



SVCW's Journey to an Integrated Asset Management System

Silicon Valley Clean Water WWTP

- ▶ Located in Redwood City, CA
- ▶ Treats influent from:
 - ▶ Redwood City
 - ▶ San Carlos
 - ▶ Menlo Park
 - ▶ West Bay Sanitary District
- ▶ Originally built in 1979





San Francisco Bay

Stormwater Management Basin

Force Main Outfall

Plant Operations

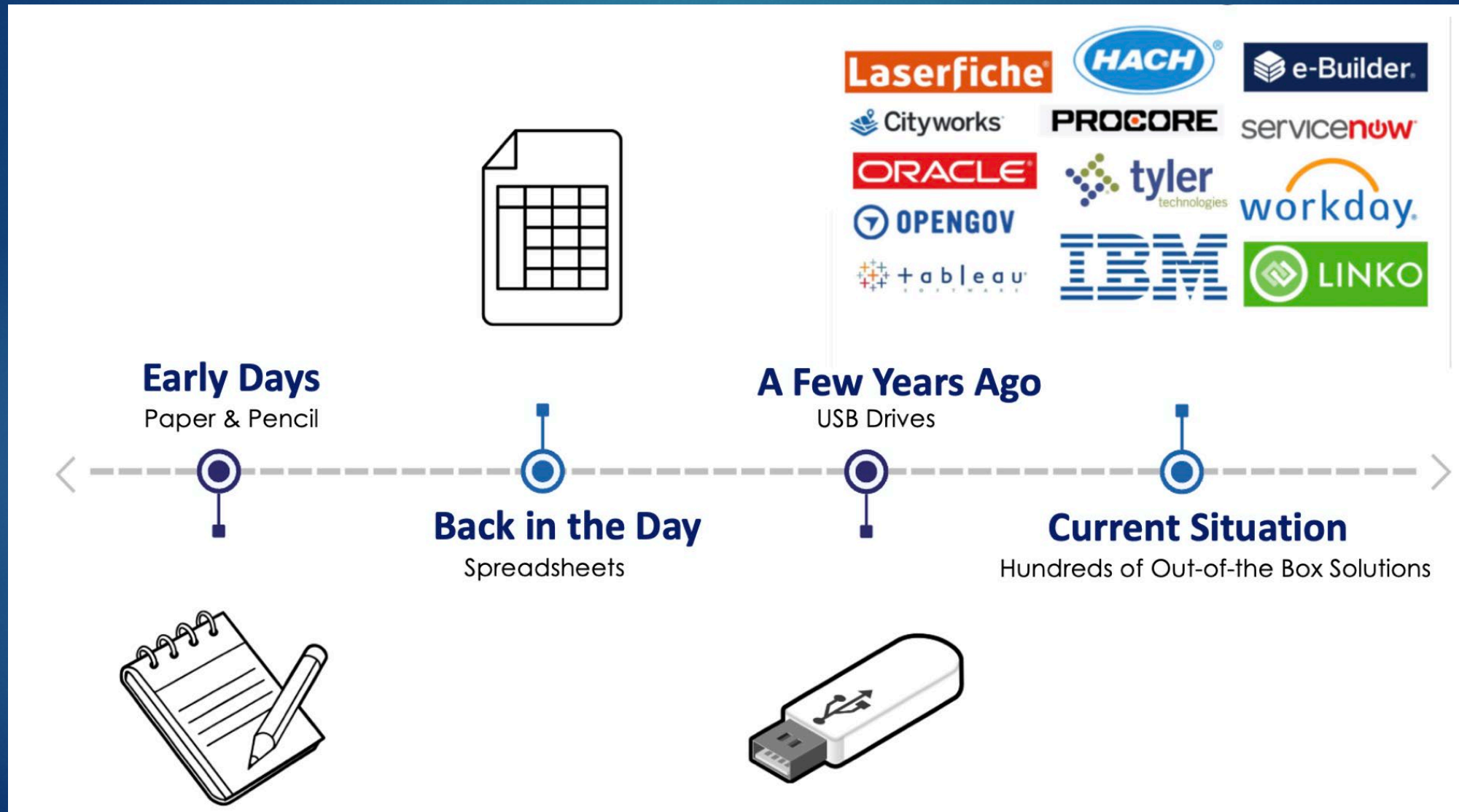
Perimeter Levee

Steinberger Slough

Silicon Valley Clean Water WWTP

- ▶ Average Daily Flow - 12MGD
- ▶ About 220,000 residents
 - ▶ 84 Employees
- ▶ ~\$350M CIP Program in Treatment Plant Upgrades over next 10 years

The Evolution of Siloed Technologies



Versioning control issues resulting from high spreadsheet volume and decentralized email-based dissemination

