

Oikos Solar Project

City of Staunton City Council

May 25, 2023

Applicants:

**Staunton PV-UT, LLC and Staunton PV-CS, LLC,
Daniel Chung, Principal/Owner**

Engineering:

Timmons Group, Rick Thomas

Attorney:

Williams Mullen, Lori Schweller

Actions Requested

- Approve withdrawal from Agricultural Forestal District
- Approve special use permit for a solar facility
- Approve Siting Agreement

The Property

801 Commerce Road



Property Location:
801 Commerce
Road

Existing
Access Drive



Project Entrance

VDOT / State Police
Buildings are Located
to the Left of the
Photograph



Withdrawal from Bell's Lane Agricultural-Forestal District

Land may be removed by owner upon a showing of good
and reasonable cause.

--City Code Sec. 18.095.060(2)

Factors that May be
Considered

Va. Code § 15.2-4314.
Withdrawal of land from a
district

Land Evaluation

- Soil Rating and Group

Site Assessment

- Non-soil factors related to agricultural use of a site.
- Factors related to development pressures.
- Other public values of a site.

Land Evaluation: Not in Prime Farmland (Areas in Red)

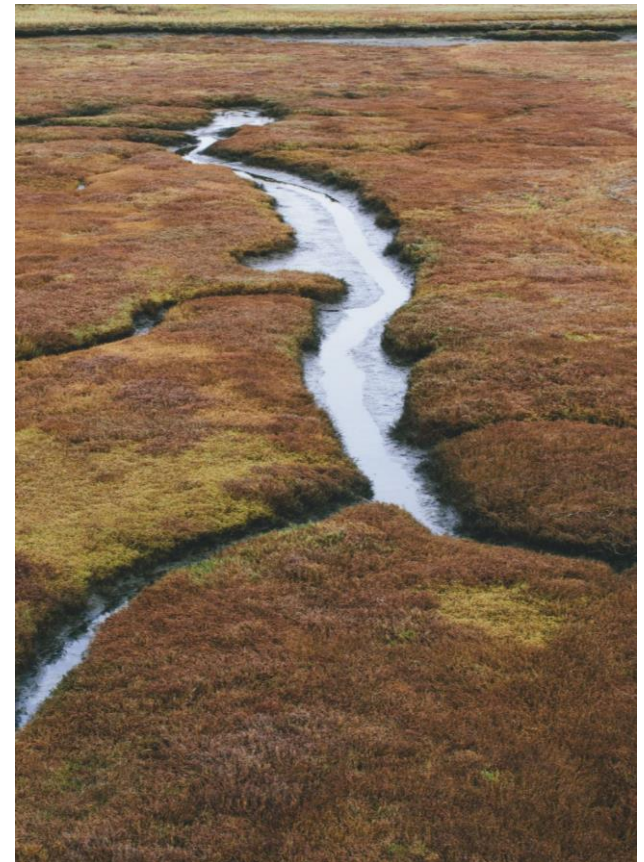


Agricultural-Forestal Committee

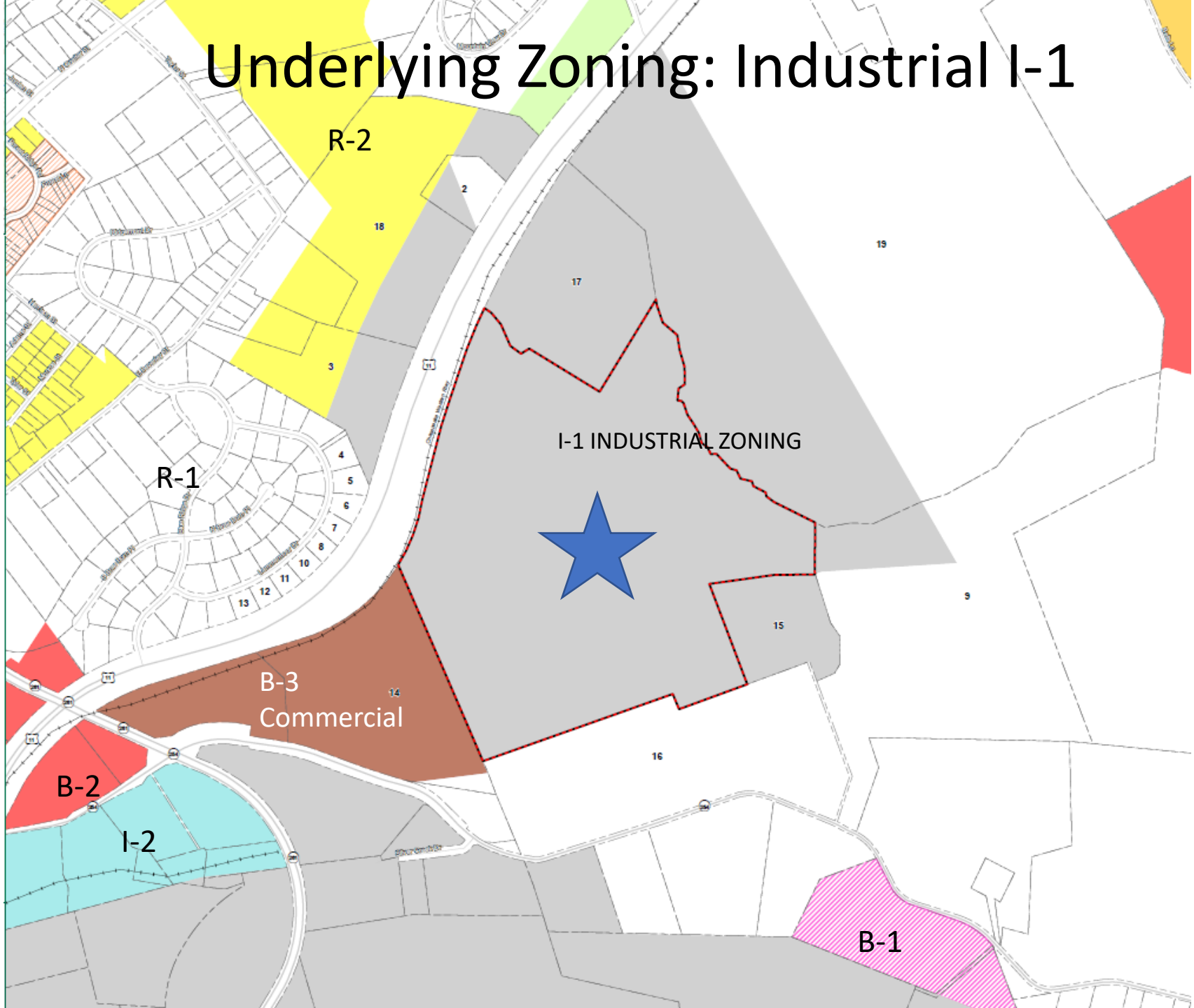
Recommendation of Approval

February 24, 2023

- Not prime farmland, very rocky
- Solar is not destructive to the land, low impact
- Wildlife corridors and riparian buffers preserved
- DEQ will regulate water runoff
- Landowner's property rights
- History of overlay was to allow city-annexed farmland to stay in land use taxation for farmers; intended to come out of land use taxation eventually for underlying zoned uses when timely and feasible
- Public benefit; economically beneficial to City and Virginia
- Landowner could opt out anyway when term expires in 2030

