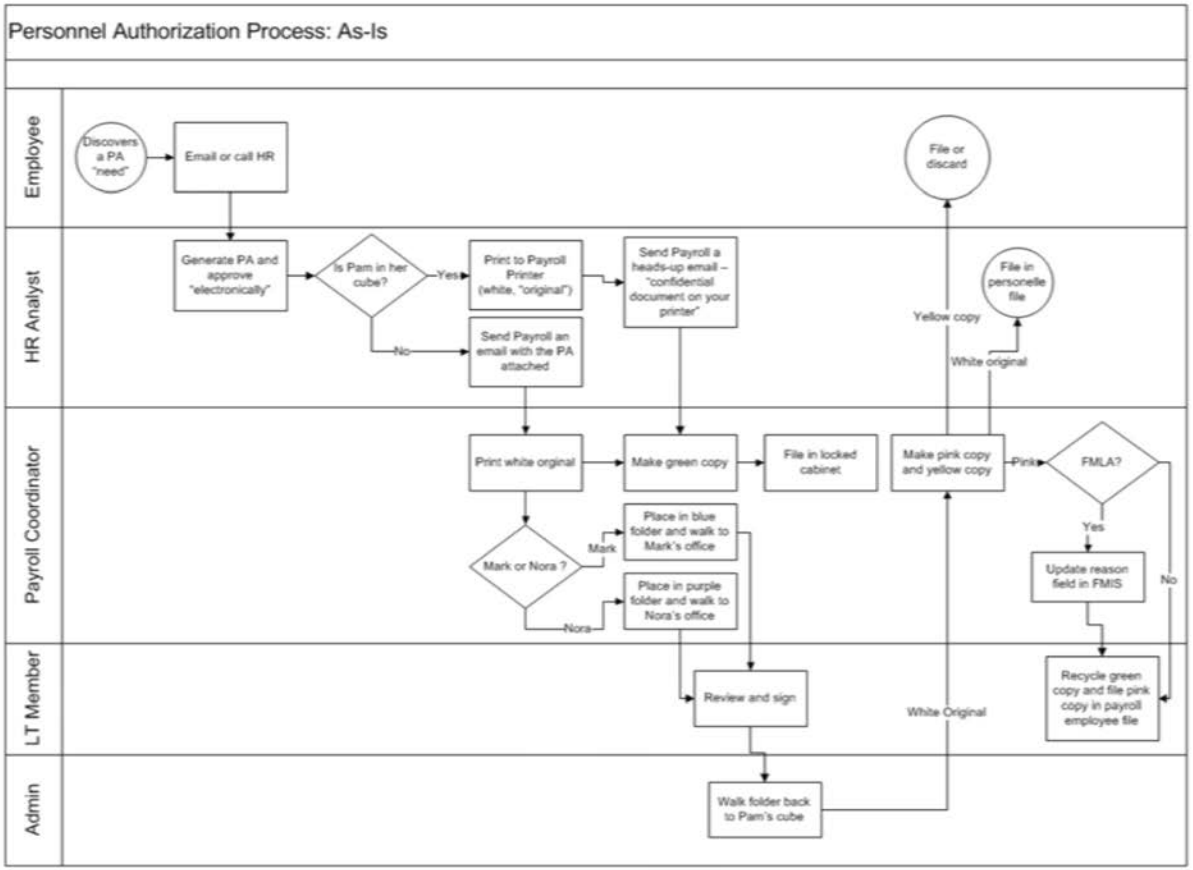
- Flow-focused
- Less wasted time or materials improves efficiency and reduces cost
- Many small improvements
- Focus on “DOWNTIME”

DOWNTIME

- **D**efects
- **O**ver-Production
- **W**aiting
- **N**ot Using Tribal Knowledge
- **T**ransportation
- **I**nventory
- **M**otion
- **E**xtra Processing



