Florida Department of Environmental Protection

South Regional Brownfield Symposium

Renova Partners LLC
Brightfields Development LLC
Pete Pedersen

Wednesday, June 7th, 2017



Agenda

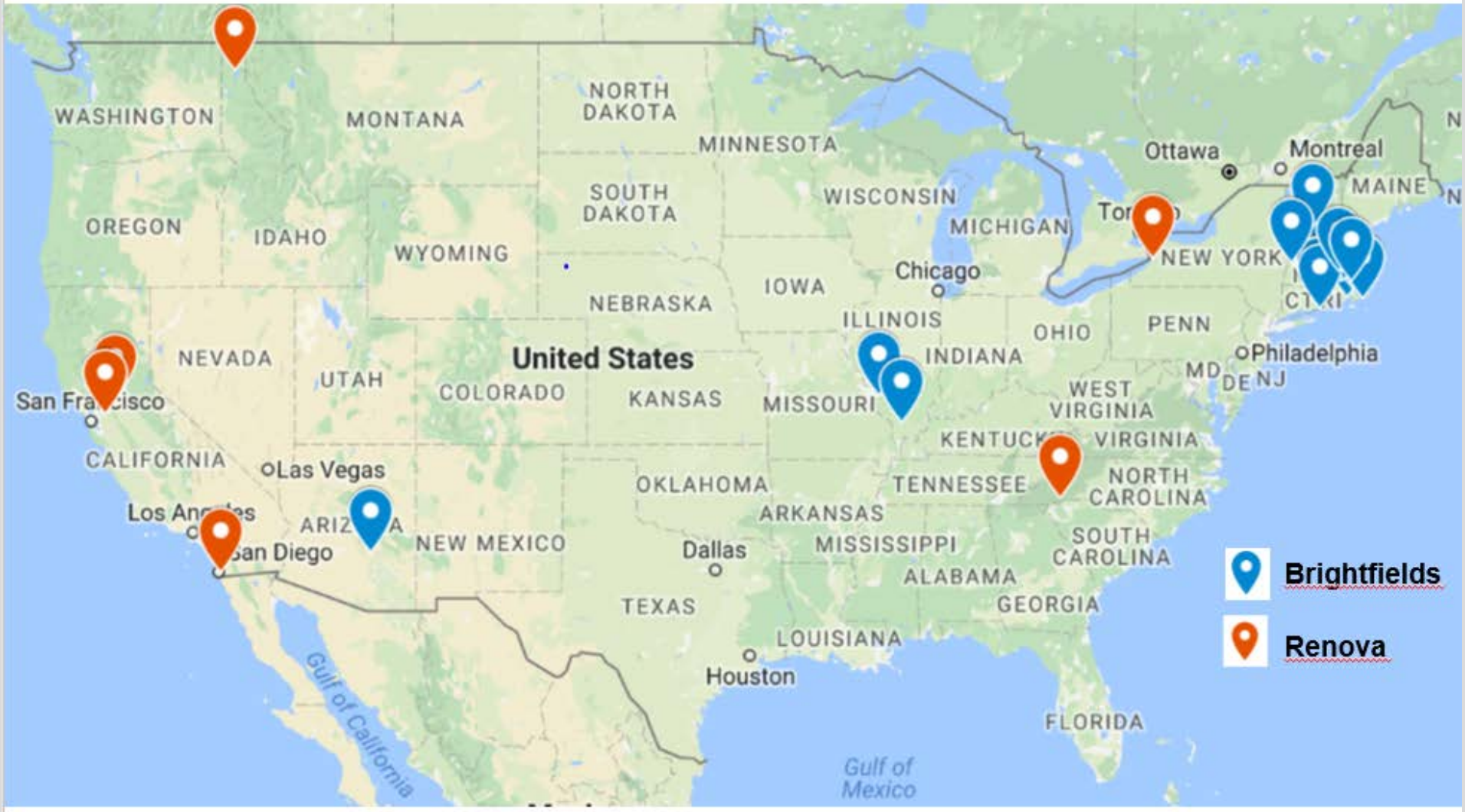
- General Redevelopment Issues
- Coordination of Divergent Stakeholder Priorities
- Simultaneous Redevelopment Processes
- General Land Redevelopment: Renova Partners
- Specific Redevelopment: Brightfields Development
- Goal: Value Creation

