



AGENDA
GREER CITY COUNCIL

March 28, 2023

MEETING LOCATION: Greer City Hall, 301 East Poinsett Street, Greer, SC 29651

6:30 PM

COUNCIL REGULAR MEETING

Call to Order

Mayor Rick Danner

Invocation and Pledge of Allegiance

Councilman Jay Arrowood

Public Forum

Minutes of Council Meeting

1. March 14, 2023
(Action Required)

Special Recognition

1. Employee Recognition
2. City of Greer Tomahawk Youth Wrestling Program

Departmental Reports

1. Building and Development Standards Activity Report - February 2023
2. Engineering & Storm Water Activity Report - February 2023
3. Financial Activity Report - February 2023
[Link to Detail Financial Reports](#)
4. Fire Department Activity Report - February 2023
5. Municipal Court Activity Report - February 2023

6. Parks, Recreation & Tourism Activity Report - February 2023
7. Police Department Activity Report - February 2023
8. Public Services Activity Report - February 2023
9. Website Activity Report - February 2023

Administrator's Report

Andy Merriman, City Administrator

Old Business

1. Second and Final Reading of Ordinance Number 3-2023
AN ORDINANCE AUTHORIZING THE CONVEYANCE OF CERTAIN REAL PROPERTY IN THE CITY OF GREER (Action Required)
2. Second and Final Reading of Ordinance Number 4-2023
AN ORDINANCE AUTHORIZING THE CITY OF GREER TO ENTER INTO AN AGREEMENT WITH THE COUNTY OF SPARTANBURG PROVIDING FOR FIRE SERVICE AND FINANCIAL ARRANGEMENTS FOR PROPERTIES LOCATED IN THE DUNCAN FIRE SERVICE AREA (Action Required)

New Business

1. Bid Summary- Freedom Blast Sound & Lighting Bid
The Parks, Recreation & Tourism Department advertised for bids for Freedom Blast Sound & Lighting services. Staff recommends the contract be awarded to Custom Production Services. (Action Required)
Robbie Davis, Events Supervisor, Parks Recreation & Tourism Department
2. First and Final Reading of Resolution Number 3-2023
ALLOCATION OF GREENVILLE COUNTY CDBG AND HOME FUNDS FOR PROGRAM YEAR 2023 (Action Required)
Mike Sell, Deputy City Administrator
3. First and Final Reading of Resolution Number 5-2023
RESOLUTION TO ADOPT THE SPARTANBURG COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN (Action Required)
Catrina Woodruff, Administrative Services Director
4. First Reading of Ordinance Number 6-2023
AN ORDINANCE AMENDING CHAPTER 22 (CITY-OWNED CEMETERIES)

OF THE CITY CODE OF ORDINANCES. (Action Required)

Andy Merriman, City Administrator

5. First Reading of Ordinance Number 7-2023

AN ORDINANCE OF THE CITY OF GREER, SOUTH CAROLINA AMENDING
THE COMPREHENSIVE FEE SCHEDULE FOR CITY OWNED CEMETERIES.

(Action Required)

Andy Merriman, City Administrator

Executive Session

Council may take action on matters discussed in executive session.

Adjournment

Anyone who requires an auxiliary aid or service for effective communication or a modification of policies or procedures to participate in a program, service, activity or public meeting of the City of Greer should contact Catrina Woodruff, ADA Coordinator at (864) 479-0965 as soon as possible, but no later than 48 hours prior to the scheduled event.

Category Number:
Item Number:



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Councilman Jay Arrowood

ATTACHMENTS:

Description	Upload Date	Type
📎 Invocation Schedule	3/13/2023	Backup Material



**Greer City Council
2023 Invocation Schedule**

January 10, 2023	Councilmember Mark Hopper
January 24, 2023	Councilmember Lee Dumas
February 14, 2023	Councilmember Wryley Bettis
February 28, 2023	Councilmember Judy Albert
March 14, 2023	Mayor Rick Danner
March 28, 2023	Councilmember Jay Arrowood
April 11, 2023	Councilmember Karuam Booker
April 25, 2023	Councilmember Mark Hopper
May 9, 2023	Councilmember Lee Dumas
May 23, 2023	Councilmember Wryley Bettis
June 13, 2023	Councilmember Judy Albert
June 27, 2023	Mayor Rick Danner
July 11, 2023	Councilmember Jay Arrowood
July 25, 2023	Councilmember Karuam Booker
August 8, 2023	Councilmember Mark Hopper
August 22, 2023	Councilmember Lee Dumas
September 12, 2023	Councilmember Wryley Bettis
September 26, 2023	Councilmember Judy Albert
October 10, 2023	Mayor Rick Danner
October 24, 2023	Councilmember Jay Arrowood
November 14, 2023	Councilmember Karuam Booker
November 28, 2023	Councilmember Mark Hopper
December 12, 2023	Councilmember Lee Dumas

Category Number:
Item Number: 1.



AGENDA
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3/28/2023

March 14, 2023

Summary:

(Action Required)

ATTACHMENTS:

Description	Upload Date	Type
☐ March 14, 2023 Council Meeting Minutes 3/21/2023		Backup Material

CITY OF GREER, SOUTH CAROLINA

MINUTES of the PUBLIC HEARING of GREER CITY COUNCIL March 14, 2023

Meeting Location: Greer City Hall, 301 East Poinsett Street, Greer, SC 29651

Call to Order of the Public Hearing

Mayor Rick Danner – 6:30 P.M.

The following members of Council were in attendance: Jay Arrowood, Karuam Booker, Mark Hopper, Lee Dumas, Wryley Bettis and Judy Albert.

Others present: Andy Merriman, City Administrator, Mike Sell, Deputy City Administrator, Tammela Duncan, Municipal Clerk and various other staff.

Subject: NOTICE OF PUBLIC HEARING FOR GREENVILLE COUNTY PROGRAM YEAR 2023 ANNUAL ACTION PLAN / CITY OF GREER

The City of Greer participates in the Greenville County Community Development Block Grant (CDBG) Program and HOME Investment Partnerships Program funded by the U.S. Department of Housing and Urban Development. The Greenville County Redevelopment Authority is preparing its Annual Action Plan for the 2023 program year (7/1/23-6/30/24).

Presented by Imma Nwobodu, Program Director

Mayor Danner asked three (3) times if anyone would like to speak and no one indicated an interest in speaking during the Public Hearing.

Presentation attached.

The Public Hearing adjourned 6:53 P.M.

MINUTES of the FORMAL MEETING of GREER CITY COUNCIL March 14, 2023

Meeting Location: Greer City Hall, 301 East Poinsett Street, Greer, SC 29651

Call to Order of the Formal Meeting

Mayor Rick Danner – 6:53 P.M.

The following members of Council were in attendance: Jay Arrowood, Karuiam Booker, Mark Hopper, Lee Dumas, Wryley Bettis and Judy Albert.

Others present: Andy Merriman, City Administrator, Tammela Duncan, Municipal Clerk, Mike Sell, Deputy City Administrator, Steve Owens, Communications Manager and various other staff.

Invocation and Pledge of Allegiance Mayor Rick Danner

Public Forum No one signed up to speak during Public Forum.

Minutes of the Council Meeting February 28, 2023

ACTION – Councilmember Karuiam Booker made a motion that the minutes of February 28, 2023 be received as written. Councilmember Wryley Bettis seconded the motion.

VOTE - Motion carried unanimously.

SPECIAL RECOGNITION

Proclamation – National Bleeding Disorders Awareness Month

Mayor Danner presented Sue Martin with a proclamation for National Bleeding Disorders Awareness Month. He then proclaimed March 2023 as Bleeding Disorders Awareness Month. Mrs. Martin spoke briefly and thanked Mayor and Council for the recognition.

Andy Merriman, City Administrator presented the following:

Free Medical, Dental and Vision Clinic – is coming to Greer High School Saturday, March 18th through Sunday March 19th. Services are available on a first come first serve basis. Additional information is available at www.cityofgreer.org . This event is provided by the non-profit organization Remote Area Medical in collaboration with Greenville County Schools.

Global Action Collations Invocation Solutions World Conference – We are hosting the event March 27th through 29th at City Hall. This event delves into the topics of foreign affairs, international businesses, as well as issues such as supply chain, cyber security, China, Ukraine and changes in the auto industry. Tickets may be purchased online at www.innovationsandsolutionsworldconference.com

Eggtastic – will be held Saturday, April 1st at City Park from 10:00 am until 12:00 pm. Additional information can be found at www.cityofgreer.org.

Mayor Rick Danner urged Council to follow the calendar closely, we have a number of events coming up over the next couple of months.

Appointments to Boards and Commissions

Recreation Association, Inc. Board of Trustees

District 2 Chris Stroble resigned effective immediately, her term will expire 12/31/2024.

ACTION – Councilmember Karuam Booker nominated Brandon Coleman to fill the District 2 vacancy on the Recreation Association, Inc. Board of Trustees. Councilmember Judy Albert seconded the motion.

VOTE – Motion carried unanimously.

Greer Trust Board of Commissioners

Mark Thornton passed away, his term will expire 6/30/2024.

ACTION – Councilmember Jay Arrowood nominated Wayne Griffin to fill the current vacancy on the Greer Trust Board of Trustees. Councilmember Karuam Booker seconded the motion.

VOTE – Motion carried unanimously.

NEW BUSINESS

First Reading of Ordinance Number 3-2023

AN ORDINANCE AUTHORIZING THE CONVEYANCE OF CERTAIN REAL PROPERTY IN THE CITY OF GREER (Alley - Randall St, Depot St. & E. Poinsett St)

Andy Merriman, City Administrator presented the request.

ACTION – Councilmember Judy Albert made a motion to approve First Reading of Ordinance Number 3-2023. Councilmember Wryley Bettis seconded the motion.

Brief discussion was held.

VOTE – Motion carried unanimously.

First Reading of Ordinance Number 4-2023

AN ORDINANCE AUTHORIZING THE CITY OF GREER TO ENTER INTO AN AGREEMENT WITH THE COUNTY OF SPARTANBURG PROVIDING

**FOR FIRE SERVICE AND FINANCIAL ARRANGEMENTS FOR PROPERTIES
LOCATED IN THE DUNCAN FIRE SERVICE AREA**

Andy Merriman, City Administrator presented the request.

ACTION – Councilmember Jay Arrowood made a motion to approve First Reading of Ordinance Number 4-2023. Councilmember Judy Albert seconded the motion.

VOTE – Motion carried unanimously.

Executive Session

Mayor Danner stated there were no stated items for Executive Session.

Adjourn – 7:12 P.M.

Tammela Duncan, Municipal Clerk

Richard W. Danner, Mayor

Notifications: Agenda posted in City Hall and email notifications sent to The Greenville News, The Greer Citizen, GreerToday.com and the Spartanburg Herald Journal Friday, March 10, 2023.

Category Number:
Item Number: 1.



AGENDA
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3/28/2023

Employee Recognition

ATTACHMENTS:

Description	Upload Date	Type
☐ Resolution Number 4-2023	3/15/2023	Resolution

RESOLUTION NUMBER 4-2023

**A RESOLUTION RECOGNIZING AND COMMENDING
CITY OF GREER EMPLOYEES**

WHEREAS, the City of Greer endeavors to recognize and reward its dedicated and faithful employees; and

WHEREAS, Brandon Akers has served in the Police Department for 5 years; Emma Mann has served in the Parks, Recreation and Tourism Department for 5 years; Shauna Marckley has served in the Police Department for 10 years; Meghan Weibel has served in the Police Department for 10 years; Jim Ridgill has served in the Administration/IT Department for 15 years; Roman Wilson has served in the Police Department for 15 years; Steve Anderson has served in the Police Department for 25 years; Paul Brown has served in the Fire Department for 25 years; and Matt Hamby has served in the Police Department for 30 years; and

WHEREAS, these employees have served in a distinguished and professional manner;

NOW, BE IT THEREFORE RESOLVED, that the City Council of the City of Greer, South Carolina, in a meeting duly assembled, wishes to officially recognize and commend these employees for the distinguished and dedicated service which they have performed; and

BE IT FURTHER RESOLVED that the City of Greer hereby rewards these dedicated employees with a certificate of appreciation and an administrative day off with pay approved this 28th day of March 2023.

CITY OF GREER, SOUTH CAROLINA

Richard W. Danner, Mayor

ATTEST:

Tammela Duncan, Municipal Clerk

Category Number:
Item Number: 1.



AGENDA
GREER CITY COUNCIL
3/28/2023

Building and Development Standards Activity Report - February 2023

ATTACHMENTS:

Description	Upload Date	Type
▢ Building and Development Standards Activity Report - February 2023	3/13/2023	Backup Material

Building and Development Standards

February for 2023

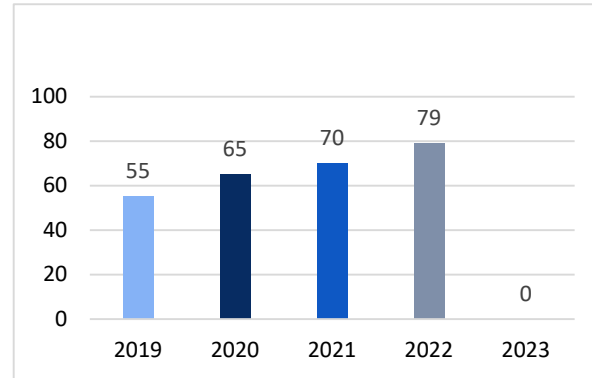


This is the Yearly activity report of the Building and Development Standards department. It tracks the activities of: Planning & Zoning, Building Inspections and Code Enforcement, and GIS. More information about our Teams are located on the City of Greer's website at www.cityofgreer.org.

Planning & Zoning

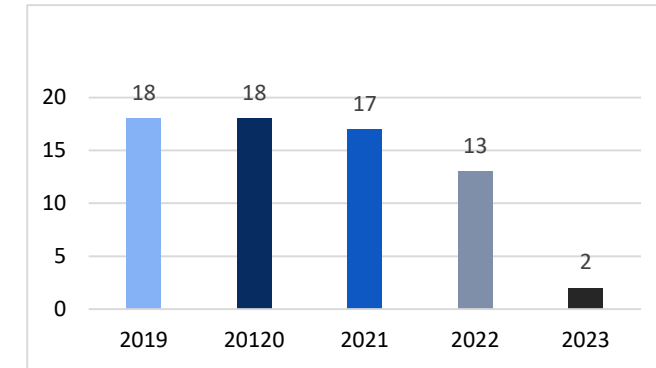
Planning Commission

The Planning Commission review total for February is zero.



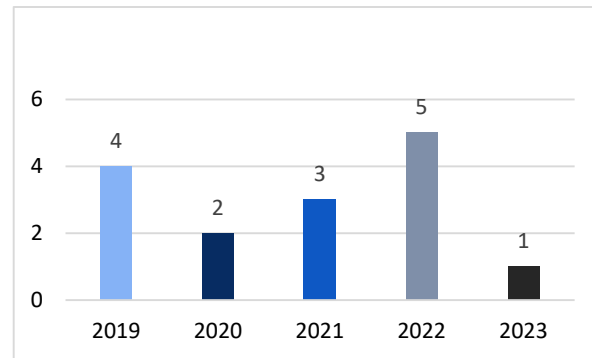
Board of Zoning Appeals

The Board of Zoning Appeals review total for February is one.



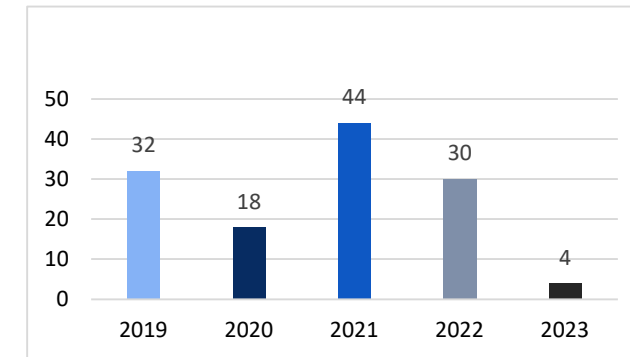
Board of Architectural Review

The Board of Architectural Review total for February is one.

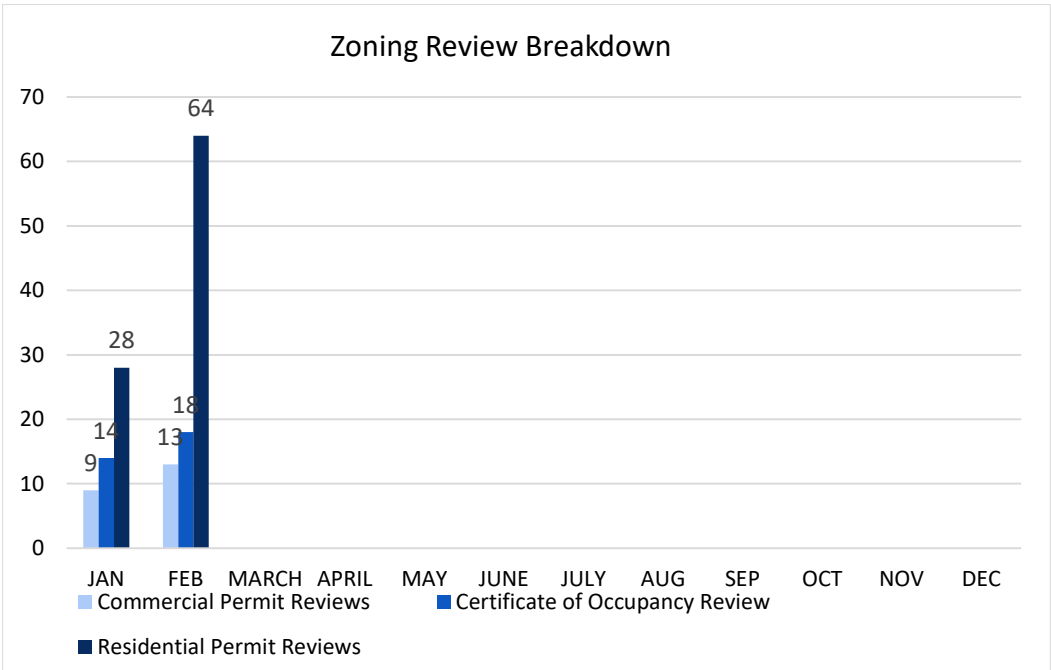
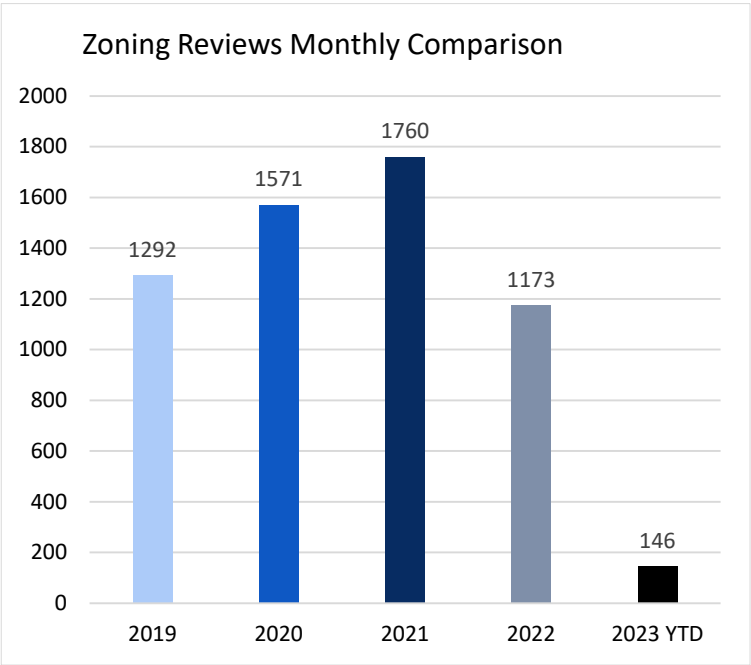


Planning Advisory Committee

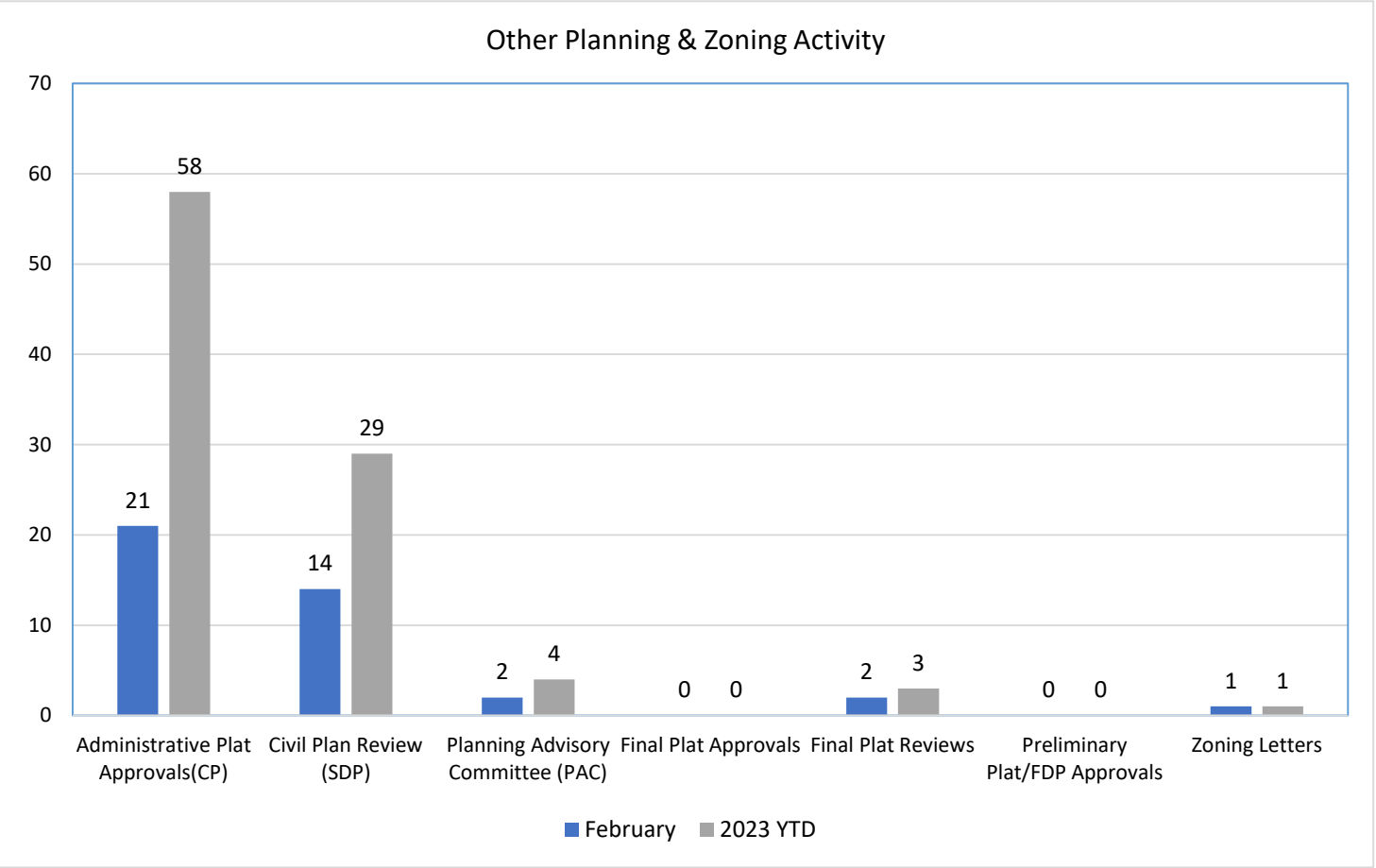
The Planning Advisory Committee review total for is two.



For more information about these cases, please visit the Planning and Zoning webpage at: <http://www.cityofgreer.org> or visit the GIS webpage to see an interactive Development Dashboard.



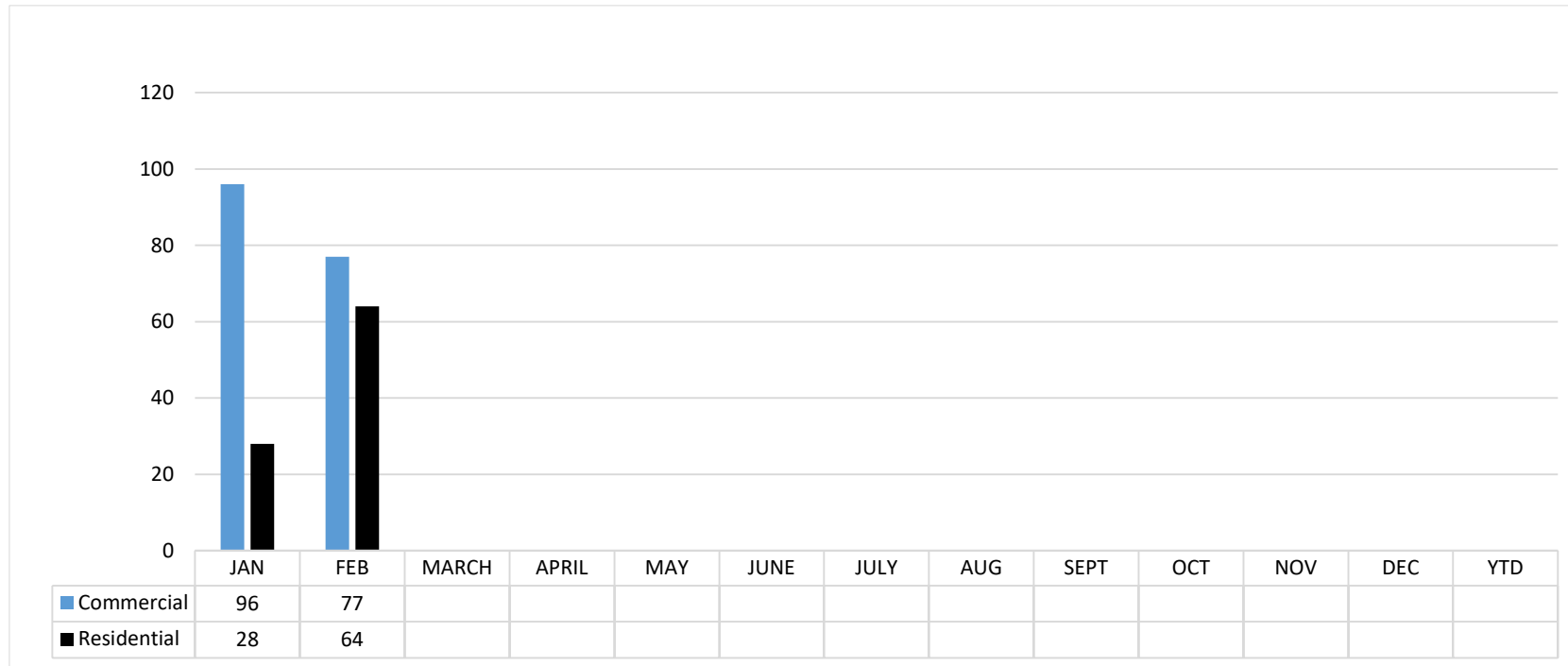
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2023 YTD	51	95										
2022 YTD	132	134	94	76	68	109	72	111	138	105	77	57



Commercial Plan Reviews

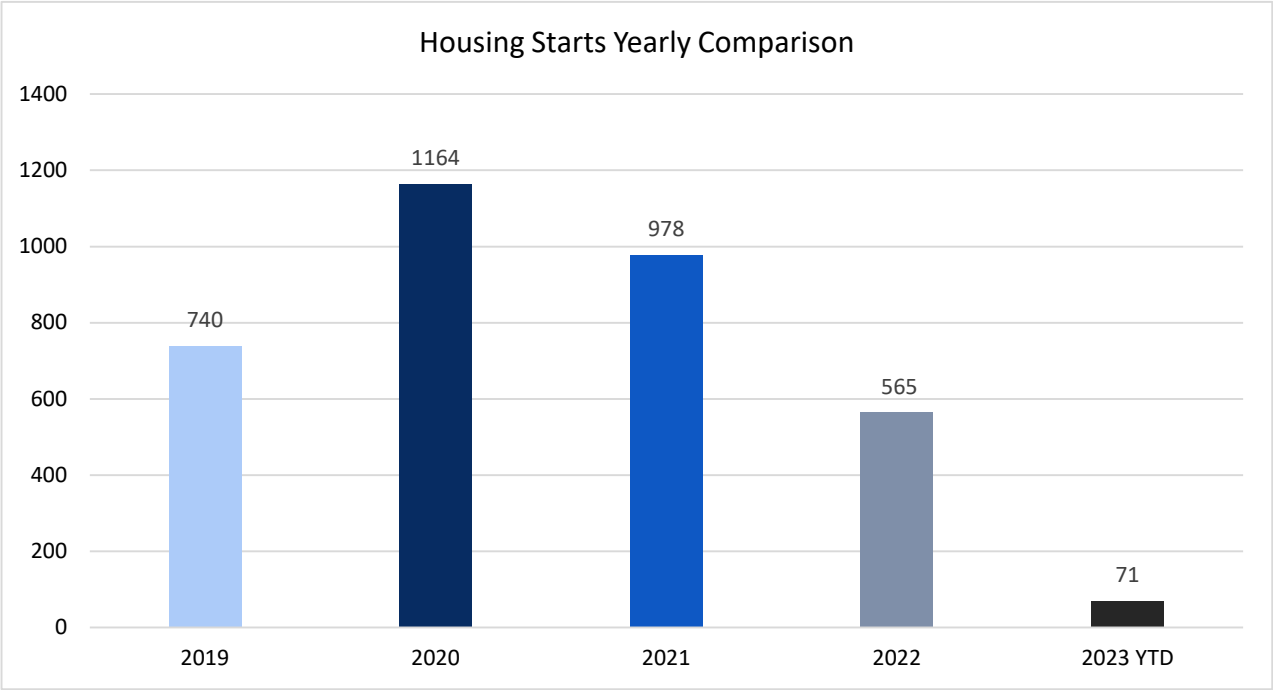
Commercial Plan Review	Address
COVINGTON VILLAGE RETAINING WALL	SNOW RD
RESIDENTIAL RETAINING WALL	420 OAKTON DR
ONEAL VILLIAGE - TOWNHOMES	202,204,206,208,210 WAKELON DR
PLAYGROUND EQUIPMENT	13586 E WADE HAMPTON BLVD
WALNUT HILL TOWNHOMES	321,325,400, 405, 409 CINERA WAY
BROOKSIDE RIDGE TOWNHOMES	24,26,28,30 SUNRIFF
VERIZON STORE REMODEL	6031 WADE HAMPTON BLVD
CHESTNUT GROVE AMENITY CENTER	741 BURGHLY CIR
FIRE STATION EXHAUST SYSTEM	103 W POINSETT ST
STATION 56 - EXHAUST SYSTEM	137 ROGERS CIR
ARCHVET ADDITIONAL WORK	1285 S SUBER RD

Plan Reviews



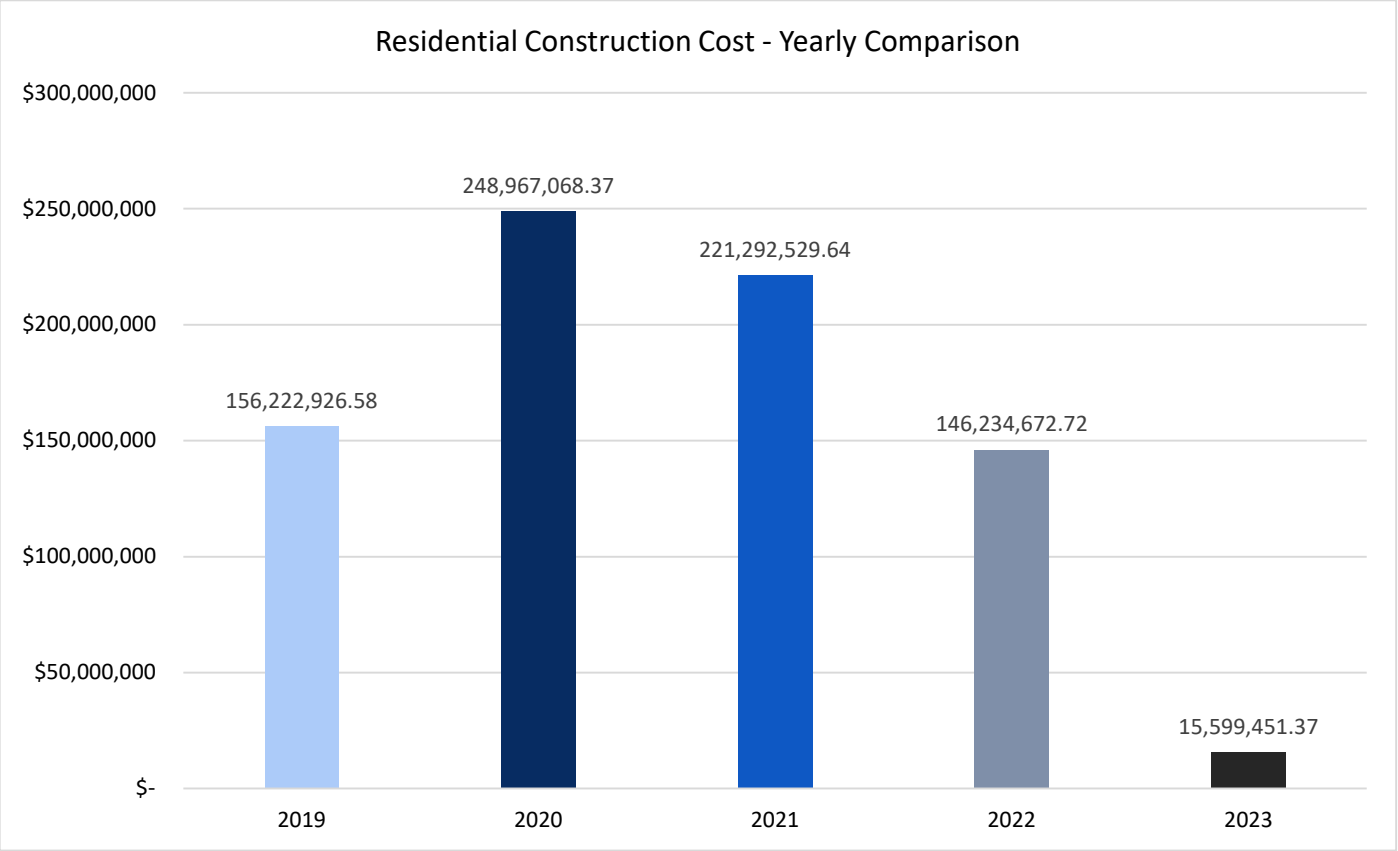
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL
2022 Commercial	58	77	97	97	63	76	57	99	108	90	93	55	970
2022 Residential	84	73	61	32	43	75	36	56	101	75	52	38	726

Housing Starts



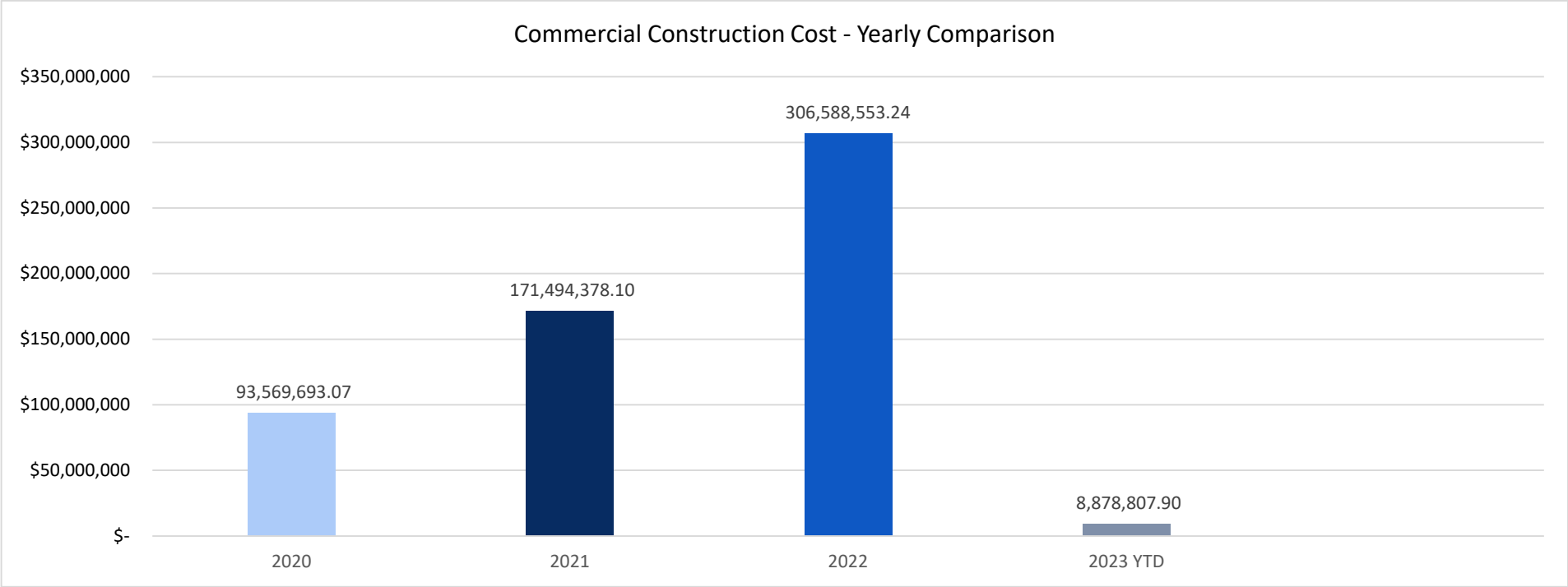
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2023 YTD	15	56										
2022	65	59	49	21	32	60	24	41	85	60	44	25