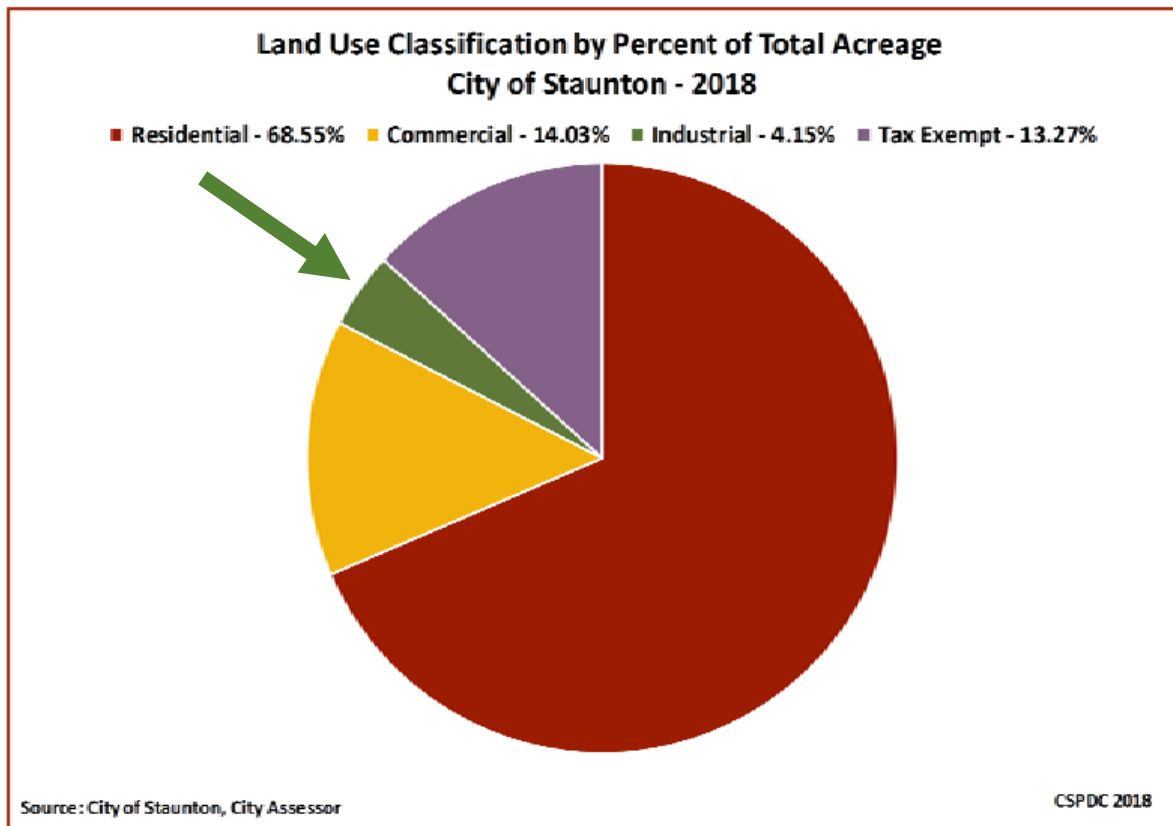


Underlying Zoning: Industrial I-1



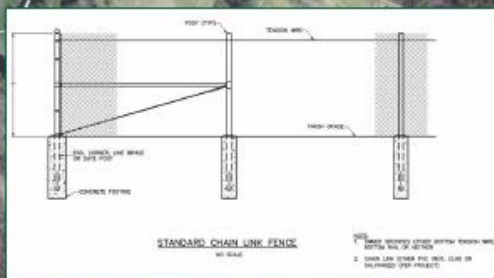
Limited Industrial Zoning

**Figure 11-1 - Land Use Classification by Percent of Total Acreage —
City of Staunton - 2018**



- Only 4.15% of the acreage (0.7% of parcels) in the City is zoned Industrial, so there is limited acreage available for solar facilities (only permitted in I-1 and I-2)

Special Use Permit Concept Plan



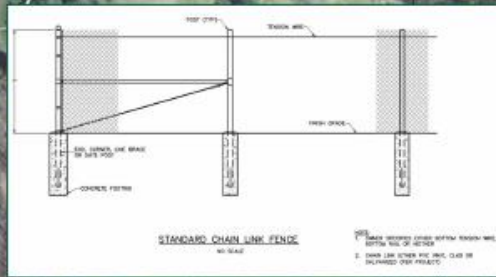
Collector Substation

5 MW
Community Solar

15.75 MW

Legend

- Project Study Limits - 95.1 Acres
- Property Setbacks - See Notes
- Fence - 60.0 Acres
- ★ Project Entrance
- Point of Interconnection
- Inverters
- Solar Arrays
- Collector Substation
- Internal Roads
- Stormwater Diversion Ditch
- Stormwater Basins
- Area of Required Vegetative Screening (50' Wide)
- Area of Voluntary Additional Vegetative Screening (50' Wide)
- 50' Riparian Buffer
- Delineated Stream
- Delineated Wetland
- FEMA Flood Zone
- Operating Sections**
 - Utility Scale Solar Array Area - 15.75 MWac - 57.5 Acres
 - Community Scale Solar Array Area - 5 MWac - 35.8 Acres
 - Collector Substation Area - 1.8 Acres

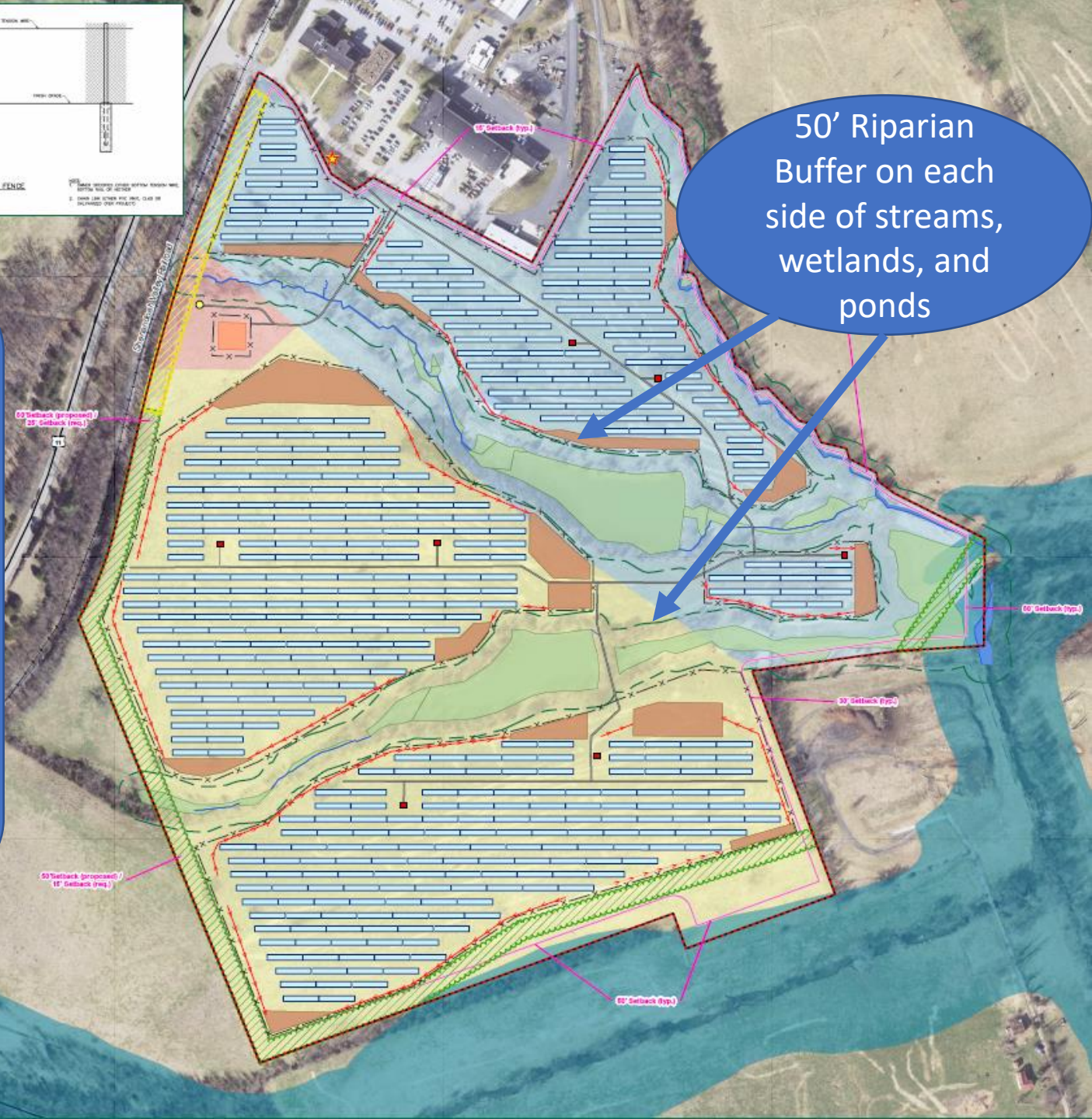


SETBACKS:

50' setback for all panels, inverters, collector station from Commerce and adjoining properties not zoned industrial