[illegible]

</

Version history

Delete All Versions

No. ↓	Modified
57.0	4/30/2024 1:41 PM
56.0	4/30/2024 12:45 PM
55.0	4/23/2024 10:22 AM
54.0	4/15/2024 8:53 AM
53.0	4/15/2024 8:53 AM
52.0	4/15/2024 8:49 AM
51.0	4/9/2024 3:58 PM
50.0	3/26/2024 9:05 AM
49.0	3/15/2024 9:32 AM
48.0	3/13/2024 9:23 AM
47.0	3/6/2024 9:51 AM
46.0	3/4/2024 9:09 AM

From Chaos to Control: Why Model-Driven Applications Win



Unstructured

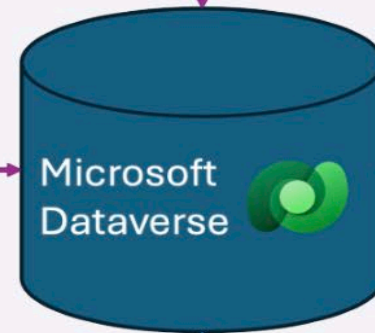
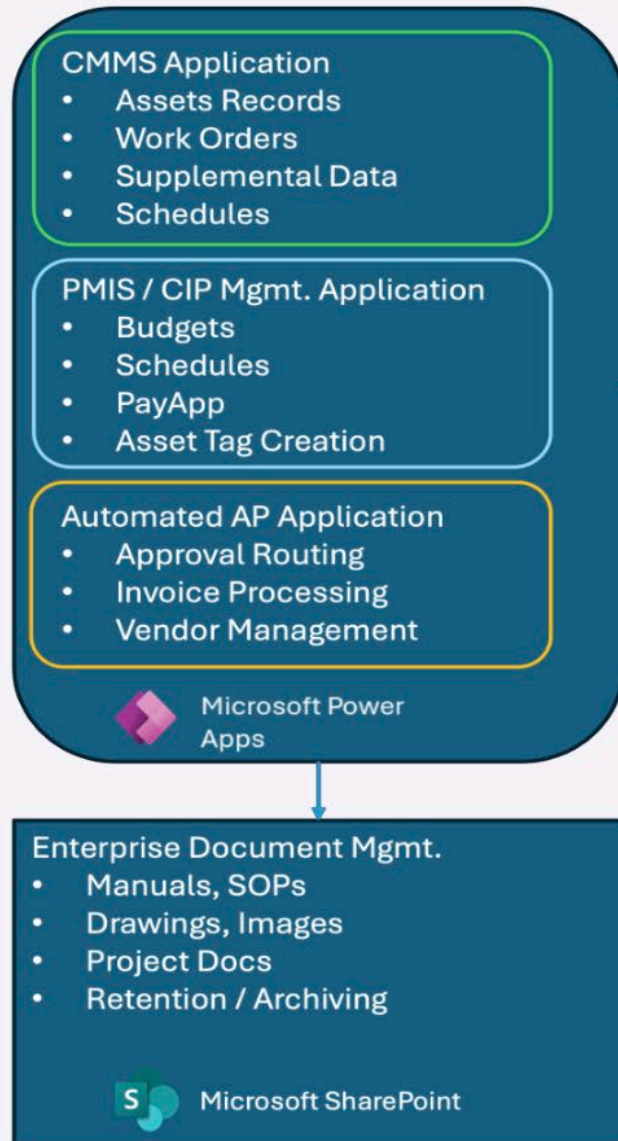
- Limitations of Spreadsheets & USB-Based Workflows
 - Data Siloes & Version Drift
 - Error-Prone Manual Entry
 - Limited Collaboration
 - No Automation or Audit Trail
 - Disorganized Document Storage
 - Time-Consuming Search & Retrieval



