## Distribution Grid Modernization



CUSTOMERS FIRST

Strategic Long Term Resource Plan

#### DIGITAL TRANSFORMATION

- Allows us to rethink how we use technology and data to fundamentally change business practices and performance.
- Our business processes (majority of them) were created ages ago before a lot of technology was available. They were also developed with safety in mind.
- It encompasses technology, culture, and processes working together in synergy





## Distribution Automation Program

... LADWP envisions to have all the foundational elements in place to build a smarter, more reliable distribution system that effectively utilizes new technology and innovation to improve system reliability and customer experience.

... this program's vision... is for a resilient distribution system that has the intelligence required to automatically self-heal, greatly reduce outage duration and frequency, and shift our employees' focus toward proactive decision-making rather than reacting to issues after they occur.

LADWP Distribution Automation Program Charter, October 2018



#### Distribution Automation Benefits

- Build a smarter, more reliable distribution system effectively
- Utilize innovative technologies to improve system reliability
- Develop foundation for Power System's digital backbone
- Leverage intelligence to automatically self-heal grid issues
- Greatly reduce outage duration and frequency
- Expand use of AMI throughout the service territory
- Enable data driven decisions through advanced insights



# Distribution Automation Program Overview

#### Phase 1

- Deploy Communication Network for field devices
- Initial Deployments of DA Devices on Selected Circuits
  - Targeting Worst-Performing 10% of 34.5kV and 4.8kV Circuits
- Begin DA Applications
  - Volt-VAR Optimization
  - System Health Monitoring
  - Fault Location, Isolation, and Service Restoration (FLISR)
- System Integration
  - GIS, OMS, DMS, Pi, CCB

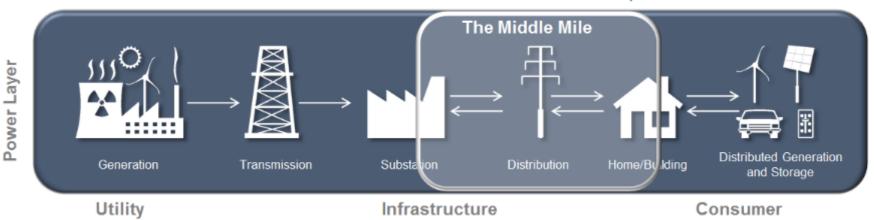
#### **Future**

Full Deployment of DA Devices and Applications



# Distribution Automation Program Overview

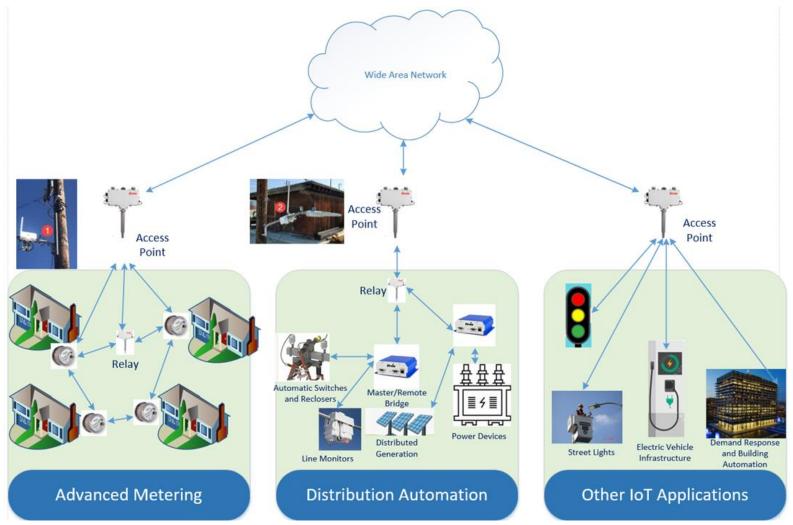
Distribution boundary



DA Focus is on visibility and control outside of substations on 34.5kV and 4.8kV



## **Communication System Overview**





# Building the Future

Phase 3:

**Grid Modernization** 

Phase 2:

**Smart Meter Deployment** 

Phase 1:

**Distribution Automation** 



### Phase 1 -

## Distribution Automation - Projects

Communication System

Field Communication Network

Edge of Substation to the customer

Supports AMI and DA Applications

**Distribution Automation** 

Line Monitoring

Volt-Var Optimization

Fault Location, Isolation, Service Restoration (FLISR)

Field Communication Network at Substation Complete System

Mission Critical System Integration

Operational Service Bus (Rest API Architecture) **Back Office** 

Head End System

Necessary Software for AMI and DA Applications

**Cyber Security** 

Managed Services

**Vendor Support** 

Train and Transition LADWP Staff



## Phase 2 - Smart Meter Deployment

1.5M **Business** and Data and Billing Electric Organizational **Insights** Change Meters

#### **Utility Side Benefits**

**Energy Savings** 

**Operational Awareness** 

**Proactive Decisions** 

Reliability





# Building a Bridge to Each Customer

#### **Customer Benefits**

**Customer Awareness** 

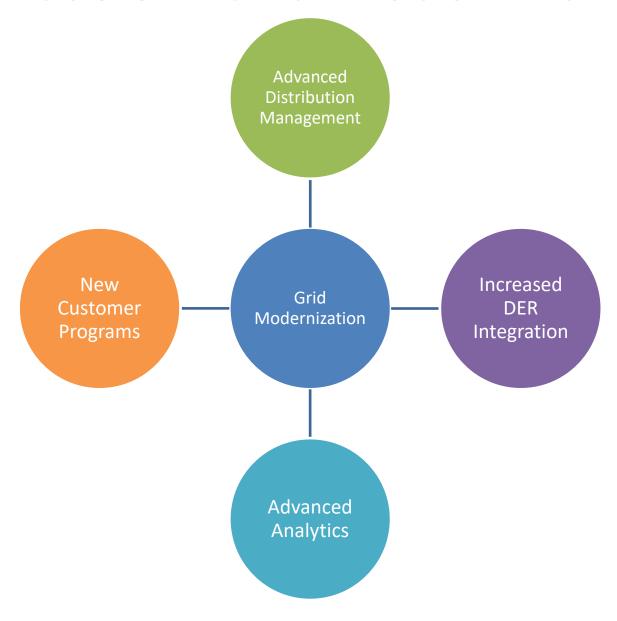
**Customer Portal** 

**Self Service Options** 



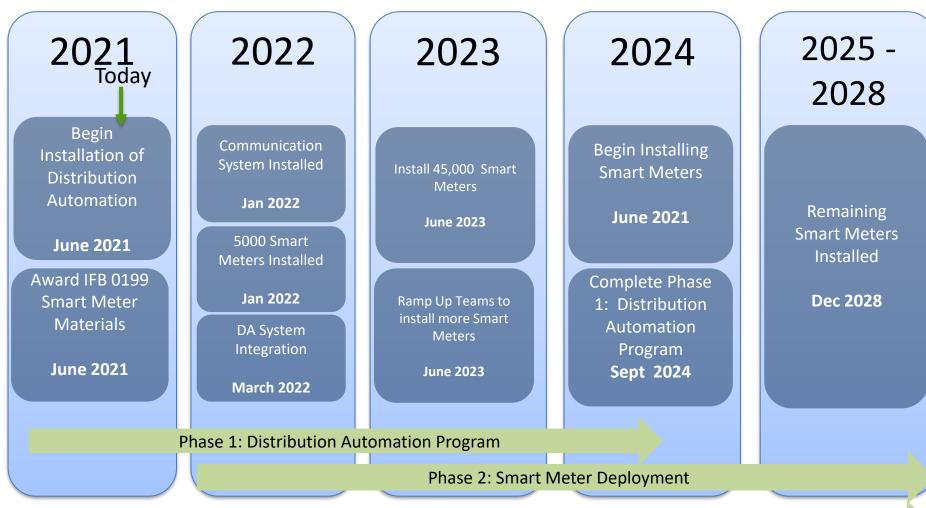


## Phase 3 – Grid Modernization





#### Timeline and Milestones





### Thank You

## **Questions or Comments**