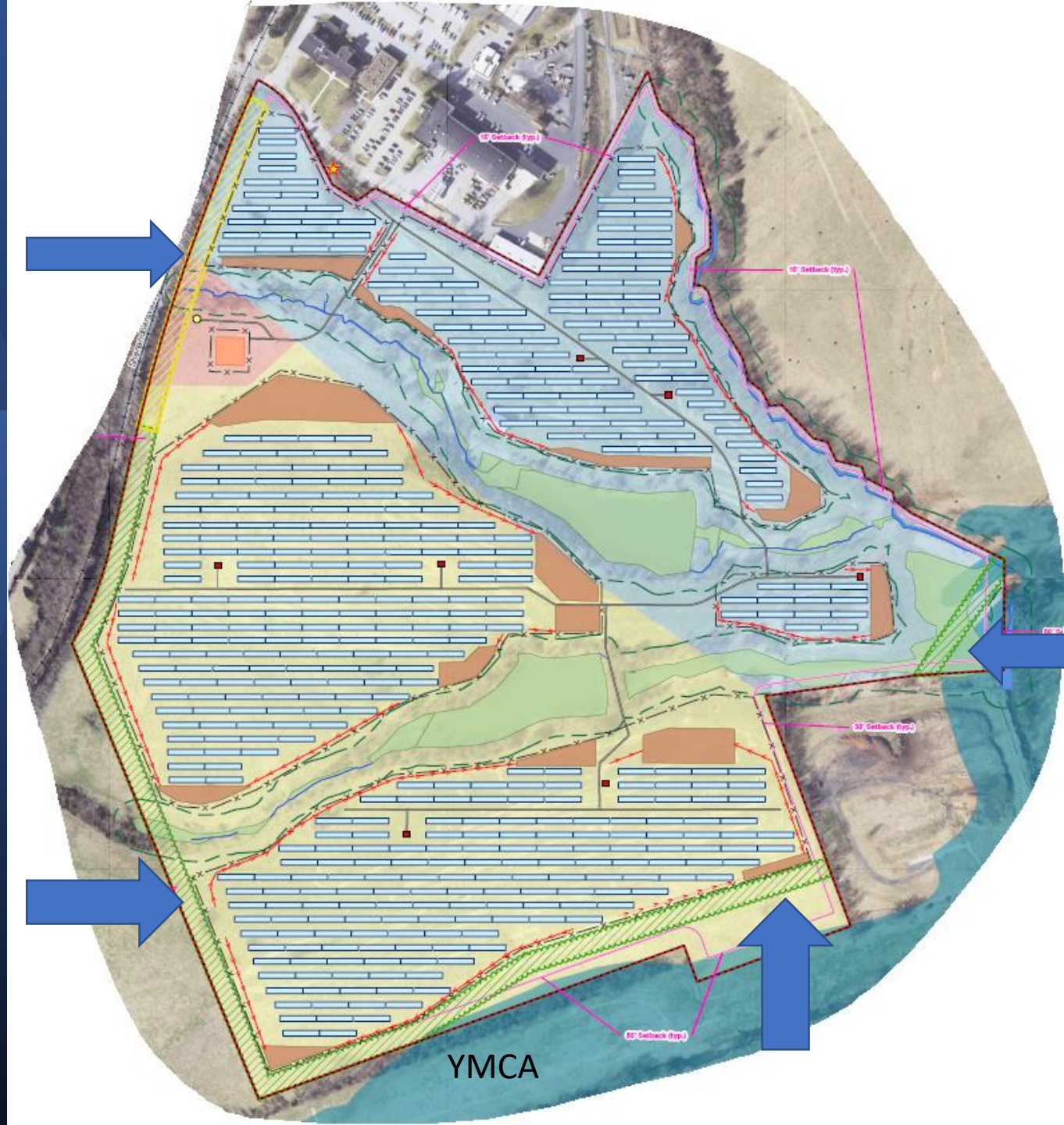
15' or 30' setback to industrial zone

50' Riparian Buffer on each side of streams, wetlands, and ponds

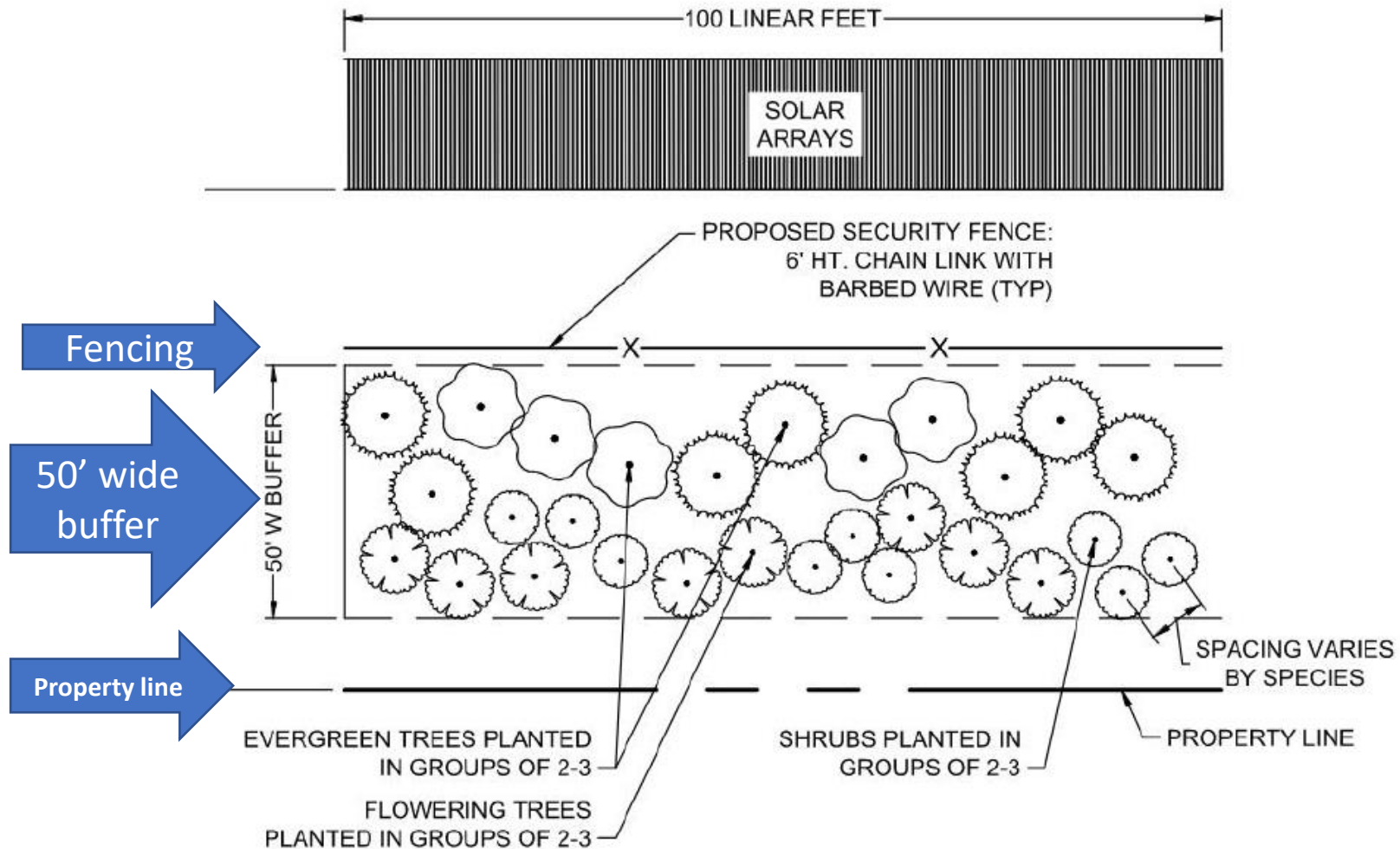


ZONING ORDINANCE:
15' SIDE
25' STREET / FRONT YARD,
30' REAR
50' ADJACENT RESIDENTIAL ZONED PARCELS.

