American Red Cross Emergency Shelters in California

Patrick Burgess

May 15, 2019
Agenda

01  Willdan Overview

02  Slido Audience Polling

03  Every Problem is Not a Nail

04  Red Cross Emergency Shelter Site Case Study

05  Path Forward

06  Questions?
01

Willdan Overview
Willdan Overview

- National professional engineering firm specializing in Energy Program Implementation, Engineering and Construction Management, and Advanced Energy Services/Microgrids
- Founded 1964
- Publicly traded
- 1,200+ employees
- 60+ offices
- Headquarters in Anaheim, CA

600+ Healthcare Facilities

Healthcare Facilities Served
02

Slido Audience Polling
Slido Audience Questions

- Which category best describes your organization?
  - Utility
  - Regulator
  - Consultant
  - Vendor
  - Customer (Healthcare)
  - Customer (Other)
  - Other

- Which benefit is most important to you in a microgrid?
  - Resilience
  - Reliability
  - Economics
  - Environmental
03

Every Problem is Not a Nail
Understanding Critical Infrastructure

- Role of healthcare and critical infrastructure during emergency situations
  - Provide medical and support services
  - Housing for residents

- Red Cross Emergency Shelter Sites
  - Provide disaster relief services
    - Triage Medical and Support Services
    - Provide Short and Long Term Housing
    - Coordinate Transportation to Healthcare Facilities

- Memorial Medical Center – Hurricane Katrina
  - Five Days at Memorial – Sheri Fink
Balancing Client Priorities

- Short-Term Energy Continuity
- Power Quality Improvement
- Sensitive Loads
- Critical Loads
- Catastrophic Events
- Physical and Cyber Attacks

- Defer Infrastructure Upgrade
- Lower O&M Costs
- Save Energy/Lower Peak Demand
- Generate Revenue
- GHG Emission Reduction
- Renewable Goals

Reliability
Resiliency
Economics
Environmental

How clients weight these categories shapes the solution
Healthcare and Critical Infrastructure Priorities

- **Primary Motivators**
  - Resilience, Reliability

- **Secondary Motivators**
  - Economics, Environmental goals

- Standard most “cost-effective” solution would be diesel generators
Client Priorities Change With Recent Natural Disasters

- Hurricane Sandy – East Coast
  - Inspired NY Prize/MassCEC

- Hurricane Maria – Puerto Rico
  - Difficulties getting diesel
  - Sites running two diesel generators back to back
  - Communications/water were major issues

- California Wildfires
  - Camp Fire – Paradise
  - Now preventative blackouts in PG&E Territory
Red Cross Emergency Shelter Site Case Study
Intro to Culver City

- Senior Center and Community Center
  - Provide basic medical support and transportation at senior center
  - Host community events and classes in the community center
- During a disaster – Certified as red cross emergency shelter sites
  - Serve thousands of residents with basic medical and housing services
  - Provide shelter to 450 residents in high risk wildfire areas
Motivation to Pursue Microgrid

- Aging infrastructure – like many other cities nationally
- Re-investing in their critical infrastructure
- Standard “cost-effective” solution would be diesel generators – funding is available from federal and state agencies
- Aggressive environmental goals
- “Thought leader” – to help drive solutions for other cities
Microgrid Case Study: Culver City - Results

- Meter Consolidation and Islanding to create a microgrid behind a single meter – New Lines in Blue

- Optimal Technical Microgrid Solution
Setting New Precedent for Cost-Effective Resilience

- The Culver City Microgrid Balances Priorities
  - Resilience, Reliability, Environmental, Economics

- We are working with federal funding agencies to set precedence for new definitions of cost-effectiveness
  - This will be the first time a microgrid will be supported by funds used historically for diesel generators

- How does this benefit future healthcare and critical infrastructure microgrid projects?
  - Access to funding opportunities that were reserved for “standard solutions”
05
Path Forward
Path Forward

- Changing Landscape
  - SB100 2045 carbon free mandate in CA
  - NY’s 2040 carbon free goals
  - Changing roles of the utilities

- Healthcare facilities have the opportunity to lead in microgrid deployment as solutions become standardized
- Now is the time to invest
  - Benefits have been proven
  - Public funding and incentives remain to offset the costs
Thank you!

Questions?

Patrick Burgess – Pb Burgess@Willdan.com