



**AGENDA  
REGULAR WORKSHOP/MEETING OF THE  
BOARD OF DIRECTORS**

**WEDNESDAY, SEPTEMBER 2, 2020  
10:00 A.M.**

**INLAND EMPIRE UTILITIES AGENCY\*  
VIEW THE MEETING LIVE ONLINE AT IEUA.ORG  
TELEPHONE ACCESS: (415) 856-9169 / Conf Code: 440 187 404#**

PURSUANT TO THE PROVISIONS OF EXECUTIVE ORDER N-25-20 ISSUED BY GOVERNOR GAVIN NEWSOM ON MARCH 12, 2020, AND EXECUTIVE ORDER N-29-20 ISSUED BY GOVERNOR GAVIN NEWSOM ON MARCH 17, 2020 AND IN AN EFFORT TO PROTECT PUBLIC HEALTH AND PREVENT THE SPREAD OF COVID-19, THERE WILL NO PUBLIC LOCATION FOR ATTENDING IN PERSON.

The public may participate and provide public comment during the meeting by dialing into the number provided above. Alternatively, you may email your public comments to the Interim Board Secretary/Office Manager Laura Mantilla at [lmantilla@ieua.org](mailto:lmantilla@ieua.org) no later than 24 hours prior to the scheduled meeting time. Your comments will then be read into the record during the meeting.

**CALL TO ORDER OF THE INLAND EMPIRE UTILITIES AGENCY BOARD OF DIRECTORS MEETING**

**FLAG SALUTE**

**PUBLIC COMMENT**

Members of the public may address the Board on any item that is within the jurisdiction of the Board; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) of Section 54954.2 of the Government Code. Those persons wishing to address the Board on any matter, whether or not it appears on the agenda, are requested to email the Interim Board Secretary no later than 24 hours prior to the scheduled meeting time or address the Board during the public comments section of the meeting. Comments will be limited to three minutes per speaker. Thank you.

**ADDITIONS TO THE AGENDA**

In accordance with Section 54954.2 of the Government Code (Brown Act), additions to the agenda require two-thirds vote of the legislative body, or, if less than two-thirds of the members are present, a unanimous vote of those members present, that there is a need to take immediate action and that the need for action came to the attention of the local agency subsequent to the agenda being posted.

1. **WORKSHOP**
  - A. **ASSET MANAGEMENT WORKSHOP**
2. **GENERAL MANAGER'S COMMENTS**
3. **BOARD OF DIRECTORS' REQUESTED FUTURE AGENDA ITEMS**
4. **DIRECTORS' COMMENTS**
5. **CLOSED SESSION**
  - A. **PURSUANT TO GOVERNMENT CODE SECTION 54956.9(d)(2)**  
**CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION**  
One (1) Case
6. **ADJOURN**

\*A Municipal Water District

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Interim Board Secretary (909) 993-1944, 48 hours prior to the scheduled meeting so that the Agency can make reasonable arrangements.

#### **Declaration of Posting**

Proofed by: SR

I, Laura Mantilla, Interim Board Secretary/Office Manager of the Inland Empire Utilities Agency\*, A Municipal Water District, hereby certify that a copy of this agenda has been posted by 5:30 p.m. at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA on Thursday, August 27, 2020.



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Laura Mantilla

## WORKSHOP

# 1A

# Board Workshop

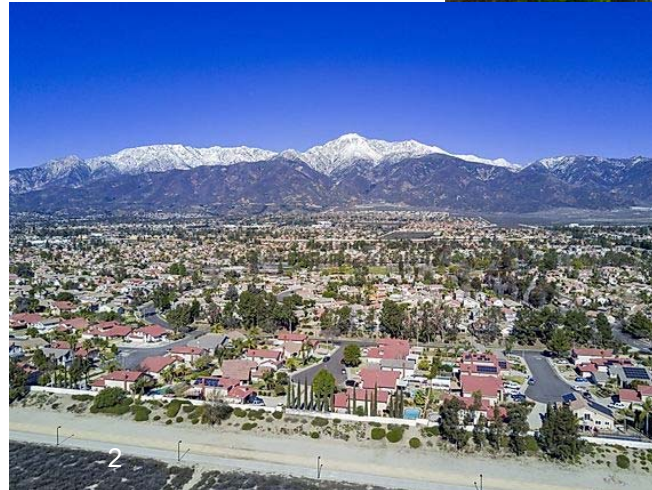
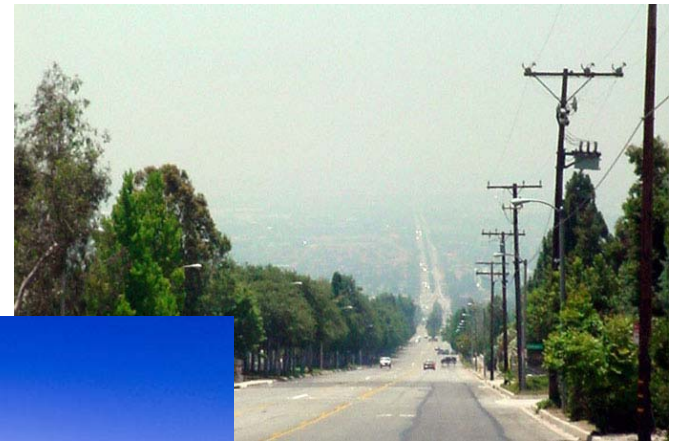
## Getting IEUA's Asset Management (AM) "Fix"



# Agenda

## But FIRST...Why what we do matters

- History (military, private, public)
- Review
- Breadth of AM
- Where are we & how do we compare
- Plans moving forward

