

CITY OF THOMASVILLE COUNCIL MEETING AGENDA

Monday, October 16, 2023 – 6:00 P.M.
20 Stadium Drive, Thomasville, NC 27360

Mayor Raleigh York, Jr. ~ Mayor *Pro Tem* Hunter Thrift

1. Call to Order
2. Additions and Deletions to the Agenda
3. Recognitions and Presentations
 - A. National Breast Cancer Awareness Month (October)
 - B. Domestic Violence Awareness Month (October)
4. Public Forum Please sign up in person at the podium to speak for two minutes on any topic. *The two-minute time limit will be enforced.*
5. Public Hearings
 - A. Request for Rezoning: (Z-23-06)

Applicant/Owner:	William & Martha Anderson
Location:	Lambeth Rd.
Parcel Number:	16348C0000410
Existing Zoning:	R-10 Low Density Residential
Proposed Zoning:	C-2 Highway Commercial

The Planning Board held a public hearing on September 26, 2023 and voted 5-1 to approve this request because:

- This area is adjacent to 109 – one of the major highways coming into Thomasville.
- Changing to a C-2 would promote retailing and personal services for residents and non-residents.
- The 2035 Comprehensive Plan encourages mixed-use and commercial use along 109.
- Find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

- B. Request for Rezoning (Z-23-07) for Solar Farm at Baptist Children's Home of NC

Applicant:	Kayla Marshall
Owner:	Baptist Children's Homes of North Carolina, Inc. (c/o Sam Barefoot)
Location:	Farmview Road & Baptist Children's Home Road
Parcel #s:	1633400000029, 16106000B0001, 1633800000007

& 1615800080001

Existing Zoning:	R-10, R-8, M-2	Proposed Zoning:	CZ-M-1
Conditional Use Permit:	Solar Energy		

The Planning Board held a public hearing on September 26, 2023 and voted 6-0 to approve this request because:

- The rural nature of the land to be used for the Solar Farm and the land surrounding the property provide a significant buffer for adjoining properties. (As long as it will include Opaque fencing, where the project abuts residential properties and no other buffers exist).
- Analysis shows no negative impact to property values where the Solar Farm abut nearby properties.
- The Solar Farm is a compatible use for the property owned by Baptist Children's Home.
- Find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

6. Consent Agenda

- A. Consideration of Approval of Minutes – Briefing Meeting on 09/11/23
- B. Consideration of Approval of Minutes – Council Meeting on 09/18/23
- C. Consideration of ARPA Grant Project Ordinance
- D. Consideration of Grant Project Ordinance: Assistance to Firefighters Grant
- E. Consideration of Budget Amendment P4-01
- F. Consideration of Revised Grant Project Ordinance: Golden Leaf Project M – Nucor
- G. Consideration of Grant Project Ordinance: Governor's Highway Safety Program
- H. Consideration of Resolution in Support of Operation Green Light

7. Regular Agenda

- A. Consideration of Amendments to City Ordinances Chapter 54, Article 1:
 - Section 54-12. Soliciting and Begging
 - Section 54-16. Camping on Public and Private Property
 - Section 54-17. Urinating and Defecating on Public Property
- B. Consideration of Replacement of Article II. Noise Ordinance

8. Committee Reports and Appointments, Mayor's Report and Appointments, City Manager's Report, City Attorney's Report

9. Additional Items

10. Adjournment

PROCLAMATION



National Breast Cancer Awareness Month



WHEREAS, breast cancer touches every corner of the United States. Hundreds of thousands of Americans will be diagnosed with breast cancer and tens of thousands will die from it; and

WHEREAS, about 1 in 8 women born today in the United States will get breast cancer at some point in their lifetime, and approximately 2,000 men are diagnosed with breast cancer each year; and

WHEREAS, we show our support for every individual and every family struggling with breast cancer and we pause to remember those we have lost; and

WHEREAS, Breast Cancer Awareness Month in October is a chance to raise awareness about the importance of early detection of breast cancer by getting a mammogram and encouraging our community, organizations, churches, families and individuals to get involved; and

WHEREAS, we salute the women and men who dedicate themselves to prevention, detection and treatment as we observe Breast Cancer Awareness Month.

NOW, THEREFORE BE IT RESOLVED that the City Council of the City of Thomasville hereby proclaims October 2023 as

NATIONAL BREAST CANCER AWARENESS MONTH

in Thomasville and encourages all citizens to join in activities that will increase awareness of what we can do to prevent breast cancer.

Adopted this the 16th day of October, 2023.

Raleigh York, Jr.
Mayor

Attest:

Wendy S. Martin
City Clerk

PROCLAMATION

DECLARING OCTOBER AS DOMESTIC VIOLENCE AWARENESS MONTH

WHEREAS, domestic violence is a serious crime that affects people of all races, ages, genders, and income levels; and

WHEREAS, domestic violence is widespread and affects over four million Americans each year; and

WHEREAS, on average, every 9 seconds there is a domestic assault reported in the United States; and

WHEREAS, children that grow up in violent homes are believed to be abused and neglected at a rate higher than the national average; and

WHEREAS, domestic violence costs the nation billions of dollars annually in medical expenses, police and court costs, shelters, foster care, sick leave, absenteeism and non-productivity; and

WHEREAS, only a coordinated community effort will put a stop to this heinous crime; and

WHEREAS, Domestic Violence Awareness Month provides an excellent opportunity for citizens to learn more about preventing domestic violence and to show support for the numerous organizations and individuals who provide critical advocacy, services, and assistance to victims.

NOW, THEREFORE, Mayor Raleigh York, Jr. and the Thomasville City Council hereby proclaim that the month of October is **Domestic Violence Awareness Month** and urge the citizens of Thomasville to work together to eliminate domestic violence from our community.

IN WITNESS WHEREOF, I have hereunto set my hand and cause the Seal of the City of Thomasville to be affixed on this 16th day of October, 2023.

Raleigh York, Jr.
Mayor

Attest:

Wendy S. Martin
City Clerk

Agenda Item Cover Sheet

Admin. Use Only:

Committee Name

Public Safety

--

Committee Date
And Agenda #

10.3.23

Psafe3

Item Name:

Zoning Case for undeveloped Lot Case Number Z-23-06 on Lambeth Road

Description of Item:

Zoning Admendment - Lambeth Road from R-10 (Low Density Residential) to C-2 (Highway Commercial)

Back-Up Materials:

Supporting Documents

Council Action Requested:

Discussion

Requested By:

Department:

To: Michael Brandt, City Manager
From: Chuck George, Planning Director
Date: September 27, 2023
Re: City Council Meeting, October 16, 2023

The following items has been before the Board of Planning & Adjustment on Tuesday, September 26, 2023.

Request for Rezoning (Z-23-06)
Applicant/Owner: William & Martha Anderson
Location: Lambeth Rd.
Parcel Number: 16348C0000410
Existing Zoning: R-10 Low Density Residential
Proposed Zoning: C-2 Highway Commercial

A public hearing was conducted, and the board voted 5-1 to approve the request for the following reasons:

- This area is adjacent to 109 – one of the major highways coming into Thomasville.
- Changing to a C-2 would promote retailing and personal services for residents and non-residents.
- The 2035 Comprehensive Plan encourages mixed-use and commercial use along 109.
- Find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

**AN ORDINANCE AMENDING THE CODE OF ORDINANCES
OF THE CITY OF THOMASVILLE, NORTH CAROLINA**

BE IT ORDAINED, that the Code of Ordinances of the City of Thomasville be amended in the following respects:

SECTION 1. That the Official Zoning Map of the City of Thomasville, North Carolina as set out in Appendix A (Zoning), Article IV (Establishment of Districts), Section 2 (Location and Boundaries of Districts) be amended by changing certain property from R-10 (Low Density Residential) Zoning District to C-2 (Highway Commercial) Zoning District as shown on the attached map (Z-23-06).

SECTION 2. That this Ordinance shall become effective upon its adoption by the City Council of the City of Thomasville.

ADOPTED this the _____ day of _____, _____, by the City Council of the City of Thomasville.

Raleigh York, Jr., Mayor

ATTEST:

Wendy S. Martin, City Clerk



The Board of Planning and Adjustment of the City of Thomasville has approved
by a 5 to 1 vote the rezoning request (Z-23-06).

Applicant/Owner: William F & Martha Anderson

Location: Lambeth Road

Parcel Number: 16348C0000410

Existing Zoning: R-10 Low Density Residential

Proposed Zoning: C-2 Highway Commercial

9 / 26 / 23

Date

Jane Hill

Jane Hill, Chairperson

MOTION TO REZONE INCLUDING NCGS 160D-604(d); -605(a); -701 LANGUAGE

I move to rezone the property from R-10 to C-2
for the following reasons:

This area is adjacent to 109 - one of the major highways coming into Thomasville.

Changing to a C-2 would promote retailing and personal services for residents and non-residents.

The 2035 Comprehensive Plan encourages mixed-use and commercial use along NC 109.

Further, I move that the City Council find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

MOTION TO DENY INCLUDING NCGS 160D-604(d); -605(a); -701 LANGUAGE

I move to deny the rezoning of the property from _____ to _____
_____ for the following reasons:

Further, I move that the City Council find that this rezoning is unreasonable and not in the public interest due to its inconsistency with the comprehensive plan and, as a result, is a hindrance to the goals and objectives of the comprehensive plan.

City of Thomasville Planning & Zoning
Rezoning Case # Z-23-06
Staff Report: Chuck George, Director

Applicant/Owner: William F & Martha Anderson

Location: Lambeth Road

Tax Parcel ID Number: 16348C0000410

Request: Rezoning from R-10 to C-2

Requested Zoning District Characteristics:

The current zoning is R-10 Low Density Residential – This district is defined as low density residential areas of mostly single-family dwellings plus open areas where similar residential development will likely occur. The uses permitted in this district are designed to stabilize and protect the essential characteristics of the area and to prohibit all activities of a commercial nature except certain home occupations controlled by specific limitations.

The proposed zoning is C-2 Highway Commercial - This district is defined as certain areas that are primarily designed for citizens using the major highways that run through or around the city. The district is customarily located along the major arterial highways. This district may also provide retailing and personal services for the benefit of residents in nearby areas and nonresidents. Included also are certain functions, such as warehousing, that are compatible with the primary uses.

Site Information

Size of Parcel for Flag Lot	Approx. 2 acres		
Existing Land Use	R-10 Low density residential		
Proposed Land Use	C-2 Highway commercial		
Surrounding Property Zoning and Use	Direction	Zoning	Use
	N	R-10	Residential
	E	R-10	Residential
	S	R-10	Residential
	W	R-10	Residential
Physical Characteristics	Undeveloped land		
Historic Properties	NA		

History of Denied Cases:

N/A

Compatibility with Adopted Plans

The 2035 Land Development Plan indicates the areas as Development and Re-development area (#3), NC 109 South Commercial & Mixed-use. Encourage mixed-use and commercial along NC 109 and Liberty Drive south of I-85. Medium and high-density residential. Discourage commercial expansion into existing residential areas that do not have direct access to NC 109 or Liberty Drive south of I-85.

Staff Comment

Approximately 2 acres of undeveloped land adjacent to residential properties and NC HWY 109. The 2035 Comprehensive Plan encourages mixed-use and commercial along NC 109. The required buffer between commercial and residential property will suffice to protect existing property owners. NCDOT may require road improvements for commercial development.

Attachments

- Rezoning Application
- Legal description
- Zoning map
- Davidson County GIS,
- 2035 Land use map
- Permitted use table
- Consistency statement to approve or deny request

Public Notice

<i>Notification</i>	<i>Planning/Adjustment Board</i>	<i>City Council</i>
Public Hearing Notice	9/14/23 & 9/21/23	10/5/23 & 10/12/23
Property Posted	9/14/23	10/5/23
Notification Letter Sent	9/14/23	10/5/23

Zoning Board Recommendation

A public hearing was conducted, and the board voted 5-1 to approve the request for the following reasons:

- This area is adjacent to 109 – one of the major highways coming into Thomasville.
- Changing to a C-2 would promote retailing and personal services for residents and non-residents.
- The 2035 Comprehensive Plan encourages mixed-use and commercial use along 109.
- Find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

CITY OF THOMASVILLE

Planning & Zoning Department

PO BOX 368 • THOMASVILLE, NC 27360 • (336) 475-4255

REZONING APPLICATION

File No. **Z-** 23-06

Date 8-31-2023

Applicant William F Anderson & Martha Anderson

Phone 336-309-8850

Applicant's Address P.O. Box 1206 Thomasville NC 27361

Property Owner same as above

Phone 336-309-8850

Property Owner's Address same as above

Existing Zoning R-10

Requested Zoning C2

Address or Location of Property to be Rezoned Lambeth Rd, Thomasville NC, Vacant Lot

Description of Property Parcel # 16348C0000410 Deed book 0579 Pg: 0926

Fee Received \$ 500

Map No **16-** 348C0000410

(PLEASE MAKE CHECK PAYABLE TO "CITY OF THOMASVILLE")

Applicant's
Signature



Owner's
Signature



Planning Board Hearing Date 9-26-23

Planning Board Action

☒

Approved

☐

Denied

Vote of: 5-1

City Council Hearing Date

10-16-23

City Council Action

☐

Approved

☐

Denied

Vote of: _____

Signed _____

Secretary to Planning Board

Mailed To William Frank Anderson, Route 3, Box 487, Thomasville, N. C. 27360

WARRANTY DEED-Form WD-502

Printed and for sale by James Williams & Co., Inc., Raleigh, N. C.

STATE OF NORTH CAROLINA, Davidson County.
 THIS DEED, Made this 18th day of February, 1980, by and between Guy Hughes and his wife Annie Lee Hughes, Faye H. Loflin and her husband Lespy H. Loflin; Eva H. Lewallen and her husband Fred Lewallen and Max Hughes, unmarried, and Guy Hughes, Executor of the Estate of Mamie Hughes of Davidson

and state of North Carolina, hereinafter called Grantor, and

William Frank Anderson and his wife Martha Sue Anderson

of Davidson County and State of North Carolina, hereinafter called Grantee.
 WITNESSETH That the Grantor, for and in consideration of the sum of Ten (\$1.00) and other good and valuable considerations to him in hand paid by the Grantee, the receipt whereof is hereby acknowledged, has given, granted, bargained, sold, aliened, conveyed, confirmed, released, quitclaimed, assigned, transferred, and by these presents does give, grant, bargain, sell, convey and confirm unto the Grantee, his heirs and or successors and assigns, premises situate in Th. masville Township, Davidson County, North Carolina described as follows:

Being Lots numbered 410 and 411 in CEDAR LODGE PARK No. 2, or plat of land formerly owned by Lambeth Furniture Company and known as Cedar Lodge Park as surveyed and platted by June A. Johnson, plat of which is recorded in the Office of the Register of Deeds for Davidson County, N.C., in plat book 3, at page 25, to which reference is hereby made for a more perfect and complete description by metes and bounds.

Subject to those restrictive covenants appearing of record.

See deed book 162, page 359.

Grantors being sole and surviving heirs of Mamie Hughes.
 See Estate File 80 E 53, Office of the Clerk of Superior Court for Davidson County, N.C.

FILED
 BOOK 529 PAGE 926

FEB 22 10 54 AM '80

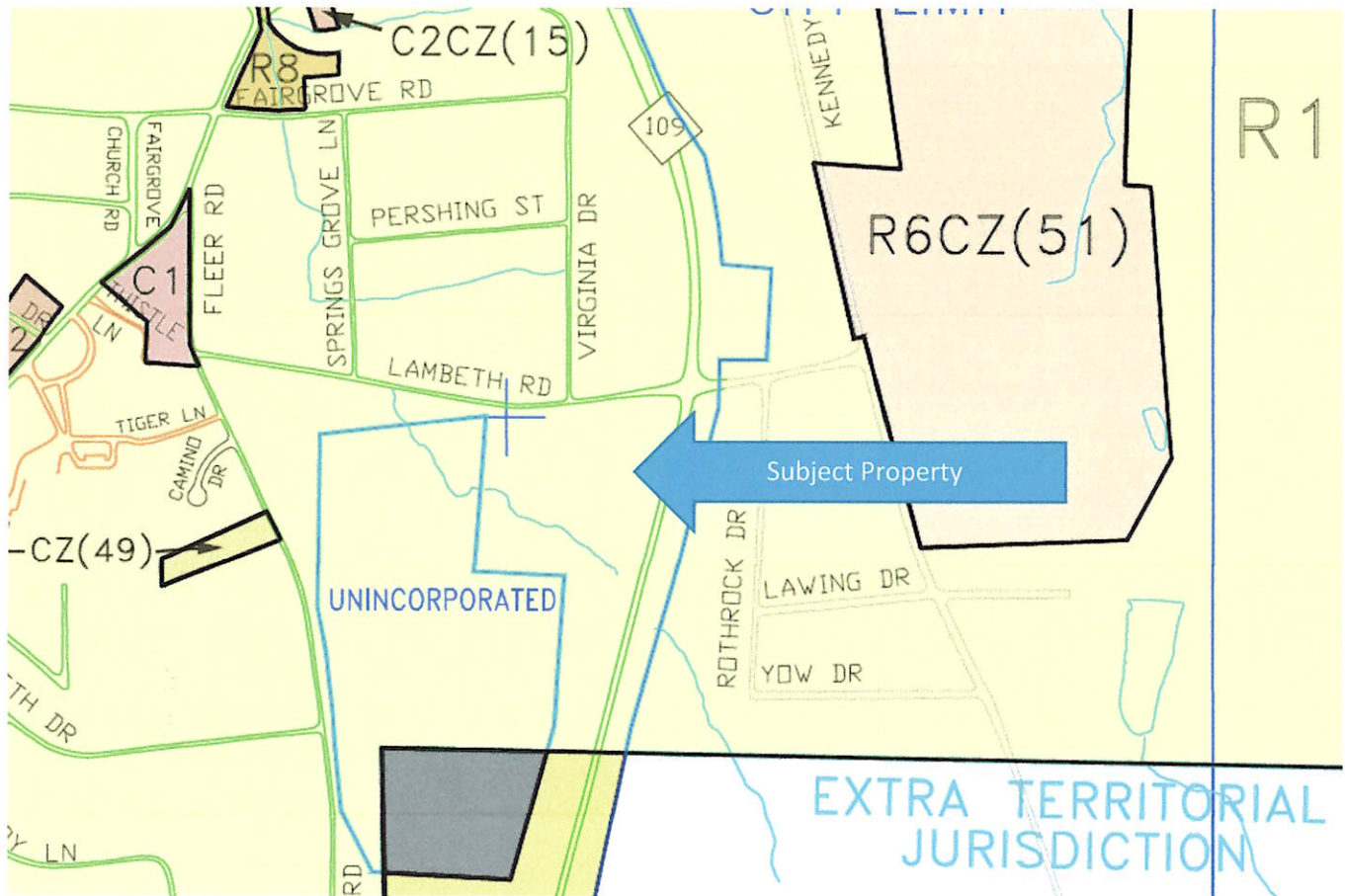
RECORDED BY CLERK OF SUPERIOR COURT
 DAVIDSON COUNTY, N.C.

5.00
 6.00 ST



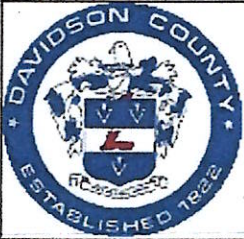
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 2/28/80

Lambeth Road
Parcel Number: 16348C0000410
Zoning: R-10 Low Density Residential

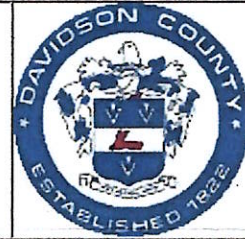


Zoning Map colors index:

Brown – R-6 High Density Residential
Orange – R-8 Medium Density Residential
Yellow – R-10 Low Density Residential
Dark Orange – R-10M Mobile Home Park
Light Green – O-I Office and Institutional
Pink – C-2 Highway Commercial District
Red – C-4 Central Commercial District
Light Blue – M-1 Light Industrial District
Purple – M-2 Heavy Industrial District



Davidson County GIS



Parcel Number : 16348C0000410
Pin Id : 6786-01-25-4321
Owner : ANDERSON WILLIAM F
ANDERSON MARTHA
PO BOX 1206
THOMASVILLE NC 27361

Property Address: LAMBETH RD
Township: 16
Building Value:

Land Units: 1 LT
Deed Book: 0579 Pg: 0926

Deed Date: 02/22/1980

Account Number: 218015

Exempt Code:
\$0 Other Building Value: \$0

NC 109 SOUTH COMMERCIAL & MIXED USE (#3)

Summary: This development area has seen a lot of activity over the last 10 years. Both vacant and parcels with structures on site have been developed and re-developed into primarily highway commercial retail and restaurant uses. This area is located along Interstate 85 and is a southern gateway to Thomasville, as well as a “rest area” for interstate travel. A mix of large lot commercial uses is located closer to the I-85 exit. Southern portions of the small area have also seen residential growth pressure, but sewer service is not anticipated to be provided outside current city limits, limiting the density of this residential development. Northern portions of the small area contain a mix of light industrial and commercial retail uses.



Photo 13: ABC Store Along NC 109 South

Encourage: Mixed use and commercial along NC 109 and Liberty Drive south of I-85. Medium and high density residential.

Discourage: Commercial expansion into existing residential areas that do not have direct access to NC 109 or Liberty Drive south of I-85.

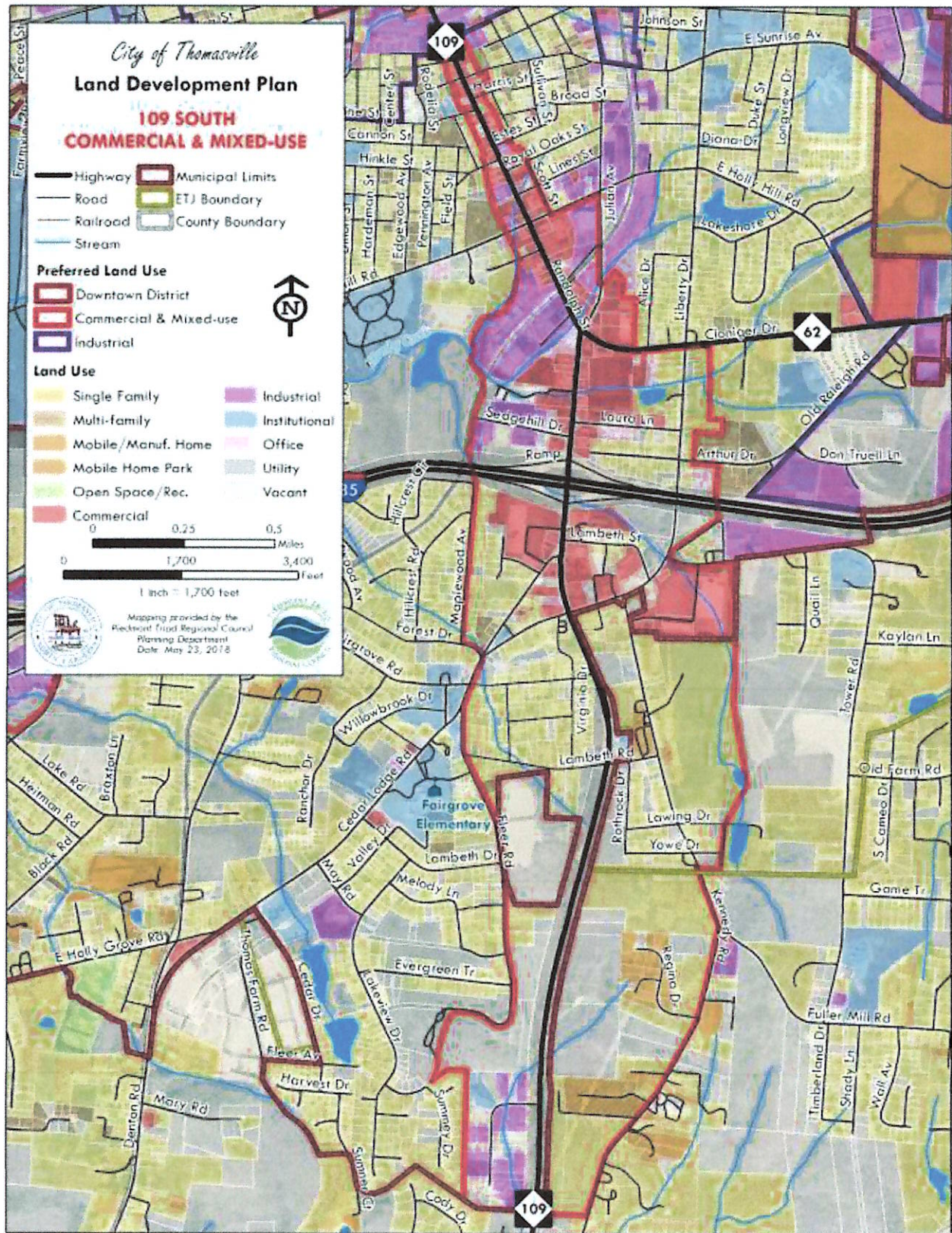
Lot Sizes: Continue existing lot sizes.

Pedestrian and Bicycling Friendliness: Require sidewalk construction with new commercial, medium and high density residential development. Insure that safe and accessible pedestrian and bicycle access is provided within the private rights of way of new commercial development and re-developing commercial areas. Connect parks and open space areas with multi-use trails to residential and commercial uses.

Other Criteria:

- Preserve the scenic look and tree buffer of NC 109 south of the existing commercial area.
- Buffer adjacent residential land uses from commercial areas through vegetative screening and berms as new development occurs.
- Work with the Parks and Recreation department to locate a public park for community use.

Area	Square Miles	1.66
	Acres	1,060.21
Parcels and Size	# of Parcels	560
	Parcel Acres	885.59
	ROW Acres	174.62
	Mean Parcel Size	1.58
	Median Parcel Size	0.65
	Range	0.01 to 63.85
	Top Third Mean Size	3.79
	Top Third Range	0.77 to 63.85
	Top Third Sum	708.33
	Mid Third Mean Size	0.65
	Mid Third Range	0.45 to 0.89
	Mid Third Sum	121.33
	Bottom Third Mean Size	0.3
	Bottom Third Range	0.01 to 0.45
	Bottom Third Sum	55.94
Zoning	C1	10.54
	C2	84.82
	C3	96.99
	M1	104.76
	M2	1.49
	OI	6.11
	PDH (County)	13.78
	R10	390.65
	R8	6.14
	RA3 (County)	170.32
	TOTAL	885.60
Land Use	Commercial	163.22
	Industrial	73.30
	Institutional	7.66
	MF	4.56
	MH	19.40
	MHP	19.98
	Office	13.36
	OS	0.83
	SF	344.13
	Vacant	239.16
	TOTAL	885.60





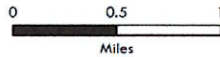
City of Thomasville

Land Development Plan

DEVELOPMENT & RE-DEVELOPMENT AREAS



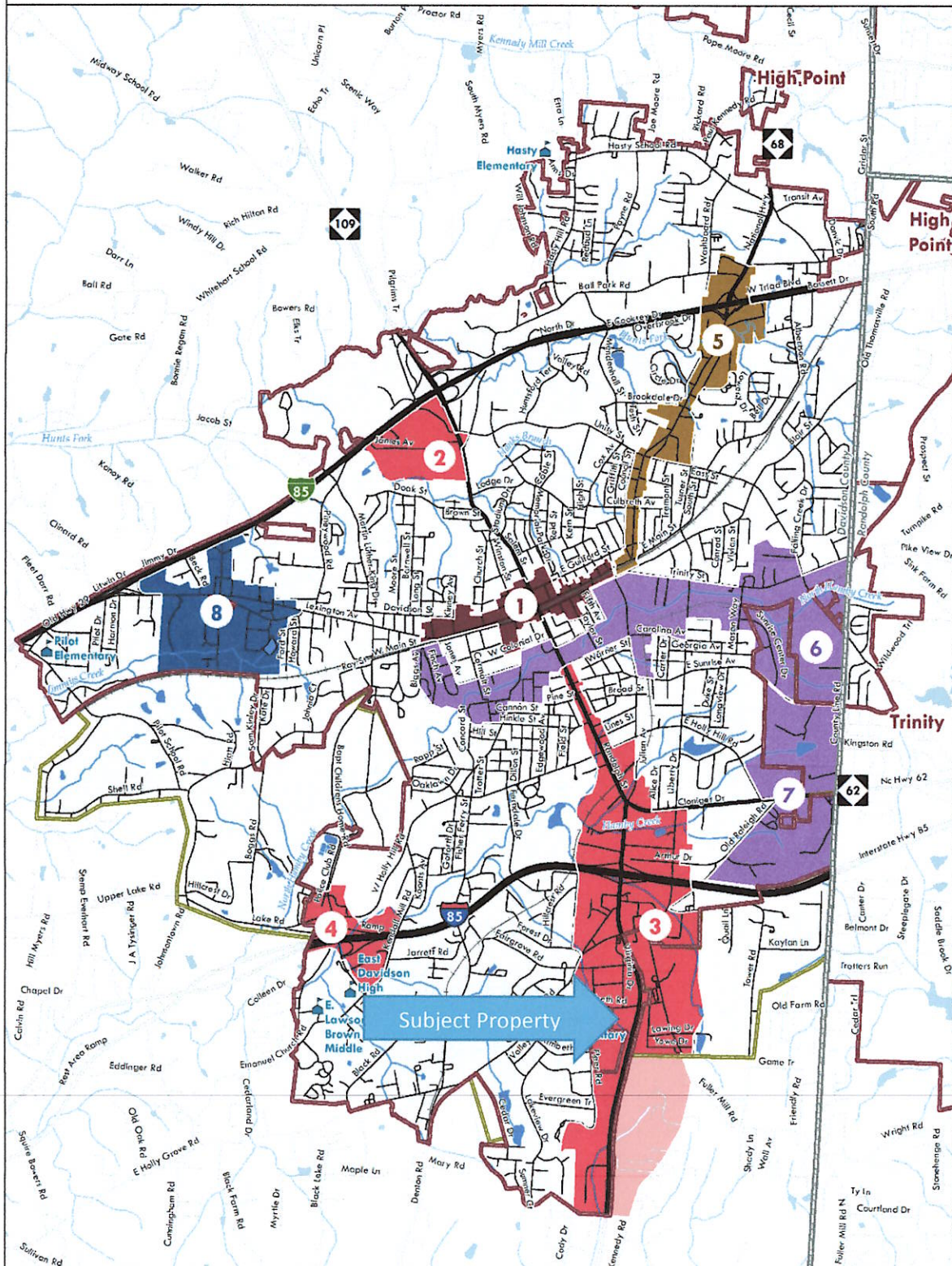
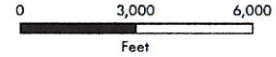
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|------------|--------------------|--|-----------------------|
| — Highway | ▭ Municipal Limits | ▭ Downtown Business District | ▭ Industrial |
| — Road | ▭ ETJ Boundary | ▭ Commercial & Mixed-use | ▭ Medical & Mixed-use |
| — Railroad | ▭ County Boundary | ▭ National Highway Commercial Corridor | |
| — Stream | | | |



Mapping provided by the
Piedmont Triad Regional Council
Planning Department
Date: May 14, 2018



1 inch = 3,000 feet



MOTION TO REZONE INCLUDING NCGS 160-383 LANGUAGE

I move to rezone the property from _____ to _____
for the following reasons:

1. _____

2. _____
_____ and
3. _____

Further, I move that the City Council find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

MOTION TO DENY THE REZONING INCLUDING NCGS 160-383 LANGUAGE

I move to deny the rezoning of the property from _____ to _____
_____ for the following reasons:

1. _____

2. _____
_____ and
3. _____

Further, I move that the City Council find that this rezoning is unreasonable and not in the public interest due to its inconsistency with the comprehensive plan and, as a result, is a hindrance to the goals and objectives of the comprehensive plan.

Agenda Item Cover Sheet

Admin. Use Only:

Committee Name

Public Safety

--

Committee Date
And Agenda #

10.3.23

Psafe4

Item Name:

Zoning Case Z-23-07 for Solar Farm at Baptist Children's Home of NC

Description of Item:

Zoning Amendment - Farmview Road and Baptist Children's Home Road from R-8 (Medium Density Residential), R-10 (Low Density Residential), M-2 (Heavy Industrial) to CZ-M-1 (Conditional Zoning Light Industrial), Special Use Permit: Solar Farm

Back-Up Materials:

Supporting documents

Council Action Requested:

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Requested By:

Department:

To: Michael Brandt, City Manager
From: Chuck George, Planning Director
Date: September 27, 2023
Re: City Council Meeting, October 16, 2023

The following items has been before the Board of Planning & Adjustment on Tuesday, September 26, 2023.

Request for Rezoning (Z-23-07)
Applicant: Kayla Marshall
Owner: Baptist Children's Homes of North Carolina, Inc. (c/o Sam Barefoot)
Location: Farmview Road & Baptist Children's Home Road
Parcel Number: 1633400000029, 16106000B0001, 1633800000007, 1615800080001
Existing Zoning: R-10, R-8, M-2
Proposed Zoning: CZ-M-1
Conditional Use Permit: Solar Energy

A public hearing was conducted, and the board voted 6-0 to approve the request for the following reasons:

- The rural nature of the land to be used for the Solar Farm and the land surrounding the property provide a significant buffer for adjoining properties. (As long as it will include Opaque fencing, where the project abuts residential properties and no other buffers exist).
- Analysis shows no negative impact to property values where the Solar Farm abut nearby properties.
- The Solar Farm is a compatible use for the property owned by Baptist Children's Home.
- Find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

**AN ORDINANCE AMENDING THE CODE OF ORDINANCES
OF THE CITY OF THOMASVILLE, NORTH CAROLINA**

BE IT ORDAINED, that the Code of Ordinances of the City of Thomasville be amended in the following respects:

SECTION 1. That the Official Zoning Map of the City of Thomasville, North Carolina as set out in Appendix A (Zoning), Article IV (Establishment of Districts), Section 2 (Location and Boundaries of Districts) be amended by changing certain property from R-8 (Medium Density Residential), R-10 (Low Density Residential), M-2 (Heavy Industrial) Zoning District to CZ-M-1 (Conditional Zoning Light Industrial) Zoning District as shown on the attached map (Z-23-07).

SECTION 2. That this Ordinance shall become effective upon its adoption by the City Council of the City of Thomasville.

ADOPTED this the _____ day of _____, _____, by the City Council of the City of Thomasville.

Raleigh York, Jr., Mayor

ATTEST:

Wendy S. Martin, City Clerk



The Board of Planning and Adjustment of the City of Thomasville has approved
by a 6 to 0 vote the rezoning request (Z-23-07).

