

**Information Item:**  
**MCES Continuous Improvement Journey  
and Project Spotlights**

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Environment Committee: December 11, 2018



# MCES' Continuous Improvement (CI) Journey

2015

- Engaged State CI Office in conducting 2 kaizen events and provide CI training to 80 SSBU staff
- Launched 6 CI projects
- Completed 3 projects

2016

- Created and filled a CI Manager position (Cristine Leavitt)
- Launched 15 CI projects (average of 8 staff on each project team)
- Completed 6 CI projects
- 1 project on "Hold"
- Trained 21 managers in continuous improvement (8 hour session)

2017

- Launched 14 CI projects
- Completed 10 projects
- 4 Green Belts certified
- Developed a CI Toolbox

2018

- Launched 19 CI projects
- Completed 13 projects
- 1 project on "Hold"
- 5 Green Belts certified & 1 Black Belt
- Launched Project Spotlights
- Enhanced & Expanded Toolbox
- Developing an Improvement Network



METROPOLITAN  
COUNCIL

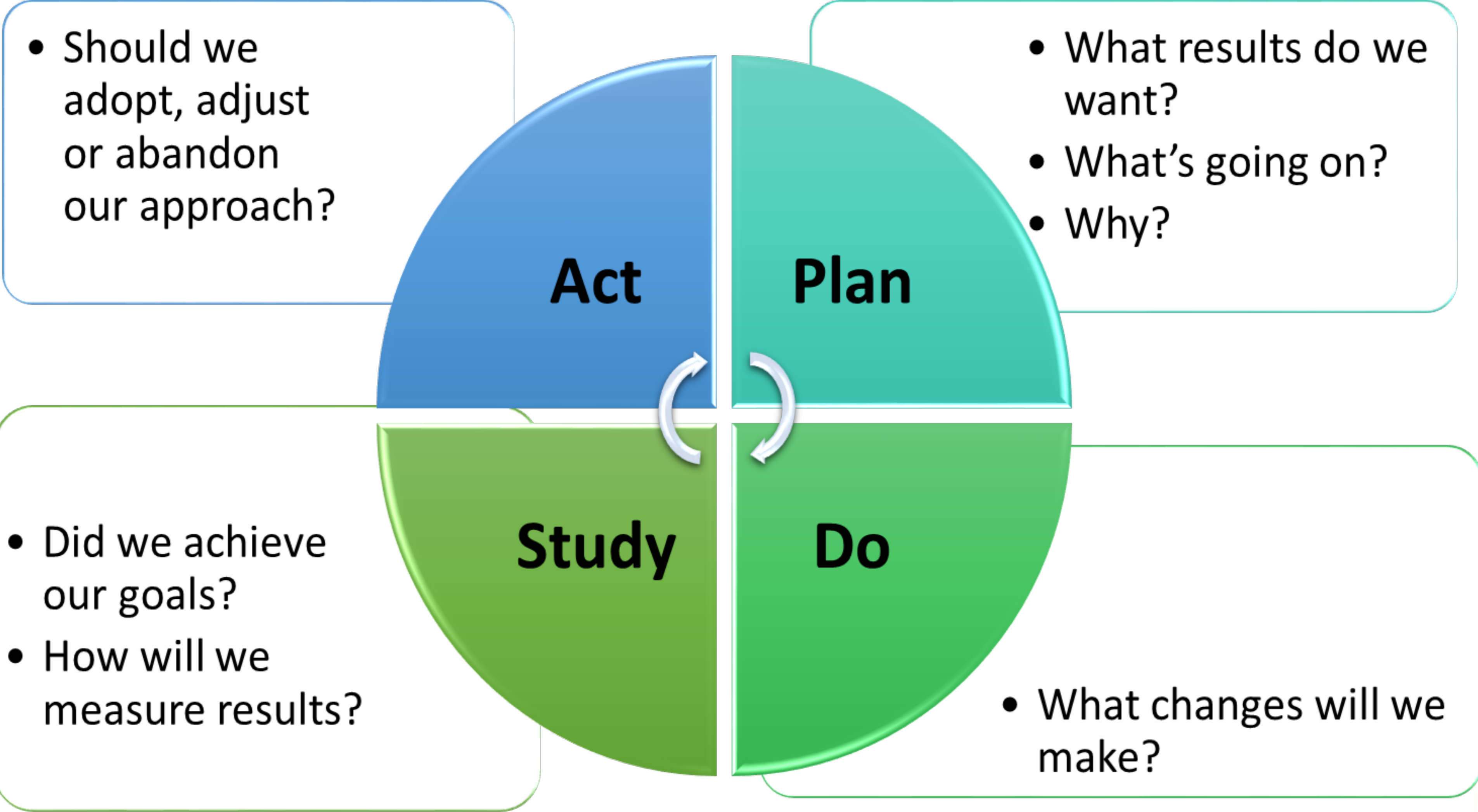
# What is continuous improvement?