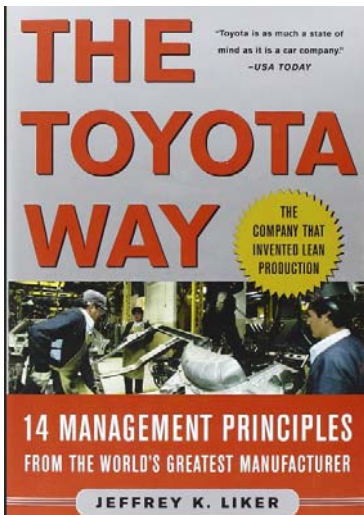




# Brief History of Asset Management (AM)

## History:

- Government: Military/FAA
- Private
- Public



## IEUA: Mission / Vision / Values



- We are **public stewards** who provide Water & Treated Wastewater
- How we do it
  - Safely
  - Compliantly
  - Reliably
  - Sustainably (Cost effective & environmentally conscious)

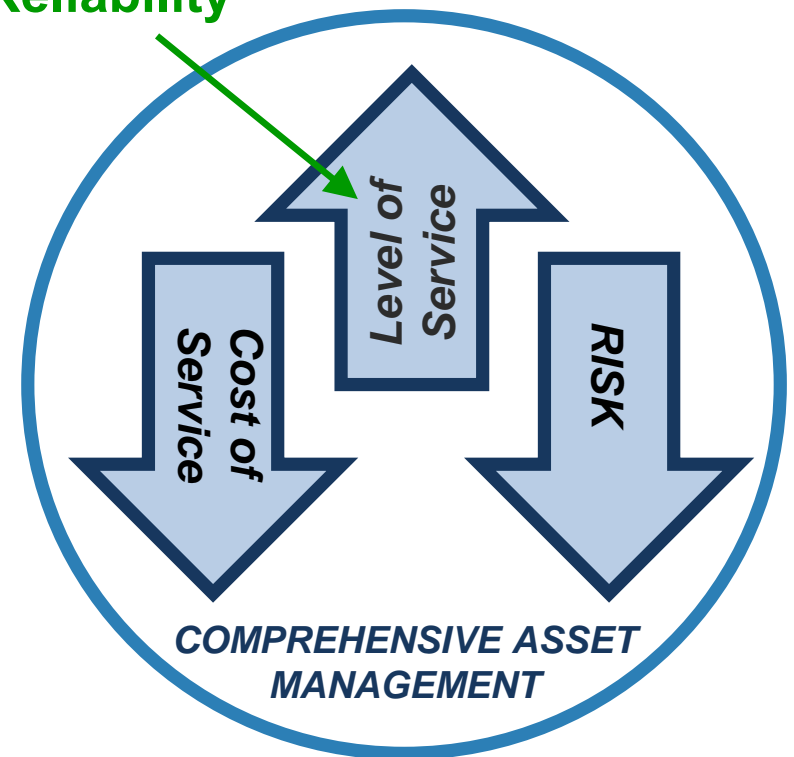
# Review: What is Asset Management (AM)?

## Definition

*Asset Management is an integrated set of processes that minimize the lifecycle costs of owning, operating, and maintaining assets, at an acceptable level of risk, while continuously delivering established levels of service now and for the future.*

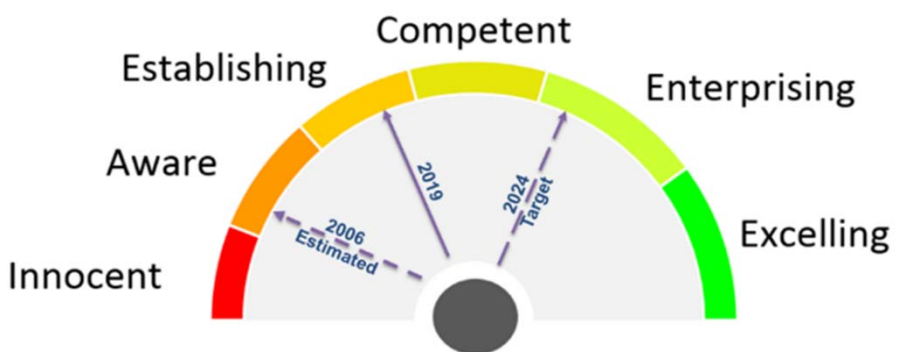
*Doing the **right projects**, at the **right cost**, at the **right time**.*

Reliability

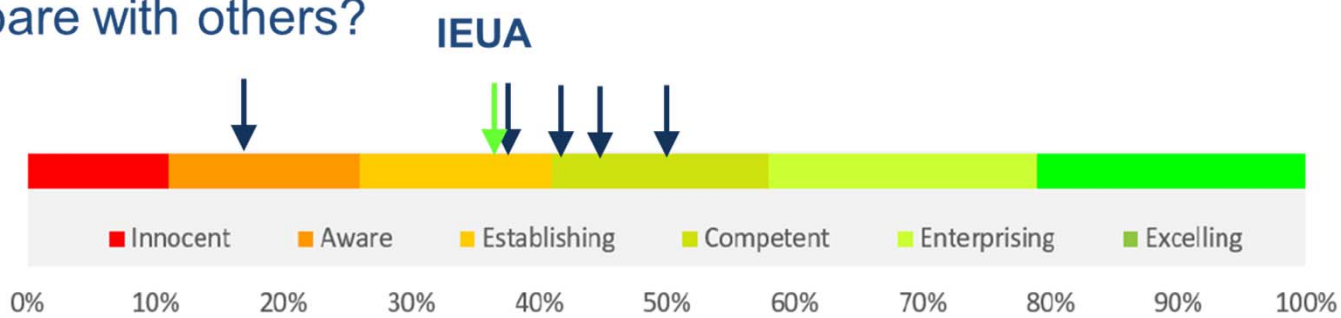


# Where are we in our AM Journey?

- 100 Setting Policy and Direction
- 200 Capital Project and Maintenance Planning
- 300 Asset Life Cycle Decision Making
- 400 Project, Operations and Maintenance Delivery
- 500 Asset Monitoring and Performance
- 600 Quality and Risk Assessment
- 700 Organization
- 800 Data and Information
- 900 Technology



How do we compare with others?