Applicant: Kayla Marshall

Owner: Baptist Children's Homes of North Carolina, Inc (c/o Sam Barefoot)

Location: Farmview Road & Baptist Children's Home Road

Parcel Number: 1633400000029, 16106000B0001, 1633800000007, 1615800080001

Existing Zoning: R-10, R-8, M-2

Proposed zoning: CZ-M-1

Conditional Use Permit: Solar Energy

9.26.23

Date

Jane Hill

Jane Hill, Chairperson

MOTION TO REZONE INCLUDING NCGS 160D-604(d); -605(a); -701 LANGUAGE

I move to rezone the property from R-10, R-8, M-2 to CZ-M-1(Conditional Use Permit)
for the following reasons:

The rural nature of the land to be used for the Solar Farm and the land surrounding
property provide a significant buffer for adjoining properties. (*As long as it will include
(opaque fencing where the project abuts residential properties and no other buffers exist.)

Analysis shows no negative impact to property values where the Solar Farm abuts nearby properties.

The Solar Farm is a compatible use for the property owned by Baptist Children's Home.

Further, I move that the City Council find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

MOTION TO DENY INCLUDING NCGS 160D-604(d); -605(a); -701 LANGUAGE

I move to deny the rezoning of the property from _____ to _____
_____ for the following reasons:

Further, I move that the City Council find that this rezoning is unreasonable and not in the public interest due to its inconsistency with the comprehensive plan and, as a result, is a hindrance to the goals and objectives of the comprehensive plan.

City of Thomasville Planning & Zoning
Rezoning Case # Z-23-07
Staff Report: Chuck George, Director

Applicant: Kayla Marshall

Owner: Baptist Children's Home of NC

Location: Farmview Road / Baptist Children's Home Road

Tax Parcel ID Number: 1633400000029, 16106000B0001, 1633800000007, 1615800080001

Pin Number: 6777-03-42-2968, 6777-02-55-6829, 6777-03-40-2146, 6777-04-64-6673

Existing: R10, R8, M2

Request: CZ-M1

Conditional Use Permit: Solar Farm

Site Information

Size of Parcel	Approximately 300 acres		
Existing Land Use	Forestry and Institutional		
Proposed Land Use	Solar Farm		
Surrounding Property Zoning and Use	Direction	Zoning	Use
	N	R-8, R-10	Residential
	E	R-8, R-10	Residential
	S	R-10, M-1, M-2	Residential, Hotels Convenience stores
	W	R-10, M-2	Residential, Waste Treatment Plant
Physical Characteristics	The Site is used for Forestry		
Historic Properties	NA		
General Site Information	The proposed site is undeveloped with Pine Trees, Power Transmission Line, Sanitary Sewer Line, Pump Station, and North Hamby Creek		

History of Cases:

Z-18-07 Duke Energy Carolina, LLC

Duke Energy Carolina withdrew the rezoning application on August 10, 2018, to address concerns regarding solar in residential zones. Duke Energy amended the solar ordinance and text amendment to remove R-8 and R-10 from article V, Note 24, at the City Council meeting in August 2018.

Compatibility with Adopted Plans

The 2035 Land Development Plan indicates the areas that have not been identified for development or redevelopment are suitable for infill development that is consistent with the existing surrounding land uses.

Staff Comments:

Farmview Solar proposes to build a solar facility with a projected buildable area of approximately 240 acres—the facility is located on Baptist Children’s Home Road in the City limits and the ETJ. The 2035 Comprehensive Plan identified the area for infill development that is consistent with the existing surrounding land uses.

Special provisions for conditional use districts and conditional use permits

Proposals for rezoning to any conditional use district shall always be accompanied by a request for a conditional use permit. Such proposals and requests shall be processed and considered in the same procedure as conventional rezoning proposals, except as otherwise set forth herein, and the voting shall be the same as that required for zoning matters.

Any proposal for conditional use district rezoning and its accompanying request for a conditional use permit shall be heard and considered simultaneously. If the city council should determine that the property involved in the proposal should be rezoned and the conditional use permit issued, it shall adopt an ordinance rezoning the property and authorizing the issuance of the conditional use permit. Otherwise the proposal shall be denied.

In granting a conditional use permit, the city council shall make the following affirmative findings:

- 1) The use requested is among those listed as an eligible conditional use in the district in which the subject property is located or is to be located;
- 2) That the conditional use will not materially endanger the public health or safety if located where proposed and developed according to the plan as proposed;
- 3) That the conditional use meets all required conditions and specifications;
- 4) That the conditional use will not substantially injure the value of adjoining or abutting property, or that the use is a public necessity; and
- 5) That the location and character of the conditional use if developed according to the plan as proposed will be in harmony with the area in which it is to be located and in general conformity with the plan of development of Thomasville and its environs.

In granting a conditional use permit, the city council may impose such additional restrictions and requirements upon such permit as it may deem necessary in order that the purpose and intent of this ordinance are served, public welfare secured and substantial justice done. If all requirements and conditions are accepted by the applicant, the city council shall authorize the issuance of the conditional use permit; otherwise the permit shall be denied.

Any conditional use permit so authorized shall be perpetually binding upon the property included in such permit unless subsequently changed or amended by the city council, as provided for in this article.

Final plans for any development to be made pursuant to any conditional use permit shall be submitted to the board of planning and adjustment for review in the same manner as other development plans are now required to be approved by the board. In approving such final plans, the board of planning and adjustment may modify the requirements or conditions of such conditional use permit where in the opinion of the board such modification will result in equal or better performance and provided that the objective and purpose of the requirements and conditions of the conditional use permit are maintained.

In granting modifications, the board of planning and adjustment may require such conditions as will secure the objectives of the requirements or conditions modified. Any violation of a term or condition of a conditional use permit shall be treated the same as a violation of this ordinance and shall be subject to the same remedies and penalties as any such violation.

The city council may change or amend any conditional use permit, after a public hearing upon recommendation by the board of planning and adjustment and subject to the same consideration as provided for in this article for the original issuance of a conditional use permit.

No proposal to amend or change any conditional use permit shall be considered within 12 months of the date of the original authorization of such permit or within 12 months of hearing of any previous proposal to amend or change any such permit.

Public Notice

<i>Notification</i>	<i>Planning/Adjustment Board</i>	<i>City Council</i>
Public Hearing Notice	9/14/23 & 9/21/23	10/5/23 & 10/12/23
Property Posted	9/14/23	10/5/23
Notification Letter Sent	9/14/23	10/5/23

Enclosed Documents

- Rezoning Application (Z-23-07)
- Conditional Use Application
- Authorization Letter
- Zoning Map
- Zoning Site Plan
- Landscape Plan
- Decommissioning Plan
- Proposed Farmview solar Farm

Board of Planning/Adjustment Recommendation:

A public hearing was conducted, and the board voted 6-0 to approve the request for the following reasons:

- The rural nature of the land to be used for the Solar Farm and the land surrounding the property provide a significant buffer for adjoining properties. (As long as it will include Opaque fencing, where the project abuts residential properties and no other buffers exist).
- Analysis shows no negative impact to property values where the Solar Farm abut nearby properties.
- The Solar Farm is a compatible use for the property owned by Baptist Children's Home.
- Find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

REZONING APPLICATION

noreply@revize.com <noreply@revize.com>

Fri 9/1/2023 2:43 PM

To:George, Chuck W. <Chuck.George@thomasville-nc.gov>

text-1612692143820 =

date-1612692147374 = 2023-09-01

text-1612692156972 = Kayla Marshall

text-1612692157999 = (703) 472-9282

text-1612692158862 =

textarea-1612692159693 = 5315 Highgate Drive Suite 202 Durham, NC 27713

text-1612692169293 = Baptist Children's Homes of North Carolina, Inc. (c/o Sam Barefoot)

text-1612692170293 = (336) 474-1224

text-1612692171693 =

textarea-1612692173503 = PO Box 338 Thomasville, N.C. 27360

text-1612692186214 = R-10 (Low Density Residential Zoning District), R-8 Medium Density Residential Zoning District) & M2 (Light Industrial Zoning District)

text-1612692187575 = CZ-M-1 (Light Industrial Conditional Zoning District)

textarea-1612692189303 = Near 11 Farmview Road Thomasville, NC 27360

textarea-1612692191078 = Silviculture, Timber tree farm

text-1612692203494 = Kayla Marshall

date-1612692206454 = 2023-09-01

checkbox-group-1612692236728[] = I Agree to terms

Client IP = 76.38.3.158

CITY OF THOMASVILLE

P O BOX 368 • THOMASVILLE, NC 27360 • (336) 475-4249

Planning & Zoning Department

APPLICATION FOR SPECIAL USE PERMIT

File No. _____ Date _____
Applicant Farmview Solar LLC Phone 919-723-7473
Address 5315 Highgate Drive STE 202 Durham, NC 27713
Property Owner Baptist Children's Homes of North Carolina, Inc. Phone 336-474-1224
Address PO Box 338 Thomasville, NC 27360
Existing Zoning R8, R10, M2 Requested Zoning CZ-M-1
Location & Description of Property in Question 10 Farmview Road Thomasville, NC 27360 (Parcel IDs 6777-03-42-2968, 6777-02-55-6829, 6777-03-40-2146 & 6777-04-64-6673)
The current use is managed timberland.

The following conditions are hereby agreed to by the property owner requesting conditional zoning of the above property

Permitted Uses to be Included Development and construction of a utility-scale solar farm with possible battery storage system

Permitted Uses to be Excluded _____

Development Conditions 1) A survey map and written legal description of the project area with the classification of all properties within one hundred (100) feet of the project boundary line will be provided to the City of Thomasville Department of Planning prior to the construction of Farmview Solar. 2) Farmview Solar LLC will submit its Interconnection Request Application to Duke Energy to the City of Thomasville before the project's appearance before the the City Council; 3) Farmview Solar shall have the flexibility to use any fencing which meets the requirements of the national electric code (NEC); 4) this permit shall carry five years of vesting

Other Conditions _____

Applicant's
Signature

Matthew D. [Signature] ~~Owner's~~
~~Signature~~

Provided in the "Farmview Solar Landowner Consent Form" document submitted as part of this application.

Planning Board Hearing Date 9/26/23

Planning Board Action ☒ Approved ☐ Denied Vote of: 6-0

City Council Hearing Date 10/16/23

City Council Action ☐ Approved ☐ Denied Vote of: _____

Signed _____

Secretary to Planning Board

FARMVIEW SOLAR – CITY OF THOMASVILLE, NC



Farmview Solar – Special Use Permit Findings of Fact

09/22/2023

1. The use requested is among those listed as an eligible special use in the district in which the subject property is located or is to be located:

Solar Farms are permitted in the Light Industrial (CZ-M-1) and Heavy Industrial (CZ-M-2) Conditional Zoning Districts by a Special Use Permit in the City of Thomasville, as outlined by the “City of Thomasville, North Carolina Code of Ordinances,” (Republication, 2009), in Appendix A – Zoning (Note 24. Solar Farms). Farmview Solar is requesting a rezone, in addition to the special use permit, from the existing zoning designations, Medium Density Residential (R8), Low Density Residential (R10) and Heavy Industrial (M2), to the Light Industrial Conditional Zoning District (CZ-M-1).

Farmview Solar will not affect, nor be affected by, existing uses within the proximity of the proposed facility. The solar farm will be remotely monitored, with no full-time personnel onsite. Therefore, no adjoining or nearby uses, including subdivisions, agriculture, animal husbandry, or similar uses, will cause nuisances that would detract from the ability of solar facility to operate. Similarly, since the facility will be completely enclosed by a perimeter security fence, the activities occurring on adjoining parcels will not have the ability to physically interfere with the facility.

2. The special use will not materially endanger the public health or safety if located where proposed and developed according to the plan as proposed:

The Farmview Solar facility will be built in accordance with the building codes of North Carolina and the City of Thomasville, using UL approved equipment. The system will be built to the wind rating of the region. There will also be a perimeter fence securing the facility, posted with high voltage warning signs. Solar panels have been studied extensively by the Environmental Protection Agency (EPA) and the North Carolina State Clean Energy Center and have been deemed landfill safe due to the absence of hazardous materials. The electric and magnetic fields (EMF) from facilities have also been measured and have been deemed indistinguishable from Earth’s magnetic fields at the project fence line. If the final site design includes batteries, adequate design will be provided to ensure all local, state and federal requirements regulating outdoor battery storage have been met.

Several hundred solar farms have been approved in North Carolina after the local county or municipality found, based on evidence, that health & safety standards were met, and there is no evidence, based on constructed solar farms, that the finding was incorrect. A Health & Safety Assessment Report was prepared for this project by a licensed North Carolina engineer, in which

additional information and evidence is provided showing that the operation of the facility will not result in any negative impacts to public health or safety for residents of the City of Thomasville. This report is included as a part of this application.

3. The special use meets all required conditions and specifications:

Farmview Solar will meet all dimensional & design requirements of a Solar Farm that falls within CZ-M-1. Pre-existing vegetation will be maintained, or a landscape buffer will be installed with a minimum width of fifteen feet (15 ft.) along the entire project boundary. In conformity with the City of Thomasville's UDO, the facility will utilize front setbacks of at least thirty-five feet (35 ft.) from roadways and adjoining property lines to the facility's fence line, and rear and side setbacks of at least twenty feet (20 ft.). The facility will include a setback at least one hundred feet (100 ft.) from the residences along West Holly Hill Road, providing additional screening from the facility for those residents. Additionally, North Hamby Creek will provide a natural vegetative buffer of at least one hundred and fifty feet (150 ft.) for property owners located on Rapp Street.

The facility will utilize fencing which meets the requirements of the National Electric Code (NEC) to be finalized prior to the issuance of building and electrical permits. The proposed fencing will be either a wild-life friendly, fixed-knot fence that is at least eight feet (8 ft.) in height, or a security fence that is at least six feet (6 ft.) in height as an alternative option. These design specifications meet and, in some instances, exceed the requirements set by the city. There will be no off-street parking or loading required.

The security fence around the perimeter of the property will be the first improvement constructed, after which will come the internal access road. Designated internal loading and equipment pads off this access road will be denoted as part of the engineering process, where any unloading of equipment for the facility will occur.

As a part of its special use permit application, the proposed facility will submit all required deliverables defined in the "City of Thomasville, North Carolina Code of Ordinances," (Republication, 2009), in Appendix A – Zoning (Note 24. Solar Farms), as well as a few additional volunteered deliverables. Farmview Solar will submit a Site Plan, Decommissioning Plan, and Landscape Buffer Visualization. The Site Plan will show an overview of the project design including the applicable setbacks and vegetative buffers, and location of property lines, buildings and road right of ways, and the proposed point of interconnect. The Site Plan will also show thirty feet (30 ft.) buffers for development activities along perennial waters, as outlined by the ordinance. The Decommissioning Plan will define the conditions upon which decommissioning will be initiated, decommissioning process, how often the plan will be updated, the party responsible for decommissioning, and the decommissioning cost estimate. The Landscape Buffer Visualization will outline the layout of all proposed landscaping, with property buffers between the facility fence line and bordering residential uses and public roads, and the scheduled maintenance of the property. The Landscape Buffer Visualization will also provide visual simulations of the proposed vegetative buffers.

4. The special use will not substantially injure the value of adjoining or abutting property, or that the use is a public necessity:

A property values impact study by Kirkland Appraisals, a licensed North Carolina appraiser, was conducted for this project. It is included in this application and will be entered into the record at the applicant's public hearing. The impact study was conducted using the matched-pairs appraisal analysis technique and found that there is no measurable difference in price or time on the market for properties adjoining a solar facility compared with similar properties not adjacent to solar farms, provided that there are sufficient setbacks and buffering as identified in the analysis. Solar facilities do not exhibit any typical public nuisance characteristics that would harm adjacent property values since they do not produce emissions, noise, glare, hazardous chemicals or measurable traffic. These data and facts demonstrate that the facility will not substantially injure the value of adjoining or abutting properties and is therefore a harmonious use for existing adjoining uses or possible future development. The applicant will also present evidence at the hearing that NC Courts have determined that subjective feelings of how something looks is not evidence that it is inharmonious with an area.

5. The location and character of the special use if developed according to the plan as proposed will be in harmony with the area in which it is to be located and in general conformity with the plan of development of Thomasville and its environs:

Farmview Solar is in general conformity with the "City of Thomasville Land Development Plan 2035" (LDP 2035). The Development and Re-Development Areas Map provided at the end of this document shows that the project site location, which is marked in green, is located outside of the identified eight (8) development and re-development areas in the Thomasville downtown area that were selected by the City as key locations for development of specific land uses outlined in the LDP 2035, pages 39-56. Farmview Solar will be a good neighbor to the identified development and re-development areas, as there will no personnel onsite, no increased traffic generation, and no noise, light, or odor generation. The proposed facility will not impede on the Thomasville downtown strategy which includes future improvements and land uses within the downtown areas to create an attractive and vibrant downtown for the community (LDP 2035 Recommendation C, Goal 1). A minimum of fifteen feet (15 ft.) of preserved or planted vegetation will be maintained along the facility boundaries, minimizing any potential impacts to the target locations of future developments, and preserving Thomasville's unique heritage in downtown Thomasville (LDP 2035 Recommendation C & E, Goal 1).

Solar development is inherently constrained by the capacity of electrical transmission lines, which transport the electricity created by the solar facility to serve nearby load. Duke Energy Carolinas (DEC), which owns and operates the transmission lines in the City of Thomasville, has strict regulations which govern line utilization. Although lines can be upgraded, this process is very expensive which incentivizes projects to spread throughout the grid. For these reasons, and in line with ratified, bi-partisan-supported House Bill 951, solar can be considered as one of the highest and best uses for the parcels optioned to Farmview Solar. Since Duke Energy has been legally mandated to decarbonize its grid, it must move towards diversified energy sources including solar, resulting in county & state benefits including increased grid stability and

reliability for future and existing developments, as well as decreasing cost to ratepayers over time (LDP 2035 Recommendation B, Goal 1).

Additionally, the project is near the Hamby Creek Industrial Corridor on Development and Re-Development Areas Map. Farmview Solar will be a good fit for this area, as it will avoid development in any 100-year floodplain and will go through a required stormwater permitting process with NC DEQ, resulting in any necessary stormwater features being installed and maintained. These features will include preserving ditches and riparian buffers. Additional control measures that may be installed include, but are not limited to, sediment basins, silt fencing, enhanced drainage swales, and bioretention areas. These closely regulated measures control runoff, minimizing any potential impact to adjacent properties and the nearby Hamby Creek wetlands areas. This is harmonious with the LDP 2035 as it ensures safe development near this area through carefully regulated protection measures and avoiding direct development in the most environmentally sensitive of areas.

Finally, the project will provide economic benefit and contribute significantly to the Davidson County tax base, providing indirect benefit to the city residents, without drawing on public resources provided by the city or county such as sewage services, emergency services, or schools (LDP 2035 Recommendation B, Goal 1). Additionally, Farmview Solar will take approximately one year to construct, and during that time, an estimated one hundred and fifty (150) construction workers will work on the facility. In addition to the construction labor, the extended construction schedule will foster significant spending in the City of Thomasville, increasing the local economy through attracting and retaining businesses and industries (LDP 2035 Recommendation D, Goal 1). Farmview Solar is committed to working with the Thomasville Area Chamber of Commerce and the Davidson County Economic Development Corporation (EDC) to ensure local contractors have the opportunity to bid on work throughout the construction process, including in the fuel, equipment rentals and maintenance, parts, grading and site preparation, fencing, solid waste, lodging, food and beverage, and landscape materials industries.

Farmview Solar – Petition Survey Map

09/01/2023

A survey map and written legal description of the area for which rezoning is being sought. The map must show the classification of the property for which the change is sought as well as the classification of all properties within one-hundred (100) feet of any boundary line of the requested property.

A survey map and written legal description of the project area with the classification of all properties within one hundred (100) feet of the project boundary line will be provided to the City of Thomasville Department of Planning prior to the construction of Farmview Solar. A preliminary map of the properties seeking a conditional rezoning to the conditional zoning district CZ-M-1 (Light Industrial) is shown below in **Exhibit A**.


Exhibit A – Farmview Solar Preliminary Map


Attached hereto:


Farmview Solar Preliminary Map


The City of Thomasville - Current Zoning Classification of Property
Conditional rezoning to the Light Industrial (CZ-M-1) conditional zoning district

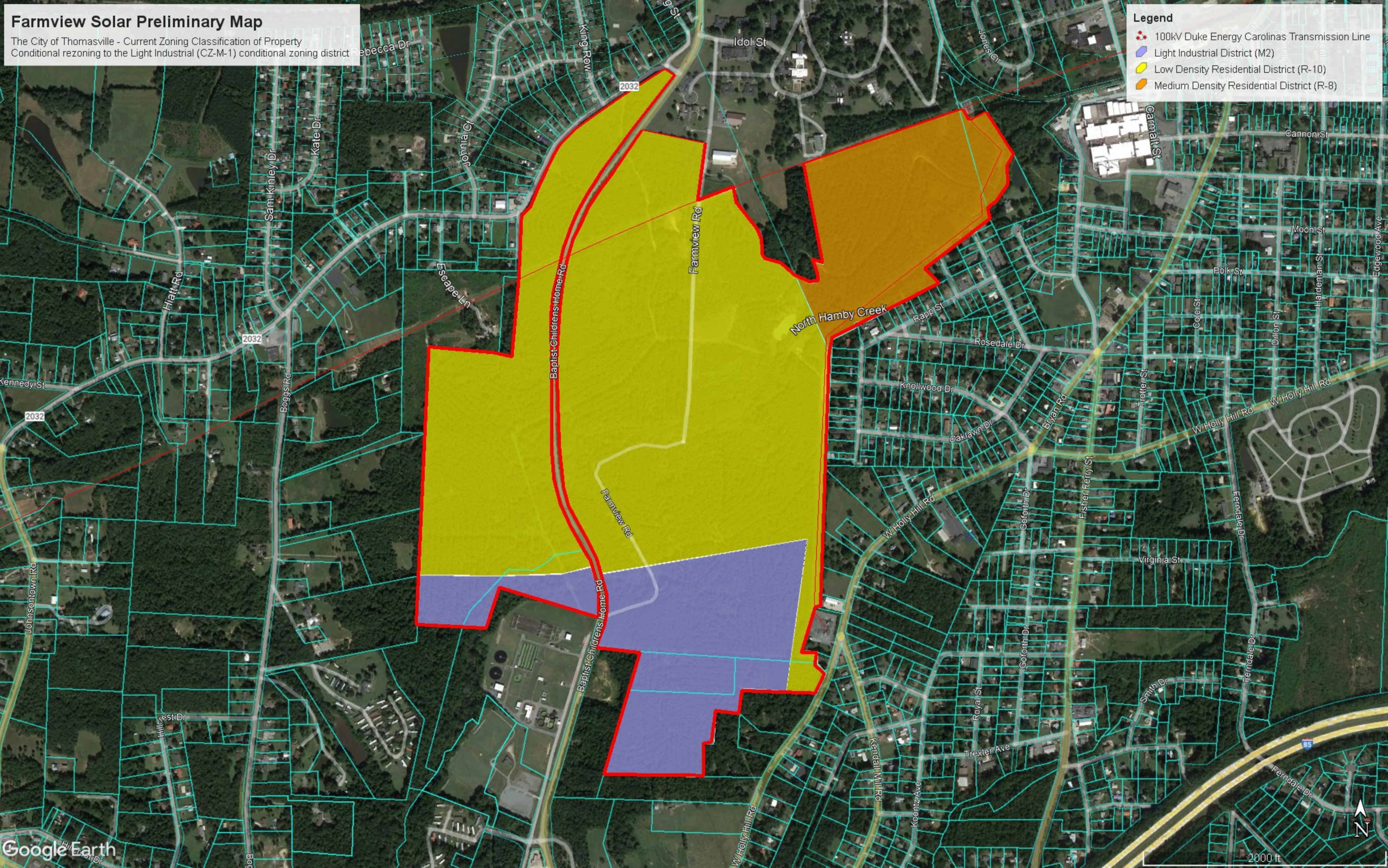
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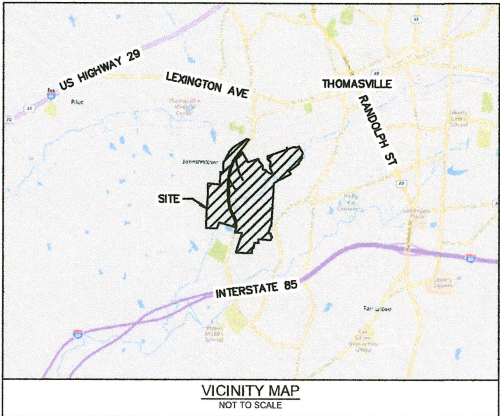
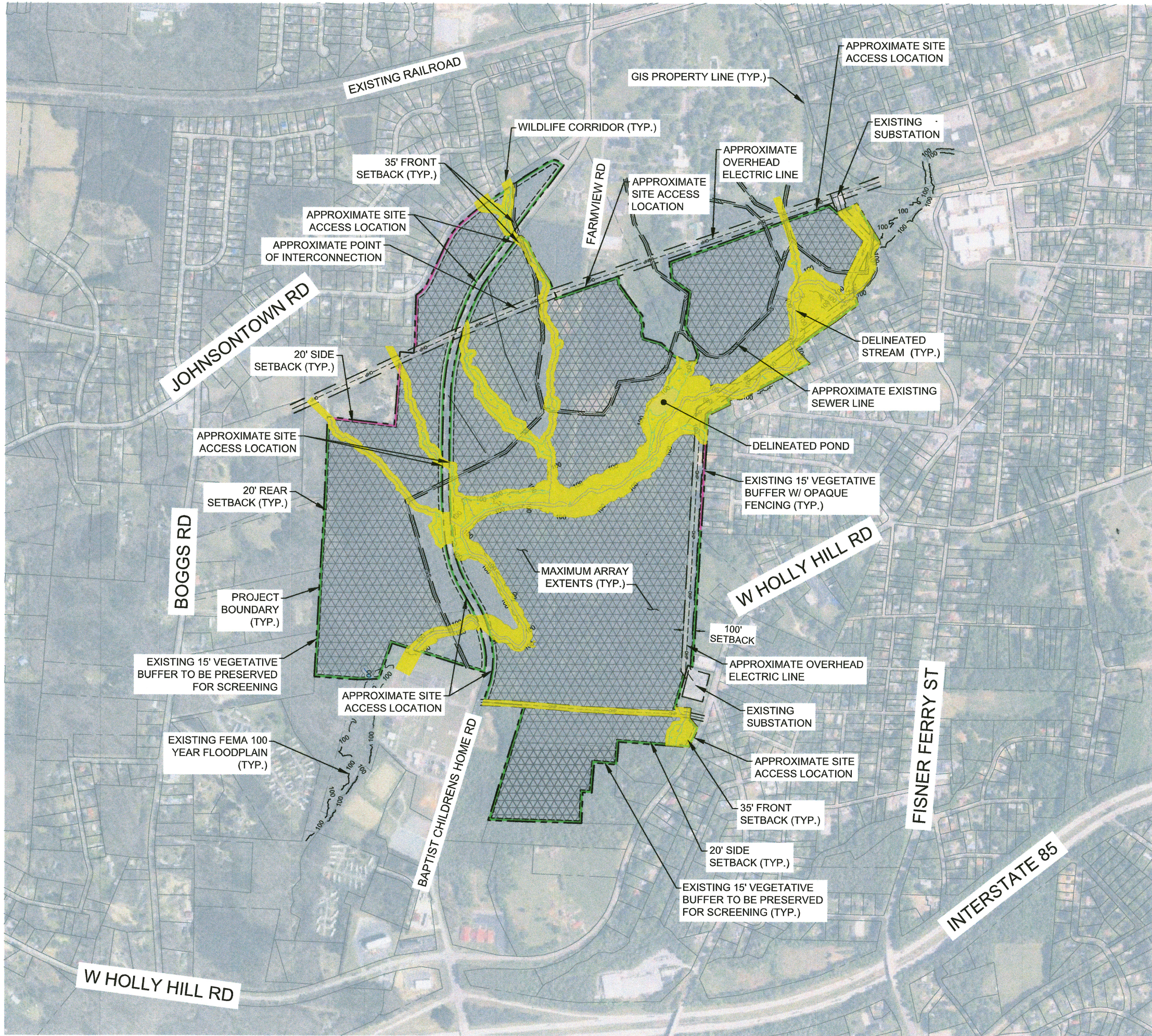
 100kV Duke Energy Carolinas Transmission Line

 Light Industrial District (M2)

 Low Density Residential District (R-10)

 Medium Density Residential District (R-8)

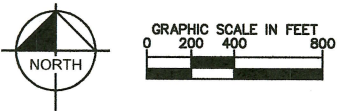




SITE DATA TABLE	
PROJECT AREA	± 308 ACRES
PARCEL ID #	1633400000029 1810600000001 1633800000008 1633800000007
ZONING JURISDICTION	CITY OF THOMASVILLE
CURRENT ZONING	R8 / R10 / M2
PROPOSED ZONING	M1
ADJACENT PROPERTY ZONING	R8 / R10 / M2
CURRENT LAND USE	FORESTED
PROPOSED LAND USE	SOLAR ENERGY
REQUIRED SETBACKS (ARTICLE V, SECTION 4) ZONE M1	FRONT: 35' SIDE: 20' REAR: 20'
RIPARIAN BUFFER	30' FROM STREAM CENTERLINE
LANDSCAPE REQUIREMENTS (ARTICLE V, SECTION 3A) ZONE M1	15' SEMI-OPAQUE REQUIREMENTS

LEGEND	
	PROJECT BOUNDARY
	GIS PROPERTY LINE
	PERIMETER SETBACK
	APPROXIMATE EASEMENT BOUNDARY
	APPROXIMATE EXISTING OVERHEAD TRANSMISSION LINE
	APPROXIMATE EXISTING SEWER LINE
	DELINEATED STREAM
	FEMA 100 YEAR FLOODPLAIN
	DELINEATED WETLANDS
	DELINEATED POND
	MAXIMUM ARRAY EXTENTS
	WILDLIFE CORRIDOR
	EXISTING NATURAL WOODED BUFFER TO BE PRESERVED
	EXISTING NATURAL WOODED BUFFER W/ OPAQUE FENCING

- NOTES
1. PROJECT BOUNDARY SHOWN IS BASED ON FILES RECEIVED FROM RENEWABLE ENERGY SERVICES, LLC ON 04/24/2023.
 2. PARCEL BOUNDARIES SHOW ARE BASED ON PUBLICLY AVAILABLE NORTH CAROLINA GIS DATA ACCESSED ON 08/17/2023.
 3. ALL EXISTING TRANSMISSION LINES SHOWN ARE APPROXIMATE LOCATIONS BASED ON PUBLICLY AVAILABLE GIS DATA ACCESSED ON 08/17/2023.
 4. 100-YR FLOODPLAIN LINEWORK IS BASED ON PUBLICLY-AVAILABLE FEMA GIS DATA, ACCESSED ON 08/15/2023.
 5. WETLANDS AND WATERS ARE BASED ON PUBLICLY-AVAILABLE DATA FROM THE NATIONAL WETLANDS INVENTORY (NWI), ACCESSED 08/15/2023.
 6. THE LOCATION OF PROPOSED EQUIPMENT INCLUDING BUT NOT LIMITED TO: ACCESS LOCATIONS, FENCING, SOLAR ARRAY RACKING, ELECTRICAL EQUIPMENT, VEGETATIVE BUFFER, AND OVERHEAD POLES & LINE, ETC. SHOWN ARE APPROXIMATE AND MAY BE SUBJECT TO MODIFICATIONS DUE TO SITE CONDITIONS, ADDITIONAL PERMITTING REQUIREMENTS, DETAILED DESIGN, EQUIPMENT AND/OR OTHER CONSTRAINTS.
 7. THIS PLAN IS PRELIMINARY AND WILL NOT BE RELEASED FOR CONSTRUCTION.
 8. THE POINT OF INTERCONNECTION IS APPROXIMATE AND MAY INCLUDE AN ELECTRICAL SUBSTATION.
 9. THE PROJECT MAY INCLUDE A BATTERY ENERGY STORAGE SYSTEM (BESS) LOCATED NEAR THE POI.
 10. THE PROJECT SITE WILL BE ENCLOSED BY A MINIMUM 8' HIGH SECURITY FENCE.
 11. ACCESS POINTS ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON SURVEYED TOPOGRAPHY, UTILITIES, NC DOT PERMITTING, OR ENVIRONMENTAL FEATURES.



