Capturing Knowledge Today – Sharing it Tomorrow

Stephanie Fleckenstein, EI
JTAC January 21, 2016
Agenda

01 High Performance
02 Employee Development
03 Knowledge Management Implementation
04 Beneficial Use
05 Sustainability
01 High Performance
Managing for High Performance

Ten Attributes of Effectively Managed Water Sector Utilities

1. Product Quality
2. Customer Satisfaction
3. **Employee and Leadership Development**
4. Operational Optimization
5. Financial Viability
6. Infrastructure Stability
7. **Operational Resiliency**
8. Community Sustainability
10. Stakeholder Understanding and Support
Managing for High Performance

High Performing Utility

- Empowerment
- Efficiency
- Engagement
02 Employee Development
When An Employee Walks Out the Door...What Is Lost?

- Leadership (Trust, Respect, Loyalty)
  - Relationships and Contacts
  - Historical Strategic Advantage
- Knowledge and Experience
- Training and Development
  - Electronic Documents
  - Files and Books
  - Observed Information
  - Skillset and Talents
Knowledge Transfer Process

Processes
- Document / Content Management
- Knowledge Capture
- Dialogue
- Coaching
- Experience
- Training

Type of Knowledge
- Explicit
- Implicit
- Tacit

Solutions
- Knowledge Repository
- Best Practices / SOPs
- Forums / Brown Bags
- Informal/Formal Mentoring Program
- Apprenticeships / Rotational Assignments
- Formal Training Program
03 Knowledge Management Implementation
Knowledge Management is...

“...the process of capturing, developing, sharing, and effectively using organizational knowledge.”

(Davenport, 1994)
The Knowledge Management Process

1. Identify critical knowledge
2. Capture knowledge
3. Share knowledge
4. Use knowledge
5. Inherit knowledge
Connecting Knowledge and Location to Reach All Users

Microsoft SharePoint
- Website Interface
- Hierarchy Menu System
- Searchers

GIS Dashboard
- Map Interface
- Visual Mapping of KM
- Locators

Linking Content To Location and Back
Knowledge Management Platform: Microsoft SharePoint

- Highly Customizable but User-Friendly
- Robust Search Engine
- Community Features (Discussions, Blogs)
- Editing and Approval Workflows

- Manage Documents
  - SOPs
  - Operations Logs
  - Drawings
  - Photos and Videos
  - Planning
  - Regulatory
  - Construction
  - Legal Records
Greeley, CO Case Study: Microsoft SharePoint

Industrial Pretreatment Program

The Industrial Pretreatment Program (IPP) is a program mandated by the Environmental Protection Agency under the Clean Water Act through the WPCF’s Colorado Discharge Permit System permit.

The Objectives of the Industrial Pretreatment Program are:

- To prevent the introduction of pollutants into the publicly owned treatment works that could pass through the treatment works or be incompatible with treatment processes.
- To prevent the introduction of pollutants into the wastewater treatment plant and collection system that could interfere with treatment operations and/or the use or disposal of biosolids.
- To improve the feasibility of recycling and reclaiming the municipal and industrial wastewater and biosolids.
- To protect the general health and safety of wastewater treatment plant and collection system employees.
- To enforce applicable EPA categorical standards.

In order to accomplish this, the IPP is required to regulate wastewater discharges from industrial and commercial users into the sanitary sewer system. The legal authority to achieve these objectives is found in Chapter 14.11 of the Greeley Municipal Code.

In addition to the required elements of our program, we implement in-plant monitoring programs, educational programs that promote environmental awareness, best management practices with different business sectors (link), and source control.

