Innovative City and Community Partnerships

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North Central Texas Energy Forum

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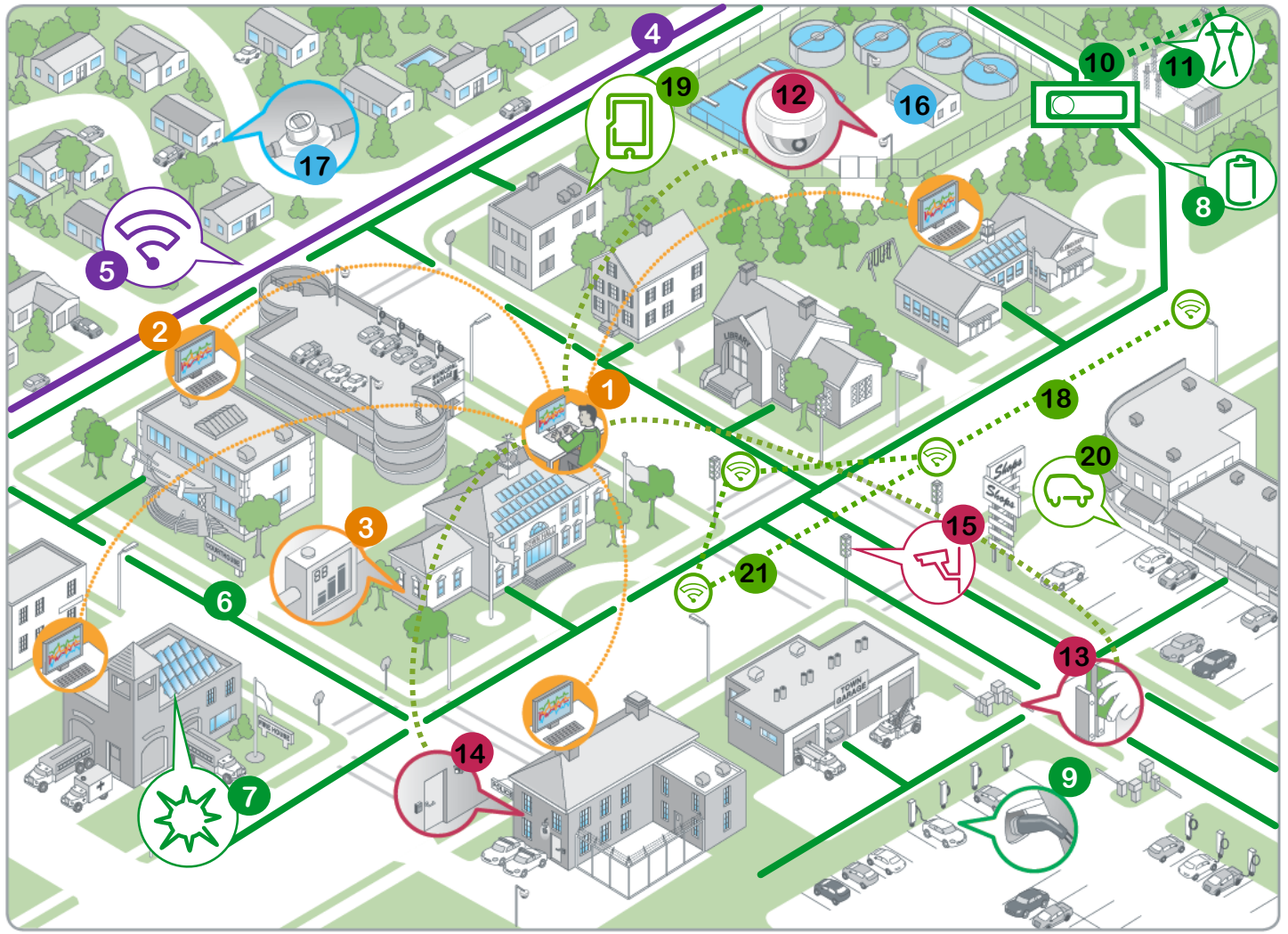
DECARBON
-IZED
DECENTRAL
-IZED
DIGITIZED

The Future of Urban Infrastructure – Neighborhood Scale



Integrated Management

1 Network Operations Center (NOC)
2 Enterprise System Control & Visibility
3 Centralized Management & Metering

Integrated Communications

4 Fiber
5 Broadband Access (FTTx, LTE), Small Cells/WLAN & IP Backhaul

Energy Infrastructure

6 Community Microgrid
7 On-site Renewables (Solar)
8 Energy Storage
9 Electric Vehicle Infrastructure
10 Utility Switch, Primary Meter
11 Smart Grid Utility Tie-in