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Renova Partners LLC

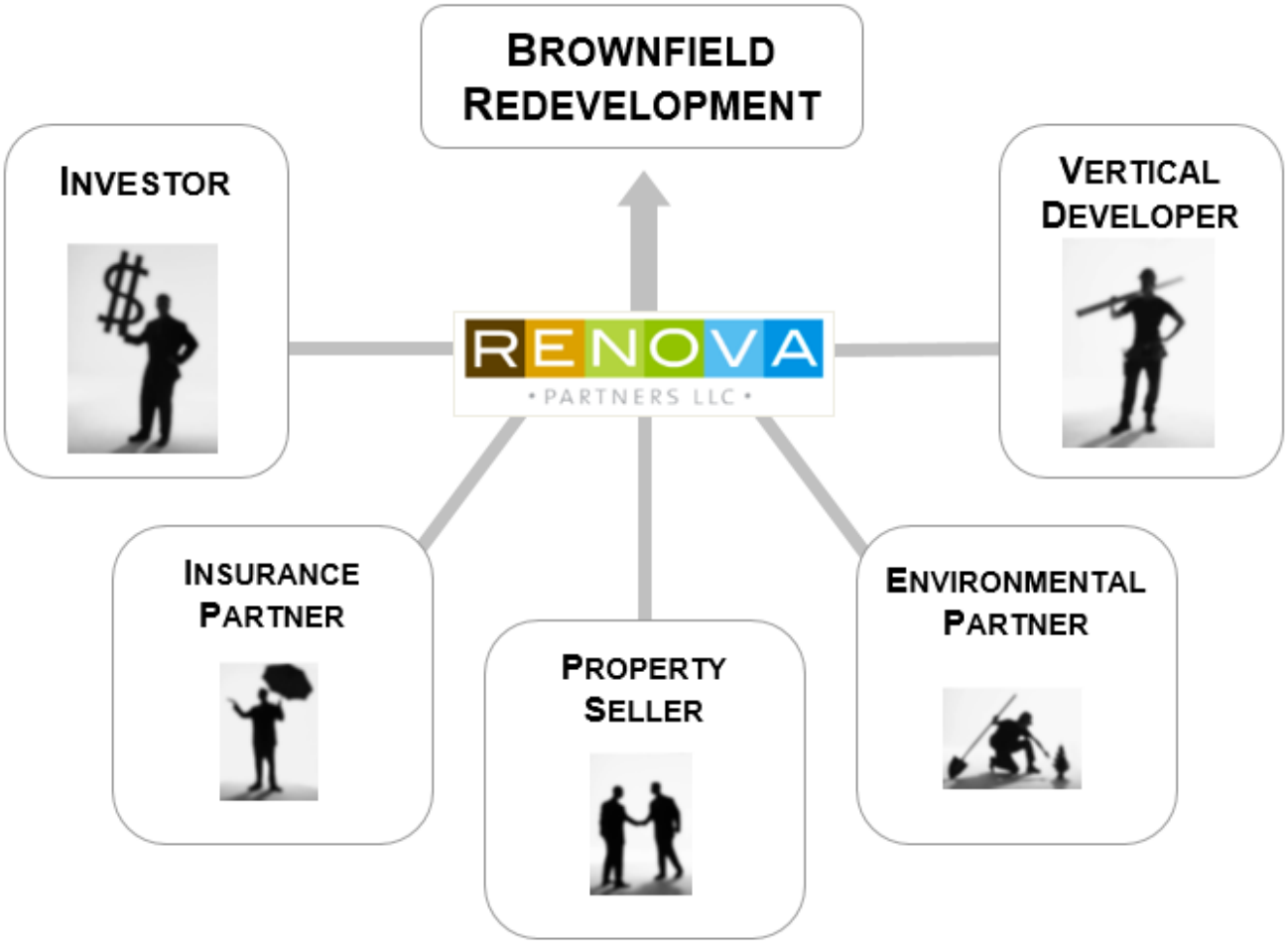
- Over two decades experience in the restoration and redevelopment of severely contaminated brownfields and Superfund sites
- Experienced at tackling extremely challenging cleanup problems involving a wide range of contaminants:
  - Mercury, PCBs, asbestos, oil derivatives and other dangerous chemicals
- Extensive master planning for redeveloped sites
- **160** Contaminated reclamation projects nationwide
  - **$300,000,000** Joint Venture with Prudential (2004)
  - **3,000,000** square feet of industrial buildings demolished
  - **1,000,000** cubic yards of hazardous material removed and recycled
  - **1,000** acres of green redevelopment
- Currently managing properties owned by Joint Venture

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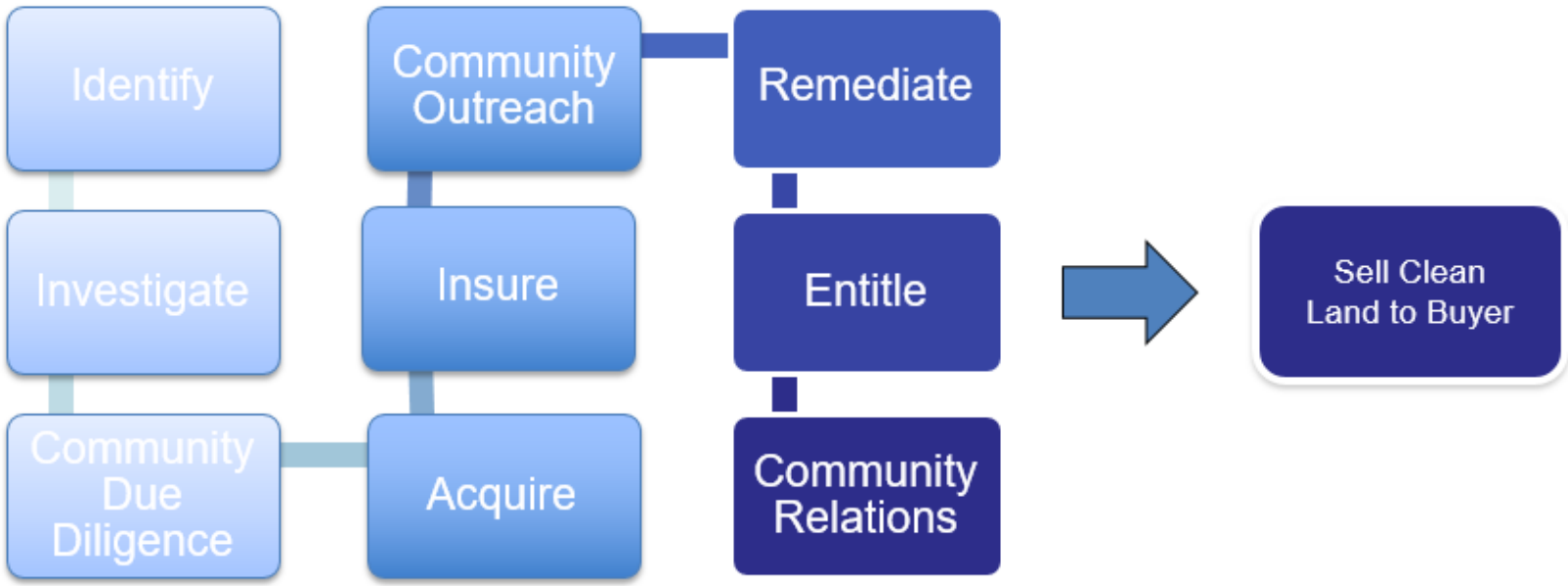
Our Experience

BRIGHTFIELDS DEVELOPMENT LLC



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TRANSACTION PROCESS



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Union Pacific

Sacramento, CA

Former Rail Yard

Project:	Curtis Park Village
Location:	Sacramento, CA
Area:	72 acres (approximately)
Prior Owner:	Union Pacific Railroad
Prior Use:	General rail facility
Contaminants:	Mixed contamination from rail yard activities & maintenance
Regulatory Agencies:	City of Sacramento, CA DTSC
Future Use:	Mixed-use single/multi family residential, commercial





RENOVA

Johns Manville

Pittsburg, CA

Former Roofing Plant

Project:	Pittsburg River Park
Location:	Pittsburg, CA
Area:	25 acres (approximately)
Prior Owner:	Johns Manville
Prior Use:	Roofing Plant
Contaminants:	Asbestos, petroleum hydrocarbons, VOCs, SVOCs, PCBs, heavy metals
Regulatory Agencies:	California Department of Toxic Substances Control (CA DTSC)
Future Use:	Mixed-use with single and multi family residential, commercial space, open space and adjacent riverfront park