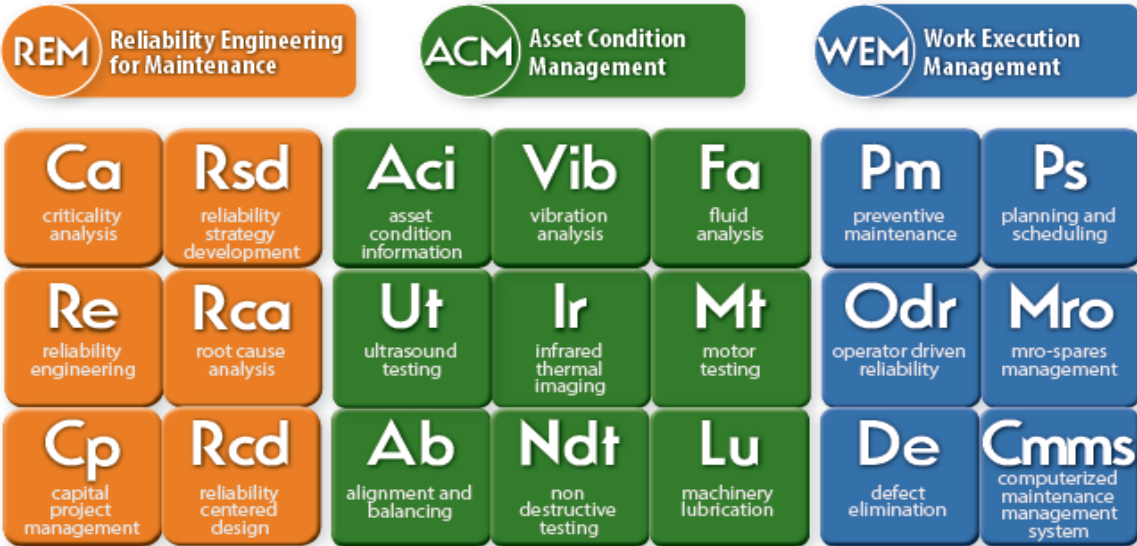
# How to Close the Gap: Comprehensive Asset Management



# Asset Lifecycle & Breadth of AM

## Uptime® Elements

### Technical Activities



### Leadership



### Business Processes



A Reliability Framework and Asset Management System™

# Plans Moving Forward

100	Setting Policy and Direction
200	Capital Project and Maintenance Planning
300	Asset Life Cycle Decision Making
400	Project, Operations and Maintenance Delivery
500	Asset Monitoring and Performance
600	Quality and Risk Assurance Practices
700	Organization
800	Data and Information Management
900	Technology/Systems and Tools

- Improving Upon Successes (“Sharpening the Saw”)
  - Advanced Maintenance Practices
- Planning & Scheduling (IERCF Pilot)
  - Criticality Analysis & Asset Hierarchy
  - Computerized Maintenance Management System (CMMS)
  - Warehouse Improvements
  - Standardization
- Condition Assessment Planning -> CIP
- RP-5 Expansion AM Processes
- Collaborative Culture of Continual Improvement
  - Asset Management Steering Committee (AMSC)
  - Defect Elimination (De)

# Building Upon Success: AM Maintenance Philosophies

- Run to Failure (RTF)
  - History
  - Applicability
  - Intentional
- Preventive Maintenance (PM) & Corrective Maintenance (CM)
- Predictive Maintenance (PdM)



More Options Available

**Exclusive** Everbilt 1/2 HP Submersible Aluminum Sump Pump with Tethered Switch

Model# HDPS50W

★★★★☆ (107)