Residential Construction Costs



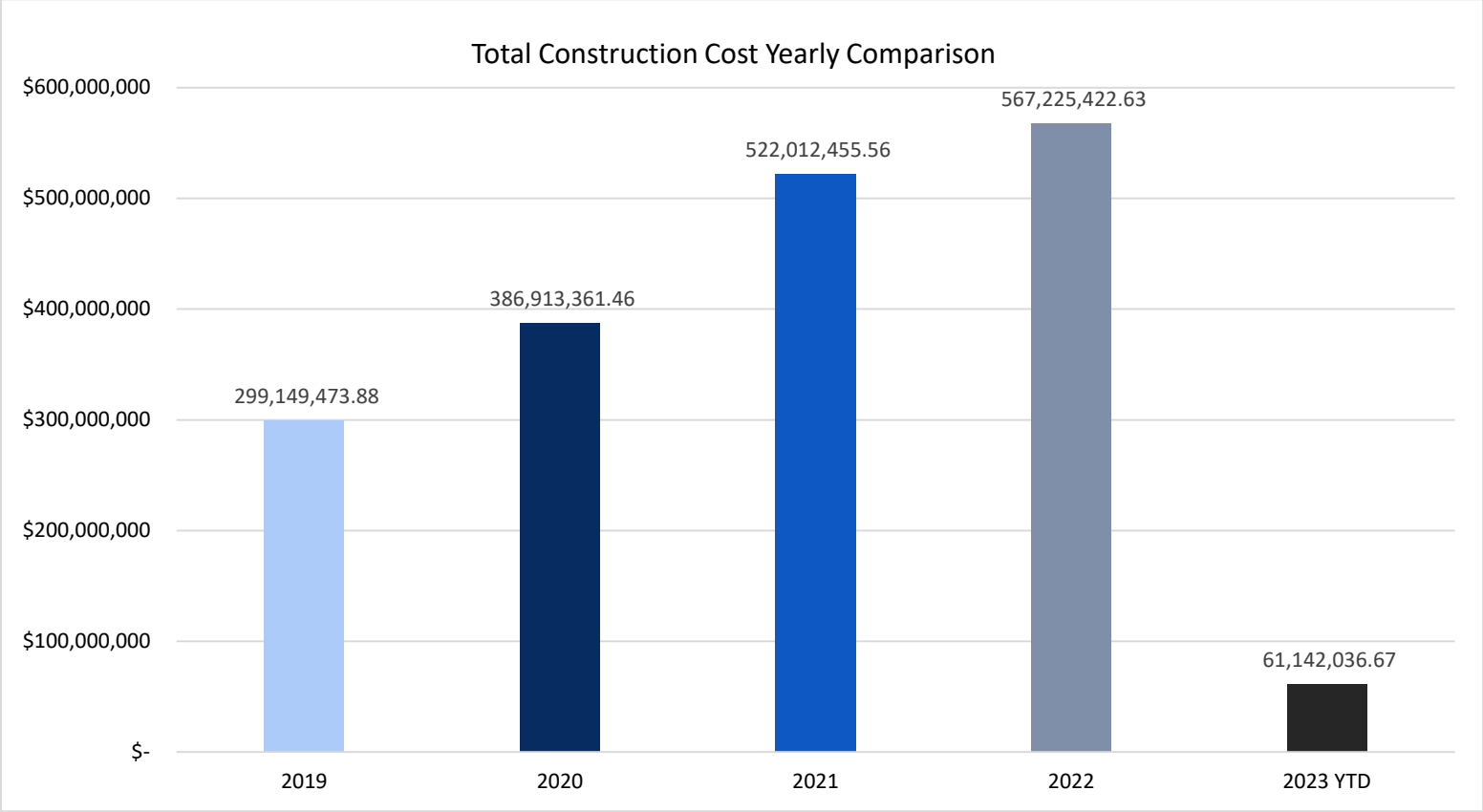
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2023 YTD	3,499,086	12,100,365										
2022 YTD	12,735,485	12,795,727	15,266,534	6,277,318	5,833,247	13,350,404	8,131,191	9,708,707	22,781,154	15,856,805	16,373,626	7,124,477

Commercial Construction Costs



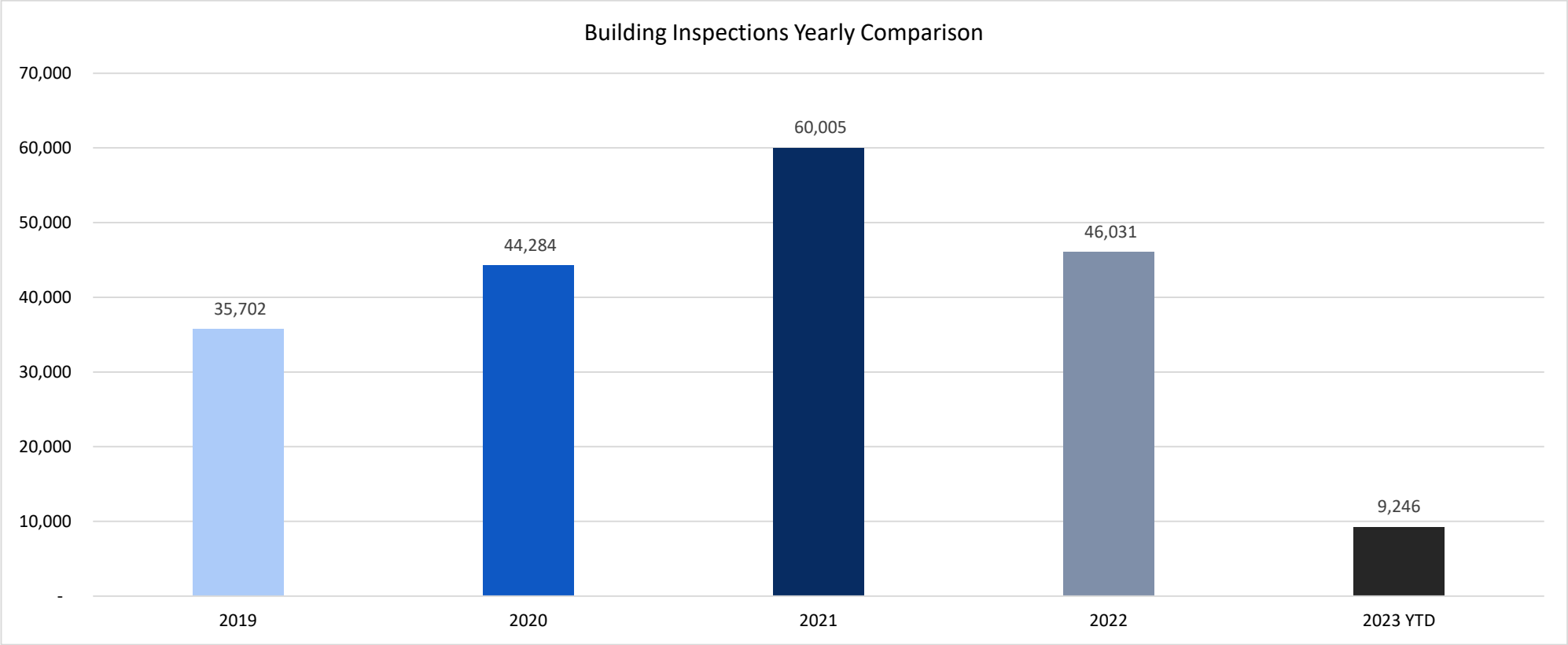
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2023 YTD	3,982,418	4,896,390										
2022	5,638,911	26,521,263	36,241,046	40,996,333	7,714,643	5,545,852	28,480,600	4,918,521	41,583,098	42,090,976	41,432,040	25,425,270

Total Construction Costs



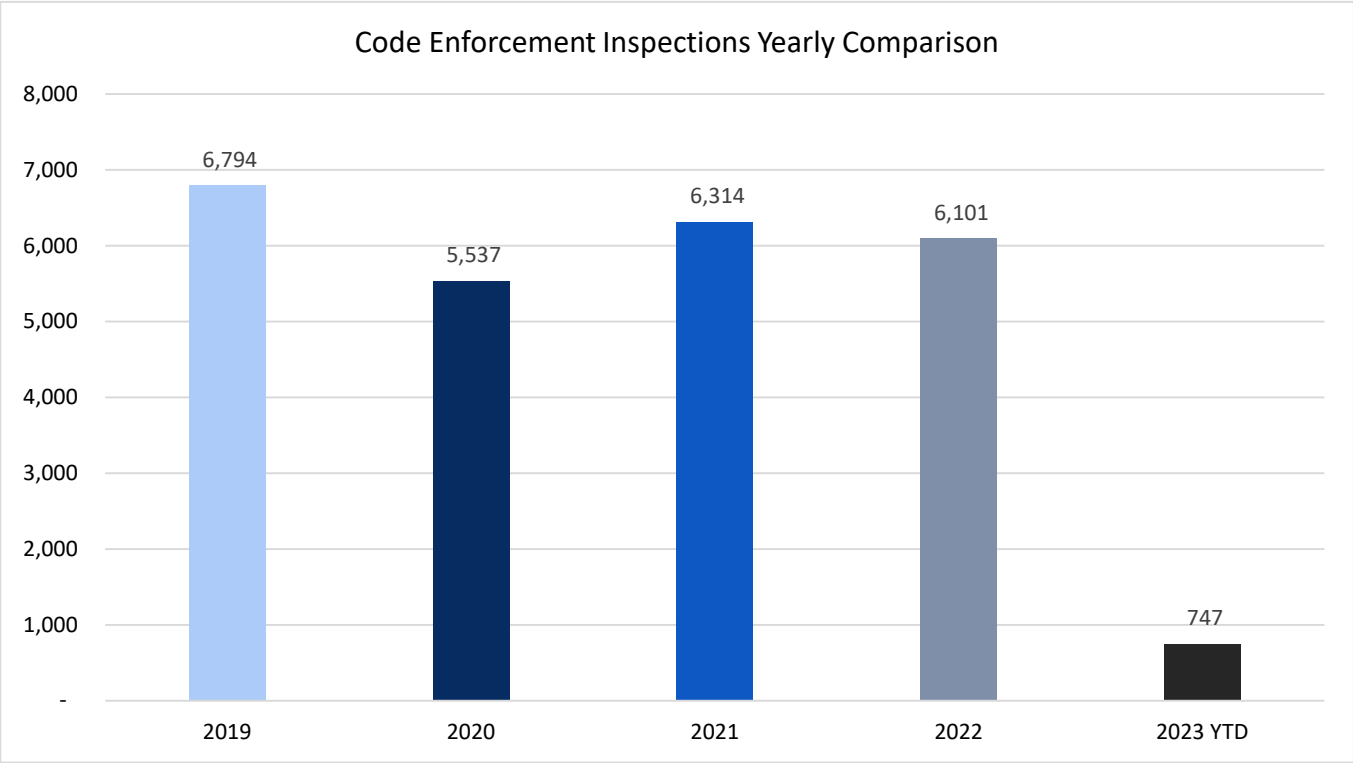
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2023 YTD	13,042,046	48,099,991										
2022	21,508,538	49,487,638	57,997,685	60,354,560	31,331,295	27,057,353	43,498,334	23,846,710	79,024,826	70,474,835	63,744,975	38,898,675

Building Inspections



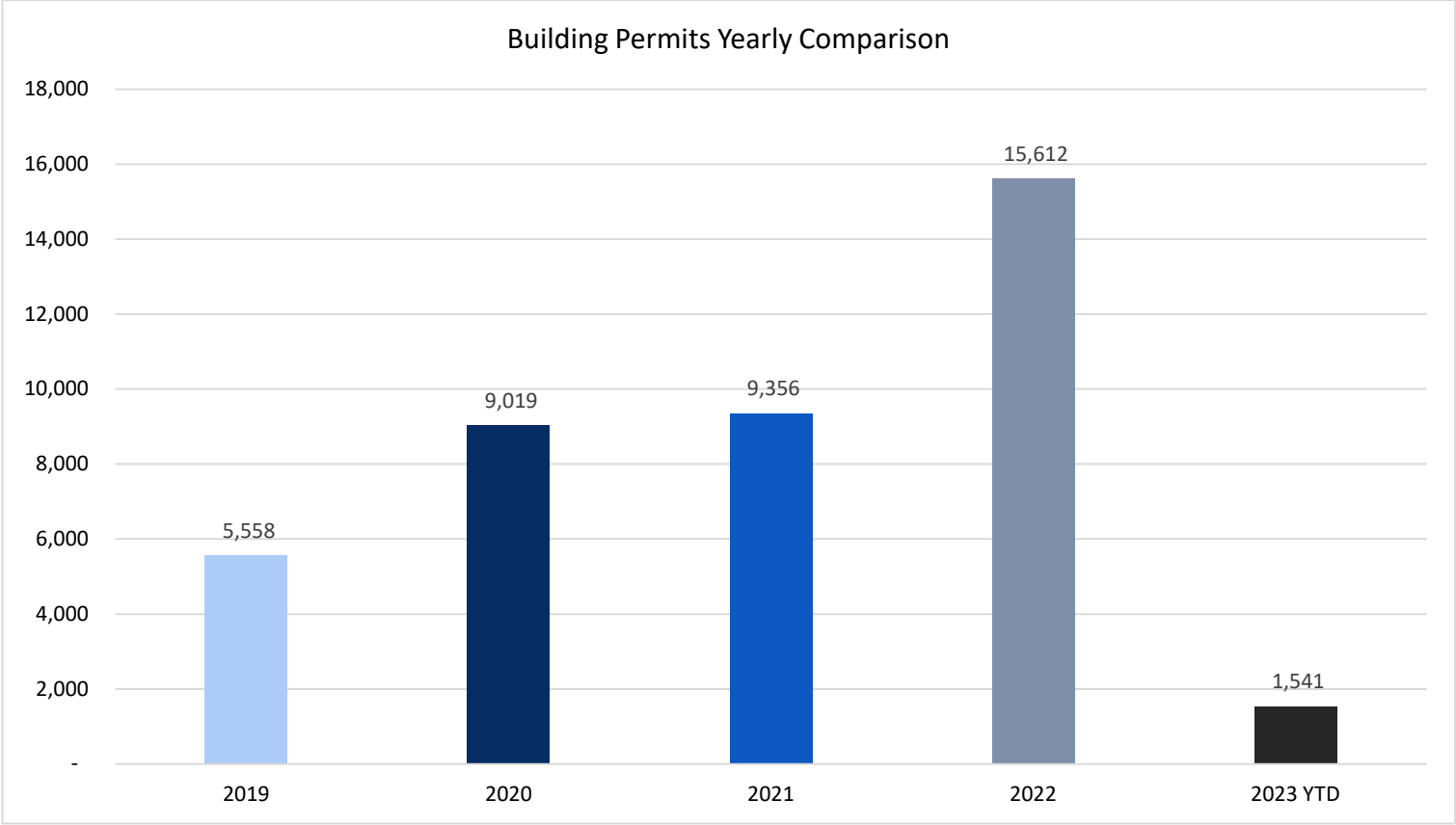
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2023 YTD	4196	5050										
2022	3194	3994	5554	3885	3461	3620	3105	4813	3368	3780	3208	4049

Code Enforcement Inspections



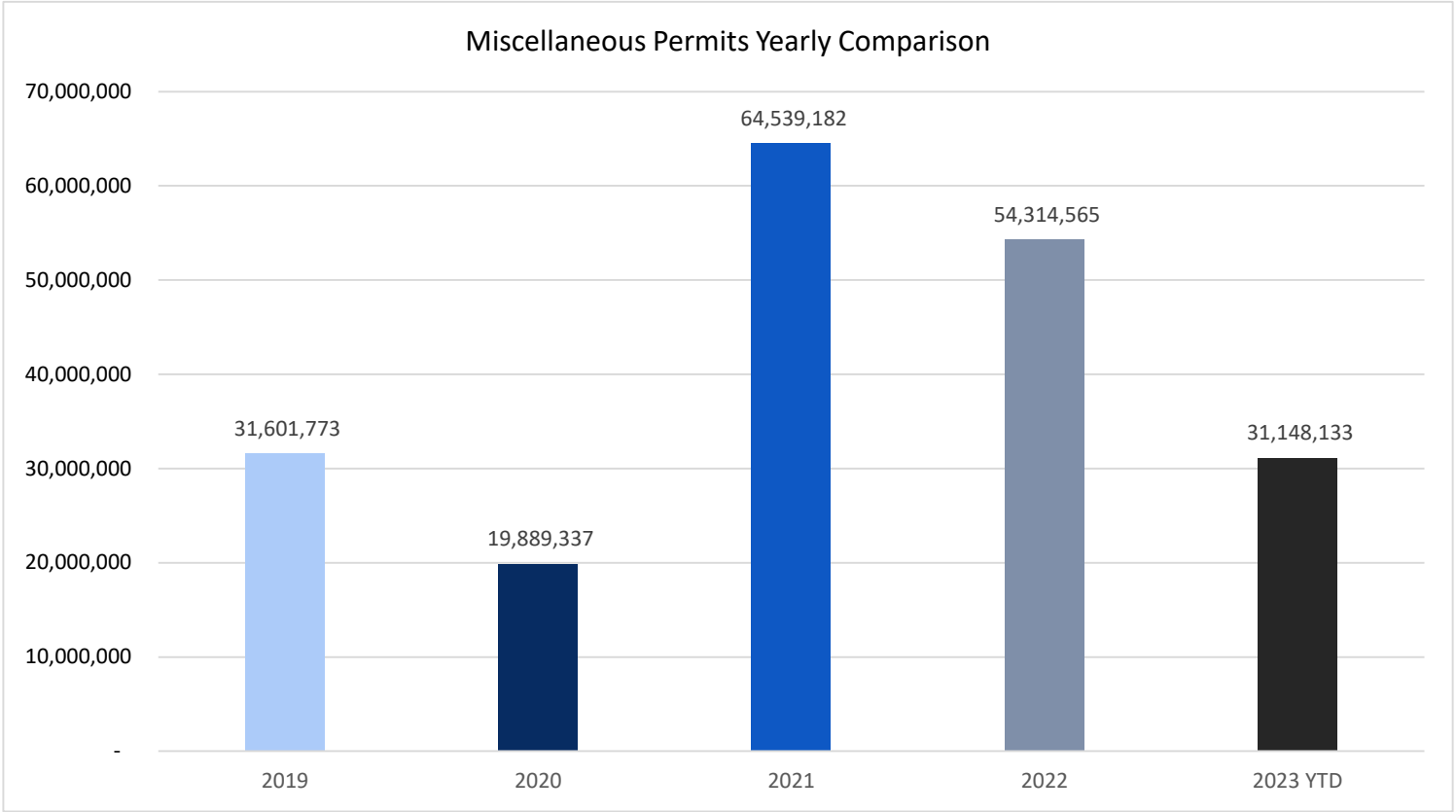
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2023 YTD	417	330										
2022	416	447	529	238	570	765	465	645	622	569	449	386

Building Permits



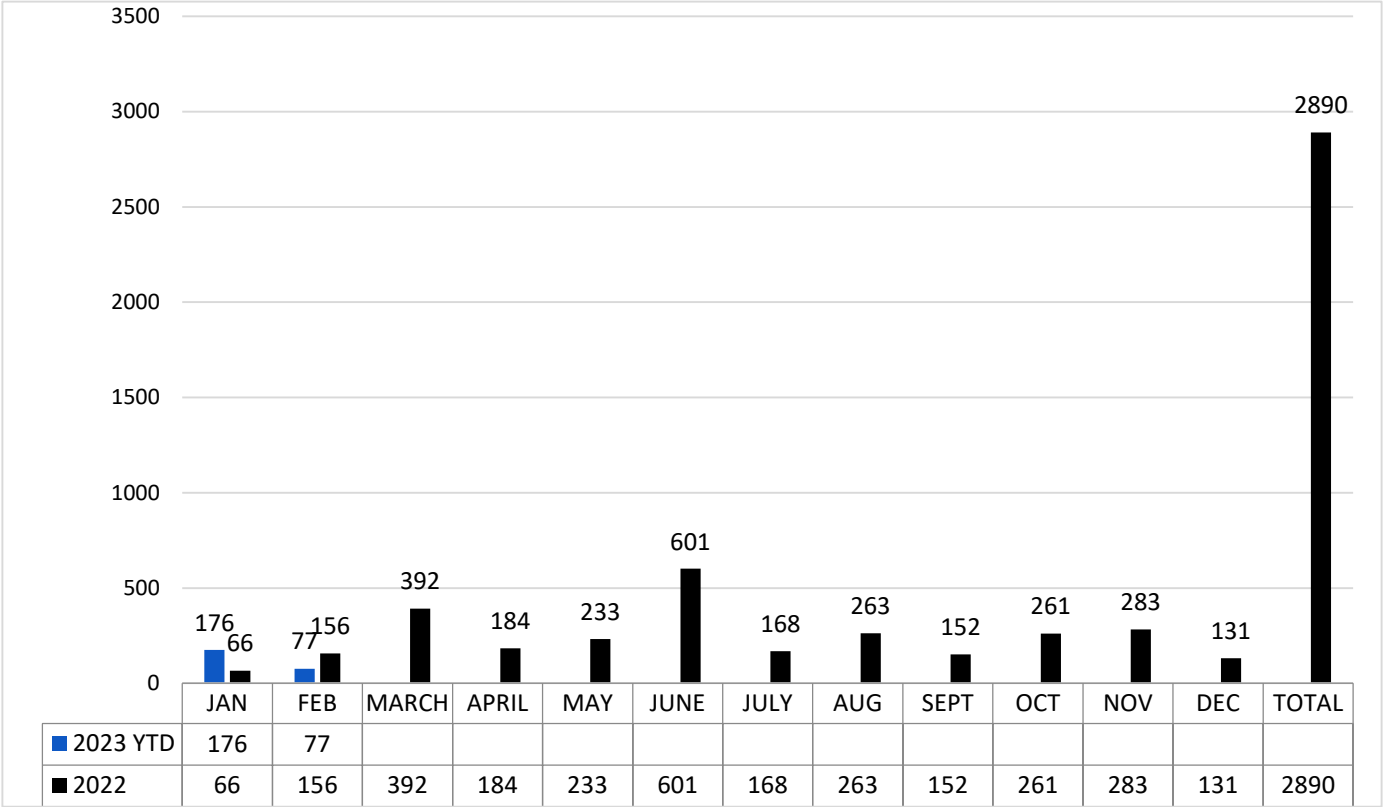
	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2023 YTD	768	773										
2022	990	1000	1186	916	774	2451	1192	1126	1174	1234	2126	1443

Miscellaneous Permits



	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
2023 YTD	1,757,141	29,390,992										
2022	1,037,173	2,952,099	608,583	9,336,883	15,453,304	3,065,856	5,175,413	4,928,999	2,414,315	6,699,964	642,265	1,999,711

Illegal Signs



2022	66	156	392	184	233	601	168	263	152	261	283	131	2890
2021	117	334	225	194	121	182	176	191	145	78	555	181	2499

Category Number:
Item Number: 2.



AGENDA
GREER CITY COUNCIL
3/28/2023

Engineering & Storm Water Activity Report - February 2023

ATTACHMENTS:

Description		Upload Date	Type
▢	Engineering & Storm Water Activity	3/20/2023	Backup Material
	Report - February 2023		



February 2023



Engineering Department Monthly Report

The Engineering Department consists of two divisions – Engineering/Stormwater and Facilities/Project Management. This report provides information on the monthly activities of the department.

For more information, please contact Department Director and City Engineer Steve Grant, PE.

Engineering Projects (ongoing):

- City Intersection study – nearing completion
- W. Poinsett Road Diet – Bids will let in March 2023
- North Avenue sidewalk improvement – funding approved by Council
- Parking Lot sealing project – Held Pre-bid meeting - Bids due March 30th
- Fire Dept. Suber Road – coordination meetings
- Transfer Station/Recycle Center Improvements – tweaking site plan
- OC Site Improvement – plans submitted to City for review
- Storm Drain Asset Mgmt./Pilot watershed study- consultant getting field survey
- Pavement Preservation 2023 – collecting proposals
- Pavement Preservation 2022 – crack seal completed by King Asphalt-Spbg County side

Engineering Activities:

- W. Phillips Road bridge – Consultant preparing plans/specs
- Cartegraph A.M. software – working in system, weekly update meetings
- Engineering Design Manual development – Expecting proposals
- Westmoreland Road ditch improvements – coordinating with Pub. Svc.
- Monthly Inspection at Recycle Center completed
- Victor Hill road improvement discussion with Spbg County – on hold
- Coordinating with CPW regarding street cuts-ongoing

Subdivision/Development Projects – Meetings with engineers and developer representatives discussing details with new subdivisions or commercial sites that are either in planning stages or under construction.

Active projects:

- Sunnydale/Poinsett – monitoring land clearing activity
- Brookside Farms – exterior sidewalk issue
- Blue Ridge Plantation – inspected existing infrastructure status

Other:

- PAC site reviews and meeting (2)
- Greer Golf stormwater issue and meeting
- Three month review with AV
- Training needs meeting with HR
- Attended SCSPE Piedmont Chapter banquet in Greenville
- Downtown Parking team – scope review meeting
- Internal preliminary budget discussion
- Greenleaf Drive/Wards Creek Park – house/driveway issue
- Douglas Drive – dead end, turnaround issue

Assistant City Engineer & Stormwater Manager – Robert Roux, PE, CFM

Miscellaneous Tasks – Engineering & Stormwater

- 1) TMDL Monitoring – obtained dry weather samples
- 2) Cartegraph – meetings, PCI data conversion, and beta testing
- 3) Pilot Watershed Study – Data Gathering; field and survey work in progress by consultant
- 4) Traffic Calming – Analysis of Will St
- 5) Attended SCDNR Floodplain Training – How to Determine a BFE in Zone A
- 6) Attended South Carolina Assoc. of Stormwater Managers 1st Quarter Meeting
- 7) Engineering and Stormwater Design Manuals – obtaining project scopes from consultants
- 8) Adopt-a-Stream – checked out kits to certified volunteers.
- 9) Misc. Meetings:
 - a. Culvert Map meeting with GIS staff
 - b. McElrath Road Evaluation
 - c. 405 Sunnysdale site issues
 - d. Site questions at Police Department
 - e. Decal install on new City vehicle
 - f. FY 23-24 Budget kickoff meetings
 - g. 600 and 602 W Poinsett with SCDOT and owner
 - h. Wards Creek Park house encroachment issue
 - i. Site visit to Greer golf to investigate stream stabilization and infrastructure issues with PRT staff and Clemson Extension, creek and culvert pictured below:



Construction/ Post-construction Program – Pre-submittal Meetings, Plan Reviews, Pre-construction meetings, As-built Review and Project Meetings *(Construction and Post-construction Minimum Control Measures) - Stormwater site plan reviews that incorporate consideration for water quality impacts and attempt to maintain pre-development runoff conditions are required by our SMS4 permit.*

2023 Stormwater Summary January 1st through February 28th, 2023		
Projects Submitted	Site Dev. Plan Reviews	Preconstruction Meetings
7	19	7

Historical Project Submittals	
Year	Projects Submitted
2023	7
2022	50
2021	55
2020	32
2019	41
2018	46
2017	37
2016	41
2015	35
2014	34

Engineering and Stormwater Civil Engineer – Adam Vidalis, EIT

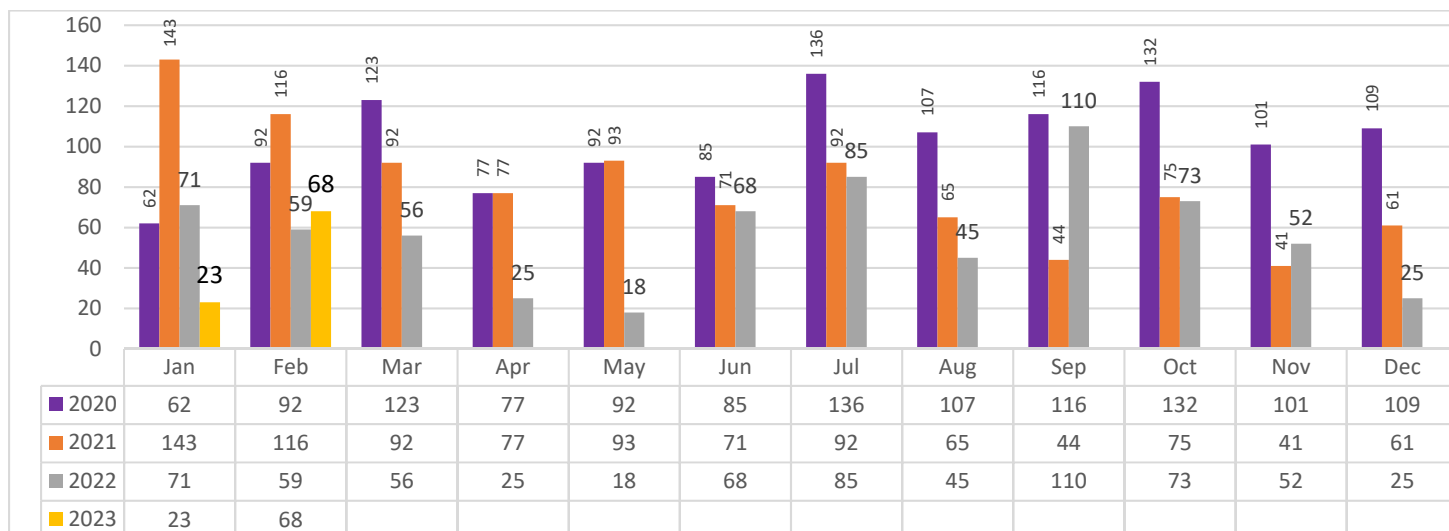
Miscellaneous Tasks – Engineering & Stormwater

- 1) Engineering and Stormwater Design Manuals – updated checklists for 2023
- 2) Created Illicit Discharge Detection and Elimination presentation for internal training and MS4 compliance purposes (in progress)
- 3) Took dry weather samples for quarterly TMDL monitoring
- 4) Began parking lot/pavement surface study to evaluate condition of city-owned parking lots
- 5) Met Dustin Drake, subcontractor for Duke Energy regarding guywire placement for a DE line expansion near the Davenport estate.
- 6) Met with DHEC to discuss enforcement action on 405 Sunnyside Dr
- 7) Meetings:
 - a. Pre-Con Inland Port Greer West Container Yard Expansion
 - b. Pre-Con Covington Village
 - c. Pre-Con BP Greer
 - d. Pre-Con Greer CPW Electrical Substation
 - e. PAC committee 2/23
 - f. Mandatory Pre-Bid Suber Road & Country Club Parking Lot Sealing Project

Projects Submitted	
Development Type	Project Name
COMMERCIAL	Bower's Circle Extension
COMMERCIAL	Greer Parks and Recreation Property Renovation Project
MAJOR MODIFICATION	Parkview Greer Apartments
MAJOR MODIFICATION	Project Apollo - Trailer Storage Lots

Plan Reviews- Site Development, Stormwater, As-Built	
Review Type	Project Name
	COG Fire Station
	Streams- Group Residential Development
COMMERCIAL	Coffee Angle is a 584 S.F. coffee shop located on .3 acres
COMMERCIAL	2701 E Phillips Road
COMMERCIAL	Greer Mill Redevelopment
COMMERCIAL	Greer Commission of Public Works (CPW) Electrical Substation
COMMERCIAL	Truliant Federal Credit Union
COMMERCIAL	Greer Parks and Recreation Property Renovation Project
COMMERCIAL	GSP Industrial Park
COMMERCIAL	2701 E Phillips Road
FDP MINOR REVISION	Reduced setback on Fairview with added fence
MAJOR MODIFICATION	Project Apollo - Trailer Storage Lots
MAJOR MODIFICATION	Parkview Greer Apartments
NOT APPLICABLE	Brookside Farms Streets/Amenity Center
NOT APPLICABLE	Brookside Farms Streets/Amenity Center
NOT APPLICABLE	Vines Creek
RESIDENTIAL	Cambridge Springs
RESIDENTIAL	O'Neal Village Phase 6 - Townhomes/Commercial
AS BUILT REVIEW	South Main Townes
AS BUILT REVIEW	O'Neal Village Phase 3 Section 2
AS BUILT REVIEW	Hyundai of Greer dealership
AS BUILT REVIEW	Hyundai of Greer dealership
FINAL PLAT	Brookside Farms Streets/Amenity Center
FINAL PLAT	Brookside Farms Streets/Amenity Center
FINAL PLAT	Brookside Farms Streets/Amenity Center
FINAL PLAT	Vines Creek
FINAL PLAT	Vines Creek

STORMWATER INSPECTION: 68 Individual LOT Drainage Plan Reviews (Per Month)



Addressed Citizen Complaints: Anthony Copeland

Issue	Complaint Date	Address	Resolution	Completed
SW Runoff from neighbors	2/28/2023	305 Delphine Ct.	Anthony (COG) met with homeowners and stated, SW has always run in the direction of newly constructed home. Constructed Lot Swales are carrying off most of the runoff. They are receiving surface water only because the downspouts are piped to the streets.	2/28/2023
Clogged Culvert Pipe	2/28/2023	118 Lands Ct, Greer	Complaint was forwarded to COG Maintenance.	In-Progress
Ponding SW near rear patio.	2/14/2023	Joe McCreery The Pines Aleppo Lanes.	Anthony met with AHO Developer and they planning to redefine the rear swales to carry the SW to detention ponds	In-Progress

Asphalt Activities Inspection: Anthony Copeland / Scott Reid

Subd. / Project Name	Date	Operation
Dobson Meadows	2/14/2023	Surface Asphalt Course
Vining's Creek Subd	2/23/2023	Proof Roll Subgrade: Vines Trl Dr., Bowfin Rd, Redfin St.
Vining's Creek Subd	2/24/2023	Asphalt Binder : Bowfin Rd., Vines Trl. Dr.

FACILITIES AND PROJECTS – John Goughneour and Patrick Bailey

Facilities & Maintenance Activities:

- RSI finished up their quarterly PMs on our HVAC and ice machines throughout the city.
- The facilities group has been working on the cross walk lights near City Park entrance. Several have stopped working and we have been in contact with the manufacture to send replacement lights and will install these once they come in.
- The facilities group were able to make repairs to the soffit at the Golf course club house. A section had fallen off we rented a lift and were able to make repairs safely.
- We are working on installing sound boards at the arts center in the auditorium area.
- We are continually busy working on daily repairs and breakdowns of the Facilities throughout in the city.

Electrical Projects Done In-House: The facilities group has been able to self-perform several electrical projects and repairs due to Patrick's electrical background and having a South Carolina electrical license.

- Added new circuits in the Cannon center maintenance shop area. Est. cost \$2,500-\$3,000. Upgraded electrical at Berry Ave. Installed new panel and re-wired existing offices to meet code standards. Est. cost \$10,000-\$12,000.
- Ran power to new lift at garage fleet shop. Also installed a new outlet at the brake machine area. Est. cost \$2,000-\$3,000.
- Electrical hook up for stage at freedom blast. COG normally paid Langford electrical \$800 for the day.
- Corrected electrical wiring at center for the arts on the Emergency lights. New circuits were needed to put these separate from the auditorium lights. Est. cost \$1,500-\$2,000.
- Working on replacing the cross walk lights near City park entrance. We were able to troubleshoot the problem and determine there were several lights bad and needed to be replace. Will replace these once the new ones come in. Unable to determine an est. cost for this project.

Project Developments:

- The design of the new Suber Road Fire Department is being updated as a two bay facility in lue of the original three bay concept by Mcmillan Pazdan Smith.
- Greer Relief final design has been submitted to Building and Development Standards for review and approval. Once all concerns are addressed we are ready to put this project out for formal bid.
- The Operations Center roof repair is currently under way. The renovations to the first portion will be completed April 1st and then staff will move into that space so that renovations can begin on the second phase of the buildout.
- The drawings for our renovations of the club house at Greer Golf are within a week of being ready for submission to BDS and a Guaranteed Maximum Price will be delivered by Friday March 24.
- Design for Phase II of our Berry Ave. renovations are complete and will be submitted to BDS for review by Tuesday March 21st.
- Recycle Center construction drawings are on target for completion and we plan to break ground after amnesty day and going into summer

Category Number:
Item Number: 3.