Kimley»Horn

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421 FAYETTEVILLE STREET, SUITE 600, RALEIGH, NC 27601
PHONE: 919-677-2000 FAX: 919-677-2050
WWW.KIMLEY-HORN.COM
#F-0102

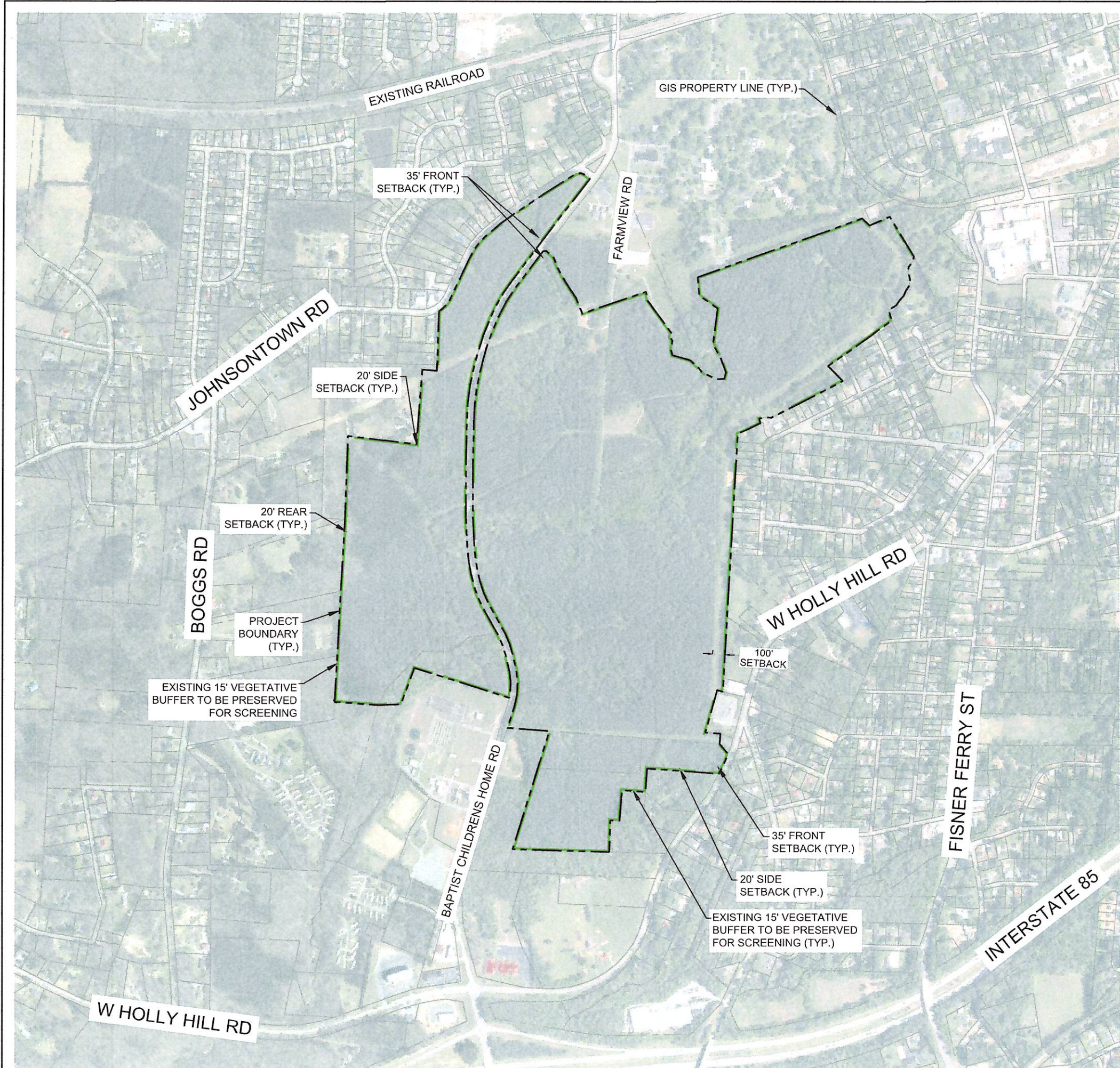
PRELIMINARY
NOT FOR
CONSTRUCTION

KHA PROJECT 016458004	DATE 09/27/2023	AS SHOWN SCALE	DESIGNED BY SRF	DRAWN BY BCB	CHECKED BY JSL
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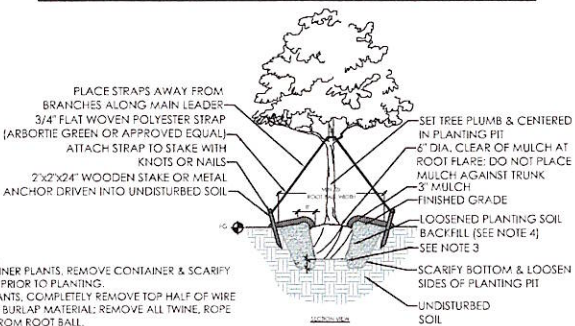
ZONING SITE PLAN

FARMVIEW SOLAR

SHEET NUMBER
EX1.0

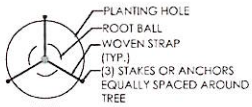


LEGEND	
	PROJECT BOUNDARY
	GIS PROPERTY LINE
	EXISTING NATURAL WOODED BUFFER TO BE PRESERVED



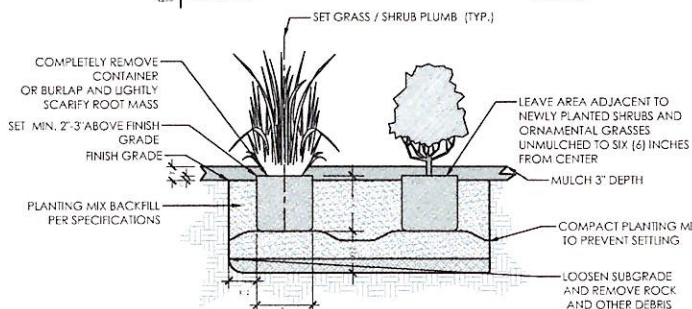
PLANTING NOTES:

1. FOR CONTAINER PLANTS, REMOVE CONTAINER & SCARIFY ROOT MASS PRIOR TO PLANTING.
2. FOR B&B PLANTS, COMPLETELY REMOVE TOP HALF OF WIRE BASKET AND BURLAP MATERIAL. REMOVE ALL TWINE, ROPE AND WIRE FROM ROOT BALL.
3. SET ROOT BALL ON UNDISTURBED STABLE SUBSOIL SO THAT TOP OF ROOT BALL IS 2-3\"/>



1 STANDARD TREE PLANTING DETAIL

SCALE: 3/4\"/>



PLANTING NOTES:

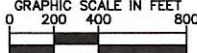
1. ALL PLANT MATERIAL PRICING SHALL INCLUDE MULCH, BED PREPARATION, AND STAKING.
2. ALL PLANTING BEDS SHALL RECEIVE 3\"/>
3. MULCH TYPE FOR PROJECT: DOUBLE SHREDDED HARDWOOD HARDWOOD DESIGNER MULCH IN DARK BROWN.
4. PLANT MATERIAL SPACING SHOWN ON LANDSCAPE PLANS SHALL OVERRIDE TYPICAL PLANT SPACING INDICATED ON PLANT SCHEDULE. LANDSCAPE CONTRACTOR RESPONSIBLE FOR VERIFYING ALL PLANT SPACING AND MAKING MINOR FIELD ADJUSTMENTS DUE TO UTILITY CONFLICTS.
5. ALL SHRUBS SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT \"AMERICAN STANDARDS FOR NURSERY STOCK\" PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N.).
6. SOIL ANALYSIS SHALL BE OBTAINED PRIOR TO PLANTING. SOIL SHALL BE AMENDED AS RECOMMENDED BY CERTIFIED TESTING AGENCY.
7. SEE PLAN FOR SPACING.

2 SHRUB AND ORNAMENTAL GRASS PLANTING DETAIL

SCALE: 1\"/>

NOTES

1. EXISTING VEGETATION IS TO BE PRESERVED AND PROTECTED IN PLACE TO MEET THE INTENT OF THE BUFFER REQUIREMENTS WHEREVER APPLICABLE. THE PROPOSED BUFFER STANDARD IS MEANT TO SUPPLEMENT EXISTING VEGETATION TO MEET THE SCREENING INTENT OF THE CODE REQUIREMENTS FOR SOLAR ARRAY FACILITIES AS NECESSARY.
2. ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL, FREE OF PESTS AND DISEASE.
3. ALL TREES MUST HAVE A STRAIGHT TRUNK AND FULL HEADED AND MEET ALL REQUIREMENTS SPECIFIED.
4. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE BEFORE, DURING, AND AFTER INSTALLATION.
5. ALL TREES MUST BE GUYYED OR STAKED AS SHOWN IN THE DETAILS.
6. ALL TREE RINGS MUST BE COMPLETELY MULCHED AS SPECIFIED. MULCH TO BE THREE(3) INCHES OF DOUBLE SHREDDED HARDWOOD DESIGNER MULCH IN DARK BROWN.
7. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDING BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, WEEDING, FERTILIZING, ETC.) OF THE PLANTING AREAS AND LAWN UNTIL SUBSTANTIAL COMPLETION OF PROJECT.
8. THE CONTRACTOR SHALL COMPLETELY WARRANTY ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR BEGINNING ON THE DATE OF SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE OR AT THE END OF THE WARRANTY PERIOD.
9. ANY PLANT MATERIAL WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO SUBSTANTIAL COMPLETION OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE MEETING ALL PLANT SCHEDULE SPECIFICATIONS.
10. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES & ORDINANCES REGARDING LANDSCAPING. GENERAL CONTRACTOR IS TO CLEAN THE INDICATED BUFFER AREA OF ALL CONSTRUCTION DEBRIS PRIOR TO FINAL INSPECTION.
11. THE CONTRACTOR SHALL INSTALL NON-WOVEN PERMEABLE GEOTEXTILE UNDER PLANTING BED MULCH IN ALL LANDSCAPE BEDS TO PREVENT WEED GROWTH.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING TREES AND SHRUBS THAT WILL MEET BOTH MINIMUM SIZE AND SPACING REQUIREMENTS AS SET FORTH IN THE CITY OF THOMASVILLE, NC CODE OF ORDINANCES. FAILURE TO INSTALL PLANT MATERIAL PER THIS PLAN WILL JEOPARDIZE ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING INSPECTIONS OF PLANT MATERIAL.
13. SURFACE MATERIAL FOR THE GROUNDPLANE APPLICATION WITHIN THE FENCE LIMITS OF THE SOLAR DEVELOPMENT WILL CONSIST OF TURFGRASS SEED TO BE ESTABLISHED WITHIN THE WARRANTY PERIOD AND BE MAINTAINED BENEATH THE PANEL MODULES. FREQUENCY OF MAINTENANCE/MOWING OF THE TURFGRASS WILL BE DONE AS NEEDED TO MAINTAIN A UNIFORM STAND OF VEGETATION THAT DOES NOT EXCEED A MAXIMUM HEIGHT OF 30\"/>



Kimley»Horn

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27601
FAIRVIEW STREET, SUITE 800, FARMVILLE, NC
PHONE: 919-727-1000 FAX: 919-677-2050
WWW.KIMLEY-HORN.COM

PRELIMINARY
NOT FOR
CONSTRUCTION

KHA PROJECT 010458004	DATE 08/22/2023	SCALE AS SHOWN	DESIGNED BY SRF	DRAWN BY BCB	CHECKED BY JSL
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LANDSCAPE PLAN

FARMVIEW SOLAR

SHEET NUMBER
EX1.0

DAVIDSON COUNTY NORTH CAROLINA

FARMVIEW SOLAR – THE CITY OF THOMASVILLE, NC



Landowner Consent Form

To: The City of Thomasville Planning & Inspections Department/ Planning Board & Adjustment Board/ City Council

Subject: Farmview Solar, LLC – Conditional Rezoning and Conditional Use Permit Request

I, **Samuel V. Barefoot**, representative of **Baptist Children's Homes of North Carolina**, being the property owner of parcels **6777-03-42-2968, 6777-02-55-6829, 6777-03-40-2146 & 6777-04-64-6673**, give consent to **Farmview Solar, LLC** and its agents to act on my behalf in applying for any **rezoning and/ or conditional use permits** necessary for the development and construction of a utility-scale solar farm.

LANDLORD:

By: Samuel V. Barefoot

Printed Name: SAMUEL V. BAREFOOT

Title: JR. VICE PRESIDENT

Date: 8-17-2023

Farmview Solar – Description of Proposed Technology

09/01/2023

A description of the proposed technology to include: type of solar panel and system; fixed mounted versus solar tracking; number of panels; and angles of orientation.

The project will use approximately 65,000 crystalline silicon panels, manufactured by Hanwha QCells (or comparable Tier-1 supplier), mounted on a single-axis tracking racking system. The racking system will be manufactured by Nextracker or Array Technologies (or comparable Tier-1 supplier). These panels will track the sun from east to west, as it rises and sets, so their orientation will vary throughout the day.

Overall, the project will follow Duke Energy's Approved Vendor List as guidance for all proposed technology. The Duke Energy Approved Vendor List is attached hereto.

Approved Vendors List

The following instructions are intended to guide Market Participant equipment and services vendor selections in their Proposals.

Solar Facility:

PV Modules:

- Crystalline silicon modules shall be conventionally framed, tempered glass with anti-reflective coating, and encapsulated electrical component construction. Crystalline silicon modules shall be from one of the preferred suppliers: Canadian Solar, Hanwha Q Cells, JA Solar, Jinko, Longi, Moxeon, REC Group, and Trina. Alternate suppliers may be submitted for review and approval.
- Bifacial crystalline silicon modules shall have rear glass only. Modules with clear backsheets other than glass are not permitted.
- Thin-film modules shall be from the First Solar Series 6 family.
- Modules shall be furnished with the following minimum warranties: 10-year product warranty, and 25-year production warranty.

Racking/Trackers:

- Most fixed-tilt suppliers are considered conditionally approved; fixed-tilt racking specification must be submitted to confirm approval.
- Tracking systems shall be sourced from the approved suppliers Array Technologies and NEXTracker only; additional tracking system suppliers may be considered if submitted as a cost alternative line item.

Inverters:

- Central inverters shall be sourced from the approved suppliers SMA and TMEIC only. Siemens Gamesa or Sungrow inverters may be considered if submitted as a cost alternative line item.
- 3-phase string inverters are only allowable on sites less than 10 MWac total capacity, and only products from SMA and Yaskawa Solectria are approved.

SCADA:

- To integrate with Duke Energy systems, power plant controller shall be from Emerson only. The power plant controller shall be programmed with the Duke solar standard. The SCADA shall have a Factory acceptance test (FAT) and site acceptance test (SAT) witnessed by Duke.

GSU:

- Generator step-up transformers shall be sourced from Hitachi, GE Prolec, Hico, Hyundai, Siemens, Delta Star, Weg, Georgia Transformer, or SGB-SMIT only.

Substation Equipment:

- Medium voltage collection systems shall be 34.5 kV and substation breakers shall be provided by Siemens, subject to Duke Energy specifications.

Testing Services Contractors:

- All underground medium voltage cable shall be partial discharge tested after installation, and this testing shall be performed by IMCORP only.

PCS Transformer:

- Medium voltage transformers shall be sourced from Eaton, GE Prolec, Hitachi, or Siemens only. Alternate transformers vendors may be considered if submitted as a separate cost alternative line item.

Switchgear:

- Switchgear shall be sourced from S&C, G&W, Eaton, Schneider Square D, Siemens, or ABB only.

Storage Facility:

Battery Cells:

- Battery Cells shall be from one of the preferred suppliers. Alternate lithium battery suppliers may be submitted for review and approval. Preferred suppliers include CATL (LFP), Samsung (NMC), LG Chem (NMC), SAFT (NMC), Kore (NMC), and SKI (NMC).

Power Conversion System:*

- Power Conversion System (PCS) shall be sourced from SMA, Dynapower, Sungrow, LS Energy, TMEIC, EPC Power only.

SCADA:

- To integrate with Duke Energy systems, power plant controller shall be from Emerson only. The power plant controller shall be programmed with the Duke storage standard. The SCADA shall have a Factory acceptance test (FAT) and site acceptance test (SAT) witnessed by Duke.

GSU:

- Generator step-up transformers shall be sourced from Hitachi, GE Prolec, Hico, Hyundai, Siemens, Delta Star, Weg, Georgia Transformer, or SGB-SMIT only.

Substation Equipment:

- Medium voltage collection systems shall be 34.5 kV and substation breakers shall be provided by Siemens, subject to Duke Energy specifications.

Testing Services Contractors:

- All underground medium voltage cable shall be partial discharge tested after installation, and this testing shall be performed by IMCORP only.

PCS Transformer:

- Medium voltage transformers shall be sourced from Eaton, GE Prolec, ABB, Siemens only. Alternate transformers vendors may be considered if submitted as a separate cost alternative line item.

Switchgear:

- Switchgear shall be sourced from S&C, G&W, Eaton, Schneider Square D, Siemens, or ABB only.

DC/DC Converters:

- Dynapower, Sungrow, Alencon

* For AC Connected Systems only, if applicable

** Duke Energy reserves the right to make changes to this approved vendor list.

Farmview Solar – Application to Utility Company

09/01/2023

A copy of the application to the utility company that will be purchasing electricity from the proposed site.

Farmview Solar LLC will submit the Interconnection Request Application to Duke Energy before the 2023 Solar Procurement Bid Window closing date on September 29th, 2023. The applicant will provide a copy of the Interconnection Request Application to the City of Thomasville before the project appears before the City Council on October 16th, 2023.

FARMVIEW SOLAR DECOMMISSIONING PLAN AUGUST 2023

Purpose

This decommissioning plan is provided by Farmview Solar, LLC (the "Project Company") and will detail the projected decommissioning demands associated with the Farmview Solar project.

The purpose of this decommissioning plan is to provide procedures and an opinion of probable cost for partial or full closure of the solar facility. City of Thomasville code requires a decommissioning plan and performance guarantees to supplement plans submitted as part of the submittal package for insurance of the conditional zoning approval. This decommissioning plan details provisions for facility deconstruction and site restoration, to satisfy the specific guidelines set in the Code of Ordinances City of Thomasville, North Carolina, Appendix A - Zoning, Article V. - District Regulations, Section 3. - Notes to the table of permitted uses, Note 24, Decommissioning Plan A. and B. This decommissioning plan shall take effect upon facility abandonment, discontinuation of operation, or expiration of the use permit as determined by the City of Thomasville as the Authority Having Jurisdiction ("AHJ").

Site Location

Farmview Solar, LLC proposes to build a photovoltaic (PV) solar facility ("Solar Facility") with a projected buildable area of approximately 240 acres, in Davidson County, NC. The Facility is located on Baptist Childrens Home Road and is within the tax parcel identification numbers 1633400000029 (ZONE R10), 16106000B001 (ZONE R8), 1633800000008 (ZONE M2), 1633800000007 (ZONE M2) ("Property").

Anticipated Service Life of the Project

Unless the system is purchased by City of Thomasville or other entity, the facility shall be decommissioned in accordance with this Decommissioning Plan ("Plan"), restoring the site to as close to its agreed-upon post-decommissioned state as practicably possible upon expiration or termination of the Power Purchase Agreement. The Solar Facility will have a maturity date of twenty (20) years but carries an expected useful lifetime of more than 30 years.

Decommissioning responsibilities include the removal of perimeter fences, concrete or steel foundations, metal structures (e.g., mounting racks and trackers), photovoltaic (PV) modules, aboveground and underground cables up to 36" deep, transformers, inverters, fans, switch boxes, project substation and otherwise restoring the premises to a condition reasonably similar to its original condition or mutually agreed upon state. Other Plan activities include the management of associated materials and waste, associated erosion & sedimentation control, and restoration of the soil surface to a condition reasonably similar to its original condition or other agreed upon state.

Decommissioning Risk Over the Lifecycle of a Project

The probability of an event that would lead to abandonment or long-term interruption is extremely low during the first 15 to 20 years of the Project life. Accordingly, the risk of decommissioning the Project is extremely low during this time frame. The reasons why the risk to decommission the Project is extremely low in the early phases of the Project include, but are not limited to:

- Project owners have sophisticated financing structures that allow the lender or tax equity partner to step in and rectify the event that may lead to abandonment.
- Most critical solar components have original equipment manufacturer (OEM) warranties with terms exceeding five years that include labor and parts. A warranty is an agreement or guarantee outlined by a manufacturer to a customer that defines performance requirements for a product or service. Warranties give customers a form of insurance if the purchased product or service does not adhere to quality standards. These warranties assure the Project owner, financing parties, and other stakeholders, that equipment will perform as expected which minimizes the risk of a decommissioning event. Average warranty lengths for critical solar components range from 5 to 10 years, with production warranties on solar panels extending to 20 to 25 years.
- Solar projects consist of many networked components designed to convert solar radiation into electrical energy. The failure of any single component will not result in a substantial reduction of energy generation that could lead to a decommissioning event.
- Solar projects are required to maintain replacement value property damage insurance coverage and business interruption insurance coverage. Business interruption insurance covers the loss of income that a business suffers after a disaster or equipment failure. Typical solar business interruption insurance covers income loss for twelve months from the date of the event triggering the loss.
- The replacement costs of solar components will typically decline over time, and accordingly, costs to replace failed or damaged equipment after lapsed OEM warranties will not create large financial hurdles for the Project.
- In the early stages of the Project, the resale value of the equipment is significantly higher than the decommissioning costs, resulting in a net positive (revenue).

Considering the reasons above, a decommissioning bond early in the life of a solar project is not anticipated to be required to assure the coverage facility removal and site restoration costs.

Solar power is an increasingly popular form of renewable energy around the world and as an alternative to the burning of fossil fuels, solar ranks alongside wind and hydropower as essential energy options for the future of the planet. Solar also offers the additional benefit of being easier to build, operate, and decommission with minimal environmental risks. Recent rises in popularity and use can be linked to lower installation and operation costs and it is expected that this pattern will continue, further reducing the risk of a decommissioning event.

Decommissioning Risks Over Time

As previously noted, the probability of a decommissioning event that would lead to abandonment or long-term financial interruption is extremely low during the first 15 to 20 years of the Project life and accordingly, the financial risk to decommission the Project is also extremely low. A risk analysis approach is presented here for informational purposes only and has not been considered in the decommissioning cost estimates present in this Plan.

It is important to note that there are two aspects to consider when evaluating the risk for decommissioning the Project:

1. The risk of the need to decommission the Project as a whole (Project termination risk)
2. The risk of failing to recuperate the cost of the decommissioning activities (decommissioning funding)

The most important concern for Farmview Solar, LLC is the ability to recuperate the cost of decommissioning and restoration of the land to pre-Project conditions. The presence of a typical Power Purchase Agreement (PPA) in the first 20 years of the Project makes the likelihood of decommissioning very low during that time. The factors taken into consideration in estimating the risk include, but were not limited to:

- Years 1-5 – Minimal Project termination or financial risk due to presence of a typical PPA with guarantee to purchase power, resale of valuable components, component warranties, value of facility.
- Years 5-10 – Similar consideration of previous period, except minimal increased financial risk due to the decrease in resale value of used components and rise in technological improvements of new equipment in market.
- Years 10-15 – Similar consideration of previous period, with slightly increased risk as warranties start to expire. Value of equipment is still substantial but decreasing.
- Years 15-20 – Similar consideration of previous period, warranties continue to expire; value of equipment diminishes with age and technological improvements in market.
- Years 20-25 – Typical PPA expires, Project termination and funding risks increase, value of equipment diminishes with age, and technological improvements in market. A rise in salvage value of removed equipment due to diminishing natural resources and improvements in the efficiency of recycling/extraction technologies are anticipated to offset all or a portion of the cost of decommissioning.

Commencement of Decommissioning

This Plan assumes that the Facility will be decommissioned under any of the following conditions:

1. The land lease (including the exercise of any extension options) ends and will either not be renewed, or a new lease will not be entered into for the Project.

2. The system does not produce power for sale for a consecutive duration, usually 12-month period, except in the instance of a force majeure event in which the Project is being repaired and/or restored.
3. The system is damaged and will not be repaired or replaced.

Removal of Nonutility Owned Equipment

To decommission the Solar Facility, the Project will include at a minimum:

- Disconnection from the utility power grid
- Removal of Facility components: panels, inverters, wire, cable, combiner boxes, transformers, racks, trackers, tracker motors, weather monitoring, control system apparatus, etc.
- Removal of non-utility owned equipment (at point of interconnection), conduits, structures, fencing, and foundations to a depth of at least three feet below grade.
- Restoration of property to a condition reasonably similar to its condition prior to Solar Facility installation, or as initially agreed upon with the landowner.
- Plant vegetation and/or ground cover suitable for the location, native to the region, and which matches surrounding vegetation.

The owner of the leased property may request in writing for certain items to remain, e.g., access roads.

This decommissioning plan is based on current best management practices and procedures. This Plan may be subject to revision based on new standards and emergent best management practices at the time of decommissioning. Permits will be obtained as required and notification will be given to necessary stakeholders prior to decommissioning.

The decommissioning process will make every effort maximize the recycling, reuse, and salvage of applicable facility components. Based on the extent of decommissioning, prior to beginning construction activities, the Project Company will submit applicable demolition and construction plans and permit applications which will outline the schedule and extents of demolition. Decommissioning activities will not begin prior to issuance of approved permits by local regulatory agencies with appropriate jurisdiction.

Restoration of Property

At the time of decommissioning, the Project Company will restore the Property to its condition prior to the installation of the Solar Facility, or to the state requested by the landowner in the original lease agreement. Waste and excess materials associated with the Solar Facility and/or decommissioning process will be disposed of in accordance with municipal, state, and federal regulations. Waste that can be recycled under municipal programs will be recycled accordingly. Provided, The Project Company shall not be required to replace any trees that were removed by landowners before construction start, any structures that were removed during construction, or revert any grading completed.

The restoration will consist of de-compaction of the topsoil by disking or tilling and re-vegetation of the property. At the end of the Project the site will be restored to match the prior vegetative cover, will with every effort be seeded and fertilized with native vegetation to return the site to its condition prior to the installation of the Solar Facility. Installed perimeter landscaping and entrance(s) will remain following site restoration. The future use of the land will be determined at the time of decommissioning. Deciding factors will be influenced by County land use and comprehensive plans and regulations at such time in the future.

The Project Company will coordinate with the County and state having AHJs to monitor vegetation and drainage following restoration until permanent vegetation is established. Erosion and sediment control, re-seeding, soil stabilization, weed control and fertilization will be provided by the Project Company as needed until the site is stabilized and any permits that may be needed associated with the decommissioning are approved to be closed.

Time Period to Complete Decommissioning

The Project Company is expected to have a minimum of twelve (12) months from the date decommissioning commences to complete decommissioning.

Party Responsible for Decommissioning

The Project Company is responsible for this plan, provided, however, that the Project Company may contract with a third-party to perform the decommissioning on its behalf. Nothing in this Plan relieves any obligation that the real estate property owner may have to remove the Solar Facility as outlined in the Conditional Use Permit in the event the operator of the Solar Facility does not fulfill this obligation.

Decommissioning Cost Estimate and Bonding

An engineer's opinion of probable cost and analysis of material salvage value were prepared as part of this decommissioning plan. Exhibit A summarizes the probable costs and salvage values associated with decommissioning. Exhibit B summarizes probable costs associated with decommissioning exclusive of salvage values. Exhibit C summarizes probable costs associated with trucking panels to approved recycling facilities.

Expenses associated with decommissioning the Project will be dependent on labor costs at the time of decommissioning. For the purposes of this report, current RSMeans data was used to estimate labor, material, and equipment expenses. Fluctuation and inflation of the labor costs were not factored into the estimates.

Total probable cost of decommissioning in Year 20, including inflation, of \$2,280,000 with salvage values of \$3,777,358 for a total potential profit of \$1,497,087.

An updated Decommissioning Plan can be provided once six (6) months prior to the anticipated start of decommissioning if requested by the AHJ.

Resale/Salvage Value

There is a robust secondary market for resale of solar PV panels worldwide and a network of facilities available for recycling panels. Solar PV panels are estimated to degrade less than 0.5% per year, meaning they're expected to operate between 80-86% of capacity after 25 years. Panel manufacturers will guarantee the performance for each individual module and replace defective modules per the terms of warranty. Used panels can potentially be re-sold.

In general, the highest component value would be expected at the time of construction with declining value over the life of the Project. Over most of the Project's life, components such as the solar panels could be sold in the wholesale market for reuse or refurbishment. As panel efficiency and power production decrease due to aging and/or weathering, the resale value will decline accordingly. Secondary markets for used solar components include other utility scale solar facilities with similar designs that may require replacement equipment due to damage or normal wear over time; other buyers (e.g., developers, consumers) that are willing to accept a slightly lower power output in return for a significantly lower price point when compared to new equipment.

The Solar Facility's additional supporting components, such as inverters, transformers, fencing, racking and piles, can be dismantled and resold for scrap value. Inverters and transformers are comprised of salvageable materials such as copper, aluminum, and silver. Piles and other steel components can likewise be recovered and salvaged. The resale value of components such as trackers may decline more quickly; however, the salvage value of the steel that makes up a larger portion of the tracker is expected to stay at or above the expected material value.

EXHIBIT A

Farmview Solar, LLC
City of Thomasville, NC
Decommissioning Estimate Pro Forma
August 28th, 2023



The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs. LS = Lump Sum, HR = Hours, EA = Each, LF = Linear Feet.

Item	Quantity	Unit	Unit Price	Total Salvage	Total Cost (incl. markups)	Total Net Price
Mobilization	1	LS		\$0	\$76,530	(\$76,530)
Administration	500	HR	\$97	\$0	\$48,585	(\$48,585)
Temporary Facilities	1	LS		\$0	\$9,450	(\$9,450)
Safety	1	LS		\$0	\$6,400	(\$6,400)
Legal Expenses	1	LS		\$0	\$1,680	(\$1,680)
General Liability Insurance	1	LS		\$0	\$6,860	(\$6,860)
Contractor's G&A	1	LS		\$0	\$12,960	(\$12,960)
SWPPP, Erosion Control Measures (Disturbed Area)	241	Ac	\$670	\$0	\$161,584	(\$161,584)
Seeding	12	Ac	\$1,376	\$0	\$16,589	(\$16,589)
Tilling 6" topsoil/scarifying access road and rough grading existing soil	12	Ac	\$710	\$0	\$8,565	(\$8,565)
Remove and Recycle Chainlink Fence, 6' High	54,682	LF	\$4	\$9,187	\$191,976	(\$182,789)
Disconnection and Demolition of Switchyard/Substation Equipment	1	EA	\$75,776	\$15,155	\$75,776	(\$60,621)
Removal and Recycle AC Cables	142,714	LF	\$0	\$15,385	\$28,268	(\$12,884)
Removal and Recycle Above Ground DC Cables	832,948	LF	\$0	\$89,792	\$81,447	\$8,345
Backfill AC and DC trenches	1,970,942	LF	\$0	\$0	\$368,923	(\$368,923)
Remove and Recycle Inverters	12	EA	\$7,146	\$64,800	\$85,748	(\$20,948)
Removed and Recycle Photovoltaic Modules	89,748	EA	\$2	\$1,593,098	\$166,361	\$1,426,736
Remove and Recycle Piles (10' W6x7 piles @ 25' OC assumed)	34,213	EA	\$4	\$223,482	\$127,037	\$96,445
Remove and Recycle Support Assemblies	5,279,901	LB	\$0	\$686,387	\$100,405	\$585,982
Contaminated Soils Testing	1	LS		\$0	\$2,000	(\$2,000)
Reclamation Monitoring and Maintenance	1	LS		\$0	\$5,000	(\$5,000)
Subtotal:				\$ 2,804,576	\$1,693,000	\$1,111,543
Inflation (1.5%/year):					\$587,226	\$385,544
Total:					\$2,280,000	\$1,497,087

Notes:

1. Similarly sized sites were used to derive potential quantities for erosion and sediment control. Quantities were determined by comparing "unit/MW" quantities directly.
2. Labor productivity and unit rates were derived from RSMeans Online (Heavy Construction, 2022 data).
3. Labor, material, and equipment rates are based on the nearest available RSMeans City Cost Index (CCI) -Greensboro, NC.
4. Material salvage values were based off of current US salvage exchange rates.
5. Equipment rental rates were determined from local rental facilities.
6. Photovoltaic Module material salvage rate is based on straight-line depreciation of modules (-0.5% per year).
7. For PV Module Removal/Recycle labor and equipment costs are computed at present values, while salvage value is computed at 20 year
8. Material salvage values were determined using the most prevalent salvageable metal in each component. Copper Wire @0.05/LF (AC and DC Cables) and Steel @5.60/LF of fence, @\$7.00/pile, and @\$0.11/LB.
9. Inverter resale value is dependent on the assumption that all inverters will be decommissioned and resold half way through their useful life (every 5 years).
10. Assumption of module quantity from preliminary layout - String size of 26; (678) 3-string tables = 52884 modules & (374) 2-string tables = 19448 modules to get total - rounded up to 73000 modules

EXHIBIT B

Farmview Solar, LLC
City of Thomasville, NC

Decommissioning Estimate Pro Forma w/o Salvage

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design professional familiar with the construction industry. The Engineer cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs. LS = Lump Sum, HR = Hours, EA = Each, LF = Linear Feet.

Item	Quantity	Unit	Unit Price	Total Price
Mobilization	1	LS		\$76,530
Administration	500	HR	\$97.17	\$48,585
Temporary Facilities	1	LS		\$9,450
Safety	1	LS		\$6,400
Legal Expenses	1	LS		\$1,680
General Liability Insurance	1	LS		\$6,860
Contractor's G&A	1	LS		\$12,960
SWPPP, Erosion Control Measures (Disturbed Area)	241	Ac	\$670.00	\$161,584
Seeding	12	Ac	\$1,375.73	\$16,589
Tilling 6" topsoil/scarifying access road and rough grading existing soil	12	Ac	\$710.26	\$8,565
Remove and Recycle Chainlink Fence, 6' High	54,682	LF	\$3.51	\$191,976
Disconnection and Demolition of Switchyard/Substation Equipment	1	EA	\$75,776.11	\$75,776
Removal and Recycle AC Cables	142,714	LF	\$0.20	\$28,268
Removal and Recycle Above Ground DC Cables	832,948	LF	\$0.10	\$81,447
Backfill AC and DC trenches	1,970,942	LF	\$0.19	\$368,923
Remove and Recycle Inverters	12	EA	\$7,145.65	\$85,748
Removed and Recycle Photovoltaic Modules	89,748	EA	\$1.85	\$166,361
Remove and Recycle Piles (10' W6x7 piles @ 25' OC assumed)	34,213	EA	\$3.71	\$127,037
Remove and Recycle Support Assemblies	5,279,901	LB	\$0.02	\$100,405
Contaminated Soils Testing	1	LS		\$2,000
Reclamation Monitoring and Maintenance	1	LS		\$5,000
Subtotal:				\$1,693,000
Inflation (1.5%/year):				\$587,226
Total:				\$2,280,000

Notes:

1. Similarly sized sites were used to derive potential quantities for erosion and sediment control. Quantities were determined by comparing "unit/MW" quantities directly.
2. Labor productivity and unit rates were derived from RSMeans Online (Heavy Construction, 2022 data).
3. Labor, material, and equipment rates are based on the nearest available RSMeans City Cost Index (CCI) -Greensboro, NC.
4. Material salvage values were based off of current US salvage exchange rates.
5. Equipment rental rates were determined from local rental facilities.
6. Photovoltaic Module material salvage rate is based on straight-line depreciation of modules (-0.5% per year).
7. For PV Module Removal/Recycle labor and equipment costs are computed at present values, while salvage value is computed at 20 year depreciated values.
8. Material salvage values were determined using the most prevalent salvageable metal in each component. Copper Wire @0.05/LF (AC and DC Cables) and Steel @5.60/LF of fence, @\$7.00/pile, and @\$0.11/LB.
9. Inverter resale value is dependent on the assumption that all inverters will be decommissioned and resold half way through their

EXHIBIT C

Farmview Solar, LLC
City of Thomasville, NC
Panel Trucking Costs

\$/mo/truck rental	\$	4,000
\$/mo/truck labor (FT+benefits)*	\$	5,000
\$/mo/truck maintenance	\$	500
\$/mo/truck insurance	\$	1,000
Total \$/mo/truck cost	\$	10,500.00

\$/gallon gas	\$	3.80
miles /gallon		8
Mileage (Thomasville, NC to Raleigh, NC) roundtrip		200
Total fuel cost per trip	\$	95.00

Capacity in tons per trip	20
total number of panels	89,748
panel weight (tons)	2,692
Misc. Waste (tons)	20
Total trips	136

Loading/unloading hours per trip	1
road hours per trip	12.0
hours per day	10
days/month	21
trips per month per truck	16.2
Total truck months	9

Subtotal of Truck and Labor Cost	\$	94,500
Fuel Cost	\$	12,920
Total Trucking Cost	\$	107,420

*Assumes truck labor only works half of the month at standard heavy truck operator rates



HEALTH AND SAFETY ASSESSMENT REPORT

Farmview Solar
30 MW_{AC} Photovoltaic Facility with
~12 MW_{AC} / 4-hour Battery
Thomasville, NC

ABSTRACT

This is an assessment of the potential health and safety impacts of the proposed 30 MW_{AC} Farmview Solar photovoltaic facility with battery energy storage (BES) in Thomasville, NC. Considering the project design and location, the assessment evaluates the potential positive and negative impacts of the project on public health and safety. Most of the project area will be covered by solar equipment, which produces valuable electricity without producing any air, water, or soil emissions. The primary health and safety risk of the system equipment is toxicity, which is considered in detail in this assessment. The battery equipment will occupy a tiny portion of the site's footprint and will provide many benefits to the electric grid. The primary health and safety risk of the battery equipment is fire, which is minimized by advanced battery technologies, 24/7 monitoring, new battery regulations, and the long distance between the equipment and the public. The conclusion of the assessment is that the Farmview Solar facility will not create negative health and safety impacts. The clean electricity the project will produce will reduce the burning of fossil fuels, which will reduce pollution and provide millions of dollars' worth of local public health benefits as a result, based on U.S. Environmental Protection Agency estimates.