Continuous Improvement (CI) is an ongoing effort to improve products, services, processes, and work spaces using best practices.



**Mindset | Methodology | Tools**

# Methodology: Plan, Do, Study, Act (PDSA)



# Project Spotlights

- Recognize a project team for improving performance
- Enhance communication and promote awareness about ES projects
- Close out a project and capture lessons learned
- Foster a culture of innovation, collaboration, and continuous improvement

# River Data Collection and Reporting Kaizen

## Background

This project was launched to improve the quality and efficiency of river water related data collection and reporting processes. Process challenges prompting the project included:

- Lack of process documentation to ensure data quality and provide continuity of operations.
- Unpublished data due to errors in data entry, transfer, and the approval process.
- Customer confusion on monitoring steps and changes.

## Actions Taken

- This was one of the first process improvement (kaizen) projects. A kaizen event uses a Continuous Improvement Facilitator who works with a cross functional team of subject matter experts to:
  1. Define customer requirements;
  2. Map the “As Is” process;
  3. Identify process wastes and pain points;
  4. Brainstorm and prioritize improvement ideas;
  5. Map the “To Be” process;
  6. Define performance measures;
  7. Develop an action plan;
  8. Share results with project stakeholders; and
  9. Implement changes and sustain results.
  10. Conduct a lessons learned session (7/14/16).
- Some key improvements made:
  1. Defined sampling needs & customer requirements
  2. Reviewed process of logging and analyzing data.
  3. Implemented a mobile data collection system.
  4. Performed field testing with river monitoring staff.
  5. Defined and prioritized areas for improvement.
  6. Optimized use of lab staff and monitoring staff.

## Objective

To define, document, implement, and sustain a more effective and efficient river data collection and reporting process.



Front Row (left to right): Emily Resseger, Arthur McGrane, Mallory Vanous, Tyler Winter, Judy Sventek (Team Leader), and Sara Landgreen

Back Row (left to right): Jennifer Kostrzewski, Mike Moger, Sarah Voth, Terrie O’Dea, Lisa Dyste, Matthew Loyas, Kim Borman-Krinhop (Facilitator), and Cristine Leavitt (Facilitator)

## Results

- Reduced process time from 353 days to 51 days (a 85% reduction in lead time).
- Reduced task time by 25%.
- Reduced data transfer errors from 80,000 per month to zero!
- Reduced time for loading data sheet information into LIMS from 12 months to 5 months.
- Reduced data review from annually to monthly.
- Implemented quarterly meetings to enhance communication and collaboration.

## Lessons Learned

- The kaizen event was a collaborative effort that allowed us to learn more about one another’s work.
- By making the process visible in our swim lane map, it was easy to see where we could make the process better.
- Improving our work requires change, and nothing changes until we implement our improvement ideas.
- Leadership support is critical in this work.
- Revisiting some of the brainstormed improvement ideas may be worthwhile.