PowerApps

SVCW EIMS

- Model Driven Application Advantages
 - Centralized Data Integrity
 - Real-Time Collaboration & Updates
 - Structured Data Input & Validation
 - Automated Workflows & Audit Trails
 - Integrated Document Management
 - Searchable & Filterable Data



Introducing SVCWs EIMS

Built on the Microsoft Power Platform

Power AppsEIMS Demo

Search

+⚙️?⚙️👤

Maintenance

HomeEquipmentWork OrdersFleet ChecklistsFleet Work Orders

Operations

SOPsLOTOs

Tools & Utilities


AnnouncementsUpload DocumentsEIMS Documents

Reports

Asset Tag ValidationDocument HistoryDocumentsWork Order Report

O&M

Recent Announcements




Gravity Pipeline

8/5/2024

We are pleased to announce the commencement of a new boring project at our wastewater facility that will significantly enhance the capacity of our pump station. This project involves drilling a new underground tunnel, which will allow us to increase the inflow of wastewater into the facility. Once completed, the expanded infrastructure will enable the pump station to handle larger volumes of wastewater more efficiently, ensuring that we meet both current and future demands. The boring project will incorporate advanced engineering techniques to minimize disruption to our existing operations while maximizing the station's capacity. This new tunnel will provide additional routing for incoming wastewater, alleviating pressure on the current system and reducing the likelihood of bottlenecks or overflows during peak usage. It's a vital upgrade that will improve the facility's overall resilien...

News




Launch of SVCW Project Management System

3/17/2025

Engineering division is proud to announce its first ever project management system to manage all of its projects whether it be CIP, capital projects or any other project. The launch of this tool will allow project managers to actively start using this tool immediately. SVCW has a CIP of \$358 million and all of these projects will utilize this new system to execute it. The tool was launched on March 17, 2025.

News



Front of Plant Opening

1/1/2025

We are excited to announce the opening of our new pump station at the wastewater treatment facility. This new addition is a critical upgrade that will enhance our ability to manage increased wastewater flow, improve operational efficiency, and ensure the reliable processing of the community's wastewater. The new pump station will play a key role in reducing the strain on our existing infrastructure while preparing us for future demands as the population grows. The pump station is equipped with state-of-the-art technology designed to optimize energy consumption, automate critical processes, and provide real-time monitoring. Its advanced control systems will allow us to track performance and identify any potential issues early, minimizing downtime and improving the overall reliability of our operations. Additionally, the station has built-in redundancies to ensure continuous operation in the eve...