Tommy Cleveland, PE

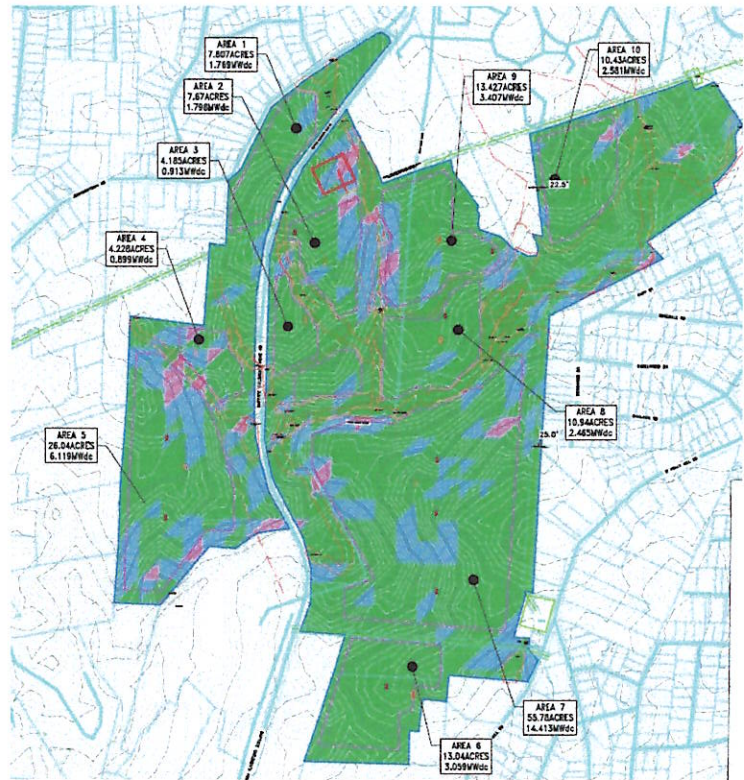
Consulting Engineer
Solar Health and Safety Expert
August 23, 2023

Health & Safety Assessment Report

Farmview Solar (with batteries) – Thomasville, NC

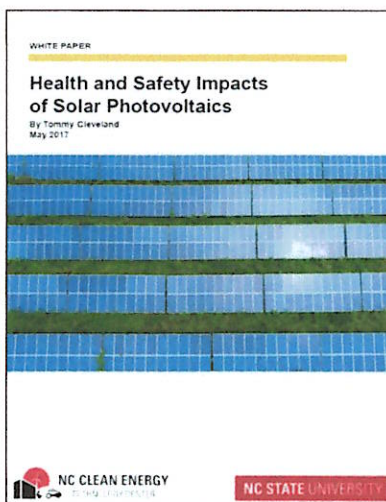
Project Overview:

- **Project Name:** Farmview Solar
- **Developer:** Renewable Energy Services
- **Project Area (inside fence):** ~154 acres
- **PV Capacity:** 30 MW_{AC} (~37.4 MW_{DC})
- **Solar Panels:** bi-facial crystalline silicon: Hanwha Q Cells 580W or equivalent
- **Structure:** single-axis trackers (north-south rows, 60° E to 60° W)
- **Inverters:** central station type: SMA Sunny Central 4000 (4.0 MW) or equivalent
- **Battery Energy Storage (BES):** 10 to 13 MW_{AC} with 4-hour duration (~48 MWh), AC-coupled
- **Battery Type:** lithium-ion batteries, manufactured by a Duke Energy approved battery cell vendor
- **Point of Interconnection to Grid:** Duke Energy Carolinas 100 kV transmission line passing through northern end of project area
- **Interconnection Equipment:** Duke Energy Carolinas 100 kV switchyard and project's 34.5kV/100kV substation just north of the point of interconnection, internal to areas of PV modules



Report Author

The author of this report is **Tommy Cleveland, PE**, (the "Author") a consulting engineer licensed as a professional engineer in NC since 2007. Mr. Cleveland graduated from North Carolina State University ("NC State") with undergraduate and master's degrees in mechanical engineering, where he focused on energy. His solar career started with his master's thesis, which led



to working over 12 years at the North Carolina Clean Energy Technology Center at NC State University. While at the university, Tommy worked on nearly every aspect of solar energy; from teaching, to testing equipment, to research & development, to leading a statewide stakeholder group in the development of a template solar ordinance. During his time at NC State, North Carolina installed more photovoltaic ("PV") capacity than any state other than California, mostly in the form of 2-5 MW_{AC} utility-scale solar facilities covering around 40 acres each. Utility-scale solar was unfamiliar to the hundreds of communities around the state where the systems were proposed, and many of those communities had questions about the technology and its potential to harm public health or the environment in their community. Many of those questions found their way to Mr. Cleveland and he expanded his already broad knowledge of PV to research and find answers to the questions being asked. Over time he became an expert on the potential health and safety impacts of PV and was the lead author of the 2017 NC State white paper on the topic (pictured to the left). Since mid-2017 Mr. Cleveland has worked as a solar engineer at an energy engineering firm conducting

interconnection commissioning of utility-scale solar and battery facilities for utilities in North and South Carolina. In this role Mr. Cleveland was the engineer responsible for (interconnection) commissioning over 60 PV sites and 4 battery sites.

Executive Summary

This report assesses the potential health and safety impacts of the proposed Farmview Solar 30 MW_{AC} solar photovoltaic with battery energy storage project. The Farmview Solar facility, located in Thomasville, North Carolina, will install crystalline silicon solar panels on single-axis tracking racks that slowly rotate each row of panels to follow the sun across the sky. Large central station inverters will convert the DC solar electricity generated by the solar panels into grid-synced AC electricity. Containerized battery systems, capable of storing and discharging energy, will be located at the system substation at the point of interconnection to the grid. Transformers will boost the voltage of the PV and battery inverters for connection to an onsite substation that connects to a transmission power line running through the project.



Photovoltaic (PV) panels are not new. They have been used and studied for over 40 years and are well understood by the scientific community. Utility-scale solar facilities are newer, but they too have been installed and studied for over a decade, and scientists also have a clear understanding of their function and impacts.

Utility-scale battery energy storage systems are newer still but have been maturing very quickly in the last few years. Farmview Solar will use a leading lithium-ion battery technology from a top manufacturer.

Photovoltaic systems produce emission-free electricity. This replaces electricity production from fossil fuel power plants that produce harmful emissions. The health benefits of clean solar electricity are hard to put a dollar figure on, but the EPA's best attempt at doing just that puts the value in the Carolinas between 1.7 and 3.8 cents per kWh produced. Even at the bottom end of this range, this equates to approximately \$1.1 million of public health benefit per year for the Farmview Solar project, and over \$32 million in 30 years.

The only identifiable risks to health and safety of the PV aspects of the Farmview Solar project are not unique to solar but exist for any source or use of electricity. These are electric shock, arc flash, and fire. Due to world-class safety regulations in the U.S. and an experienced solar industry, these risks are extremely low, and the secure and isolated nature of ground-mounted PV facilities, including Farmview Solar, results in minimal risk to the general public.

Common concerns about toxicity and EMF from solar facilities are understandable, but the operating characteristics and materials present in the equipment means that neither toxicity nor EMF pose a material risk to public health or safety. Research and experience regarding heat island effect and solar glare shows that, like other utility-scale PV projects, the Farmview Solar project will not create either of these potential impacts. The single-axis trackers at Farmview Solar that will keep the panels facing in the direction of the sun minimizes the potential for the project to create any glare.



Modern US battery codes and standards minimize the risk of fire, effectively removing the risk of explosion. A battery fire would damage equipment but due to the distance between the batteries and the public, a fire would not negatively impact public health or safety.

Based on my knowledge of engineering and science, personal experience with PV and battery technology, review of academic research, and review of project materials provided by Renewable Energy Services my findings and opinions are summarized as follows:

- The Farmview Solar project will result in a significant reduction of regional air pollution.
- The Farmview Solar project will not result in any negative impacts to public health or safety.
- The Farmview Solar facility will not increase the temperature of the area surrounding the site.
- The Farmview Solar facility is not expected to create any glare hazards or other negative glare impacts.
- The Farmview Solar project will not create bothersome noise for any neighbors.

Introduction

Purpose:

This report assesses the potential health and safety impacts of the proposed Farmview Solar ("Farmview") 30 MW_{AC} solar with battery energy storage (BES) project. It also seeks to educate readers on the health and safety impacts of photovoltaic and battery energy storage systems using accurate scientific sources of information, including providing resources for further reading.

System Overview: Solar with Batteries

The proposed Farmview Solar facility is a utility-scale photovoltaic generation facility with lithium-ion battery energy storage. The energy storage is in the form of containerized battery systems with inverters separate from the PV inverters, which is referred to as "AC-coupled" batteries. The batteries will all be located in a single area near the point of interconnection to the grid. In general, the batteries are charged by solar during peak hours and discharged when there is little or no sun shining but grid electricity is in high demand, and it repeats this cycle daily.

Battery Assessment

FOLLOW THE BATTERY ICON FOR
ASSESSMENT OF BATTERIES



Overview of Potential Impacts:

The proposed solar photovoltaic (PV) and BES system is likely to remain in operation at least 30 years, and this report considers its potential impacts in Thomasville from the start of construction onward, including decommissioning of the project and restoration of the land. This assessment considers all aspects of the project but focuses on those unique to solar with battery energy storage projects.

Potential Positive Health and Safety Impacts:

Every utility-scale PV project significantly reduces pollution by producing emission-free electricity that replaces electricity that otherwise would have been largely produced by burning coal and natural gas. Burning these fossil fuels for electricity production is a significant source of air, water, and soil pollution, so reducing their use is a clear public health benefit.

The US Environmental Protection Agency (EPA) conducted a study to determine how much pollution PV systems save and to estimate the public health value of the cleaner air, water, and soil they provide. These experts calculated that in the Carolinas, based on the sunshine available, the way electricity is produced, and the public health impacts of fossil fuel-fired electricity, every kilowatt-hour (kWh) of solar electricity produced provides 1.7 to 3.8 cents of public health benefit.¹ At this rate of benefit, **the Farmview Solar project will produce \$1.1 - \$2.4 million of public health benefits every year**, which would add up to **\$32 - \$73 million over the life of the project**. The public health benefits of generating pollution-free electricity with PV are very significant.

It is relatively simple to replace a small amount of grid energy with utility-scale solar energy, but as the portion of grid energy provided by solar becomes more significant it becomes increasingly challenging to integrate more solar without sacrificing reliability or power quality. Energy storage is a simple solution to overcome most of these challenges, and recent cost reductions and increased experience makes it feasible to integrate significant energy storage into solar facilities. While many types of energy storage are technically possible, battery energy storage has proven to be most practical. So, the inclusion of battery energy storage in projects like Farmview Solar improve the economics of the projects, such that some projects may not be feasible without the benefits of the batteries.



The positive benefits of photovoltaics are widely understood and well documented, so this report will not address them further. Furthermore, the positive public health impacts of the Farmview Solar project significantly outweigh any health and safety risks, as described below. The ability of energy storage to facilitate increased solar energy on the grid is widely understood and well documented, but direct analysis of the positive benefits of a battery system is less common. A life

¹ US Environmental Protection Agency, Public Health Benefits-per-kWh of Energy Efficiency and Renewable Energy in the US: A Technical Report. 2nd Ed, May 2021, www.epa.gov/statelocalenergy/public-health-benefits-kwh-energy-efficiency-and-renewable-energy-united-states

cycle environmental impacts assessment of utility-scale battery energy storage in California found that when the positive and negative carbon impacts of batteries are considered, that the batteries reduce the carbon footprint of the grid due to the storage's ability to store and release solar energy that otherwise would have gone unproduced due to curtailment.²

Potential Negative Health and Safety Impacts:

All electricity generating facilities, including photovoltaics and batteries, provide some potential for negative health and safety impacts, however the Farmview project does not present negative health and safety risks to the general public due to its location or technology (photovoltaic generation with battery energy storage). The only aspect of the PV portion of the system at Farmview Solar that presents risk of physical harm is the potential for electrical shock, arc flash, or fire, which are hazards present with any electrical system and not unique to solar. There are several other aspects of PV systems that often raise public health and safety concerns, but no other aspect of PV systems poses any material risk of negative public health or safety impacts.

Like PV systems, battery systems also produce a limited electrical shock and arc flash hazard, however unlike PV systems, batteries also have the potential for toxicity, fire, and explosion hazards. While it is possible for lithium-ion batteries to catch fire, release toxic gases, and even explode, these hazards at the Farmview Solar site do not pose any risk to the general public because the battery systems are outdoors and hundreds of feet from the closest neighbor.

The major health and safety risk of the project is not due to the solar or battery technologies but is standard construction hazards for construction workers building the site, which does not pose any safety risk to the general public.

Utility-scale PV is becoming a mature industry, but still rapidly growing. The underlying PV technologies of silicon and cadmium telluride have been studied in the laboratory and in the field for well over 30 years. So, the products, practices, regulations, and policies in the PV industry have a well-established base to build upon. Also, research literature on potential negative impacts of PV goes back decades. Modern utility-scale battery energy storage is a rapidly emerging industry, largely building on the success of lithium-ion batteries in consumer products and electric vehicles. So, the products, practices, regulations, and policies in the BES industry are changing extremely rapidly, often with technology change leading policy and regulations. Even though there have been years of experience with batteries in laptops and phones, stationary multi-megawatt battery systems are still somewhat new. The industry is only a handful of years old, with equipment to be installed in 2023 or later being much more mature than technology installed just 3 or 4 years ago. In that time, codes and standards have gone from being designed for small lead-acid battery emergency back-up power to being robust regulations built on several years of early BES experience with input from a wide array of battery stakeholders and experts. Just 3-4 years ago the regulations for stationary battery left system safety to the equipment manufacturers. During this "wild west" period of utility-scale BES development many valuable safety lessons were learned. See below for several publications on the potential health and safety impacts of battery energy storage systems.

Sources for Further Reading on Battery Impacts:

- Sandia National Lab: [Grid-scale Energy Storage Hazard Analysis & Design Objectives for System](#), August 2020
- Energy Response Solutions, Inc.: [Energy Storage System Safety: Comparing Vanadium Redox Flow and Lithium-Ion Based Systems](#), Aug 2017
- National Fire Protection Association (NFPA): [Energy Storage Systems Safety Fact Sheet](#), June 2020
- New York State Energy Research and Development Authority: [New York Battery Energy Storage System Guidebook for Local Governments](#), December 2020
- Electric Power Research Institute (EPRI): [Energy Storage Integration Council \(ESIC\) Energy Storage Implementation Guide](#), March 2019
- Electric Power Research Institute (EPRI): [Lessons Learned: Lithium Ion Battery Storage Fire Prevention and Mitigation – 2021](#), June 2021

² Balakrishnan, Brutsch, Jamis, et al, Environmental Impacts of Utility-Scale Battery Storage in California, 2019 IEEE 46th Photovoltaic Specialists Conference (PVSC), June 2019, www.firstsolar.com/-/media/First-Solar/Sustainability-Documents/Environmental-Impacts-of-Utility-Scale-Battery-Storage-in-California.ashx

Evidence for the lack of any significant environmental, health, or safety impact of the proposed Farmview project is provided by the required State Environmental Review Clearinghouse (the "State Clearinghouse") review, which is required as a part of the project's Certificate of Public Convenience and Necessity ("CPCN") application process. The North Carolina Environmental Policy Act of 1971 (G.S. 113A 1-13), also known as the State Environmental Policy Act ("SEPA"), defines the state policy designed to maintain and protect the state's environment. The statute requires state agencies to the fullest extent possible identify significant environmental effects of their actions and to implement measures to minimize negative effects. The State Clearinghouse consists of all applicable state agencies, who review and comment on every request for a CPCN. The State Clearinghouse includes the North Carolina Department of Natural and Cultural Resources, NC Wildlife Resources Commission, The Division of Waste Management, North Carolina Department of Agriculture and Consumer Services, and others. The Farmview project has not yet applied for a CPCN, but before this required certificate is granted by the NC Utilities Commission, the State Clearinghouse must review the proposed project and find it to be in compliance with the North Carolina Environmental Policy Act.

In addition to the State Clearinghouse review, the Project has many environmental regulations and permitting processes that it must comply with. One notable environmental protection regulation is the Sedimentation Pollution Control Act of 1973.³ This act requires construction projects, including utility-scale solar facilities, to meet requirements designed to keep sediment from entering our natural watercourses (e.g. streams, rivers, lakes, etc.) and to keep sediment from washing onto adjacent property. The North Carolina Department of Environmental Quality (DEQ) enforces the act through their local offices spread around the state, which includes requiring DEQ approval of a site-specific erosion and sedimentation control plan before disturbing any soil. The approved Erosion and Sedimentation Control plan must be adhered to throughout construction and until adequate groundcover to stabilize the soil is established.

This assessment report will address all the potential health and/or safety risks of the Farmview project, including common concerns that have no potential for public health impact. Specifically, this report addresses the following possible negative impacts/concerns:

- Electrical Shock and Arc Flash
- Toxicity / Chemical
- Heat Island Effect
- Fire and Emergency Response
- Electromagnetic Fields (EMF)
- Glare and noise

To meet the Thomasville solar ordinance, Farmview Solar will provide a 15ft vegetative buffer, within the 35ft of minimum setback around the entire perimeter of the site, with a 100ft setback along the eastern edge of the site that is adjacent to several residences. This is a larger buffer than many existing solar facilities and most other land uses. This combination of setback and vegetative screening will separate the public from this project and minimize its impacts, including the visual/aesthetic impact of seeing the equipment.

Before addressing each of these impact categories, this report provides an overview of utility-scale photovoltaic and battery energy storage equipment and facility construction and operations. These photos should help introduce utility-scale PV and batteries to any reader who has not toured a facility during construction or operation.

³ North Carolina Environmental Quality webpage: Erosion and Sediment Control Laws and Rules, retrieved 2/8/2023, <https://deq.nc.gov/about/divisions/energy-mineral-and-land-resources/erosion-and-sediment-control/erosion-and-sediment-control-laws-and-rules>

Equipment, Construction, and Operations⁴

To understand the potential impacts of a utility-scale PV and battery system it is helpful to understand the components of the facility, as well as how a facility is constructed and maintained. The components and practices in this overview are typical of the industry and representative of the proposed Farmview Solar project. The initial site work occurs first, but the order of the other construction steps is flexible and may occur concurrently.

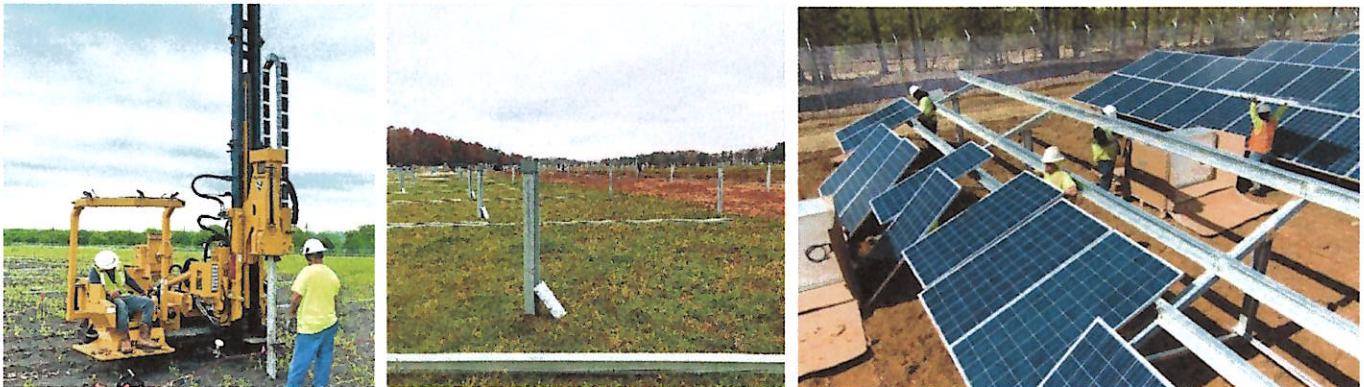
Initial Site Work (construction entrance/driveway, sedimentation and erosion control installation, clearing and grubbing, potentially some grading, perimeter fence, and internal roads)



Underground Work (trenching for wires from PV combiner boxes to inverters, inverter pad installation, medium voltage cables to interconnection equipment)



PV Panel Structure/Racking (driving of steel piles, installation of racking "tables", installation of PV panels)

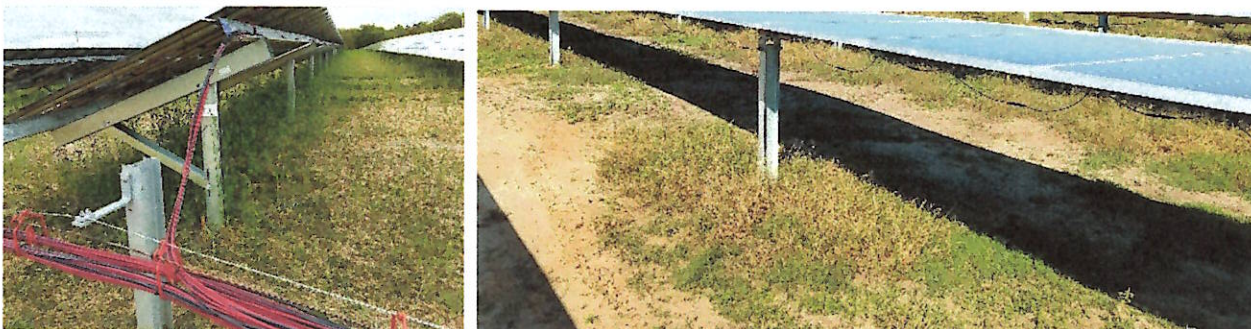


⁴ Photo sources: author, ncre-usa.com, NC DEQ, blueoakenergy.com, solarbuildermag.com, hbc-inc.com, solarprofessional.com, enr.com, dynapower.com, ie-corp.com, ccrenew.com, and landiscontracting.com

Electrical Work (connection of PV module wiring, combiner boxes, inverters, batteries, transformers, interconnection facilities)



Establishment of Ground Cover (required to close out sedimentation and erosion control permit)



Operations and Maintenance (24/7 monitoring, vegetation maintenance, preventative maintenance)



Electrical Shock and Arc Flash

Any electricity over 50 volts presents an electrical shock hazard, including the electricity in PV and battery facilities. However, like electrical systems in buildings, the solar and battery facility must adhere to the National Electrical Code (NEC) and the equipment must be certified to the appropriate UL safety standards. Unlike buildings, members of the public are restricted from entering a utility-scale solar facility. To help ensure that only qualified people have access to the equipment, the NEC requires a secure perimeter security fence with electrical warning signs. The lack of public access coupled with the high U.S. electrical safety standards essentially eliminates the risk of electric shock for the public.

In circuits with significant available fault current there is another electrical hazard, called arc flash, which is an explosion of energy that can occur due to a short circuit. This explosive release of energy causes a flash of light and heat, creating a shockwave that can knock someone off their feet. The risk of arc flash in a solar and battery facility is no different than the risk at commercial or industrial buildings, except that solar facilities are much less accessible. Equipment with an arc flash risk require arc flash warning labels, and only trained personnel wearing the proper personal protective equipment are allowed in it. Due to the secure perimeter and the high U.S. electrical safety standards there is essentially no arc flash risk to the public.



Figure 1. Perimeter Fence with Warning Signs

Fire Risk and Emergency Response

Every electrical system has some risk of starting a fire, including electrical systems in residential, commercial, and industrial buildings. It is this hazard that motivated creation of the National Electrical Code over 100 years ago. Due to the high standard required by the NEC, modern electrical systems rarely start fires. Like electrical systems in buildings, ground-mounted photovoltaic systems and battery energy storage systems must also adhere to the NEC, including sections of the NEC with specific rules for PV and for batteries.

Fire Risk: Solar

In the rare case that a PV system has a fault that starts a fire, there is very little combustible material present for it to ignite. The only flammable portions of PV panels are the few thin plastic layers, the plastic junction box, and the insulation on its wires. The inverters are also capable of igniting, however like PV modules, they consist primarily of non-flammable materials.

The inverters and transformers are located on concrete pads or raised steel platforms that are isolated from other equipment and vegetation, so a fire in this equipment poses little treat of spreading.

Heat from a small flame is not adequate to ignite a PV panel, but an intense fire or an electrical fault can ignite a PV panel. One real-world example illustrating the low flammability of PV panels occurred during July 2015 in an arid area of California. Three acres of grass under a utility-scale PV facility burned without igniting the panels mounted just above the grass.⁵ Another example occurred recently (2022) in Florida, where there was a 5-acre grass fire under a portion of a 400-acre PV facility that did not ignite any modules.⁶

Fire Risk: Transformers

The most significant fire hazard at a utility-scale solar facility may be the oil in the transformers. There are medium voltage transformers dispersed throughout the site located by each inverter, called inverter step-up (“ISU”) transformers, and there is a large transformer in the interconnection substation, known as the generator step-up (“GSU”) transformer. Traditionally these types of transformers are filled with a non-PCB mineral oil, which is derived from petroleum, and is electrically insulating but flammable. A popular alternative to mineral oil is a transformer fluid made of biodegradable vegetable oil, such as FR3 by Cargill or VG-100 by GE. This type of oil not only has several performance benefits over mineral oil, but it is also dramatically reduces the fire hazard of transformers. These vegetable oils’ flash point of 330°C is dramatically hotter than mineral oil transformer fluid (160°C). Unlike mineral oil, FR3 and VG-100 are classified as a K-class, “high-fire-point”, “fire-resistant”, and “less-flammable” fluid. Also classified as “nonpropagating”, it is self-extinguishing, and will not continuously burn if ignited. Mineral oil, however, will keep burning for hours when ignited, with no feasible way to stop it until all the oil is consumed. However, neither mineral oil- or vegetable oil-filled transformers create a fire hazard for the community or property surrounding the solar facility because even in a worst-case scenario of a transformer fire, this equipment is located in the middle of a field, far from other flammable materials and far from neighboring properties. Typically, the only thing at risk of being ignited by a transformer fire in a utility-scalar facility is the groundcover (i.e. grass, clover, etc.), which is only a risk in particularly dry conditions. A grass fire is relatively easy to control and poses negligible fire risk to the community.

There are best practices for how to prepare for and conduct an emergency response at a transformer. For example, see the NERC lessons learned document in the Sources for Further Reading at the end of this section.

Fire Risk: Batteries

Batteries can store a lot of energy, which makes them valuable but can also mean they have the potential to unintentionally release that energy very quickly, which can cause a fire or even lead to an explosion. The degree of fire risk varies greatly not only between battery chemistries but also between different battery systems. There have been some fires at utility-scale batteries in recent years in the US and around the world, however newer battery systems have learned from these experiences and have corrected many of problems that led to these early fires.⁷ Our understanding of battery fires and how to avoid them has rapidly increased the last few years as experience has grown from near zero to many thousands of systems. With this experience has come improved battery systems and improved codes and standards.

Generally, all utility-scale batteries are packaged in outdoor-rated containerized enclosure with a battery management system (BMS) and any needed HVAC capabilities. By far the most common type of utility-scale battery is lithium-ion. While there are several different lithium-ion chemistries, all the varieties on the market today consist of cells that each contain a solid anode and cathode separated by liquid electrolyte, which is generally flammable. Many of these cells are connected into a module, several modules are connected in a rack, and several racks are connected in the containerized battery system. Each level has physical barriers and a protective battery management system.

The fire risk starts at the cell level, where if a cell faults or is abused in some way it often produces heat. It is possible for the heating to continue until the cell is generating heat more quickly than it can dissipate the heat, resulting in a rapid, accelerating rise in temperature, which is known as thermal runaway. When the cell reaches high temperatures, it vents



⁵ Matt Fountain. The Tribune. Fire breaks out at Topaz Solar Farm. July 2015. www.sanluisobispo.com/news/local/article39055539.html

⁶ WBMM News 13, Fire breaks out at Jackson Co. solar farm. August 2022, www.youtube.com/watch?v=byE_BpUX2mc

⁷ EPRI, Lessons Learned: Lithium Ion Battery Storage Fire Prevention and Mitigation – 2021, June 2021
<https://www.epri.com/research/products/000000003002021208>

gases that are often flammable and toxic. The heat from a single cell in thermal runaway could cause nearby cells to also go into thermal runaway, causing more heat and the potential to drive more cells into thermal runaway. However, there are early warning signs of problems before there is any smoke or fire, allowing for automatic protection systems to act early enough to avoid the worst impacts and potentially avoid thermal runaway all together. The national electrical code (NEC) requires that the battery be certified to UL 1973, the battery safety standard for stationary batteries, which includes a requirement that the battery module does not allow fire outside of the module or any explosion. The NEC also requires the battery system to be certified to UL 9540 that addresses the safety of the entire battery system.

In addition to updated equipment standards, there are new installation standards, notably the (National Fire Protection Association) NFPA 855 Standard for the Installation of Stationary Energy Storage Systems which covers the "design, construction, installation, commissioning, operation, maintenance, and decommissioning of stationary ESS." This standard addresses everything from hazard assessment to emergency response planning, and determines when large scale fire testing per UL 9540A is required. UL 9540A is the U.S.'s "Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems", which was first published in late 2017 and has recently had a significant impact on the safety of battery systems. The test starts with a cell level test and only proceeds to module, unit, and installation level tests if the lower-level tests find a fire risk. The UL 9540A test for the cell level consists of attempts to cause the battery to burn or emit flammable gas. The abuse tests include driving a 2.5-inch nail through the battery, overcharging the battery to 200% of nominal charge, and short circuiting the positive and negative terminals of the battery. Any off gassing is captured and analyzed to determine the gases released, and the tests are videoed, with all this data included in the test results.

With lithium-ion batteries there is always some risk of fire, however when built and installed in compliance with the modern US battery safety codes and standards the risk of fire is extremely small and the risk of explosion is practically zero. Due to the isolation of the Farmview Solar batteries from the public due to being located inside of the solar facility and proper emergency response planning and training, even a battery explosion would not impact the public. In a worst-case scenario of a large fire in a battery enclosure that destroys the entire unit, the only potential impact to the public is due to the smoke emitted by the fire. The smoke from a lithium-ion battery fire is very similar to the smoke from a fire of a similar mass of common plastics⁸, which is more toxic than wood smoke and likely more toxic than the smoke from a burning building. However, at Farmview Solar the significant distance from each battery enclosure to the nearest neighbors makes the potential health impact from smoke from a battery fire insignificant.⁹

Thus, there is very little chance of a fire in the batteries at Farmview Solar, and even the worst-case situation of a fire in a single battery enclosure would not produce enough smoke for long enough to have a material impact on public health.

Emergency Response: Solar

No special equipment is required to respond to a fire incident at a utility-scale PV facility. The most important thing for first responders to know is that as long as the sun is shining on the PV panels they will produce voltage that is dangerous to touch, but there is no danger in touching undamaged panels. There are multiple electrical disconnect switches in PV systems which allows problem areas to be electrically isolated quickly.

Risks of fire associated with vegetative ground cover are reduced by landscaping plans that keep this vegetation low. Local emergency responders typically have access to open locked gates and training on the electrical hazards within the site. So, they are able to safely extinguish grass fires inside of the facility, or monitor and protect the areas surrounding the facility, to ensure the fire does not spread to surrounding areas. The solar facility is remotely monitored around the clock, and responding personnel are available for emergencies. The International Association of Fire Fighters (IAFF) provides online training on responding to fires at photovoltaic facilities at www.iaff.org/solar-pv-safety.

⁸ Sandia National Laboratories, Grid-scale Energy Storage Hazard Analysis & Design Objectives for System Safety, August 2020, <https://www.osti.gov/servlets/purl/1662020>

⁹ An example of toxic smoke impact analysis for a project using Tesla MegaPack lithium-ion battery with a church and residences approximately 200 feet from the batteries: Hazards Assessment Final Report Orni 34 LLC Battery Energy Storage System Prepared for Santa Barbara County, Nov. 2019, https://files.ceqanet.opr.ca.gov/257908-2/attachment/ID6EipwCFrLAn_Z0Z-SNkEMFUIsW7hhYR-SowwCukaV4k_p5sk_bElvYOC3UYKgeBtfprFm-FaYmK0eu0

Emergency Response: Batteries

No special equipment is needed to respond to a battery fire. In fact, many facilities direct firefighters to not fight the battery fire at all but to allow the fire to burn itself out. In this case, the site's emergency response plan likely calls for a defensive firefighting approach in which firefighters may spray adjacent equipment with water to ensure the fire doesn't spread beyond a single battery enclosure. When the plan calls for actively fighting the battery, the best method is to douse the fire with large volumes of water. The NFPA 855 installation standard requires that the facility create an emergency response plan and provide the plan and training to the local fire department. The appropriate first responders' actions will vary depending on the type of battery at the site, so it is vital that the facility create an emergency response plan specific to the equipment and procedures of that facility and educate the local fire departments on the equipment and the response plan. The National Fire Protection Association (NFPA) provides on-line training on PV and Energy Storage: <https://catalog.nfpa.org/Energy-Storage-and-Solar-Systems-Safety-Online-Training-P20882.aspx>



Sources for Further Reading on Fire and Emergency Response:

- Duke Energy: [Fire Safety Guidelines for Rooftop- and Ground-Mounted Solar Photovoltaic \(PV\) Systems](#), September 2015
- North American Electric Reliability Corporation (NERC): [Lessons Learned, Substation Fires: Working with First Responders](#), February 2019
- Sandia National Lab: [Grid-scale Energy Storage Hazard Analysis & Design Objectives for System](#), August 2020
- Energy Storage Association (ESA), [Operational Risk Management in the U.S. Energy Storage Industry: Lithium-Ion Fire and Thermal Event Safety](#), September 2019
- Electric Power Research Institute (EPRI): [Energy Storage Integration Council \(ESIC\) Energy Storage Implementation Guide](#), March 2019
- Electric Power Research Institute (EPRI): [Proactive First Responder Engagement for Battery Energy Storage System Owners and Operators](#), September 2021
- Tesla: [Lithium-Ion Battery Emergency Response Guide](#), 2022 (Version 2.6)
- also see *Sources for Further Reading on Battery Impacts* on page 5 of this report



Toxicity (Equipment and Operations)

Toxicity is probably the most common health and safety concern about photovoltaic systems, although as detailed below the systems do not pose a material toxicity risk to the public or the environment. This report examines all possible sources of toxicity, from site construction to decommissioning at the end of the project life. The potential sources of toxicity are organized into two categories: equipment and operations and maintenance (O&M).