*“This project was critical in refreshing our river program data collection and reporting procedures. The efficiencies gained with the program refresh also freed up staff time to work on other important projects!”*

*– Judy Sventek*

## Team Members

Sam Paske (Sponsor), Larry Rogacki (Sponsor), Judy Sventek, Kent Johnson, Dave Fuchs, Jennifer Kostrzewski, Terrie O’Dea, Emily Resseger, Scott Schellhaass, Matt Loyas, Tyler Winter, Art McGrane, Sue Harthun, Sarah Voth, Lisa Dyste, Mallory Vanous, Sara Landgreen, Mike Moger, Kim Borman-Krinhop (Facilitator), and Cristine Leavitt (Facilitator)

July 2016

# Mobile Computing Monitoring Tool

## Background

MCES monitors over 150 river miles via 21 monitoring sites on five rivers: the Mississippi, Minnesota, St. Croix, Rum, and Vermillion Rivers. These large rivers are monitored for a variety of physical, chemical, and biological variables, to document long-term changes in water quality and assess biological communities and riverbed sediments.

## Actions Taken

- Defined requirements for developing a mobile computing tool
- Identified and acquired a mobile device that would fit the program needs
- Leveraged capabilities within the organization to generate a software system
- Trained staff how to use mobile monitoring tool effectively

## Objective

Research, develop, and implement a mobile computing monitoring tool that decrease turnaround time from collection to publication of information, reduces data errors, saves staff time, and promotes effective communication among staff.

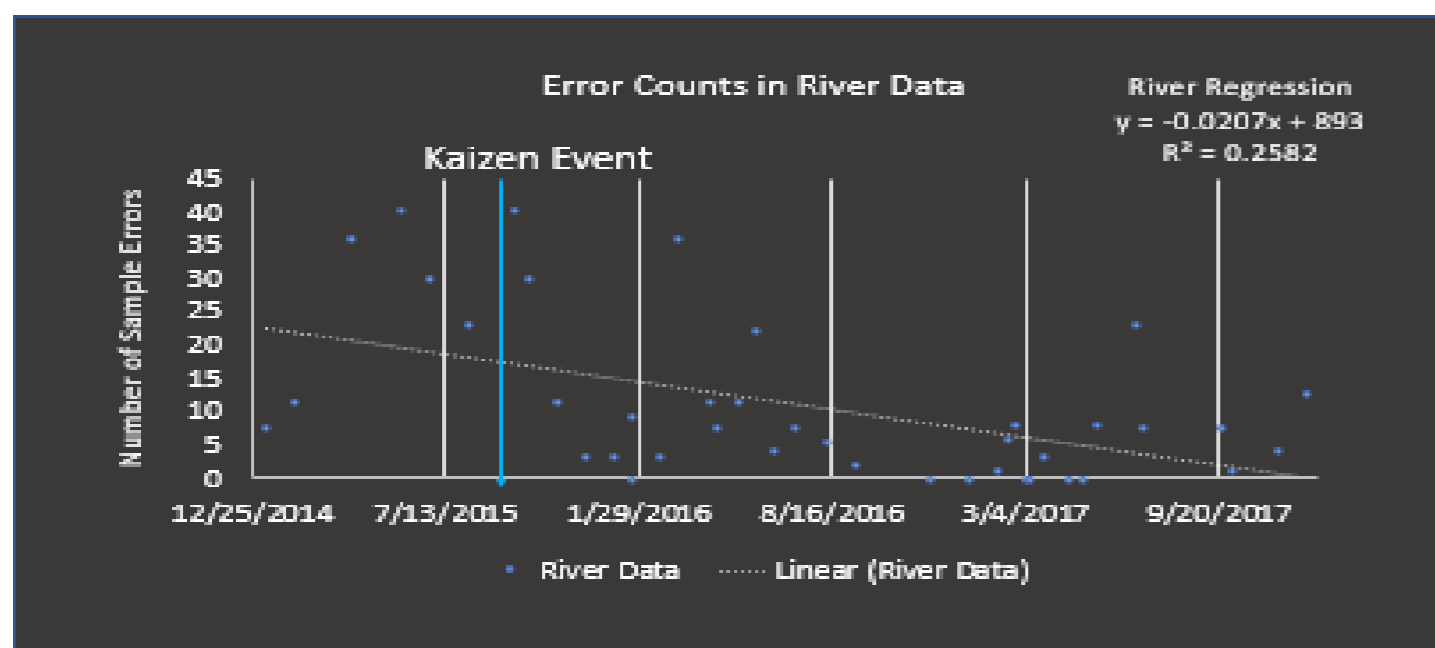


## Lessons Learned

- Leveraging internal resources to create a software application decreased design to deployment turnaround
- A tool is only as helpful as the user's knowledge of technology
- Effective change management impacted the success of the project by helping staff to adjust to sample processing modifications