Project Update

Resources

Equipment Resources

- Pump Station Manuals
- Upcoming Maintenance
- Hazardous Areas

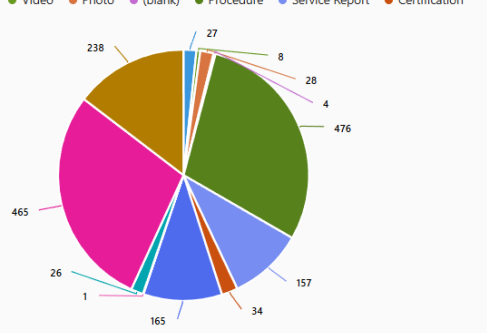
Feedback & Support

- Support Request
- Report an Issue
- Provide Feedback

Ask Copilot

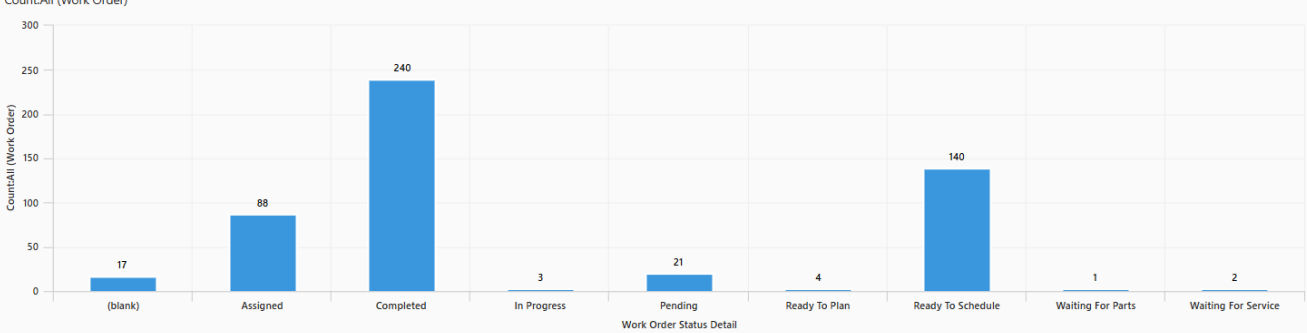
All Active Documents

Operations SOPVideoPhoto(blank)ProcedureService ReportCertification



Work Order by Status

Count:All (Work Order)



Work Order Status Detail

Name Builder Equipment

Name Builder Equipment



Live Demonstration

Lessons Learned

Design for the Long Term

- ▶ WWTPs are long-lived facilities—**scalability, maintainability, and documentation** were prioritized over flashy features.

Start with a Strong Data Foundation

- ▶ **Asset taxonomy and naming conventions** must be defined early to avoid rework downstream.
- ▶ Wastewater facilities have complex, layered systems—organizing by process area and location (e.g., headworks, digesters, pumps) helps maintain clarity and scalability.

Integration Planning is Critical

- ▶ CMMS and document management systems (e.g., SharePoint) must be integrated at the data model level – not just with links – to enable smooth workflows.

Forms & Views Must Match the Field User's Mental Model

- ▶ Engineers and maintenance staff think in terms of **equipment groups, locations, and tasks**—model-driven forms must reflect that to reduce training friction.
- ▶ **Customized views and dashboards** improve usability and speed up adoption.

5:04
Authenticator

Aeration Basin 1 - 3Water Isolation Valve - FCV 1001
Equipment Asset
3W_ISL_VLV_16101 Tag 20032 Equip

Summary Equipment

Related Work Orders

All Work Orders

SORD0100017128 Preventative
SORD0100017020 James Kemp Corrective
SORD0100016863 Preventative
SORD0100016574 Peter Georgeades Preventative
SORD0100016389 Jason Herrera Preventative
SORD0100016094 Preventative

5:40

PRESSURE GAUGE
Equipment Asset
3W_INL_PL_49002 Tag 22501 Equipment Key

Summary Equipment Segments Work Orders

Equipment Details

Tag 3W_INL_PL_49002
Alternate Tag ID ---
Equipment Class Inst
Equipment Description PRESSURE GAUGE
Manufacturer ASHCROFT
Model ---
Serial Number N/A
Acquisition Date 9/28/2023
Acquisition Cost 0.00

Save Save & Close Replace Equipment More

***An integrated EIMS Platform is more than a database.
It's a digital foundation that improves reliability, reduces duplication,
and empowers staff across engineering and operations.***