AGENDA
GREER CITY COUNCIL
3/28/2023

Financial Activity Report - February 2023

Summary:

[Link to Detail Financial Reports](#)

ATTACHMENTS:

Description	Upload Date	Type
❏ February 2023 Summary Financial Report	3/23/2023	Backup Material



February 2023 Summary Financial Report



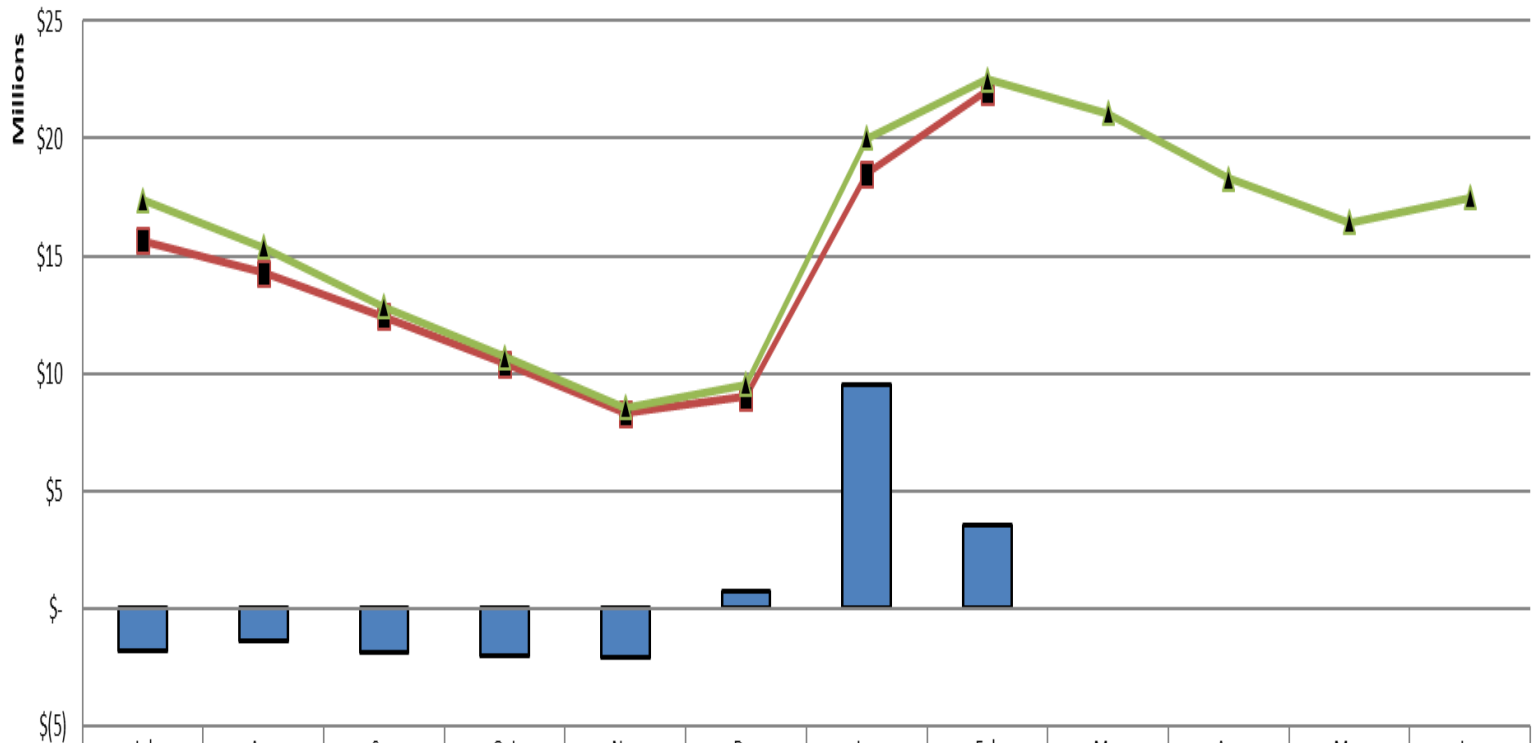
Financial Performance Summary

As of Month End February, 2023

Quick Look Indicators	This Month	This Year	Balance
GENERAL FUND			
Cash Balance	↑	↓	\$ 22,021,134
Revenue	↓	↑	\$ 27,072,929
Total Expenditures	↑	↑	\$ 24,159,707
Total Percentage (Over) / Under	-	-	4%
Revenue Benchmark Variance	↑	↑	\$ 2,327,992
Expenditure Benchmark Variance	↓	↓	\$ (337,616)
Overall Benchmark Variance	↑	↓	\$ 1,990,376
HOSPITALITY FUND			
Cash Balance	↑	↑	\$ 3,283,225
Revenue	↓	↑	\$ 2,290,827
Expenditures	↑	↑	\$ 661,896
STORM WATER FUND			
Cash Balance	↑	↑	\$ 4,174,748
Revenue	↓	↑	\$ 2,099,583
Expenditures	↑	↓	\$ 146,338

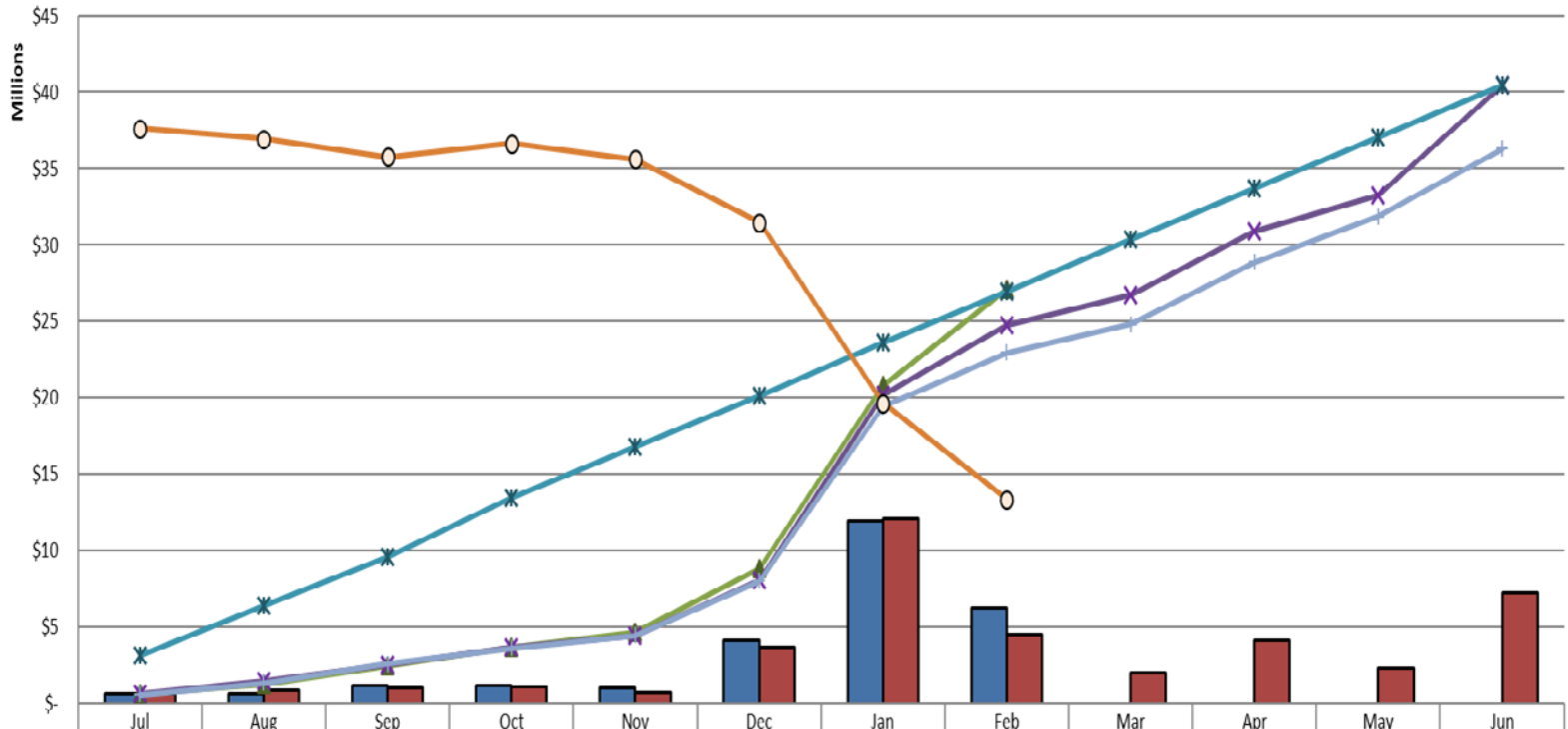
Cash Balance - General Fund

Fiscal Year 2022/23



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Net Monthly Cash	(1,817,717)	(1,359,647)	(1,876,889)	(2,014,653)	(2,115,479)	724,615	9,484,382	3,522,380	-	-	-	-
Current Fiscal YTD Balance	15,656,424	14,296,778	12,419,888	10,405,235	8,289,756	9,014,372	18,498,754	22,021,134				
Prior Fiscal YTD Balance	17,366,297	15,367,487	12,842,494	10,702,120	8,548,128	9,533,938	20,030,717	22,502,207	21,065,284	18,292,438	16,427,836	17,474,141

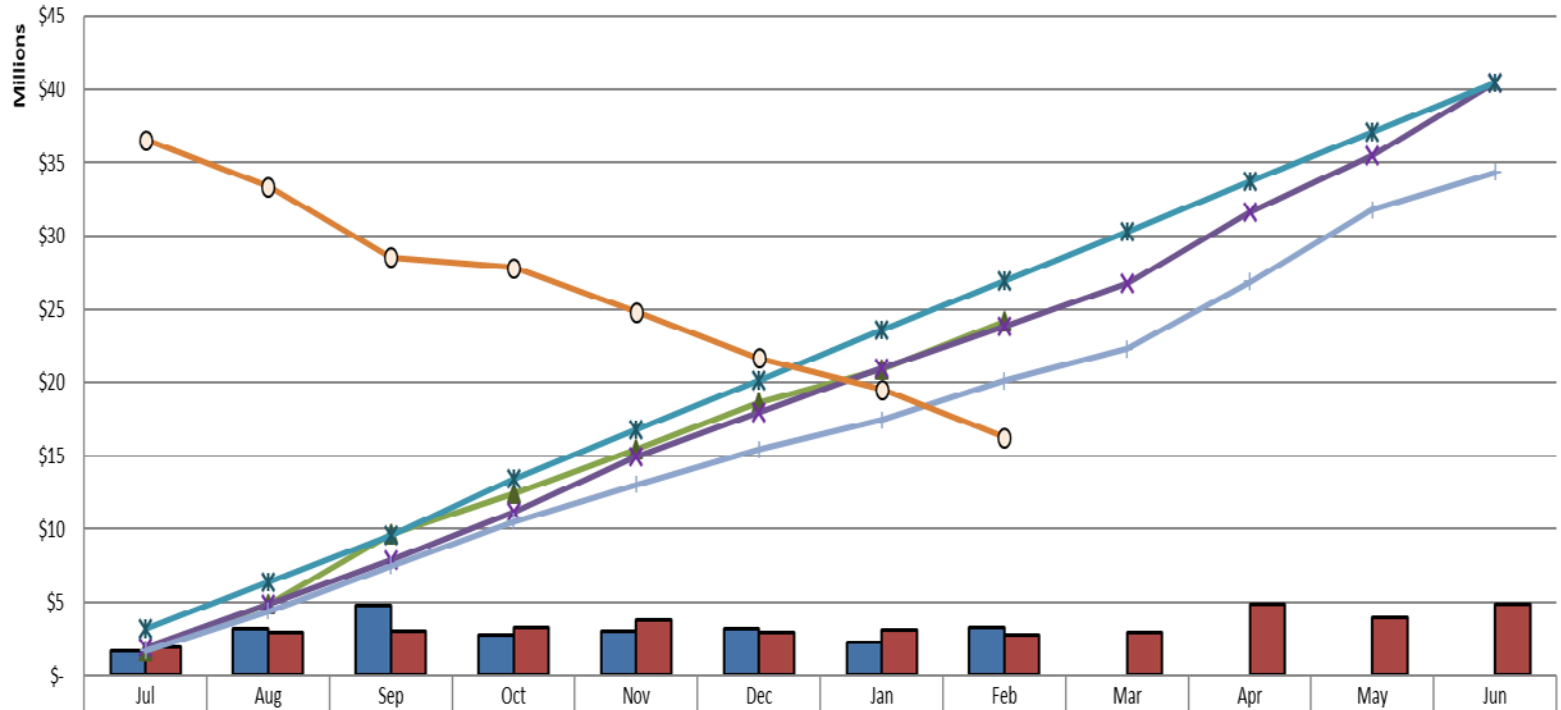
Revenue - General Fund Fiscal Year 2022/23



Monthly Actual	615,877	676,295	1,203,301	1,188,080	1,015,090	4,150,921	11,942,598	6,280,767				
Monthly Benchmark	655,670	860,331	1,036,334	1,125,164	755,410	3,652,048	12,127,251	4,532,729	2,007,822	4,149,198	2,323,518	7,217,488
YTD Actual	615,877	1,292,172	2,495,473	3,683,553	4,698,642	8,849,563	20,792,161	27,072,929				
YTD Benchmark	655,670	1,516,001	2,552,335	3,677,499	4,432,909	8,084,957	20,212,208	24,744,937	26,752,759	30,901,957	33,225,475	40,442,963
YTD Prorated Budget	3,187,749	6,375,498	9,563,247	13,439,654	16,799,568	20,159,482	23,591,728	26,961,975	30,332,222	33,702,469	37,072,716	40,442,963
Prior YTD Actual	593,504	1,358,690	2,603,803	3,638,911	4,461,393	8,013,498	19,415,294	22,972,853	24,820,050	28,861,627	31,875,980	36,300,627
Balance to Collect	37,637,111	36,960,816	35,757,515	36,635,410	35,620,321	31,469,400	19,650,802	13,370,035				

Expenditures - General Fund

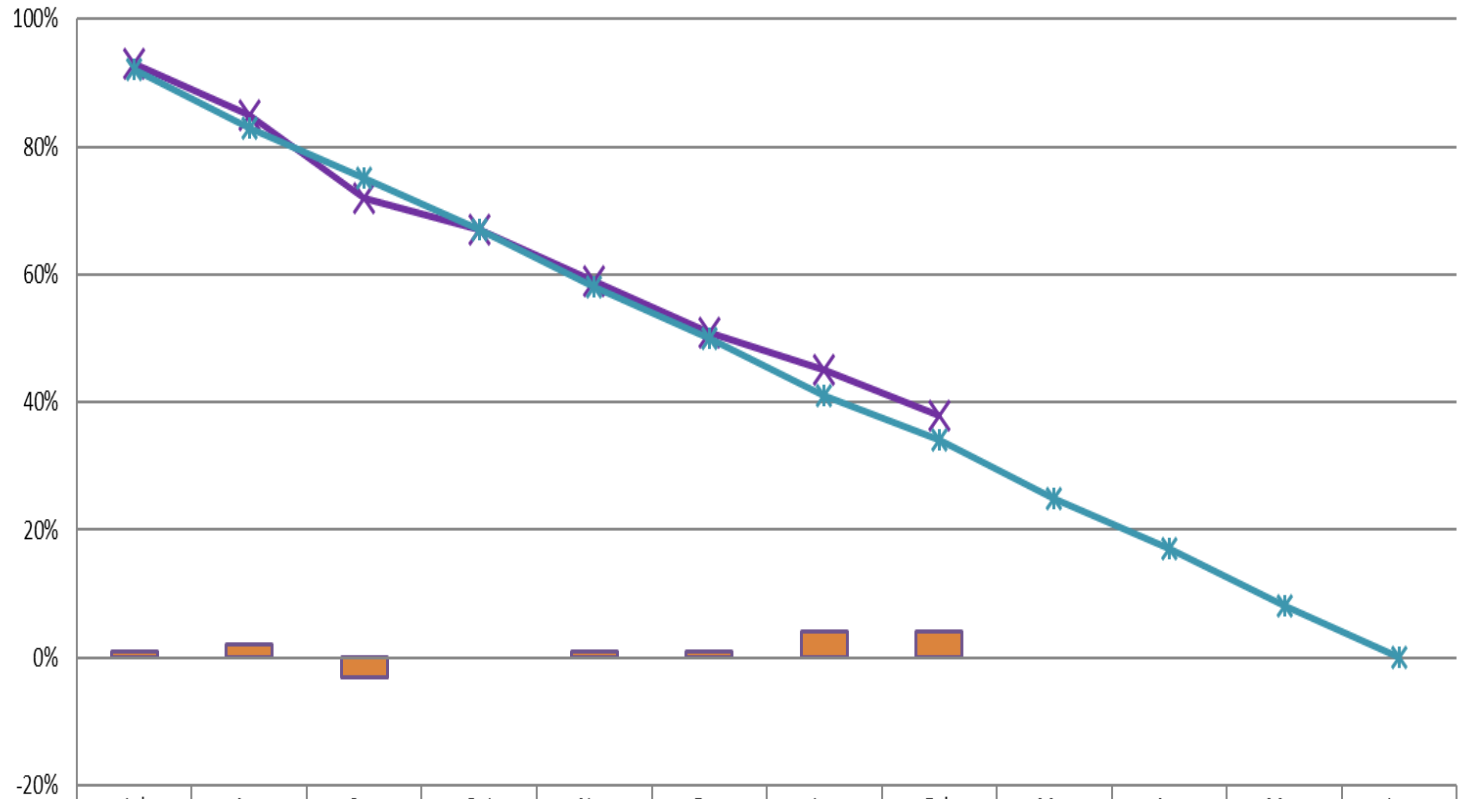
Fiscal Year 2022/23



Monthly Actual	1,679,188	3,211,869	4,788,062	2,775,799	3,025,673	3,160,273	2,247,452	3,271,391				
Monthly Benchmark	1,953,319	2,947,018	3,013,192	3,274,325	3,793,707	2,964,224	3,077,069	2,799,237	2,923,536	4,872,295	3,920,803	4,904,238
YTD Actual	1,679,188	4,891,057	9,679,119	12,454,918	15,480,591	18,640,864	20,888,316	24,159,707				
YTD Benchmark	1,953,319	4,900,337	7,913,529	11,187,854	14,981,561	17,945,785	21,022,854	23,822,091	26,745,627	31,617,922	35,538,725	40,442,963
YTD Prorated Budget	3,187,749	6,375,498	9,563,247	13,439,654	16,799,568	20,159,482	23,591,728	26,961,975	30,332,222	33,702,469	37,072,716	40,442,963
Prior YTD Actual	1,710,327	4,398,054	7,501,885	10,504,480	13,035,709	15,436,452	17,424,736	20,112,810	22,315,890	26,872,670	31,800,478	34,332,576
Balance to Expend	36,573,800	33,361,931	28,573,869	27,864,045	24,838,372	21,678,099	19,554,647	16,283,256				

Budget Percent Remaining - General Fund

Fiscal Year 2022/23



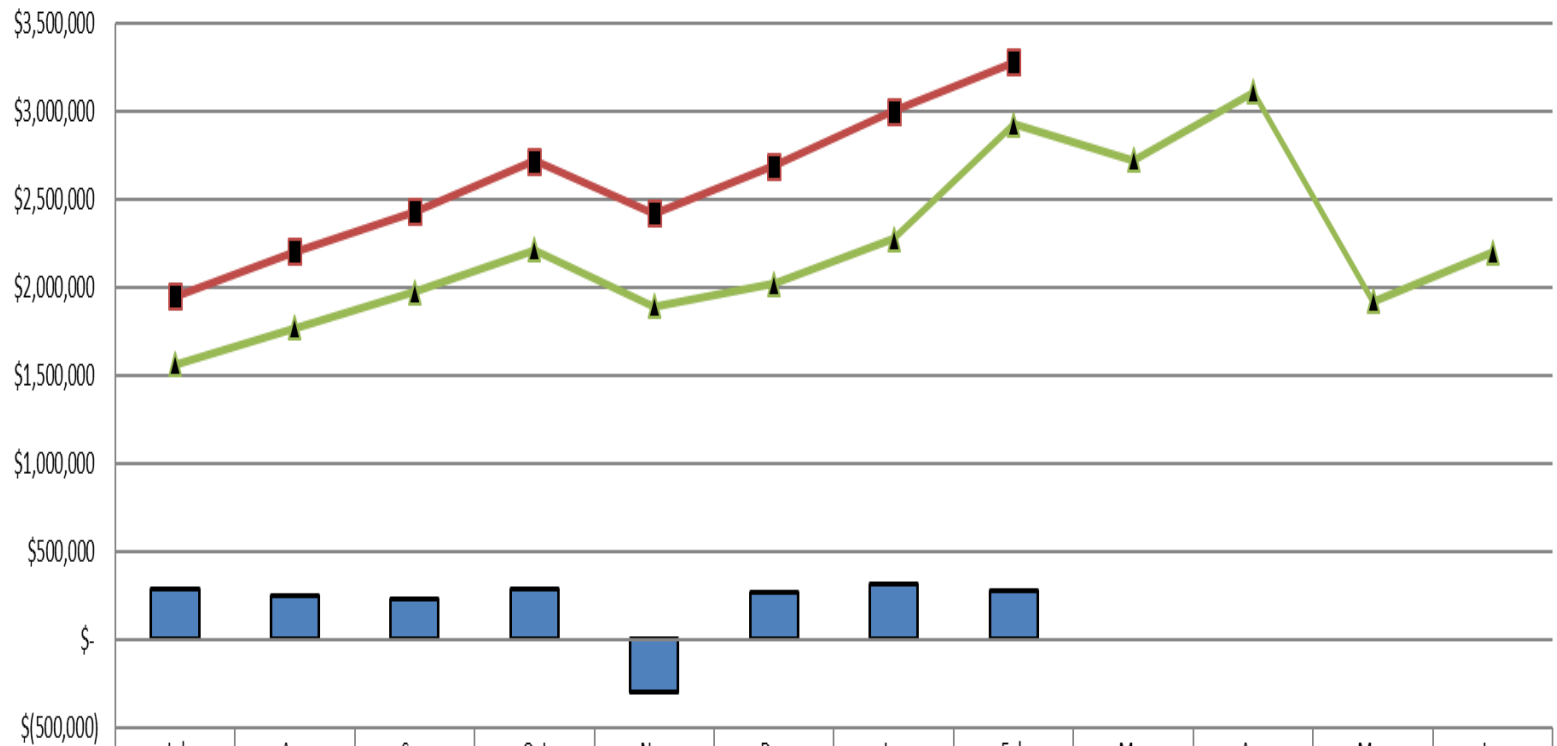
(Over) Under Budget	1	2	-3	0	1	1	4	4				
Actual Percent Remaining	93	85	72	67	59	51	45	38				
Prorated Percent Remaining	92	83	75	67	58	50	41	34	25	17	8	0



Hospitality Taxes Fund

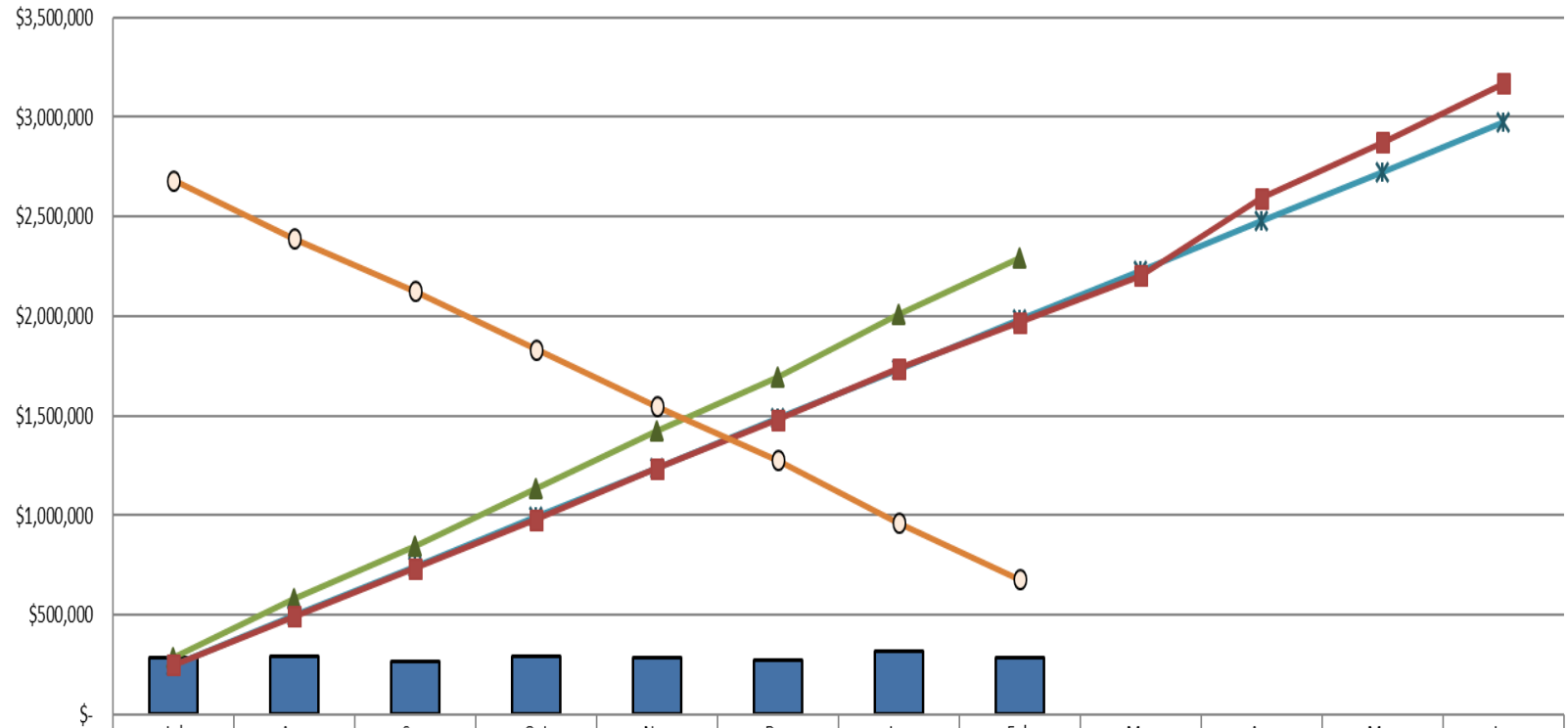
Cash Balance - Hospitality Taxes Fund

Fiscal Year 2022/23



Net Monthly Cash	282,926	253,489	226,422	290,314	(299,477)	268,510	310,611	281,385	-	-	-	-
Current Fiscal YTD Balance	1,951,971	2,205,460	2,431,882	2,722,197	2,422,719	2,691,229	3,001,840	3,283,225				
Prior Fiscal YTD Balance	1,565,859	1,772,270	1,974,992	2,216,274	1,895,889	2,024,016	2,277,201	2,926,768	2,724,388	3,112,585	1,923,550	2,203,625

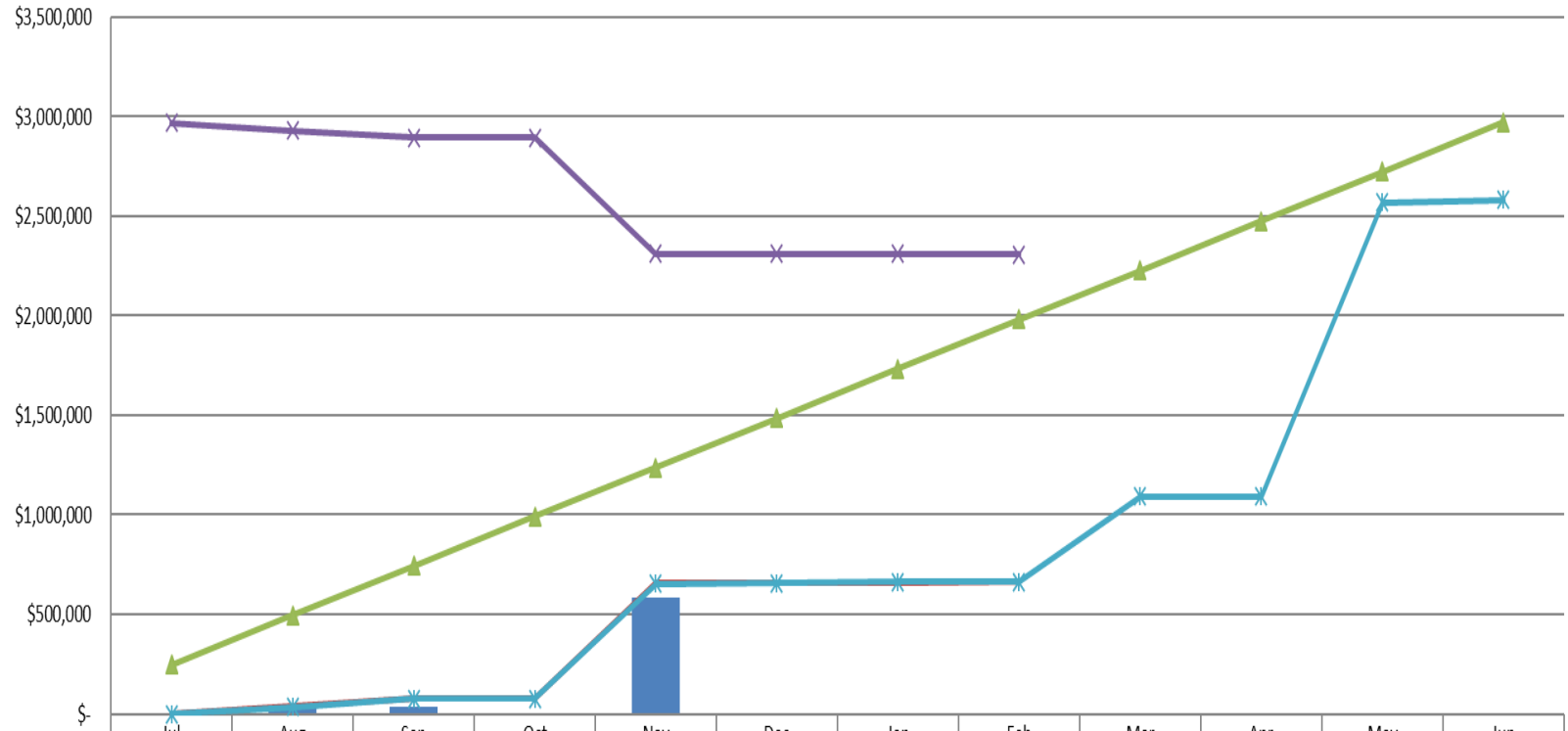
Revenue - Hospitality Taxes Fund Fiscal Year 2022/23



Monthly Actual	286,962	293,071	264,625	291,860	285,389	270,080	314,638	284,202				
YTD Actual	286,962	580,032	844,657	1,136,517	1,421,907	1,691,987	2,006,625	2,290,827				
YTD Prorated Budget	247,533	495,067	742,600	990,133	1,237,667	1,485,200	1,732,733	1,980,267	2,227,800	2,475,333	2,722,867	2,970,400
Prior YTD Actual	248,827	492,238	735,026	976,881	1,234,718	1,478,993	1,738,479	1,970,280	2,202,452	2,590,919	2,873,456	3,166,708
Balance to Collect	2,683,438	2,390,368	2,125,743	1,833,883	1,548,493	1,278,413	963,775	679,573				

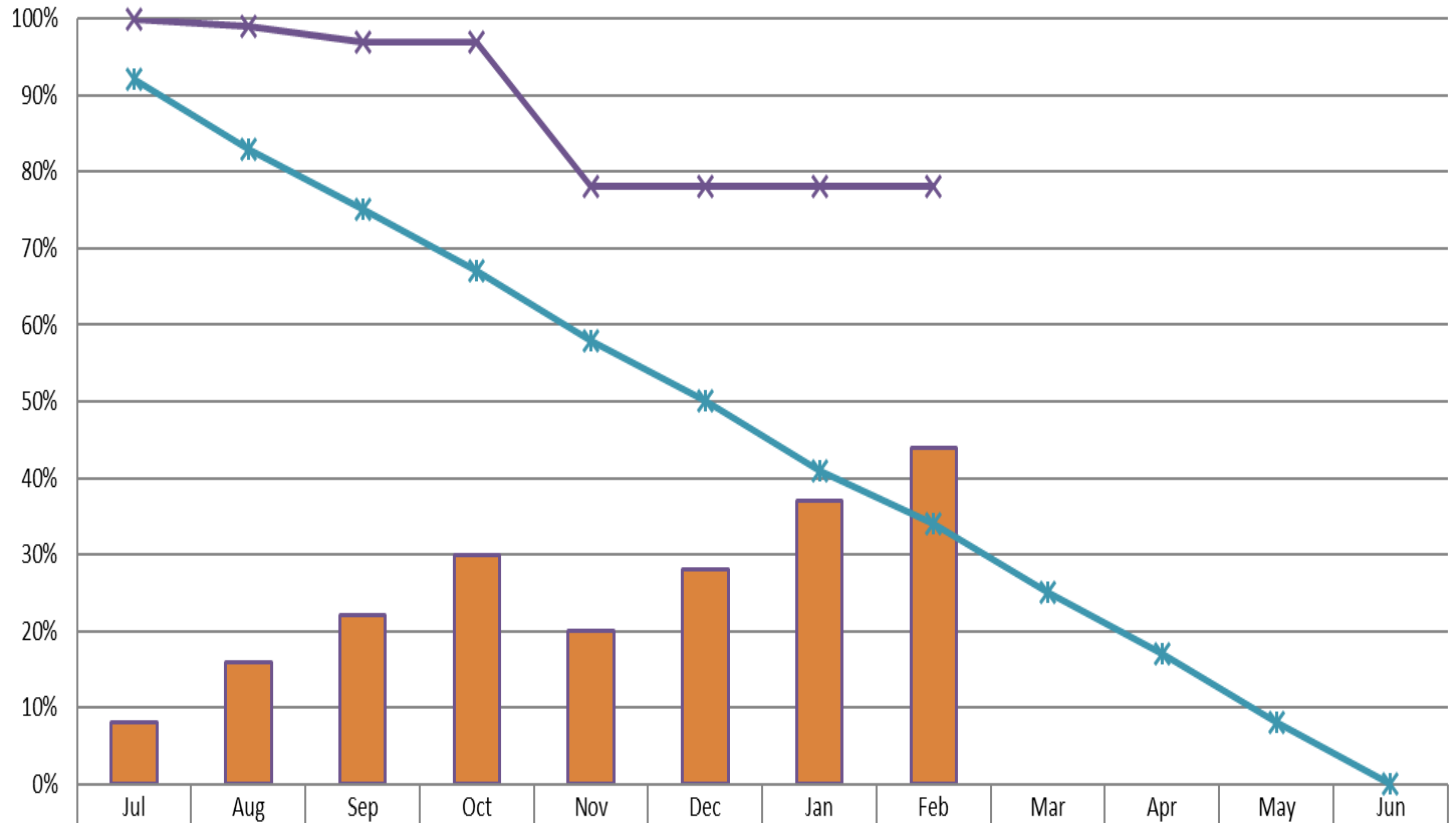
Expenditures - Hospitality Taxes Fund

Fiscal Year 2022/23



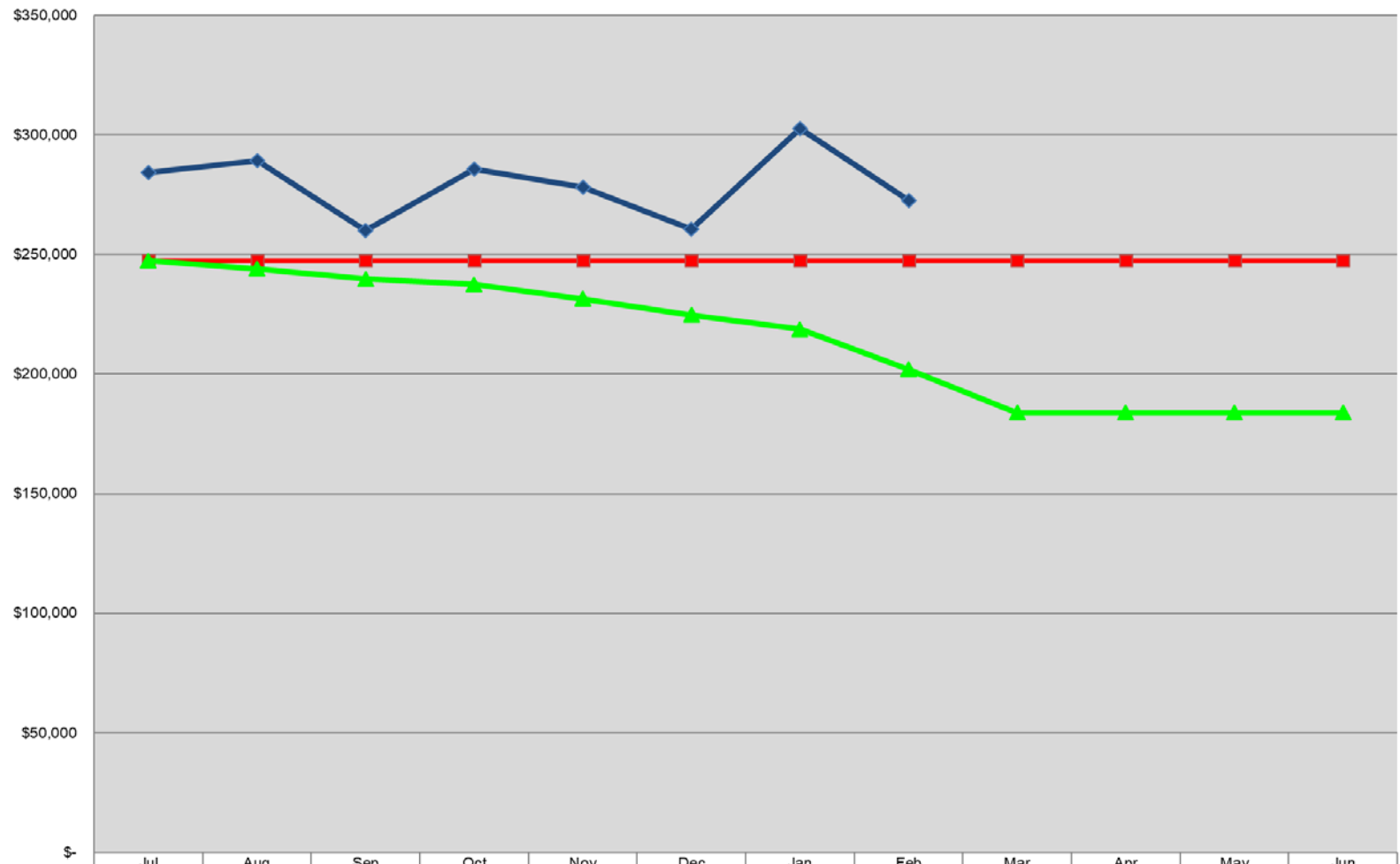
Monthly Actual	1,000	38,418	35,959	887	583,135	0	472	2,025				
YTD Actual	1,000	39,418	75,378	76,264	659,399	659,399	659,871	661,896				
YTD Prorated Budget	247,533	495,067	742,600	990,133	1,237,667	1,485,200	1,732,733	1,980,267	2,227,800	2,475,333	2,722,867	2,970,400
Prior YTD Actual	0	35,512	75,411	76,204	654,372	654,972	661,274	661,574	1,091,382	1,091,365	2,567,550	2,582,864
Balance to Expend	2,969,400	2,930,982	2,895,022	2,894,136	2,311,001	2,311,001	2,310,529	2,308,504				