Vegetative
Buffer
50' wide
abutting
non-industrial
districts



Conceptual Vegetative Buffer



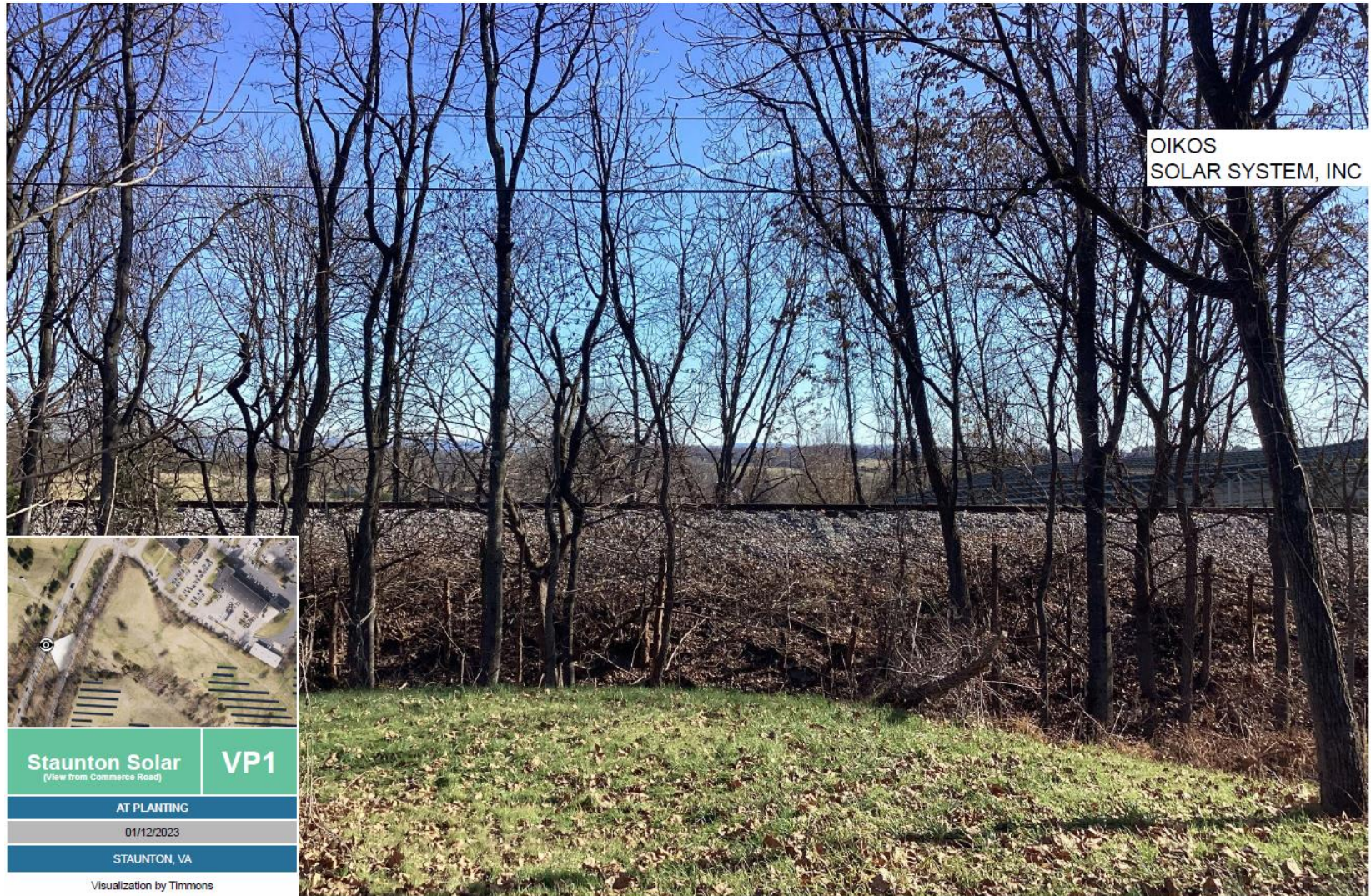
Pollinator Groundcover Plan

- Pollinator-friendly native plants, shrubs, trees, grasses, and wildflowers following Virginia pollinator-smart program best practices
- Pollinator habitats will be mowed at the end of each migratory season in order to reseed to encourage pollinator habitats to maintain rural agriculture
- Noxious weed and invasive plant species management plan

Visual Renderings

(Showing only 10' buffers, not current 50' buffers)

From Commerce Road



Buffer Plantings at Maturity



View from New Hope Road

OIKOS
SOLAR SYSTEM, INC



Staunton Solar
(View from New Hope Road)

VP2

AT PLANTING

01/12/2023

STAUNTON, VA

Visualization by Timmons



Plantings at Maturity



View from Staunton Alliance Church

OIKOS
SOLAR SYSTEM, INC



Staunton Solar
(View from Staunton Alliance Church)

VP3

AT PLANTING

03/28/2023

STAUNTON, VA

Visualization by Timmons



From Church with Plantings at Maturity

OIKOS
SOLAR SYSTEM, INC



Staunton Solar
(View from Staunton Alliance Church)

VP3

AT MATURITY

03/28/2023

STAUNTON, VA

Visualization by Timmons

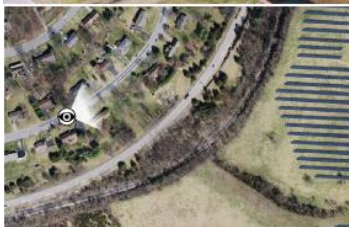


Aerial View of Plantings at Maturity

Lammermoor Drive

OIKOS
SOLAR SYSTEM, INC

PHOTOS AT PEDESTRIAN LEVEL



Staunton Solar
(Aerial View from Lammermoor Dr.)

VP4

AT MATURITY

03/28/2023

STAUNTON, VA

Visualization by Timmons



Solar Electricity Generation

THE VIRGINIA CLEAN ECONOMY ACT 2020

Adopted by the Virginia General Assembly in 2020 and signed into law by Governor Ralph Northam.

Establishes a mandatory renewable portfolio program:

Dominion Energy to deliver electricity from 100% renewable sources by 2045

Appalachian Power to deliver electricity from 100% renewable sources by 2050

Declares the following to be in the public interest:

16,100 MW of solar and onshore wind

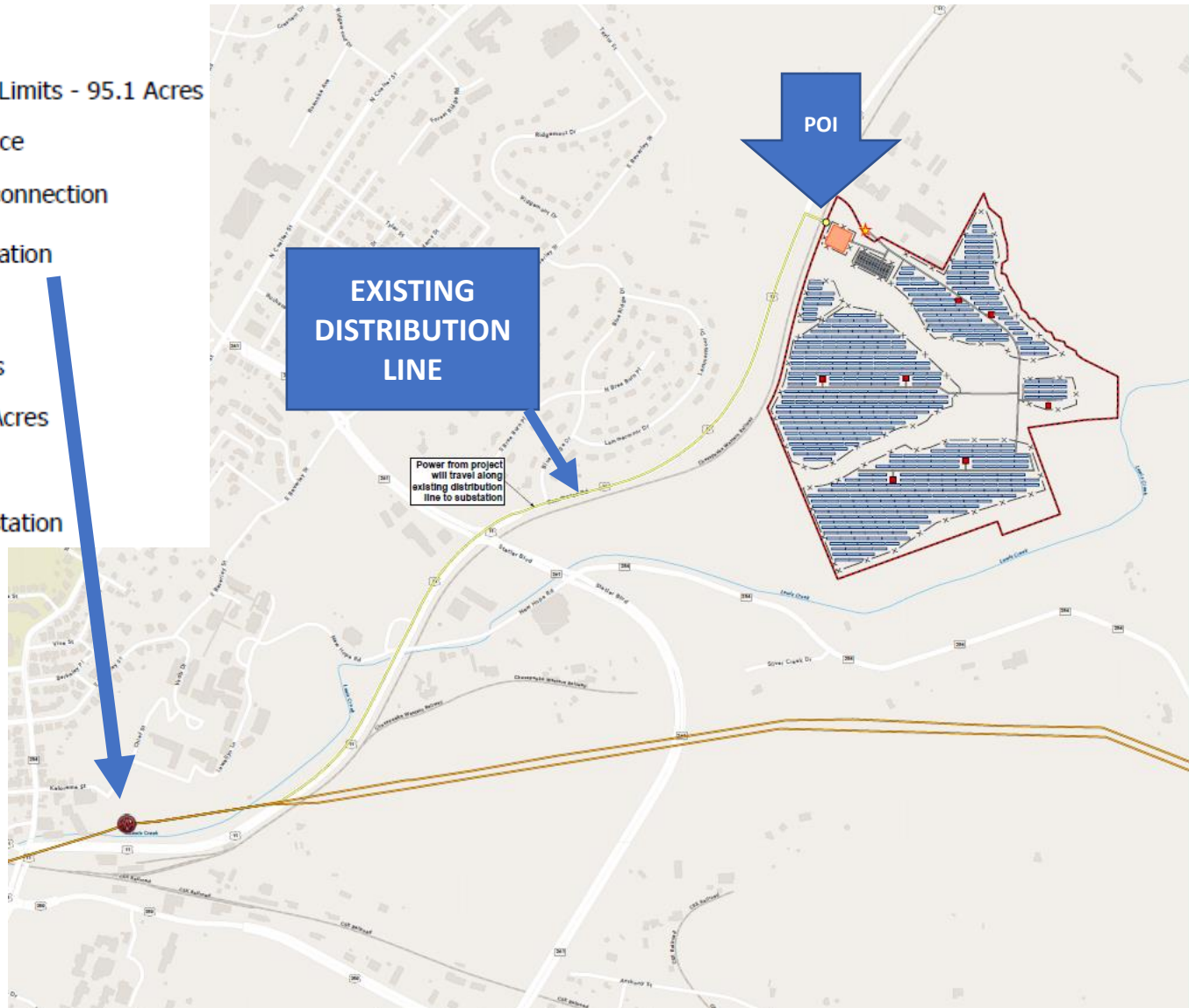
5,200 MW of offshore wind

2,700 MW of energy storage capacity

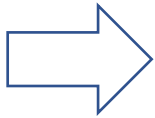
Dominion Energy Distribution Line Map

Legend

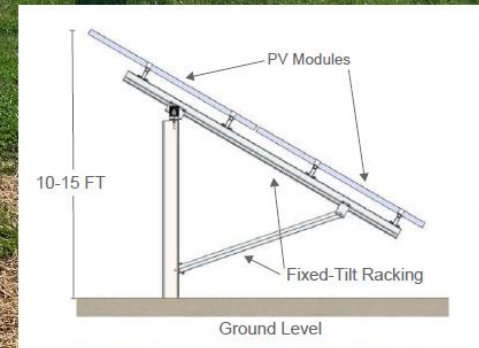
-  Project Study Limits - 95.1 Acres
-  Project Entrance
-  Point of Interconnection
-  Existing Substation
-  Inverters
-  Internal Roads
-  Fence - 60.4 Acres
-  Solar Arrays
-  Collector Substation