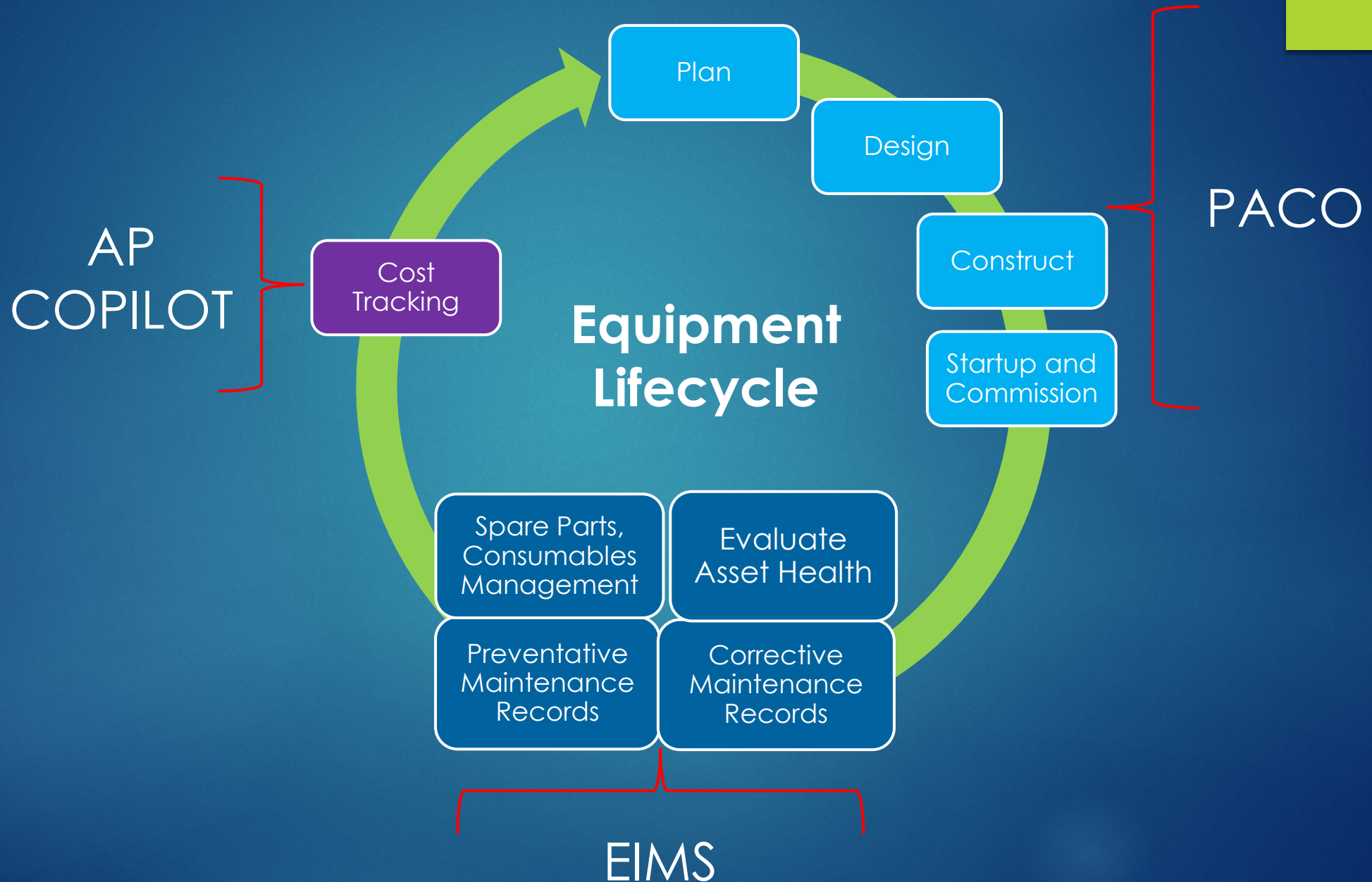
Benefits We've Experienced

- ▶ Unified platform for different projects/departments
- ▶ No repeated effort (ex: equipment info on CMMS)
- ▶ Managed by one staff member

The top screenshot displays the 'Create your Asset Tags' form in the Power Apps EIMS Admin Center. The form includes fields for Process Area (BFT - BioForceTech), Process Function (GDR - Grinder), Equipment Designator (SIA - Analyzer Suffixe Ion), Accounting Billing Code (48 - Force Main Belmont), Process Unit Location (3 - Unit Process #3), Equipment Sequential Number (05), Instrumentation Suffix (PUL - Automatic Sampler Flow Pace Pulse), and Equipment Class (Grinder). A 'New Asset Tag: BFT_GDR_SIA_48305_PUL' is shown at the top, and a 'CWL_GEN_AUD_50505_DG' tag is visible on the right.