Budget Percent Remaining - Hospitality Taxes Fund Fiscal Year 2022/23



(Over) Under Budget	8	16	22	30	20	28	37	44				
Actual Percent Remaining	100	99	97	97	78	78	78	78				
Prorated Percent Remaining	92	83	75	67	58	50	41	34	25	17	8	0

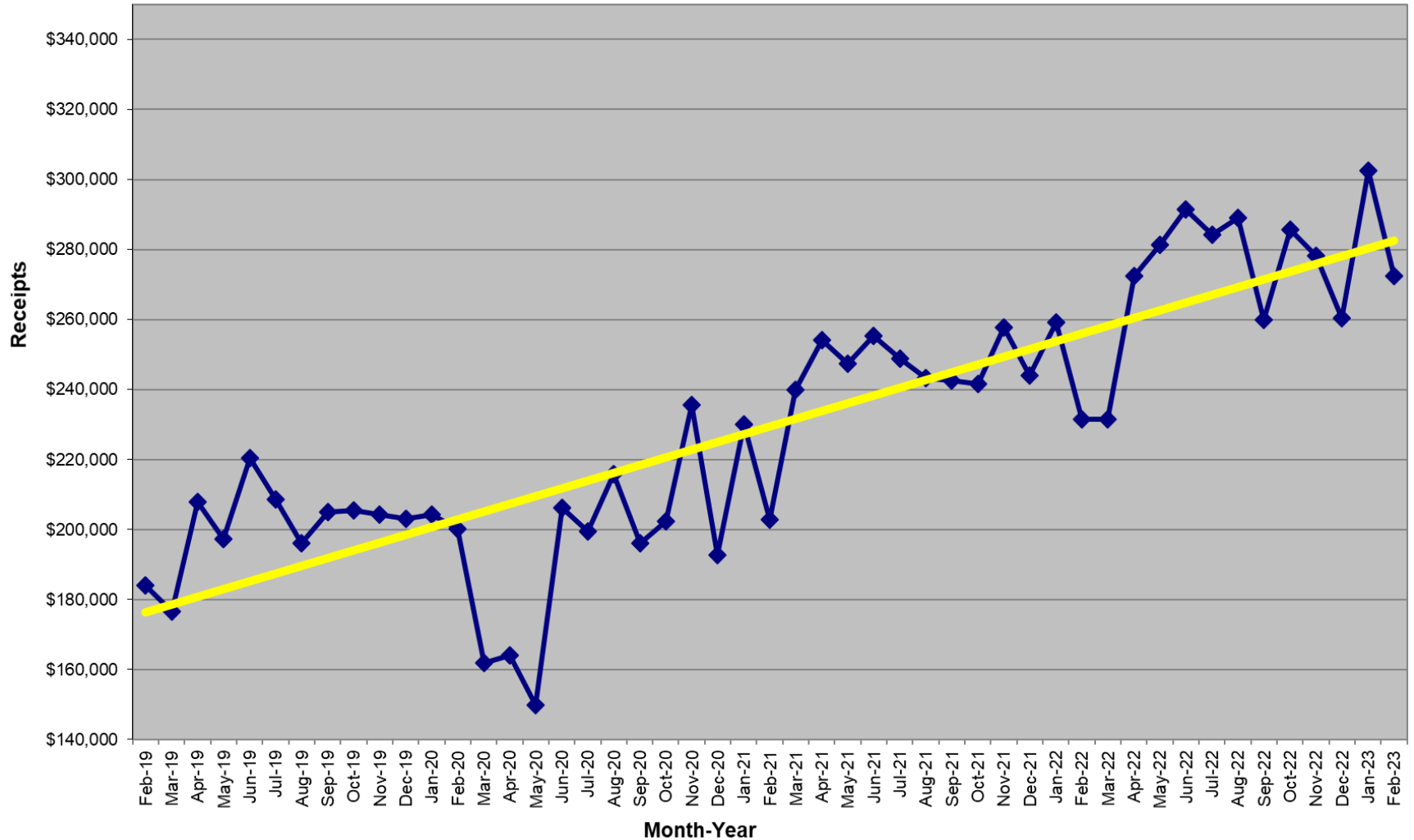
Hospitality Taxes Fiscal Year 2022/23



Monthly Actual	284,337	289,113	260,011	285,747	278,189	260,432	302,631	272,441				
Monthly Budget	247,333	247,333	247,333	247,333	247,333	247,333	247,333	247,333	247,333	247,333	247,333	247,333
Budget Requirement	247,333	243,969	239,695	237,438	231,399	224,715	218,762	201,988	183,775	183,775	183,775	183,774

Hospitality Tax

4 - Year Trending

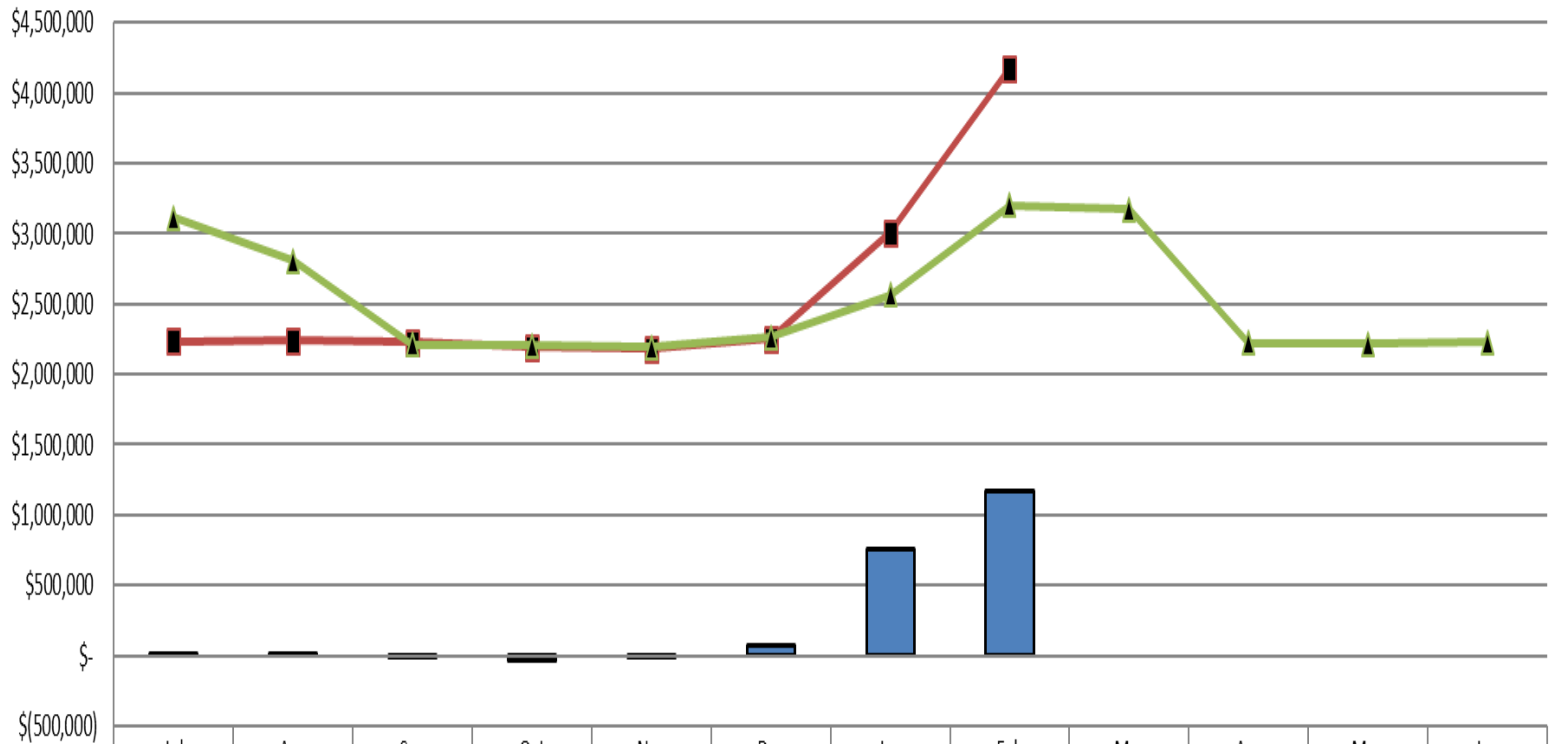




Storm Water Fund

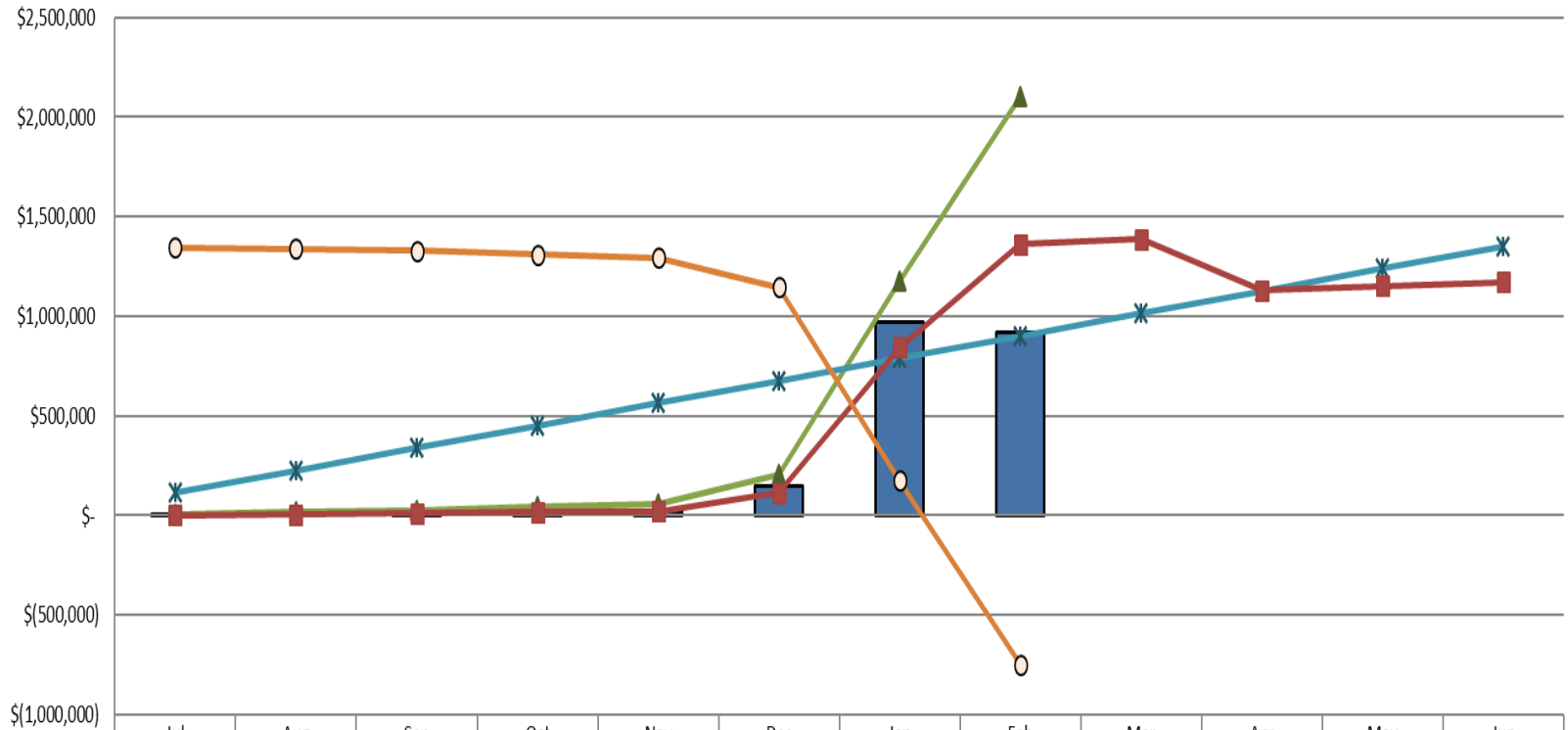
Cash Balance - Storm Water Fund

Fiscal Year 2022/23



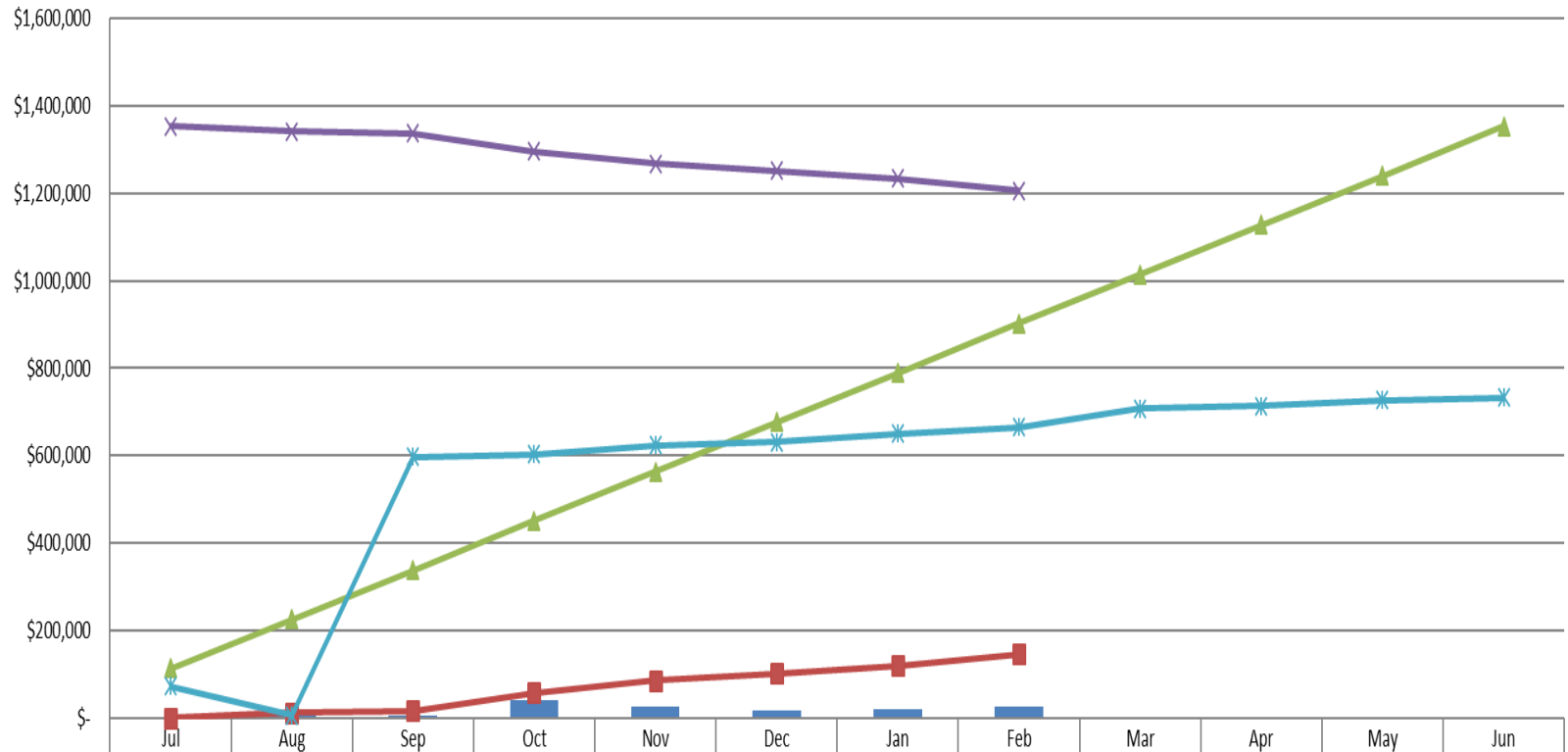
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Net Monthly Cash	5,574	3,243	(13,601)	(33,635)	(12,937)	74,871	755,488	1,165,699	-	-	-	-
Current Fiscal YTD Balance	2,235,621	2,238,864	2,225,263	2,191,628	2,178,692	2,253,562	3,009,050	4,174,748				
Prior Fiscal YTD Balance	3,114,764	2,805,716	2,208,685	2,207,088	2,194,336	2,263,223	2,562,625	3,203,729	3,170,779	2,223,499	2,214,988	2,230,047

Revenue - Storm Water Taxes Fund Fiscal Year 2022/23



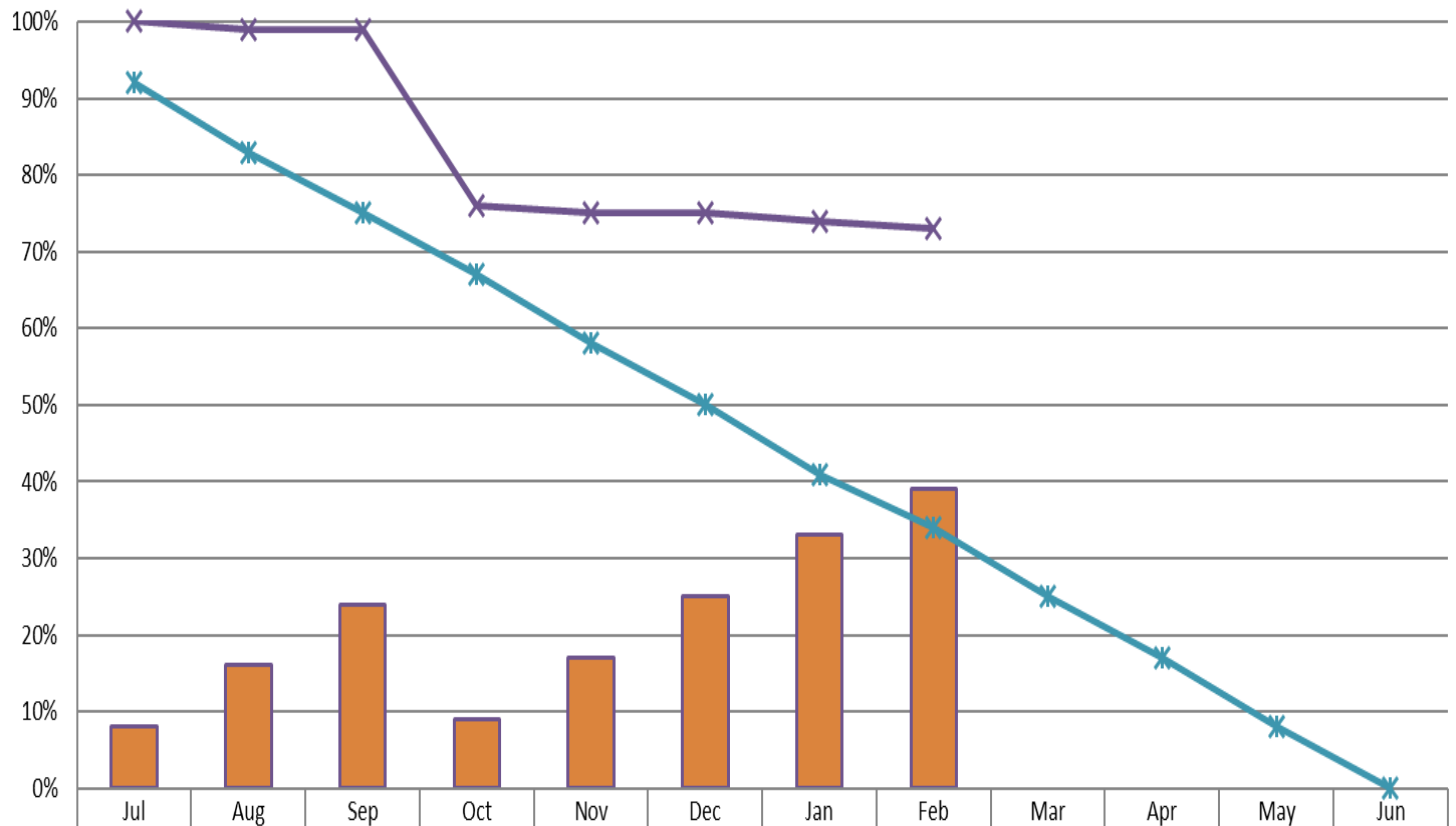
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Monthly Actual	6,726	8,493	9,009	19,968	15,395	147,021	971,780	921,191				
YTD Actual	6,726	15,219	24,228	44,196	59,591	206,612	1,178,392	2,099,583				
YTD Prorated Budget	112,708	225,417	338,125	450,833	563,542	676,250	788,958	901,667	1,014,375	1,127,083	1,239,792	1,352,500
Prior YTD Actual	173	5,330	9,900	16,528	19,291	114,377	842,130	1,359,562	1,386,414	1,129,332	1,151,452	1,172,397
Balance to Collect	1,345,774	1,337,281	1,328,272	1,308,304	1,292,909	1,145,888	174,108	(747,083)				

Expenditures - Storm Water Fund Fiscal Year 2022/23



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Monthly Actual	-	11,483	4,365	41,723	27,058	16,296	18,422	26,992				
YTD Actual	-	11,483	15,848	57,571	84,628	100,925	119,346	146,338				
YTD Prorated Budget	112,708	225,417	338,125	450,833	563,542	676,250	788,958	901,667	1,014,375	1,127,083	1,239,792	1,352,500
Prior YTD Actual	72,335	5,532	596,217	602,046	623,657	631,349	650,261	665,211	707,452	713,043	726,845	732,540
Balance to Expend	1,352,500	1,341,017	1,336,652	1,294,929	1,267,872	1,251,575	1,233,154	1,206,162				

Budget Percent Remaining - Storm Water Fund Fiscal Year 2022/23



 (Over) Under Budget	8	16	24	9	17	25	33	39				
✕ Actual Percent Remaining	100	99	99	76	75	75	74	73				
✱ Prorated Percent Remaining	92	83	75	67	58	50	41	34	25	17	8	0

Category Number:
Item Number: 4.



AGENDA
GREER CITY COUNCIL
3/28/2023

Fire Department Activity Report - February 2023

ATTACHMENTS:

Description	Upload Date	Type
📎 Fire Department Activity Report - February 2023	3/13/2023	Backup Material



FEBRUARY

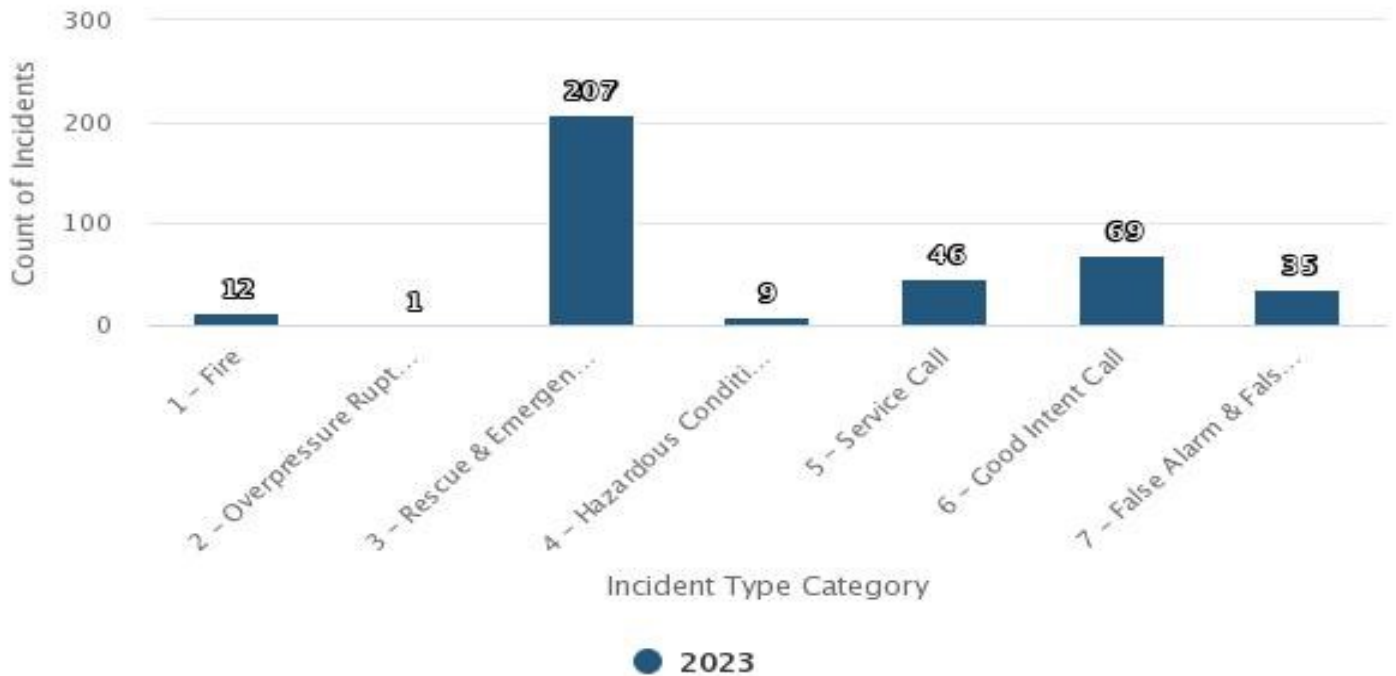
2023

CITY OF GREER
FIRE DEPARTMENT
MONTHLY REPORT

OPERATIONS DIVISION

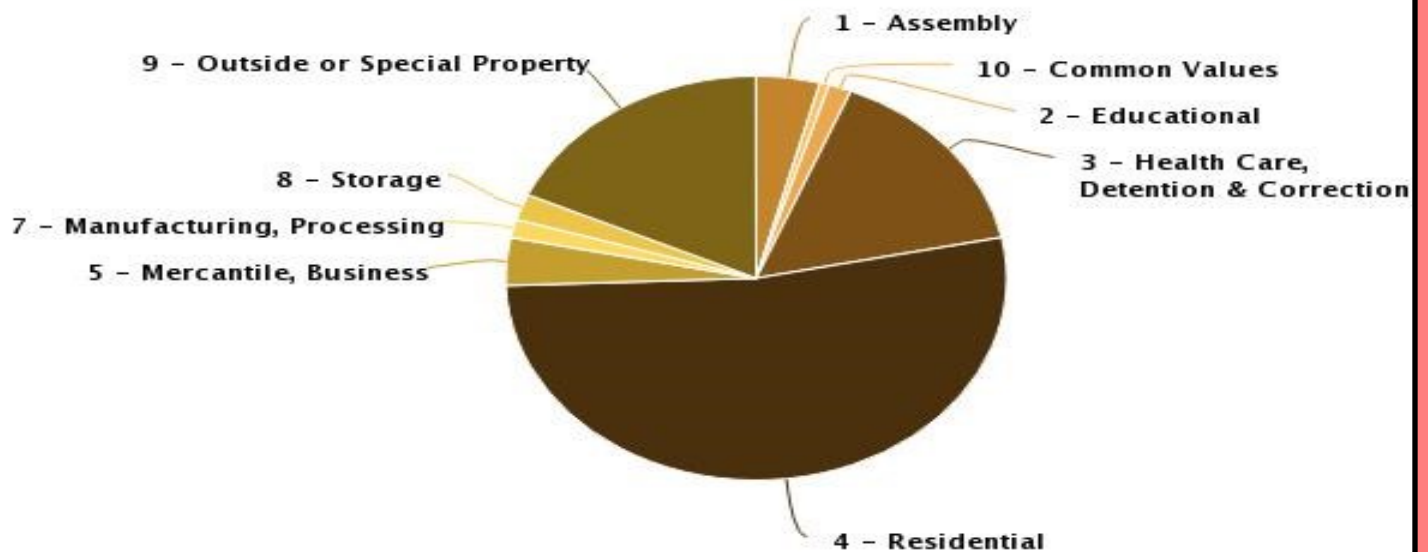
Incidents by Category and Year

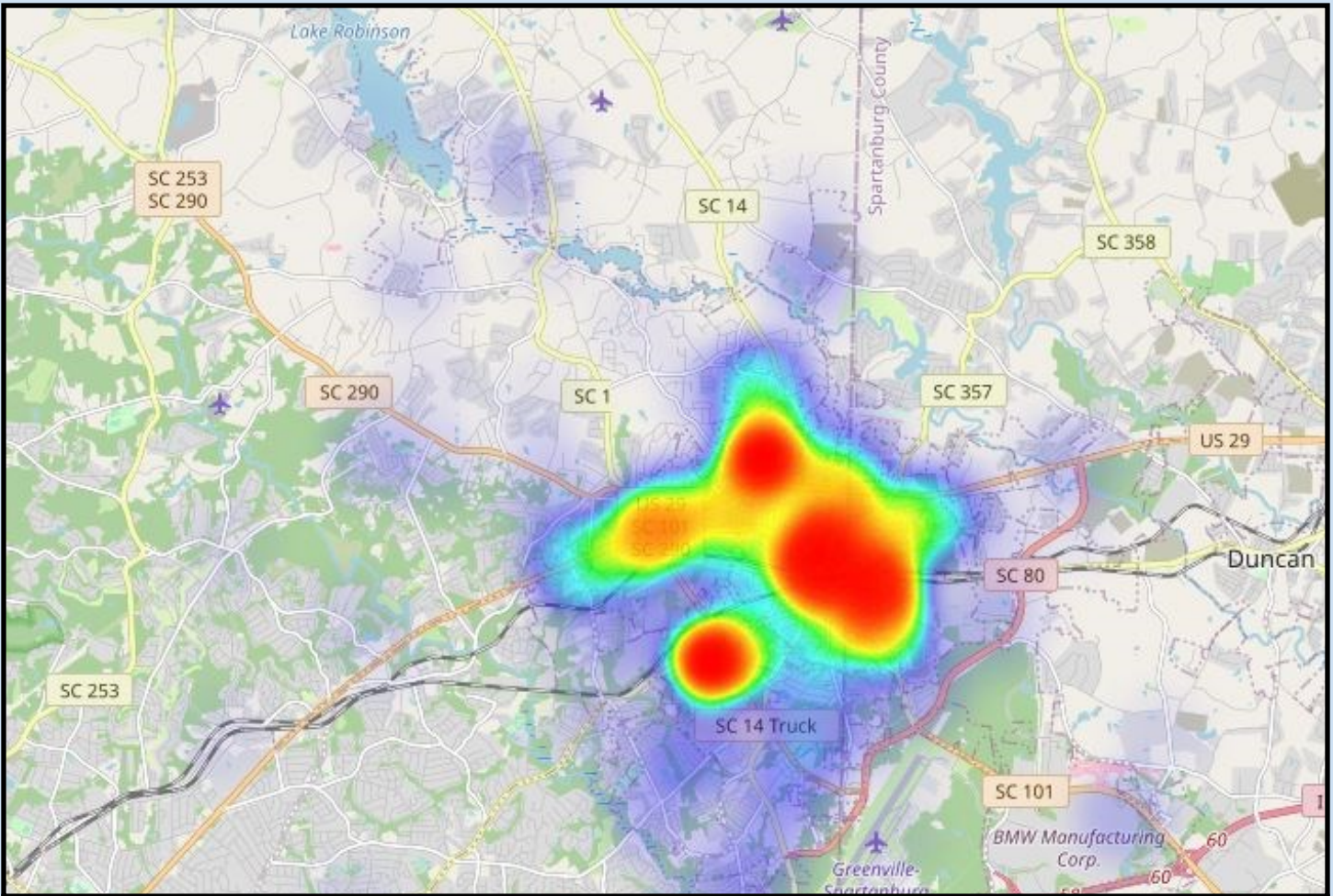
Feb 01, 2023 to Feb 28, 2023



Incidents by Property Use Category

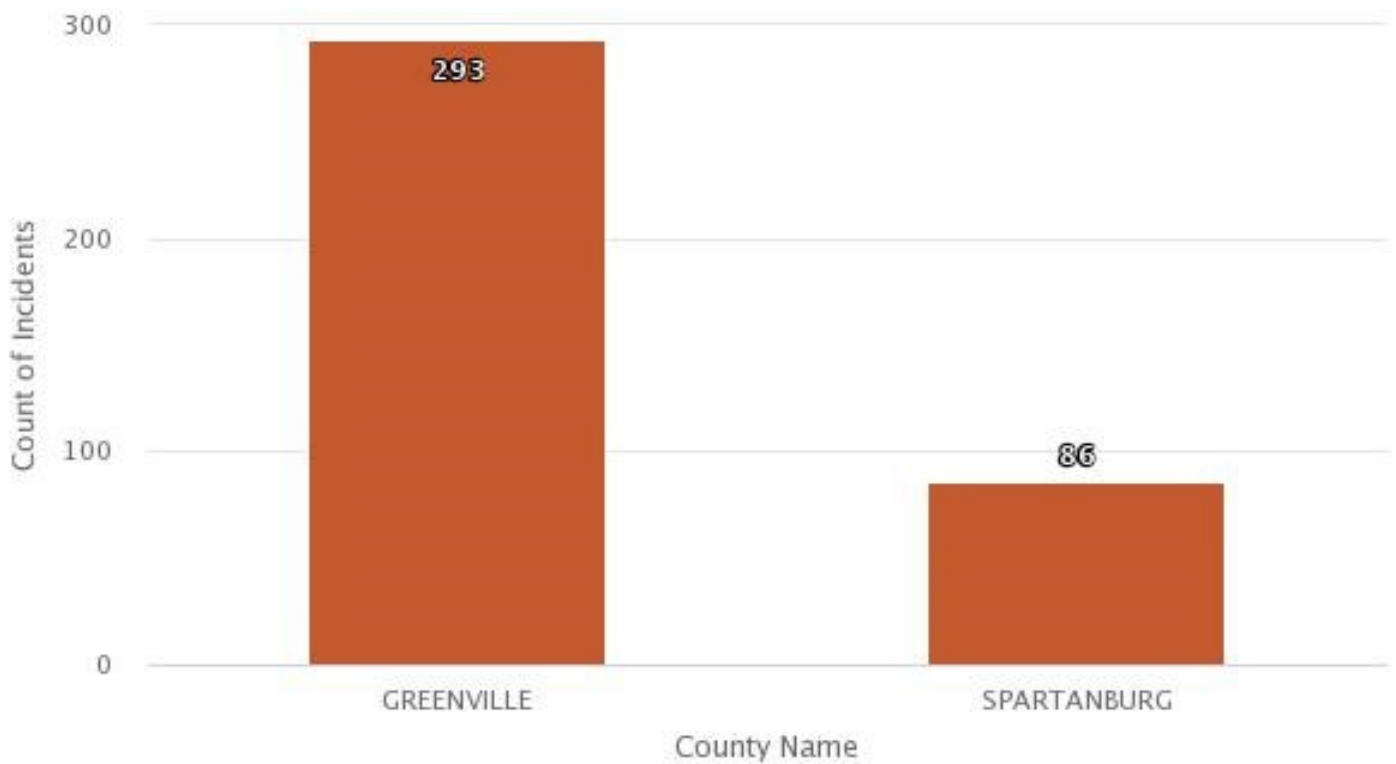
Feb 01, 2023 to Feb 28, 2023





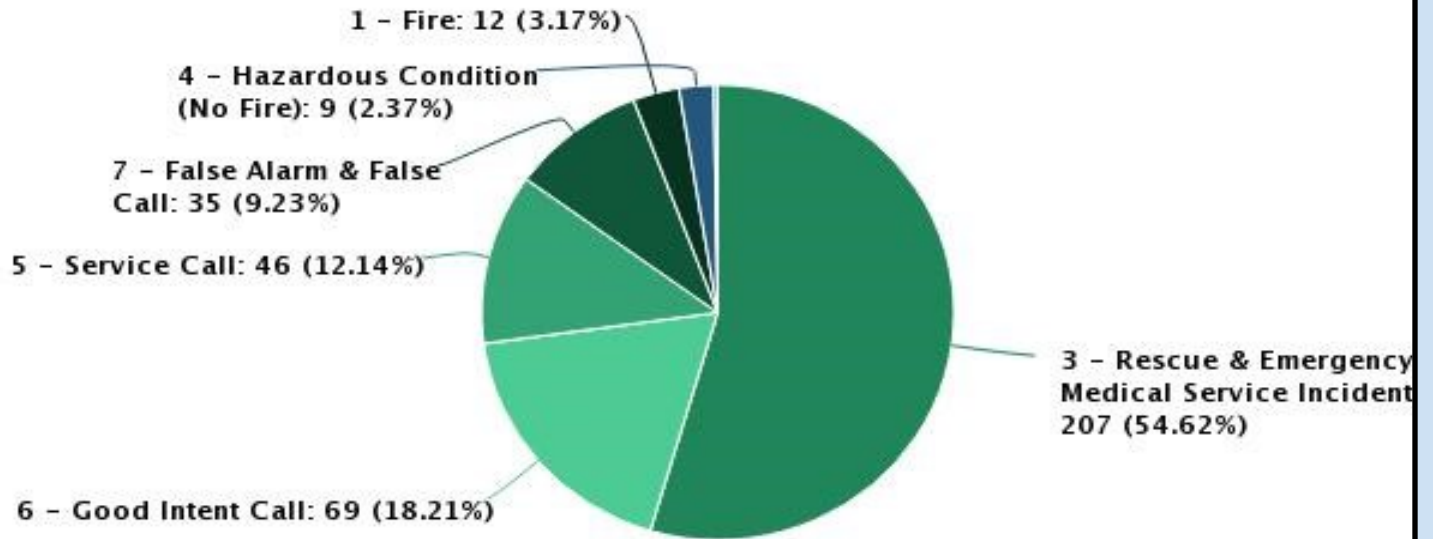
Incidents by County Name (Top 15)