“We broke silo walls down through collaboration. As a team, with the same mission in mind, we envisioned and created a new process and tool with great success. Working with this team was highly rewarding.”

— Joel Belmares



Note the downward trend in the number of errors

## Results

- Field staff able to access mobile desktop on site (weather information, email, internet, communication, directions, historical water sample trends)
- Data is now available almost instantly versus a week(s) lag
- More effective use of employee time – less manual data entry, decreased number of data entry errors (See Graph), and increased error recognition speed
- Risk of loss of data in the field is decreased with increased reliability and availability of the mobile tools

## Team Members

Sam Paske (Sponsor), Larry Rogacki (Sponsor), Dave Fuchs, Ricky Arora, Judy Sventek, Terri O’Dea, Jennifer Kostrzewski, Emily Resseger, Jack Barland, Tyler Winter, Lisa Dyste, Scott Sherman, Rose Degerstrom, Jon Hoekenga, Mathew McGuire, Kent Johnson, Mallory Vanous, Sara Landgreen, Mark Kotz, Dan Vaaler, and Joel Belmares (Project Manager)

07/2018

# Lab Services Communication WorkOut

## Background

A WorkOut is an easy method for managers to get feedback from employees on how work can be improved. While WorkOuts typically include all work within a service area, in this instance the WorkOut focused on improving internal communications, a desired outcome that was identified by a Laboratory Labor Management Committee.

## Actions Taken

- Conducted a WorkOut session with Lab staff.
- Staff identified 58 improvement ideas.
- Changes approved and implemented were:
  - Installed a whiteboard in the lab to communicate and share work related information.
  - Initiated brief weekly standing meetings with section staff to share workload plans and concerns.
  - Sample processing initiated communication about special projects and sample concerns.
  - Prioritized cross-training in each lab section to meet the demands of the workload and prioritize sample turn around.
  - Transferred coordination of daily routine work from managers to Lab Technical Coordinators.
  - Creation of the 'utility' role to provide additional work assistance to meet daily work needs.

*“The Communication WorkOut provided the opportunity for staff to participate in a continuous improvement project focused on collaboration and sharing of ideas and concerns to improve laboratory communication”*

— Char Collins, Assistant Laboratory Manager

## Objective

Enhance internal communications within the Lab Services department.

## Results

- Staff are informed about the purpose and needs of projects, which improves efficiencies in analyzing samples and meeting customer/stakeholder turnaround expectations.
- White board concept has also aided in communicating specific information such as when and how many samples will be arriving to the lab, and requesting additional help to complete work.
- Weekly meetings have aided in long-range planning needs.
- 23% increase in maintained Demonstration of Capability (DOC) tests from 2016 to 2017.

Year	DOCs Maintained (#)	Increase (%)
2013	133	-
2014	143	7.5
2015	155	8.4
2016	163	5.2
2017	201	23.0

**Table 1: The WorkOut took place in 2016. Note a 23% increase in Demonstration of Capability (DOCs) from 2016 to 2017.**

## Lessons Learned

- Communication needs throughout the lab are not one size fits all and vary based on work-group.
- WorkOuts are a great opportunity for staff to provide input and voice their concerns.
- It would be valuable to revisit the improvement list that was generated.
- Lunch was appreciated and encouraged attendance.
- While the workout process added value to lab communication, it would have beneficial to have a more focused workout to narrow the scope and be more concise with ideas and concerns.