The bottom screenshot shows the 'All Projects' table in the Power Apps EIMS Admin Center. The table lists various projects with columns for Project Name, Batch Status, Project Manager, Description, Asset Count, Created By, Created On, and Modified By. The table includes a sub-table for 'Tag 1' with columns for Equipment Class, Equipment Description, Process Area, Process Function, Equipment Designator, Accounting Billing, Process Unit Location, Equipment Sequential Number, and Instrumentation Suffix. The table lists projects such as BIO-FORCE TECH, Biogas Utilization - Linear Generators, Electric Vehicle Power Supply, FEP Equipment Project, FOP Additional Equipment Location Tags, Linear Generator Connection Project, POBE EV FLEET CHARGING PROGRAM, SXCW Gas Conditioning, and Underground Fuel Tank Replacement.

In Practice - Process Flow



Start the Process Early

FEP Equipment Project - Saved

Name Builder Project

GeneralCommentsRelated

Project Details

Project Name *

FEP Equipment Project

Project Status

In Development

Project Manager

CA Chathu Abeyrathna

Description

Final Effluent Pump equipment. Tags added by Josh Hammer. May need to review Equipment Class for assets.

Load Template

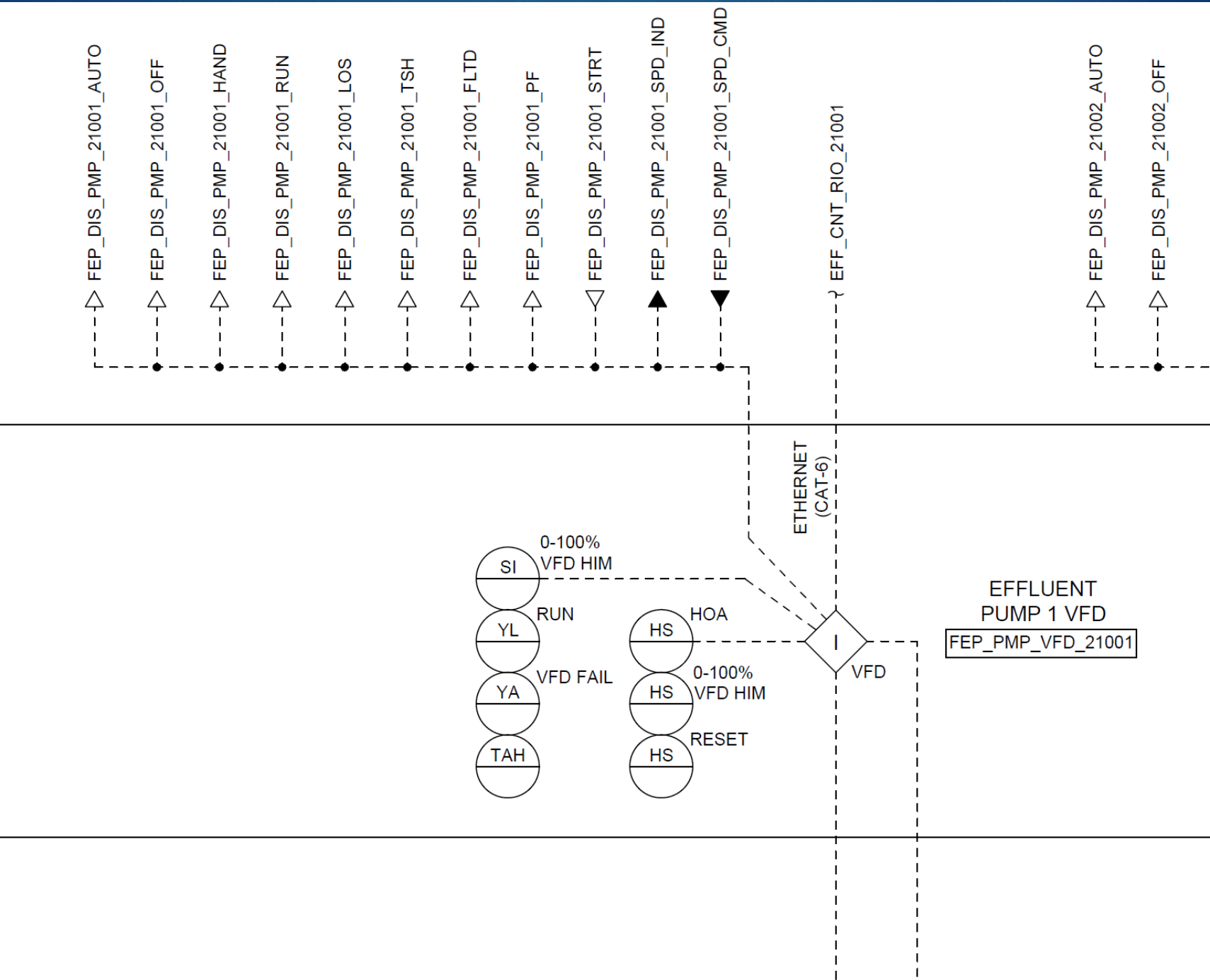
Choose FileNo file chosen

Associated Equipment

