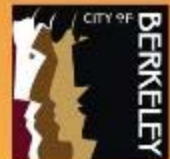


The Berkeley Energy Assurance Transformation (BEAT) Project

Katie Van Dyke
City of Berkeley
March 27, 2018

www.cityofberkeley.info/microgrid





BERKELEY

Resilience Strategy

A plan to advance preparedness and equity in Berkeley, a community known for inclusiveness and innovation



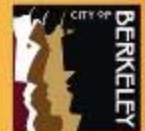
BEAT Project

Microgrids have multiple benefits ...

- Energy assurance
- Reduce GHG emissions
- Reduce reliance on fossil fuels
- Reduce utility costs
- Advance ZNE communities
- Increase public/private partnerships
- Increase local clean jobs
- Potential grid stabilization
- Advance innovative business models

BEAT Project and Team

- **Funding:** California Energy Commission Electric Program Investment Charge (EPIC) \$1.5 million Grant
- **Project Team**
 - City of Berkeley
 - Association of Bay Area Governments (ABAG)
 - Center for Sustainable Energy (CSE)
 - Interface Engineering
 - Lawrence Berkeley National Laboratory (LBNL)
 - NHA Advisors LLC
 - URS Corporation
 - West Coast Code Consultants, Inc. (WC³)
- **Technical Advisory Committee (TAC)** includes: PG&E, CAISO, UC Berkeley, Rocky Mountain Institute and Urban Sustainability Directors' Network, local non-profits, businesses and developers.



BEAT Project and Team

- **Project Sub-Teams**

- Regulatory Team: CSE, URS, ABAG
- Technical Team: URS, LBNL, Interface, WC³
- Financial Team: URS, NHA
- Knowledge Transfer Team: ABAG

- **Pre-grant RFQ**

Center Street Garage Rebuild

The New Center Street Garage will be:

BETTER

- More accessible spaces
- More EV spaces
- Stormwater retention system
- Photovoltaic system on roof
- Microgrid ready
- New, larger art display space

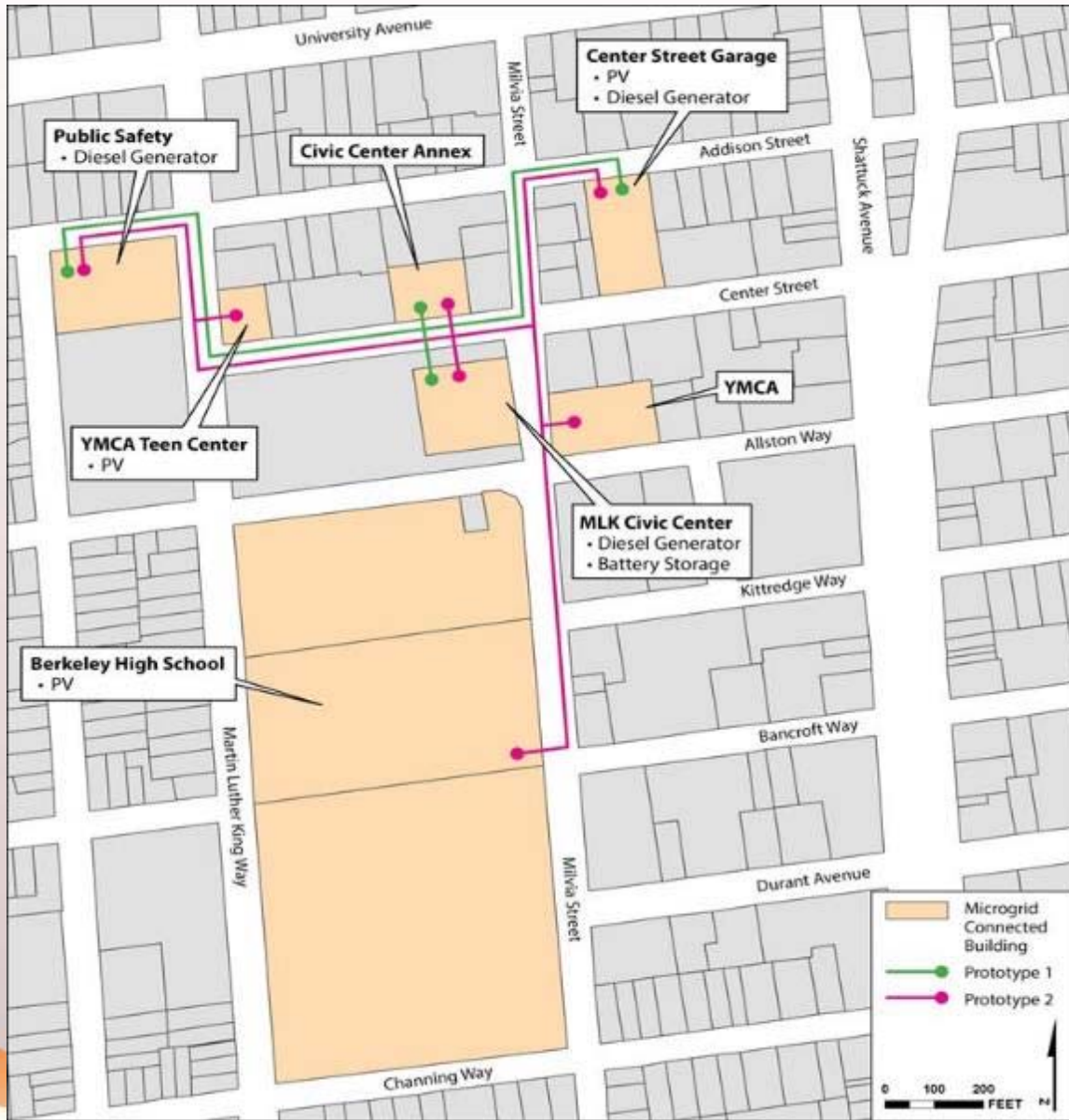
BIGGER

720 parking spaces
300+ bicycle spaces

OPENING 2018



Proposed BEAT Buildings



Key Lessons Learned

- Community microgrids are feasible under current regulations (local, state and federal)
- Community microgrids in dense urban areas are expensive
- Community microgrids require utility participation or municipally-owned utility

The “Ideal” Microgrid Project:

- Infrastructure feasibility
- Lots of solar + storage
- Microgrid can aggregate power:
 - Buildings are campus-style, or
 - Buildings are next to each other, or
 - Distribution lines are owned/operated by a municipal utility
- Partnerships with utility and technical experts
- Seed & match funding from external sources

Current Barriers for BEAT Project

- Small solar & storage capacity
- Cannot use existing distribution lines
- High cost of new distribution lines
 - Capital costs, O&M, and a transfer tax
- Cannot share power between buildings every day
- Utility must own/operate distribution lines
- Rate structures/tariffs

Solar + Storage Option

- As an alternative to the full microgrid, islandable solar+ storage is being considered at:
 - Center Street Garage
 - Public Safety Building
 - Civic Center
 - Potentially others like BUSD, YMCA
- Cost effective – Positive ROI
- No regulatory, technical or financial barriers
- Still provides resilience benefits
- Does not allow buildings to share power

Questions?

Katie Van Dyke

BEAT Project Manager
City of Berkeley

kvandyke@cityofberkeley.info

(510) 981-7403

Marna Schwartz

BEAT Project Manager
City of Berkeley

mschwartz@cityofberkeley.info

(510) 981-7473

Feliz Ventura

URS Project Manager
URS/AECOM

Feliz.ventura@aecom.com

(415) 955-2836

Website:

www.cityofberkeley.info/microgrid