*“The Communication WorkOut helped us to see how we could do our work differently and focus on the ‘big picture’. By changing our workflows and modifying our existing work processes, we were able to breakdown silos within the lab, which promoted open communication, improved efficiencies, and opened up opportunities for lab staff.”*

— Sarah Hanson, Lab Technical Coordinator 2

## Team Members

**Sponsor:** Dave Fuchs

**Steering Team:** Char Collins, Mallory Vanous, Meridith Richmond, Ashley Lokensgard,

**Team Members:** All Lab Services staff

**Facilitator:** Cristine Leavitt



# Total Residual Chlorine (TRC) Testing

## Background

Our MCES' National Pollutant Discharge Elimination System (NPDES) permit requires TRC levels in treated waste water that is discharged to rivers to have less than 0.08 milligrams per liter of TRC. In 2016, one plant exceeded this level. A root cause analysis of the TRC exceedance found the following root causes: 1) ineffective quality control program for on-site TRC testing, 2) silos resulting in a lack of collaboration, and 3) inadequate operator training resources. This project was initiated to address root causes and ensure we protect the environment and maintain compliance with our NPDES permit.

## Actions Taken

- Engaged a cross functional team in improving the TRC program.
- Reviewed permit requirements.
- Reviewed existing procedures and documentation to improve quality control and standardize work.
- Reviewed and updated job aids.
- Visited sites to observe processes.
- Developed processes and procedures to fill gaps.
- Developed and implemented a training program.

## Objective

- Create an effective quality control program for on-site Total Residual Chlorine testing;
- Develop and implement a training program for plant operators;
- Utilize web-based training and videos as job aids in plant operations; and
- Improve collaboration between stakeholders.



SSBU Recognition Event: Pictured left to right: Theresa Gilchrist, Rose Cauley, Scott Bowes, Patti Herme, Cheryl Scholten

## Results

- During the 2017 disinfection season we reached 100% compliance with the MCES TRC Program and NPDES permit TRC limits at Blue Lake, Hastings, and Seneca.
- 35 plant operators performed a TRC test with satisfactory results in 2017
- 75% of plant operators surveyed in 2017 agreed that the web-based training and videos contained useful information that they would apply on the job.

## Lessons Learned

- A neutral facilitator helped us to better understand the different work environments and perspectives of stakeholders in the project
- Documenting standard work that is routinely reviewed and continuously improved is the foundation of effective procedures
- A successful plant operator training program can be established using a web-based course, videos, hands-on demonstration, and job aids like program overviews, standard operating procedures and forms.

## Team Members

Larry Rogacki (Sponsor), Rose Cauley, Dave Gardener, Terry Gilchrist, Patti Herme, Scott Joseph, Cheryl Scholten, Dave Simons, Jay Sockness

## Web-Based Course Team Members

Scott Bowes, Rose Cauley, Carol Critchley, Patti Herme and Lisa Mernaugh

## Background

Clarity on the purpose, direction, and priorities of an organization promotes employee confidence, innovation, productivity, collaboration, engagement, efficiency, quality, agility, and capability. This project was launched to:

- 1) Align and focus staff on current work priorities,
- 2) Engage staff in creating a shared vision of success for each department, and
- 3) Enhance department communications regarding what we do with internal and external stakeholders.

Strategy maps are also being used to align daily decisions and actions with each department's vision and priorities. The next steps for this work is developing performance measures for each department.

## Actions Taken

- Managers and staff were trained on the *why, what, and how* of strategic planning.
- Strategy maps were collaboratively developed and communicated to staff for:
  - Support Services Business Unit
  - Lab Services
  - Industrial Waste (IWPP)
  - Performance Excellence and Analytics (PXA)
  - Process Computer Group (PCG)
  - Process Engineering, R&D, and Air Quality
  - Continuous Improvement
  - Sustainability