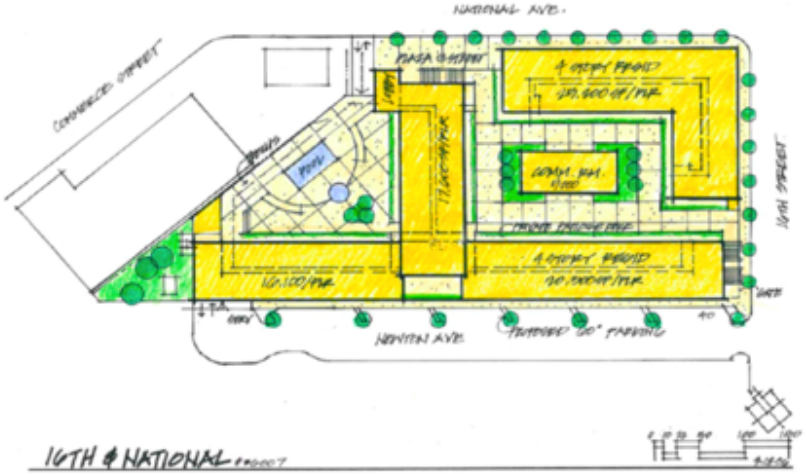
Unocal

San Diego, CA

Former Bulk Storage Facility

Project:	Graybill Ventures
Location:	San Diego, CA
Area:	4 acres (approximately)
Prior Owner:	Unocal Corporation
Prior Use:	Bulk Oil Storage
Contaminants:	Petroleum hydrocarbons and BTEX (benzene, toluene, ethylbenzene and xylenes)
Regulatory Agencies:	County of San Diego Department of Environmental Health
Future Use:	Mixed-use residential/retail complex with underground parking structure





Louisiana Pacific

Sandpoint, ID

Former Lumber Mill

Project:	Milltown Park
Location:	Sandpoint, ID
Area:	26 acres (approximately)
Prior Owner:	Louisiana Pacific Corporation
Prior Use:	Lumber mill
Contaminants:	Petroleum hydrocarbon impacts, groundwater contamination from off-site sources, wood waste
Regulatory Agencies:	Idaho Department of Environmental Quality
Future Use:	Mixed-use with multi-family residential, general retail, movie theater and grocery store





Featured Brownfield Redevelopment

- Davidson River Village: Brevard, North Carolina
- 550-acre former Ecusta paper manufacturing facility
- 62 years of operation
- 3,500 employed at peak production
- Significant soils and groundwater contamination in ecologically sensitive area
  - Mercury, Asbestos, Process By-Products
- Joint state and federal jurisdiction over environmental conditions
  - US EPA, North Carolina Department of Environment & Natural Resources
- State and Federal closure approved in September 2011

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Brevard, North Carolina • Site Aerial

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Brevard, North Carolina • 2008

RENOVA
PARTNERS LLC



Brevard, North Carolina • 2011

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PARTNERS LLC

Davidson River Village

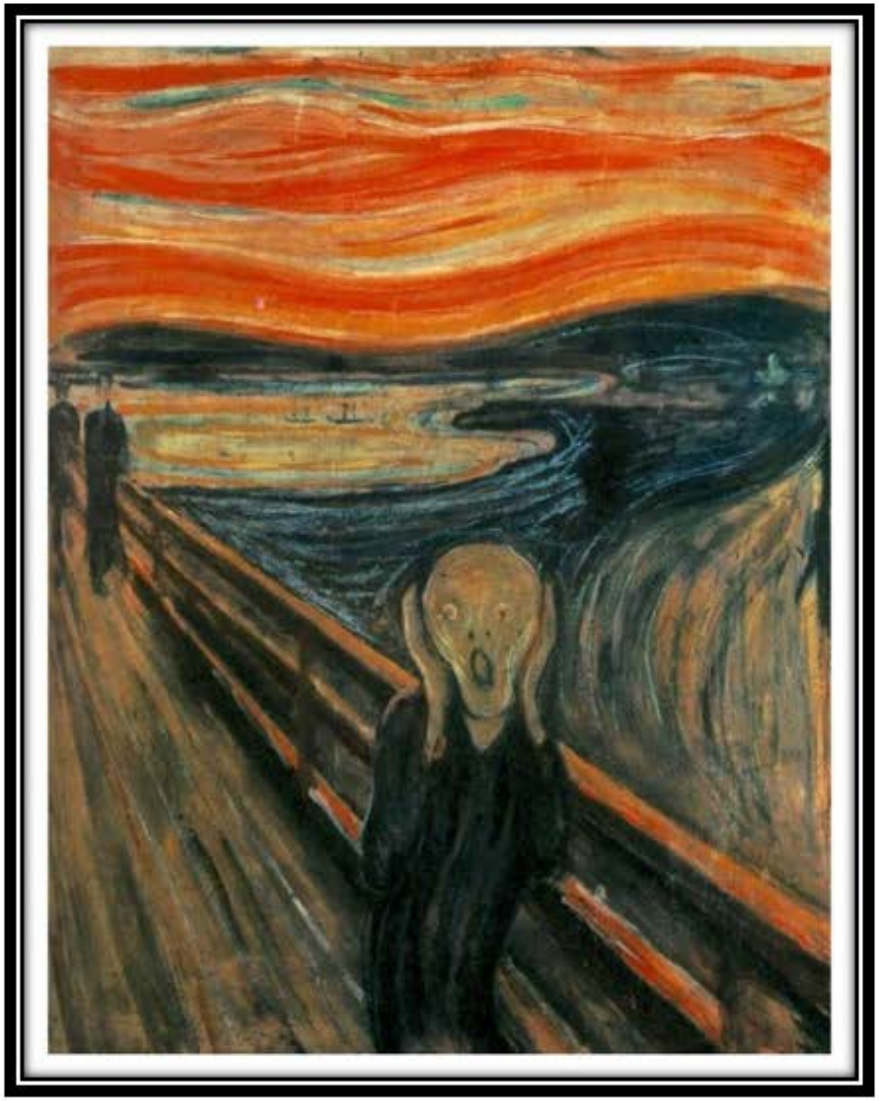
- State and Federal environmental sign-off in September 2011
- Entitlements secured through master planning process:
  - 1,000,000 square feet of commercial-retail
  - 1,000 housing units
  - 250,000 square foot resort