Public Safety

12 Surveillance
13 Access Control
14 Fire & Life Safety
15 License Plate Cameras

Water Infrastructure

16 Water Treatment, Storage, Recycling
17 Water Infrastructure & Metering

Entertainment/ Services

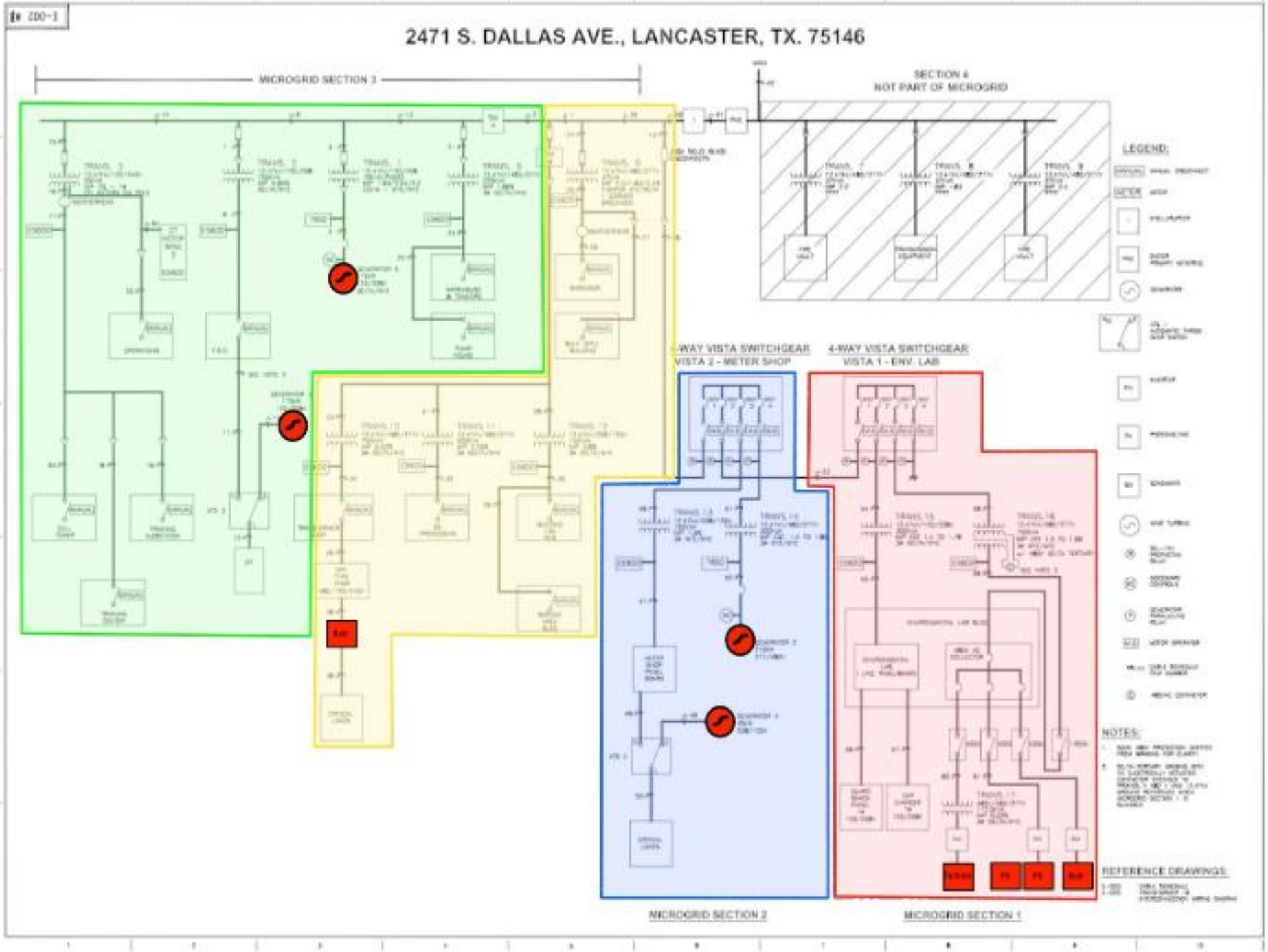
18 Micro-Cell Broadband Internet
19 Citizen Apps & Entertainment
20 Smart Parking
21 Smart Streets

MICROGRID

1. Produce ons
2. Usually m eters w cal boundary
3. Can act as ne grid
4. Often inco trols an automation software f lligent nd demand response
5. Customer or third-party owned