Fixed Tilt Panels
10'-15'

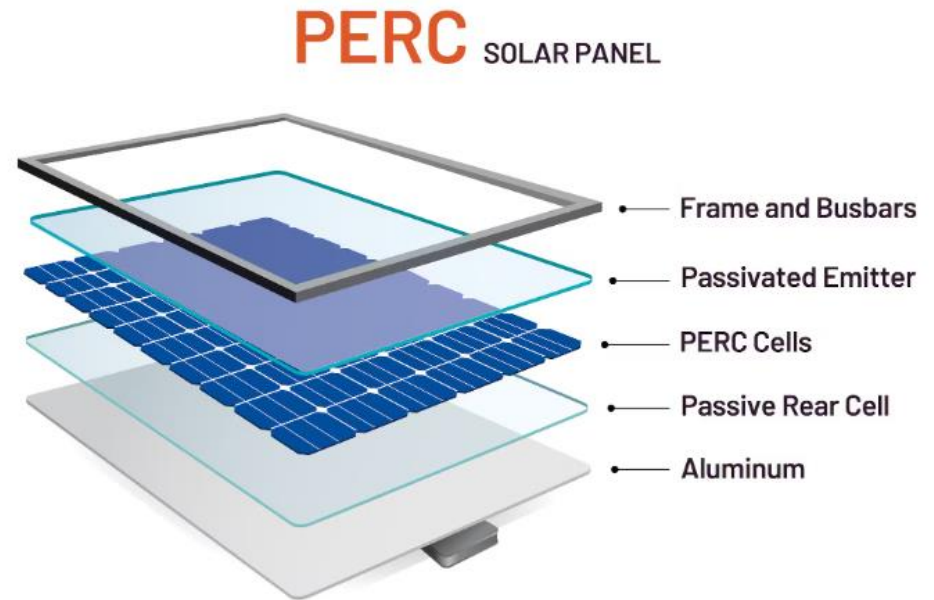


Inverter



PERC Solar Panels

- Project will use highly efficient photovoltaic (PV) technology that improves on traditional crystalline silicon: PERC (Passivated Emitter and Rear Contact) mono-silicon panels
- PV cells in PV panels are sealed between layers of plastic to protect against air and moisture
- Glass (on top) and polymer sheet (below) protect the encapsulating plastic
- As with car windshields and hurricane windows, the panels stay intact even in the unlikely event of breaking
- Industry-standard 25-year production warranty but quality panels can be expected to produce power for 35 years



Crystalline Silicon Panel Construction

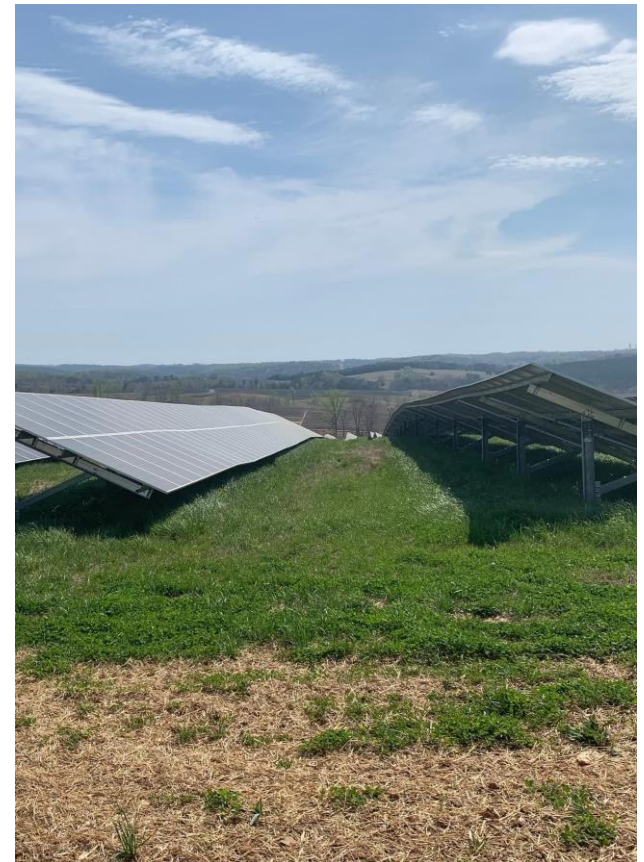
- 80%+ of the panel is glass and aluminum; most of the rest is composed of common plastics
- The photovoltaic cell is nearly 100% silicon (the second most common element in the earth's crust)
- Produced by high-temperature processing of quartz sand
- Lead oxide is sometimes used in tiny quantities in a component of the silver paste used to make contacts between layers
- No risk of leak or release into the environment because of the strong physical and chemical attachment to other components

Community Benefits

- Shared Solar Program
- Economic
- Environmental

Community Benefits

- Furthering Virginia's clean energy goals by producing power to serve 3,500 homes
 - utility-scale: 2,800+/-*
 - community solar: 700-800*
 - (depending on energy usage)*
- Opportunity to subscribe to Dominion Energy Shared Solar Program
- Solar uses minimal city services unlike residential development (schools, parks, roads, water/sewer, and other infrastructure)
- Pollinators, stream buffers, wildlife corridors
- Increased tax revenue





**Dominion
Energy®**

Shared Solar Program

Adopted by the Virginia General Assembly in 2020

Allows Dominion customers to save money on electricity without installing panels on their roof or property

At least 30% of the initial Shared Solar Program megawatts must be allocated to Low-Income Customers

Subscribers will receive a 10% credit on their electric bills without risk or obligation—just sign up

Minimum bill of \$55.10 except for Low-Income Customers (no minimum)

Third-party promotion and subscription company
(Arcadia) manages billing

(See www.arcadia.com/for-homes)

12 months exclusivity for Staunton

(any Dominion customers are eligible provided that the project has 30% LMI subscribers)

After 12 months, opportunity opened to
Dominion customers statewide (100% Low-
Income Customers)

Income Eligibility ($\leq 80\%$ AMI)

- 2022 Area Median Income for the Staunton-Waynesboro MSA = \$83,600
- 80% Income Limits:

Family Size	1	2	3	4	5
Income Limit	\$44,600	\$51,000	\$57,350	\$63,700	\$68,800

Financial Benefits to the City

- Revenue increases through taxes:
 - Rollback taxes of over \$52,000
 - Increase in assessment from Land Use to Fair Market Value for Industrial Development (\$6,694.01 in additional annual tax revenue (\$200,820.36 over 30 years)*)
 - Machinery & Tools Tax
- Siting Agreement (\$200,000)

**For illustrative purposes. Real estate property assessments and tax rates are subject to change annually.*

Decommissioning
the Project

*Secured by
Performance Bond
or Letter of Credit
with no credit for
salvage value*

- I. Regulatory Compliance / Obtain Necessary Permits & Approvals**
- II. Remove all equipment /panels / foundations / fencing**
- III. Materials recycling and Disposal
(90%+ of the semiconductor material and glass can be reused in new modules and products.)**
- IV. Site Restoration**

Prepared By:



TIMMONS GROUP
ENGINEERING | DESIGN | TECHNOLOGY

State and Local Permitting

Department of
Environmental
Quality (DEQ)
Permit by Rule
(PBR)

Process available for solar projects
150 MW and less

DEQ coordinates review by

- Department of Historic Resources
- Department of Wildlife Resources
- Department of Conservation and Recreation

To ensure potential impacts to
natural or cultural resources are
avoided or mitigated.

Project Approvals Timeline

Approximately
2 years

Interconnection Agreement for utility-scale facility by June, Interconnection Agreement for community solar by July

Engineered Site Plan Review and Approval by City of Staunton (including erosion and sediment control, stormwater management) (4-6 months)

DEQ Permit by Rule (6-12 months)

Storm Water Management Permit from DEQ (6 months with some overlap with PBR)

Construction Permit

Thank you

Questions?

Solar and Property Values Studies

- CohnReznick 6-10-2020
 - Eight facilities of various sizes in six states
 - No evidence of negative impact on adjoining property values based on sales prices and conditions
- Kaila and Associates – 6-16-2020 Augusta County, VA
 - Single proposed facility
 - Based on appraiser and county staff interviews
 - No impact on property values adjoining proposed facility
- NorthStar 9-16-2020
 - Analysis of sales adjoining (200') from existing 13 MW facility
 - No impact on property values

Property Values?