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Economic Downturn 2008-2009



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Brightfields Development

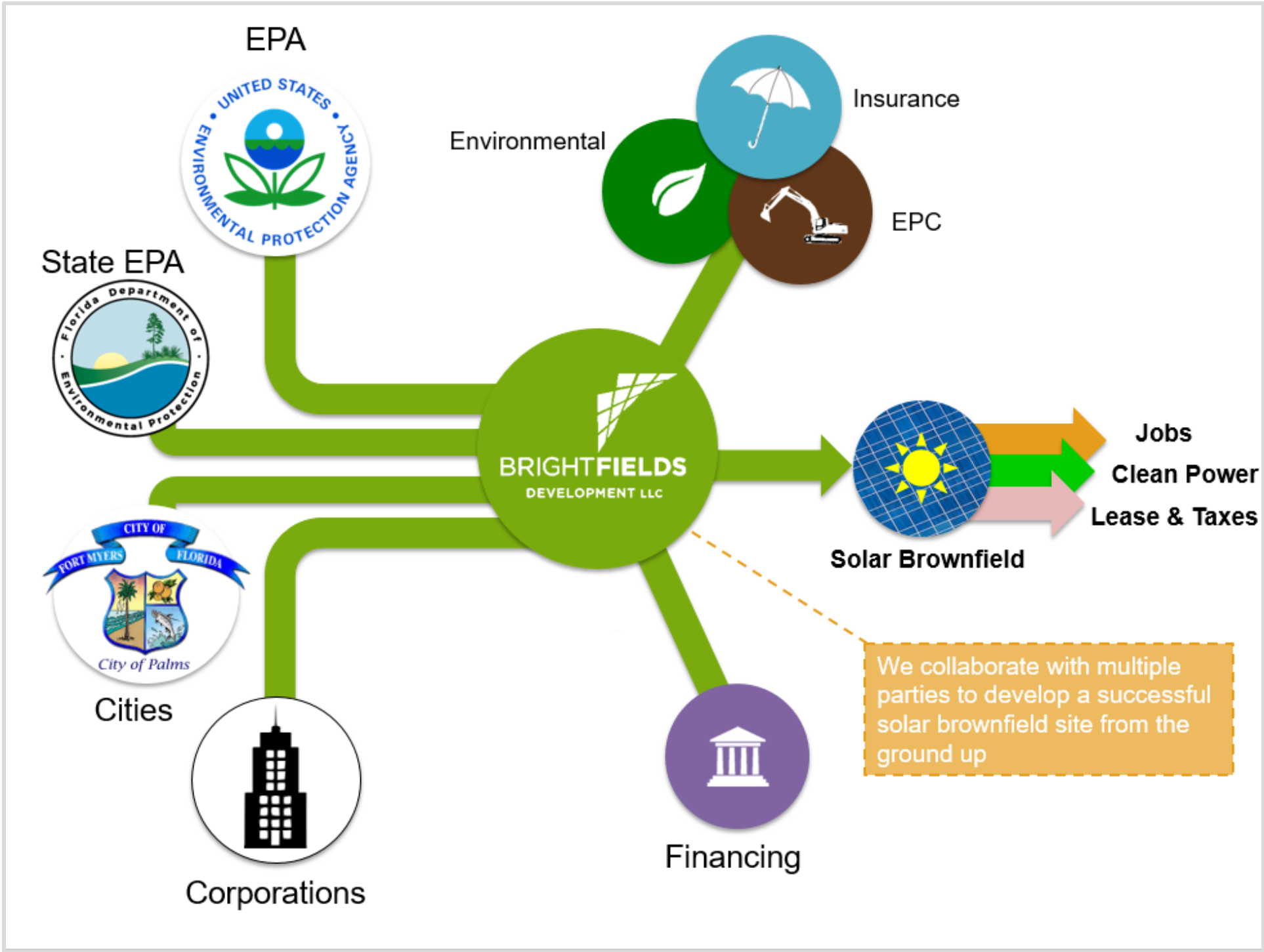
- Founded in 2009 to repurpose Brownfields with renewable energy
- Principals have developed 15 major power projects
  - Conventional, renewable and hybrid fuels
  - 145 MW of biomass renewables (7 projects)
  - In excess of 1,000 total MW
- Representative PV Projects
  - 20.0 MW Superfund solar facility in East St. Louis, Illinois
  - 20.0 MW RCRA solar facility in Carbondale, Illinois
  - Multiple municipal landfill solar facilities in Massachusetts
  - 20.0 MW solar facility portfolio on multiple sites in Connecticut
  - 7.0 MW solar facility on Vermont Superfund site
  - Multiple carport solar facilities on several Massachusetts sites

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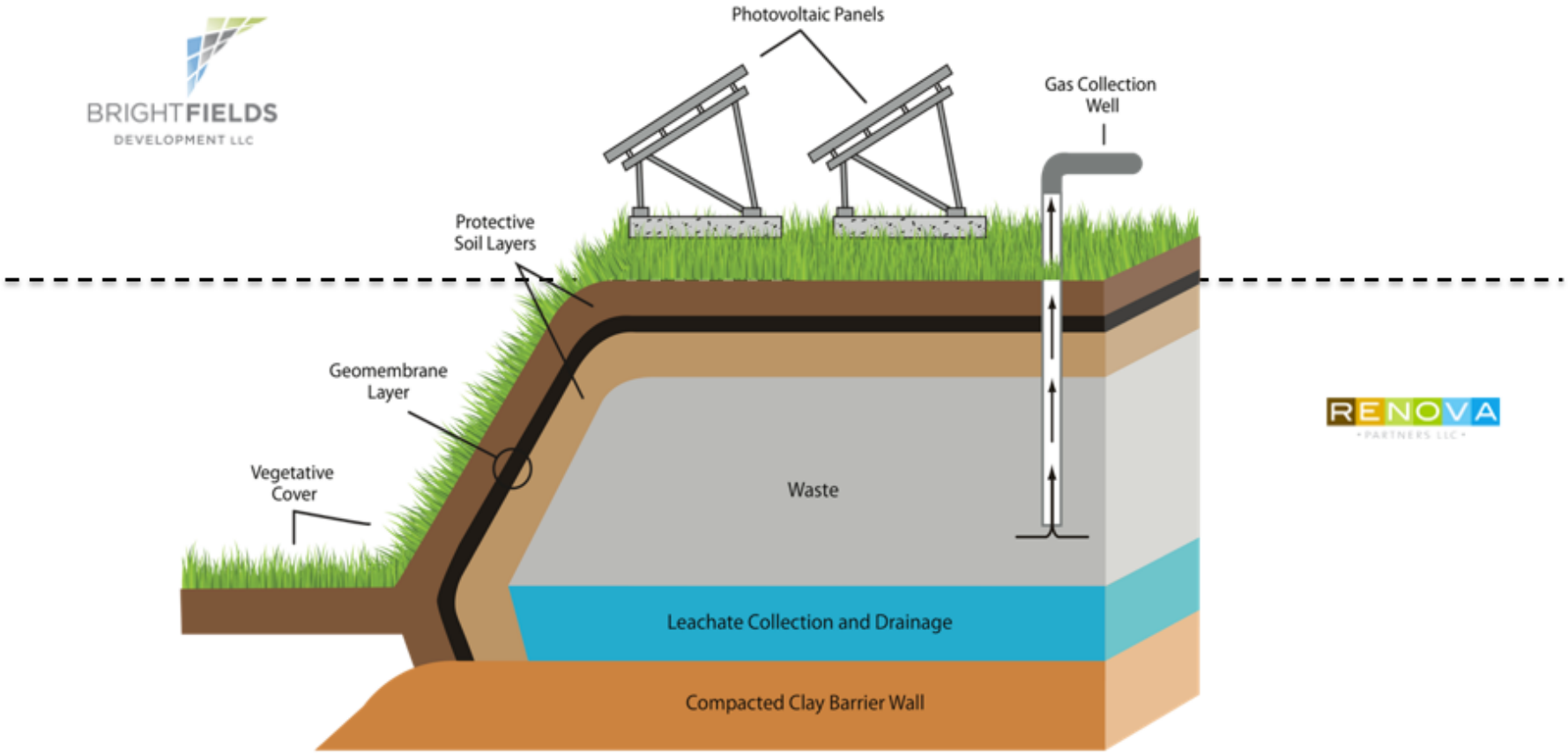
The Renova and Brightfields Partnership