Feb 01, 2023 to Feb 28, 2023



Incident Type Categories

Feb 01, 2023 to Feb 28, 2023



MUTUAL AID – GIVEN AND RECEIVED:

Fire Department	Automatic Aid Given	% of Total Automatic Aid Given	Automatic Aid Received	% of Total Automatic Aid Received	Mutual Aid Given	% of Total Mutual Aid Given
Boiling Springs Fire District	1	20%	3	18%	0	0.00%
Lake Cunningham Fire Department	2	40%	2	12%	2	67%
Pelham Batesville Fire Department	0	0%	1	6%	0	0.00%
Taylor's Fire Department	2	40%	6	35%	0	0.00%
Tyger River Fire Department	0	0%	4	24%	1	33%
Overall	5	100.00%	17	100.00%	3	0%

Unit Average Turnout Time (Seconds)

Feb 01, 2023 to Feb 28, 2023



Unit 90th Percentile Turnout Time (Seconds)

Feb 01, 2023 to Feb 28, 2023



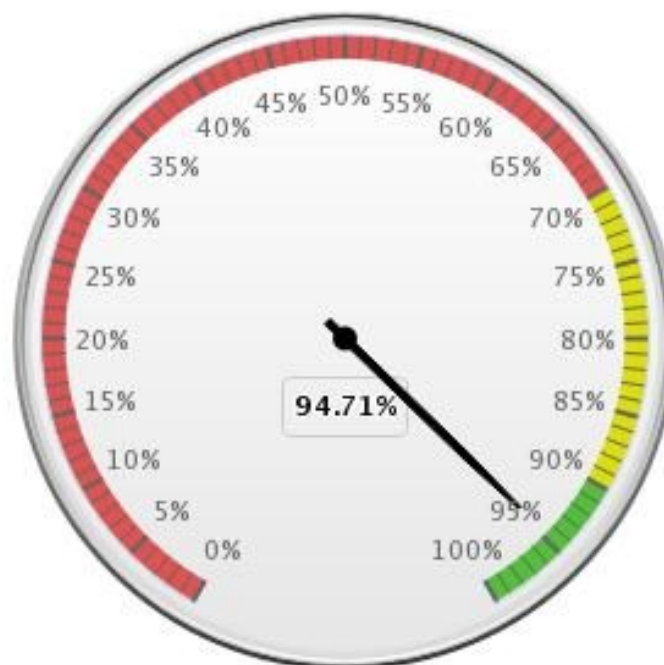
Unit Average Total Response Time (HH:MM:SS)

Feb 01, 2023 to Feb 28, 2023

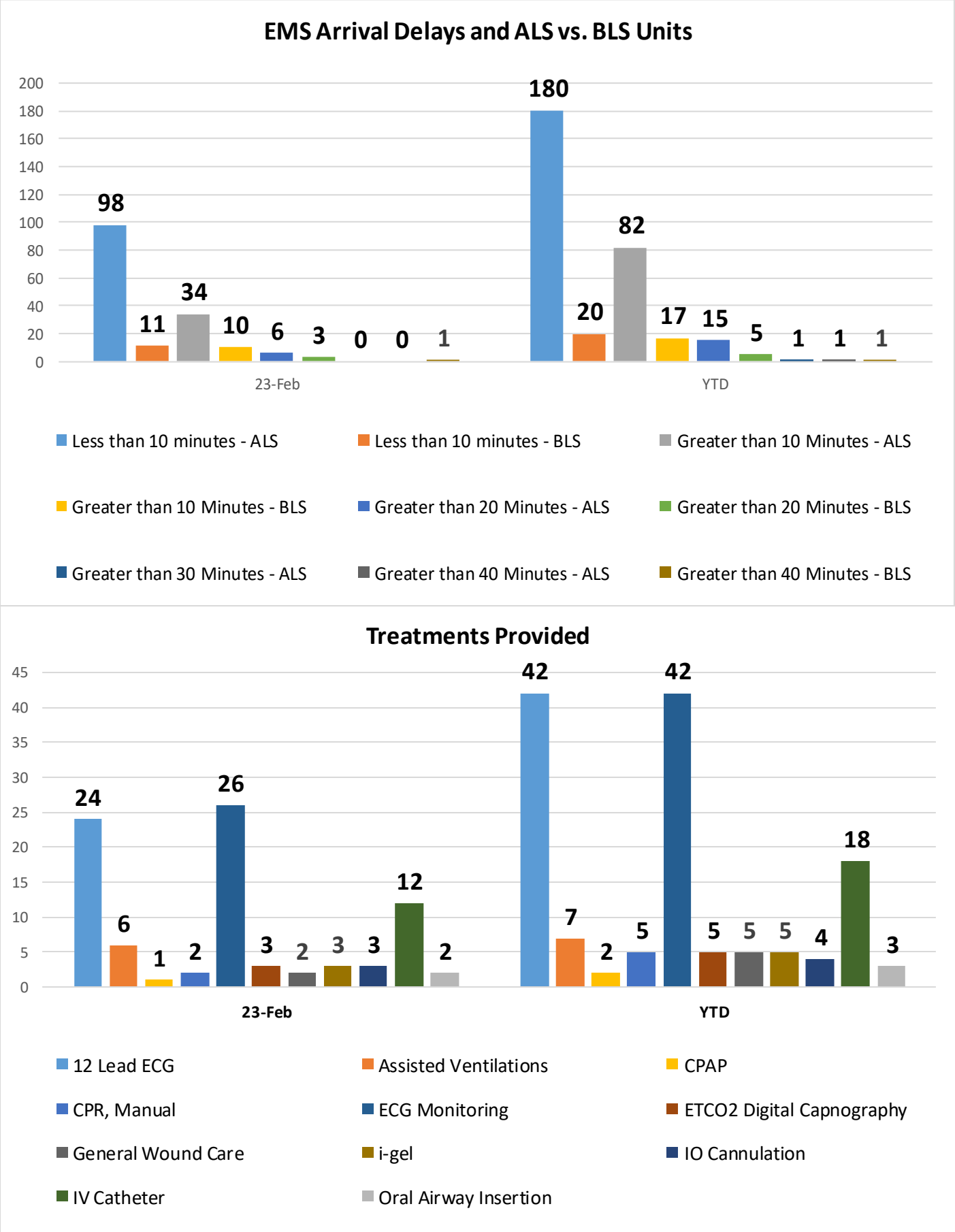


Percentage of Unit Total Response Times Under 09:00 Minutes

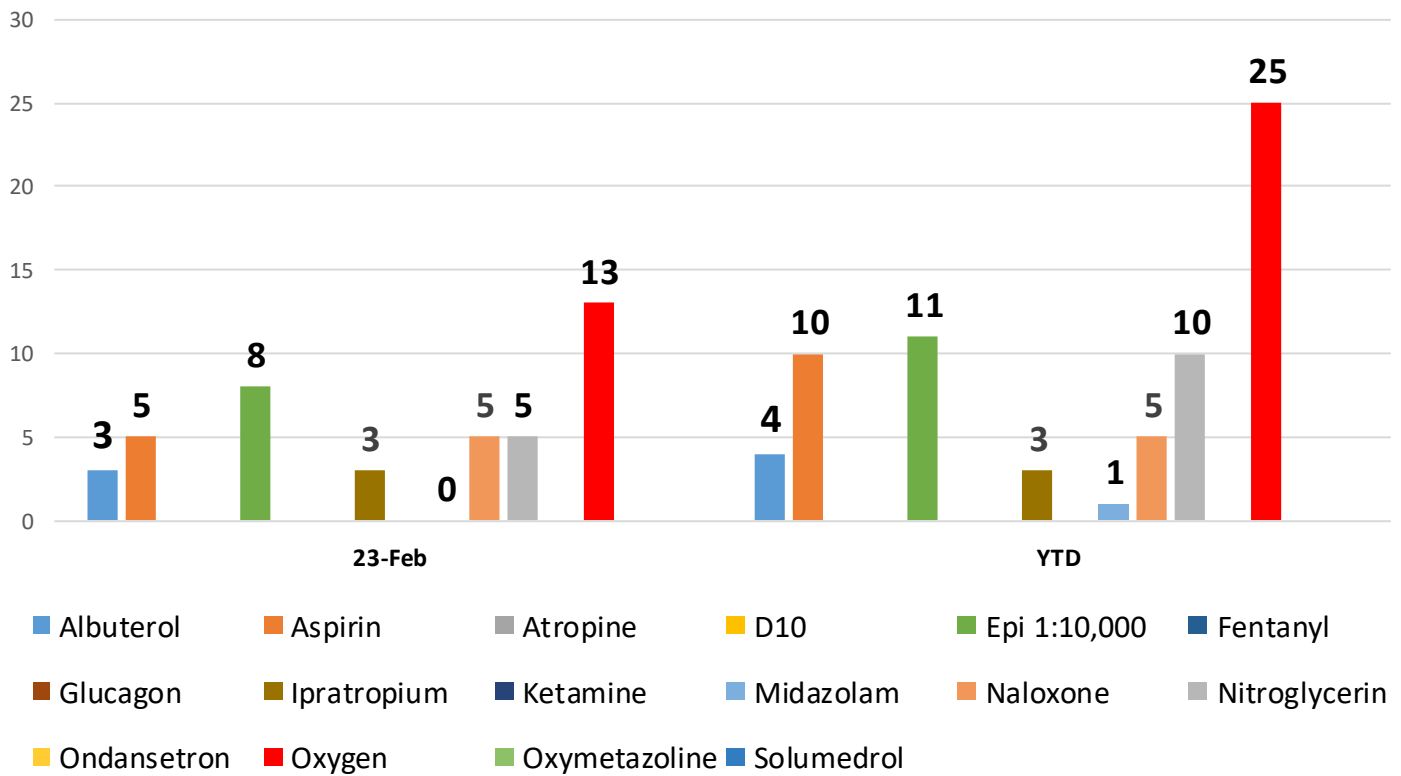
Feb 01, 2023 to Feb 28, 2023



Medical Care:



Medications Administered



The following personnel completed courses in the month of February:

Fire Instructor I (Duncan, SC):

Chase Bradshaw

Drew Pitman

Emergency Vehicle Drivers Training (Taylors, SC)

Eli Basnight

Chase Bradshaw—Fire Instructor I

Drew Pitman—Fire Instructor I

Scott Tompkins—Urban Search and Rescue (Shoring and Breaching)

Brian Collins—Urban Search and Rescue (Shoring and Breaching)

Medical Training:

PHTLS:

Joshua Holzheimer

Chase Raper

McCauley Hannah

Leroy Clanton

Allison Nelson

Matt Field

Robert South

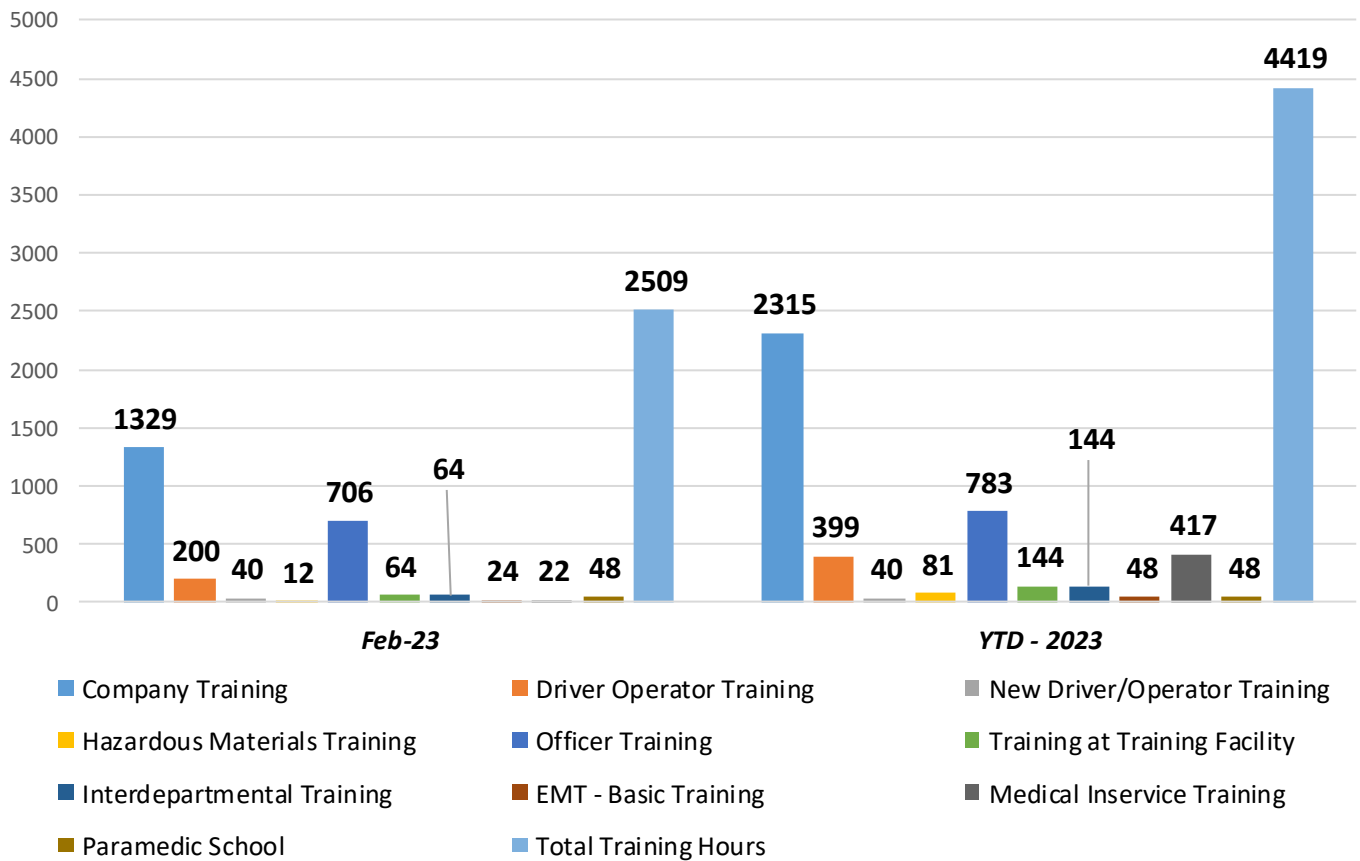
Carlos Cortes

Andrew Morgan

Timothy Scouten

Chase Dotson

2023 Departmental Training



Engine 97 and Battalion 41 were invited and attended a home cooked breakfast hosted by Lake Cunningham FD (Taylors Engine 83 and Battalion 81 also attended). The breakfast was held at Station 43 (LCFD HQ).

Staff in Action:

Lieutenant Kickler, Captain Norris and Captain Tidwell attended Blue Card Instructor course hosted by North Spartanburg Fire Department. This course was 40 hours long and brings our Blue Card Instructors up to a total of 6.

The City of Greer hosted a Blue Card Certification course the first week of February and consisted of 4 personnel from the City of Greer and 7 personnel from neighboring agencies. Greer Personnel—Lt. Dillon Blackwell, Eng. Andrew Morgan, Eng. Drew Pitman, and Eng. Chase Raper.

The class was taught by: Chief Holzheimer, Capt. Lister and Lt. Holleman.



Staff in Action:



3-3-2023—Deputy Chief Keeley, Battalion Chief Blanchard and Captain Lister completed their 2 week Fire Officer III course hosted by Parker Fire Department and the South Carolina Fire Academy. This 80 hour course focused on various aspects of being a Chief Officer.

Incidents:



2-11-23

EN56, L14 and BAT41 responded to 1155 S. Suber Rd for an MVC with injuries.

Residential Structure Fire:
15 Mendham Lane —
BAT41, BAT81, TW41,
R41, EN56, EN41, L14,
EN81, and FM42 Re-
sponded. Units arrived
and found the fire con-
tained to the exterior of
the structure. Fire was
quickly extinguished and
turned over to Fire Mar-
shal for investigation. No
injuries.



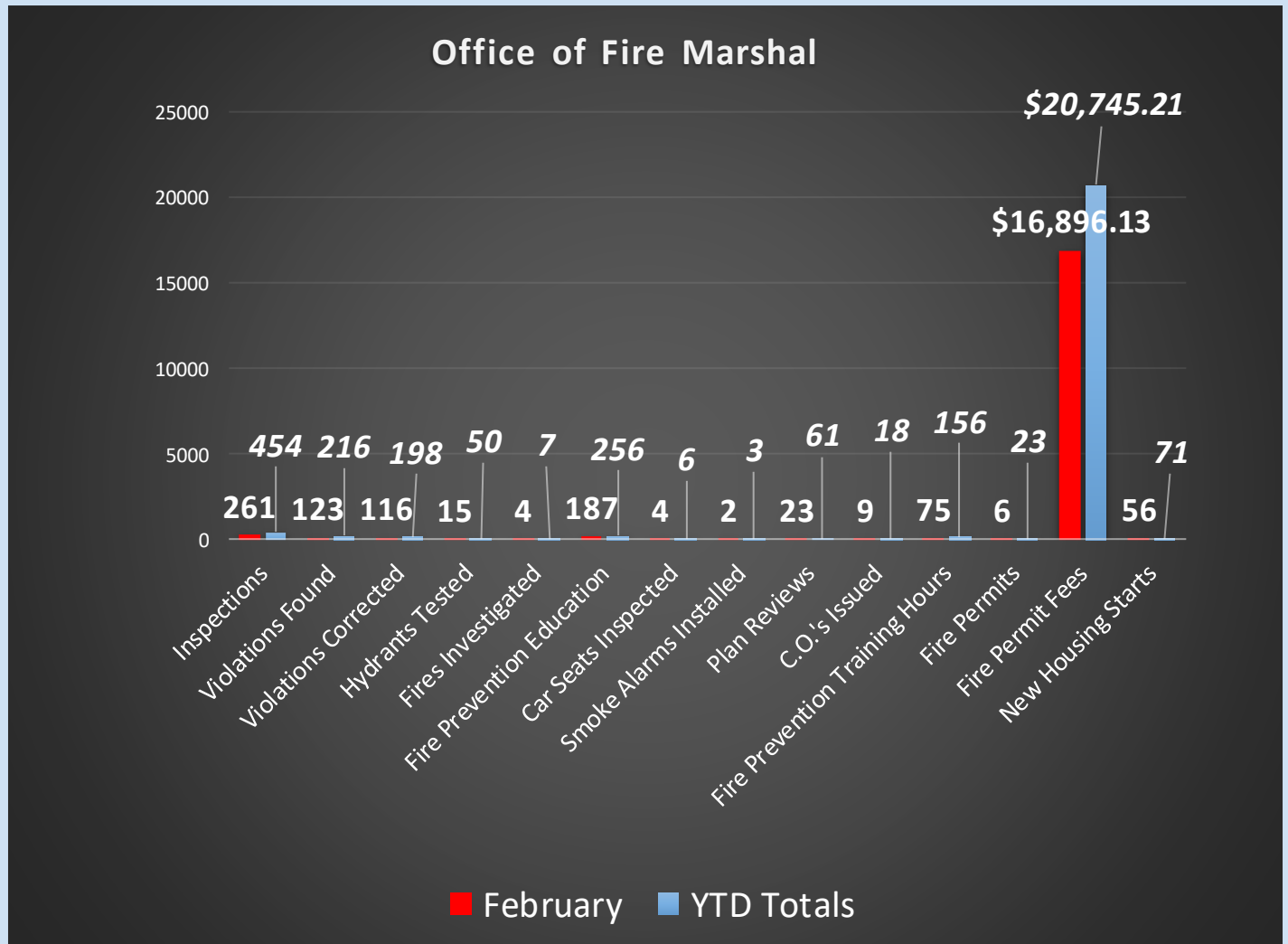


2-28-2023—101 Davis Ave—Structure Fire

BAT41, BAT11, EN41, EN42, EN56, EN151, EN97, L14, TW41, DC41 and CH41 responded to a structure fire that was threatening another structure. Upon arrival crews found a detached garage/storage building that was burning and starting to burn the residence. Crews quickly extinguished the fire. No injuries reported. Scene was turned over to Fire Marshal for investigation.



Administration Division



STAFFING REPORT					
DIVISION	TOTAL POSITIONS ALLO-CATED	CURRENT STAFFING LEVEL	STAFF ON LIGHT DUTY/LEAVE	POSITIONS TO FILL	IN PROCESS
OPERATIONS	49	48	2	1	0
ADMINISTRATION	7	7	0	0	0
PART-TIME	11	7	0	4	2

Category Number:
Item Number: 5.



AGENDA
GREER CITY COUNCIL
3/28/2023

Municipal Court Activity Report - February 2023

ATTACHMENTS:

Description		Upload Date	Type
📎	Municipal Court Monthly Report February 2023	3/20/2023	Backup Material



MUNICIPAL COURT

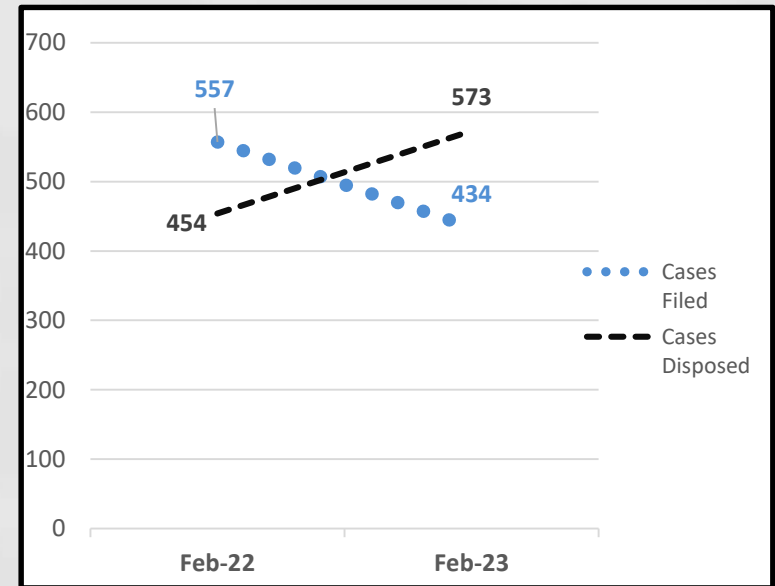
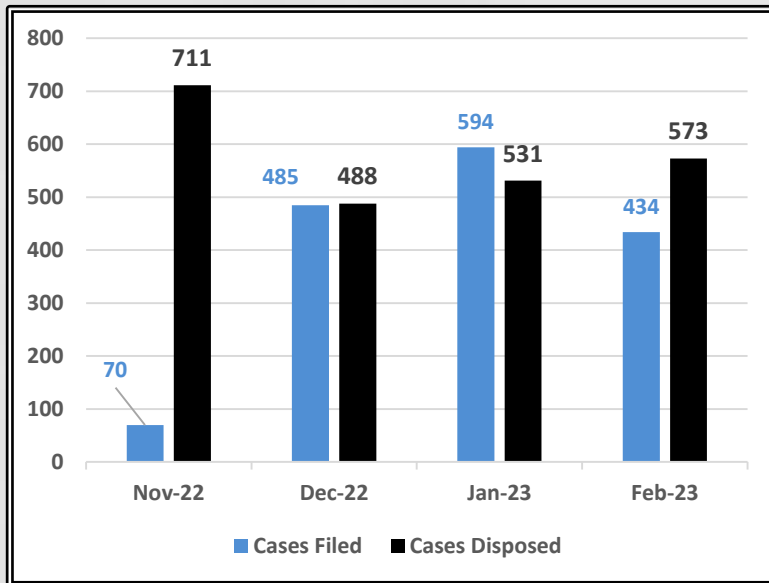
Monthly Report
February 2023

CASE LOAD

Traffic, Criminal and City Ordinances

Total cases disposed: 454

Total cases filed by officers: 557

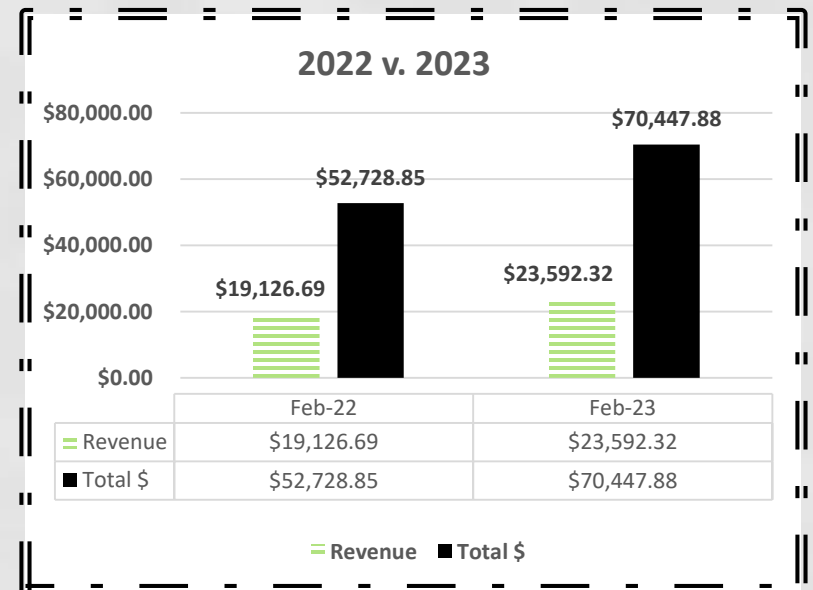
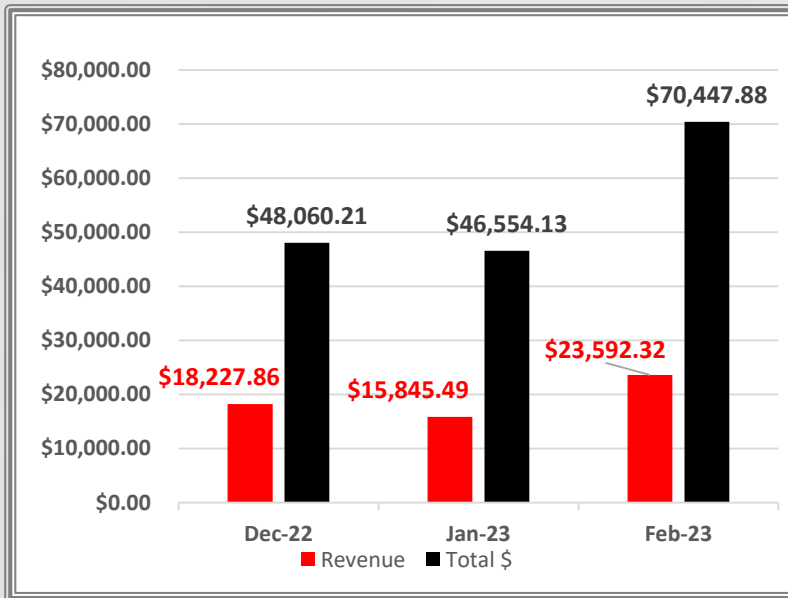


Arrest Warrants, Bench Warrants & Search Warrants

Arrest Warrants issued	68
Arraignments-# of defendants	115
Arraignments-# of charges	227
Bench Warrants issued	15
Bench Warrants served	11
Search Warrants issued	11

Revenue

Total Revenue	\$23,592.32
Sent to State Treasurer	\$33,616.76
Victim Assistance Funds	\$ 3,687.80
Total Collected	\$70,447.88



ACTIVITY

- Traffic Court was held February 1, 8, 15 and 22.
- DV Court was held February 9.
- Preliminary Hearings were held February 3.
- K. Pressley attended MCAA in Columbia as a trainer/speaker February 13-15.
- K. Pressley, D. Livingston, E. Demko and D. Dowling attended a gun law class in Spartanburg, February 17.

Category Number:
Item Number: 6.



AGENDA
GREER CITY COUNCIL
3/28/2023

Parks, Recreation & Tourism Activity Report - February 2023

ATTACHMENTS:

Description	Upload Date	Type
▢ Parks, Recreation & Tourism Activity Report - February 2023	3/23/2023	Backup Material

Parks, Recreation & Tourism

February 2023 Monthly Report

Current/Ongoing Projects

Administration

South Tyger River Greenway

- Keck + Wood continues to work on the revisions to the Greenway plans connecting to Greer High School, as requested by the Greenville County School District.
- HOA President for Cypress Landing Rick Glover has indicated that he has obtained the necessary signatures for granting the City the easement to connect to Spyglen Way. We expect to receive the signed documents in early March.

Wards Creek Greenway

- Staff is working on documentation for ROW (Right of Way) on Greenleaf Dr. Ext.

Turner Field Improvements

- Keck + Wood is working on addressing comments from the City's plan review.

Kids Planet

- Keck + Wood is working on engineered construction documents.
- We are finalizing the design plan for the art project using the old fence pickets and the installation on the split-rail fence that runs parallel to the parking lot.

Greer Golf Clubhouse and Pool Area Renovation

- P+F Construction is finalizing MEP Engineered drawing this week. After that, staff will meet once more for review, before submitting for plan review.

O.C. Roof Repair

- Construction started on February 20 and we have finalized all the design choices in regards to carpet, tile, paint and other finishes.

Miscellaneous

- Ann Cunningham and Red Watson have worked on updating the City's list of assets for the Parks, Recreation & Tourism Department for insurance purposes.
- On February 13, staff met with John Goughneour to discuss current FY projects, and requests for upcoming projects.

Division Highlights

Athletics

- Rugby
 - The South Conference Collegiate Rugby Tournament was held at Country Club Park on Saturday, February 25. Approximately 20 teams from all around the southeast competed. Matches started at 9am and finished at 6pm.
 - The South Carolina High School State Finals was held at Country Club Park on Sunday, February 26, for Girls Varsity, Junior Varsity Boys, and Varsity Boys.
 - Hosting collegiate club/intramural rugby tournaments is something we will need to evaluate in the future, due to the wear and tear from these tournaments.
 - Staff facilitated practices for the Greer 76ers Varsity and JV Boys at Country Club Park on Mondays and Wednesdays. They are set to attend Ruggerfest a national tournament March 3-5. We have 40 boys in our high school program competing this season.
 - The Girls 76ers Rugby season has complete. We did not have enough participation from high school girls to support a full team so the Atlanta Youth Rugby and Greer 76ers Girls teamed up for the Christmas 7s and South Carolina Rugby Jamboree Play each weekend. Looking at the

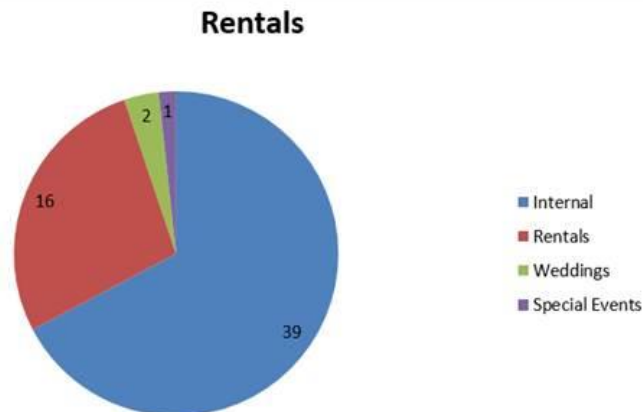
- participation rate over the past two years a decision was made to eliminate the girls division beginning next year, until a time where interest is higher in our community
- Our Staff hosted a postseason meeting with Greer 76ers Junior Rugby program director Andy Garcia. Instead of a travelling for competition in the fall and winter, the junior program is going to operate a flag league during June 1 – July 27. Many of our previous participants are choosing to play traditional varsity sports such as basketball, baseball, football, and soccer over rugby. It is our hope that this time frame will garner higher participation.
- Our staff facilitated the Tomahawk Youth Wrestling practice at Tryon Recreation Center, which was relocated, due to Cultural Arts programming in the Cannon Center.
 - The South Carolina State Open Championships for wrestling are being held, at Lander University. After the Championships our wrestling season will conclude.
- Completed all Greer Baseball Club Preseason Activities – Evaluations and Drafts
 - Practices for all teams begin the week of February 27. In total 500 kids are utilizing a baseball diamond this spring season. So we practice will practice Monday through Sunday using Century Park, Country Club Park, Turner Field, Riverside Middle School and Davenport Field.
 - Baseball/Softball continues to be the largest program offered by the City of Greer, this year we will eclipse 700 participants through both seasons.
 - Baseball/Softball diamonds continues to be a big need for the City of Greer, with 5 of our 6 leagues met waiting list capacity.
- Completed Greer Girls Softball Drafts
 - Practices for all teams begin the week of February 27.
 - This program utilizes Victor Park Monday-Sunday for practices and games.
 - All 3 age divisions are currently on a waiting list.
- Concluded the 22-23 Greer PRT Youth Basketball League
 - All regular season teams competed in league playoffs.
 - All Star teams competed in district tournaments. Unfortunately, this season our 8U, 10U, and 12U all-star teams were eliminated in the 2nd round of district play.
 - Overall, the 22-23 season was a tremendous success with overwhelming participation. The residents of Greer and the surrounding area have really bought in to this program. We are excited to see where it goes.

Cultural Arts

- The Greer Children's Theatre performed The Lion King, Jr. at the Cannon Centre on Feb 24-26. Rehearsals were held every evening with performances on Friday at 7pm, Saturday at 2pm & 7pm, and Sunday at 2pm. All shows are sold out for both weekends.
- Clay classes are on a spring break until mid-March, Zumba classes continue on Wednesday evenings, and Candle making classes continue to meet on Saturdays.
- The GCAC Board and Student Board held their monthly meeting on Monday, February 13 at the Tryon Recreation Center while Lion King, Jr. rehearsal was going on.
- The 2023 City of Greer Juried Art Show was judged by 5 people - employees, artists and business leaders on Thursday, February 16. The show was hung at the Center for the Arts on Friday February 17. The winners will be recognized on March 2.
- The Foothills Philharmonic woodwind quartet performed at the Center for the Arts on Saturday, February 18, with the largest crowd to date, of 83 people.