New Study by Lawrence Berkeley
National Laboratory
Largest Analysis of the Question
to date

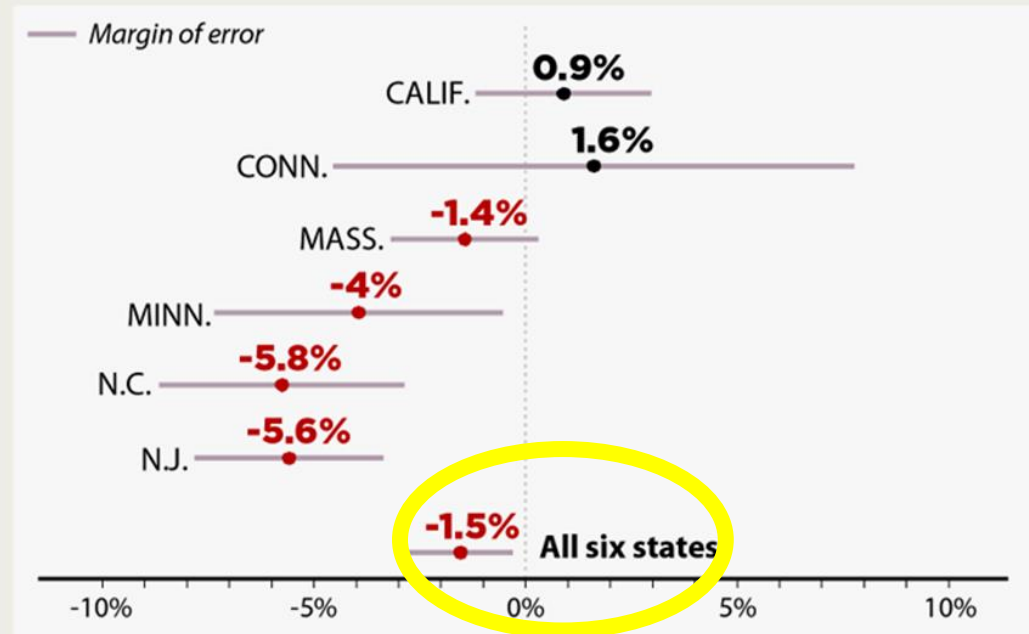
- Sale prices of 1.8M homes near utility-scale solar facilities analyzed in six states, five of which are the top five states in the U.S. for number of solar installations of 1 MW or larger
- Does not take into effect financial benefits from solar and tax reduction

Solar's Effect on Home Resale Prices

A new study looked at resale values of houses near utility-scale solar plants and found the properties closest to a solar project sell for slightly less than properties that are a little farther away. The research covered six states, only three of which (Minnesota, North Carolina and New Jersey) showed pricing effects outside of the study's margin of error.

HOME RESALE VALUES

Price difference between half-mile and 2-to-4 mile proximity of utility-scale solar plant



NOTE: Data is gathered from 1.8 million home resale transactions between 2003-2020.

SOURCE: Lawrence Berkeley National Laboratory

PAUL HORN / Inside Climate News

Uses Permitted in I-1 Industrial

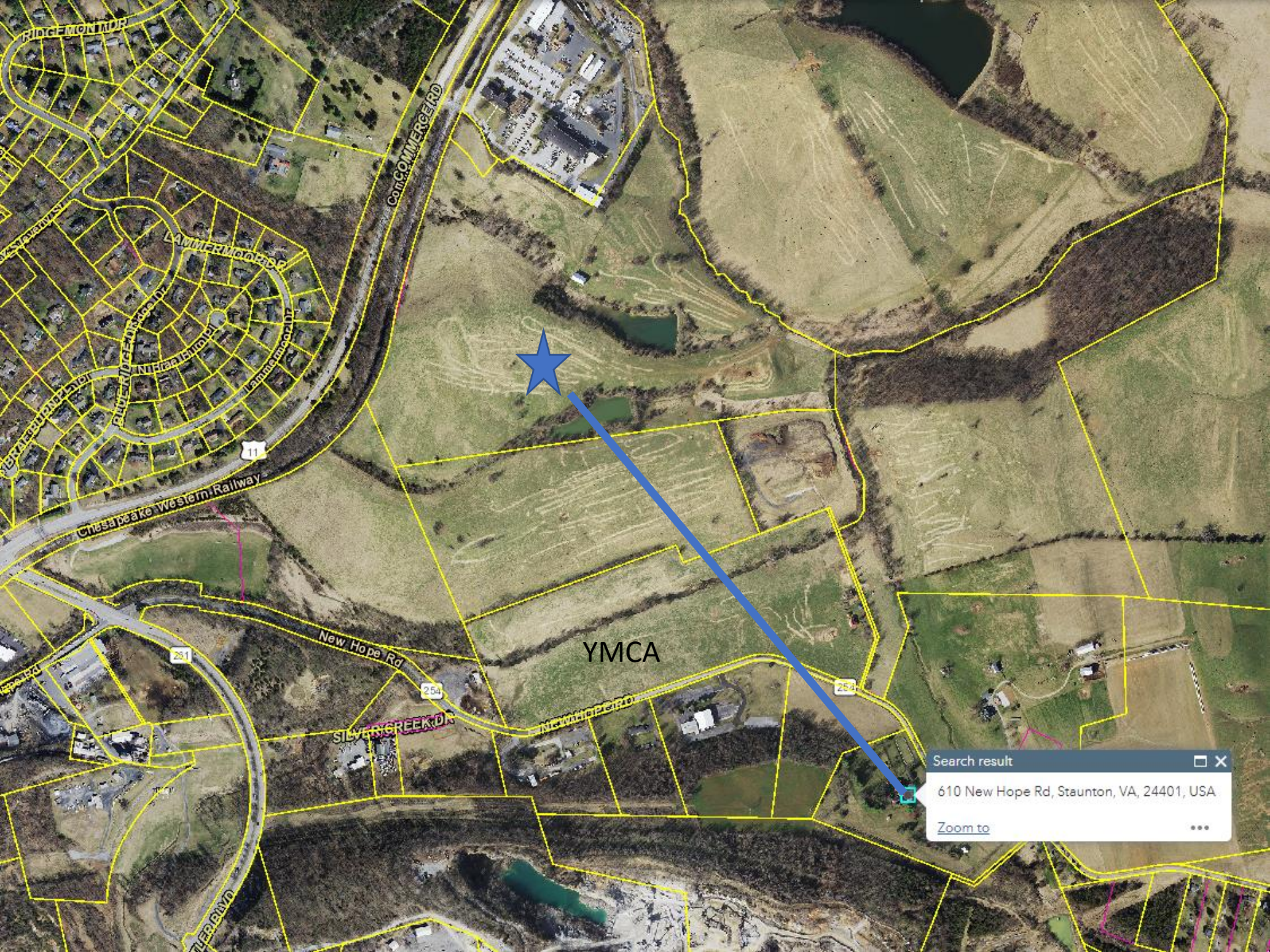
(if not in Agricultural-Forestal District)

- Retail/service use directly serving industrial plants
- No residential uses permitted
- Building material sales yard, lumber yard, rock/sand/gravel sales
- Contractor's equipment storage yard or plant, equipment rentals
- Freighting or trucking yard or terminal
- Outdoor storage of coal, coke, building materials, sand, gravel, stone, lumber, construction contractor's equipment and supplies
- Public utility service yard or electrical receiving or transforming station
- Tire recapping or retreading
- Adult Businesses

610 New Hope Road

Over 2,000' to closest panels





YMCA

Search result ☐ ☐

610 New Hope Rd, Staunton, VA, 24401, USA

[Zoom to](#) ...

610 New Hope Road (Dixon)



Road Bends before Project Visibility



Limits of Ground Disturbance



Legend

-  Project Study Limits - 95.1 Acres
-  Limits of Disturbance - 62 Acres
-  Conceptual Stormwater Basins
-  Conceptual Stormwater Diversion Ditch
-  Point of Interconnection
-  Fence

RECOMMENDED BUFFER PLANT LIST

SUPPLEMENTAL PLANTING: EVERGREEN TREES

BOTANICAL NAME / COMMON NAME

ILEX OPACA 'GREENLEAF' / AMERICAN HOLLY

ILEX X 'NELLIE R. STEVENS' / NELLIE STEVENS HOLLY

JUNIPERUS VIRGINIANA 'BRODIE' / EASTERN RED CEDAR

MYRICA CERIFERA / SOUTHERN WAX MYRTLE

PINUS VIRGINIANA / VIRGINIA PINE

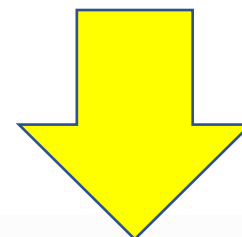
THUJA OCCIDENTALIS 'TECHNY' / ARBORVITAE

Valley Conservation Council and Headwaters Soil and Water Conservation District Easement





Better Business Bureau®



Business Profile

Oikos Roofing and Siding, Inc.

Commercial Roofing



Oikos Roofing and Siding, Inc.

