



Photo : Sergio Ruiz, SPUR

DISTRICT SYSTEMS

City Council Study Session

Thursday, March 25, 2021 | 1:30 PM

Introduction

What is a District System?

- Privately owned/operated
- Connected to overall municipal systems

Why a District System?

- Resiliency
- Sustainability
- Operational efficiency



Introduction

What District Systems are Proposed

- Utility corridors (“utilidors”) for privately owned utilities within the public rights-of-way
- Electrical distribution system
- Wastewater collection and treatment and recycled water distribution systems
- Building heating and cooling systems



Memorandum of Understanding (2018)

- **Environmental Sustainability:** “Advance the City’s sustainability goals as outlined in the City’s “Climate Smart San José” plan, including reducing greenhouse gas emissions aligned with the Paris Agreement to combat climate change.”
- **District Systems:** “Collaborate in the study and evaluation of a district wide program of shared utilities, such as electricity, data, water, storm water, waste and sewer that allows for necessary City easements.”

District Systems Alignment



Reduce per capita energy 50% by 2022

- Facilitate 200,000 solar roofs by 2040
- 100 M sq ft green buildings by 2040
- Recycle or beneficially reuse 100% of wastewater



Paris-compliant pathway

- Renewable energy, density
- Embracing the Californian climate
- Creating local jobs and innovation



Strategic & Master Plan

- Increase recycled water to 40,000 AFY by 2025 and 50,000 AFY by 2035.

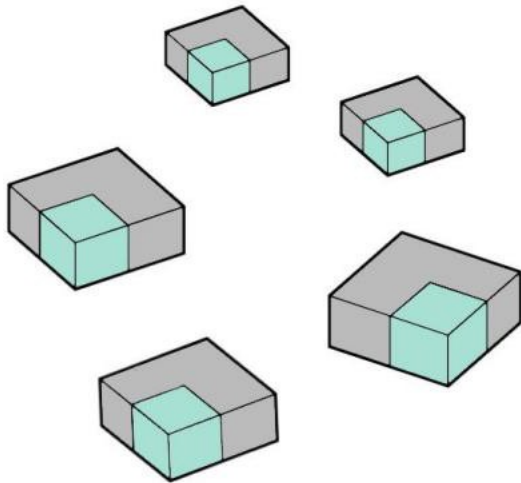


All-electric buildings with no new gas connections

- Higher penetrations of electric vehicles for all building types
- Solar-ready buildings