**BULK PRICE** \$139<sup>00</sup>

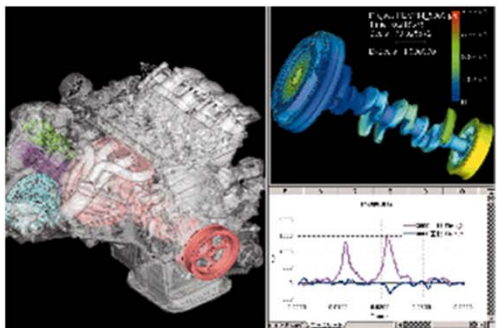
Buy 3 or more \$111.20

✓ 9 in stock at Upland  
Check nearby stores



# Predictive Maintenance (PdM)

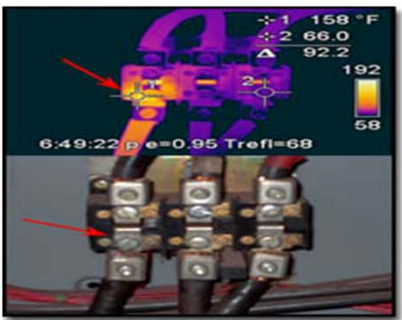
## Vibration Analysis



## Oil Analysis

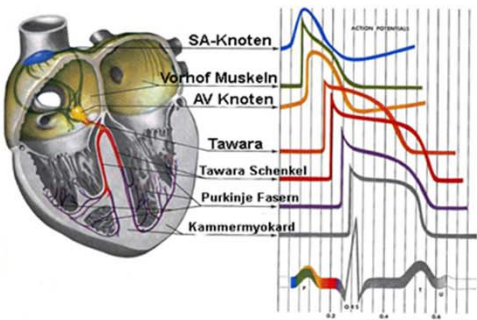


## Thermography

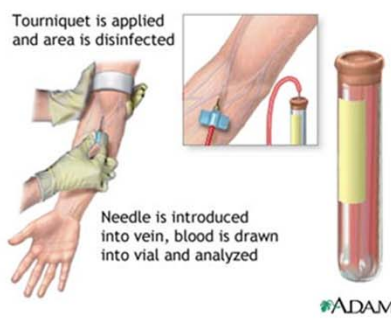


## Medical Analogy

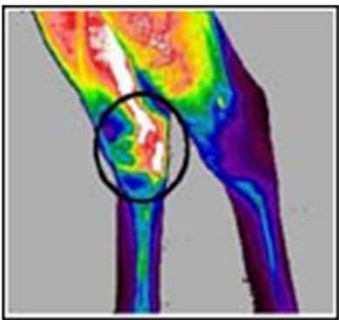
## EKG



## Blood Analysis



## Thermal Imaging





# PdM Example: Vibration Analysis (Feed Pump No. 4)

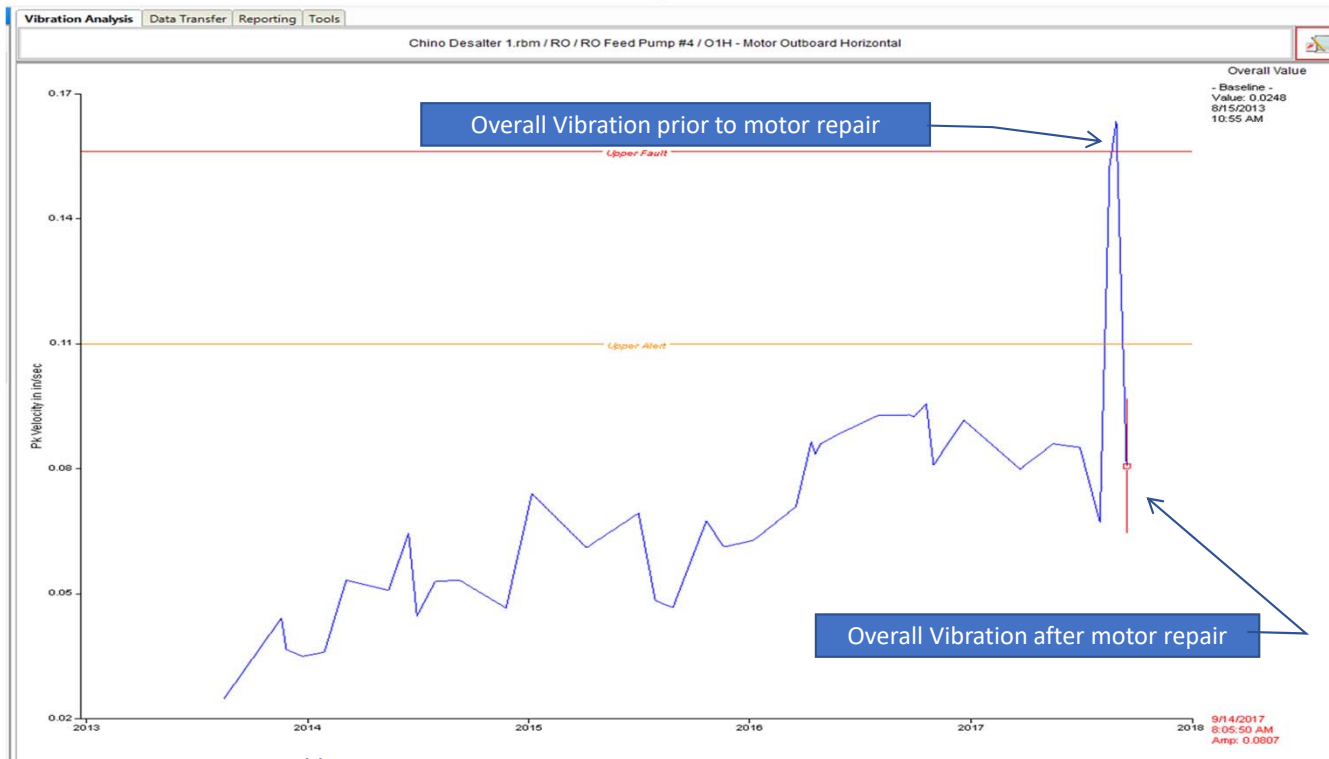
## Equipment

- Desalter 1 RO Feed Pump No. 4
- 350 HP
- 24/7 Operation



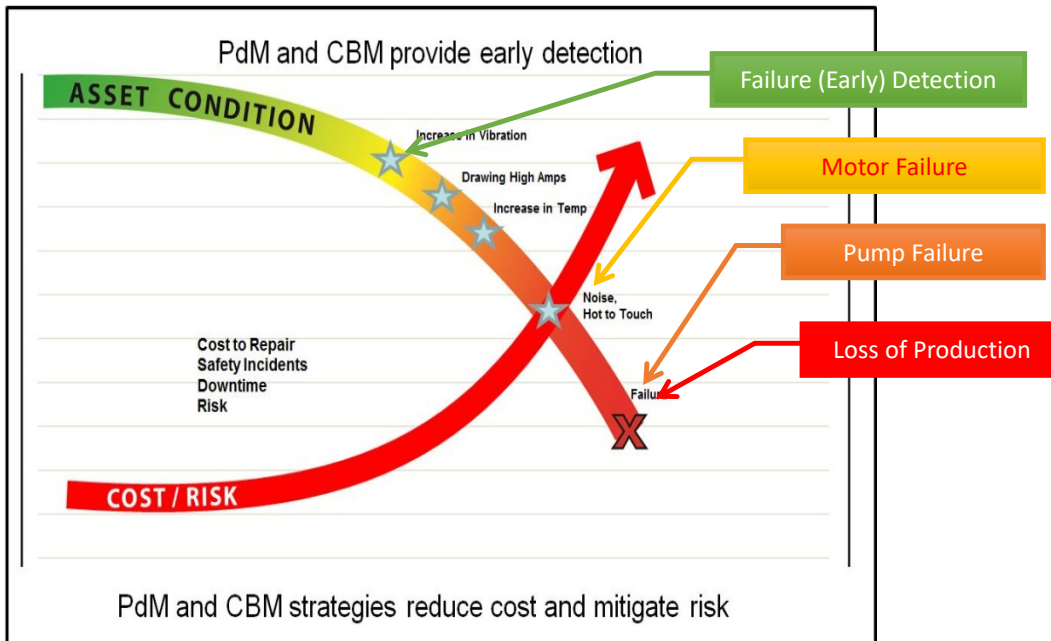
## Failure Avoidance

- Vibration trend before and after motor change.