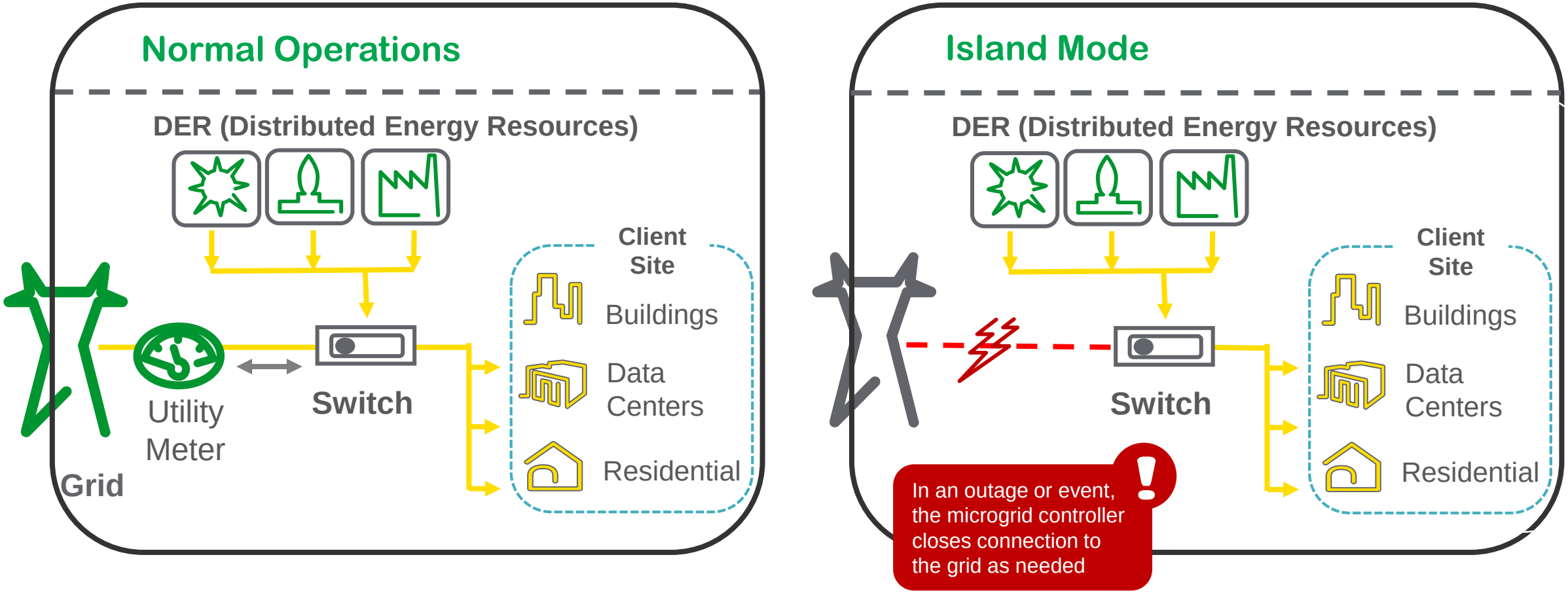
$10B/year 2013

$40B/year 2020


2471 S. DALLAS AVE., LANCASTER, TX. 75146
MICROGRID SECTION 3
SECTION 4
NOT PART OF MICROGRID
LEGEND:
4-WAY VISTA SWITCHGEAR
VISTA 2 - METER SHOP
4-WAY VISTA SWITCHGEAR
VISTA 1 - ENV. LAB
NOTES:
REFERENCE DRAWINGS:
MICROGRID SECTION 2
MICROGRID SECTION 1

What is a microgrid?

An integrated energy system consisting of interconnected loads and DERs…



…which as an integrated system can operate in parallel with the grid or in an intentional islanded mode.

Advanced Microgrid Solutions

Reliable Energy

- Ability to proactively “island “from utility
- Preserve critical loads 24/7/365
- Repurpose grid tied inverters for island mode operation
- Determine root cause of outages and restore power quickly