Contact Information

11011 Richardson Rd
Ashland, VA 23005-3418

[Visit Website](#)

[\(804\) 262-7260](tel:(804)262-7260)

BBB Rating & Accreditation



ACCREDITED
BUSINESS

A+

Accredited Since: 4/1/2011

Years in Business: 19

Customer Reviews are not used in the
calculation of BBB Rating

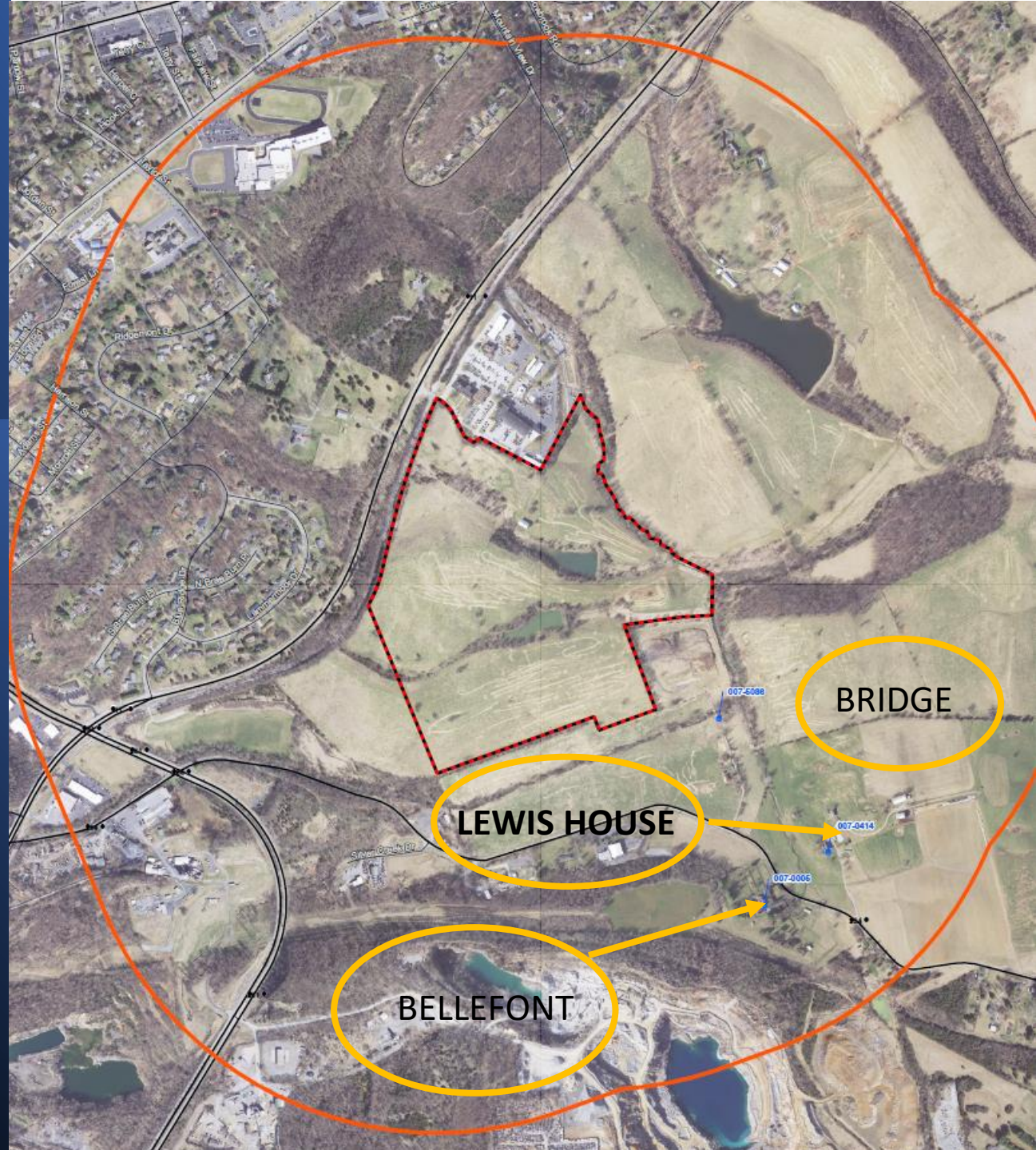
[Overview of BBB Rating](#)

Oikos Roofing and Siding, Inc. has maintained 12 years 1 month of continuous BBB Accreditation. BBB has determined that Oikos Roofing and Siding, Inc. meets [BBB accreditation standards](#), which include a commitment to make a good faith effort to resolve any consumer complaints. BBB Accredited Businesses pay a fee for accreditation review/monitoring and for support of BBB services to the public.



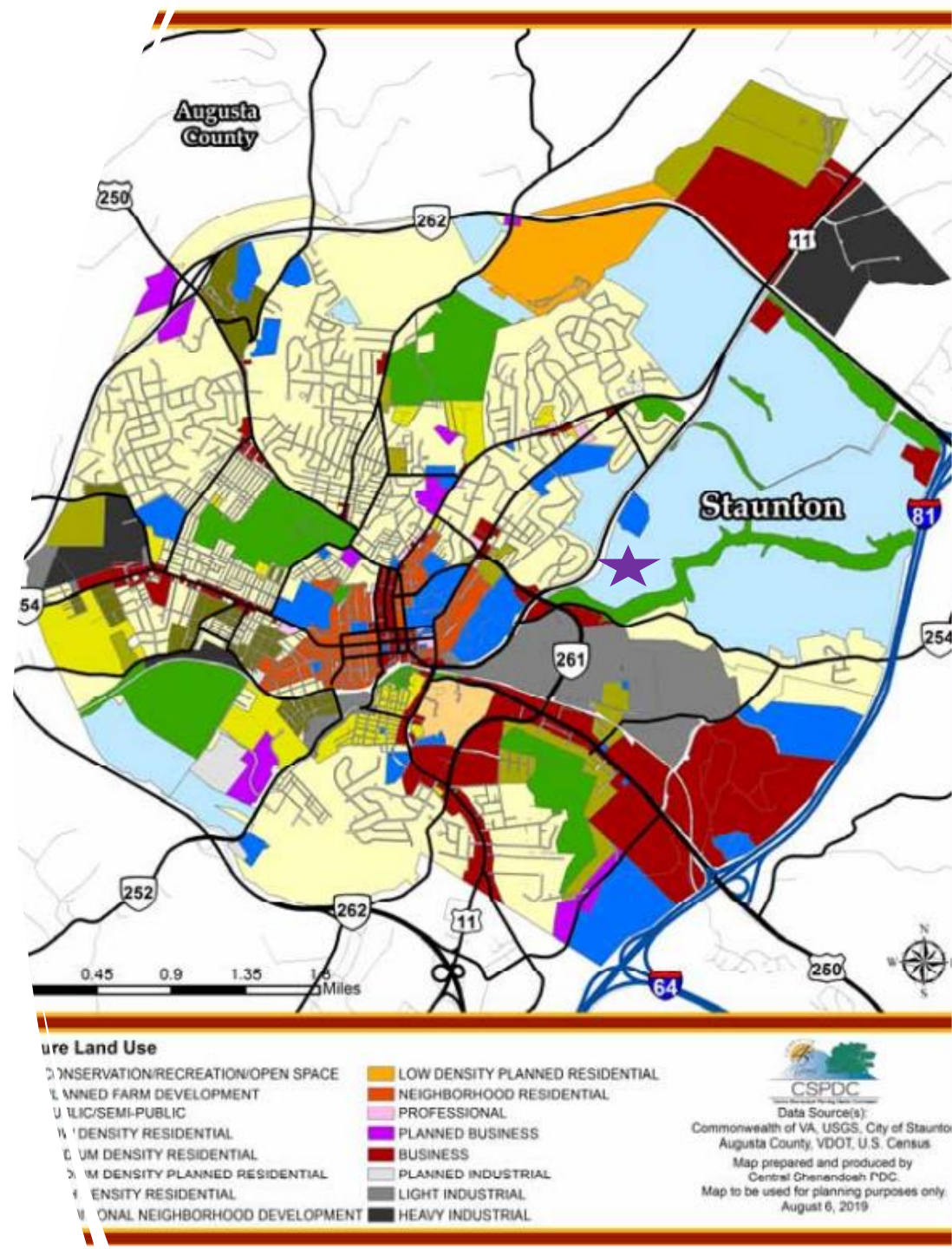
Collection Station for 20 MW Solar Facility in Stony Creek, VA