# CBM Success Stories: Vibration Analysis (RO Feed Pump No. 4)

## Cost of Failure



## Cost Avoidance and Savings

Consequences of catastrophic failure:

- New Motor (total motor failure) = \$65,000
- New Pump (4 stages in stainless steel) = \$100,000

**Total Reactive Cost: \$165,000**

Loss of Production: 1.77 Million Gallons per Day (MGD)

Cost of this early detection:

- Pull motor and install back-up = \$3,600
- Motor bearing replacement = \$2,500
- Loss of Production = 1.77 MGD x 1 Day ≈ \$5,000
- **Total Cost: \$11,100**

**Savings (against catastrophic failure):**

- \$165,000 - \$11,000 = **\$154,000**
- Loss of production cost will depend on lead time and downtime (no. days x 1.77 MGD = \$5,000/day)

# Building Upon Success: Predictive Maintenance (PdM)

Vibration Analysis



Laser Alignment



Ultrasonic Greasing



How can we improve on past success...

- Increase Predictive Maintenance (PdM)
- Reduce Preventive Maintenance (PM)
- Investing in Staff

# Planning & Scheduling (P/S) Best Practices

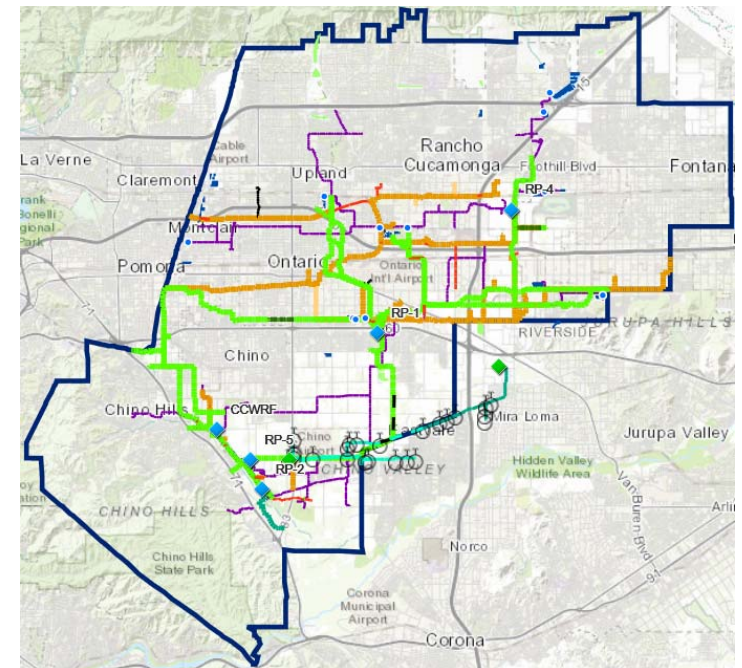
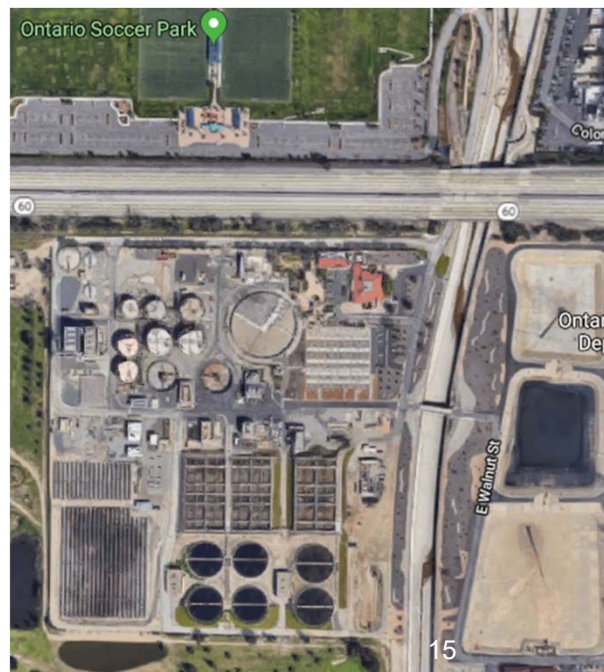
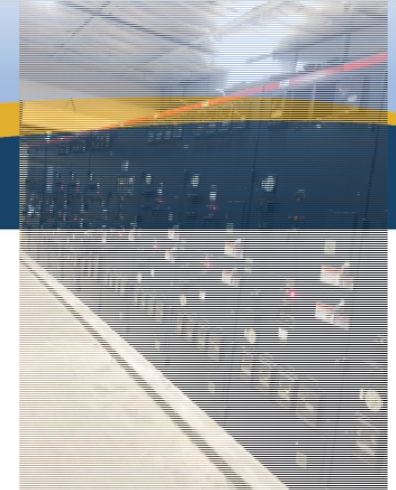
- Planner (What & How)
  - One of most experienced in craft
  - Dedicated to planning & CMMS (work history recording)
  - Plans ALL future work
- Scheduler (Who & When)
  - Schedule compliance
  - Communicates Expectations/Plan
- Criticality Analysis & Asset Hierarchy
- CMMS
  - Improved Material History & Cost Documentation
  - Reports to Support Decision Making
- Warehouse
  - MRO (Maintenance Repair & Operation) Spares
  - Bill of Materials (BOM)
  - Kitting



- ~ 1.5 Force Multiplier:  $41 - 3 = 38$      $38 \times 1.5 = 57$   
**Overall gain of 16**
- Wrench Time from 25-30% to 50-55%
- Schedule Compliance > 90%
- Consistency Across Agency