Personnel Authorization Process: As-Is



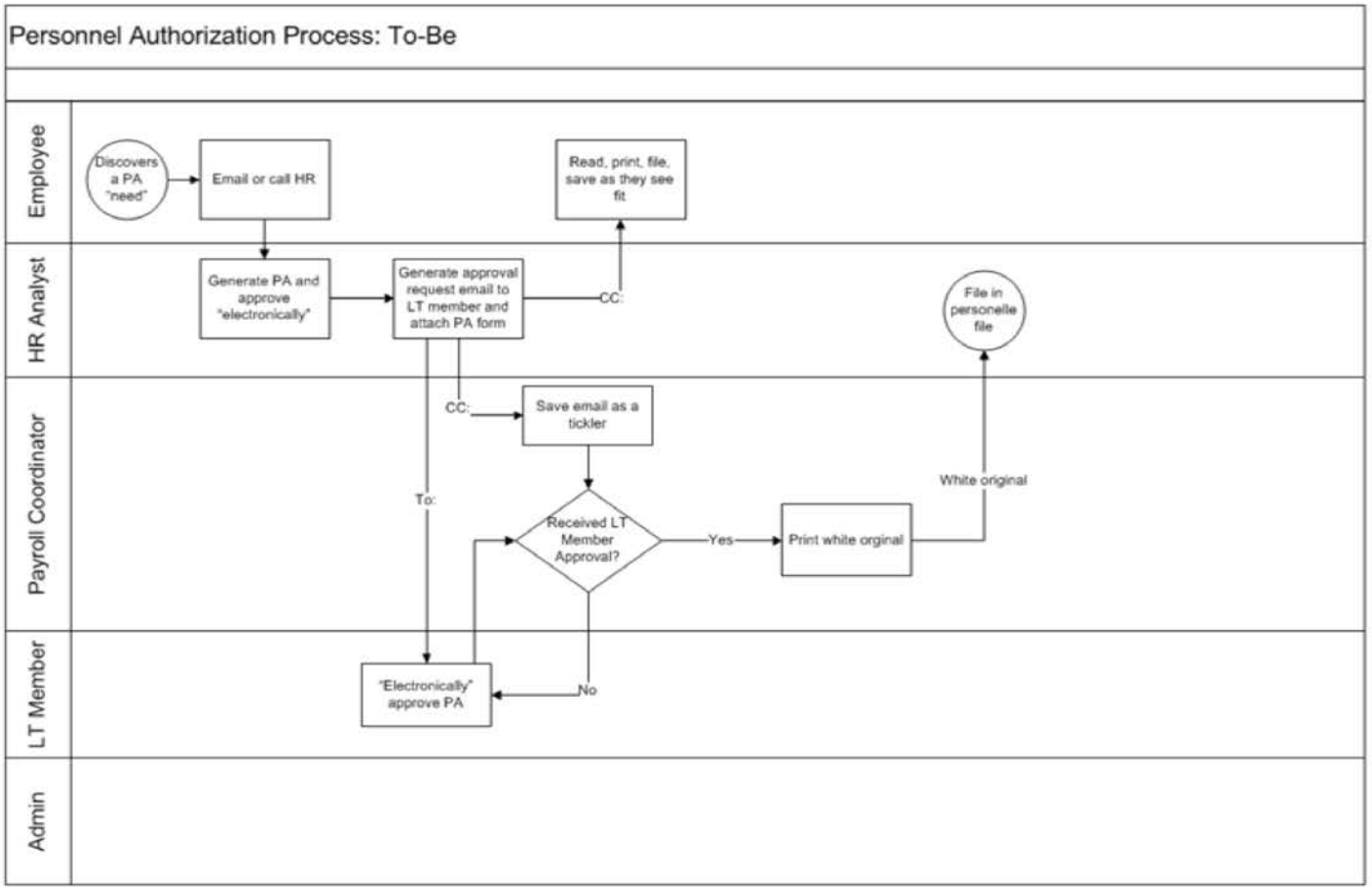
DOWNTIME

Category of Waste	Definition	Example in an office (non-manufacturing) environment.	Personnel Authorization Waste Eliminated
Defects	The effort involved in inspecting for and fixing defects	Errors in data, invoices, customer orders, etc.	Reduced the number of steps (where errors could be introduced) from 15 to 7.
Overproduction	Production ahead of demand	Printing unneeded paperwork	Printing PAs for physical signatures
Waiting	Waiting for the next production step	Staff waiting for a resource (e.g. access to a computer application) to become available.	Payroll waiting for batched folders to be signed and returned
Not fully utilizing tribal knowledge	Failing to tap into the knowledge, skills, education and creativity of employees.	Not involving office staff in an attempt to improve a process.	Staff knew time card double entry of seven types was occurring
Transportation	Moving products that are not actually required to perform the processing	Receiving items in an area not close to where they will actually be used.	Walking to route batched folders
Inventory	All components, work in process and finished product not being processed	Messages and requests in email in-boxes.	Placing them in batched folders
Motion	People or equipment moving or walking more than is required to perform the processing	Looking for physical documents.	Placing paper-based PAs into batched folders
Extra (stupid) Processing	Performing unnecessary or incorrect processing.	Over-analyzing data.	Reduced the number of reasons for a PA from 13 to 7

Overproduction – Eliminated 46% of Types of PAs

Personal Authorization Type	Eliminate	Reason
New Hire	No	Requires Dept. Director Approval
Separation	No	Requires Dept. Director Approval
Family Medical Leave	Yes	Captured on Timecards
Promotion	No	Requires Dept. Director Approval
Leave Without Pay	No	Tracks Loss of Accruals
Worker's Comp Paid Time Loss	Yes	Capture on Timecards
Employer Paid Time Loss	Yes	Capture on Timecards
Light Duty	Yes	Capture on Timecards
Return to Regular Duty	Yes	Capture on Timecards
Suspension Without Pay	No	Requires Dept. Director Approval
Holiday Without Pay	Yes	Capture on Timecards
Administrative Absence Without Pay	No	Requires Dept. Director Approval
Military Leave	Yes	Capture on Timecards