Events

- We are currently planning for the upcoming Food Truck Rollouts, International Festival, Moonlight Movies, and Freedom Blast.
- Emma Mann and Jacob Motter attended the Southeast Festival and Event Association Annual Conference from February 19-22.
- The Ambassadors have continued to provide excellent customer service to 650 passengers in downtown Greer Station in the month of February.
- **The Events Division hosted 58 total events – Internal: 39, Rentals: 16, Special Events: 1, Wedding Events 2. A total of 4,075 guests visited the City of Greer Events Center**



Golf

- Bids for course-wide fertilizer were opened February 23. Staff is reviewing them.
- We have experienced several issues with Club Prophet, our POS Software used in the Pro Shop. We are working with the companies support staff to resolve these issues.
- Bid specifications for the new practice green have been submitted to procurement for advertising. The goal is to open bids in mid-March, award to council at the following meeting, construct in April, sod in May, and open in June.
- Staff has updated and completed an Excel spreadsheet containing Greer Golf's equipment to be included in the City's asset list.

Recreation

- Senior Action met at Needmore Recreation Monday-Fridays for activities and lunch (20-25 seniors daily).
- Archery met at Victor Gym on Monday nights and City Stadium on Wednesday nights (48 participants).
- Never Alone Continued on Tuesdays at the Tryon Recreation Center.
- SOAR hosted two Line Dancing sessions with 60 in attendance at the Cannon Centre on Wednesdays.
- SOAR hosted a Bingo Day with 26 participants at City Hall.
- SOAR hosted a Gentle Yoga classes with 21 participants at City Hall.
- SOAR hosted a Movie Day with 20 participants at City Hall.
- SOAR hosted a Book club meeting with 6 participants at City Hall.
- Hosted Pickleball Clinics (112 attendees) and Open Play sessions (102 registrants) at Victor Gym and Tryon Park (148 registrants).
- Needmore Afterschool program continued at the Needmore Community Center.
- Creative Advancement Afterschool program began at Victor Gymnasium.
- The DAV monthly meeting was held at Tryon Recreation Center.
- The Artifacts monthly meeting was held at the Tryon Recreation Center.

- Justin Miller certified members of the Events Division in CPR, First Aid, and AED use.
- **Rentals:** Recreation Centers - 3; Kids Planet - 24

Tourism

- Lindsey Shaffer attended a virtual seminar on “Community Connection through Bike Infrastructure” and “Local Tourism” on Wednesday, February 15.
- Lindsey Shaffer attended the Southeast Festivals & Events Association’s Annual Conference February 19 – 22. Lindsey is the Vice-Chair of the SFEA Board.
- Lindsey Shaffer and Robbie Davis met with Sharon Murry, the GM for the Spinning Jenny, for a Renaissance Faire update on Thursday, February 23.
- Lindsey Shaffer and Justin Miller interviewed candidates for a Tourism Recreation Leader.

<u>UPCOMING EVENTS</u>	<u>CURRENT PROJECTS</u>
<ul style="list-style-type: none"> • City of Greer Juried Arts Exhibition – March 2023 (Center for the Arts) • Annual Juried Art Show Reception – March 2 (Center for the Arts) • GCT presents Lion King, Jr. - March 3-5 (Cannon Centre) • Food Truck Rollout – March 10, April 7, May 12, August 18, September 22, and October 20 (City Park) • Summer Camp Registration Opens – March 13 (City of Greer Residents) and March 20 (Non-City Residents) • Foothills Philharmonic Performance – March 18 (Center for the Arts) • Opening Day – April 1 (Century Park, Country Club Park, and Victor Park) • Eggtastic Easter Event – April 1 (City Park) • Foothills Philharmonic Performance – April 15 (Center for the Arts) • Dedication of the Butterfly Project and showing of the movie “Beloved” – April 18 (Center for the Arts) • International Festival – April 29 (City Park) • Greer Farmers Market – Tuesdays May 2 – August 29; September 19, October 17, and November 14 (City Park) • Tunes in the Park – May 20, June 10, July 22 and August 19 (City Park) • Moonlight Movies – Thursdays June 8 - 29 and July 13 - August 3 (City Park) • Freedom Blast – June 24 (City Park) 	<ul style="list-style-type: none"> • Bensons Automotive Kids Planet • Greer Golf Redesign Clubhouse & Pool Area • H.R. Turner Park Renovation • Operations Center Roof Repair • South Tyger River Greenway • Wards Creek Greenway

The City of Greer Parks and Recreation Department is committed to fulfilling our mission of providing quality recreational experiences while administering the values of community image, human development, preservation of environmental resources, health and wellness, economic development, and cultural unity.

Category Number:
Item Number: 7.



AGENDA
GREER CITY COUNCIL
3/28/2023

Police Department Activity Report - February 2023

ATTACHMENTS:

Description	Upload Date	Type
☐ Police Department Activity Report - February 2023	3/20/2023	Backup Material

Greer Police Department Monthly Report

**February
2023**



Command Staff

Chief Hamby

Captain Pressley- Support
Services Bureau

Captain Fortenberry-
Operations Bureau

Lt. Forrester- Administrative
Division

Lt. Blackwell- Operational
Support Division

Lt. Richardson- Patrol
Division

Lt. Varner- Criminal
Investigations Division

102 S. Main St. Greer, SC 29650

Administrative Division

Monthly Staffing Report

DEPARTMENT	TOTAL POSITION ALLOCATED	CURRENT STAFFING LEVEL	STAFF ON LIGHT DUTY/FMLA/MILITA RY LEAVE	POSITIONS TO FILL
SWORN OFFICERS	66 FT/1 PT	62 FT/0 PT	0	4 FT/1 PT
COMMUNICATIONS	14 FT	13 FT	0	1 FT
DETENTION	7 FT	7 FT	0	0 FT
ADMINISTRATIVE	8 FT/1 PT	8 FT/1 PT	0	0 FT/0 PT
ANIMAL CONTROL	1 FT	1 FT	0	0
TOTAL	96 FT/2 PT	91 FT/1 PT	0	5 FT/1 PT

Monthly Records and Data Entry

REPORTS CODED	510
TRAFFIC CITATIONS ENTERED IN DATABASE	351
RECORDS REQUESTS/FOIA	192
INCIDENT/SUPPLEMENTAL REPORTS ENTERED/COPIED OVER	510
EXPUNGEMENTS RECEIVED	0
EXPUNGEMENTS RESEARCHED/COMPLETED/SEALED	0
TOTAL EXPUNGEMENTS REMAINING	134
CRIMINAL HISTORY CHECKS	12
SLED SUBMITTAL	1

MONTHLY STATISTICS

Volunteer Hours

78

OF VOLUNTEER
HOURS THIS MONTH

218

OF VOLUNTEER
HOURS YTD

Training

14

OF CLASSES THIS
MONTH

18

OF CLASSES YTD

157

OF STUDENTS THIS
MONTH

193

OF STUDENTS YTD

92

OF CLASS HOURS
THIS MONTH

100

OF CLASS HOURS
YTD

856

TOTAL HOURS TRAINING
TIME THIS MONTH

931

TOTAL HOURS
TRAINING TIME YTD

School Resource Officer Report

DAILY ACTIVITIES	TOTAL
CONFERENCE WITH TEACHERS/ADMIN STAFF	50
MEETINGS WITH STUDENTS	94
PHONE CONFERENCES WITH PARENTS	22
CONFERENCES WITH PARENTS (IN-PERSON)	16
SCHOOL EVENTS	13
CLASSROOM VISITS	22
INCIDENT REPORTS	4
FOLLOW UPS	3

Community Outreach



First ever Senior Luncheon
collaboration with Greer
Community Ministries!

Community Helpers
Day at Covenant
Christian Academy



Officer Grimstad met
with some children
from the community
and gave them a tour
of the PD.

Operational Support Division

Communications Center

DISPATCH AND CALL FREQUENCY	JAN-23	FEB-23	% CHANGE FROM PREVIOUS MONTH	YEAR TO DATE 2022	YEAR TO DATE 2023	% CHANGE FROM PREVIOUS YEAR
NUMBER OF 911 CALLS	1,437	1,329	-7.5%	2,632	2,766	5.1%
INCOMING 7-DIGIT LINE CALLS	5,005	4,843	-3.2%	9,042	9,848	8.9%
POLICE CALLS FOR SERVICE	3,488	2,751	-21.1%	4,915	6,239	26.9%
FIRE CALLS FOR SERVICE	1,111	998	-10.2%	2,120	2,109	-0.5%
TOTAL DISPATCHED CALLS	4,599	3,749	-18.5%	7,035	8,348	18.7%

Detention Center

INMATE AND PROCESS TOTAL	JAN-23	FEB-23	% CHANGE FROM PREVIOUS MONTH	YEAR TO DATE 2022	YEAR TO DATE 2023	% CHANGE FROM PREVIOUS YEAR
NUMBER OF ADULTS PROCESSED	110	115	4.5%	199	225	13.1%
TRANSPORTED TO GREENVILLE	19	19	0.0%	47	38	-19.1%
TRANSPORTED TO SPARTANBURG	18	18	0.0%	33	36	9.1%
INMATES TRANSPORT BY 600	8	8	0.0%	40	16	-60.0%
NUMBER OF TRIPS MADE BY 600	7	6	-14.3%	30	13	-56.7%

Animal Control Services

ANIMAL CONTROL ACTIVITY	JAN-23	FEB-23	% CHANGE FROM PREVIOUS MONTH	YEAR TO DATE 2022	YEAR TO DATE 2023	% CHANGE FROM PREVIOUS YEAR
CALLS FOR SERVICE	142	131	-8%	136	273	101%
LIVE DOGS PICKED UP	9	7	-22%	9	16	78%
LIVE CATS PICKED UP	2	1	-50%	2	3	50%
TRAPS DELIVERED	2	6	200%	1	8	700%
FOLLOW UP CALLS	7	9	29%	14	16	14%
CITATIONS ISSUED	0	0	0	2	0	-100%
DOGS TAKEN TO COUNTY SHELTER	0	0	0	0	0	0
CATS TAKEN TO COUNTY SHELTER	7	9	29%	15	16	7%

Property and Evidence/Court Security

EVIDENCE & TIME MANAGEMENT	JAN-23	FEB-23	% CHANGE FROM PREVIOUS MONTH	YEAR TO DATE 2022	YEAR TO DATE 2023	% CHANGE FROM PREVIOUS YEAR
TOTAL ITEMS ENTERED	181	245	35.4%	205	426	107.8%
NEW ITEMS ENTERED	144	153	6.3%	193	297	53.9%
ITEMS PURGED	28	327	1067.9%	251	355	41.4%
ITEMS RELEASED	9	2	-77.8%	7	11	57.1%
CASES SENT TO CO 23 LAB	10	8	-20.0%	13	18	38.5%
CASES SENT TO CO 42 LAB	15	6	-60.0%	8	21	162.5%
HOURS SPENT AT LABS	4.5	4	-11.1%	9.5	8.5	-10.5%
HOURS SPENT IN COURT	36	38	5.6%	67.5	74	9.6%

Patrol Division

POLICE PATROL ACTIVITY	FEB-22	FEB-23	% CHANGE FROM	YTD 2022	YTD 2023	% CHANGE
CITATIONS ISSUED	511	371	-27.40%	887	908	2.37%
ARRESTS	132	126	-4.55%	210	255	21.43%
INCIDENT REPORTS	390	366	-6.15%	716	738	3.07%
COLLISION REPORTS	131	137	4.58%	262	295	12.60%
WARNING CITATIONS	440	301	-31.59%	774	702	-9.30%
PATROL MILES	39,073	45,403	16.20%	81,112	92,210	13.68%
WARRANTS SERVED	80	69	-13.75%	132	138	4.55%

Proactive Efforts

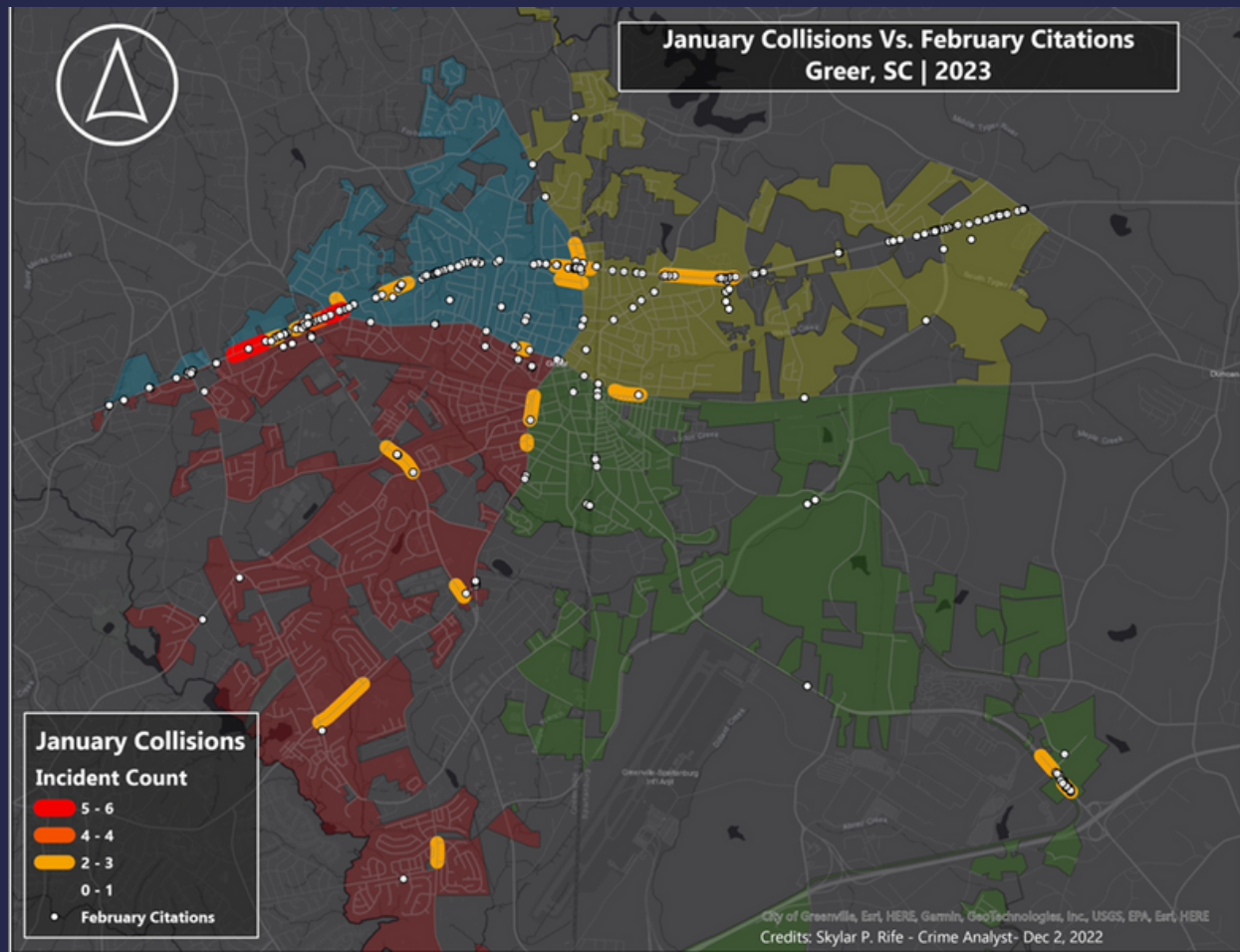
DUI ARRESTS	DRUG CHARGES	DRIVING UNDER SUSPENSION	GENERAL SESSIONS CHARGES	WARRANTS OBTAINED
7	18	38	38	36

Drugs Seized

MARIJUANA	METH	HEROIN	COCAINE
400.1 GRAMS	62.8 GRAMS	75.3 GRAMS	6.7 GRAMS

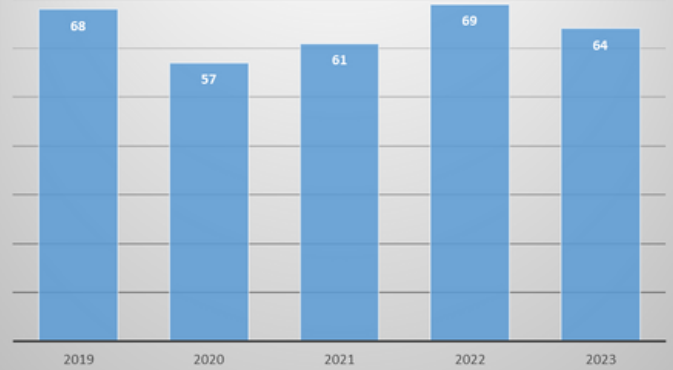
Patrol Division

Monthly Traffic Collision and Enforcement Efforts

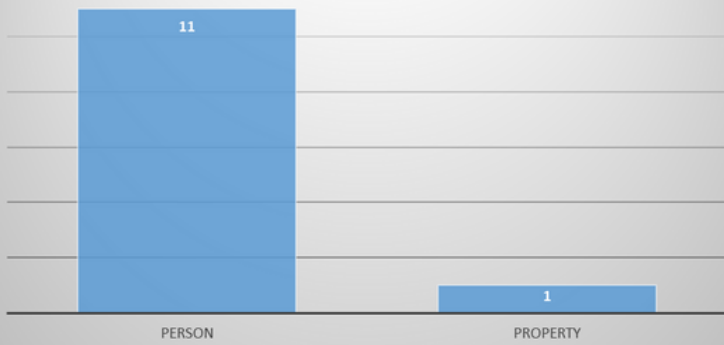


Criminal Investigations Division

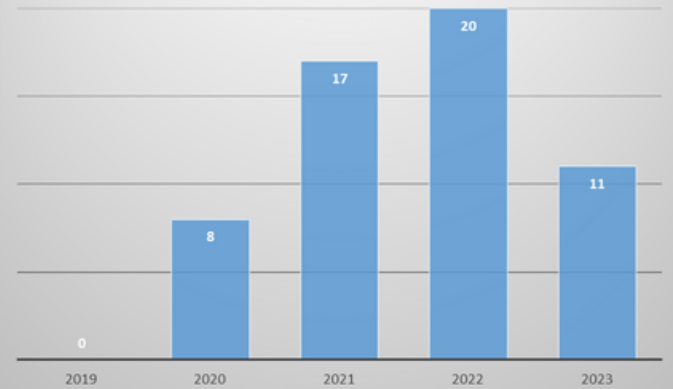
**CID Assigned Cases
2023 Total YTD**



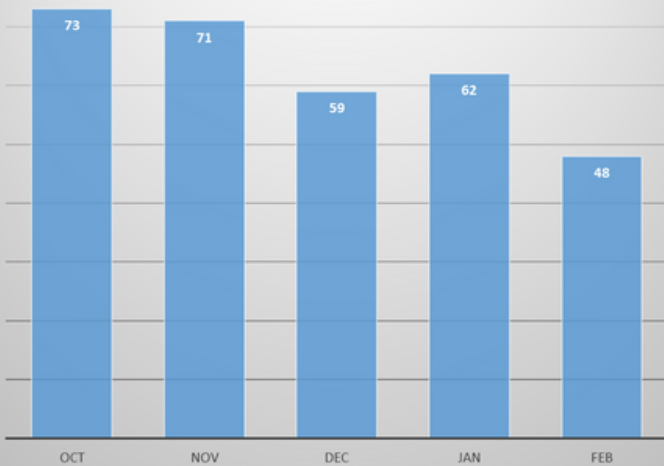
CID Closed Cases - 2023 Total
(Admin, Ex-Clear, No Status, Unfounded, Arrest)



**White Collar Cases
2023 Total**



**New VA Cases
FEB 2023**



Category Number:
Item Number: 8.



AGENDA
GREER CITY COUNCIL
3/28/2023

Public Services Activity Report - February 2023

ATTACHMENTS:

Description		Upload Date	Type
📎	Public Services Activity Report - February 2023	3/22/2023	Backup Material



TO: Andy Merriman, City Administrator
Tammy Duncan, City Clerk

FROM: Public Services Department

SUBJECT: February - 2023 Activity Report

DATE: March 22, 2023

Grounds & Street Maintenance Divisions

- Staff placed mulch at Station 56 on Hwy 14
- Staff started preparing ballfields for the upcoming Spring season
- Staff made repairs to the flag poles at Veterans Park
- Staff began growing season landscape maintenance and pruning shrubs at parks and facilities
- Dreamscape mulched all of City Park and Downtown areas

- Staff installed a new zip line cable at Kids Planet
- Staff installed two new batting cage nets at Century Park
- Staff drained and cleaned both fountains at City Park
- Staff continued to run leaf trucks
- Staff poured concrete pads for Buddy Benches at City Parks and Kids Planet
- Staff repaired pavers on Trade St
- Staff repaired pot holes on the following roads:
 - Sunnydale Dr.
 - Pine and Wood St
 - Broadus St.
 - 11th St.
 - 10th St.
 - 9th St.
 - Carey Ave
 - Able St.
- Staff repaired or replaced signs at the following locations:
 - Wilson and 11th St - Street marker
 - Snow and 25th St - Street marker
 - Miller and Arlington - Stop Sign
- Hauled seven [7] loads of construction material to landfill
- Hauled four [4] loads of E-Waste to landfill

Stormwater

- Staff ran camera lines and jet truck in storm drains on W Arlington, 201 E James St and 103 E James St
- Staff rebuilt curblin and catch basin on Ballenger St
- Staff reconstructed 125' ditch line with fabric stone on Dobson Rd
- Staff repaired storm drain lid at Palmer St and Pelham St

CPW Street Cut Repairs

Two [2] CPW road cuts on City Roads:

Brannon Ave and Geranium

Staff completed permanent patches on [13] thirteen previous
Temporary patches.

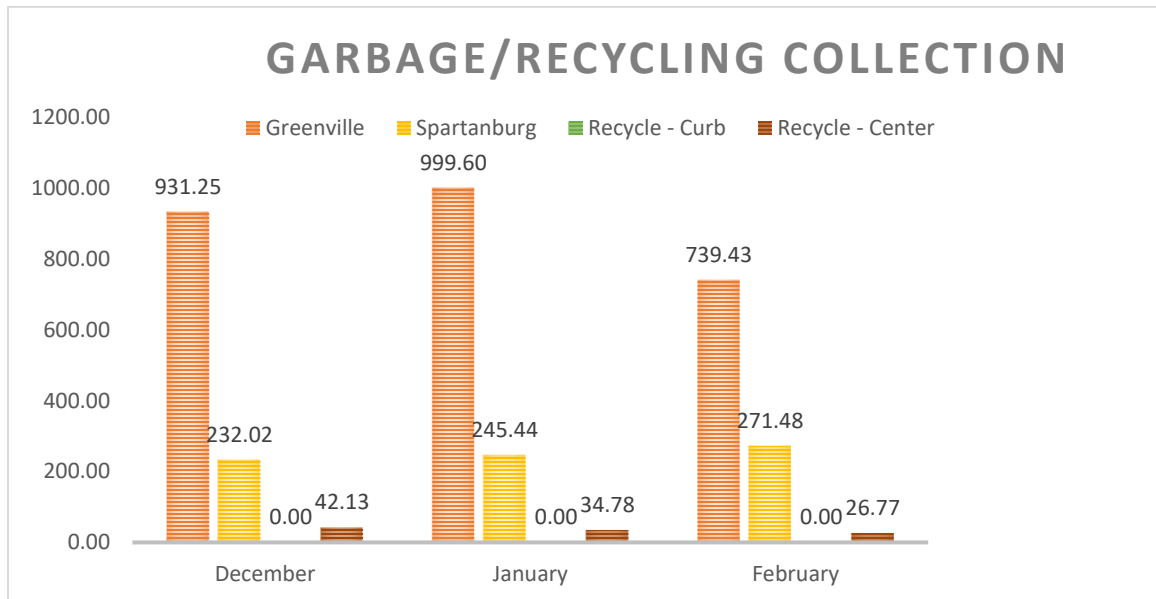
Bins & Carts Delivered

NEW HOME CARTS: **40** REPAIRED/REPLACED CARTS: **31**

YARD WASTE CARTS: **0** DELIVERED RECYCLE BINS: **5**

2ND TRASH CART: **2**

Solid Waste Division



YTD Fiscal Year Totals: Greenville 6384.43 + Spartanburg 2585.20 = **8969.63 Total**

Category Number:
Item Number: 9.



AGENDA
GREER CITY COUNCIL
3/28/2023

Website Activity Report - February 2023

ATTACHMENTS:

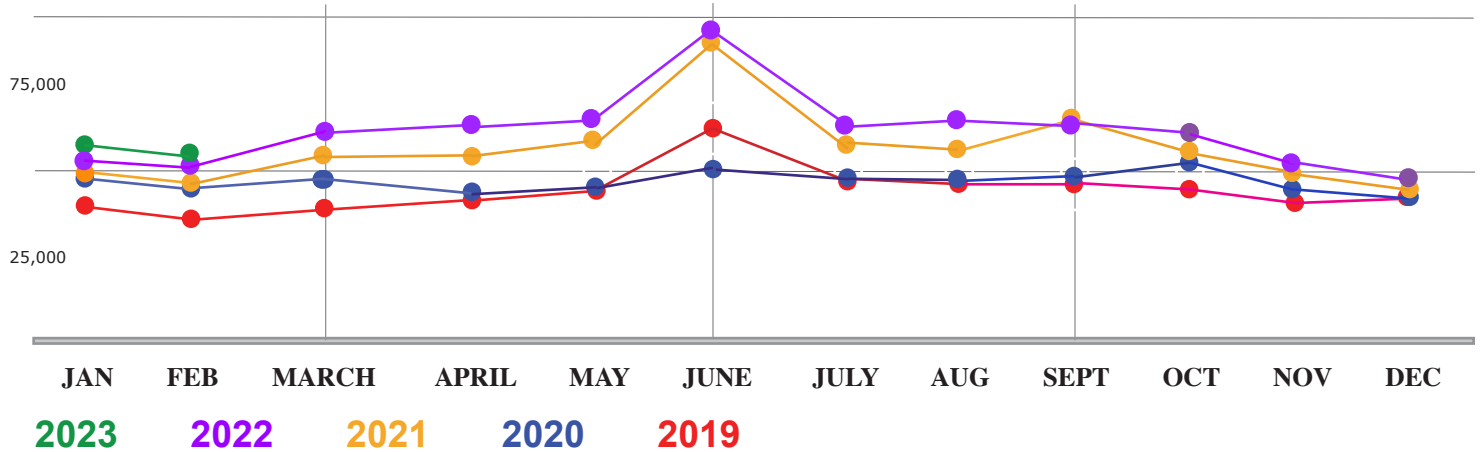
Description	Upload Date	Type
📎 Website Activity Report - February 2023	3/13/2023	Backup Material



City of Greer Website

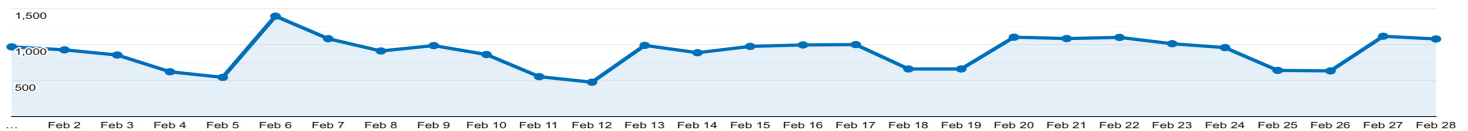
February 2023 Monthly Report

Total Page Views by Month



Daily sessions at www.cityofgreer.org

February 1-28, 2023



Visitors to www.cityofgreer.org

Total Users: 22,496 from 98 countries
Desktop: 49.9 %
Mobile: 48.4 %
Tablet: 1.7 %

Retention

Monthly Page Views: 56,384
Avg Pages per Session: 2.02
Average Time per Session: 1 minute 27z seconds

Traffic Sources

Search Engines 58.2 %
Direct Traffic: 33.6 %
Social/Referral: 8.2 %

Most Viewed Pages

1. Home
2. Event Center Rentals
3. Parks, Recreation & Tourism
4. Youth Baseball
5. Youth Basketball
6. Police Department
7. Youth Sports
8. City Directory
9. Things to Do
10. City Departments
11. Why Live in the City of Greer?
12. Sports
13. Trash & Yard Waste
14. Century Park
15. Detention Center

Category Number:
Item Number: 1.



AGENDA
GREER CITY COUNCIL
3/28/2023

Second and Final Reading of Ordinance Number 3-2023

Summary:

AN ORDINANCE AUTHORIZING THE CONVEYANCE OF CERTAIN REAL PROPERTY IN THE CITY OF GREER (Action Required)

ATTACHMENTS:

Description	Upload Date	Type
▣ Ordinance Number 3-2023	3/15/2023	Ordinance
▣ Ord 3-2023 Exhibit A Survey	3/15/2023	Exhibit
▣ Ord 3-2023 Exhibit B Quit Claim Deed	3/15/2023	Exhibit

ORDINANCE NUMBER 3-2023

**AN ORDINANCE AUTHORIZING THE CONVEYANCE OF
CERTAIN REAL PROPERTY IN THE CITY OF GREER**

WHEREAS, the City of Greer owns certain real property identified as an alley between Randall Street, Depot Street, and E. Poinsett Street and further identified as “Parcel B/2,165 square feet/0.050 acres” on a survey for Ace Restaurant Properties, LLC dated July 8, 2021 attached hereto as Exhibit “A” (hereinafter the “Alley”); and,

WHEREAS, the City of Greer received a request from Chris and Denise Vandenberghe (collectively “Vandenberghe”) for the City to convey the Alley to Vandenberghe; and,

WHEREAS, Vandenberghe and their company, Ace Restaurant Properties, LLC, are the owners of the properties located on both sides of the Alley; and,

WHEREAS, Vandenberghe plans to use a portion of the Alley for improvements to their existing properties and to keep the Alley clean and maintained; and,

WHEREAS, the alley is abandoned, does not provide any means of public access to any of the surrounding properties, and does not benefit the City or the public; and,

WHEREAS, pursuant to S.C. Code Ann. §5-27-150, a City containing more than five thousand inhabitants may open new streets, close, widen, or alter streets in the city when, in its judgment, it may be necessary for the improvement of the city; and,

WHEREAS, based upon the foregoing findings, the City desires to convey the Alley to Vandenberghe; and,

WHEREAS, pursuant to S.C. Code § 5-7-40, a municipality may convey or dispose of property it owns by Ordinance.

NOW, THEREFORE, BE IT ORDAINED, by the Mayor and Council of the City of Greer, that the Mayor of the City is hereby authorized, empowered, and directed to execute, acknowledge and deliver the quit-claim deed attached hereto as Exhibit “B” to convey any and all interest the City may have in the Alley to Chris and Denise Vandenberghe.

This Ordinance shall be effective upon second reading approval thereof and no further authorization is required to execute and deliver all documents related to the conveyance contemplated by this Ordinance.

Richard W. Danner, Mayor

ATTEST:

Tammela Duncan, Municipal Clerk

Introduced by: Councilwoman Judy Albert

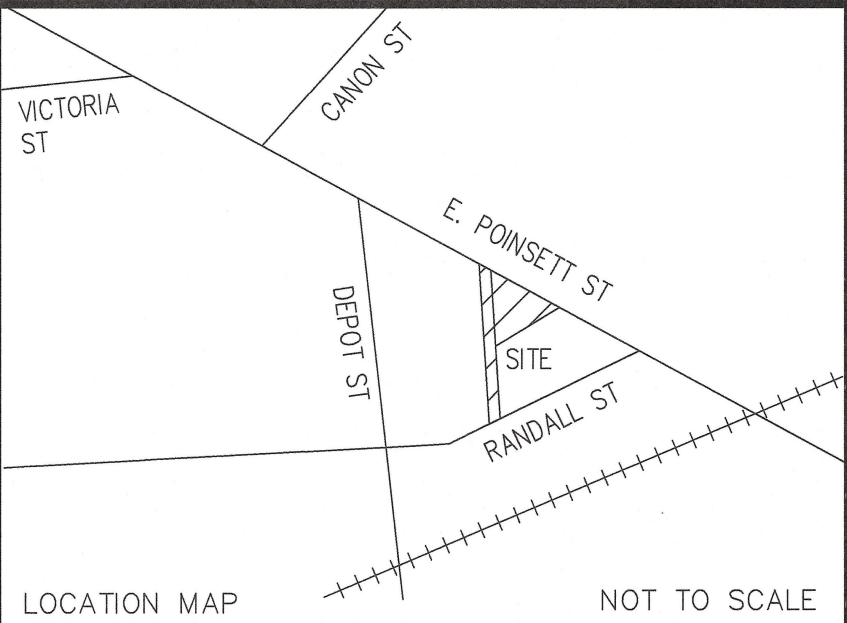
First Reading: March 14, 2023

Second Reading: March 28, 2023

Approved as to form: _____
Daniel R. Hughes
City Attorney

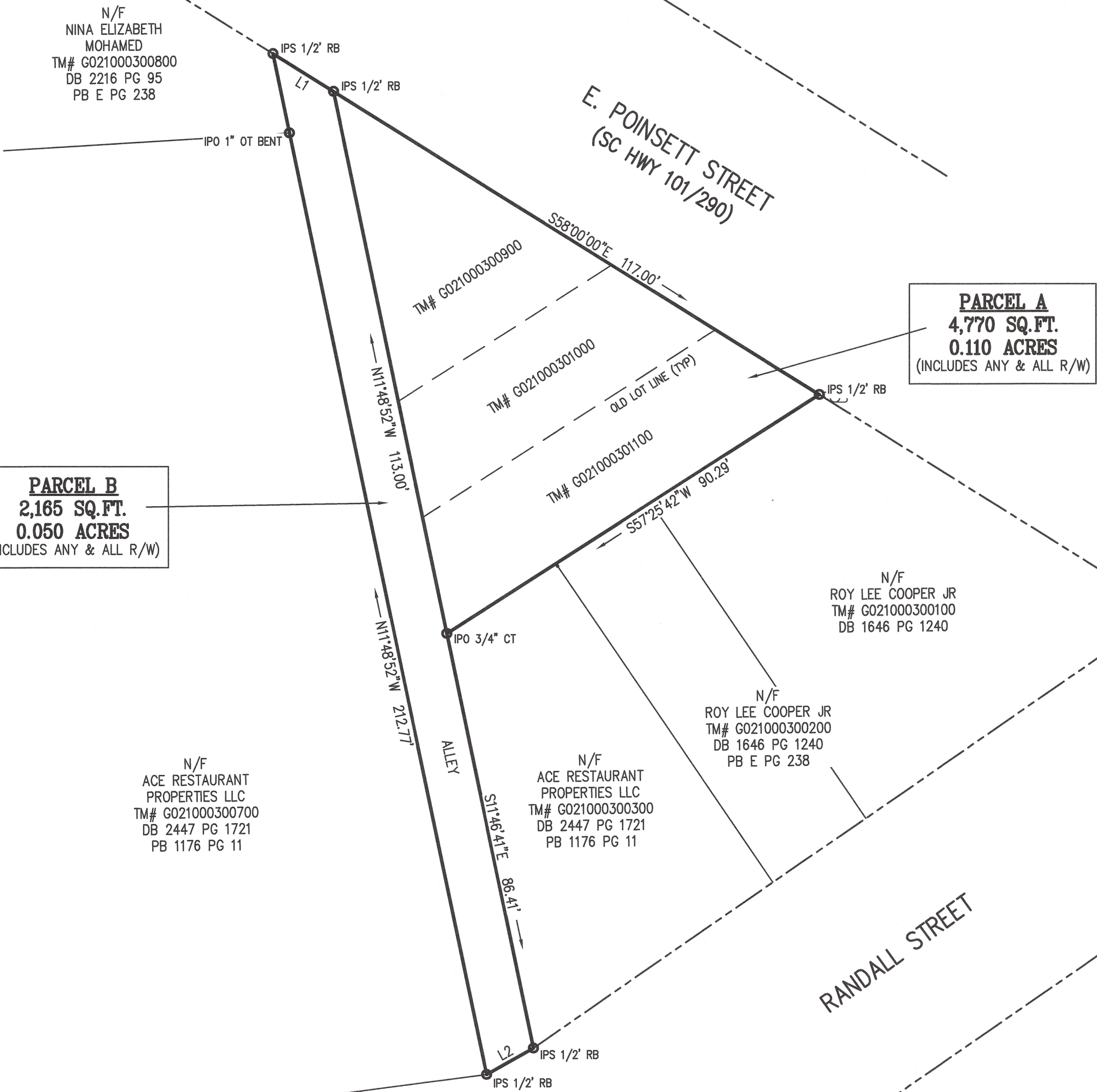
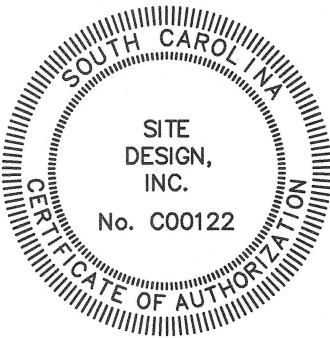
NOTE: EXCEPT AS SPECIFICALLY STATED OR SHOWN ON THIS PLAT, THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: RIGHTS-OF-WAY, EASEMENTS, OTHER THAN POSSIBLE EASEMENTS THAT WERE VISIBLE AT THE TIME OF MAKING THIS SURVEY; BUILDING SETBACK LINES; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS; ZONING OR OTHER LAND USE REGULATIONS AND ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE. - ANY FLOOD PLAIN DATA SHOWN HEREON IS AN APPROXIMATE LOCATION GRAPHICALLY PLOTTED FROM THE REFERENCED FEMA MAP UNLESS OTHERWISE NOTED. - THIS SURVEY DOES NOT CONSTITUTE A TITLE RESEARCH, FLOOD STUDY, WETLAND DELINEATION OR ENVIRONMENTAL INSPECTION BY SURVEYOR.

