Use of Wiki-Type Software to Build Knowledge Management Systems

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Cheryl Davis, SFPUC

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January 29, 2010
<table>
<thead>
<tr>
<th>BIG AGENCIES, BIG CHALLENGES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>East Bay Municipal Utility District</strong></td>
</tr>
<tr>
<td><strong>Special District</strong></td>
</tr>
<tr>
<td>Serves Alameda and Contra Costa Counties</td>
</tr>
<tr>
<td>Water, Wastewater, Power</td>
</tr>
<tr>
<td>1.3 million customers</td>
</tr>
<tr>
<td>1,800+ employees</td>
</tr>
</tbody>
</table>
CURRENT CHALLENGES

- Significant portion of mission critical classifications eligible for retirement
- Current Labor Pool insufficient to meet upcoming retirements
- Inadequate access to existing information
- Inadequate documentation on facilities, processes, procedures, technologies, and equipment
CURRENT CHALLENGES

• Lack of decision support tools to help staff plan and implement complex processes
• Unreliable cataloging and storage of valuable reports and documents
• No system that clarifies to staff what information they need to know to do their work or if this information does exist, how to find it
KNOWLEDGE MANAGEMENT
WHAT IS A WIKI?

- A wiki is a website that allows the creation and editing of any number of interlinked web pages via a web browser. Wikis are typically powered by wiki software and are often used to create collaborative websites, to power community websites and knowledge management systems. Wikipedia is an example of a free, web-base encyclopedia.
WHY USE A WIKI?

- Familiar to employees
- User friendly
- Ease of implementation
- Ease of data entry and editing
- Requires less IT support than traditional software
- Ability to link to other databases
WIKI SOFTWARE SELECTION

- Cost
- Proprietary
- Who will manage the system
- Ability to control data access, and edits
- Ease of use
- Flat versus Hierarchy structure
<table>
<thead>
<tr>
<th>UserName</th>
<th>Password</th>
<th>LastName</th>
<th>FirstName</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mingda</td>
<td>********</td>
<td>Pan</td>
<td>Mingda</td>
</tr>
<tr>
<td>Kim</td>
<td>********</td>
<td>Abercrombie</td>
<td>Kim</td>
</tr>
<tr>
<td>Junmin</td>
<td>********</td>
<td>Hao</td>
<td>Junmin</td>
</tr>
<tr>
<td>David</td>
<td>********</td>
<td>Pelton</td>
<td>David</td>
</tr>
<tr>
<td>Greg</td>
<td>********</td>
<td>Winston</td>
<td>Greg</td>
</tr>
<tr>
<td>Frank</td>
<td>********</td>
<td>Lee</td>
<td>Frank</td>
</tr>
<tr>
<td>Steve</td>
<td>********</td>
<td>Wilson</td>
<td>Steve</td>
</tr>
</tbody>
</table>
HIERARCHY DATABASE

Branch Blocks

Leaf Blocks
EBMUD chose MediaWiki

**MediaWiki** is a free software wiki package written in PHP, originally for use on Wikipedia.

- Flat structure
- WYSIWYG Rich Text Editor
WIKI SOFTWARE SELECTION

• SFPUC chose Confluence
• Confluence is a web-based corporate wiki written in Java
• Proprietary
• Hierarchy structure
• Used in over 8,100 companies in 94 countries
• Cost = $2,000/year
• mIToolbox
SFPUC IMPLEMENTATION STRATEGY

- Customize software
- Build information hierarchies to help users find information (e.g., by work unit)
- Implement SFPUC-wide
- Provide training
- Collaborate internally and with other agencies
SFPUC IMPLEMENTATION STRATEGY

- Modify software to make it more user-friendly
- Create information hierarchies based on organizational structure or project
- Implement in all parts of the organization with an interest in using mIToolbox to address knowledge management issues
SFPUC

Water Supply

Water Quality

Engineering

Operations

Planning

Wastewater

Health and Safety
mIToolbox Dashboard

Welcome to SFPUC ITS Biz Apps wiki. This is experimental, primarily for CRS 2.0 project, but feel free to play in here and add your own spaces.

Spaces: My Team All
- Asset Management Coordination Group
- City Distribution Division
- Help
- Health and Safety
- Health and Safety - Work Space
- Help
- Hitchie Hitchy Water and Power
- IT Projects

Recently Updated
- Engineer
  George
  2 minutes ago
- Jennifer
  Detolle
  13 minutes ago
- George
  Engal
  33 minutes ago

Favourite Pages
- Manoosa Pump Station (MPS)
- MPS-DW-WW.jpg
- MPS-CP.jpg
- Navigation
- Water Enterprise Information System - Project
- 015 Sansome Street CSO Discharge Point
- Sansome-st.jpg
- 20th Street Pump Station (TWS)
- TWS.jpg
- Operator Certification
EBMUD IMPLEMENTATION STRATEGY

- No IT support
- Self monitoring and editing
- Pilot project in one work group—Water Treatment
- Selected tech-savvy treatment operators to input data
- Emphasized on integrating WIKI into work processes
- Strong integration with other databases
### Water Operations Department

**Overview**

Welcome to the Water Operations Department Wiki.