## Team Members

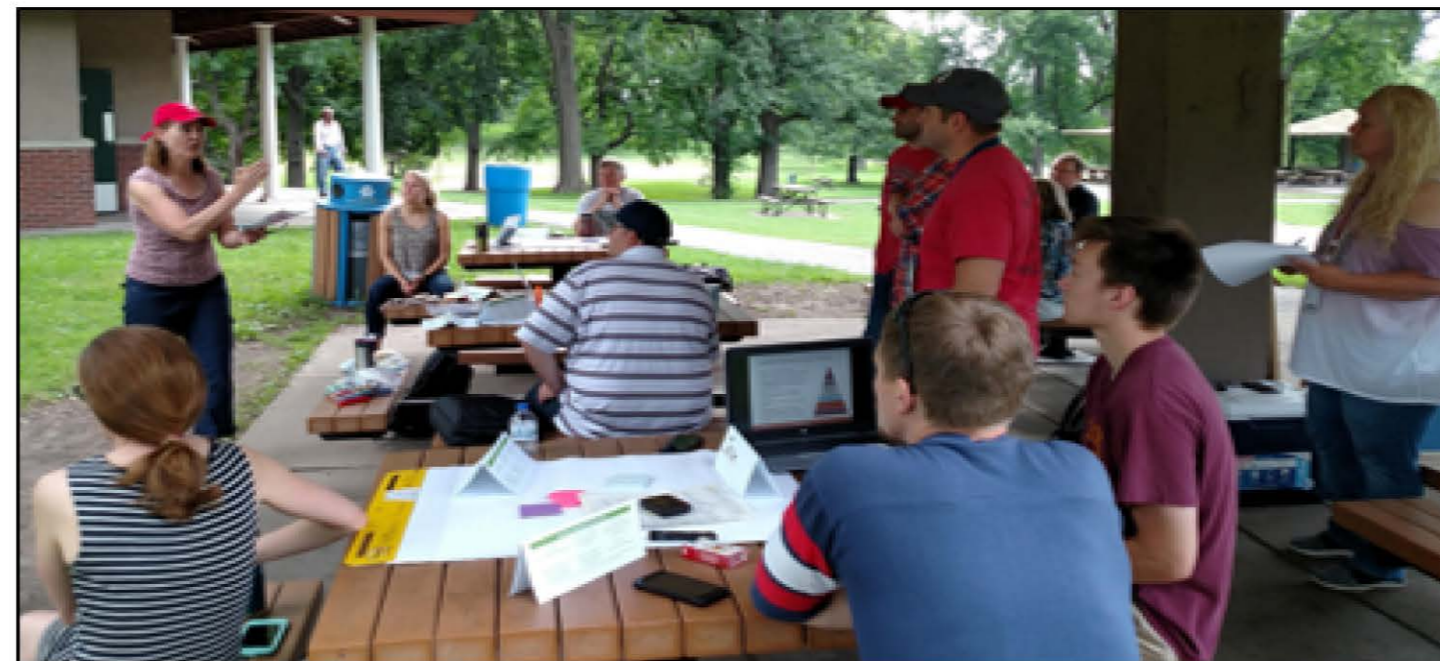
Sponsors: Larry Rogacki and SSBU Managers

Team: All SSBU staff (130 people)

Facilitators: Cristine Leavitt, Joel Belmares, Sara Smith

## Objective

Develop strategy maps for Support Services and SSBU departments that define a clear purpose, vision, and set priorities for the next 2-5 years.



CI Manager Cristine Leavitt facilitated PCG's Strategy Kickoff event at Indian Mound Park

## Results

Anticipated benefits of this project include:

- Providing a solid foundation that will direct, guide, and align decisions and actions of managers and staff for the next 2 to 5+ years.
- Work done will support development of performance measures.
- Enhanced collaboration, commitment, and morale among employees.
- Improved productivity and innovation.