Toxicity: Equipment

The main equipment at a solar facility is PV modules (a.k.a. solar panels or PV panels), metal structures for mounting the solar panels, and wiring to collect the electricity they produce. The other major components are inverters and transformers. Inverters are enclosed power electronic equipment that do not contain liquids and are treated like other electronic waste at the end of their life. Transformers contain non-toxic mineral oil or vegetable oil and are no different than the typical transformers outside of most residences, schools, and shopping centers. Solar panels have raised the most public concerns related to toxicity, so they are covered in depth below, but since transformers contain liquid they are also addressed. The other components in the facility include the steel racking, the conduits (PVC plastic and galvanized steel), and copper and aluminum wires. The conduit and wires are normal construction materials. The racking for the PV panels is generally galvanized steel posts with galvanized steel or aluminum cross members. None of these supporting materials (wire, conduit, and racking) create a toxicity concern. The galvanized coating on the steel is a zinc coating, and zinc is a vital mineral for human health. PVC plastic and galvanized steel conduits and all types of copper and aluminum wiring have been building staples for many decades. These materials have not caused a toxicity concern in buildings where people are close to this

equipment day and night so there is no reason to think they have any risk of creating a toxicity concern when used at a utility scale solar facility.

Contents of PV Panels

The Farmview Solar project will install top of the line silicon-based PV panels sourced from a reputable manufacturer meeting established criteria including third-party ratings for performance, reliability, and bankability (Bloomberg Tier I, the highest rating¹⁰). Specifically, the project plans to use a bi-facial monocrystalline silicon module. The project plans are designed based on 580 watt modules manufactured by Hanwha Q Cells, but other manufacturers make equivalent modules that could be used instead with no change in quality, should the project be unable to source that specific module. The PV panels are the most expensive and most important component in a solar facility, so the owner performs due diligence to ensure that the panels selected and delivered to the project are properly manufactured, certified, and tested.

The diagram below shows the components of a typical single-glass silicon PV panel, including a closeup of the solar cells and the electrical connections. Over 80% of the weight of a PV panel is the tempered front glass cover (or, front and back heat-strengthened glass) and the structural aluminum frame, which work together to create a strong, durable panel that outlasts its typical 25 to 30-year performance warranty. The encapsulation films are clear plastic lamination layers that protect the cells and electrical contacts from moisture for the life of the panel. These layers also maintain the panel as a single unit in the event of breakage of the glass cover(s), similar to the film in auto windshields that keeps them watertight and from fragmenting if the windshield shatters.

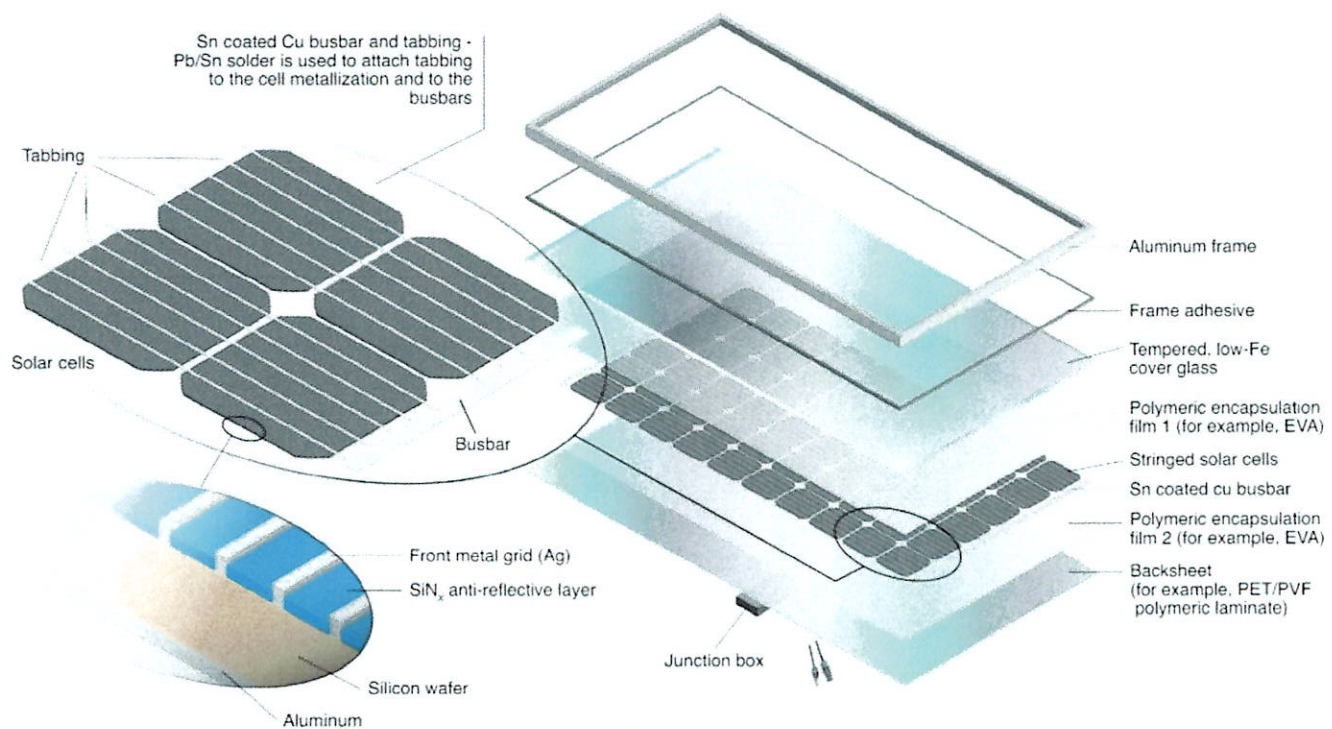


Figure 2. Contents of Framed Crystalline Silicon Panels (Source: NREL)

As can be seen in the above diagram, there are no liquids to leak from a broken panel. The plastic layers are inert. The silicon PV cells are nearly 100% silicon, which is harmless and is the second most common element in the Earth's crust. The only components of a PV panel that have any potential of toxic impact is the solder used to connect the solar cells together and to the busbars at the end of the panel, and the thin strips of silver that collect electricity from each cell. The solder, which is the

¹⁰ The financial information firm Bloomberg has developed a tiering system for PV module makers based on bankability that is the standard the PV industry uses to differentiate between the hundreds of manufacturers of solar modules on the market. Tier 1 is the highest of three tiers, which are determined by banks' confidence in a manufacturer's PV panels as demonstrated by their willingness to supply project financing backed only by the assets of the project. The details are described by BloombergNEF in this document: PV Module Tier 1 List Methodology https://data.bloomberglp.com/bnef/sites/4/2012/12/bnef_2012-12-03_PVModuleTiering.pdf

same tin-lead solder standard in the electronic industry, is 36% lead. The tiny amount of silver in a panel does not create a toxicity hazard, but it does add potential recycling value.

Even though there is only a tiny amount of lead in each panel, the total amount of lead in all the PV modules in a utility-scale project adds up to a considerable amount of lead. However, these PV panels are spread out over a large area and when the amount of lead in the PV panels is compared to the amount of lead naturally occurring in the soil under the PV array, it is obvious that even if all the lead somehow leached out of every module (which as explained below is impossible), the increase in total lead in the soil would be less than the naturally occurring difference between different soils. Across the US soils naturally have between about 10 and 50 mg of lead per kg of soil, with the average being somewhere in the 20s. Across 83 USGS survey locations across N.C., the values ranged from 5 to 46 with an average of 20 and a median of 18.¹¹ For a location that naturally has 15 mg of lead per kg of soil, all the lead in all the PV modules in the facility would have the same amount of lead as just the top 4 inches of soil at the site.¹²

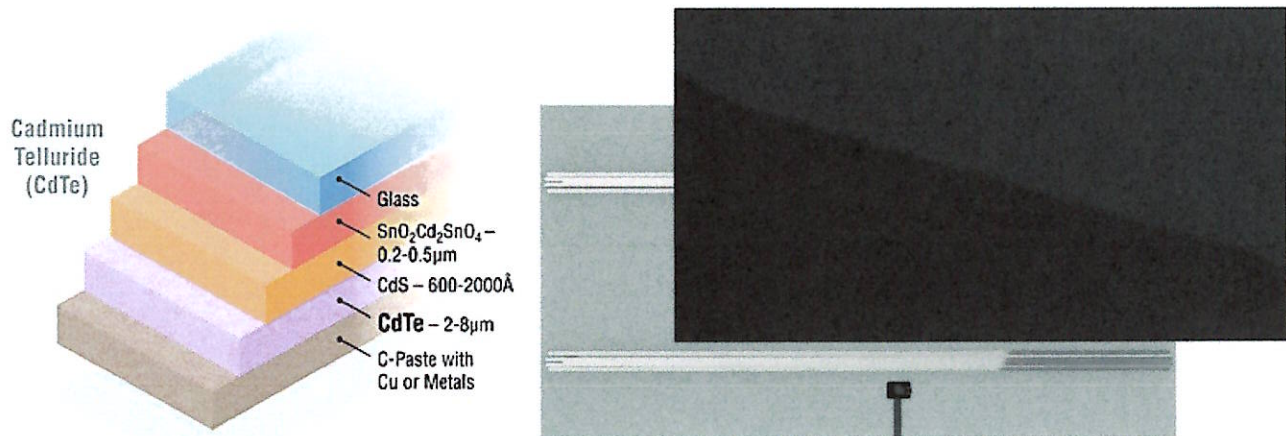


Figure 3. Contents of Cadmium Telluride Panels (Source: NREL); Front and Rear Photo of First Solar Series 7 CdTe Panels (Source: First Solar)

The leading alternative PV technology to silicon-based PV is Cadmium telluride (CdTe), which is by far the most common thin film PV technology. **While Farmview Solar plans to use silicon modules and not any CdTe modules, this assessment report is still providing a basic introduction to CdTe modules in case a switch is necessary and because it is not uncommon for stakeholders to have confusion about the differences in the two technologies.** CdTe is referred to as thin film because the active layers are less than 1/10th the thickness of a human hair. Figure 3 above contains two images, on the left is a not-to-scale diagram of the layers for a CdTe PV module (thickness dimension provided in image), and the right image is a photo of two First Solar CdTe modules showing the back of one module and the front of another. The PV cells consist of an incredibly thin layer of cadmium telluride with an even thinner coating of cadmium sulfide (roughly 1/60th the thickness of the CdTe film). Above these active layers is a transparent conducting metal oxide, commonly tin oxide (SnO₂), and below the active layers is a layer of metal to conduct away the electricity. This thin stack is sandwiched between two sheets of heat-strengthened glass that provides electrical insulation and physical protection. Like silicon modules there is no liquid to leak. The only aspect of CdTe modules that raises toxicity concern is the cadmium in the cadmium telluride and cadmium sulfide. Cadmium is a toxic heavy metal, but when cadmium is chemically bonded to tellurium in the crystalline cadmium telluride compound, it has only 1/100th toxicity to humans of cadmium on its own (i.e. not bonded to another element in a compound, also known as free cadmium).¹³ The compound cadmium telluride is very stable, so it does not easily break down into cadmium and tellurium.

¹¹ Smith, D.B., Cannon, W.F., Woodruff, L.G., Solano, Federico, Kilburn, J.E., and Fey, D.L., 2013, Geochemical and Mineralogical Data for Soils of the Conterminous United States: U.S. Geological Survey Data Series 801, 19 p., <http://pubs.usgs.gov/ds/801/>

¹² PV: 12 g of lead (per panel) per 65 ft² (panel footprint of 21.5 ft² / ground coverage ratio of 0.40) = 0.223 g of lead/ft²

Soil: 15 mg of lead per kg of soil * 45 kg of soil per ft³ * 4 inches (0.333 ft) soil depth * 65 ft² = 14.61 g of lead / 65 ft² = 0.225 g of lead/ft²

¹³ C. Miller, I.M. Peters, and S. Zaveri, Thin Film CdTe Photovoltaics and the U.S. Energy Transition in 2020, <https://qesst.org/resources/thin-film-pv-report-2020/>, June 2020

Cadmium telluride PV panels have been in use for decades, and their potential for creating a health hazard has been studied as long. As shown in the sections below and the some of the reading resources linked at the end of this section, CdTe panels are extremely safe and do not pose any risk to public health and safety, including when installed in large numbers.

Broken PV Panels

There is zero risk of toxicity escape from undamaged PV panels because any lead is sealed from air and water exposure. Individual panels damaged during the life of the solar facility are identified in days to months through either remote monitoring of system performance or from visual inspections during maintenance by onsite staff. In 2019 an international team of experts conducted an International Energy Agency - Photovoltaic Power Systems Programme (IEA-PVPS) study to assess if there is a public health hazard caused by lead leaching from the broken PV panels during the life of a utility-scale solar facility utilizing conservative assumptions to evaluate extreme scenarios.¹⁴ The study examined worst-case exposure routes of soil, air, and ground water for a typical 100 MW_{AC} PV facility. For example, the worst-case residential groundwater exposure assumed that all broken panels from the entire array were within 25 feet of the groundwater well, and the chemicals released from every broken panel transported to the same groundwater well. The study found that worst-case lead exposure via air, soil, and water were each orders of magnitude less than the levels defined by the US Environmental Protection Agency (EPA) to have no adverse health effects. In the case of water, the health-screening level is the same as the maximum concentration level (MCL) set by the EPA for water quality in public water systems. This study demonstrates that there is no risk to public health from lead leached from broken PV panels.

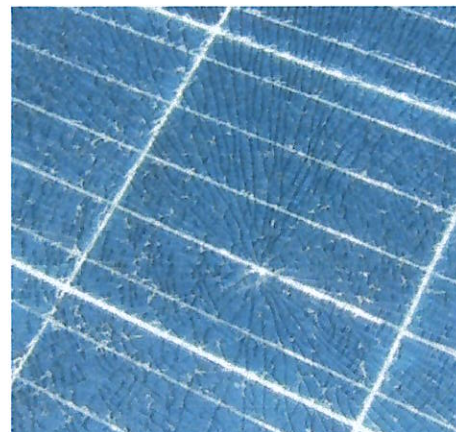


Figure 4. Close-up photo of impact point that broke the glass front of this PV panel

PFAS

Some solar opponents have raised questions about the possibility of per- and poly-fluoroalkyl substances (“PFAS”) chemicals being emitted by solar panels. PFAS chemicals are a group of man-made chemicals informally known as “forever chemicals” due to their durability in the environment. These chemicals have been used in many industrial and consumer products for over 60 years, including food packaging materials, firefighting foam, waterproof clothing, stain resistant carpet treatments, and thousands more.

As explained in a fact sheet from the University of Michigan entitled “Facts about solar panels: PFAS contamination”, PV panels do not contain PFAS materials.¹⁵ Neither the self-cleaning coating on top of the solar panel, the adhesives in the panel, nor the front or rear covers/substrates contain PFAS. The “backsheet”, or traditional rear substrate of a silicon PV panel, is the thin opaque plastic layer on the rear of a single-glass PV panel that provides electrical insulation and physical protection for the rear of the PV cells. Polyvinyl fluoride (PVF) is the base material for the most common backsheet material (Tedlar), but several other materials have also been used as backsheets, some consisting of multiple layers. Depending on which definition of PFAS that is used, PVF may be classified as PFAS, however the most recent and applicable definition of what **is and is not** a PFAS material was created by the Organization for Economic Co-operation and Development (OECD)¹⁶ in 2021 and PVF does not meet this modern PFAS definition¹⁷.

¹⁴ P. Sinha, G. Heath, A. Wade, K. Komoto, 2019, Human health risk assessment methods for PV, Part 2: Breakage risks, International Energy Agency (IEA) PVPS Task 12, Report T12-15:2019. ISBN 978-3-906042-87-9, September 2019

¹⁵ “Clean Energy in Michigan” Series, Number 12, Facts about solar panels: PFAS contamination, By Dr. Annick Ancil, <https://graham.umich.edu/media/pubs/Facts-about-solar-panels--PFAS-contamination-47485.pdf>

¹⁶ OECD is an intergovernmental organization with representatives of 38 industrialized countries. OECD developed the updated definition in response to an international call for “programmes and regulatory approaches to reduce emissions and the content of relevant perfluorinated chemicals of concern in products...” OECD Portal on Per and Poly Fluorinated Chemicals: www.oecd.org/chemicalsafety/portal-perfluorinated-chemicals/

¹⁷ OECD (2021), Reconciling Terminology of the Universe of Per- and Polyfluoroalkyl Substances: Recommendations and Practical Guidance, OECD Series on Risk Management, No. 61, OECD Publishing, Paris. www.oecd.org/chemicalsafety/portal-perfluorinated-chemicals/terminology-per-and-polyfluoroalkyl-substances.pdf

However, not all PV panels even have a backsheet, in fact the trend in PV module design is to replace the backsheet with a thin sheet of glass so that the module has thinner front and rear sheets of glass instead of a thicker sheet of front glass and a thin plastic backsheet. Bi-facial modules like those planned for Farmview Solar, require a clear glass covering on their back to allow light to reach the rear of the PV cells and therefore do not have a backsheet. Thus, the bi-facial modules at Farmview Solar should not contain any PFAS, by any definition of PFAS.

PV Panel End-of-Life

PV panels last a very long time, but they do not last forever. Their output declines slightly each year, but panels rarely fail in less than 40 years. The expected economic life of utility-scale PV panels is 25-40 years, at which point they may be replaced by new panels or the entire project may be decommissioned, bringing the land back to how it was before the solar facility was installed. In both instances, the original PV panels are removed from the site. There are three possible fates for solar panels at the end of their economic life at a project:

- **Reuse:** Most likely when the PV panels at the Farmview Solar project are decommissioned they will still produce at least 75% of their original output and have another decade of productive life, making them most valuable to be reused as solar panels on rooftops or ground-mounted applications. Markets for used solar panels exist today and are likely to be much more mature and widely available in 30-40 years when the Farmview Solar PV panels near the end of their life.
- **Recycling:** Any panels that are not reused as working panels could be recycled. Currently in the US, it is possible to recycle the largest constituents of silicon PV panels (glass, aluminum frame, copper wires) using the existing glass and metal recycling infrastructure. Today this recycling comes at a cost premium to disposing the panels in a landfill. However, as PV recycling technology improves and the number of panels reaching end-of-life increases dramatically, it is possible that in the future recycling PV panels will more than pay for itself. Recycling plants built specifically to recycle PV panels can recycle nearly 100% of the panel, including the valuable silver and refined silicon they contain, and can be optimized for the task, significantly reducing the cost to recycle each panel. In 2018 the first industrial-scale PV-specific recycling plant was built, in France, and in 2022 the first large scale PV recycling plant in the US was built. These initial PV recycling plants will not have the capacity to recycle the millions of installed PV panels, but in the coming decades it is expected that PV-specific recycling plants will become much more commonplace. PV recycling technology is clearly still in its infancy. However, it is expected that when the Farmview PV panels reach the end of their useful life in 30+ years, the US PV recycling infrastructure will be robust, such that reuse or recycling of the PV panels will be the preferred options or required by new U.S. regulations, as it has been for years in Europe.

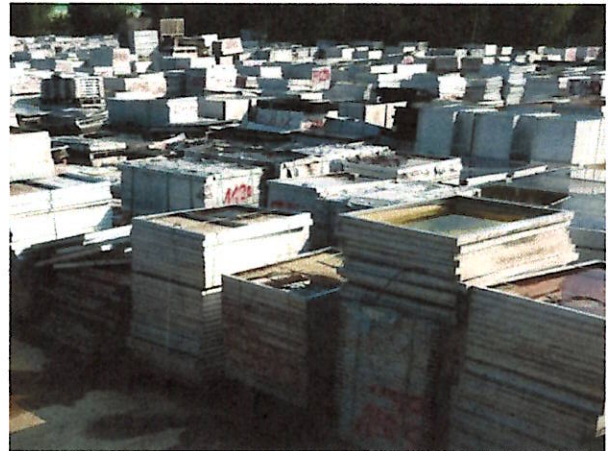


Figure 5. PV Panels Waiting to be Recycled (Source: LuxChemtech GmbH)

The Solar Energy Industries Association (SEIA) started the SEIA National PV Recycling Program several years ago to accelerate PV recycling in the US. Currently the program aggregates the services offered by recycling vendors and PV manufacturers, making it easier for the industry to select a cost-effective and environmentally responsible end-of-life management solution. **The program identifies Preferred Recycling Partners through an evaluation process. These partners are capable of recycling PV modules, inverters, and other related equipment today.** The current SEIA PV Recycling Partners are listed on the program's website, and full access to the program and the Preferred Recycling Partners is available to SEIA members.

- **Disposal:** If panels are not reused or recycled, federal waste management laws (Resource Recovery and Conservation Act, RCRA) require that PV panels, like any other commercial/industrial waste, be disposed of properly, which would typically be in a landfill. In order to determine the proper disposal method, RCRA requires that all commercial/industrial waste be identified as either hazardous or non-hazardous waste, which is generally determined for PV panels using the Toxic Characteristic Leaching Procedure (TCLP) test developed by the U.S. EPA. This test seeks to simulate landfill conditions and check for leaching of 8 toxic metals and 32 organic compounds. Limited data has been published about the TCLP test results of solar panels, but it is known that some older silicon panels that contain more lead than modern

panels exceed the TCLP test limits for lead. Researchers at Arizona State University's Photovoltaic Reliability Laboratory have done the most robust investigation of methods for conducting accurate TCLP test on PV panels, and their latest research found that all three of the modern crystalline silicon PV panels tested passed the TCLP test, classifying them as non-hazardous waste.¹⁸

A worst-case scenario would be tons of PV panels being disposed of in a non-sanitary landfill, which is essentially a huge pile of garbage with little to no effort to minimize leaching from the waste. This type of landfill is illegal in many world regions, including in North Carolina. A recent IEA-PVS research study on PV panels disposal risks used this worst-case situation to evaluate the potential for cancer and non-cancer hazards through comparison of predicted exposure-point concentrations in soil, air, groundwater, and surface water with risk-based screening levels created by the EPA and the World Health Organization (WHO).¹⁹ One of the report's authors, Gavin Heath with the US Department of Energy's National Renewable Energy Laboratory (NREL), summarized their findings about lead in silicon PV panels this way: "under the worst-case conditions, none of them exceeded health-screening thresholds, meaning they're not deemed to potentially have significant enough risk that you'd want to do a more detailed health risk assessment."²⁰ The worst-case scenario defined in the research has many conservative assumptions, and thus likely overestimates the risk of disposal in a *non-sanitary* landfill. It is important to stress that North Carolina only allows solid waste disposal in sanitary landfills, which are engineered facilities with plastic liners, leachate collection systems, and covers, all of which dramatically reduce the potential for human exposure compared to the non-sanitary landfill assumed in the study. This and other research show that if the Farmview Solar PV panels are disposed of in a landfill they will not create any negative public health impact.

In 2019 the North Carolina legislature passed HB 329 (S.L. 2019-132), requiring the NC Department of Environmental Quality ("DEQ") to prepare a report to guide rulemaking regarding decommissioning of solar PV and other renewable energy facilities and proper disposal of their equipment. The report issued January 1, 2021 and titled *Final Report on the Activities Conducted to Establish a Regulatory Program for the Management and Decommissioning of Renewable Energy Equipment*, provides a thorough discussion addressing many questions landowners and communities may have about solar decommissioning. DEQ compiled the input and commentary of numerous stakeholders, including the renewable energy industry, environmental organizations, and academia, including the author and NC State University's Clean Energy Technology Center. The report is well researched and very informative. DEQ provides several key findings and recommendations, but no recommendations for changes in NC regulations of solar facilities. **One of the report's key findings is that "According to Division of Waste Management experts, if every end-of-life PV module is disposed of in landfills, landfill capacities will not be negatively impacted."**

In South Carolina in 2021, the South Carolina legislature required the SC Department of Health and Environmental Control (DHEC) to prepare a report similar in scope to the NC DEQ report published 2021. While this report does not have any impact on regulations at Farmview, stakeholders may find value in the report. SC DHEC was required to prepare a report on research and recommendations on End-of-Life Management of Photovoltaic Modules and Energy Storage Systems, addressing six specific issues laid out by the legislature. The 50-page report titled *Final Report on the Activities Conducted to Establish a Program for End-of-Life Management of Photovoltaic Modules and Energy Storage Systems* was issued June 30, 2022. **The report describes end-of-life of PV modules topics that align with the content of this health and safety assessment, including the following conclusions: "The Department of Health and Environmental Control believes it is in the best interest of South Carolina to continue to promote the use of solar energy in our state to decrease energy costs, promote economic development, increase consumer choice in energy consumption and hopefully reduce pollution and emissions."** The report continues, "We must also be sure not to compromise human and environmental health in the process of installing and decommissioning solar energy facilities." Throughout the report DHEC suggests commonsense approaches to ensuring the long-term safety of utility-scale solar based on state and federal regulations.

¹⁸ Tamizhmani, G., et al. (2019). Assessing Variability in Toxicity Testing of PV Modules. In 2019 IEEE 46th Photovoltaic Specialists Conference (pp. 2475-2481). Institute of Electrical and Electronics Engineers Inc.. <https://doi.org/10.1109/PVSC40753.2019.8980781>
Publicly-accessible version: dev-pvrelability.ws.asu.edu/sites/default/files/93_assessing_variability_in_toxicity_testing_of_pv_modules.pdf

¹⁹ P. Sinha, G. Heath, A. Wade, K. Komoto, Human health risk assessment methods for PV, Part 3: Module disposal risks, International Energy Agency (IEA) PVPS Task 12, Report T12-16:2020. ISBN 978-3-906042-96-1, May 2020

²⁰ Green Tech Media, Landfilling Old Solar Panels Likely Safe for Humans, IEA Research Suggests, April 2020, www.greentechmedia.com/articles/read/solar-panel-landfill-deemed-safe-as-recycling-options-grow

Transformer Oil

While PV modules and inverters do not have any liquids that could leak into the environment, the generator step-up (GSU) transformer in the substation and the inverter step-up (ISU) transformers located with each inverter do contain an oil. Several types of oil can be used in transformers to provide the needed electrical insulation and cooling, but the most common type of transformer oil is mineral oil, which has been used in transformers since transformers were first manufactured in the 1890s. Due to the large volume of oil contained in a GSU transformer, they are installed with a secondary containment structure under them to contain any oil leaked or spilled. The smaller ISU transformers are approximately the same size as the transformers located throughout every community; behind schools, shopping centers, apartments, etc., and they typically do not provide secondary containment. However, ongoing monitoring of transformer temperature and pressure, and regular preventative maintenance, is likely to find the rare leak when it is still small before it has a chance to leak much oil.

There was a time when most transformer oil was toxic. From 1929 to 1977 polychlorinated biphenyls (PCBs), a man-made alternative to mineral oil, was commonly used as transformer oil instead of mineral oil. However, the toxicity of PCBs was eventually understood, leading to PCBs being banned in the US in 1979. Today, transformers either use mineral oil or vegetable oil, both of which are free of PCBs. Mineral oil is non-toxic to humans, in fact “baby oil” that is commonly used to soothe babies’ skin is a scented mineral oil. Although non-toxic to humans, mineral oil is an environmental contaminant and harmful to aquatic ecosystems, so any release to the environment should be avoided. The potential for negative environmental impact from spilled vegetable oil is much less because these oils are biodegradable, so the time they impact the environment is short-lived. Federal regulations dating back to the Clean Water Act of 1973 require that facilities with significant quantities of oil prevent pollution of water.²¹ The current EPA regulations require that facilities with over 1,320 gallons oil, and with the potential for spilled oil to impact surface water, develop and implement an oil spill prevention, control and countermeasure (SPCC) plan. While the risk of negative environmental impact from a transformer oil spill/leak cannot be eliminated entirely, these regulations along with standard industry practices result in a low probability for a substantial spill and a high probability for a quick clean-up response to minimize impact if a spill were to ever occur.



Figure 6. GSU Transformer with Secondary Containment to Capture any Leaked Oil

Contents of Batteries

The components of lithium-ion batteries vary because there are many different battery chemistries in use and several different cell construction types. And while lithium itself is non-toxic, some lithium-ion batteries do include some toxic heavy metals such as cobalt, nickel, or manganese. During the operational life of the batteries any metals in the cells are sealed inside of the batteries and thus have no impact on human health. The solvent-based liquid electrolyte in each cell is very difficult to get to leak out of a cell and will quickly evaporate if it does. In addition to the battery cells, the battery system also includes a battery management system that consists of sensors, switches, and similar controls equipment. The battery enclosure is typically an outdoor-rated steel enclosure.



Batteries End-of-Life

The performance of stationary batteries slowly degrades, eventually resulting in enough reduction of energy capacity that the battery is considered to have reached the end of its life. The expected lifespan of lithium-ion batteries is on the order of 10 to 20 years.



At the end of its life the batteries will be safely decommissioned, which will involve de-energizing the batteries to a low voltage, disconnecting each battery module from the system, removing battery modules and associated components, preparing the list of materials and components for removal, disposal, or recycling, and then shipping them to their next

²¹ Environmental Protection Agency, webpage: Overview of the Spill Prevention, Control, and Countermeasure (SPCC) Regulation, www.epa.gov/oil-spills-prevention-and-preparedness-regulations/overview-spill-prevention-control-and

location. Transport of some battery components, including shipping via a shipping provider, is regulated by the United States Department of Transportation (U.S DOT).

Most of the non-battery components of the system have readily available scrap markets, such as steel, aluminum, and copper. Much like end-of-life PV modules, end-of-life batteries can be repurposed for second life applications, recycled, or landfilled.

- **Recycling** – Lithium-ion batteries are recyclable. Currently only a small percentage of lithium-ion batteries are recycled, but that is changing very quickly. The US is just starting to build facilities that can fully recycle lithium-ion batteries into battery constituents ready to build new lithium-ion batteries. While there are many challenges to creating a robust, cost-effective collection and recycling industry for lithium-ion batteries, it does appear to be technically possible. The US Department of Energy as well as several industry groups and private companies are investing in research and development that they hope will lead to widespread recycling of lithium-ion batteries in the US.
- **Disposal** – When batteries are not repurposed or recycled, batteries are disposed as waste. Battery disposal is governed by EPA Universal Waste rules, which require waste handlers to separate hazardous materials for disposal under federal laws but allow the disposal of the remaining non-hazardous waste per state and local requirements. Once the fire risk is removed from the batteries (either by mechanical or chemical means), non-hazardous materials not recovered for reuse or recycling can be disposed of through municipal waste streams. While some lithium chemistries are considered non-hazardous, many batteries have toxic constituents that require treatment as hazardous materials. The potential toxicity of Li-ion battery materials varies widely by chemistry; for example, where nickel, cobalt, or lead are present in battery chemistries in significant quantities, precautions must be taken at disposal or incineration sites in line with the hazards of those individual materials.²²

Toxicity: Operations & Maintenance

The operations and maintenance (O&M) activities for a solar and battery energy storage site are rather limited. Often the most significant effort is maintenance of the vegetation on the site. The PV equipment and the battery equipment require some, but limited, scheduled and unscheduled maintenance.

Site and Solar Operations & Maintenance

The only two aspects of operations and maintenance (O&M) of solar system that have raised concerns about toxicity are the fluids used to wash PV panels and herbicides used to maintain vegetation.

- **Panel Washing** – Across North Carolina there is ample rain to keep the panels clean. If the panels need to be washed, it would occur infrequently and typically with use of only deionized water and cleaning brushes.
- **Herbicides** – The industry standard practice for maintaining the vegetation at solar facilities is similar to how most cities maintain their city parks, which is they primarily rely on mowing and string trimmers for vegetation management, and use herbicides along fences, in roads, and around some equipment. Parks and solar facilities also use herbicides to strategically remove problem weeds, especially woody weeds, to maintain a healthy cover of the desired species of grasses and other low-growing vegetation. This mode of herbicide use applies significantly less herbicide volume than is commonly applied in NC agriculture. For example, Round-Up-Ready crops are common row crops that have been engineered for the entire field, including the crops, to be sprayed with Round-Up (glyphosate) several times each season. Additionally, farmers applying most types of herbicides to their fields are not required to be certified or licensed, but a NC commercial pesticide applicators license is required to apply any herbicide to a solar facility.

Batteries Operation and Maintenance

Battery operation does not produce any emissions, and they require very little maintenance during their operating lifetime. The battery systems require some scheduled maintenance for things like cleaning HVAC air filters and annual or semi-annual visual checks of electrical connections. Some systems use an anti-freeze liquid coolant that might require replacement during the life of the system, but this does not pose a health or safety hazard.



²² Energy Storage Association (ESA), End-of-Life Management of Lithium-ion Energy Storage Systems, April 2020, <https://energystorage.org/wp/wp-content/uploads/2020/04/ESA-End-of-Life-White-Paper-CRI.pdf>

Sources for Further Reading on Toxicity/End-of-Life:

- International Renewable Energy Agency (IRENA): [End-of-Life management: Solar Photovoltaic Panels](#), June 2016
- Electric Power Research Institute (EPRI): [Environmental and Economic Considerations for PV Module End-of-Life Management](#), December 2018
- EPRI: [Feasibility Study on Photovoltaic Module Recycling in the United States](#), April 2018
- EPRI: [Solar Photovoltaics End of Life Management Infographic](#), March 2021
- National Renewable Energy Laboratory (NREL): [A Circular economy for PV system materials](#), April 2021
- North Carolina Department of Environmental Quality: [Final Report on the Activities Conducted to Establish a Regulatory Program for the Management and Decommissioning of Renewable Energy Equipment](#), January 2021
- Energy Storage Association (ESA): [End-of-Life Management of Lithium-ion Energy Storage Systems](#), April 2020
- EPRI: [Lithium Ion Battery Energy Storage End of Life Management Infographic](#), April 2021
- ReCell Center: [A national collaboration of industry, academia and national laboratories working together to advance recycling technologies along the entire battery life-cycle for current and future battery chemistries](#) (website)
- NAATBatt: [Laws, Regulations and Best Practices for Lithium Battery Packaging, Transport and Recycling in the United States and Canada](#) (webpage)



Electromagnetic Fields (EMF)

Exposure to EMF, or electric and magnetic fields, is a fact of everyday modern life. Electromagnetic fields come in many different frequencies, ranging from grid electricity with a frequency of 60 hertz to x-rays and gamma rays that are billions of billions of times faster. The faster the frequency the stronger the EMF. The EMF coming from grid electricity, including from the inverters, transformers, and AC wires to be used at the Farmview Solar facility, has much lower frequency and therefore much lower energy than the EMF from cell phones, wireless internet, and even radio and TV towers. The solar panels, the batteries, and the wires connecting both of them to the inverters carry direct current (DC) electricity, which has a frequency of zero hertz, and thus produces static electric and magnetic fields. The voltage and current of these circuits are both relatively low, so the electric and magnetic fields they produce are both rather weak. The static magnetic fields the PV panels generate are much weaker than the Earth's natural static magnetic field, which can be demonstrated by a compass still pointing north when placed near the panels.