The Water Operations Department consists of the Water Supply Division and the Water Treatment and Distribution Division. The Department is responsible for the operations of water treatment and distribution facilities in the East Bay, water quality monitoring and reporting, water supply scheduling and flood control, and customer contacts and investigations related to water quality, pressure, and flow inquiries. The Department is also responsible for implementing a comprehensive energy management strategy.

#### WATER TREATMENT AND DISTRIBUTION DIVISION

- Distribution Engineering
- Process Engineering
- SCADA Engineering (OPNET)
- Water Distribution and System Water Quality
- Water Treatment

#### WATER SUPPLY DIVISION

- Water Supply Engineering
- Process
- Fire
- East/South Canal Connection
- Freight Regional Water Project

#### Other Links

- Climate Change
- Contact Management Application (CMA)
- District Infrastructure Statistics
- DOD
- Facility Guideline
- General Work Draw System (GWS)
- Off Hours Contact List
- Service Area GIS

### Quick Links

- Division Links
- Other Links

### SOP’s

- Help
- Tools

### Other Links

- ebmud.com
IMPLEMENTATION AND TRAINING COST

- EBMUD = $3,000
- SFPUC = $50,000
OTHER WIKI SOFTWARE

TiddlyWiki
Sharing knowledge. Simply.

TigerWiki
What’s New?

WikkaWiki

Mindquarry
The Open Source Collaborative Software
For Additional Information, please contact:
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EBMUD
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jfsmith@ebmud.com

Cheryl Davis
Workforce Development Initiative Manager
SFPUC
415-554-1875
cdavis@sfwater.org
Quality & Reliability Enhancement Program
The following Discharge is subject to waste discharge requirements as set forth in this Order:

<table>
<thead>
<tr>
<th>Discharge Point</th>
<th>Effluent Description</th>
<th>Discharge Point Latitude</th>
<th>Discharge Point Longitude</th>
<th>Receiving Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPF 001</td>
<td>Sludge, primary Sedimentation basin</td>
<td>37° 60' 00&quot;</td>
<td>122° 22' 22&quot;</td>
<td>Lower San Francisco Bay</td>
</tr>
<tr>
<td>EPF 002</td>
<td>Secondary treatment effluent, sedimentation basin</td>
<td>37° 60' 00&quot;</td>
<td>122° 23' 13&quot;</td>
<td>San Francisco Bay</td>
</tr>
<tr>
<td>EPF 003 and EPF 004</td>
<td>Primary treated effluent of combined</td>
<td>37° 49' 25&quot;</td>
<td>122° 24' 15&quot;</td>
<td>Central San Francisco Bay</td>
</tr>
<tr>
<td>EPF 005 and EPF 006</td>
<td>Primary treated effluent of combined</td>
<td>37° 49' 36&quot;</td>
<td>122° 26' 26&quot;</td>
<td>Central San Francisco Bay</td>
</tr>
<tr>
<td>CSO Discharge Points</td>
<td></td>
<td>37° 49' 36&quot;</td>
<td>122° 26' 26&quot;</td>
<td>Marina Beach inlet</td>
</tr>
</tbody>
</table>

The discharge by the City and County of San Francisco from the discharge points identified above is subject to waste discharge requirements as set forth in this Order.
USE OF MITOOLBOX TO SUPPORT EQUIPMENT MAINTENANCE

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Description</th>
<th>Equipment ID</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milton Roy</td>
<td>Centrac 3</td>
<td>Ammonia and Hypo Chemical Feed Pumps</td>
<td>3P03, 3P04, 3P201, 3P202</td>
<td></td>
</tr>
<tr>
<td>Wallace &amp; Tieman</td>
<td>Deosys 2</td>
<td>Fluoride Analyzer</td>
<td>HTAFT721, HTAFT24-C</td>
<td></td>
</tr>
</tbody>
</table>

The image shows a screenshot of a web page with a table listing equipment manuals. The highlighted row indicates a Centrac 3 Pump and Controller, along with descriptive information and an image of the equipment.
Project Construction Records
Health and Safety Training Page

Required Health and Safety Trainings

Required Health and Safety trainings are driven by regulatory agencies, and San Francisco Public Utilities Commission’s (SFPUC) Health and Safety Program Policies.

- Click here for a table of required training from California Department of Industrial Relations, Division of Occupational Safety and Health (DOSH), Commonly known as CalOSHA.
- U.S. Department of Labor, Occupational Safety and Health Administration (Federal OSHA).
- SFPUC Health and Safety Program Policies.

SFPUC Learning Management System (LMS)

The SFPUC Learning Management System (LMS) is the system of records for all SFPUC trainings and learning. You can find upcoming trainings and history of learnings for yourself or for your group of employees.

Request for Training

To request Health and Safety Trainings, contact the Health and Safety staff.
Workers’ Compensation

- Employee’s Claim for Workers’ Compensation Benefits (DWC Form 1)
- Employer’s Report of Occupational Injury or Illness (previously known as Form 2).
  *The supervisor must complete this form.*
- Job Duties Form
- Medical Authorization Work Status Form
- Workers’ Compensation Supplementation Election Form
- City and County of San Francisco Predesignation of Personal Physician Form
- Modified Duty Work Assignment Agreement

Accident Investigation

- Supervisor Accident Investigation Report
- Supervisor Supplemental Accident Investigation Report
- Vehicle Accident Report Form

Code of Safe Practices

- Code of Safe Practices Form

Employee Report of Hazardous Conditions
Health & Safety Workspace
“Search” Function