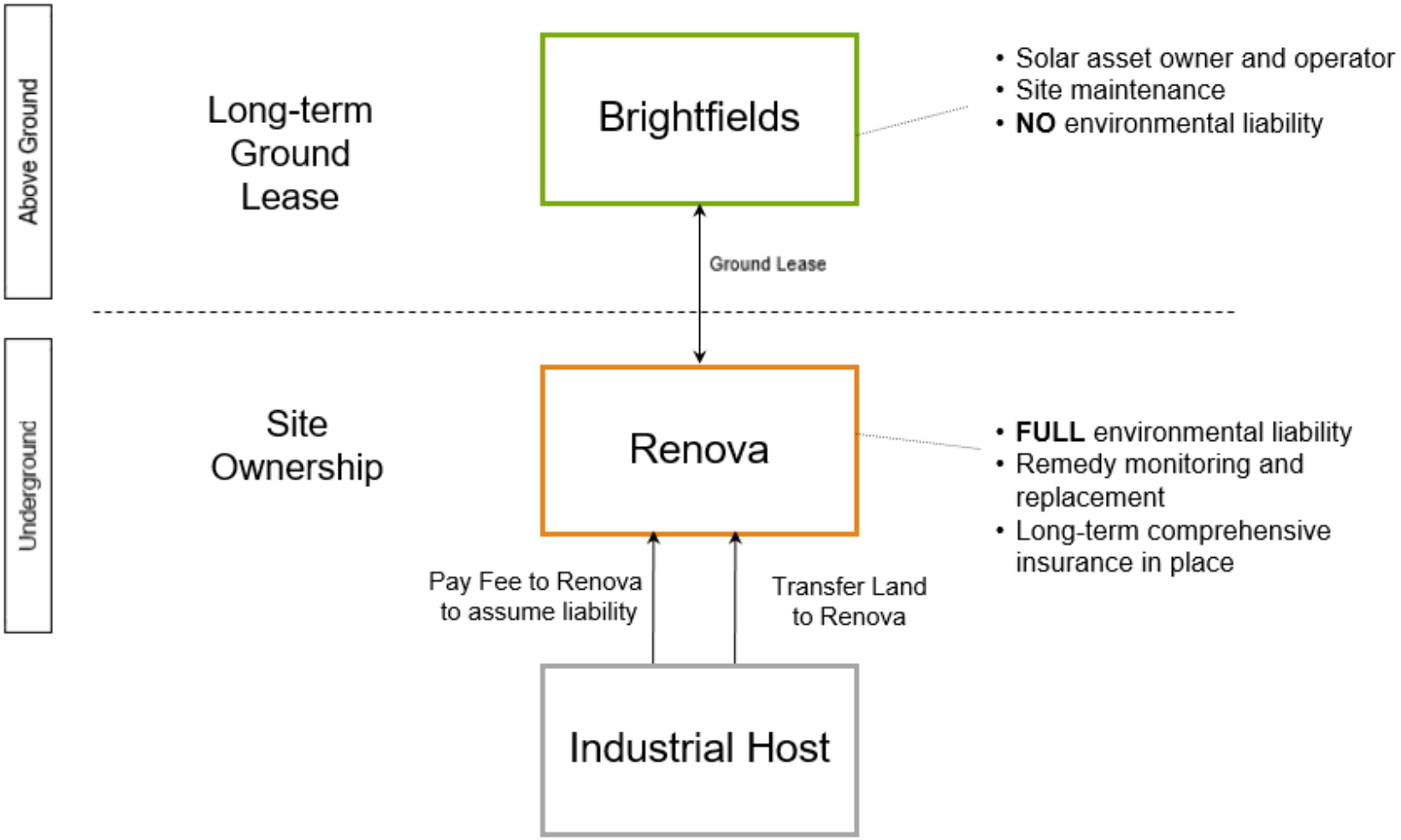
- Renova has over two decades of Brownfields experience with money center investment partners
- Brightfields specializes in repurposing contaminated land with solar photovoltaic panels
- Together, Renova and Brightfields redevelop brownfield sites as solar energy facilities
- We are working with municipalities and Fortune 100 companies to develop over 115 MW of solar power on brownfields in several states nationwide


EPA
Insurance
Environmental
EPC
State EPA
BRIGHTFIELDS
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Jobs
Clean Power
Lease & Taxes
Solar Brownfield
City of Palms
Cities
We collaborate with multiple parties to develop a successful solar brownfield site from the ground up
Financing
Corporations

How Our Solar Brownfields Work



Shielding Environmental Liability



Unique Benefits;
Keys to Success

- Conserve agriculture, forestry and wildlife resources
- Repurpose dormant land
- Environmental regulations shake hands with municipal zoning laws
- Communication between federal and state authorities
- Identification of energy off-taker
- Cooperating with electric utilities

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Florida Update

- Legislative update
  - Rejected Amendment 1
    - Could have created legal barriers to entry
    - Raised fees on solar users
  - Approved Amendment 4
    - Added solar tax exemptions for C&I properties
    - Passed unanimously through the senate and sent to governor
- Economic benefits of solar energy driving adoption
- Managed growth of solar energy development

Closed Municipal Landfill in Scituate, MA

- 3.0 MW system size
- $10 Million project capital cost
- 3,700 MWh produced in year one
- 74,000 MWh produced over the 25 year life of the project
- Energy cost savings and lease & tax revenues to community
- The first town in Massachusetts to use 100% renewables to power all of the town's municipal facilities

Power



525 homes

Displace



6,750 barrels of oil

Reduce



4,050 tons of emissions

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Scituate, MA • Municipal Landfill

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DEP Advisory:

A short video was included as part of this presentation which was unable to be included in this posting.

