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 HEATH 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 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
e-mail 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

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.

Laura Mantilla
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)
### 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**

- **Level of Service**
- **Cost of Service**
- **RISK**

**COMPREHENSIVE ASSET MANAGEMENT**
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 Assurance Practices
700  Organization
800  Data and Information Management
900  Technology

How do we compare with others?

IEUA

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Innocent  Aware  Establishing  Competent  Enterprising  Excelling

Inland Empire Utilities, A Municipal Water District
How to Close the Gap: Comprehensive Asset Management

Asset Management Brings it all Together

Culture of “Collaboration & Continual Improvement”
Asset Lifecycle & Breadth of AM

Uptime® Elements

Technical Activities

REM Reliability Engineering for Maintenance
- Ca criticality analysis
- Rsd reliability strategy development
- Re reliability engineering
- Cp capital project management

ACM Asset Condition Management
- Ac asset condition information
- Vib vibration analysis
- Rca root cause analysis
- Rcd reliability centered design

WEM Work Execution Management
- Fa fluid analysis
- Mt motor testing
- Ndt non-destructive testing
- Lu machinery lubrication

- Pm preventive maintenance
- Ps planning and scheduling
- Odr operator driven reliability
- Mro inventory and spares management

- De defect elimination
- Cmms computerized maintenance management system

A Reliability Framework and Asset Management System™

Leadership

LER Leadership for Reliability
- Es executive sponsorship
- Opx operational excellence
- Hcm human capital management
- Cbl competency based learning

Cmms computerized maintenance management system

- Int integrity
- Rj reliability journey

Business Processes

AM Asset Management
- Sp strategy and plans
- Cr corporate responsibility
- Samp strategic asset management plan

- Ri risk management
- Ak asset knowledge
- Alm asset lifecycle management

- Dm decision making
- Pi performance indicators
- Ci continuous improvement
### Plans Moving Forward

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Setting Policy and Direction</td>
<td>- Improving Upon Successes (&quot;Sharpening the Saw&quot;)</td>
</tr>
<tr>
<td>200 Capital Project and Maintenance Planning</td>
<td>- Advanced Maintenance Practices</td>
</tr>
<tr>
<td>300 Asset Life Cycle Decision Making</td>
<td>- Planning &amp; Scheduling (IERCF Pilot)</td>
</tr>
<tr>
<td>400 Project, Operations and Maintenance Delivery</td>
<td>- Criticality Analysis &amp; Asset Hierarchy</td>
</tr>
<tr>
<td>500 Asset Monitoring and Performance</td>
<td>- Computerized Maintenance Management System (CMMS)</td>
</tr>
<tr>
<td>600 Quality and Risk Assurance Practices</td>
<td>- Warehouse Improvements</td>
</tr>
<tr>
<td>700 Organization</td>
<td>- Standardization</td>
</tr>
<tr>
<td>800 Data and Information Management</td>
<td>- Condition Assessment Planning -&gt; CIP</td>
</tr>
<tr>
<td>900 Technology/Systems and Tools</td>
<td>- RP-5 Expansion AM Processes</td>
</tr>
<tr>
<td></td>
<td>- Collaborative Culture of Continual Improvement</td>
</tr>
<tr>
<td></td>
<td>- Asset Management Steering Committee (AMSC)</td>
</tr>
<tr>
<td></td>
<td>- Defect Elimination (De)</td>
</tr>
</tbody>
</table>
Building Upon Success: AM Maintenance Philosophies

- Run to Failure (RTF)
  - History
  - Applicability
  - Intentional

- Preventive Maintenance (PM) & Corrective Maintenance (CM)

- Predictive Maintenance (PdM)

~ $130,000
Predictive Maintenance (PdM)

Vibration Analysis
Oil Analysis
Thermography

EKG
Blood Analysis
Thermal Imaging

Medical Analogy
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.

![Graph showing vibration trend before and after motor repair.](image-url)
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 x 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

Physical Assets
- Above ground assets
- Below ground assets

Asset Condition Assessment Plan
- Long Term Needs
- Immediate Needs
- Maintenance Response

Asset Management Program
- Capital Improvement Projects (CIP)
Hazen Project for Goleta Sanitation District

10 Year Capital Improvement Program

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:

1. 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.
2. Click on GREYN 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.
3. Click on MAP project name to navigate directly to project sheet.

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
- Interlock IP Chamber 1 Structure Rehabilitation

Bid Package 03
- Secondary Clarifiers 1 & 2 Floor and Effluent Box Structural Rehabilitation
- Shower Locker Building: Roof Maintenance
- Shower Locker Building: Structural Rehabilitation

Bid Package 04
- Vehicle Barn Membrane Rehabilitation
- Bid Support

Secondary Clarifiers 1 & 2 Floor and Effluent Box Structural Rehabilitation

<table>
<thead>
<tr>
<th>Location</th>
<th>Description</th>
<th>Cost ($)</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Clarifier 1</td>
<td>Rehabilitation of clarifier floor surfaces and effluent box structures.</td>
<td>247,220.00</td>
<td>2020-2021</td>
</tr>
</tbody>
</table>

Attachments:
- GSD_CIP_015.pdf
• 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

Technical Activities

Leadership

Business Processes

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

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)

Remember Toyota

30 years
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)