Centralized Systems

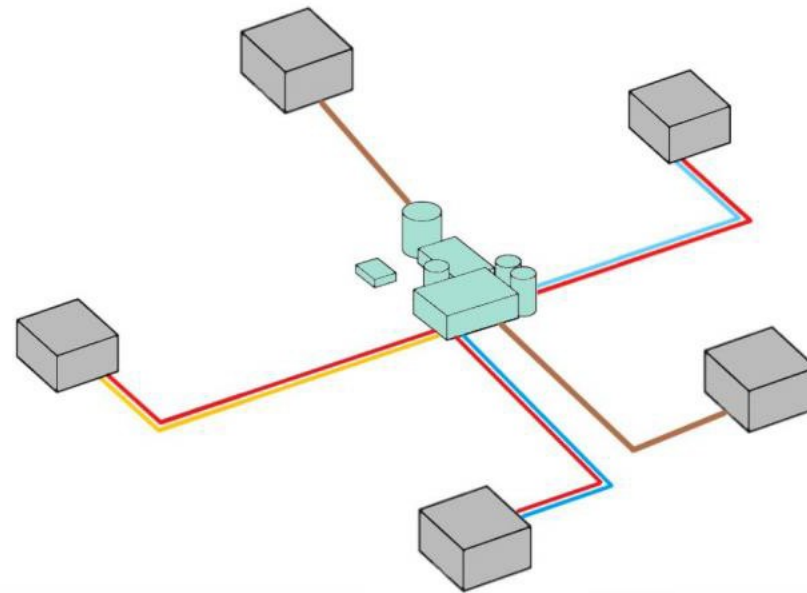
Typical Systems



Individual “back of house” systems per building, each system sized for peak load



District Systems

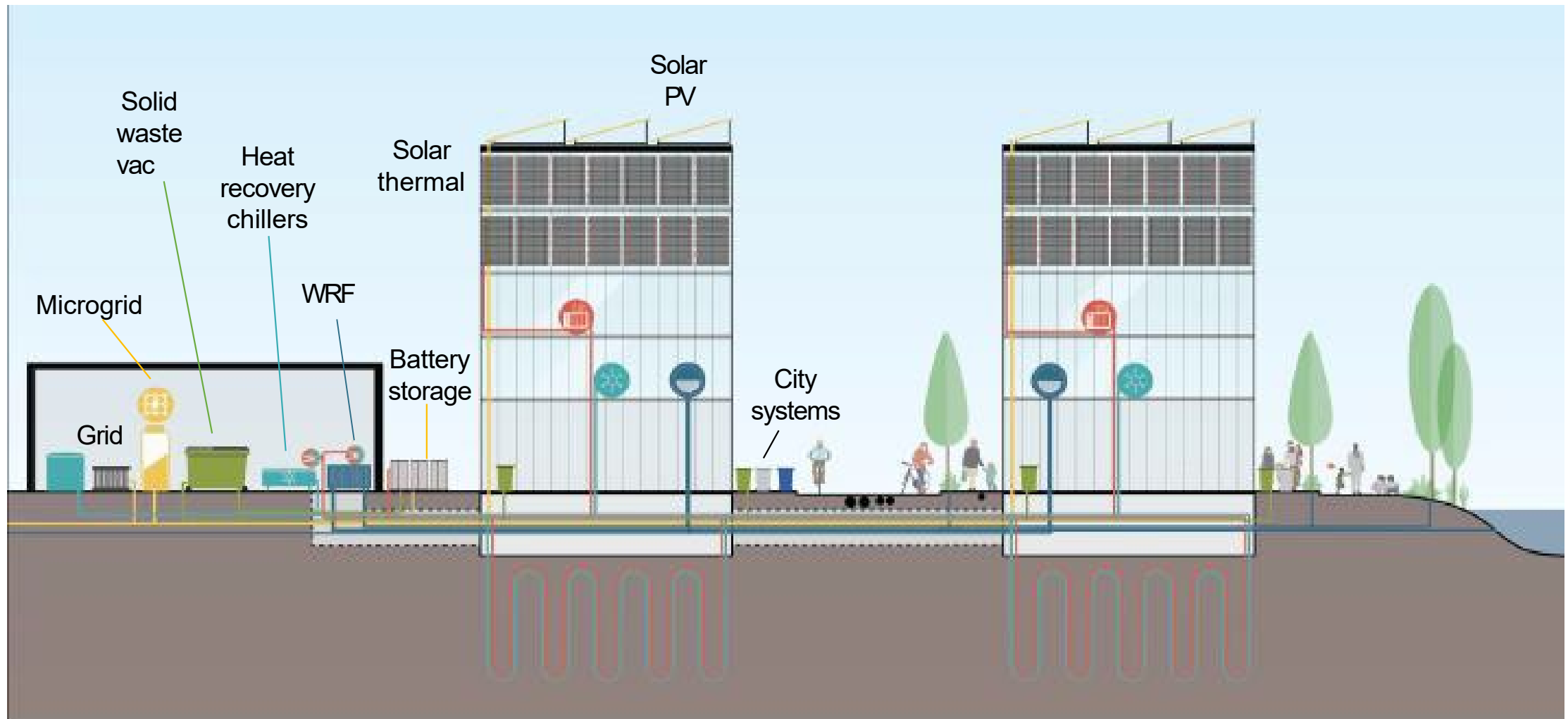


Central consolidation across district shares resources, is more efficient -- thus enabling higher environmental performance



SAN JOSE DIRIDON STATION AREA
COMMUNITY ENGAGEMENT

Urban Concept



Heating

Heat recovery chillers
Wastewater recovery



Power

Microgrid
50% Rooftop Solar
Battery Storage



Cooling

Heat recovery chillers
High efficient chillers
Ground-source heat pump



Water

Water reuse facility
Reduction in potable
water



Waste

AWCS
Anaerobic digestion
Solids management

Hudson Yards (Private System)