Please contact the presenter if you would like more information. His contact information can be found at the end of this presentation.



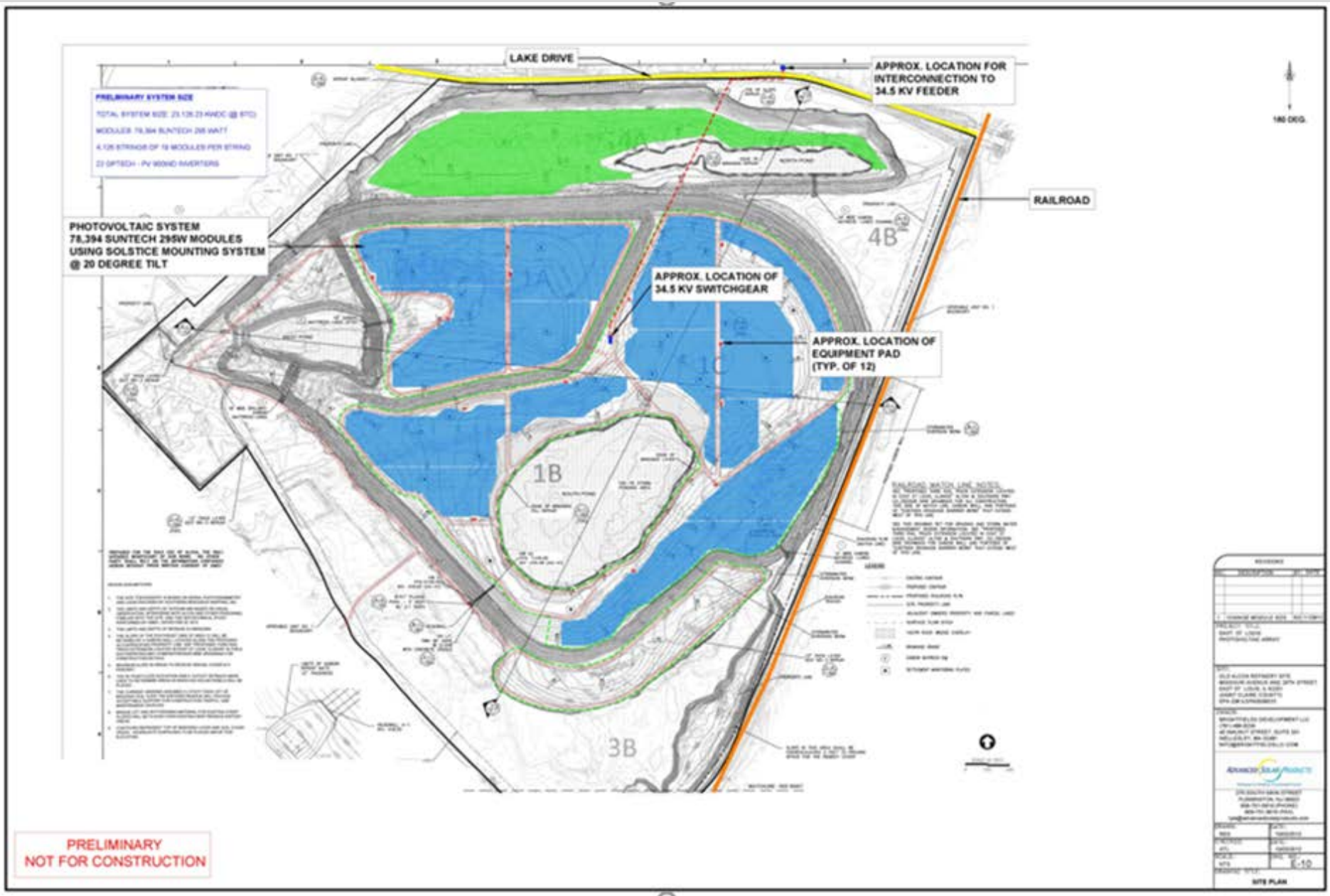
Site Aerial

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After

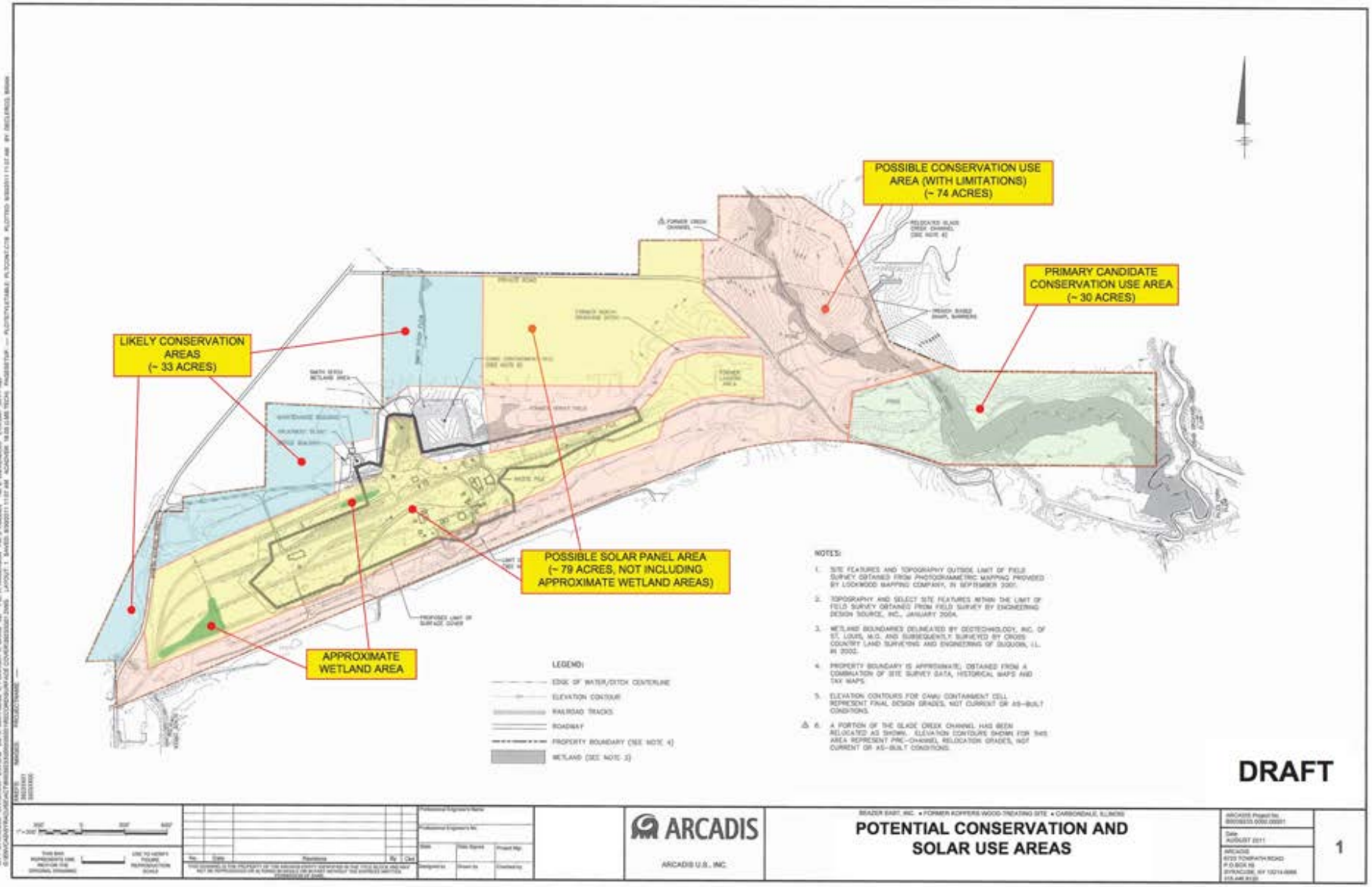
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Potential Solar Array Layout

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Typical Pole Mounted Racking
Solar Project Education Kiosk
Low Impact Mounting for Capped Areas
Community Bike Trail
0.05 mi: closest distance to community
Carbondale, IL
20 MW (AC) Conceptual Solar Project Layout
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Site Reuse Plan

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Needham, MA • Municipal Landfill