New Equipment - Name Builder

	Tag	Equipment Cl...	Equipment Description	Process Area	Process Function
	FEP_DIS_PMP_21001_A...	Pump	EFFLUENT PUMP NO.1 AUTOMATIC...	Final Effluent Pumping	Discharge
	FEP_DIS_PMP_21001_FL...	Pump	EFFLUENT PUMP NO.1 VFD FAILUR...	Final Effluent Pumping	Discharge
	FEP_DIS_PMP_21001_H...	Pump	EFFLUENT PUMP NO.1 HAND MOD...	Final Effluent Pumping	Discharge
	FEP_DIS_PMP_21001_L...	Pump	EFFLUENT PUMP NO.1 LOCKOUT-S...	Final Effluent Pumping	Discharge
	FEP_DIS_PMP_21001_O...	Pump	EFFLUENT PUMP NO.1 OFF MODE I...	Final Effluent Pumping	Discharge
	FEP_DIS_PMP_21001_PF	Pump	EFFLUENT PUMP NO.1 POWER LOS...	Final Effluent Pumping	Discharge
	FEP_DIS_PMP_21001_R...	Pump	EFFLUENT PUMP NO.1 RUNNING I...	Final Effluent Pumping	Discharge
	FEP_DIS_PMP_21001_S...	Pump	EFFLUENT PUMP NO.1 SPEED COM...	Final Effluent Pumping	Discharge
	FEP_DIS_PMP_21001_S...	Pump	EFFLUENT PUMP NO.1 SPEED INDI...	Final Effluent Pumping	Discharge
	FEP_DIS_PMP_21001_S...	Pump	EFFLUENT PUMP NO.1 START/STOP...	Final Effluent Pumping	Discharge

1 - 10 of 13



Easily Accessible Data For O&M

- ▶ PM Writeups and Schedule
- ▶ SOPs
- ▶ LOTOs
- ▶ O&Ms

RLS - MANIFOLD A - LIFT PUMP NO. 1 - Saved

Equipment Asset

SummaryEquipment SegmentsWork OrdersLock Out Tag OutSupplemental DataEquipment MetricsSOPsInventory