Personnel Authorization Process: To-Be



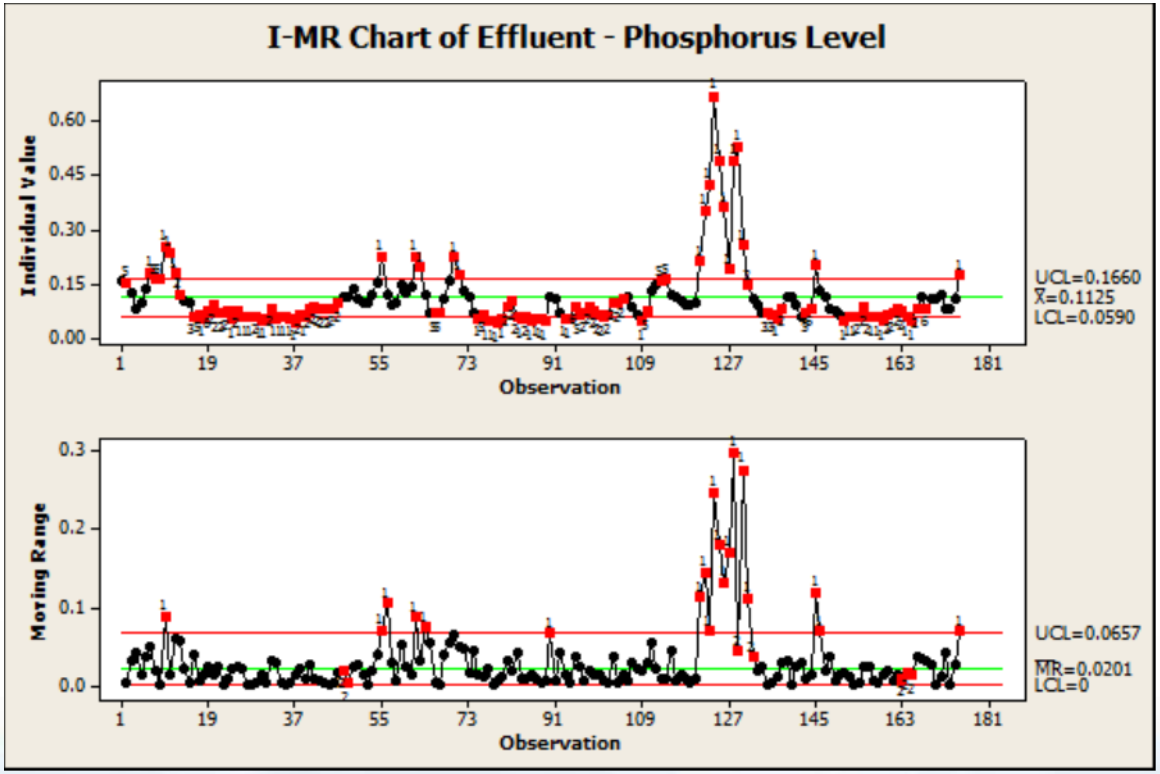
Six Sigma

Reduce Process Variation

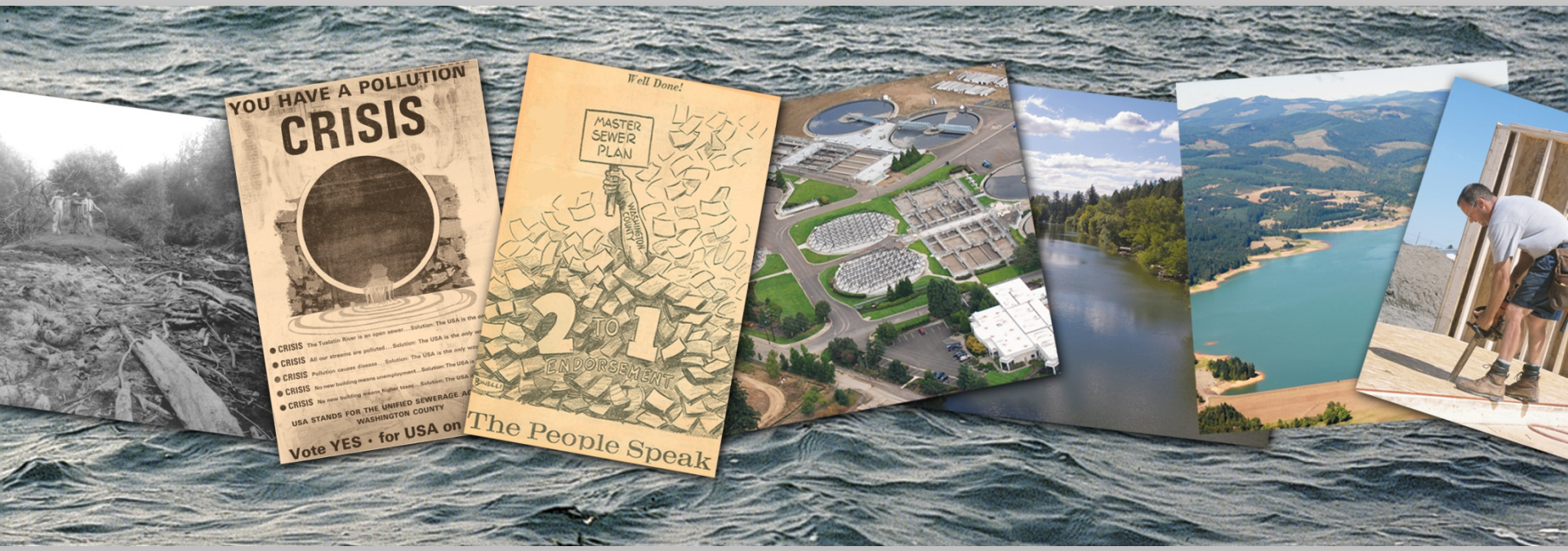
- Problem-focused
- People centered process
- Based on data
- System outputs improved by reducing variability

Bio-P Six Sigma Project

- Reduce effluent phosphorus process variability
- Reduced alum and caustic use for chemical savings of $250,000 per year targeted.
- Increase production of Crystal Green by 20%.
- Develop transferable Bio-P knowledge to other utilities



Honoring our Past...Charting the Future



Celebrating 40 Years of Clean Water

Clean Water Services
CELEBRATING 40 YEARS OF CLEAN WATER