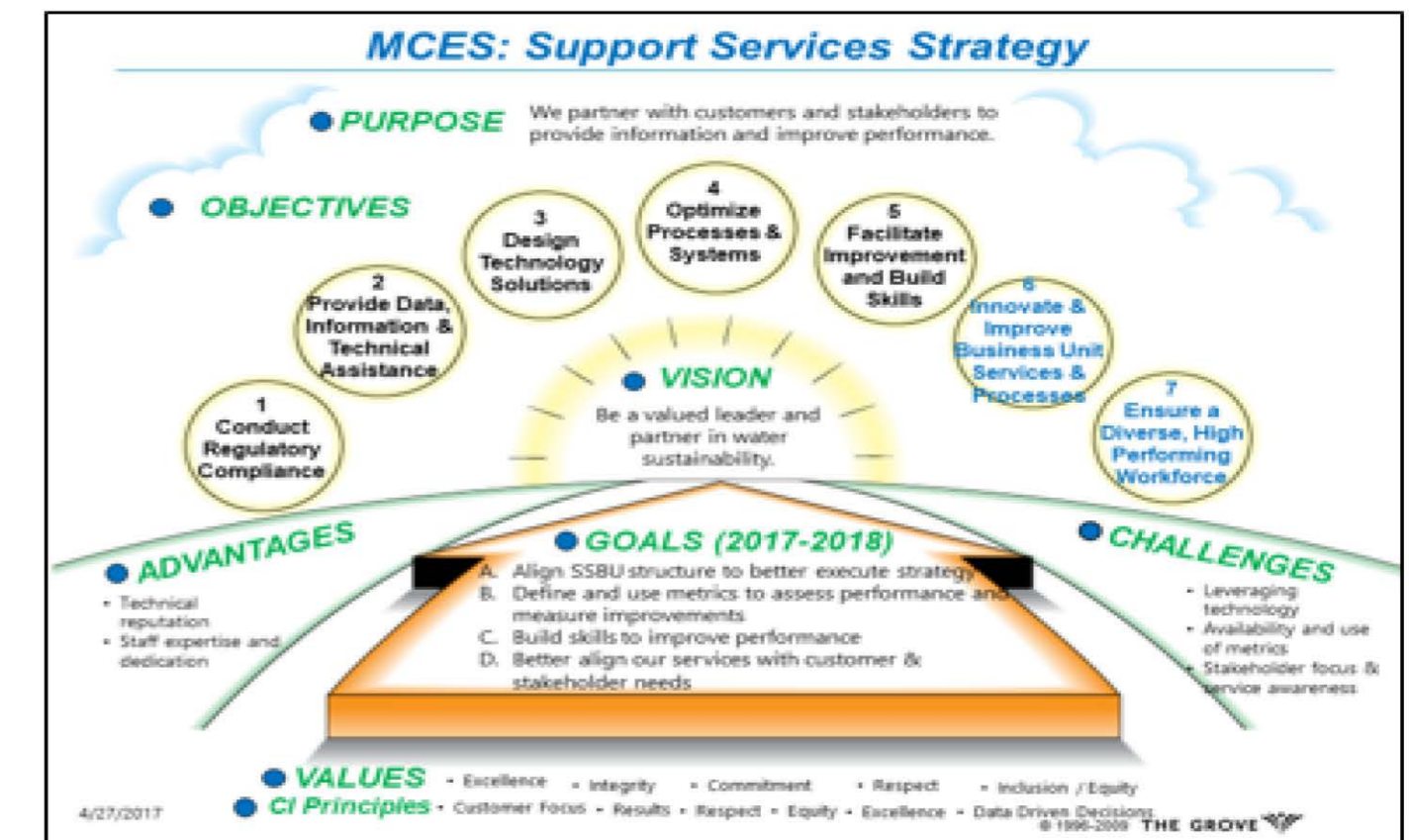
August 2018

## Lessons Learned

- Staff were glad to be included in the process and had a profound role in shaping the direction and vision for their department. *"My voice matters."*
- Managers should be present but not leading the discussion to allow for other voices to be heard.
- Follow up is key to assure that the group is following their purpose, vision, and priorities.
- *"Food was an appreciated and fun part of the process!"*

*"Engaging employees in this project provided a lot of benefits to the organization. It was very uplifting to see managers and their teams working together to establish a shared vision of success."*

— Larry Rogacki



SSBU Strategy Map



# For More Information

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# Questions