Cultural and Historical Resources Review in Area of Potential Effect



2019 Comprehensive Plan Future Land Use Designation: Planned Farm Development

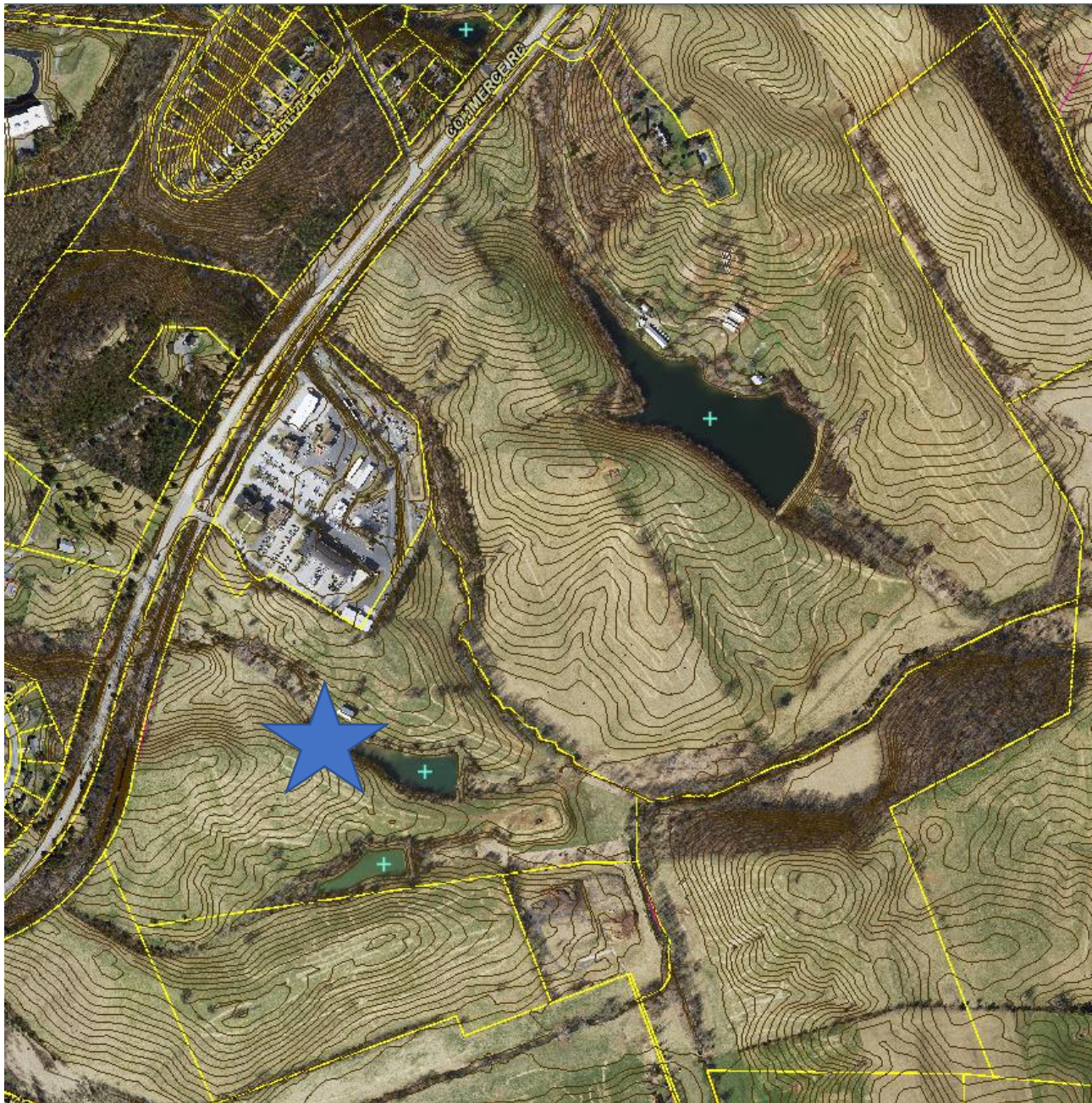
- Currently in Bell's Lane Agricultural-Forestal District, which is a **zoning overlay**
- **Opportunity to remove property from the district every 10 years or by landowner request**
- **Underlying zoning (I-1) still applies**



Solar Energy and Birds

- Audubon Society supports photovoltaic (PV) energy, not concentrated solar power (CSP)
- CSP can be Concentrated Thermal or Power Tower, which concentrate rays
- PV projects do not disrupt habitats and save birds by reducing carbon dioxide emissions

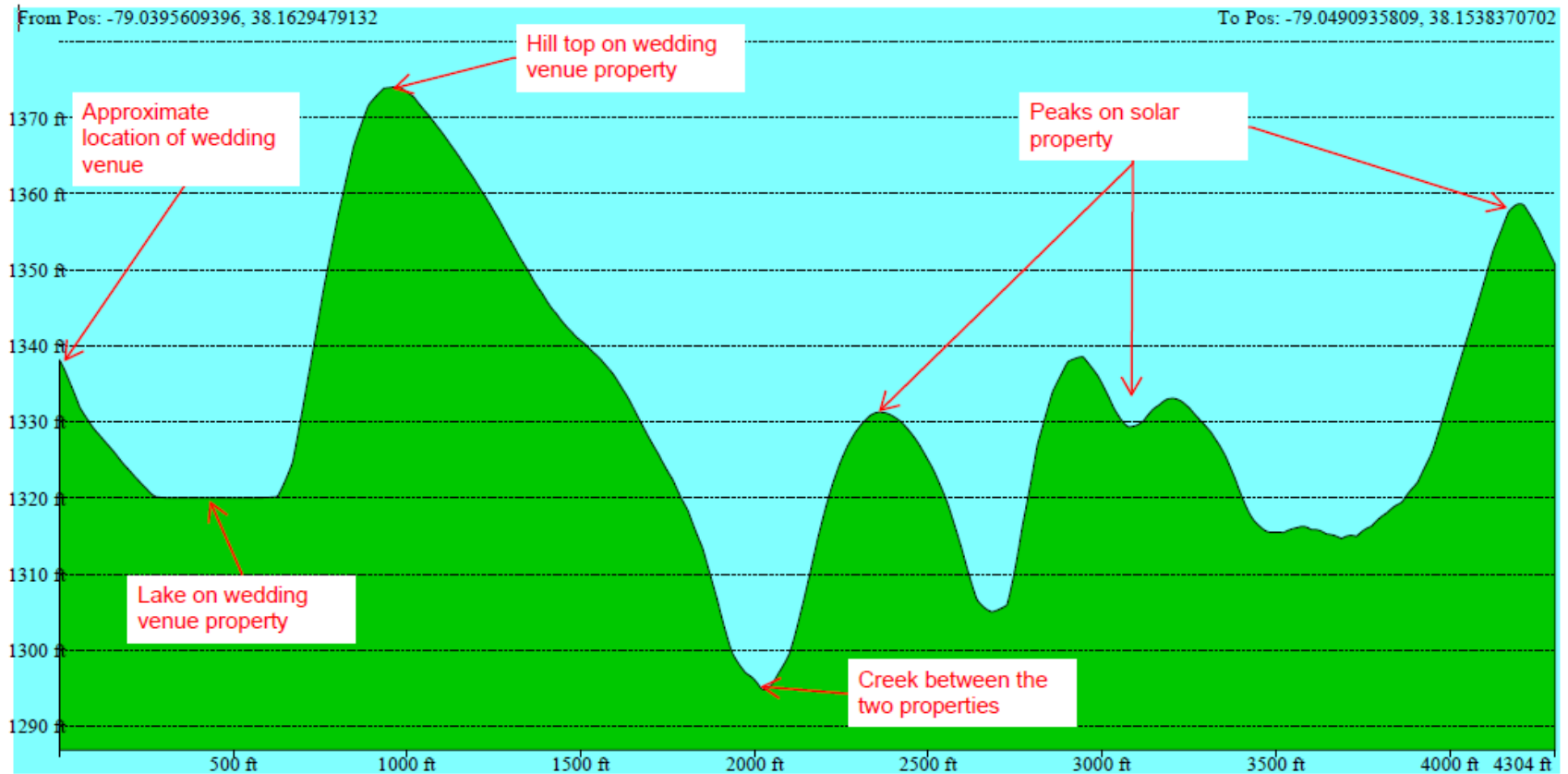
VIEW TO NORTH (GAIE LEA)







Elevation Profile from Wedding Venue



Untaxed Value of Industrial Land

Table 11-3- Vacant / Undeveloped Land By Zoning Classification

City of Staunton - 2018

Zoning District and Description	Acres of Vacant/ Undeveloped Land	Percentage of Total Vacant/ Undeveloped Land
R-1 Low Density Residential	946.4	27%
R-2 Low Density Residential	550.6	15%
R-3 Medium Density Residential	415	12%
R-4 High Density Residential	325.8	9%
HE-1 Higher Education	12	0%
P-1 Professional	27.6	1%
TND-I Traditional Neighborhood Development Infill	0	0%
B-1 Local Business	164.7	5%
B-2 General Business	361	10%
B-3 Planned Business	59.7	2%
I-1 Light Industrial	441.3	12%
I-2 Heavy Industrial	216.3	6%
I-3 Planned Industrial	0.4	0%
Split Zoned Land	36.5	1%
Total	3557.3	100%

Community Notice

- ¼ mile radius
- 76 addresses