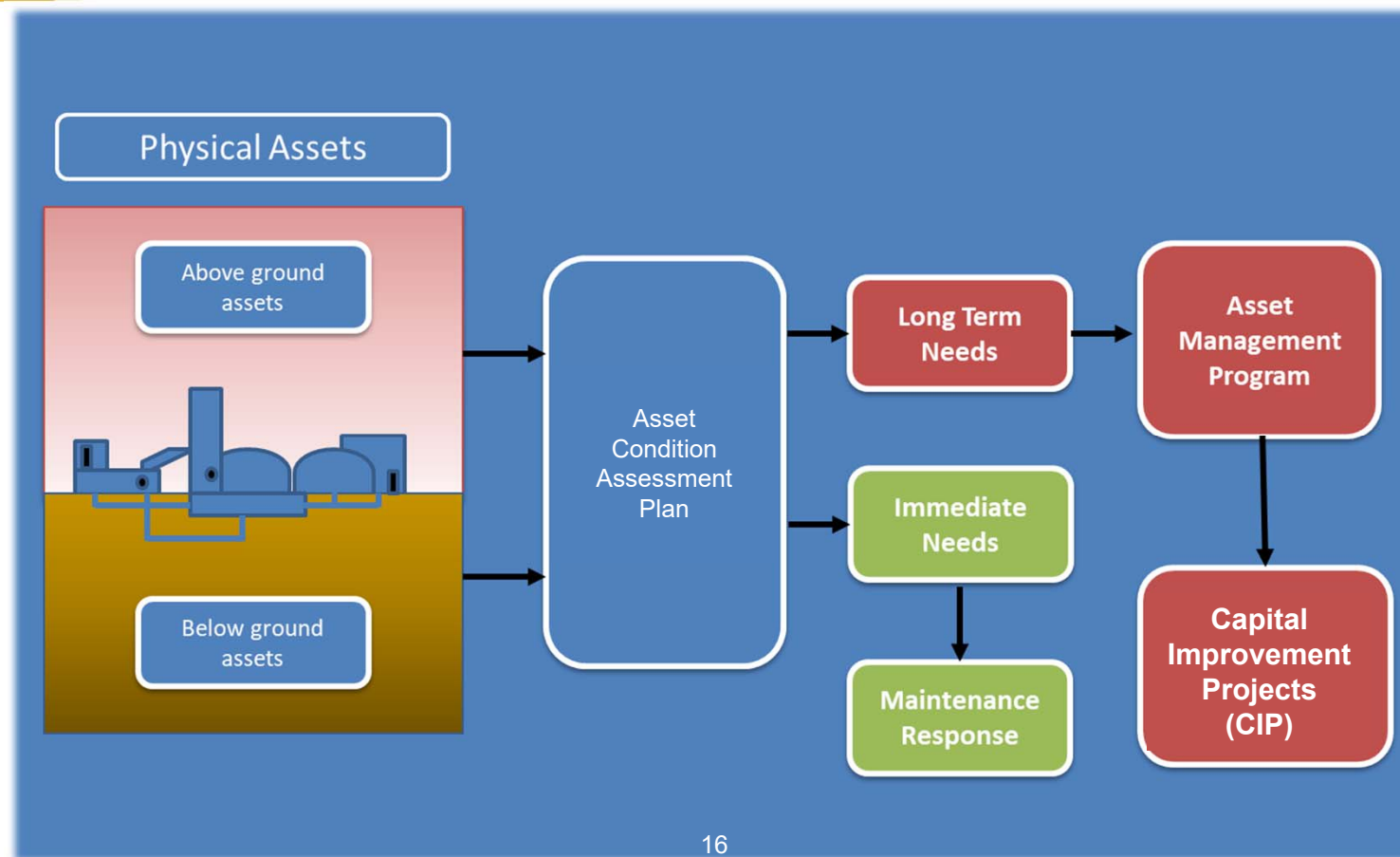


# Asset Condition Assessment Program/Plan





# Asset Condition Assessment Program/Plan



# Dashboard / StoryMap

# Hazen Project for Goleta Sanitation District



# 10 Year Capital Improvement Program

Summary x

CIP: 2019 - 2020

CIP: 2020 - 2021

CIP: 2021-2022

CIP: 2022-2023

CIP: 2023-2024

CIP: 2024-2025

CIP: 2025-2026

CIP: 2026-2027

CIP: 2027-2028

CIP: 2028-2029

## CAPITAL IMPROVEMENT PROJECTS 2020 - 2021

The Capital Improvement Bid Packages and corresponding projects that comprise the Bid Packages for the years 2020-2021 are presented on this page. Information about proposed Bid Packages and Projects can be found by clicking on the **TREATMENT PLANT** or **GSD 2020-2021 CCTV** link below and performing one of the following actions:

- Click on a location of choice to view all corresponding projects. Here, you can click on the location and view project sheets for all corresponding projects.
- Click on **GREEN** Bid Package links below to zoom into locations associated with that bid package number. Here, you can click on the location and view project sheets for all corresponding projects.
- Click on **GREY** project names to navigate directly to project sheets.

*If a location has more than one project, a grey arrow will appear in the upper right hand corner of the pop up box. Click the arrow to view all projects. A project sheet will also appear in the box as a link to an attachment.*

### TREATMENT PLANT

Bid Package 02

Interstage PS Chamber 1 Structure Rehabilitation

Secondary Clarifiers 1&2 Floor and Effluent Boxes Structural Rehabilitation

Bid Package 03

Secondary MCC Building Roof Rehabilitation

Shower Locker Building Roof Maintenance

Shower Locker Building Structural Rehabilitation

Bid Package 04

Vehicle Barn Monorail Rehabilitation

Bid Package 05

+

Home

-

Search

Interstage Pump Station

Secondary Clarifier 2

Secondary Clarifiers 1&2 Floor and Effluent Boxes Structural Rehabilitation

LOCATION	Secondary Clarifier 1
DESCRIPTION	Rehabilitation of clarifier floor surfaces and effluent box structures.
COST(\$)	247,220.00
YEAR	2020-2021

Attachments:

GSD\_CIP\_015.pdf

# RP-5 Expansion

- Develop AM Processes:
  - New Equipment/PM capture into SAP
  - Records documentation  
(Manuals, SOPs, etc.)
  - Training