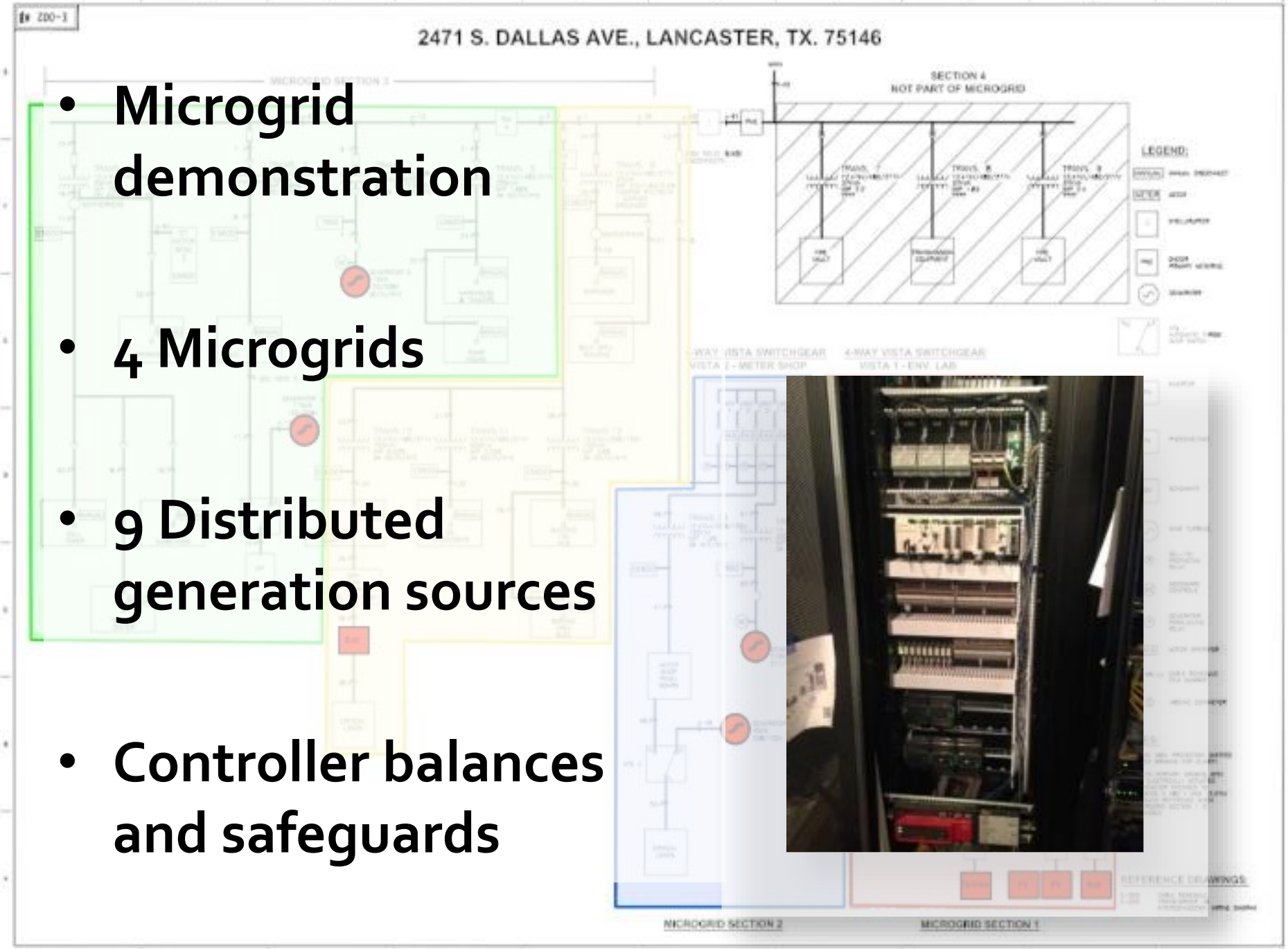
Efficiency & Optimization

- Minimize energy costs through fuel switching and energy savings
- Harness combined heat and power, maximize incentives
- Prioritize critical loads
- Monetize energy flexibility with the grid

Green Energy

- Incorporate low cost solar, low emission DER
- Implement net-zero projects
- Reduce green house gases

- Microgrid demonstration
- 4 Microgrids
- 9 Distributed generation sources
- Controller balances and safeguards



Emphasize RELIABILITY

- Today's Business Environment Demands Reliable Energy
- Increased Competitiveness / Economic Development

Consider your MIX

- Cleaner, More Efficient Sources (Organic)
- Generation Closer to Source (Local)

Provide CHOICE

- Renewable Energy & Low Carbon Options
- Leverage Digital Platforms to Better Satisfy Consumers

Town of Fairfield Public Services

- Legislation passed to improve emergency preparedness
- $1.1M microgrid grant

- Replaced diesel generator @ police HQ with natural gas

- 20kW solar system @ shelter
- 27kW solar system @ fire station

- Reduced demand & consumption @ police and fire HQs by 250,000kWh/year

Benefits - Tangible

- Lower fuel costs and consumption
- Optimize when to consume, produce, store, or sell electricity
- Potential to charge whoever uses the grid
- Potential to sell services like frequency regulation to the utility
- Sell excess power or renewable energy credits

Benefits - Intangible

Reliability

Economic growth

Security

Life Is On Schneider Electric

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