EXHIBIT A



I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.

A. CLAY JONES, P.L.S.
S.C. REG. NO. 26210



LINE TABLE		
LINE #	BEARING	LENGTH
L1	S58°00'00"E	14.57
L2	S60°48'49"W	10.96

REFERENCE
DB 1497 PG 578
DB 1208 PG 508
DB 1202 PG 591

PB E PG 238
PB 1176 PG 11

NOTE:
THE FOLLOWING TRACTS ARE TO BE
COMBINED INTO ONE TRACT:
TM# G021000300900
TM# G021000301000
TM# G021000301100

LEGEND

BL BUILDING LINE	CATV CABLE TV PEDESTAL	TC/BC TOP/BOTTOM CURB
CL CENTERLINE	TEL TELEPHONE PEDESTAL	TW/BW TOP/BOTTOM WALL
CMP CORRUGATED METAL PIPE	EM ELECTRIC METER	VCP VITRIFIED CLAY PIPE
CT CRIMP TOP	CB CATCH BASIN	WM WATER METER
DE DRAINAGE EASEMENT	DI DROP INLET	WV WATER VALVE
EP EDGE OF PAVEMENT	ELEC ELEC TRANS	CTV CABLE TV
IPO IRON PIN OLD	FIRE FIRE HYDRANT	X FENCE LINE
IPS IRON PIN SET	GAS GAS METER	FOC FIBER OPTIC CABLE
N&C NAIL & CAP	GV GAS VALVE	GAS GAS LINE
OT OPEN TOP	LP LIGHT POLE	OHP OVERHEAD POWER
RB REBAR	PP POWER POLE	OHT OVERHEAD TELEPHONE
RCP REINFORCED CONC PIPE	GP GUY ANCHOR	SD STORM DRAIN
R/W RIGHT OF WAY	SDMH SD MANHOLE	SS SANITARY SEWER
SD STORM DRAIN	SSMH SS MANHOLE	UGP UNDERGROUND POWER
SS SANITARY SEWER	TMH TELEPHONE MANHOLE	UGT UNDERGROUND TEL
SSE SS EASEMENT	CO CLEAN OUT	W WATER LINE

SURVEY FOR
ACE RESTAURANT PROPERTIES, LLC
GREENVILLE COUNTY, SOUTH CAROLINA

SCALE 1" = 20'	PROPERTY ADDRESS 208, 210, & 212 E. POINSETT STREET	TAX PIN G021000300900 G021000301000 G021000301100
DATE 7-8-21	FIELD CREW MS / NC	DRAWN BY BPO



SITE DESIGN, INC.
CIVIL ENGINEERS - SURVEYORS - LANDSCAPE ARCHITECTS

225 ROCKY CREEK ROAD, GREENVILLE, SC 29615
PH: (864)271-0496
www.sitedesign-inc.com

**GRANTEE'S ADDRESS: 3429 Rutherford Road Extension
Taylors, SC 29687**

NO TITLE SEARCH PERFORMED

STATE OF SOUTH CAROLINA)	
)	QUIT CLAIM DEED
COUNTY OF GREENVILLE)	

KNOW ALL MEN by these presents, that **The City of Greer (Grantor)**, in consideration of the sum of **Ten and 00/100 Dollars (\$10.00)**, no other consideration and by Ordinance of The City of Greer attached hereto as “**Exhibit A**”, receipt of which is hereby acknowledged, has granted, bargained, sold, and released, and by these presents does grant, bargain, sell and release unto **Denise B. Vandenberghe and Chris Vandenberghe (Grantee)**, Its Successors and/or Successors In Trust / Heirs and/or Assigns Forever:

ALL GRANTOR’S RIGHT, TITLE AND INTEREST IN AND TO THE FOLLOWING PROPERTY:

ALL that certain piece, parcel or lot of land, with any and all improvements thereon, in the Town of Greer, County of Greenville, State of South Carolina being shown and designated as Parcel B, containing 0.050 acres, as shown on a plat entitled “Survey for Ace Restaurant Properties, LLC”, dated July 8, 2021, prepared by Site Design, Inc., said most recent plat incorporated herein by reference, to be recorded herewith, and having the metes and bounds as are more particularly described thereon. Plat Book _____ at Page _____.

Parcel B to be combined with TMS #: G02100300900

This conveyance is subject to all restrictions, easements, rights-of-way, roadways and zoning ordinances of record affecting the above described property and to such matters as would appear from a current resurvey of the property.

Together with all and singular the rights, members, hereditaments and appurtenances to said premises belonging or in any wise incident or appertaining; to have and to hold all and singular the premises before mentioned unto the Grantees, and the Grantee’s heirs or successors and assigns, forever.

Category Number:
Item Number: 2.



AGENDA
GREER CITY COUNCIL
3/28/2023

Second and Final Reading of Ordinance Number 4-2023

Summary:

AN ORDINANCE AUTHORIZING THE CITY OF GREER TO ENTER INTO AN AGREEMENT WITH THE COUNTY OF SPARTANBURG PROVIDING FOR FIRE SERVICE AND FINANCIAL ARRANGEMENTS FOR PROPERTIES LOCATED IN THE DUNCAN FIRE SERVICE AREA (Action Required)

ATTACHMENTS:

Description	Upload Date	Type
▣ Ordinance Number 4-2023	3/15/2023	Ordinance
▣ Ord 4-2023 Exhibit A Annexation Agreement	3/15/2023	Exhibit
▣ Ord 4-2023 Tax Map Numbers	3/15/2023	Backup Material

ORDINANCE NUMBER 4-2023

AN ORDINANCE AUTHORIZING THE CITY OF GREER TO ENTER INTO AN AGREEMENT WITH THE COUNTY OF SPARTANBURG PROVIDING FOR FIRE SERVICE AND FINANCIAL ARRANGEMENTS FOR PROPERTIES LOCATED IN THE DUNCAN FIRE SERVICE AREA

WHEREAS, the City of Greer annexed properties located within the Duncan Fire Service Area identified on the Annexation Agreement attached hereto as Exhibit “A” (“Annexation Agreement”) as 5-19-00-208.03; 5-24-00-036.02; 5-24-00-036.01; and, 5-24-00-034.02, which four (4) properties identified as 15.196 acres have been consolidated under tax map number 5-24-00-036.02 (“annexed property”); and,

WHEREAS, Spartanburg County created the Duncan Fire Service Area and the County issued general obligation bonds payable from taxes generated in the Duncan Fire Service Area;

WHEREAS, pursuant to S.C. Code §§5-3-300 through 5-3-315, when an area located within a special taxing district is annexed into a municipality under the provisions of Section 5-3-150 or 5-3-300, the municipality may elect at its sole option to provide the service formerly provided by the district within the annexed area and the municipality is required assume contractually the obligation to pay debt service on an amount of the district’s bonded indebtedness or other obligations; and,

WHEREAS, the City will be the provider of fire and emergency services for the annexed property; and,

WHEREAS, since the annexed property is no longer located within the boundaries of the Duncan Fire Service Area, the Spartanburg County Auditor is required pursuant to the Agreement to remove the Duncan Fire Service millage levy from the annexed property and to place the City’s millage levy on the annexed property; and,

NOW, THEREFORE, City Council of the City of Greer hereby approves the Annexation Agreement attached hereto as Exhibit “A” and authorizes the Mayor to execute this Agreement for fire service to the annexed property; the payment of debt service to the County of Spartanburg; and, for the proper millage to be levied on the annexed property.

This Ordinance shall be effective upon second reading approval thereof and no further authorization is required to execute and deliver the Agreement attached hereto as Exhibit “A.”

Richard W. Danner, Mayor

ATTEST:

Tammela Duncan, Municipal Clerk

Introduced by: Councilman Jay Arrowood

First Reading: March 14, 2023

Second Reading: March 28, 2023

Approved as to form: _____
Daniel R. Hughes
City Attorney

ANNEXATION AGREEMENT

This Annexation Agreement (this "*Agreement*") is entered into this ____ day of _____, 2023 between Spartanburg County, South Carolina (the "*County*") and the City of Greer, South Carolina (the "*City*"). This Agreement is an intergovernmental agreement authorized under Article VIII, Section 13 of the Constitution of the State of South Carolina, 1895, as amended. This Agreement addresses service agreements between special tax districts and municipalities when a municipality annexes property in the service area of a special tax district pursuant to Title 5, Chapter 3 of the Code of Laws of South Carolina, 1976, as amended (the "*SC Code*").

Section 1. Findings of Fact.

- (a) Pursuant to the provisions of Title 4, Chapter 19 of the SC Code and a resolution adopted September 10, 1986, as amended, the County created the Duncan Fire Service Area (the "*Duncan FSA*") to provide fire protection services in a portion of the County near and adjacent to the City.
- (b) On September 10, 2014, the County issued three series of general obligation bond payable from taxes generated in the Duncan FSA (the "*Duncan FSA Bonds*"), which are currently outstanding in the principal amount of \$1,175,096.00 and have a final maturity of November 1, 2029.
- (c) The City has annexed several parcels of real property (the "*Annexed Parcels*") that were within the boundaries of the Duncan FSA. A listing of the Annexed Parcels are on the attached *Exhibit A* which is incorporated herein by reference.
- (d) Mindful of the requirements of the annexation statutes under Title 5, Chapter 3 of the SC Code, the County and the City desire to enter into this Agreement in order to provide (i) for the payment of the portion of the debt service on the Duncan FSA Bonds allocated to the Annexed Parcels and (ii) for the proper millage to be levied on the Annexed Parcels.

Section 2. Fire Service Provider for Annexed Parcels.

The Annexed Parcels will receive fire services from the City. The City shall be the provider of fire services authorized to receive notice from 911 dispatch for the provision of fire services.

Section 3. Payment of debt service on Duncan FSA Bonds.

The City will remit to the County at least 15 days prior to each bond payment date, the amounts set forth on the attached *Exhibit B*. Such amounts reflect the portion of Duncan FSA Bonds debt service allocable to each Annexed Parcel, if any.

Section 4. Millage Levied on Annexed Parcels.

Since the Annexed Parcels are no longer within the boundaries of the Duncan FSA and pursuant to Section 5-3-313 of the SC Code, the County Auditor is hereby notified and directed to remove the Duncan FSA millage levy from the Annexed Parcels and to simultaneously place the City's millage levy on the Annexed Parcels.

Section 5. Miscellaneous.

The invalidity or unenforceability of any one or more phrases, sentences, clauses or sections in this Agreement shall not affect the validity or enforceability of the remaining portions of this Agreement, or any part hereof. No modification to this Agreement shall be effective unless first reduced to writing with the same formality as this Agreement and executed by the duly authorized officers of the County and the City. This Agreement shall be governed by and construed in accordance with the laws of the State of South Carolina without reference to choice of law principles thereof. This Agreement is the entire agreement between the County and the City. All prior representations and proposals have been merged herein and none survived except as specifically set for in writing herein. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed in the irrelative names by the irrelative officers thereunto duly authorized as of the date first above written.

SPARTANBURG COUNTY, SOUTH CAROLINA

County Administrator

CITY OF GREER, SOUTH CAROLINA

Mayor Rick Danner

EXHIBIT A
(Annexed Parcels)

5-19-00-208.03 (a portion of former 5-24-00-051.04)

5-24-00-036.02

5-24-00-036.01

5-24-00-034.02

EXHIBIT B
(Payment Schedule)

Greer Annexation Agreement
2023

[illegible]

Category Number:
Item Number: 1.



AGENDA
GREER CITY COUNCIL
3/28/2023

Bid Summary- Freedom Blast Sound & Lighting Bid

Summary:

The Parks, Recreation & Tourism Department advertised for bids for Freedom Blast Sound & Lighting services. Staff recommends the contract be awarded to Custom Production Services. (Action Required)

Executive Summary:

Robbie Davis, Events Supervisor, Parks Recreation & Tourism Department

ATTACHMENTS:

Description	Upload Date	Type
▣ Cover Memo	3/16/2023	Cover Memo
▣ Bid Summary	3/16/2023	Backup Material

Memorandum

To: Andy Merriman, City Administrator

From: Robbie Davis, Events Supervisor, Parks, Recreation & Tourism

cc: Tammy Duncan, Municipal Clerk
Ann Cunningham, Director, Parks, Recreation & Tourism
Red Watson, Assistant Director, Parks, Recreation & Tourism
Rosalyn Carcamo, Purchaser

Date: March 16, 2023

Re: Freedom Blast Sound & Lighting

The City of Greer received bids for Freedom Blast Sound & Lighting services. One company submitted a bid, as reflected in the attached tabulation.

Staff has reviewed the bid and recommends the project be awarded to Custom Production Services.

We have an extensive history of conducting business with Custom Production Services, as they have provided lighting and sound services for our annual Freedom Blast Event for the past several years. They have provided us with superior product and customer service in our previous experience with them and they are very familiar with our event.

This item was budgeted and approved in our Fund 09, Recreation Programs Fund budget. Staff recommends moving forward with awarding the bid to Custom Production Services.

CITY OF GREER – Project # 2023-006 Freedom Blast 2023 Sound and Lighting Equipment Rental and Services
BID OPENING SHEET- 02-15-2023 11:00 a.m.

Bid No.	Contractor Name	Finance Paperwork Included in Submission y/n	Business License Included in Submission y/n	Liability Insurance Form Included in Submission y/n	SC Contractor License in Submission y/n	Bid Amount
1	Custom Production Services	Y	N	Y	N/A	Equipment: 12,925.00 Labor: 5,026.00 Total Amount: 17,951.00
2						
3						
4						
5						
6						
7						
8						



AGENDA
GREER CITY COUNCIL
3/28/2023

First and Final Reading of Resolution Number 3-2023

Summary:

ALLOCATION OF GREENVILLE COUNTY CDBG AND HOME FUNDS FOR PROGRAM YEAR 2023
(Action Required)

Executive Summary:

Mike Sell, Deputy City Administrator

ATTACHMENTS:

Description	Upload Date	Type
▣ Resolution Number 3-2023	3/13/2023	Resolution
▣ Subrecipient Applications Program Year 2023-2024	3/15/2023	Backup Material
▣ 2023 Annual Action Plan	3/13/2023	Backup Material
▣ Greer Public Hearing Notice	3/13/2023	Backup Material

RESOLUTION NUMBER 3-2023

ALLOCATION OF GREENVILLE COUNTY CDBG AND HOME FUNDS FOR PROGRAM YEAR 2023

**STATE OF SOUTH CAROLINA
COUNTY OF GREENVILLE**

CITY OF GREER

WHEREAS, the City of Greer participates in the Greenville County Urban County Program; and

WHEREAS, the funds received by Greenville County available for allocation by the City of Greer are as follows:

	<u>CDBG</u>	<u>HOME</u>
City Allocation	\$314,994	\$135,751
Program Income	\$ 45,000	\$ 70,000
Total	\$359,994	\$205,751

WHEREAS, the HOME funds may only be used to increase the supply of decent affordable housing for modest income persons, and CDBG funds may only be used to assist low and moderate income persons, reduce or eliminate slum and community blight, or meet an urgent community need where no other funding is available; and

WHEREAS, a public hearing was held at **6:30 PM on March 14, 2023** at Greer City Hall to provide opportunity for the public and the Mayor and Council of the City of Greer to review, discuss, and propose projects and activities for which these funds should be allocated by Greenville County;

NOW, THEREFORE, IT IS HEREBY RESOLVED that the City of Greer accepts the allocation of funds as set forth above and budgets use of the funds as follows:

HOME funds – the amount of **\$155,751** or such other amount as may be received in HOME funds in the **2023** program year to be used for new home construction of affordable housing and **\$50,000** rental reserve activity on properties for eligible low and moderate income households in the City of Greer;

CDBG funds – the amount of **\$359,994** or such other amount as may be received in CDBG funds in the **2023** program year to be used for the following activities: **\$189,994** for community facility and infrastructure improvements; **\$10,000** for façade improvements; **\$20,000** for demolition of slum and blight properties; **\$50,000** for Economic Development Loans; and, **\$30,000** in rental activity. A total of **\$60,000** in sub-recipient funding for public services/special programs will be allocated as follows: **\$7,000** to the City of Greer Needmore Youth Summer Program; **\$5,000** to the City of Greer Needmore Senior Program; **\$11,000** to the Creative Advancement Center Afterschool Program; **\$20,000** to the Greer Community Ministries; and, **\$17,000** to the Greer Relief and Resources Agency.

ANY CHANGE in CDBG and HOME funding allocations, increase or decrease in funding, will be distributed on a pro rata basis to all activities.

PASSED, ADOPTED AND APPROVED, by the Council of the City of Greer on this 28th day of March 2023.

CITY OF GREER, SOUTH CAROLINA

Richard W. Danner, Mayor

Attest:

Tammela Duncan, Municipal Clerk

Reviewed:

Andrew Merriman, City Administrator



GCRA

Greenville County Redevelopment Authority

March 14, 2023

Andy Merriman
City Administrator
City of Greer
301 E. Poinsett Street
Greer, SC 29651-3708

**Re: Subrecipient applications received for Public Services in the City of Greer
Program Year 2023-2024**

Dear Mr. Merriman:

The Greenville County Redevelopment Authority (GCRA) received and reviewed five total applications submitted by organizations interested in providing community services in the City of Greer, using the Community Development Block Grant (CDBG) for Fiscal Year 2023-24. A total amount of \$79,100 was requested from the five organizations. As always, GCRA receives funding request that exceed the amount available. The City of Greer CDBG Public Service allocation is \$60,000.

GCRA staff reviewed and scored each application to determine if submittal met GCRA requirements for application completeness, use of funds eligibility, experience, administration of funds, and project design. Staff also reviewed the number of persons served, any significant increase in service, the total project budget for each application, and reviewed the other funding sources identified in each application. Enclosed you will find a short description of the activities and request, along with the scoring sheet. Our recommendations are as follows:

1. City of Greer Parks and Recreation – Summer Camp

The application submission is for \$7,000 in operational costs, specifically for summer program supplies and activities.

Recommendation: \$7,000 for supplies and activities.

2. City of Greer Parks and Recreation – Cannon Senior Center Program

The application submission is for \$5,000 to provide pickleball clinics for seniors.

Recommendation: \$5,000 in funding for eligible senior activities.

3. Creative Advancement Centers

The application submission is for \$20,000 to operate an after-school program. The request is for after-school counselor, five scholarships for low-income families, and operational costs including supplies and materials.





GCRA

Greenville County Redevelopment Authority

Recommendation: \$11,000 for After-school counselor, five scholarships for low-income families, lease of facility, supplies and materials.

4. Greer Community Ministries, Inc.

The application submission is for \$20,000 toward the purchase of food for Greer Community Ministries' mobile meals, senior dining, and food pantry programs.

Recommendation: \$20,000 toward purchase of food for mobile meals, senior dining, and food pantry programs.

5. Greer Relief and Resources Agency, Inc.

The application submission is for \$27,100 for emergency financial assistance towards rent/utility payments or prescriptions for low-income residents, case management, and Charity Tracker services.

Recommendation: \$17,000 for case management and Program services.

As always, the Greenville County Redevelopment Authority Board and staff appreciates the great working relationship with the City of Greer. If you have any questions or need additional information, please let me know. I can be reached at 242-9801, extension 114.

Sincerely,

John Castile
Executive Director

JC:kc
ENCLOSURES

cc: Mike Sell
Catrina Woodruff



Program Year 2023
City of Greer - CDBG Funding Allocations

FY 23-24 Greer - CDBG Funding Requests (Page 1 of 1)							Total Funding Available:		\$60,000	
							Total Funding Requested:		\$79,100	
	Name of Subrecipients	Proposed # Households/ People to be served	Target Population	Program Description	Eligible Category of Activity	Details for the Activity /Program Request	FY 21-22	FY 22-23	23-24 Amount Requested	Staff Recommendation
1	City of Greer- Summer Camp Program	50 children	Below 80% AMI	Low income family summer camp that is safe and educational.	Youth Services	Supplies \$4500 Activities \$2500	\$7,000.00	\$7,000.00	\$7,000.00	\$7,000.00
2	City of Greer- Senior	100 seniors	Seniors from SOAR and Senior Action program	Program designed specifically for seniors, some in which may have special needs including adaptive pickleball program.	Senior Services/Equipment	100 Senior Beginner Pickleball Clinics @ \$50/person (2 hours)	\$4,000.00	\$4,000.00	\$5,000.00	\$5,000.00
3	Creative Advancement	100 Children	Families Below 50% AMI	Provides academic tutoring and life enrichment programs to nurture and develop successful children in a safe haven.	Youth Services	After School Counselor: \$6,000 // Supplies \$4,200 // Operations/Lease of Facility \$6,800 // 5 Scholarships \$3,000 //Total Project Costs: \$20,000	\$10,000.00	\$19,000.00	\$20,000.00	\$11,000.00
4	Greer Relief	60 Households	Below 80% AMI	Provides services to eliminate poverty by helping neighbors overcome barriers for success through a variety of programs.	Emergency Assistance	Low Income financial assistance: \$18,000 // Case Management: \$7,900 // Charity Tracker: \$1200 // Total Budget: \$1,072,301	\$15,000.00	\$10,000.00	\$27,100.00	\$17,000.00
5	Greer Community Ministries	367 individuals	Homebound/ Elderly/ Disabled	Faith-based organization with the mission to ensure that no one in the greater Greer community is hungry, without adequate clothing, or socially isolated.	Handicapped Services/ Seniors	\$20,000 for food purchases Total Budget: \$ 1,271,780.00	\$15,000.00	\$15,000.00	\$20,000.00	\$20,000.00
Total									\$79,100.00	\$60,000.00
Balance									-\$19,100.00	\$0.00

2023-2024 CDBG FUNDING -TOTALS FOR GREER SCORING SHEETS

<u>AGENCY</u>	<u>APPLICATION (50)</u>	<u>ELIGIBILITY (125)</u>	<u>EXPERIENCE (75)</u>	<u>ADMINISTRATION (100)</u>	<u>PROJECT (150)</u>	<u>GRAND TOTAL (500)</u>
City of Greer Senior Center	50	122	72	96	150	490
City of Greer Youth Summer Camp	50	125	75	96	150	496
Greer Community Ministries	50	125	75	97	149	496
Creative Advancements	50	123	74	89	150	486
Greer Relief	50	122	70	93	149	484

Greenville County Redevelopment Authority



GCRA

Greenville County Annual Action Plan – Program Year 2023

City of Greer - Public Hearing
Location: 301 E. Poinsett Street, Greer, SC
Date: March 14, 2023 @ 6:30 pm

FY 2023 Annual Action Plan

The Annual Action Plan is Greenville County's Application to the Federal Government (US Department of Housing and Urban Development) proposing the use of Community Development Block Grant (CDBG), HOME and Emergency Solutions Grant (ESG).

FY 2023 funds is for the period beginning July 1, 2023 to June 30, 2024.

This funding period also marks the 4th year allocation of funds and activities for the Greenville County's 2020-2024 Consolidated Plan.

Community Development Block Grant (CDBG)

At least 70% must be used for activities that benefit individuals with low to moderate incomes.



All activities must meet one of three national objectives:

Benefit low- and moderate-income persons (by area or for limited clientele or presumed benefit).

Prevention or elimination of slums or blight

Urgent community development need (there must be an immediate threat to the health or welfare of community)

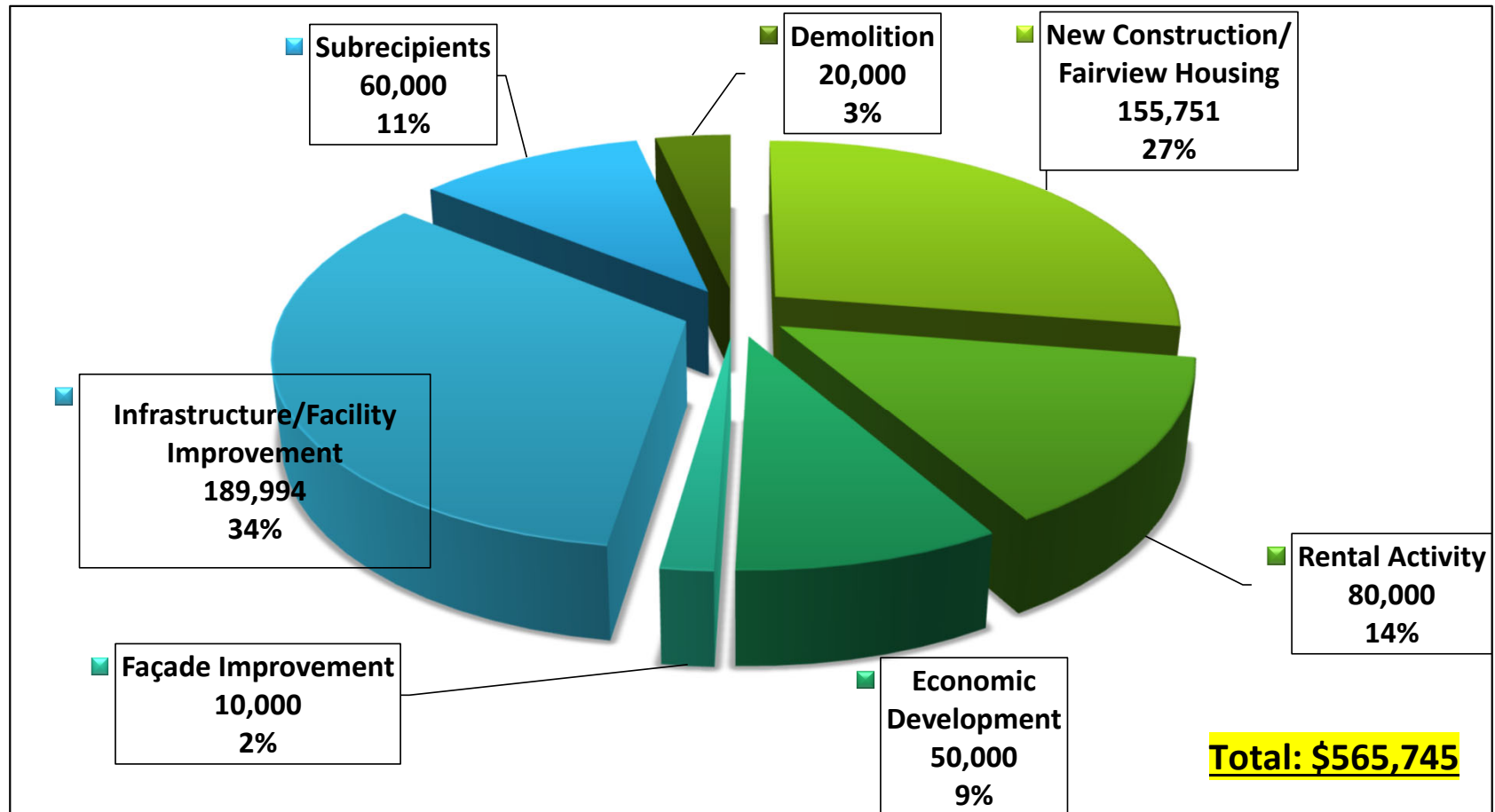


Home Investment Partnership (HOME)

A Federal grant program designed to help jurisdictions expand the supply of decent and affordable rental and homeownership housing for low- and very low-income families and households.

City of Greer - Allocations

Fund type	Final 2021	Final 2022	Final 2023
CDBG	\$274,747	\$307,512	\$314,994
CDBG - PI	\$ 50,000	\$ 40,000	\$ 45,000
HOME	\$103,836	\$136,854	\$135,751
HOME – PI	\$293,000	\$ 43,000	\$ 70,000
Total	\$721,583	\$527,366	\$565,745



GCRA – Housing Programs

**Homeownership Units
(New & Rehabbed -
GCRA and Housing
Partners)**

**Rental Units – (New
and Rehabbed - GCRA
& Housing Partners)**

**First Time Homebuyers
Program (DPT &
Closing Cost Assistance
– CWC)**

**Investor Program-
Rental Rehab**

**Owner-Occupied
Rehabilitation
Programs**

1. Major – Homeowner Rehab - GCRA
2. Emergency Repair – Program – GCRA & Partner

**MLF-Permanent
Financing – GCRA
funded homes**

**Rental Assistance -
Homelessness
Prevention – At risk of
homelessness**

**Rental Assistance -
Homelessness-Rapid
Rehousing – Literally
homeless**

GCRA- Community & Economic Development Activities

Community Development

- ☐ Infrastructure improvement
 - ☐ ADA
- ☐ Facility Improvement
- ☐ Demolition – address slum & blight
- ☐ Public Service activities – CDBG Subrecipients

Economic Development

- ☐ Small Business Loans
- ☐ Façade Improvement Program

	Name of Public Service Agency	Proposed Use CDBG fund	Recommended Allocation
1	Greer Parks and Recreation – Needmore Youth Summer Program	Summer Program – supplies and materials Requested \$7,000	\$7,000
2	Greer Parks and Recreation – Needmore Senior Program	Beginner Clinics for Pick ball Requested \$5,000	\$5,000
3	Creative Advancement Center	Afterschool Program –lease of facility, counselor, scholarships, supplies and materials Requested \$20,000	\$11,000

	Name of Public Service Agency	Proposed Use CDBG fund	Recommended Allocation
4	Greer Community Ministries, Inc.	Home Bound Meals, Food Pantry Program, Requested \$20,000	\$20,000
5	Greer Relief & Resources	Emergency financial assistance towards rent/utility payments, prescription for LMI, case management and Charity Tracker. Requested \$27,100	\$17,000

Total Recommended amount: \$60,000

Total Request: \$79,100

Greenville County Funding Approval

HOME: \$180,000

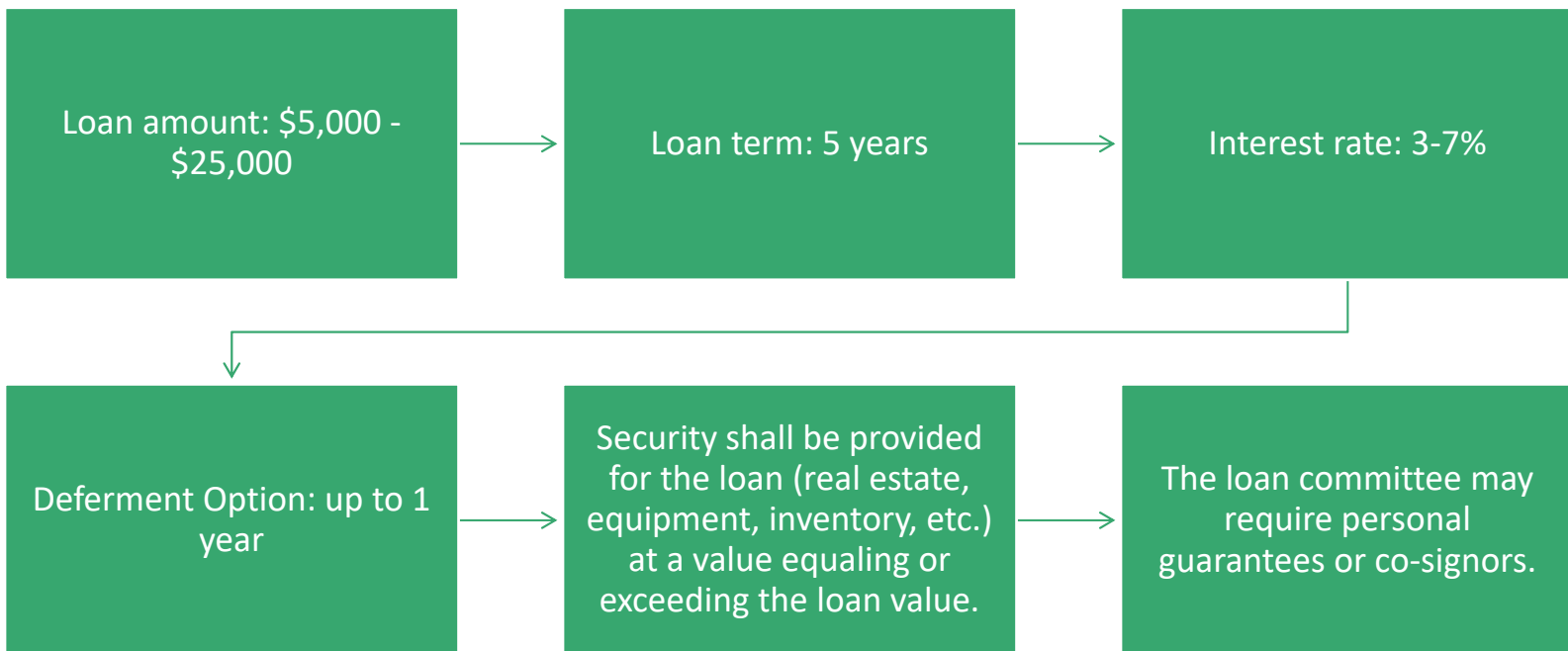
Affordable Housing Fund (AHF): \$100,000

Total Development Budget: \$794,200

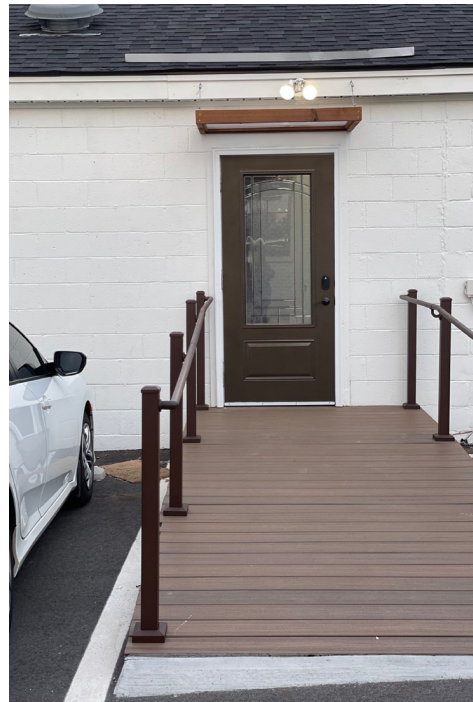
Project Name	Habitat at Creekside Homeownership units
Developer	Habitat for Humanity of Greenville County (HFHGC)
Project Location	636, 640, 644, 648 Ruddy Creek Ct, Greer, SC 29651
Census Tract	450830233.02
Tax Map #	613393883977,613393883439, 613393873805, 613393872350
Acreage	0.57
# of Units	4 (3bedrooms and 2 baths)
AMI Range	31-50% (2), 51-60% (2)



Small Business Loan Criteria



Façade Improvement Program



- \$5,000 in forgivable loan funds to finance exterior improvements to a property owner or tenant's commercial building that will be aesthetically pleasing and complimentary to local design guidelines or the municipality.
 - In the form of a declining balance non-interest-bearing loan
 - Loan funds will decline by twenty percent (20%) each year for five (5) years
 - If sold within 5 years, remaining loan balance must be recaptured.