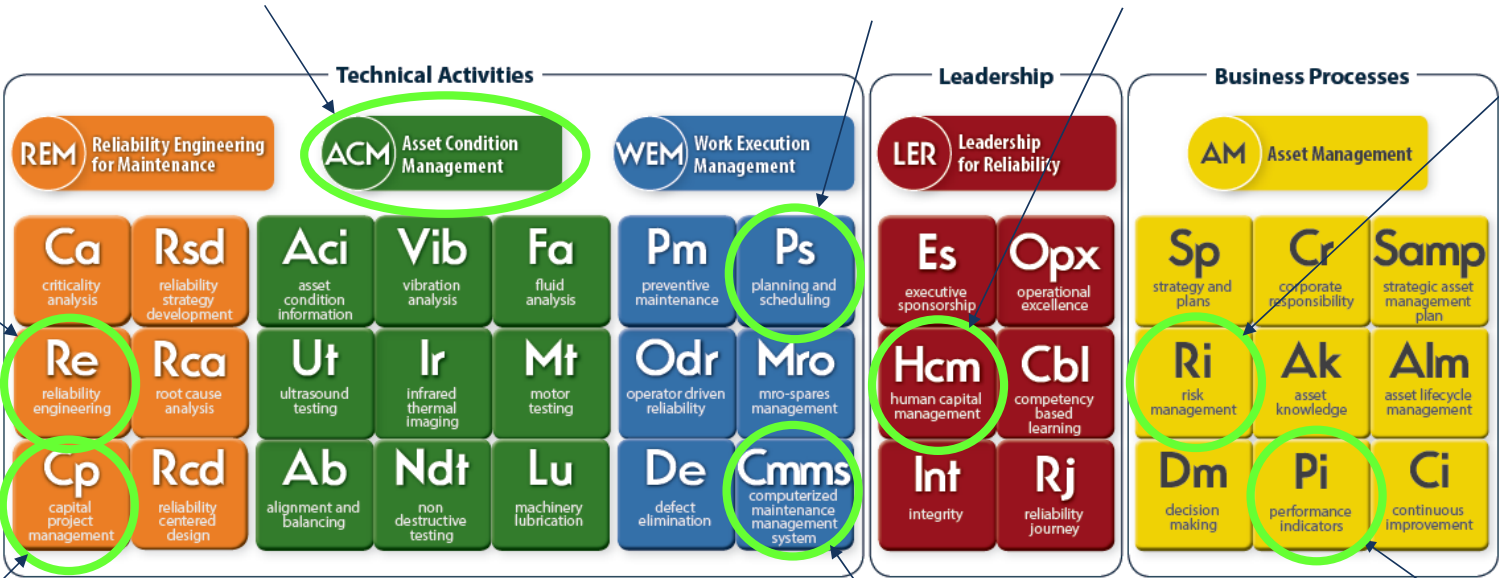
# Best Practice Results

- Cost Savings
- Less Down Time

1.5 force multiplier

Attain, Train, Retain

Mitigating Liabilities



Design in Reliability

Condition Assessment Planning & CIP

- Data Capture
- Maintenance & Cost History
  - Accurate reports / Decision Making

Metrics

# Cross Agency Collaboration:

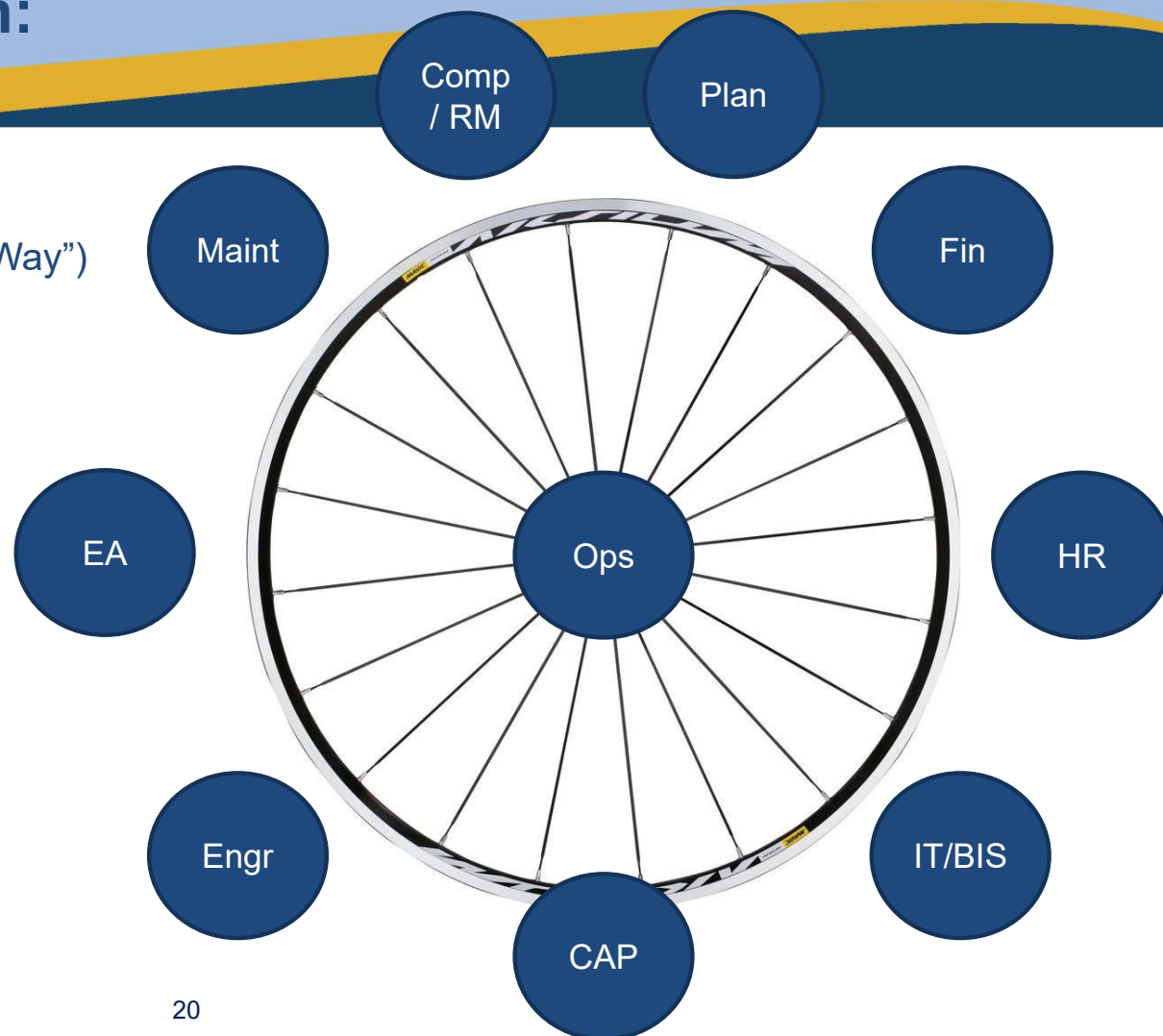
- Culture of Continual Improvement (“Toyota Way”)