Electric fields are created around wires and equipment wherever a voltage exists, however it is easily blocked with common materials such as metal, wood, and soil. The World Health Organization (WHO) in 2005 concluded that there were no substantive health issues related to electric fields (0 to 100,000 Hz) at levels generally encountered by members of the public.²³ The proposed solar project does not produce any voltages higher than the existing power lines, and therefore does not produce any electric fields not generally encountered by members of the public.

Magnetic fields are the other aspect of EMF, and they are created by electric current. Typical Americans are exposed to about 1 milligauss of magnetic field from grid electricity (60 Hz) on average during their day, primarily from sources at homes and work²⁴. The primary source of magnetic fields in a solar facility are the inverters and the short section of wires between each central inverter and its step-up transformer. To convert direct current to alternating current, inverters use a series of solid-state switches that turn off and on several thousand times a second, creating EMF in the range of 5 kHz to 100 kHz, which is much faster than the 60 Hz of grid electricity but still much slower than even the lowest frequency radio signals. The highest electrical current of any portion of the solar facility occurs in the inverters, ISU transformers, and the few feet of wire between them, making this the source for the strongest magnetic fields in the facility.

²³ WHO factsheet: Electromagnetic fields and public health, Exposure to extremely low frequency fields, June 2007, www.who.int/peh-emf/publications/facts/fs322/en/

²⁴ World Health Organization (WHO), webpage: Electromagnetic Fields – Typical exposure levels at home and in the environment, www.who.int/peh-emf/about/WhatIsEMF/en/index3.html

Since the strength of a magnetic field decreases dramatically with increasing distance from the source, these magnetic fields only extend about 50-300 feet from the inverter and ISU transformer, at which point the magnetic fields would be expected to measure less than 0.5 milligauss, which is less than half the typical American's average 60 Hz EMF exposure over a day.^{25, 26} The locations of the inverters and ISU transformers at the Farmview project have been preliminarily identified, which results in most inverter pads being over 1,000 feet from the closest home and no inverter pad closer than 500 feet from a home. The substation is over 600 feet from the closest home. Thus, the EMF from the inverters and ISU transformers are not expected to extend to any residential property. Similarly, the magnetic fields from substations generally do not extend far enough to leave the fence around the substation, so the same can be expected for the Project's substation.²⁷

The bottom line is that the EMF from the Farmview Solar PV system will not leave the solar site boundary, and thus will not increase the EMF exposure of any neighbors. Even if some EMF from the PV facility were to extend beyond the fenced perimeter of the site, there would still be no public health impact because low levels of extremely low frequency (ELF) EMF exposure are not harmful to humans. After extensive study of the potential health impacts of EMF from grid electricity the World Health Organization (WHO) concludes:

*"Despite extensive research, to date there is no evidence to conclude that exposure to low level electromagnetic fields is harmful to human health."*²⁸

Sources for Further Reading on EMF:

- Electric Power Research Institute: [EMF and Your Health: 2019 Update](#), December 2019
- World Health Organization: [Electromagnetic Fields](#) (accessed September 2022)

Heat Island Effect

The localized effects of large-scale PV facilities on temperature and moisture are not yet well understood. However, the localized micro-climate effects of large-scale PV facilities are understood well enough to determine that they do not create a heat island effect similar to the well-documented urban heat island effect from dark, massive, surfaces in urban environments, such as asphalt paved streets and parking lots, that cause urban areas to be significantly warmer than the surrounding rural area during the day and night. The changes that solar panels may make to the way land absorbs, reflects, and emits the energy from sunlight are minimal compared to the changes created by buildings, vehicles, and many miles of concrete and asphalt. By comparison, solar panels absorb and reflect a similar amount of solar energy as vegetation and soil. Solar panels are lightweight and cannot store large amounts of thermal energy, and the ground remains covered in vegetation with its natural exposure to air and water.

Initial research into the potential for PV systems to cause a heat island effect have used a variety of techniques, including conceptual energy flow calculations, advanced fluid dynamic computer simulations, and field measurements of temperature.^{29, 30, 31} This research found a range of different effects on temperature, but none indicate that a large PV system could affect the temperature of the surrounding community. Most found that compared to similar undeveloped land the air temperature in a solar facility increases during the day, but the nighttime results were mixed. Some studies found PV

²⁵ Study of Acoustic and EMF Levels from Solar Photovoltaic Projects. Tech Environmental, Inc., December 2012, <https://www.masscec.com/resources/study-acoustic-and-emf-levels-solar-photovoltaic-projects>

²⁶ EPRI technical report, Electric and Magnetic Field Exposure Levels (0 to 3 GHz) in Occupational Environments near Photovoltaic Energy Generation Facilities, November 2012, <https://www.epri.com/research/products/1023797>

²⁷ www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

²⁸ World Health Organization (WHO), webpage: Electromagnetic Fields – Summary of health effects, www.who.int/peh-emf/about/WhatIsEMF/en/index1.html

²⁹ Broadbent, Ashley & Kravynhoff, Eric & Georgescu, Matei & Sailor, David. (2019). The Observed Effects of Utility-Scale Photovoltaics on Near-Surface Air Temperature and Energy Balance. Journal of Applied Meteorology and Climatology. 58. 10.1175/JAMC-D-18-0271.1.

³⁰ Barron-Gafford, G. A. et al. The Photovoltaic Heat Island Effect: Larger solar power plants increase local temperatures. Sci. Rep. 6, 35070; doi: 10.1038/srep35070 (2016).

³¹ V. Fthenakis and Y. Yu, "Analysis of the potential for a heat island effect in large solar farms," 2013 IEEE 39th Photovoltaic Specialists Conference (PVSC), Tampa, FL, 2013, pp. 3362-3366, doi: 10.1109/PVSC.2013.6745171.

sites to be cooler than non-PV sites at night, but others found them to be warmer. Much of this variation is likely explained by the different climates studied but may also be due to the different methods of the studies. Much of the research on solar heat island effect occurred in arid regions of the U.S. southwest where the results are unlikely to translate perfectly to wetter climates in the southeast. In a written statement of evidence Greg Barron-Gafford, leading solar heat island effect researcher, says that he expects that when the area under the PV array is vegetated with grass that the localized heat island effect his research found in dry climates will be greatly reduced.³²

The available studies agree that the slight increase of air temperature in the PV site dissipates quickly with height and distance from the panels as natural processes remove and spread the heat. As a result, any temperature increase that may occur at the Farmview Solar project during the day will be limited to the site and will not increase the temperature of any of the surrounding community.

Sources for Further Reading on Heat Island Effect:

- EPA: [Learn About Heat Islands](#), (accessed September 2022)

Glare

Photovoltaic panels are designed to absorb, and thus not reflect, the solar energy that they receive. However, when sunlight strikes the glass front of a solar panel at a glancing angle a significant portion of the solar radiation is reflected, which can potentially lead to solar glint (a brief flash) or glare. Glint or glare can temporarily impact a person's vision, including pilots landing aircraft, or motorists driving vehicles. However, the conditions required for a PV project to create glare rarely occur. PV facilities, such as Farmview Solar, that utilize single axis trackers to slowly rotate the solar panels to follow the sun have even less potential to create glare because the trackers help avoid a situation where sunlight hits the panels at a glancing angle. Most modern trackers implement an advanced control strategy known as "backtracking" that increases the electricity production of the site by flattening the tilt of the panels early and late in the day to keep the rows of solar panels from shading one another. Backtracking can result in brief periods near sunrise and sunset where the sun strikes the panels at a glancing angle, creating a situation that could result in a few minutes of visible glare at sunrise and sunset. For anyone to see this glare they must be looking across the solar panels in the direction of the rising or setting sun, which is a situation where the sun obviously will create significant glare for the viewer with or without the solar project.



Figure 7. 20 MW PV System at Indianapolis International Airport (Photo source: inhabitat.com)

A clear indication of the ability to avoid glare problems from large ground-mounted PV systems are the PV systems installed on airports across the U.S., including Denver International and Indianapolis International. While there is the potential for a PV system to create glare, there is also the ability to predict when and where a system may create glare and incorporate any needed mitigation before construction. The Federal Aviation Administration (FAA) and the U.S. Department of Energy (DOE) developed specialized solar glare analysis software to predict when and where a PV project may produce glint or glare for sensitive receptors nearby. That original software technology has been licensed to a 3rd firm (Forge Solar) that continues to improve and refine the software, which has been validated to accurately predict solar glare.

In May of 2021, the FAA replaced the long-standing interim solar glare policy with a (final) policy that no longer restricts solar developed on airport property from creating glare visible to pilots. The policy explains that the new acceptance of glare

³² G. Barron-Gafford, Statement of Evidence by Greg Barron-Gafford on Solar Heat Islanding Issues, May 2018, www.planning.vic.gov.au/_data/assets/pdf_file/0024/126555/301-Expert-Witness-Statement-of-G-Barron-Gafford-PVHI-May-2018-Lemnos.pdf

visible to pilots is in recognition that pilots often experience glare during landing from bodies of water and that glare from solar is not meaningfully different.³³ The new policy does still prohibit on-airport PV systems from creating any glare visible in an air traffic control tower. While the FAA policy only applies to PV developed on airport property, it is reasonable to follow the same policy for PV plants sited near airport property.

The two closest airports in the National Plan of Integrated Airport Systems (NPIAS)³⁴ are the Davidson County Airport (EXX) and Piedmont Triad International Airport (GSO). Davidson County Airport is approximately 12 miles southwest of the closest solar panel and Piedmont Triad International Airport is over 17 miles northeast of the closest solar panel. Piedmont Triad International Airport has an air traffic control tower, but Davidson County Airport does not have a control tower. Previous conservative FAA guidance was to conduct a software glare hazard analysis when a PV facility is proposed within 5 nautical miles (5.75 miles) of an airport.³⁵ With both airports being over 10 miles away from the project and the closer airport, Davidson County Airport, not having an air traffic control tower, there is no chance for Farmview to create a glare hazard at these airports. The Farmview project does not have any plans to conduct a software glare hazard analysis of the project, which in the author's opinion is a reasonable plan that does not cause a public health risk.

Sources for Further Reading on Solar Glare:

- National Renewable Energy Laboratory (NREL): [Research and Analysis Demonstrate the Lack of Impacts of Glare from Photovoltaic Modules](#), July 2018
- ForgeSolar: [PV Planning and glare analysis software help documentation](#), (accessed September 2022)

Noise

Solar panels are silent, but some of the other components of a PV system produce some sound, although they are rarely heard by anyone outside of the project fence. The loudest equipment is the inverters, but the transformers and tracking systems also make some sound. These numerous sources of sound are dispersed throughout the facility, but the physics of sound are such that these dispersed sources of sound are non-additive. For example, if there are 50 inverters spaced across a utility-scale solar facility and you are close enough to hear some inverter noise, you could turn off the 49 inverters farthest from you and you likely wouldn't notice the difference between the sound from 1 inverter and the sound from 50 inverters. Even if two inverters are right next to each other and an even distance from you, the perceived volume of the sound coming from the two inverters is very similar to the sound from just one inverter. So, the potential for someone offsite to hear any sound generated inside a utility-scale PV project is determined by the closest and loudest source of sound. Thus, some simple analysis of the sound coming from the closest sources to a point of interest, such as a home, can effectively estimate the level of sound from the PV project at that location.

Before providing site-specific analysis of the potential for noise impacts from the Farmview project, it is useful to put the sound from the PV project in context. Our world is full of sounds, day and night, even in quiet rural areas, and any sounds from the PV project would be in concert with the existing sounds. The appropriate analysis metric is not if the sounds are audible, but if they are noticeable or bothersome, and US and international organizations have published guidance on this topic based on research on how sound impacts the public.

In 1972, the US passed the Noise Control Act, which required the EPA to define criteria for protecting the public health and wellbeing from noise interference. In response, the EPA developed guidance that included recommended sound levels limits

³³ "Federal Aviation Administration Policy: Review of Solar Energy System Projects on Federally-Obligated Airports", <https://www.federalregister.gov/documents/2021/05/11/2021-09862/federal-aviation-administration-policy-review-of-solar-energy-system-projects-on-federally-obligated>

³⁴ The National Plan of Integrated Airport Systems (NPIAS) identifies nearly 3,310 existing and proposed airports that are included in the national airport system. The NPIAS contains all commercial service airports, all reliever airports, and selected public-owned general aviation airports. www.faa.gov/airports/planning_capacity/npias

³⁵ NC Template Solar Ordinance, Appendix F: Airports. <https://nccleantech.ncsu.edu/wp-content/uploads/2018/06/NC-Template-Solar-Ordinance.pdf>

at residential structures (or places in which quiet is a basis for use)³⁶. This guidance recommends that noises at residences be limited to 55 dBA L_{dn} , where L_{dn} is the average sound level of a 24-hour period with the inclusion of a 10-dB penalty during the nighttime hours of 10PM to 7AM. So, the 55 dBA L_{dn} limit could be met with 55 dBA daytime noise and 45 dBA nighttime noise, or a 24-hour noise (L_{eq}) of 48.6 dBA. In addition to the EPA guidance, the United Nations WHO published "Guidelines for Community Noise" (1999) which suggested daytime and nighttime protective noise levels, which are to be applied outside the bedroom window.³⁷ During the day (7AM to 11PM), the equivalent continuous sound level threshold to protect against serious annoyance is 55 dBA L_{eq} , and 50 dBA L_{eq} to protect against moderate annoyance. During the night (11PM to 7AM), the averaged equivalent continuous sound level threshold is 45 dBA L_{eq} . So, the EPA and the WHO recommend similar daytime noise limits (~55 dBA and 55 to 50 dBA, respectively), and similar nighttime limits as well (~45 dBA and 45 dBA, respectively). Without local noise regulations or recommendations, these recommended noise limits from EPA and WHO provide well-established criteria for acceptable noise in rural residential areas.

At this stage of project development, the site plan package can be used to conduct a preliminary screening level noise impact assessment. Available sound power data from representative equipment is used in this assessment, so the installed equipment could have somewhat different noise generation, but the difference is expected to be insignificant. Both the PV panels and the batteries require inverters, which is the loudest piece of equipment in the facility. The PV inverters are planned to be a 4.0 MW central model, and this assessment used sound data from one of the most common central inverters on the market today, with a capacity of 3.6 MW. The battery inverters are not yet specified, but will not be any larger or louder than the PV inverters.

Generally, the difference in sound from different transformers of a similar capacity is minimal, so like the inverter, the representative sound data for the substation transformer is expected to be very similar to the equipment installed at Farmview. The third and final component that makes some noise is the motor in the tracker system, which is often located in the center of some rows of solar panels. There is a wide variety of tracker system systems with varying numbers, sizes, and styles of motors. Due to the uncertainty about the tracker that will be installed, a very conservative sound power level is used for the tracker motors in this assessment. The ISU transformers located with each inverter also makes some noise but is significantly quieter than the inverter, so it has negligible impact on the sound level heard some distance from the inverter/transformer pair, so for simplicity the ISU transformers are not included in this screening level noise impact assessment.

The following analysis starts with the sound power level of the equipment, which is measured in decibels but is different than sound pressure level, which is also measured in decibels and is used to describe how loud a sound is to humans. The sound power level of the equipment is a measure of the total acoustic energy emitted from a source of noise. The sound power level value and the distance between the equipment and the person is all that is needed to calculate the loudness of the sound in the person's ears, which is the sound pressure level. The sound power levels of representative equipment are as follows³⁸: 3.6 MW inverter: 101 dBA, substation transformer: 88 dBA, and tracker motors: 90 dBA. The distance used in this sound assessment is an estimation of the closest distance between that equipment and a residence, which will provide an estimation of the worst-case noise at the homes closest to the project. 500-ft is used as a conservative distance for the inverters and 150-ft is used for the tracker motors. The substation transformer is located in the substation, which is much further from the closest residence, over 600 feet. The battery inverters will be located near the substation and assumed to be at least 600 feet from the closest residence. The sound pressure level (in dBA) can be calculated from the sound power level (in dBA) and the distance from the source as follows:

³⁶ US Environmental Protection Agency (EPA), "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With An Adequate Margin of Safety", 1974, <https://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.PDF>

³⁷ World Health Organization (WHO), "Guidelines for Community Noise", 1999, <https://apps.who.int/iris/handle/10665/66217>

³⁸ Inverter and substation transformer sound data provided in *Speedway Solar Sound Study Report*, Revision 1 dated 10/29/2020. Produced by Burns McDonnell for Duke Energy project in Cabarrus County, NC. Tracker motor data and inverter data provided in Kaliski, et. al. Noise-Con 2020 Conference paper titled "An Overview of Sound From Commercial Photovoltaic Facilities", <https://rsginc.com/wp-content/uploads/2021/04/Kaliski-et-al-2020-An-overview-of-sound-from-commercial-photovoltaic-facilities.pdf>

- Sound pressure level = sound power level – $20 \times \log(\text{distance in feet})$
 - PV Inverters: $101 \text{ dBA} - 20 \times \log(500 \text{ feet}) = 47.0 \text{ dBA}$
 - Battery Inverters: $101 \text{ dBA} - 20 \times \log(600 \text{ feet}) = 45.5 \text{ dBA}$
 - Substation transformer: $88 \text{ dBA} - 20 \times \log(600 \text{ feet}) = 32.4 \text{ dBA}$
 - Tracker motors: $90 \text{ dBA} - 20 \times \log(150 \text{ feet}) = 46.5 \text{ dBA}$

All four of these worst-case sound estimates for the PV system meet the EPA and WHO recommended guidelines for daytime noise in a residential setting, which is the only time the PV inverters and tracker motors are expected to make any noise. The battery inverters may operate at night, and these inverters just barely exceed the EPA and WHO recommended guidelines for daytime noise in a residential setting, 45.5 dBA vs recommendations of 45 dBA. Considering the surrounding vegetation and solar panels to block this sound, and the nearby traffic noise, this noise estimate should not cause any concerns about the potential for neighbors to be bothered by the sound of the battery inverters at night. It is important to note that this analysis assumes a clear line-of-sight area between the equipment and the residence, so any vegetation or other obstacles between the PV equipment and the residence will reduce the sound reaching the residence compared to these estimates. It is also important to note that the tracker motors only operate for short periods of time throughout the day and the inverters only produce their maximum sound when operating at maximum power. While this simplified noise impact assessment is limited in capability compared to noise analysis software, this analysis reflects the physics of sound propagation and uses noise data from representative equipment, allowing for a simple yet accurate estimate of worst-case sound impacts. In conclusion, the Farmview project is not expected to create noise interference or be bothersome to any neighbors.

Sources for Further Reading on Noise:

- World Health Organization (WHO), [Guidelines for Community Noise](#), 1999

Conclusions

Based on my knowledge of engineering and science, personal experience with PV and battery technology, review of academic research, and review of materials provided by Renewable Energy Services about the proposed Farmview Solar PV and battery energy storage facility in Thomasville, North Carolina, my findings and opinions are summarized as follows:



- The Farmview Solar project will result in a significant reduction of regional air pollution.
- The Farmview Solar project will not result in any negative impacts to public health or safety.
- The Farmview Solar facility will not increase the temperature of the area surrounding the site.
- The Farmview Solar facility is not expected to create any glare hazards or other negative glare impacts.
- The Farmview Solar project will not create bothersome noise for any neighbors.

FARMVIEW SOLAR

CITY OF THOMASVILLE, NORTH CAROLINA

Application For Conditional Rezoning and
Special Use Permit



AGENDA

- Project Overview
- Project Specifics
- General Conformity with City of Thomasville
Land Development Plan 2035



Project Overview

Farmview Solar

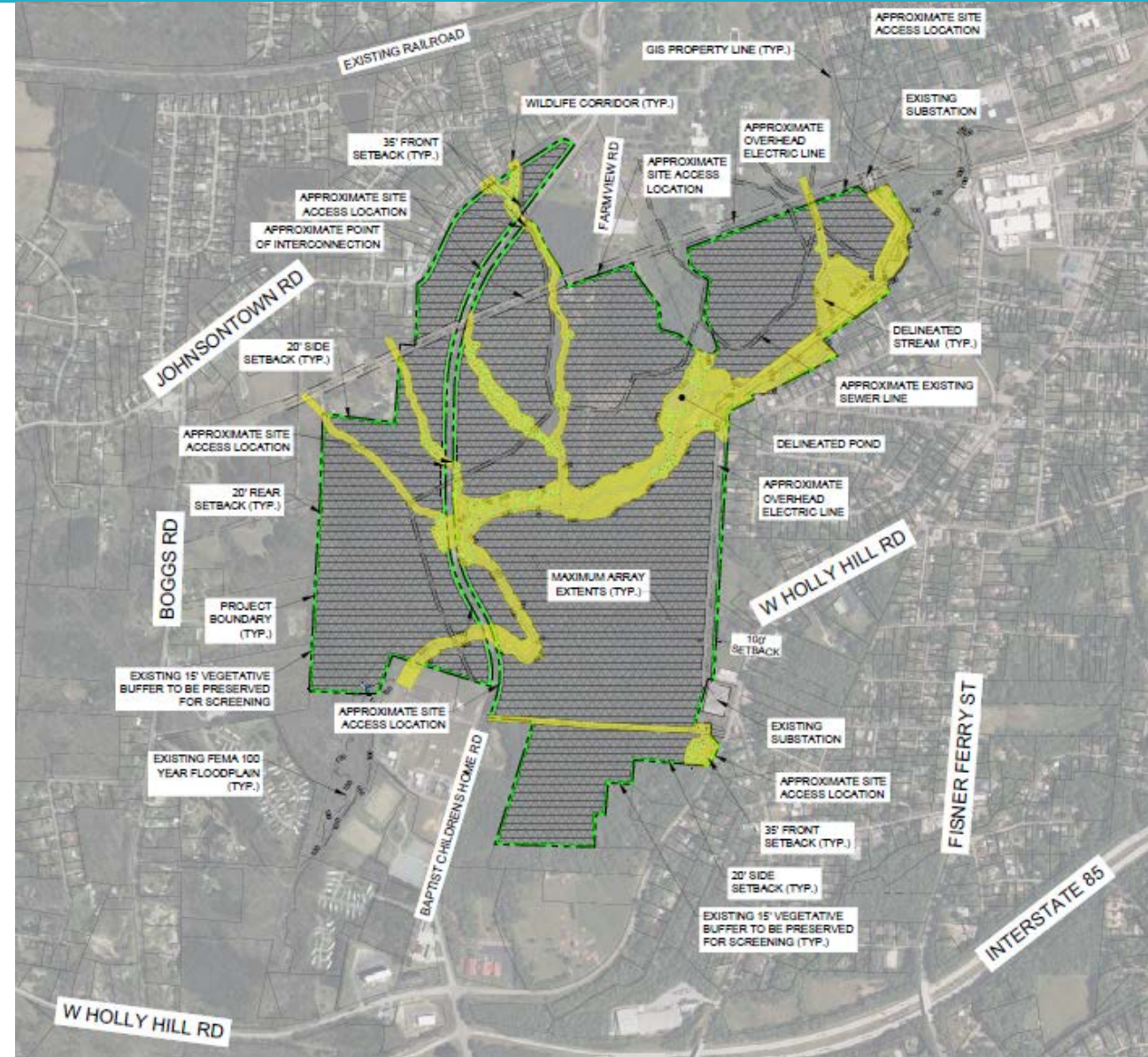
- Originated in March 2023
- Approximately 28 MW, about 3,500 homes
- May incorporate battery storage, at Duke Energy's discretion
- Approximately **\$2.4M** in net new taxes to Davidson County (Years 1-40)
- Requesting conditional rezone from R8, R10 & M2 zoning districts to CZ-M-1 conditional zoning district and approval of Special Use Permit
- Complies with City of Thomasville Land Development Plan 2035



Site Map

TOTAL PROJECT AREA
=
± 321 ACRES

AREA INSIDE THE FENCE
=
± 160 ACRES



Vicinity Map



Approximately 0.5 miles from downtown Thomasville

map not to scale

Development Status

Summary:

- Completed a number of environmental / engineering studies
- Hosted two public information meetings
 - Invited all residents within 100 ft. of project parcels



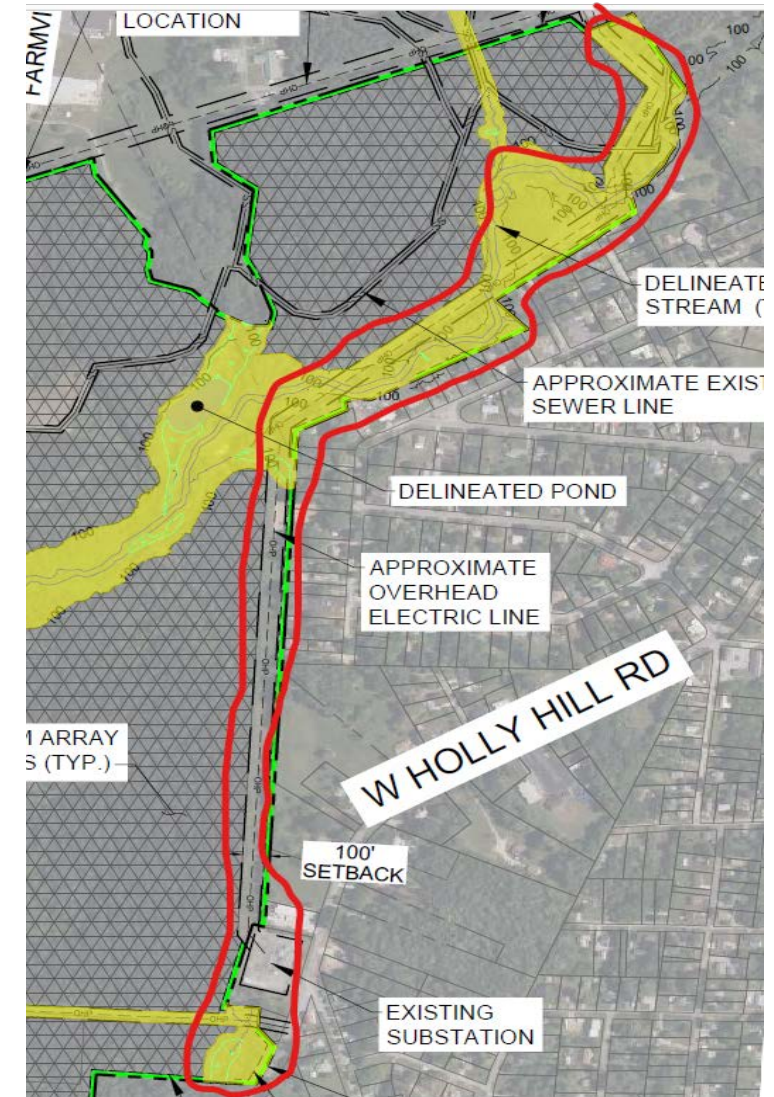
Moving Forward

- Project to enter Duke Energy 2023 Solar RFP
 - Shortlisted projects announced in January 2024; **Winners announced in May 2024**
 - If selected, tracking for a 2027 construction start
- Final engineering / design to commence after completion of the Duke Energy process

Site Design

Setbacks and Vegetative Buffers

- Adheres to all City setback requirements
 - Front: 35 ft., Side: 20 ft., Rear: 20 ft.
 - Significant natural buffers from roadways and adjoining residential properties
 - Sewer lines
 - N Hamby Creek
 - 100 ft. setback from residences along West Holly Hill Rd. (5x required setback)
- 30 ft. from the centerline of North Hamby Creek
- Vegetative Buffer: 15 ft. around the entire project boundary
 - Existing vegetative to be preserved where possible
 - Vegetation to be planted where necessary
- Will avoid wetlands and floodplains



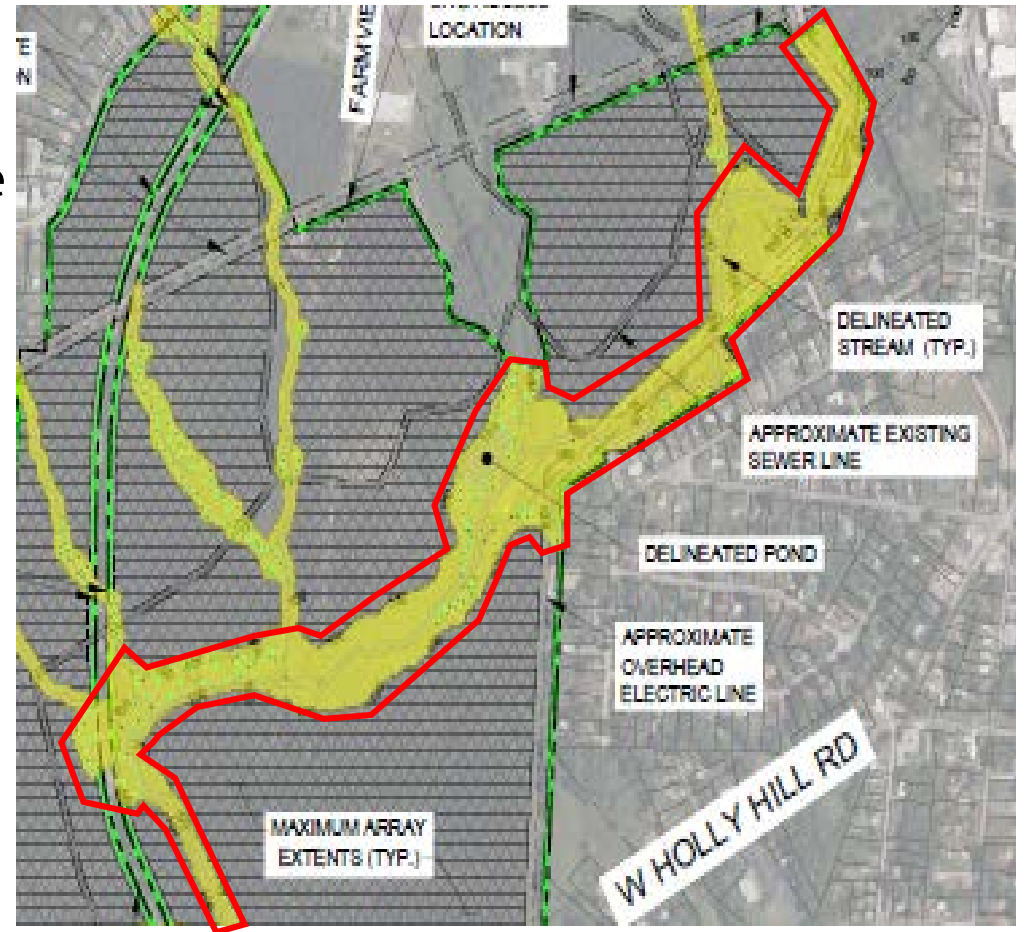
Site Design

Design

- Requesting ability to use a 7-8ft wildlife-friendly, non-opaque fencing
 - City requires opaque 8ft fence.
- Wildlife corridors
- Pollinator-friendly ground cover
- May need to relocate Farmview Rd

Neighborhood feedback:

- Concern about impact on wildlife

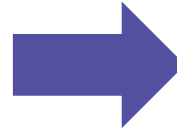


Example of Potential Wildlife Corridor Along North Hamby Creek

Minimal Impact

- Property Value Analysis shows no impact on property values
- No noise, light, odor, vibration or traffic created by solar farm
- Complies with City of Thomasville floodplain development requirements
- Concealment of panels

1-YEAR GROWTH



3-YEAR GROWTH



Landscape Plan

- 15' buffer of existing preserved vegetation along project boundary
 - Will supplement with planted vegetation where understory foliage is insufficient
- Preserved vegetation is planned around 100% of the project

**5-Year Growth Landscape
Buffer Renderings**



100 ft. Section at 5-Year Growth

Community Benefits

A substantial benefit to the Thomasville community

- Approximately **\$2.4M** in net new taxes for Davidson County (40-year period)
- EPA estimates it will produce approximately **\$1.1 – \$2.4 million** of annual **public health benefit**
 - Equates to approximately \$32 – \$73 million over the life of the project (40-year period)
- Construction:
 - Approximately 150 people required
 - 1 year construction period
 - Will work with City & County EDC, Thomasville Chamber to utilize local contractors and suppliers wherever possible
- No demand on tax-funded / City services
- Improves the resiliency of the Thomasville electrical grid
 - Lessens the amount of power outages due to extreme weather conditions

The background of the slide is a photograph of rows of blue solar panels installed on a roof, with some green foliage visible between the panel rows.