Equipment Details

Tag

RLS_TRS_PMP_49001

Alternate Tag ID

Equipment Class

Pump

Equipment Description

RLS - MANIFOLD A - LIFT PUMP NO. 1

Manufacturer

FLYGT

Model

Serial Number

3531.906 2151070

Acquisition Date

9/28/2023

Acquisition Cost

0.00

Installation Date

9/28/2023

Enable for Fleet Management

Related Documents

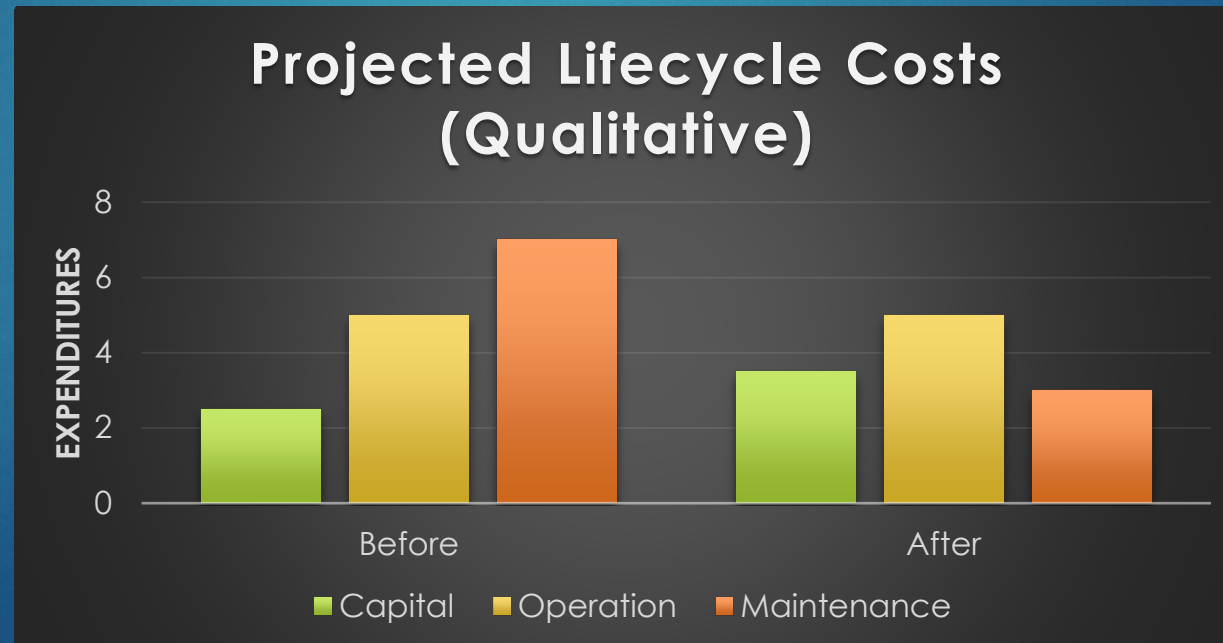
Documents

Name	Document Type	Modified By	Modified
<div>FOP_Mech_Pump Submerse_12-Month-MFR.pdf</div>	Procedure		2/13/2024 9:22 AM
<div>FOP_Elec-Controls_Pump Submerse_12-Month-MFR.pdf</div>	Procedure		2/13/2024 9:22 AM
<div>FOP_Mech_Pump Submerse_72-Month-MFR.pdf</div>	Procedure		2/13/2024 9:43 AM
<div>FOP_Mech_Pump Submerse_36-Month-MFR.pdf</div>	Procedure		2/16/2024 12:13 PM
<div>SUB_SPJIV_S2-168.07B_Submersible Dry Well Pumps - O&M_23...</div>	Manual		12/2/2024 9:14 AM

RLS_TRS_PMP_49001
Tag

Goals

- ▶ Reduce equipment downtime
- ▶ Automation will reduce the need for additional staff time
- ▶ Reduction in lifecycle costs



Q & A



THANK YOU