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Town of Needham, MA Municipal Landfill
• 3.5 MW Solar System (4,700 MWh in year one)
• 450 households powered every year
• 3,200 tons of carbon offsets every year
• K-12 Solar Curriculum developed for the Town



Williamstown, MA

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Rogers Rd, Norwich, CT

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Stott Ave, Norwich, CT

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Stott Ave, Norwich, CT

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Benefits of Battery Storage

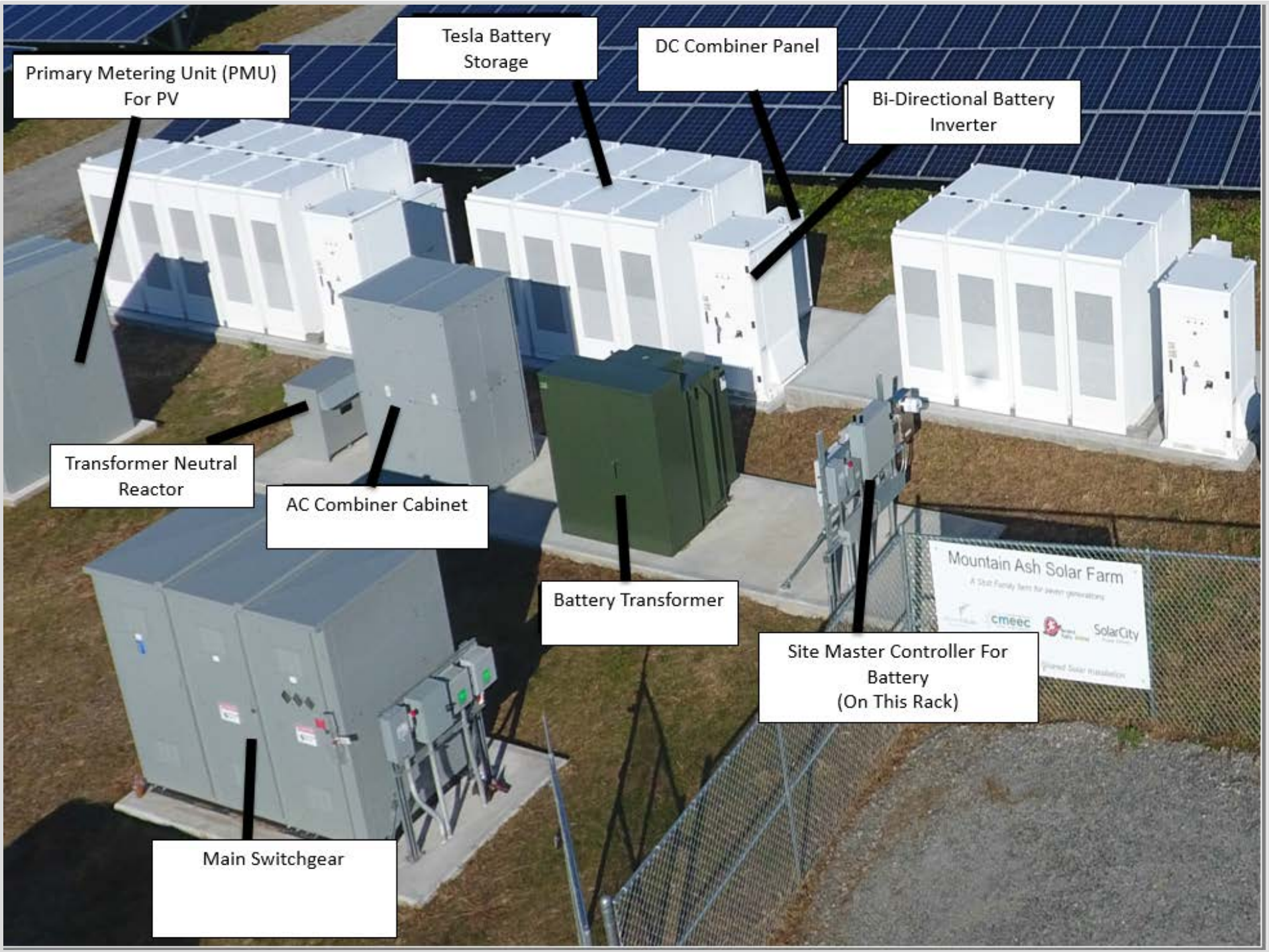
- Multiple applications: grid flexibility
- Consistent power supply
- Energy load shifting
- Emergency power
- Grid stability