General Conformity with City of Thomasville Land Development Plan 2035

- Fostering Quality Land Use and Development
 - Development and Re-Development Areas
- Infrastructure & Transportation
- Economic Development
- Historic Preservation
 - National Register of Historic Places Map

General Conformity with Land Use Development Plan 2035



Fostering Quality of Land Use and Development

Goal 2 – Create additional mixed-use opportunities in development and redevelopment areas

a. Support a variety of desired uses and discourage undesired uses as outlined in each development and re-development area

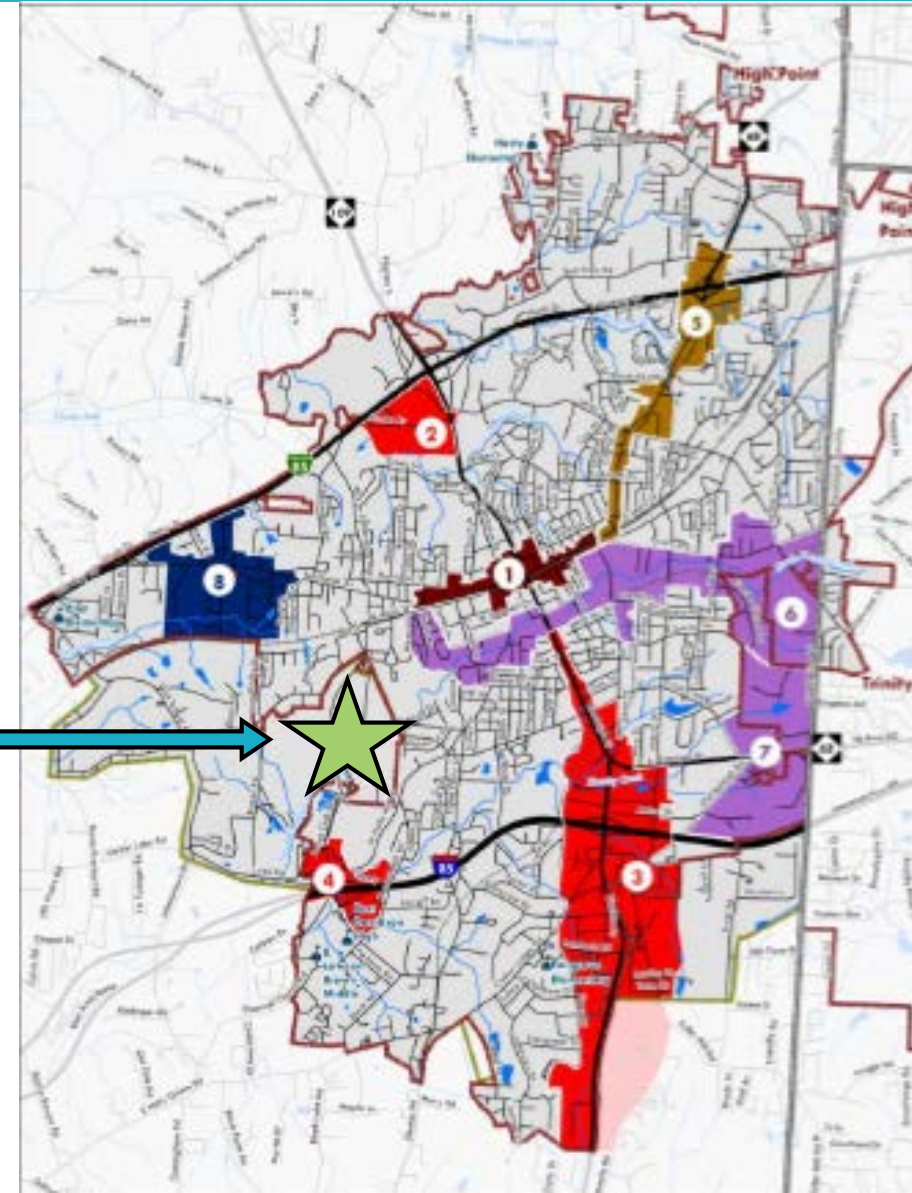
- Solar development fits surrounding uses and does not impede on desired uses within the identified development and re-development areas
 - Use: low impact use while providing County tax base

General Conformity with Land Use Development Plan 2035

City of Thomasville Development & Re-Development Areas Map:

- Located outside of Municipal Limits
 - Within City of Thomasville ETJ boundary
- Outside of City identified development and re-development areas

Site Location



General Conformity with Land Use Development Plan 2035



Infrastructure & Transportation

Goal 1 – Enhance community services and infrastructure including construction of complete streets and high-performing utilities

- a. Keep infrastructure repaired or replaced in a timely manner
- b. Ensure the most cost-effective way, if needed in the future, to extend utilities for future development

- Farmview Solar will power approximately 3,500+ homes
- Power generated will be distributed by Duke Energy and will likely serve local residents and businesses, providing a reliable energy source to the grid
- Will not require expansion of water or sewer utilities

General Conformity with Land Use Development Plan 2035



Economic Development

Goal 1 – Promote economic development through attracting and retaining business and industry

Goal 2 – Prioritize redeveloping vacant, abandoned and underutilized properties

- Redeveloping an underutilized managed timber tract to provide reliable income for BCH
- Farmview Solar will provide a substantial increase to the Davidson County tax base
- Encourages economic development through an increase in local demand during construction

General Conformity with Land Use Development Plan 2035



Historic Preservation

Goal 1 – Continue to preserve Thomasville’s unique heritage throughout the city

- a. Preserve aesthetically pleasing architectural designs of established and valued structures within neighborhoods and older commercial areas**
- b. Continue to support the Historic Preservation Commission and existing historic districts**

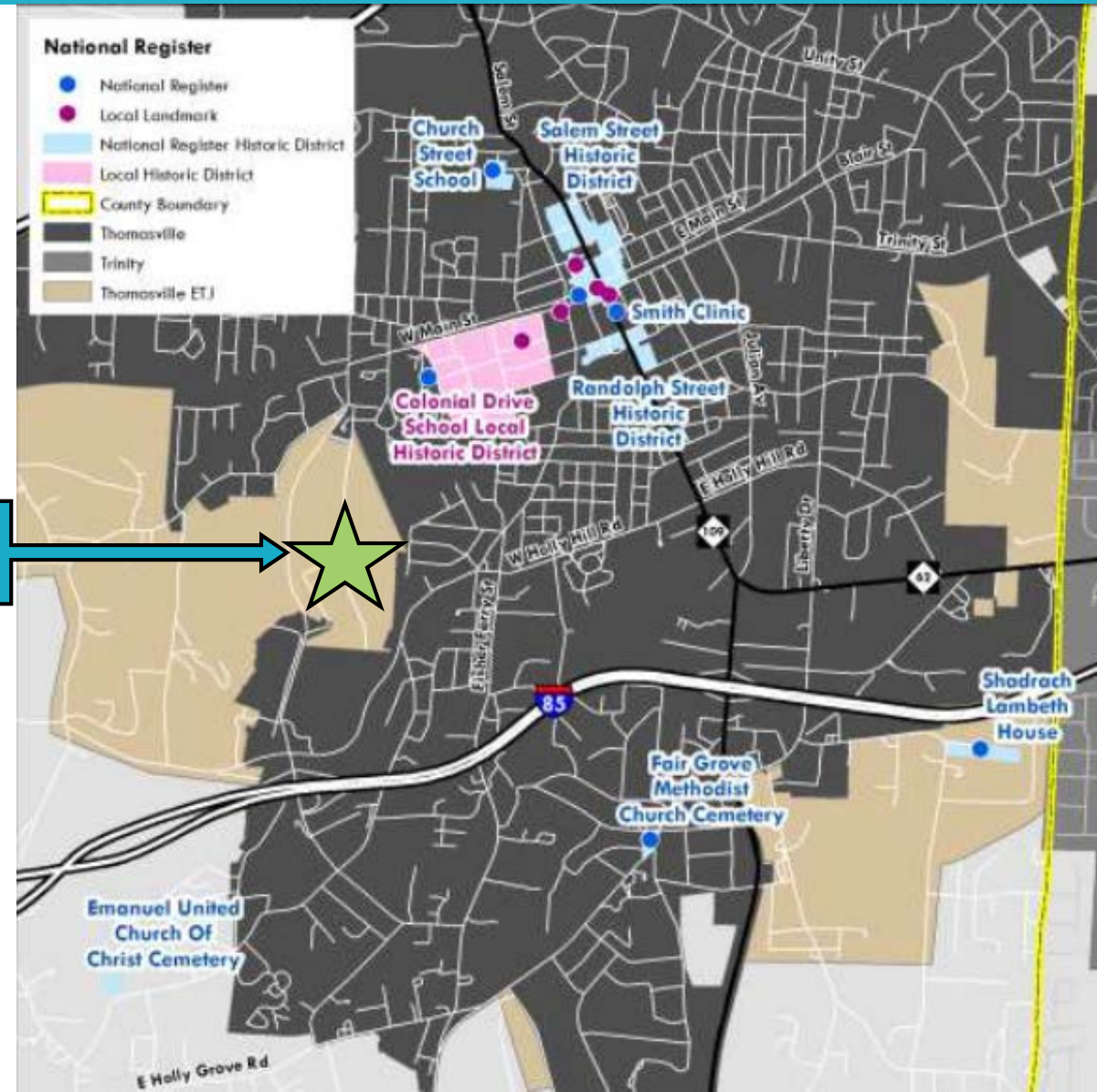
- Outside of all City historic districts
- Initial screen shows no on-site historic or cultural resources
 - Will coordinate with NCSHPO (if needed) to ensure the preservation of historic and cultural resources
- Mills Home Orphanage Cemetery (Gods Acre) located on-site, outside of the project fence line
 - Will adhere to all federal regulations pertaining to development near Cemeteries

General Conformity with Land Use Development Plan 2035

National Register of Historic Places Map:

- Located outside of the City's Local Historic District and the National Register Historic Districts

Site Location



Farmview Solar Summary

Farmview Solar project requesting conditional rezoning from R8, R10 & M2 to CZ-M-1 & approval of Special Use Permit

1

2

In general conformity with the City's ordinances and Land Development Plan

Hear from Fox Rothschild, Kirkland Appraisals, and Tommy Cleveland on project specifics

3



Renewable Energy Services

Thank you very much!

CITY OF THOMASVILLE



Renewable Energy Services

MOTION TO REZONE INCLUDING NCGS 160-383 LANGUAGE

I move to rezone the property from _____ to _____
for the following reasons:

1. _____

2. _____
_____ and
3. _____

Further, I move that the City Council find that this rezoning is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.

MOTION TO DENY THE REZONING INCLUDING NCGS 160-383 LANGUAGE

I move to deny the rezoning of the property from _____ to _____
_____ for the following reasons:

1. _____

2. _____
_____ and
3. _____

Further, I move that the City Council find that this rezoning is unreasonable and not in the public interest due to its inconsistency with the comprehensive plan and, as a result, is a hindrance to the goals and objectives of the comprehensive plan.

MINUTES FOR THE THOMASVILLE CITY COUNCIL BRIEFING MEETING ON MONDAY, SEPTEMBER 11, 2023 AT 4:00 PM AT 20 STADIUM DRIVE, THOMASVILLE, NC.

Elected officials in attendance: Mayor Raleigh York, Jr.; Mayor *Pro Tempore* Wendy Sellars; and Council Members Doug Hunt, Lisa Shell, Hunter Thrift and Payton Williams. Council Member Ronald Bratton and Jeannette Shepherd had excused absences.

1. Call to Order - Mayor York called the Briefing meeting of the Thomasville City Council to order.

2. Additions and Deletions to the Agenda

City Manager Michael Brandt asked Council to add:

7. Closed Session – Attorney/Client and Economic Development

Council Member Thrift moved to approve the agenda as amended. Council Member Shell seconded. *Motion unanimously approved 5 – 0.*

3. Recognitions and Presentations on September 18, 2023 - Hispanic Heritage Month (Sept. 15 – Oct. 15, 2023)

4. Public Forum – A public forum will be held at the Council Meeting on September 18, 2023. A two-minute time limit will be enforced.

5. Public Hearing – to be held on September 18, 2023

Request for Rezoning (Z-23-05)

Applicant/Owner:: Ever Mejia

Location: 105 Winston Street

Parcel Number: 16087000C0009

Existing Zoning: R-6 High Density Residential

Requested Zoning: C-4 Central Commercial

The Planning Board held a public hearing on August 29, 2023 and voted 7-0 to approve this request because:

- the rezoning is compatible with the existing development contiguous to the property;*
- the required buffer between commercial and residential property will suffice to protect existing property owners;*
- the rezoning will permit appropriate development or redevelopment of the property; and*
- it is reasonable and in the public interest due to its consistency with the comprehensive plan and, as a result, its furtherance of the goals and objectives of the comprehensive plan.*

The following items were put on the Consent Agenda by the Council members for consideration on September 18, 2023:

6. Consent Agenda

- A. Consideration of Approval of Minutes – Briefing Meeting on 08/14/23
- B. Consideration of Approval of Minutes – Council Meeting on 08/21/23
- C. Consideration of Approval of Minutes – Special Called Meeting on 08/28/23
- D. Consideration of Approval of Budget Amendment 2024-P3-01
- E. Consideration of Approval of Resolution Dissolving the Winding Creek Golf Course Enterprise Fund
- F. Consideration of Approval of Ordinance Establishing a Loading Zone on the First Block of Salem Street
- G. Consideration of Approval of Thomasville Christmas Parade Road Closure Ordinance
- H. Consideration of Approval of Star of Bethlehem Drive-Thru Nativity Road Closure Ordinance

7. Closed Session – Attorney/Client & Economic Development

Council Member Thrift moved to go into closed session. Council Member Hunt seconded. *Motion unanimously approved 5 – 0.*

Council came back to open session. No action was taken in closed session.

The following items were put on the Regular Agenda by the Council members for consideration on September 18, 2023:

8. Regular Agenda

- A. Consideration of Approval of Contract for 1 MGD Sanitary Sewer Allocation Agreement with Davidson County for Economic Development
- B. Consideration of Approval of Resolution Granting Law Enforcement Retiree Raymond Widener His Service Revolver and Badge

9. Committee Reports and Appointments, Mayor's Report and Appointments, City Manager's Report, City Attorney's Report on September 18, 2023 – No action was taken.

10. Additional Items – N/A

11. Adjournment – Council Member Sellars moved to adjourn. Council Member Shell seconded. *Motion unanimously approved 5 – 0.*

Raleigh York, Jr., Mayor

Wendy S. Martin, City Clerk

MINUTES FOR THE THOMASVILLE CITY COUNCIL MEETING ON MONDAY, SEPTEMBER 18, 2023 AT 6:00 PM AT 20 STADIUM DRIVE, THOMASVILLE, NC.

Elected officials in attendance: Mayor Raleigh York, Jr.; and Council Members Ron Bratton, Doug Hunt, Lisa Shell, Hunter Thrift, and Payton Williams. Mayor Pro Tempore Wendy Sellars and Council Member Jeannette Shepherd had excused absences.

1. Call to Order – Mayor York called the meeting of the Thomasville City Council to order and welcomed everyone in person and online. He made a special warm welcome to Council Member Ron Bratton who has returned following an illness.

2. Additions and Deletions to the Agenda – No changes were requested.

Council Member Thrift moved to approve the agenda as presented. Council Member Hunt seconded. Motion unanimously approved 5 – 0.

3. Recognitions and Presentations – Hispanic Heritage Month (Sept. 15 – Oct. 15, 2023)

Council Member Thrift presented the Proclamation in English. LuzAngela Shoffner, representative of the Latino Association of Davidson County, presented the proclamation in Spanish.

4. Public Forum – No one came forward to speak.

5. Public Hearing

Request for Rezoning (Z-23-05)

Applicant/Owner: Ever Mejia

Location: 105 Winston Street

Parcel Number: 16087000C0009

Existing Zoning: R-6 High Density Residential

Requested Zoning: C-4 Central Commercial

Mayor York opened the hearing. Property Owner Ever Mejia spoke in favor of the rezoning. Nobody spoke against it. Mayor York closed the public hearing.

Council Member Hunt moved to approve the rezoning ordinance.

Council Member Thrift moved to amend the motion to require that all City liens owed by Ever Mejia be paid before the zoning is changed. Council Member Williams seconded. Amendment unanimously approved 5 – 0.

Council Member Thrift seconded the amended rezoning motion. Motion unanimously approved 5 – 0.

6. Consent Agenda – City Manager Brandt and spoke briefly about each of these items:

- A. Consideration of Approval of Minutes – Briefing Meeting on 08/14/23
- B. Consideration of Approval of Minutes – Council Meeting on 08/21/23
- C. Consideration of Approval of Minutes – Special Called Meeting on 08/28/23
- D. Consideration of Approval of Budget Amendment 2024-P3-01

This amendment is from the Personnel/Finance Committee. It appropriates:

- \$4,411 of insurance proceeds in the Police Department for a vehicle accident;
- \$44,440 for hail damage to multiple vehicles;
- \$3,500 will go to City Auditor Martin Starnes & Associates on behalf of the Thomasville Tourism Commission for an audit of the hotel occupancy taxes;
- \$76,000 of fund balance in the Police Restitution/Forfeiture Fund for the purchase of night vision devices and lithium battery-powered illuminators/lasers for the Thomasville PD SWAT Team. This is in response to a situation that occurred in Denton when they didn't have enough of this equipment, so the resolution of the matter lasted longer than it would have. This will make it safer for our SWAT Team;
- Trade-in revenue for the current golf cart fleet is appropriated and applied to the purchase cost of the new fleet in the Golf Course Fund; and
- At the request of our auditors, we are also transferring \$595,578 of unspent ARPA funds budgeted in the Water/Sewer Capital Project Fund back to the Grant Special Revenue Fund at FY 2023 year-end.

- E. Consideration of Approval of Resolution Dissolving the Winding Creek Golf Course Enterprise Fund

In order to begin the process of closing the Golf Course Enterprise Fund, Finance staff requested a resolution to dissolve the fund and transfer all assets and debt to the General Fund as part of the Parks and Recreation Department.

- F. Consideration of Approval of Ordinance Establishing a Loading Zone on the First Block of Salem Street

This is north of E. Main Street for commercial vehicles serving businesses in this area. The loading zoning was a request from a local business. Staff from TPD, TFD, Planning, and Downtown Economic Development reviewed and recommend approval of the request.

G. Consideration of Approval of Thomasville Christmas Parade Road Closure Ordinance

The Parade is scheduled for Saturday, December 9, following the same route as previous years.

H. Consideration of Approval of Star of Bethlehem Drive-Thru Nativity Road Closure Ordinance

This annual event is scheduled for Dec. 9 & 10 and will close neighborhood streets in and around E. Main Street south of the RR tracks.

Council Member Hunt moved to approve all the items on the Consent Agenda. Council Member Williams seconded. Motion unanimously approved 5 – 0.

7. Regular Agenda

A. Consideration of Approval of Resolution Granting Law Enforcement Retiree Raymond Widener His Service Revolver and Badge

Mayor York presented the Resolution. Council Member Bratton moved to approve the Resolution. Council Member Shell seconded. Motion unanimously approved 5 – 0.

Mayor York invited Lt. Widener forward and stated that Lt. Widener has put in over 40 years of faithful service here in the City of Thomasville. He said Lt. Widener knows everybody here, and they know him, so he is able to talk to people and resolve issues quickly.

Mayor York said, "We appreciate your service, the 40+ years that you've given the City of Thomasville. We certainly wish you well on your retirement." He then presented the Resolution to Lt. Widener, and Chief Carter presented him with his service revolver and badge. He received a standing ovation by a full house.

Council Member Ron Bratton said, "It's truly an honor to be here to see Lt. Widener retire. Lt. Widener has been a policeman's policeman. For that forty years, he has worked hard. I remember when Raymond came to work here. We were a very scaled back unit of police officers. We had five police cars. We just got rid of the motorcycles, so times were bad. Raymond was a forward charger. He believed in following the law. As he worked as an investigator, he was probably one of the most talented investigators we ever had. We have great guys now, but they have a whole lot more technology than he had. Usually, he had the ability to talk and reason with folks. Because of his ability to solve crime, he solved crimes all over the Triad area. So let me be the first to say that I am no more honored to work with such a great law enforcement officer than Raymond Widener. You deserve your retirement, and you have done us all a good job. The citizens of Thomasville truly

owe you an honor for you to serve them over the last forty years. So, Thank you, Raymond.”

B. Consideration of Approval of Contract for 1 MGD Sanitary Sewer Allocation Agreement with Davidson County for Economic Development

City Manager Brandt said after months of negotiation between Thomasville and Davidson County, the proposed agreement provides for a long-term agreement for sewer treatment of 1 MGD initially, with a potential for another 1 MGD in the future.

The County will construct the system and dedicate the operations to the City to serve the US 64 corridor for Economic Development purposes. The agreement has “clawback” provisions to allow the City to receive annual maintenance funding if flow volumes are not adequate and other provisions to protect the Thomasville customers.

Mayor York thanked County Commissioners Fred McClure and Steve Shell and County Manager Casey Smith for attending the meeting.

Council Member Hunt moved to approve this contract. Council Member Thrift seconded. Council Member Williams voiced her concern about giving so much, about one-third, of the City’s sewer capacity to the County. She asked for a roll-call vote.

Council Member Williams voted against it.
Council Member Thrift voted in favor of it.
Council Member Bratton voted in favor of it.
Council Member Hunt voted in favor of it.
Council Member Shell voted in favor of it.

Motion approved 4 – 1.

Mayor York thanked the County Commissioners and the members of the Sewer Committee for working together on this. He said, “Hopefully it will be mutually beneficial to both parties for many, many years to come.”

8. Committee Reports and Appointments, Mayor’s Report and Appointments, City Manager’s Report, City Attorney’s Report

Council Member Hunt welcomed Council Member Bratton back.

Council Member Bratton said he was glad to be back. He thanked everyone for their support during his illness. He added, “We’ve got good people in Thomasville, and I appreciate all you’ve done for me.”

Council Member Williams invited people to check out the Downtown. She said it is looking awesome for the upcoming Fall season with great new banners from

Beautification, plants at the Big Chair, and awesome Halloween decorations. She reported that she attended the first NC Main Street Program meeting, saying, "It's going to be such a good thing for our community! The next one is October 24th. Everyone is invited to participate in those. Bring your ideas."

Mayor York attended several events last month, a few of which were:

- Downtown Streetscape planning meeting;
- the closing for property at 52 East Main Street, which will add to the City property Downtown;
- Groundbreaking for Nucor Steel's large manufacturing plant near Hwy 64, which will bring jobs to the citizens of Thomasville and surrounding areas;
- State of the City and County, where he presented information about happenings in Thomasville. This was hosted by the Chamber of Commerce.
- Meetings with the Downtown Associate Community Team, including a public meeting regarding the 2-year process of getting Thomasville ready to apply for the NC Main Street Program.

City Manager Brandt Thanked the Beautification Committee for purchasing new downtown banners for Fall. In addition, Reville, a local non-profit, decorated some of the light poles with cornstalks and other fall decorations. It really looks like Fall downtown!

He gave a shout-out to the City's Maintenance/Construction crew in the Public Utilities Department that performed a sewer repair on E. Main Street earlier this week. A local business owner sent an email that said:

"A quick note of appreciation for Kirby (Lambeth) and his crew that came out for a main sewer repair today. Leading up to the job and the work performed today, the entire crew was extremely friendly, professional, proactive, and efficient. In a world where mostly complaints are voiced, please know that I'm grateful for these guys and their hard work that is rarely seen."

City Manager Brandt said, "These are the same people that are out at 2:00 or 3:00 in the morning. They do repairs to sewer lines and water lines. So we very much appreciate them. This is a great example of our City's core values of quality and effective service, and honesty and integrity at work. Great job!"

Everybody's Night and Day is September 29 and 30th. Contact the Chamber of Commerce to reserve your craft booth.

9. Closed Session – Attorney/Client and Economic Development

Council Member Thrift moved that Council go into closed session for attorney/client and economic development matters. Council Member Shell seconded. Motion unanimously approved 5 – 0.

Open session resumed, and Mayor York announced that no action was taken in closed session.

10. Additional Items – N/A

11. Adjournment – Council Member Shell moved to adjourn. Council Member Williams seconded. Motion unanimously approved 5 – 0.

Agenda Item Cover Sheet

Admin. Use Only:

Committee Name

Personnel/Finance

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Committee Date
And Agenda #

10.3.2023

PF1

Item Name:

Grant Project Ordinance for ARPA

Description of Item:

Appropriating all surplus funds and unallocated funds across all areas.

Back-Up Materials:

Grant Project Ordinance

Council Action Requested:

Approval

Requested By:

Thomas Avant

Department:

Finance

CITY OF THOMASVILLE
Grant Project Ordinance

BE IT ORDAINED by the Thomasville City Council that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following Grant Project is hereby adopted:

Section 1. The project authorized is the American Rescue Plan Act (ARPA) – Coronavirus Local Fiscal Recovery Funds (CLFRF) Grant Project described in the work statement contained in the grant agreement between this unit and the U.S. Department of the Treasury.

Section 2. The officers of this unit are hereby directed to proceed with the Grant Project within the terms, rules and regulations of the funding agreement, and the budget contained herein.

Section 3. The following revenues are anticipated to be available to complete this project:

045-0000-322-0605	Federal Grants/ARPA	\$7,381,468.00
045-0000-322-0605	Federal Grants/ARPA	\$1,111,500.00
Total		\$8,492,968.00

Section 4. The following amounts are appropriated for this project:

045-9010-505-6100	Transfer to General Fund	\$ 6,090,995.00
045-7010-573-6030	Transfer to Water & Sewer Fund	\$ 695,069.00
045-6221-503-6031	Transfer to Golf Course Fund	\$ 595,404.00
045-7097-573-6061	Transfer to W/S Capital Proj. Fund	\$ 401,357.00
045-7098-573-6061	Transfer to W/S Capital Proj. Fund	\$ 710,143.00
Total		\$8,492,968.00

Section 5. The Finance Officer is hereby directed to maintain within the Grant Project Fund sufficient specific detailed accounting records to provide the accounting to the grantor agency required by the grant agreement(s) and federal and state regulations.

Section 6. Requests for funds should be made in an orderly and timely manner as funds are obligated and expenses incurred.

Section 7. The Finance Officer is directed to report timely on the financial status of each project element in Section 4 and on the total revenues received or claimed.

Section 8. The Budget Officer is directed to include a detailed analysis of past and future costs and revenues on this Grant Project in every budget submission made to this Council.

Section 9. Copies of this Grant Project Ordinance shall be made available to the Budget Officer and the Finance Officer for direction in carrying out this project.

ADOPTED this 16th day of October, 2023

Mayor

ATTEST:

City Clerk

Agenda Item Cover Sheet

Admin. Use Only:

Committee Name

Personnel/Finance

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**Committee Date
And Agenda #**

10.3.2023

PF2

Item Name:

Consideration of Grant Project Ordinance for AFG Grant

Description of Item:

Ordinance appropriates funding for FY 2022 Assistance to Firefighters Grant (AFG).

Back-Up Materials:

Ordinance and award package

Council Action Requested:

Approval

Requested By:

Thomas Avant

Department:

Finance

CITY OF THOMASVILLE
Grant Project Ordinance

BE IT ORDAINED by the Thomasville City Council that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following Grant Project is hereby adopted:

Section 1. The project authorized is the FY 2022 FEMA Assistance to Firefighters Grant (AFG) described in the work statement contained in the Grant Agreement between this unit and the U.S. Department of Homeland Security and the budget contained herein.

Section 2. The officers of this unit are hereby directed to proceed with the Grant Project within the terms of the funding agreement, the rules and regulations of FEMA/U.S. Department of Homeland Security, and the budget contained herein.

Section 3. The following revenues are anticipated to be available to complete this project:

060-5320-322-0602	FEMA Grant	\$ 47,273.00
060-5320-380-1000	Contribution – City of Thomasville	\$ 4,727.00
Total		\$ 52,000.00

Section 4. The following amounts are appropriated for this project:

060-5320-522-3601	Uniforms/Turn Out Gear	\$ 52,000.00
Total		\$ 52,000.00

Section 5. The Finance Officer is hereby directed to maintain within the Grant Project Fund sufficient specific detailed accounting records to provide the accounting to the grantor agency required by the grant agreement(s) and federal and state regulations.

Section 6. Requests for funds should be made in an orderly and timely manner as funds are obligated and expenses incurred.

Section 7. The Finance Officer is directed to report timely on the financial status of each project element in Section 4 and on the total revenues received or claimed.

Section 8. The Budget Officer is directed to include a detailed analysis of past and future costs and revenues on this Grant Project in every budget submission made to this Council.

Section 9. Copies of this Grant Project Ordinance shall be made available to the Budget Officer and the Finance Officer for direction in carrying out this project.

ADOPTED this 16th day of October, 2023

Mayor

ATTEST:

City Clerk

Agenda Item Cover Sheet

Admin. Use Only:

Committee Name

Personnel/Finance

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**Committee Date
And Agenda #**

10.3.2023

PF3

Item Name:

Budget Amendment P4-01 which includes ARPA items

Description of Item:

Amendment transfers funding in multiple funds, including final allocation of all remaining ARPA grant funds for supplanting PD salaries and two new utility fund capital items.

Back-Up Materials:

See Budget Amendment for details; ARPA grant funding summary worksheet included.

Council Action Requested:

Approval

Requested By:

Thomas Avant

Department:

Finance

Budget Amendment

To: City Manager

From: Finance Director

Date: 10/5/2023

Council Budget Amendment Reference #: 2024 – P4 - 01

Re: 2023-2024 Budget Amendment (including ARPA items)

This ARPA grant budget amendment requires Council approval and is necessary to recognize revenue in the special revenue fund (Fund 045) and transfer appropriated funding to the proper fund. All interfund transfers must be budgeted, and the expending fund must have a budget. According to guidance from the UNC School of Government and N.C. Dept. of State Treasurer, ARPA grant funds must first be accounted for in a special revenue and then transferred to the expending fund. Budget authorization automatically carries forward into new budget years.

The amendment appropriates grant funding in the General Fund, totaling \$504,356 to supplant the cost of salaries in the Police Dept. for the following pay dates: 7/28/2023, 8/11/2023, 8/25/2023, and 9/8/2023. Supplanting General Fund salaries for first responders using grant funding will free stated budgeted amount in the General Fund for future projects determined by the City Council. The supplanted salary amount will be transferred to a General Fund holding account for future project(s) determined by the Council. \$161,465 of funding originally allocated for the payroll costs of the Downtown Economic Development Director will be transferred to supplant PD salaries. This is to ensure all ARPA funds are obligated and expended by the grant deadline and will ensure all available funds are used. Payroll costs of the Downtown Economic Development Director will be grant funded through 6/30/2025, at which time the position will be funded from non-grant, General Fund dollars in the annual budget.

\$200,003 of surplus ARPA funding in the Utility Capital Project Fund for ARPA water/sewer projects which came in under budgeted estimates will be reallocated and used for the purchase of a new floating aerator system at raw water intake at the Water Treatment Plant. The new system will help the plant maintain healthy oxygen levels in the water system to reduce the likelihood of another cloudy water outbreak. The remaining \$141,600 of surplus ARPA funding in the Utility Capital Project Fund will be used for the final year costs of the UV system upgrade in the Waste Treatment Plant, which will reduce the total capital funded and/or financed with city funds. \$50,000 will supplement ARPA grant funds and will be

appropriated from contingency in the Water/Sewer Fund to account for any potential deficit for either project costing more than original estimates.

The General Fund Budget needs to be amended to appropriate the city's contribution (cash match) to the FY 2022 FEMA Assistance to Firefighters Grant award. The grantor requires a minimum 10% non-federal match of \$4,727 for a total approved budget of \$52,000.