Location: New York, New York

Utilities: Heating, Cooling, Electricity, Rainwater Harvesting

Owner: Hudson Yards Microgrid Company (HYMco) –
Privately owned Operator: HYMco

Area Served: 18 million square feet

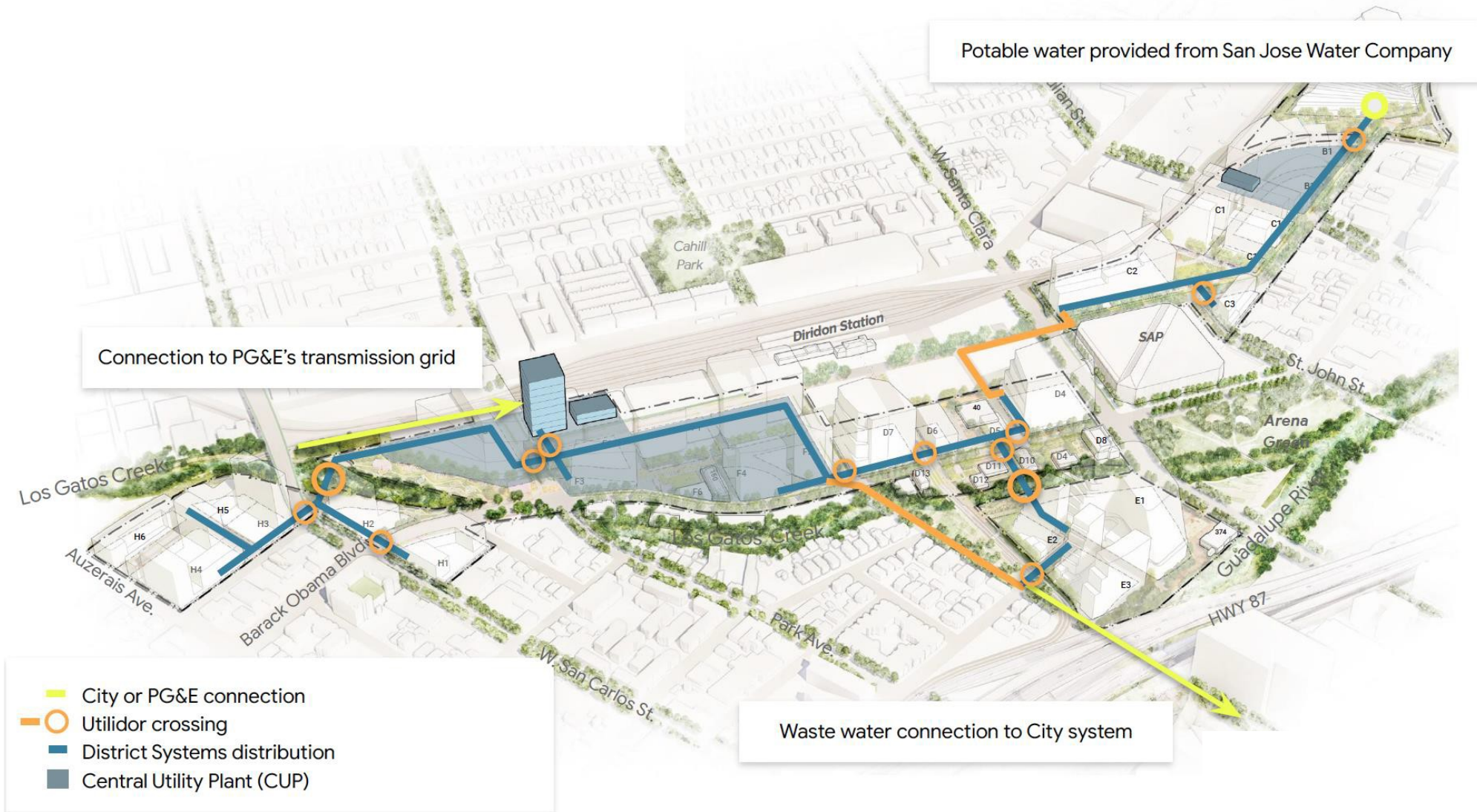
Customer Types: Retail, hotel, schools, offices and residences



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Orientation



Microgrid Options

San José Owned

Municipal Supply

The City of San José is investigating the potential to provide a service to Downtown West

Gonzalez Industrial Business Park Microgrid

(Completion 2022). Private power company owns and operates generation assets to sell to municipal-created utility for distribution.

Philadelphia Navy Yard

(Operational 2016). Abandoned unregulated shipyard grid acquired by a public company (PIDC), which sought approval from PUC as an unregulated utility.

PG&E Owned

Incumbent Provider

PG&E has potential to service Downtown West via Community Microgrid Enablement Program (CMEP)

Redwood Coast Airport Renewable Energy Microgrid

(Complete Nov 2021). CCA own and operates generation assets and sells wholesale to PG&E, which governs microgrid.

Google Owned

Privately Operated

Conditional on primary regulator approval. Unique circumstances and characteristics influence design

Hudson Yard Microgrid

(Operational 2019). Unique utility Offset Tariff allowed distribution to neighboring loads on the same property.

Apple Cupertino

(Operational 2017). 16 MW Solar, 4MW biomass, Fuel cell.

Electric Distribution System (Microgrid)

Future Considerations (Depends on selected Service Option):

- City provided Service
 - Utility formation actions and approvals
 - Interconnection to PG&E system
 - Business relationship with Google for microgrid implementation and operations
- Google provided service
 - Google exploring alternatives to current CPUC regulations
 - Required permitting details and compliance with Conditions of Approval