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CMEEC Battery Installation

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Primary Metering Unit (PMU) For PV
Tesla Battery Storage
DC Combiner Panel
Bi-Directional Battery Inverter
Transformer Neutral Reactor
AC Combiner Cabinet
Battery Transformer
Site Master Controller For Battery (On This Rack)
Main Switchgear
Mountain Ash Solar Farm
cmeec
SolarCity

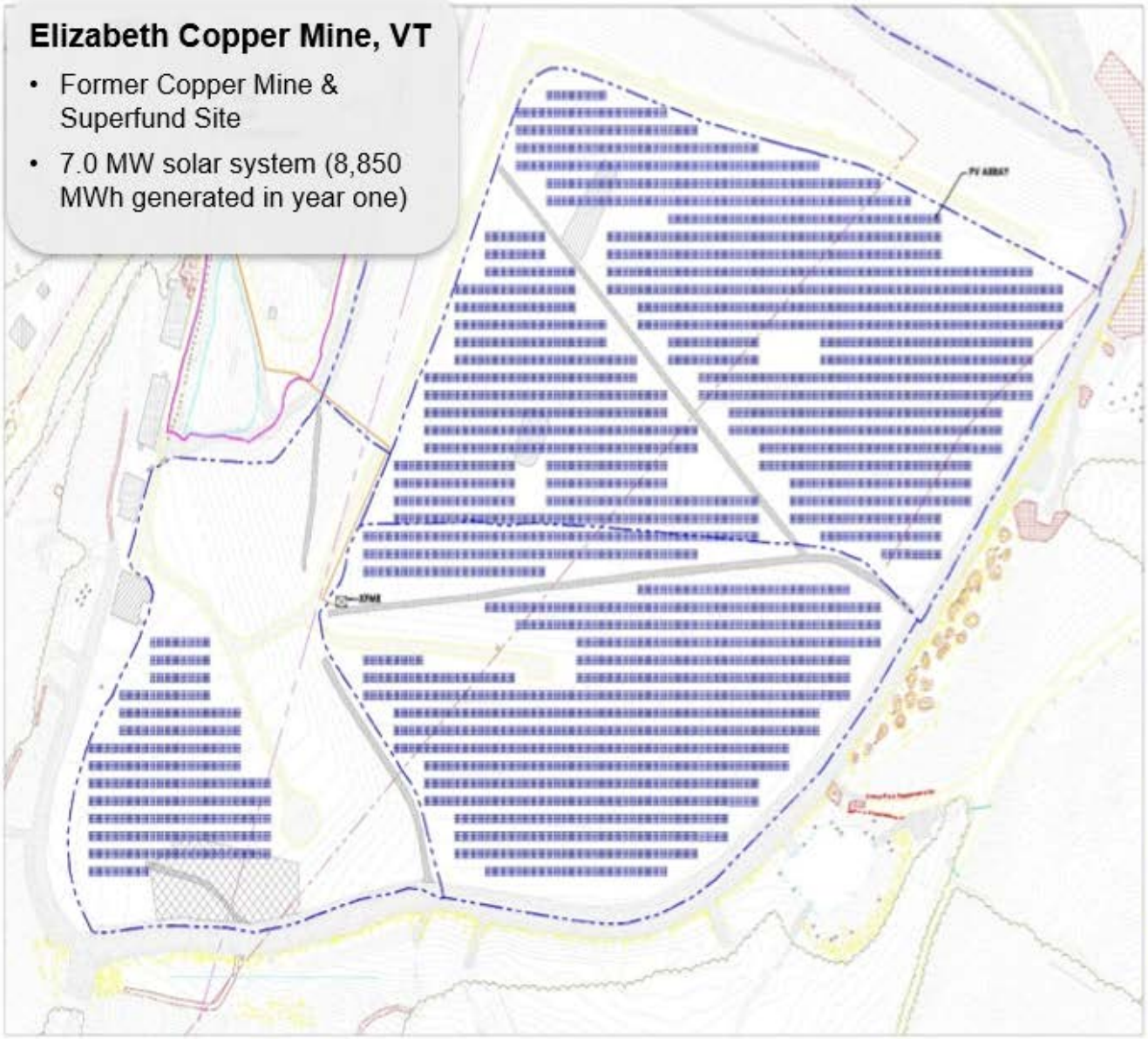


Elizabeth Copper Mine, VT

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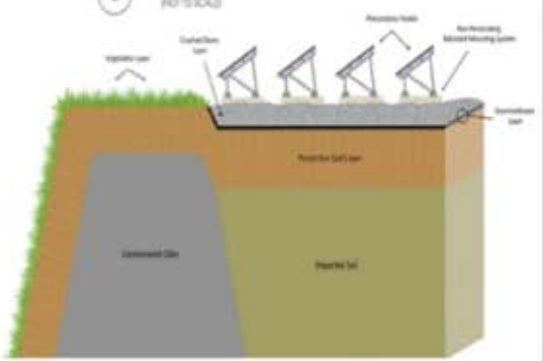
Elizabeth Copper Mine, VT

- Former Copper Mine & Superfund Site
- 7.0 MW solar system (8,850 MWh generated in year one)



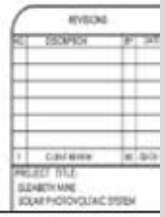


2 VICINITY MAP



3 SAMPLE IMAGE
NON-PENETRATING
BALLASTED POLE MOUNT





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Lexington, MA

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Benefits of Solar Canopies

- Ability to leverage current real estate portfolio to generate solar energy
- Utilize existing parking lots and open space with minimal operational impacts
- Define critical design constraints (turn radius, clear-height, lighting, water management, column protection)
- Create a collaborative design that balances facility priorities with canopy structure design
- Design an implementation plan that limits site disturbance and functionality


Lexington, MA
• Solar canopies and ground mount on a municipal landfill and active compost facility
• High clearances to facilitate commercial operations


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