- Asset Management Steering Committee

- CIPs
- Agency Risks & Mitigations
- Performance Indicators

- Defect Elimination (De)

- Quick Wins



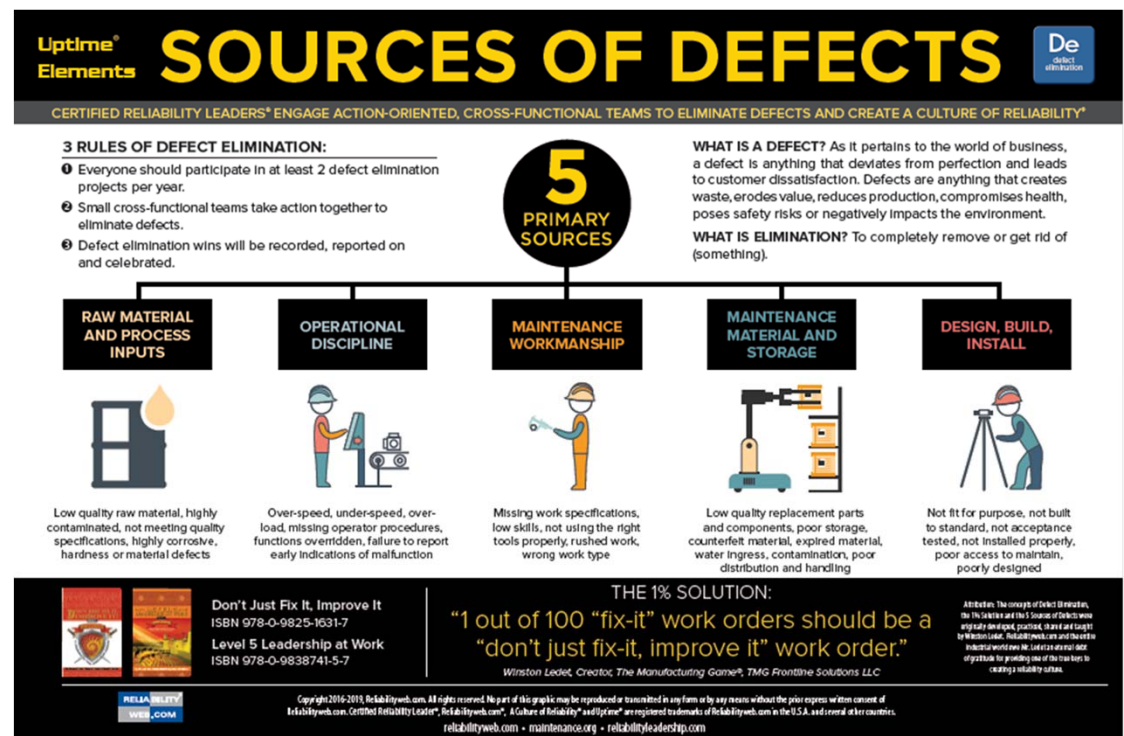


# Defect Elimination (Quick Wins)

**Defect** – Anything that erodes value, reduces production, compromises HSE, or creates waste.

Fewer defects means less work for maintenance!

- Better quality products
- Better yield from raw materials
- Improved Uptime
- Higher reliability with fewer machine breakdowns.
- Longer equipment life
- Higher energy efficiency
- Fun and develop new skills



# Where else?

- Safety – Safety Observation & Near Hit corrections
- Records Management – Attaining new equipment manuals and removing / storing old manuals
- Compliance – Other options to flaring waste gas
- HCM – How protect against trade skillset challenges
- Budgeting – Ideas for revenue shortfalls
- Outreach – Wipes/Grease in pipes
- Others



# Challenge & parting thoughts

It is a journey...AND...the road is long.



## Remember Toyota



30 years



## Toyota Way (2 keys)

- The key is to build and maintain a **culture** of **continual improvement**
- This is a **journey** – marathon, not a sprint (long term over short term gain)

# Parting Thoughts / Questions

## Toyota Way (2 keys)

- The key is to build and maintain a **culture** of **continual improvement**
- This is a **journey** – marathon, not a sprint (long term over short term gain)

- **Challenge** “This is the way we always did/do it.”
- **We** will make mistakes, but when we fail...**fail forward**

"Unity is strength...  
when there is  
teamwork and collaboration,  
wonderful things  
can be achieved."



## Things AM is not (when it is done right)

- Not a fad
  - Yes, terminology will change
    - TQM / TQL
    - Lean Production / Six Sigma
    - Uptime Elements
- Not just a bunch of tools
  - Just in Time (JIT)
  - Kitting
  - Planning & Scheduling
- Fear - “Do more with less” (Desire efficiency & sustainability)