Industrial Users

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Hazardous Waste Notification

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Monitoring

| See Linko HTC | Chain of Custody | Bottle Order |

Inspections

| Scheduled | Unscheduled |

Categorical Regulations

|             |

Documents

- Ally Clincy Wastewater Discharge Permit 2014
- Atlas Energy Services Wastewater Discharge Permit 2014
- Cintas Wastewater Discharge Permit Amended 7/18/14
- Cintas Admin. Show Cause Order 5/03
- CINTAS CORPORATION FACT SHEET
- Cintas Hazardous Waste Notification 2013
- Cintas Inspection Photos
- Cintas Inspection Report 2014 pg 6/10
Communication Tools

- Calendars
- Task Lists
- Gantt Charts
- Newsfeed
Content Management

- Check In/Out
  - Multiple Authors
  - Single Current version

- Versioning
  - Automatic record keeping

- Permissions
  - Full Control
  - Contribute
  - Read Only
Training Resources

- Intuitive Structure
- Historical Records
- Input Forms
- Varied Media

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**SAMPLING EVENT PLANNER**

DATE: ____________  SITE: ____________

SAMPLE#: ____________  DATE CLEANED: ____________

**WHAT WAS CLEANED OR REPLACED?**
- TUBING: washed/chlorinated
- and acetone rinsed
- or alcohol rinsed
- new

**SAMPLE LINE:**
- washed/chlorinated
- and acetone rinsed
- or alcohol rinsed
- new

**Teflon**
- Vinyl

**LINE STRAINER:**
- small stainless steel
- large stainless steel
- Plastic

**JUGS:**
- DAY 1: plastic
- glasses
- washed/chlorinated
- and acetone rinsed
- washed/HNO3/DL
- and acetone rinsed
- bag line
- washed/chlorinated
- glass
- washed/chlorinated
- and acetone rinsed
- washed/HNO3/DL
- and acetone rinsed

**GRAB BOTTLES:**
- Cyanide
- Cr6+  O&G  VOC
- calibrated

**PH METER:**
- calibrated

**CONFINED SPACE:**
- Yes
- No

**FLOW METER:**
- Yes
- No

**FLOW INSERT:**
- Yes  6”
- 8”

**FLOW BAND:**
- Yes
- No

**BATTERY:**
- Plug-in
- Nickel

**PERMIT REQUIREMENTS:**
- BOD
- WET
- TSS
- O&G
- grab composite
- Metals
- all metals
- limited
- Organic
- Blew
- 634
- 636

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Calibrating pH Probes

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Location Management Platform: GIS Operations Dashboard

- View System Information and GIS Attributes
- Pinpoint Current Location in Field
- Search Addresses, GIS, and SharePoint
- Submit GIS Data Markups
# Greeley, CO Case Study: GIS Operations Dashboard

## Files in Folder: 2008 W and S Standard Drawings in PDF

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How does this fit in with other IT systems?

- Not intended to replace asset management or other existing information management systems.
- Intended to supplement, fill in gaps, and improve connections between systems.
- Intended to act as a portal and electronic document management system.
  - Records retention at Greeley (Laserfiche).
What are the beneficial uses of knowledge management?
An Innovative Electronic Solution that Provides Many Benefits to Your Utility

✓ **Increases** Access to Knowledge
✓ **Contains** Treatment Facility eO&M and SOPs
✓ **Facilitates** Design and Construction Coordination
✓ **Becomes** a Mobile Field Resource
✓ **Displays** Visual Mapping of Knowledge
✓ **Drives** Employee Engagement and Retention
✓ **Acts** as a Records Management System
✓ **Improves** Interdepartmental Dialogue
Take it with you to the Field!

- Runs on any browser
- Needs data connection
- SharePoint apps for off-line access
How do we sustain knowledge management?
Organizational Development Invests in People, the Greatest Asset

- **Build** a culture of sharing, collaboration, and learning
- **Integrate** succession planning and implementation
- **Give** people reasons to join and stay with your organization
- **Move** knowledge forward by developing a knowledge management plan and implementing it

Credit: HDR 2011.
Getting Started with Knowledge Management at Your Utility

• Establish management and supervisor support and accountability from start
• Get past initial apprehension and acknowledge benefits
• Set individual performance goals
• Perform KM audits annually
• Use KM as a utility performance metric
• Build a system all can use for daily tasks
Transferring knowledge to the Next Generation

- Ensure the next generation has the tools to succeed
  
  They are expecting it!

- Build the platform now for a younger technology-driven culture

  Attract new talent!

- Return on investment escalates with new staff

  Training platform is built!
Thanks for coming! Questions?

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