GENERAL FUND

INCREASE REVENUE

010-0000-380.62-00	Transfers/ARPA Funds	\$ 240,535.00
010-0000-383.01-00	Refunds/Insurance Proceeds	\$ 2,561.00
Total		\$ 243,096.00

DECREASE APPROPRIATION

010-4110-512.90-01	Contribution to Other/Economic Development	\$ 50,000.00
010-5110-521.02-01	Salaries/Full Time	\$ 342,891.00
010-5110-521.02-01	Salaries/Full Time	\$ 161,465.00
010-5310-522-36-01	Uniforms/Turn Out Gear	\$ 4,727.00
010-4210-512.45-01	Contracted Services/Professional	\$ 102,356.00
010-4210-511.02-01	Salaries/Full Time	\$ 116,266.00
010-4210-511.04-01	Taxes/FICA	\$ 7,286.00
010-4210-511.04-02	Taxes/Medicare	\$ 1,704.00
010-4210-511.05-01	Group Health Insurance	\$ 18,567.00
010-4210-511.05-02	Life Insurance	\$ 112.00
010-4210-511.06-01	NC Retirement	\$ 17,530.00
010-9010-505.58-00	Unallocated/Contingency	\$ 3,000.00
010-9010-505.58-00	Unallocated/Contingency	\$ 12,425.00
Total		\$ 838,329.00

INCREASE APPROPRIATION

010-4110-512.26-00	Operations & Maintenance/Advertising	\$ 3,000.00
010-5110-521.02-01	Salaries/Full Time	\$ 342,891.00
010-5110-521.02-01	Salaries/Full Time	\$ 161,465.00
010-5110-522.15-04	Maintenance & Repairs/Vehicles	\$ 2,561.00
010-5110-523.60-63	Transfers To/Public Safety Grant Fund	\$ 12,425.00
010-4210-512.45-01	Contracted Services/Professional	\$ 240,535.00
010-4210-512.45-01	Contracted Services/Professional	\$ 102,356.00
010-4210-512.45-01	Contracted Services/Professional	\$ 161,465.00
010-4210-512.45-01	Contracted Services/Professional	\$ 50,000.00
010-5310-522-90-60	Contribution to General Capital Project	\$ 4,727.00
Total		\$ 1,081,425.00

WATER/SEWER CAPITAL PROJECT FUND

INCREASE REVENUE

061-7097-380.30-00	Transfers/From Combined Enterprise	\$ 33,000.00
061-7098-380.30-00	Transfers/From Combined Enterprise	\$ 17,000.00
Total		\$ 50,000.00

DECREASE APPROPRIATION

061-7097-574.74-00	Capital Outlay/Equipment	\$ 6,275.00
061-7098-572.45-04	Contracted Services/Engineering	\$ 74,358.00
061-7098-572.45-04	Contracted Services/Engineering	\$ 75,642.00
061-7098-572.45-04	Contracted Services/Engineering	\$ 6,990.00
Total		\$ 163,265.00

INCREASE APPROPRIATION

061-7097-574.74-00	Capital Outlay/Equipment	\$ 33,000.00
061-7097-574.74-00	Capital Outlay/Equipment	\$ 75,642.00
061-7097-574.74-00	Capital Outlay/Equipment	\$ 6,990.00
061-7098-574.73-00	Capital Outlay/Other Improvements	\$ 74,358.00
061-7098-574.73-00	Capital Outlay/Other Improvements	\$ 17,000.00
061-7098-574.73-00	Capital Outlay/Other Improvements	\$ 6,275.00
Total		\$ 213,265.00

WATER/SEWER ENTERPRISE FUND

DECREASE APPROPRIATION

030-9010-505.58-00	Unallocated/Contingency	\$ 55,000.00
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INCREASE APPROPRIATION

030-7097-573.60-61	Transfers to / W/S Capital Projects Fund	\$ 33,000.00
030-7098-573.60-61	Transfers to / W/S Capital Projects Fund	\$ 17,000.00
030-7015-572.33-00	Operations & Maintenance/Supplies	\$ 5,000.00
Total		\$ 55,000.00

**American Rescue Plan Act (ARPA) Grant
Funding Summary**
as of 9/30/2023

Project	Council-approved Budget	Amount Obligated	Total Paid	Remaining Balance of Unobligated Funds	Notes
Personnel Positions - Financial Analyst and DEDD - Salaries and Fringe Benefits	\$ 611,053.00	\$ 611,053.00	\$ 150,457.76	\$ -	In October, \$161,465 will be used to supplant PD salaries, freeing funds to be used for any purpose in the General Fund with no restrictions; DEDD payroll costs will be grant funded through 6/30/2025; costs transferred to General Fund at that time.
Vaccine Incentive Payments to Employees	\$ 37,500.00	\$ 37,500.00	\$ 37,500.00	\$ -	
Premium Pay for employees	\$ 993,478.00	\$ 993,478.00	\$ 993,476.00	\$ -	
Golf Course Buildings - driving range and course bathroom	\$ 123,018.00	\$ 123,018.00	\$ 46,068.00	\$ -	Funds to be requisitioned soon to close out driving range building project.
Golf Course Equipment - lights, golf carts, batteries and accessories	\$ 442,116.00	\$ 442,116.00	\$ 62,509.00	\$ -	Handicap bays at Finch Field and Cushwa Stadium; Myers Park, Strickland Center, Farmers' Market and fountain
Recreation Contractual Services - master plan and parking lot paving/marketing/stripping	\$ 323,294.00	\$ 323,294.00	\$ 273,294.00	\$ -	
Recreation capital improvements - Myers Park playground revitalization, TACC street and trail enhancements and A/V equipment	\$ 485,157.00	\$ 485,157.00	\$ 331,553.00	\$ -	
North Hamby Creek Greenfield restoration planning and design master plan	\$ 25,000.00	\$ 25,000.00	\$ 25,000.00	\$ -	
MIS capital improvements - asset management software application/cloud hosting platform/public wi-fi expansion and upgrade/hardware/security	\$ 673,177.00	\$ 673,177.00	\$ 673,177.00	\$ -	
Supplanting PD salaries	\$ 950,000.00	\$ 950,000.00	\$ 950,000.00	\$ -	In October, \$240,535 of unallocated funds, \$102,356 of surplus funding from completed projects under budget, and \$161,465 originally budgeted for DEDD salaries/fringe will be supplanted, freeing funds to be used for any purpose in the General Fund with no restrictions (\$504,356 total to be supplanted)
PD capital equipment - message boards, light trailers, UTVs/trailer, mobile command unit, scanner, radio amplifier, 6 patrol vehicles	\$ 627,386.00	\$ 627,386.00	\$ 605,936.00	\$ -	
Supplanting FD salaries	\$ 489,696.00	\$ 489,696.00	\$ 489,696.00	\$ -	
FD capital equipment - partial cost of fire engine apparatus, EOC upgrades and technology equipment, weather station, generator, and truck with outfitting	\$ 202,432.00	\$ 202,432.00	\$ 60,345.00	\$ -	
Engineering Capital Equipment	\$ 38,792.00	\$ 38,792.00	\$ 38,792.00	\$ -	
Public Works Capital Equipment - dump truck, rear load garbage truck, and knuckle boom trash loader	\$ 487,533.00	\$ 487,533.00	\$ 67,533.00	\$ -	
Water/Sewer Fund - Maintenance and Construction Capital Equipment	\$ 528,945.00	\$ 528,945.00	\$ 436,489.00	\$ -	
Water/Sewer Capital Project Fund - Capital Equipment - bulk alum tank addition at Water Treatment Plant	\$ 325,000.00	\$ 201,354.00	\$ 127,494.00	\$ 123,646.00	In October, remaining funds to be reallocated/transferred to new project - floating aerator system at raw water intake
Rains Road Pump Station upgrades - engineering services	\$ 425,000.00	\$ 275,000.00	\$ 111,602.00	\$ 150,000.00	In October, remaining funds to be reallocated/transferred to new projects - floating aerator system at raw water intake and WWTP UV system upgrade (year 3 cost)
WWTP - systemwide wastewater collection system evaluation - engineering services	\$ 231,500.00	\$ 224,510.00	\$ 223,605.00	\$ 6,990.00	In October, remaining funds to be reallocated/transferred to new project - floating aerator system at raw water intake

Project	Council-approved Budget	Amount Obligated	Total Paid	Remaining Balance of Unobligated Funds	Notes
Installation/construction of 2 flow meters on force mains - Northside and East Davidson Pump Stations	\$ 130,000.00	\$ 69,033.00	\$ 69,033.00	\$ 60,967.00	In October, remaining funds to be reallocated/transferred to new project - WWTP UV system upgrade (year 3 cost)
Totals	\$ 8,150,077.00	\$ 7,808,474.00	\$ 5,773,559.76	\$ 341,603.00	
Unallocated Funds to Date	\$ 240,535.00	In October, to supplant PD salaries, freeing funds to be used in the General Fund with no grant restrictions			
Surplus Funds to Date - Projects completed under Council-approved budgetary estimates	\$ 102,356.00	In October, to supplant PD salaries, freeing funds to be used in the General Fund with no grant restrictions			
Total ARPA Funding Received	\$ 8,492,968.00				
Total supplanted in October 2023 and available for use in the General Fund with no restrictions		\$ 504,356.00	included in October ARPA grant project ordinance and budget amendment for Council approval		

Agenda Item Cover Sheet

Admin. Use Only:

Committee Name Personnel/Finance

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Committee Date
And Agenda #

10.3.2023

PF9

Item Name:

Consideration of Revised Grant Project Ordinance - Project M/Nucor - Golden LEAF

Description of Item:

change order in project cost to appropriate funding from Davidson County for larger piping for the sewer extension to the Nucor plant

Back-Up Materials:

Ordinance

Council Action Requested:

Approval of Ordinance

Requested By: Thomas Avant

Department: Finance

CITY OF THOMASVILLE
Grant Project Ordinance

BE IT ORDAINED by the Thomasville City Council that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following Grant Project is hereby adopted:

Section 1. The project authorized is the Project M - Nucor Public Sewer Extension Grant Project described in the work statement contained in the Grant Agreement between this unit and the Golden LEAF Foundation and the budget contained herein.

Section 2. The officers of this unit are hereby directed to proceed with the Grant Project within the terms of the funding agreement, the rules and regulations of the Golden LEAF Foundation and the budget contained herein.

Section 3. The following revenues are anticipated to be available to complete this project:

061-7901-322-0509	State Grants/Miscellaneous State Grant	\$1,100,000.00
061-7901-390-0109	Contribution – Nucor	\$ 55,000.00
061-7901-390-0109	Contribution – Davidson County	\$ 130,000.00
Total		\$1,285,000.00

Section 4. The following expenditures are anticipated to be available to complete this project:

061-7901-574-7300	Construction Improvements	\$ 840,000.00
061-7901-574-7300	Construction Improvements	\$ 130,000.00
061-7901-572-4501	Administrative	\$ 55,000.00
061-7901-572-4504	Engineering	\$ 260,000.00
Total		\$1,285,000.00

Section 5. The Finance Officer is hereby directed to maintain within the Grant Project Fund sufficient specific detailed accounting records to provide the accounting to the grantor agency required by the grant agreements and federal and state regulations.

Section 6. Requests for funds should be made in an orderly and timely manner as funds are obligated and expenses incurred.

Section 7. The Finance Officer is directed to report timely on the financial status of each project element in Section 4 and on the total revenues received or claimed.

Section 8. The Budget Officer is directed to include a detailed analysis of past and future costs and revenues on this Grant Project in every budget submission made to this Council.

Section 9. Copies of this Grant Project Ordinance shall be made available to the Budget Officer and the Finance Officer for direction in carrying out this project.

ADOPTED this 16th day of October, 2023

Mayor

ATTEST:

City Clerk

CITY OF THOMASVILLE
Grant Project Ordinance

BE IT ORDAINED by the Thomasville City Council that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following Grant Project is hereby adopted:

Section 1. The project authorized is the North Carolina Governor's Highway Safety Program (GHSP) – FY 2024 DWI Task Force Grant described in the work statement contained in the Grant Agreement between this unit and the North Carolina Department of Transportation and the budget contained herein.

Section 2. The officers of this unit are hereby directed to proceed with the Grant Project within the terms of the funding agreement, the rules and regulations of N.C. Department of Transportation and the budget contained herein.

Section 3. The following revenues are anticipated to be available to complete this project:

063-5112-322-0506	State Grants/Governor's Highway Safety	\$ 70,413.00
063-5112-380-1000	Contribution – City of Thomasville	\$ 12,425.00
Total		\$ 82,838.00

Section 4. The following amounts are appropriated for this project:

063-5112-521-0201	Full-time Salaries	\$ 55,610.00
063-5112-521-0401	Taxes – FICA	\$ 3,448.00
063-5112-521-0402	Taxes – Medicare	\$ 806.00
063-5112-521-0501	Group Health Insurance	\$ 9,360.00
063-5112-521-0502	Life Insurance	\$ 77.00
063-5112-521-0601	Retirement	\$ 7,807.00
063-5112-521-0602	Retirement – 401(K)	\$ 2,780.00
063-5112-522-1097	Travel & Training/Police Administration	\$ 2,950.00
Total		\$ 82,838.00

Section 5. The Finance Officer is hereby directed to maintain within the Grant Project Fund sufficient specific detailed accounting records to provide the accounting to the grantor agency required by the grant agreement(s) and federal and state regulations.

Section 6. Requests for funds should be made in an orderly and timely manner as funds are obligated and expenses incurred.

Section 7. The Finance Officer is directed to report timely on the financial status of each project element in Section 4 and on the total revenues received or claimed.

Section 8. The Budget Officer is directed to include a detailed analysis of past and future costs and revenues on this Grant Project in every budget submission made to this Council.

Section 9. Copies of this Grant Project Ordinance shall be made available to the Budget Officer and the Finance Officer for direction in carrying out this project.

ADOPTED this 16th day of October, 2023

Mayor

ATTEST:

City Clerk

Agenda Item Cover Sheet

Admin. Use Only:

Committee Name Public Safety

Committee Date
And Agenda #

10.3.2023	Psafe11
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Item Name:

Consideration of Resolution in Support of Operation Green Light

Description of Item:

Consideration of Resolution in Support of Operation Green Light

Back-Up Materials:

Resolution

Council Action Requested:

Consider Approval

Requested By: Mayor Raleigh York, Jr.

Department: Mayor



RESOLUTION IN SUPPORT OF OPERATION GREEN LIGHT

WHEREAS, The representatives of the City of Thomasville have the utmost respect, admiration, and gratitude for all of the men and women in the Armed Forces who have selflessly served their country and this community. Their contributions and sacrifices have been vital in maintaining the freedoms and the way of life enjoyed by our citizens; and

WHEREAS, There are currently approximately 700,000 Veterans in the State of North Carolina, with over 9,000 of them in Davidson County; and Thomasville seeks to honor these individuals, because they paid the high price for the freedom of all, by placing themselves in harms way; and

WHEREAS, Approximately 200,000 US service members transition to civilian communities each year, and it is estimated that there will be a 20% increase of service members transitioning to civilian life in the near future. Studies indicate that between 44 and 72% of all active military service members experience high levels of stress during transition from military to civilian life, and they are at a higher risk for suicide during their first year after leaving military service; and

WHEREAS, The Mayor and City Council of Thomasville appreciate the sacrifices that United States Military Personnel make while defending everyone's freedoms and believe specific recognition should be accorded to them in appreciation of their service.

NOW THEREFORE BE IT RESOLVED, with designation as a *Green Light for Military Service City*, I, Raleigh York, Jr., Mayor hereby declare that November 6 - 12, 2023 in Thomasville is a time to salute and honor the service and sacrifice of our men and women in uniform transitioning from active service; and

BE IT FURTHER RESOLVED, that in observance of **Operation Green Light**, the Mayor and City Council of Thomasville encourage its citizens to recognize all those who helped to preserve freedom by **displaying a green light in a window of their place of business or residence**.

Adopted this the 16th day of October, 2023.

[SEAL]

CITY OF THOMASVILLE

By: _____

Raleigh York, Jr., Mayor

Attest: _____

Wendy S. Martin, City Clerk

Department: Police

**AN ORDINANCE AMENDING THE
SOLICITING AND BEGGING ORDINANCE OF
THE CITY**

City Council of the City of Thomasville

The City Council finds that the current ordinance found in Chapter 54, Article I- In general, Sec. 54-12, "Soliciting and Begging" should be changed as indicated in red on Exhibit A (attached) and as follows:

The wording in Section 54-12 should be changed so that it reads,

Sec. 54-12. Soliciting and begging.

- (a) *Definitions.* The following words, terms and phrases, when used in this section, shall have the meanings ascribed to them in this subsection, except where the context clearly indicates a different meaning:

Aggressive panhandling, solicitation, or peddling includes:

- (1) Accosting a person by approaching or speaking to the individual or individuals in such a manner as would cause a reasonable person to fear imminent bodily harm or the commission of a criminal act upon the person, or upon property in his immediate possession;
- (2) Touching someone without their consent;
- (3) Using obscene or abusive language toward someone while attempting to panhandle or solicit them;
- (4) Forcing oneself upon the company of another by continuing to solicit in close proximity to an individual who has made a negative response by verbal or physical signs or by attempting to leave the presence of the person soliciting, or by other negative indication;
- (5) Blocking the path of the individual being solicited; otherwise engaging in conduct that could reasonably be construed as intending to force a person to accede to a solicitation;
- (6) Other conduct that a reasonable person being solicited would regard as intended to compel or force the person to accede to the solicitation.

Automatic teller machine means a device linked to a financial institution's account records, which is able to carry out transactions, including but not limited to, account transfers, deposits, cash withdrawals, balance inquiries, and mortgage, loan, and credit card payments.

Automatic teller machine facility means the area comprised of one or more automatic teller machines and any adjacent space which is made available to banking customers after regular banking hours.

Financial institution means any bank, industrial bank, credit union, savings and loan, check cashing business, or other financial business.

Panhandling means, without limitation, use of the spoken, written, or printed words, signs, bodily gestures, or other acts as are conducted in the furtherance of the purpose of obtaining alms or contributions of money, food, or clothing for the use of oneself or others.

Public place means a place where a governmental entity has title and/or to which the public or a substantial group of persons has access, including, but not limited to, any street, highway, parking lot, plaza, restaurant, theater, transportation facility, vendor location, school, place of amusement, park or playground.

- (b) *Prohibited conduct while soliciting, peddling, or panhandling.* It shall be unlawful for any person to solicit, peddle, or panhandle, as defined in subsection (a) of this section:

- (1) By engaging in any acts of aggressive soliciting, peddling, or panhandling as defined in subsection (a) of this section;
- (2) Within 50 feet of the entrance to any financial institution, any automatic teller machine or any automatic teller facility;

- (3) At any permitted outdoor dining area or outdoor merchandise area, provided such areas are in active use at the time;
- (4) At any transit stop or taxi stand, or in a public transit vehicle;
- (5) While the person being solicited is standing in line waiting to be admitted to a commercial establishment;
- (6) On private property, unless the person has written permission from the owner of the property to beg or solicit alms on the property;
- (7) After dark, which shall mean one-half hour after sunset until one-half hour before sunrise;
- (8) While under the influence of alcohol or after having illegally used any controlled substance as defined in the North Carolina Controlled Substance Act;
- (9) Within 20 feet of any crosswalk;
- (10) In or on city streets to include the right-of-way, median or shoulder thereof;
- (11) By standing, sitting or loitering in any street or highway, including shoulders or medians, but excluding sidewalks, and/or to stop or attempt to stop any vehicle for the purpose of obtaining employment, business or contribution from the driver or any occupants of the motor vehicle in accordance with G.S. 20-175. This provision shall not apply to licensees, employees or contractors of the department of transportation or city employees engaged in construction, maintenance or in making traffic engineering surveys;
- (12) In a school zone during the time of arrival of students at the beginning of the school day and/or during the time of the departure of students at the end of the school day;
- (13) Within 20 feet of the entrance or exit of any parking deck, garage, or surface parking lot;
- (14) Within 50 feet of any city-owned or -operated building or facility.

(c) *Penalty.* Any person who violates any of the provisions of this section shall be guilty of a misdemeanor as provided in NC G.S. 14-4 and , upon conviction, shall be subject to a maximum fine of \$500.00 per occurrence, imprisonment, or both.

Upon the motion of Council Member_____, and a second by Council Member_____, the foregoing ordinance was passed upon its first reading by a vote of_____to_____.

This Ordinance shall be effective _____, 2023.

This the ____ day of _____, 2023.

CITY OF THOMASVILLE

By:_____

Raleigh York Jr., Mayor

Attest:_____

Wendy S. Martin, City Clerk

[SEAL]

Agenda Item Cover Sheet

Admin. Use Only:**Committee Name**

Public Safety

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**Committee Date
And Agenda #**

8.8.23	Psafe5

Item Name:

Consider Addition to City Ordinance Chapter 54, Article 1 , Section 54-16 Regarding Camping on Public and Private Property and Addition to City Ordinance Chapter 54, Article 1 Section 54-17 Urinating and Defecating on Public Property.

Description of Item:

See Memo

Back-Up Materials:

Memo; Amended Ordinances

Council Action Requested:

Approval

Requested By:

Chief Carter

Department:

Police

**AN ORDINANCE ADDING THE CAMPING
ON PUBLIC AND PRIVATE PROPERTY
ORDINANCE OF THE CITY**

City Council of the City of Thomasville

The City Council finds that the ordinance Chapter 54, Article I- In general, Sec. 54-16, "Camping on Public and Private Property" should be added as indicated in red on Exhibit A (attached) and as follows:

The wording in Section (54-16) should be added so that it reads,

Sec. 54-16. Camping on Public Property

- a. *Purpose.* The streets and public areas within the city should be readily accessible and available to residents and the public at large. The use of these areas for camping purposes interferes with the rights of others to use the areas for which they were intended. Such activity can constitute a public health and safety hazard, which adversely affects neighborhoods and commercial spaces. Camping on private property without the owner's consent, without proper sanitary measures, and for other than a minimal duration adversely affects private property rights as well as public health, safety, and welfare of the city. The purpose of this section is to maintain streets, parks, and other public and private areas within the city in a clean, sanitary, and accessible condition and to protect the health, safety, and public welfare of the community while recognizing that subject to reasonable conditions, camping and camp facilities associated with special events can be beneficial to the cultural and educational climate in the city. Nothing in this section is intended to interfere with otherwise lawful and ordinary uses of public or private property.
- b. *Definitions.* As used in this section:

Camp or Camping means sleeping, making preparations to sleep (including lying down or the laying down of bedding for the purpose of sleeping), and/or storing personal belongings; the placement of tents, huts, tarps; parking of a motor vehicle, motor home or trailer, or mooring of a vessel or any other type of structure for living accommodation purposes. Camping as defined in this section is deemed a public nuisance, and the city may summarily remove a temporary shelter, bedding, or personal belongings.

Camp Facilities include, but are not limited to, tents, huts, vehicles, vehicle camping outfits, or temporary shelter.

Establish means setting up or moving equipment, supplies, or materials onto public or private property to “camp” or operate camp facilities.

Maintain means keeping or permitting equipment, supplies, or materials to remain on public or private property to camp or operate camp facilities.

Operate means participating or assisting in establishing or maintaining a camp or camp facility.

Ordinary High-Water Mark means the average level of the water attained in annual seasonal flow.

Park or Park Facilities means any areas set aside for recreational uses, areas conserved for their scenic interest, playgrounds, recreation centers, golf courses, and any other areas owned or operated by the City of Thomasville and which are intended for active or passive recreational purposes. The word “park” shall also include any parking lot adjacent to any park, any buildings, equipment, plants, or other facilities located in any park, and any landscaped public area and/or right-of-way.

Private Property means all privately-owned property including, but not limited to, streets, sidewalks, alleys, and improved or unimproved land.

Public Property means all city-owned property including, but not limited to, streets, sidewalks, alleys, improved or unimproved land, and parks.

Store means to put aside or accumulate for use when needed, to put for safekeeping, to place or leave in a location.

Unattended Property means no person is present with the personal property that asserts or claims ownership over the personal property. Conversely, the property is considered “attended” if a person is present with the personal property and the person claims ownership over the personal property.

Vehicle for the purpose of this chapter shall be defined by N.C.G.S. § 20-4.01 as it now exists or may hereafter be amended.

- c. *Unlawful Camping on Public and Property.* It shall be unlawful for any person to camp on public property as follows:
 - 1. It is unlawful to camp upon any city-owned property, including, without limitation, streets, sidewalks,

parking lots, parking structures, easements, open spaces, parks, cemeteries, real property within or below one hundred feet (100') above the ordinary high-water marker of any lake, waterway, river, stream, pond, or reservoir, or corporation yards.

2. Any encampment on publicly-owned property within the city that is deemed a high risk to the public's health and safety will be posted "No Trespass", removed, and cleaned.
 3. It is unlawful to camp on private property without permission from the owner of said private property.
- d. *City Manager Permit.* The city manager may issue a temporary permit to allow camping on city-owned or private property in connection with a special event.
- e. *Enforcement.* Any sworn law enforcement officer shall have the authority to enforce this section.
1. *Penalty.* Any person who violates any of the provisions of this section shall be guilty of a misdemeanor as provided in G.S. § 14-4 and, upon conviction, shall be subject to a maximum fine of \$500.00 per occurrence, imprisonment, or both.
 2. *Severability.* If any provision of this section is declared invalid or unconstitutional for any reason, the remaining provisions shall be severable and shall continue in full force and effect.

**AN ORDINANCE ADDING THE
URINATING AND DEFECATING ON PUBLIC
PROPERTY ORDINANCE OF THE CITY**

City Council of the City of
Thomasville

The City Council finds that the ordinance Chapter 54, Article I- In general, Sec.

54-17, "Urinating and Defecating on Public Property" should be added as indicated in red on Exhibit A (attached) and as follows:

The wording in Section (54-17) should be added so that it reads,

Sec. 54-17. Urinating or defecating on any public place.

(a) It is unlawful for any person to urinate or defecate on any public place, sidewalk, street, alley or right of way, or in any public building, except in toilet facilities, or upon private property in a location visible from any public place. "Public place" means property owned by the city, the state, a county or federal government, including leaseholds and easements.

(b) *Penalty.* Any person who violates any of subsection (a), above, of this section shall be guilty of a misdemeanor under G.S. § 14-4 and, upon conviction, shall be subject to a maximum fine of \$500.00 per occurrence, imprisonment, or both.

Upon the motion of Council Member _____, and a second by
Council Member _____, the foregoing ordinance was passed upon
its first reading by a vote of ___ to ____ .

This Ordinance shall be effective _____, 2023.

This the ____ day of _____, 2023.

CITY OF THOMASVILLE

By:

Raleigh York Jr., Mayor

Attest: _____

Wendy S. Martin, City Clerk

[SEAL]

Agenda Item Cover Sheet

Admin. Use Only:

Committee Name

Public Safety

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Committee Date
And Agenda #

10.3.2023

Psafe9

Item Name:

Consideration of Noise Ordinance

Description of Item:

City Council has requested the noise ordinance to be changed to allow noise in all zoning districts to occur until 10pm Sunday to Thursday and 11pm on Friday and Saturday. City Attorney Misti Whitman will bring noise ordinance revisions forward for approval by Council.

Back-Up Materials:

Noise Ordinance- Attorney Misti Whitman

Council Action Requested:

Consider Approval

Requested By:

City Council

Department:

City Council

AN ORDINANCE AMENDING THE NOISE ORDINANCE

City Council of the City of Thomasville

The City Council finds that the current Noise Ordinance which is found in **Article II Noise** of the Code of Ordinances is deficient in many respects, and that it would be advisable to amend the current Ordinance in its entirety.

Therefore, be it enacted that **Article II Noise** is hereby repealed and is hereby replaced with the following new **Article II Noise** as set forth on Exhibit A.

See Exhibit A

This Ordinance shall be effective _____, 2023

Upon the motion of Member of Council _____, and a second by Member of Council _____, the foregoing ordinance was passed upon its first reading by a vote of _____.

This ____ day of _____, 2023.

CITY OF THOMASVILLE

By: _____
Raleigh York, Jr., Mayor

Attest: _____
Wendy S. Martin, City Clerk

[SEAL]

Exhibit A

ARTICLE II. - NOISE

Sec. 34-31. - Purpose and applicability of article.

- (a) This article is set forth for the purpose of promoting the public health, safety and general welfare through the control of noises which occur in public places or which cross property or occupancy lines and which annoy or disturb humans or which cause or tend to cause adverse psychological or physiological effects on humans. From and after the effective date of the ordinance from which this article is derived, a person shall not make, cause to be made, allow to be made under their control, or continue to make any noise disturbance, or operate, use, cause to be used or operated, or allow to be used under their control, or otherwise create or allow to be created, sounds in such a manner as to create a noise disturbance by exceeding any of the sound levels as set forth in this article.
- (b) No sound being created prior to the effective date of the ordinance from which this article is derived shall continue to be made after such effective date except in conformance with all the provisions of this article.

(Ord. No. 855-B, § 12-101, 6-17-91)

Sec. 34-32. Generally, prohibited.

- (a) Subject to the provisions of this section, it shall be unlawful for any person or persons to make, permit, continue or cause to be made or to create any unreasonably loud, disturbing and unnecessary noise in the city, with the exception of construction work done pursuant to a federal, state, county or city contract which requires work to be performed during certain hours. Construction work under these conditions shall be exempt from the provisions of this section. For purposes of this section, the following definitions shall apply:
 - (1) **Unreasonably loud.** Noise which is substantially incompatible with the time and location where created to the extent that it creates an actual or imminent interference with peace or good order.
 - (2) **Disturbing.** Noise which is perceived by a person of ordinary sensibilities as interrupting the normal peace and calm of the area.
 - (3) **Unnecessary.** Any excessive or unusually loud sound or any sound which is of such character, intensity and duration as to disturb the peace and quiet of any neighborhood or which disturbs, injures or endangers the comfort, repose, health, peace or safety of any person, and being a type of sound which could be lessened or otherwise controlled by the maker without unduly restricting his conduct.
- (b) In determining whether a noise is unreasonably loud, disturbing and unnecessary, the following factors incident to such noise are to be considered: Time of day; proximity to residential structures; whether the noise is recurrent, intermittent or constant; the volume and

intensity; whether the noise has been enhanced in volume or range by any type of electronic or mechanical means; the character and zoning of the area; whether the noise is related to the normal operation of a business or other labor activity; whether the noise is subject to being controlled without unreasonable effort or expense to the creator thereof. A continuing or non-resetting audible burglar or fire alarm shall not be considered a violation of this article. Operation of power producing generators under emergency conditions or power outages shall be exempt from the provisions of this section.

Sec. 34-33. Specific prohibitions.

The following acts, among others, are declared to be loud, disturbing and unnecessary noises in violation of this section but this enumeration shall not be deemed to be exclusive:

- (a) ***Blowing horns.*** The sounding of any horn, whistle or signal device on any automobile, motorcycle, bus or other vehicle or railroad train, except as a danger signal required by law, so as to create any unreasonable, loud or harsh sound or the sounding of such device for an unnecessary and unreasonable period of time;
- (b) ***Bells, gongs and sirens.*** The sounding of any bell, gong or siren upon any vehicle which disturbs the quiet or repose of persons in the vicinity thereof, other than police, fire or other emergency vehicles;
- (c) ***Radios, stereos, etc.*** The playing of any radio, television set, record player, stereo, phonograph or other sound reproduction system, musical instrument or sound-producing or sound amplifying device on the premises of any dwelling, hotel or motel room, in such manner or with such volume, particularly but not limited to the hours between 10:00 p.m. and 7:00 a.m. Sunday through Thursday, and the hours of 11:00 p.m. and 7:00 a.m. Friday and Saturday; and between the hours of 2:00 a.m. and 7:00 a.m. on New Year's Eve, Everybody's Night and July 4th, if the sound generated is audible at a distance of fifty (50) feet or more from the dwelling's property line, or, in the case of a hotel or motel room, the unit's most outer boundary wall. This cutoff time shall not be applicable on New Year's Eve, Everybody's Night and July 4th;
- (d) ***Sound-producing equipment in vehicles.*** The playing of any radio, cassette player, compact disc, video tape or disc, or other similar device for reproducing sound located on or in any motor vehicle on a public street, highway, within any public vehicular area, or on the premises of a private residence, if the sound generated or noise vibration therefrom is audible or can be felt at a distance of fifty (50) feet or more from the radio, cassette player, compact disc, video tape or disc, or other similar device that is sound producing the sound;
- (e) ***Pets.*** The keeping of any animal or bird, which, by causing frequent or long continued noise, shall disturb the comfort and repose of any person in the vicinity;
- (f) ***Use of Vehicles.*** The use of any automobile, motorcycle, dirt bike, go-cart, recreational vehicle or any other vehicle so out of repair or so loaded or operated in such manner as to create loud or unnecessary grating, grinding, rattling, screeching of tires or other noise;

- (g) **Blowing whistles.** The blowing of any steam whistle attached to any stationary boiler except to give notice of the time to begin or stop work or as a warning of danger;
- (h) **Exhaust discharge.** The discharge into the open air of the exhaust of any steam engine, stationary internal combustion engine, motor vehicle or motor boat engine, except through a muffler or other device which will effectively prevent loud or explosive noises therefrom;
- (i) **Compressed air devices.** The use of any mechanical device operated by compressed air unless the noise created thereby is effectively muffled and reduced;
- (j) **Building operations.** The erection (including excavation), demolition, alteration or repair of any building in a residential zone other than between the hours of 7:00 a.m. and 7:00 p.m. on weekdays of any day or in any zone other than a residential zone between the hours of 10:00 p.m. and 7:00 a.m. of any day, except in the case of urgent necessity in the interest of public safety, and then only with a permit from the building inspector, which permit may be renewed for a period of three (3) days or less while the emergency continues;
- (k) **Noises near schools, etc.** The creation of any excessive noise on any street adjacent to any school, institution of learning, library, or court while the same is in session, adjacent to any hospital, or any church during services, which unreasonably interferes with the working of such institution;
- (l) **Loading and unloading operations.** The creation of loud and excessive noise in connection with loading or unloading any vehicle or the opening or destruction of bales, boxes, crates and containers;
- (m) **Peddlers and vendors.** The shouting and crying of peddlers, barkers, hawkers and vendors which disturb the quiet and peace of the neighborhood;
- (n) **Noises to attract attention.** The use of any drum, loudspeaker or other instrument or device for the purpose of attracting attention, by creation of noise to any performance, show, sale, display or advertisement of merchandise;
- (o) **Loudspeakers or amplifiers.**
 - (1) It is prohibited within or from any commercial establishment or private entertainment or recreational venue to allow any loudspeaker or other mechanically-amplified device to be played so that the sound therefrom may be heard at a distance of fifty (50) feet or more from the facility's property line, between the hours of 10:00 p.m. and 7:00 a.m. Sunday through Thursday, and the hours of 11:00 p.m. and 7:00 a.m. Friday and Saturday; and between the hours of 2:00 a.m. and 7:00 a.m. on New Year's Eve, Everybody's Night and July 4th;
 - (2) The use of any mechanical loudspeakers or amplifiers on trucks or other moving vehicles for advertising or other purposes;

- (3) In the exercise of noncommercial free speech, loudspeakers or amplifiers may be used, subject to the following condition:

It shall be unlawful for any person to speak into a loudspeaker or amplifier within the corporate limits of the city, when such loudspeaker or amplifier is so adjusted that the voice of the speaker is amplified to the extent that it is audible at a distance in excess of one hundred fifty (150) feet from the person speaking; city sponsored events and recreational games shall be exempt;

- (p) ***Business noises.*** The conducting, operating or maintaining of any place of business located in any residential zone so as to cause loud or offensive noises to be emitted therefrom between the hours of 8:00 p.m. and 7:00 a.m.;
- (q) ***Guns, fireworks, and combustibles.*** The firing of guns, fireworks, gunpowder or other combustible substance in the streets or elsewhere, for the purpose of making a noise or disturbance, except by permit from the police department.

Sec. 34-34. Off-Road Vehicles

- (a) No off-road vehicle shall create noise to a level that it becomes a public noise nuisance.
- (b) No off-road vehicle shall be operated within the city unless it is equipped with a factory-installed or functionally equivalent muffler in good working order and in constant operation.
- (c) No off-road vehicle shall be operated within 200 feet of a dwelling unless it is being operated legally on a public road or such dwelling is occupied by the operator of the off-road vehicle.
- (d) No off-road vehicle shall be operated in such a manner as to cause excessive noise longer than one hour per day beyond boundaries of the property on which the noise originates between the hours of 8:00 a.m. and 8:00 p.m.

Sec. 34-35. Enforcement and repeated violations.

Enforcement and repeated violations. Where there is a violation of any provision of this article, the city, at its discretion, may take one (1) or more of the following enforcement actions:

- (a) A police officer may issue a citation as provided herein, subjecting the violator to a civil penalty of \$100.00. A second violation by the same person or business within one (1) year of the first violation shall subject such person or business to a penalty of \$200.00. All subsequent violations by the same person or business within one (1) year of the first violation shall subject such person or business to a civil penalty of \$300.00.
- (b) Failure to pay a civil penalty imposed under this section within 10 days may subject the offender to an additional \$25.00 delinquency charge. Any unpaid penalty or delinquency charge may be recovered by the city in a civil action.
- (c) The civil penalties imposed by this section and the proceeds therefrom as collected by payment, civil action or otherwise, shall belong to the city and shall be paid into the general fund of the city under such conditions as prescribed by the annual budget.

- (d) In the alternative, pursuant to North Carolina General Statutes, section 14-4, a violation of this section may be considered a misdemeanor. Such a misdemeanor is punishable by a fine of not more than \$500.00 or imprisonment designated for a Class 3 misdemeanor.
- (e) A property owner shall be liable for the cost of abating the nuisance or remedying the health or safety hazard created by a tenant for a third or subsequent violation of this ordinance, as specified in section 34-36. A property owner shall be liable for the actual cost of the abatement or remedy, taking into account the cost of law enforcement personnel salaries, law enforcement equipment, administrative overhead, law enforcement recordkeeping, mailing and notification costs, and any other costs directly or indirectly attributable to the cost of abating the nuisance or remedying the health or safety hazard. In no case shall the cost assessed under this subsection be less than \$100.00 for the third violation by the tenant (initial assessment of property owner), or less the \$75.00 for any subsequent assessment for a violation by the same tenant. If costs assessed pursuant to this subsection are not paid by the property owner within 30 days of receipt of a statement of costs from the city, the costs may be placed as a lien on the property where the hazard existed.
- (f) Each separate day of a continued violation shall be a separate and distinct offense and shall give rise to a separate and distinct penalty.

Sec. 34-36. Responsibility of property owner for violations by tenants.

No property owner shall allow a noise-related nuisance or health or safety hazard to be created or maintained by or on account of tenants of the property owner. For purposes of this subsection, a noise-related nuisance or health or safety hazard shall be deemed to exist when a tenant or group of tenants at a specific location receives a third citation for a noise ordinance violation pursuant to this article. The property owner shall be liable for the cost of remedying the nuisance or health or safety hazard in accordance with the provisions of section 34-35(5). A property owner may be held liable for the costs of abating the nuisance or remedying the health or safety hazard only if the property owner has been notified in writing, via actual delivery or certified mail, of the first two ordinance violations. A property owner shall be liable for the cost of abating the nuisance or remedying the health or safety hazard upon the third and any subsequent action by the same tenant at a specific location, provided the third violation occurs at least 15 days from the date of actual receipt of notice of the second violation. It shall be a complete defense to a citation under this subsection if the owner of the real property involved can prove that he is actively pursuing an eviction process according to law, and that the eviction process was begun prior to the date of the third or any subsequent violation by the same tenant at specific location.