Fairview Housing Development

Sunnyside Community
Greer, SC



Project Schedule - Implementation

Project Phase	Year	Proposed Activity	Proposed Accomplishment
Predevelopment/ Entitlement Activities and Environmental Review (EA level)	Oct 2020 - June 30, 2021	Environmental Review – EA review level Infrastructure / Zoning/Site plan/Subdivision/ permitting	Identify Project name, FRD approval, Final subdivision plats /grading and demolition permits approval, Submit Request for Release of Fund (RROF) and obtain authorization to release funds (AFD)from HUD. Completed
Infrastructure Implementation -	July 2021 – December 30, 2022	Infrastructure Improvement - for the housing units	Street name(s) Install storm and sanitary sewer lines, water lines, detention pond, road improvement, curbs gutter, sidewalks, electric, cable and telephone lines. Completed
Phase 1 – Construct 14 housing units	February 2023 – June 30, 2024	Construction documents, Bid process, contractor selection and construction of housing units.	Build and sell 14 housing units
Phase 2 - Construct 19 housing units	July 2024 - June 30, 2025		Build and sell 19 housing units

Fairview Townhomes - Infrastructure Photos

- Sidewalk
- Curbs
- Gutters
- Storm drains
- Detention pond
- Utility lines – water, electric, sanitary, cable/telephone lines
- Road Pavement



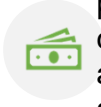


Site: 3.1 acre site
in the Sunnyside
neighborhood
Mixed-income
housing

Proposed income
range: 50% -
100% AMI



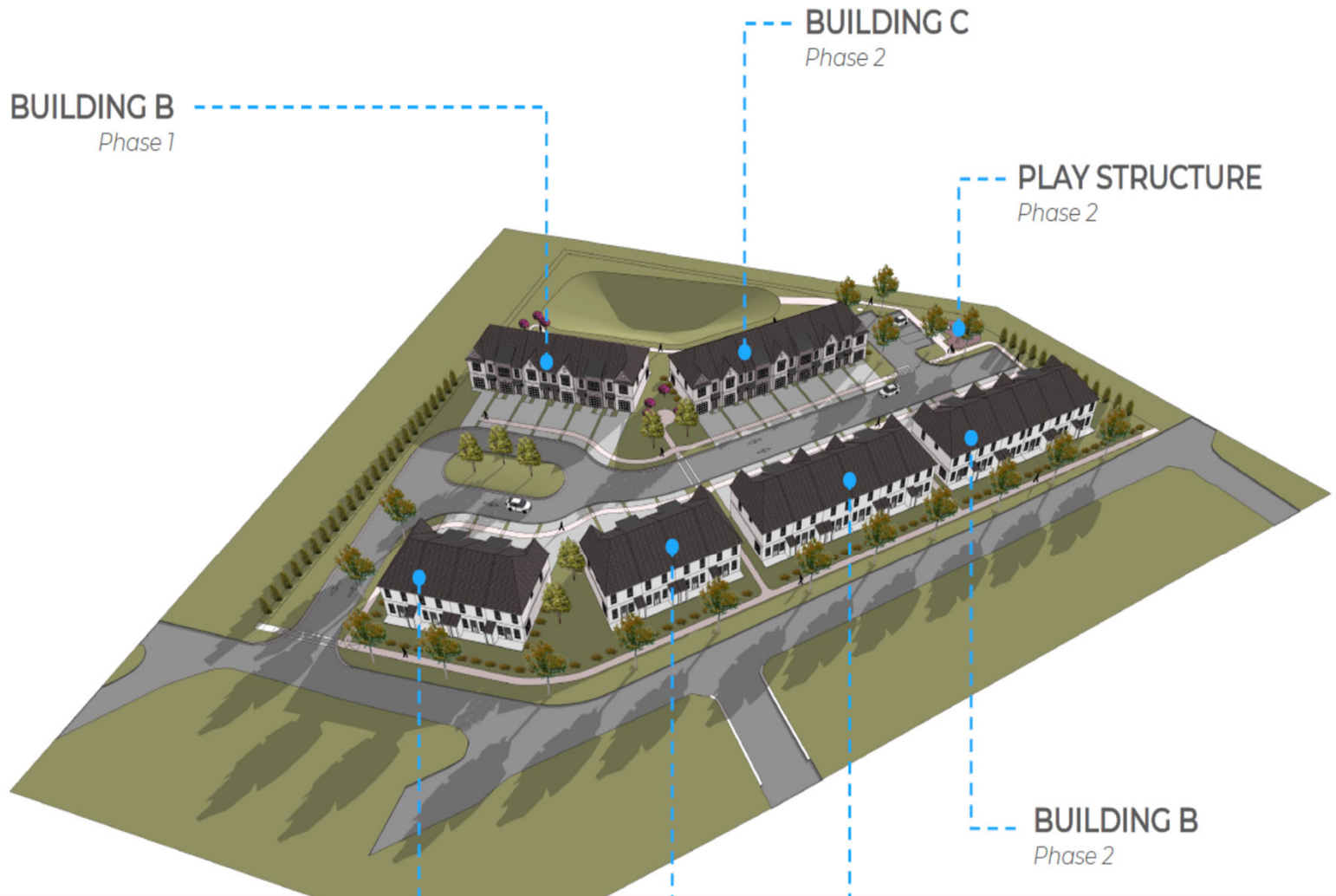
Must be First
Time Home
buyers.



Down
payment/closing
cost financial
assistance will be
available.



Homebuyer
pre-purchase
counseling is
required.



Fairview Housing Project – Sunnyside community - Greer

3 Elevation Types: 33 units' total

1. Building A – Four-unit building : 8 units
2. Building B: - Six-unit building : 18 units
3. Building C: - Seven-unit building - 7 units
4. Parking spaces: 104 spaces
 1. 3 Off-street parking spaces per unit: 1 space in garage and 2 spaces on driveway.
 2. Guest Parking Spaces (5 spaces total including one handicapped space.
5. Amenity: Children Playground

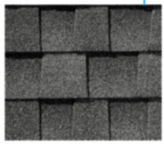


EAST FAIRVIEW TOWNHOMES

GREER, SOUTH CAROLINA



Exterior Elevation



Architectural
Asphalt Shingle Roof



Standing Seam
Metal Roof



Hardie Shingle Siding
(Straight Edge)



Vertical Board &
Batten Siding



Hardie Plank Lap
Siding

Building A

UNIT 1 - 1,345 SQ. FT.

UNIT 2 - 1,345 SQ. FT.



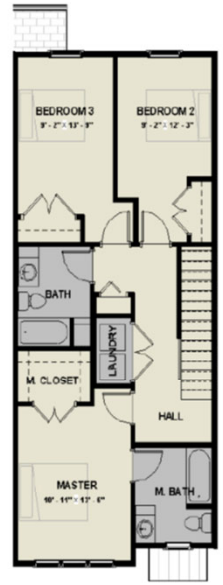
Level 1



Level 2



Level 1



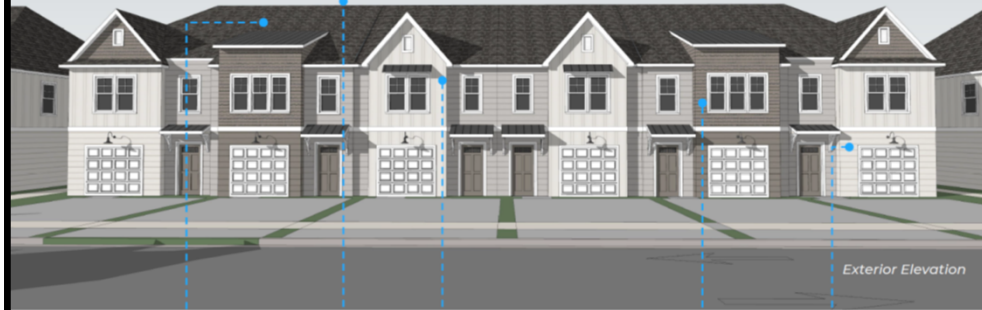
Level 2

CRAIG
GAULDEN
DAVIS

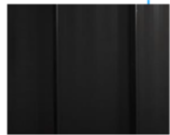
BUILDING A

EAST FAIRVIEW TOWNHOMES

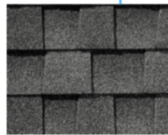
GREER, SOUTH CAROLINA



Exterior Elevation



Standing Seam
Metal Roof



Architectural
Asphalt Shingle Roof



Vertical Board &
Batten Siding



Hardie Shingle Siding
(Straight Edge)



Hardie Plank Lap
Siding

UNIT 1 - 1,345 SQ. FT.



UNIT 2 - 1,345 SQ. FT.

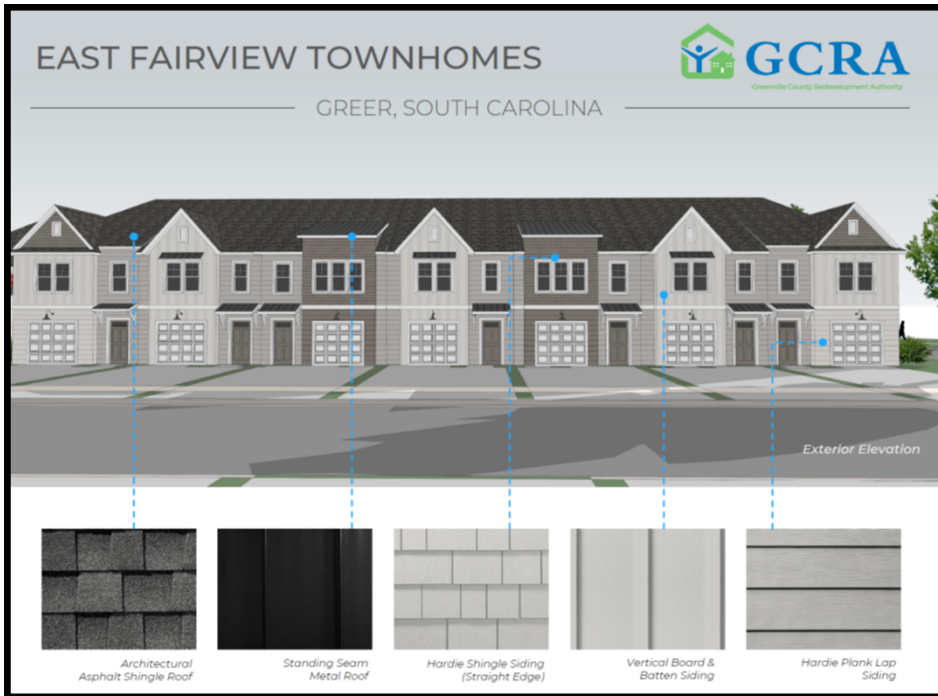


CRAIG
GAULDEN
DAVIS

BUILDING B

EAST FAIRVIEW TOWNHOMES

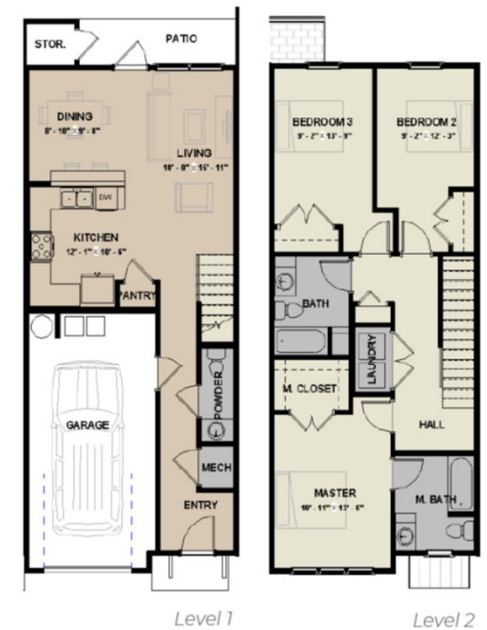
GREER, SOUTH CAROLINA



Building C

UNIT 1 - 1,345 SQ. FT.

UNIT 2 - 1,345 SQ. FT.



CRAIG
GAULDEN
DAVIS

BUILDING C

Accessible Plan options available (not shown)

NOTE:

Written questions and comments
can be sent to

PH@gcra-sc.org

or telephone # 864-242-9801

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**NOTICE OF PUBLIC HEARING FOR
GREENVILLE COUNTY PROGRAM YEAR 2023
ANNUAL ACTION PLAN / CITY OF GREER**

The City of Greer participates in the Greenville County Community Development Block Grant (CDBG) Program and HOME Investment Partnerships Program funded by the U.S. Department of Housing and Urban Development. The Greenville County Redevelopment Authority is preparing its Annual Action Plan for the 2023 program year (7/1/23-6/30/24).

An in-person public hearing will be held at the Greer City Hall, located at 301 E. Poinsett Street, Greer, on Tuesday, March 14, 2023, at 6:30 PM. Community development and housing needs and activities eligible for funding under the CDBG and HOME programs will be discussed. Public comment and proposals will be invited on the County's strategy for the City of Greer, including objectives and projected uses of funds. An estimated \$307,512 in CDBG fund and \$136,854 in HOME fund will become available in July. An estimated \$45,000 in CDBG program income and \$70,000 in HOME program income are also expected to become available through the program year. Comments are also invited on past and present housing and community development performance and needs. CDBG funds can be used to assist low- and moderate-income persons, prevent or eliminate slums and blight, or to meet an urgent community need where no other funding is available. HOME funds are used to increase the supply of decent, safe, sanitary, and affordable housing for lower income persons.

Written comments may also be sent to John Castile, Executive Director, Greenville County Redevelopment Authority, 301 University Ridge, Suite 2500, Greenville SC 29601, until Friday, May 5, 2023.

Category Number:
Item Number: 3.



AGENDA
GREER CITY COUNCIL
3/28/2023

First and Final Reading of Resolution Number 5-2023

Summary:

RESOLUTION TO ADOPT THE SPARTANBURG COUNTY MULTI-JURISDICTIONAL HAZARD
MITIGATION PLAN (Action Required)

Executive Summary:

Catrina Woodruff, Administrative Services Director

ATTACHMENTS:

Description	Upload Date	Type
▣ Resolution Number 5-2023	3/16/2023	Resolution
▣ October 2022 Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan	3/16/2023	Backup Material

RESOLUTION 5-2023

RESOLUTION TO ADOPT THE SPARTANBURG COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN

WHEREAS, City of Greer is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the City of Greer desires to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the City of Greer to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the City of Greer to fulfill its obligation under Section 322: Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the City of Greer; and

WHEREAS, City of Greer in coordination Spartanburg County has prepared a multi-jurisdictional hazard mitigation plan with input from the appropriate local and state officials;

WHEREAS, the South Carolina Emergency Management Division and the Federal Emergency Management Agency have reviewed the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, BE IT RESOLVED that the Greer City Council hereby:

1. Adopts the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan; and
2. Agrees to take such other official action as may be reasonably necessary to carry out the proposed actions of the Plan.

CITY OF GREER, SOUTH CAROLINA

Richard W. Danner, Mayor

ATTEST:

Tammela Duncan, Municipal Clerk

Introduced by:

First and Final Reading: March 28, 2023

Approved as to Form:

Daniel R. Hughes, Esquire
City Attorney

Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan

October 2022

ATKINS



TABLE OF CONTENTS

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Planning Process Documentation	APPENDIX D

SECTION 1

INTRODUCTION

This section provides a general introduction to the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan. It consists of the following five subsections:

- ❖ 1.1 Background
- ❖ 1.2 Purpose
- ❖ 1.3 Scope
- ❖ 1.4 Authority
- ❖ 1.5 Summary of Plan Contents

1.1 BACKGROUND

Natural and man-made hazards, such as floods, hurricanes, and fires, are a part of the world around us. In some cases, their occurrence is natural and inevitable, and there is little we can do to control their force and intensity. In others, we have more power to control the intensity and probability but can never truly eliminate the threat entirely. In either case, we must consider these hazards to be legitimate and significant threats to human life, safety, and property.

Spartanburg County is located in the northwestern part of South Carolina. This area is vulnerable to a wide range of natural hazards such as hurricanes, floods, severe thunderstorms, winter storms, and tornados. It is also vulnerable to man-made hazards, including hazardous materials incidents and transportation incidents. These hazards threaten the life and safety of residents in Spartanburg County and have the potential to damage or destroy both public and private property, disrupt the local economy, and impact the overall quality of life of individuals who live, work, and vacation in Spartanburg County.

While the threat from hazardous events may never be fully eliminated, there is much we can do to lessen potential impacts upon our community and our citizens. By minimizing the impact of hazards upon our built environment, we can prevent such events from resulting in disasters. The concept and practice of reducing risks to people and property from known hazards is generally referred to as *hazard mitigation*.



FEMA Definition of Hazard Mitigation:

"Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards."

Hazard mitigation techniques include both structural measures (such as strengthening or protecting buildings and infrastructure from the destructive forces of potential hazards) and non-structural measures (such as the adoption of sound land use policies and the creation of public awareness programs). It is widely accepted that the most effective mitigation measures are implemented at the local government level, where decisions on the regulation and control of development are ultimately

made. A comprehensive mitigation approach addresses hazard vulnerabilities that exist today and in the foreseeable future. Therefore, it is essential that projected patterns of future development are evaluated and considered in terms of how that growth will increase or decrease a community's overall hazard vulnerability.

A key component in the formulation of a comprehensive approach to hazard mitigation is to develop, adopt, and update a local hazard mitigation plan as needed. A hazard mitigation plan establishes the broad community vision and guiding principles for reducing hazard risk and, furthermore, proposes specific mitigation actions to eliminate or reduce identified vulnerabilities.

The county and thirteen municipalities participating in the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan have an existing hazard mitigation plan that has evolved over the years, as described in Section 2, **Planning Process**. This update of the Plan draws from the previous plan to document the efforts of each jurisdiction to incorporate hazard mitigation principles and practices into routine government activities and functions. At its core, this Plan recommends specific actions to minimize hazard vulnerability and protect residents from losses to those hazards that pose the greatest risk. These mitigation actions go beyond simply recommending structural solutions to reduce existing vulnerability, such as elevation, retrofitting, and acquisition projects. Local policies on community growth and development, incentives for natural resource protection, and public awareness and outreach activities are examples of other actions considered to reduce Spartanburg County's vulnerability to identified hazards. This Plan remains a living document with implementation and evaluation procedures established to help achieve meaningful objectives and successful outcomes over time.

1.1.1 The Disaster Mitigation Act and the Flood Insurance Reform Acts

In an effort to reduce the Nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 (DMA 2000) in order to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Section 322 of DMA 2000 emphasizes the need for state, local, and Tribal government entities to closely coordinate on mitigation planning activities and makes the development of a Hazard Mitigation Plan a specific eligibility requirement for any local or Tribal government applying for federal mitigation grant funds. In short, if a jurisdiction is not covered by an approved mitigation plan, it will not be eligible for mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP) and the Building Resilient Infrastructure and Communities (BRIC) program, both of which are administered by the Federal Emergency Management Agency (FEMA) under the Department of Homeland Security. Communities with an adopted and federally approved hazard mitigation plan thereby become pre-positioned and more apt to receive available mitigation funds before and after the next disaster strikes.

Additionally, the Flood Insurance Reform Act of 2004 (P.L. 108-264) created two new grant programs, Severe Repetitive Loss (SRL) and Repetitive Flood Claim (RFC) and modified the existing Flood Mitigation Assistance (FMA) program. One of the requirements of this Act is that a FEMA-approved Hazard Mitigation Plan is now required if communities wish to be eligible for these FEMA mitigation programs. However, as of early 2014, these programs have been folded into a single Flood Mitigation Assistance (FMA) program.

This change was brought on by new, major federal flood insurance legislation that was passed in 2012 under the Biggert-Waters Flood Insurance Reform Act (P.L. 112-141) and the subsequent Homeowner

Flood Insurance Affordability Act in 2014 that revised Biggert-Waters. These acts made several changes to the way the National Flood Insurance Program is to operate, including raises in rates to reflect true flood risk and changes in how Flood Insurance Rate Map (FIRM) updates impact policyholders. These acts further emphasize Congress' focus on mitigating vulnerable structures.

The Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan has been prepared in coordination with FEMA Region IV and the South Carolina Emergency Management Division (SCEMD) to ensure that the Plan meets all applicable FEMA and state requirements for hazard mitigation plans. A *Local Mitigation Plan Review Tool*, found in Appendix C, provides a summary of federal and state minimum standards and notes the location where each requirement is met within the Plan.

1.2 PURPOSE

The purpose of the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan is to:

- ❖ Reduce risk to people, property, and the critical infrastructure
- ❖ Increase public awareness and education about the Plan and the planning process
- ❖ Maintain grant eligibility for participating jurisdictions
- ❖ Maintain compliance with state and federal legislative requirements for local hazard mitigation plans

1.3 SCOPE

The focus of the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan is on hazards determined to be “high” or “moderate” risks to Spartanburg County, as determined through a detailed hazard risk assessment. Other hazards that pose a “low” or “negligible” risk will continue to be evaluated during future updates to the Plan, but they may not be fully addressed until they are determined to be of high or moderate risk. This enables the participating jurisdictions to prioritize mitigation actions based on those hazards which are understood to present the greatest risk to lives and property.

The geographic scope (i.e., the study area) for the Plan includes all of Spartanburg County, including its incorporated jurisdictions and unincorporated areas. **Table 1.1** indicates the participating jurisdictions.

**TABLE 1.1: PARTICIPATING JURISDICTIONS IN THE
SPARTANBURG COUNTY HAZARD MITIGATION PLAN**

Spartanburg County				
Campobello	Duncan	Landrum	Reidville	Woodruff
Chesnee*	Greer†	Lyman	Spartanburg (city)	
Cowpens	Inman	Pacolet	Wellford	

*The City of Chesnee is located in both Spartanburg County and Cherokee County.

†The City of Greer is located in both Spartanburg County and Greenville County.

1.4 AUTHORITY

The Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan has been developed in accordance with current state and federal rules and regulations governing local hazard mitigation plans and has been adopted by each participating jurisdiction in accordance with standard local procedures. Copies of the adoption resolutions for each participating jurisdiction are provided in Appendix A. The Plan shall be routinely monitored and revised to maintain compliance with the following provisions, rules, and legislation:

- ❖ Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390)
- ❖ FEMA's Final Rule published in the Federal Register, at 44 CFR Part 201 (201.6 for local mitigation planning requirements and 201.7 for Tribal planning requirements)
- ❖ Flood Insurance Reform Act of 2004 (P.L. 108-264), Biggert-Waters Flood Insurance Reform Act of 2012 (P.L. 112-141), and the Homeowner Flood Insurance Affordability Act
- ❖ National Dam Safety Program Act of 2020, (P.L. 116-260) and the National Program for Inspection of Non-Federal Dams of 1972 (P.L. 92-367)

1.5 SUMMARY OF PLAN CONTENTS

The contents of this Plan are designed and organized to be as reader-friendly and functional as possible. While significant background information is included on the processes used and studies completed (i.e., risk assessment, capability assessment), this information is separated from the more meaningful planning outcomes or actions (i.e., mitigation strategy, mitigation action plan).

Section 2, **Planning Process**, provides a complete narrative description of the process used to prepare the Plan. This includes the identification of participants on the planning team and describes how the public and other stakeholders were involved. It also includes a detailed summary for each of the key meetings held, along with any associated outcomes.

The **Community Profile**, located in Section 3, provides a general overview of Spartanburg County, including prevalent geographic, demographic, and economic characteristics. In addition, building characteristics and land use patterns are discussed. This baseline information provides a snapshot of the planning area and helps local officials recognize those social, environmental, and economic factors that ultimately play a role in determining the county's vulnerability to hazards.

The Risk Assessment is presented in three sections: Section 4, **Hazard Identification**; Section 5, **Hazard Profiles**; and Section 6, **Vulnerability Assessment**. Together, these sections serve to identify, analyze, and assess hazards that pose a threat to Spartanburg County. The Risk Assessment also attempts to define any hazard risks that may uniquely or exclusively affect specific areas of Spartanburg County.

The Risk Assessment begins by identifying hazards that threaten Spartanburg County. Next, detailed profiles are established for each hazard which build on available historical data from past hazard occurrences, spatial extent, and probability of future occurrences. This section culminates in a hazard risk ranking based on conclusions regarding the frequency of occurrence, spatial extent, and potential impact highlighted in each of the hazard profiles. In the vulnerability assessment, FEMA's Hazus^{®MH} loss estimation methodology is used in conjunction with GIS analysis to evaluate known hazard risks by their

relative long-term cost for expected damages. In essence, the information generated through the risk assessment serves a critical function as the participating jurisdictions in Spartanburg County seek to determine the most appropriate mitigation actions to pursue and implement—enabling them to prioritize and focus their efforts on hazards of greatest concern and structures or planning areas facing the greatest risk(s).

The **Capability Assessment**, found in Section 7, provides a comprehensive examination of Spartanburg County’s capacity to implement meaningful mitigation strategies and identifies opportunities to increase and enhance that capacity. Specific capabilities addressed in this section include planning and regulatory capability, staff and organizational (administrative) capability, technical capability, fiscal capability, and political capability. Information was obtained through the use of a detailed survey questionnaire and an inventory and analysis of existing plans, ordinances, and relevant documents. The purpose of this assessment is to identify any existing gaps, weaknesses, or conflicts in programs or activities that may hinder mitigation efforts and to identify activities that should be built upon in order to establish a successful and sustainable local hazard mitigation program.

The Risk Assessment and Capability Assessment collectively serve as a basis for determining the goals for the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan, each contributing to the development, adoption, and implementation of a meaningful and manageable Mitigation Strategy that is based on accurate background information.

The **Mitigation Strategy**, found in Section 8, consists of broad goals as well as an analysis of hazard mitigation techniques for the jurisdictions participating in the Plan to consider in order to reduce hazard vulnerabilities. The strategy provides the foundation for a detailed **Mitigation Action Plan**, found in Section 9, which links specific mitigation actions for each jurisdiction to locally assigned implementation mechanisms and target completion dates. Together, these sections are designed to make the Plan both strategic, through the identification of long-term goals, and functional, through the identification of immediate and short-term actions that will guide day-to-day decision-making and project implementation.

In addition to the identification and prioritization of possible mitigation projects, emphasis is placed on the use of program and policy alternatives to help make Spartanburg County less vulnerable to the damaging forces of hazards while improving the economic, social, and environmental health of the community. The concept of multi-objective planning was emphasized throughout the planning process, particularly in identifying ways to link, where possible, hazard mitigation policies and programs with complimentary community goals related to disaster recovery, housing, economic development, recreational opportunities, transportation improvements, environmental quality, land development, and public health and safety.

Plan Maintenance, found in Section 10, includes the procedures that the jurisdictions participating in the Plan will take to ensure the Plan’s continuous long-term implementation. The procedures also include the manner in which the Plan will be regularly evaluated and updated to remain a current and meaningful planning document.

SECTION 2

PLANNING PROCESS

This section describes the planning process undertaken to develop the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan. It consists of the following eight subsections:

- ❖ 2.1 Overview of Hazard Mitigation Planning
- ❖ 2.2 History of Hazard Mitigation Planning in Spartanburg County
- ❖ 2.3 Preparing the 2023 Plan
- ❖ 2.4 The Spartanburg County Hazard Mitigation Planning Team
- ❖ 2.5 Meetings and Workshops
- ❖ 2.6 Involving the Public
- ❖ 2.7 Involving the Stakeholders
- ❖ 2.8 Documentation of Plan Progress

44 CFR Requirement

44 CFR Part 201.6(c)(1): The plan shall include documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process and how the public was involved.

2.1 OVERVIEW OF HAZARD MITIGATION PLANNING

Local hazard mitigation planning is the process of organizing community resources, identifying and assessing hazard risks, and determining how to best minimize or manage those risks. This process culminates in a hazard mitigation plan that identifies specific mitigation actions, each designed to achieve both short-term planning objectives and a long-term community vision.

To ensure the functionality of a hazard mitigation plan, responsibility is assigned for each proposed mitigation action to a specific individual, department, or agency along with a schedule or target completion date for its implementation (see Section 10: *Plan Maintenance*). Plan maintenance procedures are established for the routine monitoring of implementation progress as well as the evaluation and enhancement of the mitigation plan itself. These plan maintenance procedures ensure that the Plan remains a current, dynamic, and effective planning document over time that becomes integrated into the routine local decision-making process.

Communities that participate in hazard mitigation planning have the potential to experience many benefits, including:

- ❖ Saving lives and property
- ❖ Saving money
- ❖ Speeding up the recovery process following disasters
- ❖ Reducing future vulnerability through wise development and post-disaster recovery and reconstruction

- ❖ Expediting the receipt of pre-disaster and post-disaster grant funding
- ❖ Demonstrating a firm commitment to improving community health and safety

Typically, communities that participate in mitigation planning are described as having the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster loss. A core assumption of hazard mitigation is that the investments made before a hazard event will significantly reduce the demand for post-disaster assistance by lessening the need for emergency response, repair, recovery, and reconstruction. Furthermore, mitigation practices will enable local residents, businesses, and industries to re-establish themselves in the wake of a disaster, getting the community economy back on track sooner and with less interruption.

The benefits of mitigation planning go beyond solely reducing hazard vulnerability. Mitigation measures such as the acquisition or regulation of land in known hazard areas can help achieve multiple community goals, such as preserving open space, maintaining environmental health, and enhancing recreational opportunities. Thus, it is vitally important that any local mitigation planning process be integrated with other concurrent local planning efforts, and any proposed mitigation strategies must take into account other existing community goals or initiatives that will either help complement or hinder their future implementation.

2.2 HISTORY OF HAZARD MITIGATION PLANNING IN SPARTANBURG COUNTY

Each of the 13 participating jurisdictions listed below has a previously adopted hazard mitigation plan. The Federal Emergency Management Agency (FEMA) approval dates for each of these plans are listed below:

- ❖ *Spartanburg County Hazard Mitigation Plan (2018)*
 - ❖ Town of Campobello
 - ❖ City of Chesnee
 - ❖ Town of Cowpens
 - ❖ Town of Duncan
 - ❖ City of Inman
 - ❖ City of Landrum
 - ❖ Town of Lyman
 - ❖ Town of Pacolet
 - ❖ Town of Reidville
 - ❖ City of Spartanburg
 - ❖ City of Wellford
 - ❖ City of Woodruff
 - ❖ Unincorporated Spartanburg County
- ❖ *City of Greer Hazard Mitigation Plan (2016)*

The existing county-level plan was developed using the multi-jurisdictional planning process recommended by FEMA. For this plan update the same process was utilized, and all of the jurisdictions that participated in the previous planning effort have participated in the development of this plan update. The City of Greer developed their own municipal level plan in 2016 but has since chosen not to update it to participate in the Spartanburg and Greenville County level plans instead since the jurisdiction is part of both counties.

2.3 PREPARING THE 2023 PLAN

Hazard mitigation plans are required to be updated every five years to remain eligible for federal mitigation funding. To simplify planning efforts, the jurisdictions in Spartanburg County decided to join together to create the *Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan*. This allows resources to be shared amongst the participating jurisdictions and eases the administrative duties of all of the participants.

To prepare the Plan, a team led by the consulting firm called Atkins was hired to provide professional mitigation planning services. The county ensured that the planning process was facilitated under the direction of a professional planner.

Per the contractual scope of work, the consultant team followed the mitigation planning process recommended by FEMA (Publication Series 386 and Local Mitigation Plan Review Guide) and recommendations provided by South Carolina Emergency Management Division (SCEMD) mitigation planning staff.¹ The Local Mitigation Plan Review Tool, found in Appendix C, provides a detailed summary of FEMA's current minimum standards of acceptability for compliance with DMA 2000 and notes the location where each requirement is met within this Plan. These standards are based upon FEMA's Final Rule as published in the Federal Register in Part 201 of the Code of Federal Regulations (CFR). The Planning Team (described in Section 2.4) used FEMA's Local Mitigation Plan Review Guide (April 2023) for reference as they completed the Plan.

Additionally, the Planning Team determined that it was important to include and analyze some man-made hazards in the Plan to provide a more comprehensive approach to hazard management within the county. Although this is not a requirement as per regulations regarding hazard mitigation planning at the state or federal level, it is a noteworthy step in the direction of an all-hazards approach to risk analysis and management.

Key elements from the previously approved plan are referenced throughout the document (e.g., existing actions) and also required a discussion of changes made. For example, all of the risk assessment elements needed to be updated to include the most recent information. It was also necessary to review the goals for the county. The Capability Assessment section includes updated information for all of the participating jurisdictions and the Mitigation Action Plan provides implementation status updates for all of the actions identified in the previous plans.

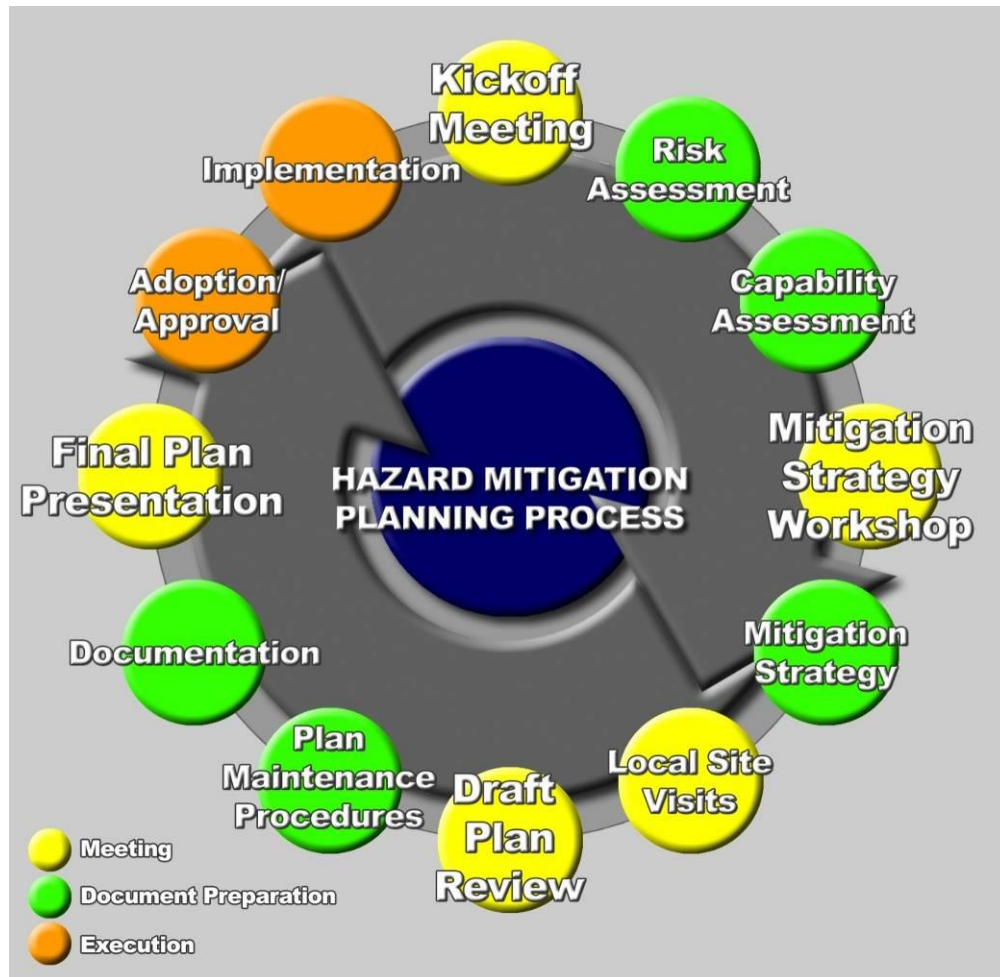
The process used to prepare this Plan included twelve major steps that were completed over the course of approximately 8 months beginning in March 2022. Each of these planning steps (illustrated in **Figure**

¹ A copy of the negotiated contractual scope of work between Spartanburg County and Atkins is available through Spartanburg County upon request.

2.1) resulted in critical work products and outcomes that collectively make up the Plan. Specific plan sections are further described in Section 1: *Introduction*.

Over the past five years, each participating jurisdiction has been actively working to implement the existing plans. This is documented in the Mitigation Action Plan through the implementation status updates for each of the Mitigation Actions. The Capability Assessment also documents changes and improvements in the capabilities of each participating jurisdiction to implement the Mitigation Strategy.

FIGURE 2.1: MITIGATION PLANNING PROCESS FOR SPARTANBURG COUNTY



As is further detailed below, the planning process was conducted through Hazard Mitigation Planning meetings comprised primarily of local government staff from each of the participating jurisdictions and advisory stakeholders.

2.4 THE SPARTANBURG COUNTY HAZARD MITIGATION PLANNING TEAM

In order to guide the development of this Plan, Spartanburg County and its jurisdictions created the Spartanburg County Hazard Mitigation Planning Team (Hazard Mitigation Planning Team or Planning Team). The Hazard Mitigation Planning Team represents a community-based planning team made up of

representatives from various county and municipal departments and other key stakeholders identified to serve as critical partners in the planning process.

In February 2022, the Steering Committee, consisting of the consultant team, the county floodplain manager, and the Office of Emergency Management Coordinator met to begin discussing the plan update process and stakeholders that needed to be involved. In April 2022, the Hazard Mitigation Planning Team members engaged in regular discussions as well as held local meetings and planning workshops to discuss and complete tasks associated with preparing the Plan. This working group coordinated on all aspects of plan preparation and provided valuable input to the process. In addition to regular meetings, team members routinely communicated and were kept informed through an e-mail distribution list.

Specifically, the tasks assigned to the Hazard Mitigation Planning Team members included:

- ❖ Participate in Hazard Mitigation Planning Team meetings and workshops
- ❖ Provide best available data as required for the Risk Assessment portion of the Plan
- ❖ Help review the local Capability Assessment information and provide copies of any mitigation or hazard-related documents for review and incorporation into the Plan
- ❖ Support the development of the Mitigation Strategy, including the design and adoption of countywide goal statements
- ❖ Help design and propose appropriate mitigation actions for their department/agency for incorporation into the Mitigation Action Plan
- ❖ Review and provide timely comments on all study findings and draft plan deliverables
- ❖ Support the adoption of the 2023 *Spartanburg County Hazard Mitigation Plan*

Table 2.1 lists the members of the Hazard Mitigation Planning Team who were responsible for participating in the development of the Plan. Team members are listed in alphabetical order by last name.

TABLE 2.1: MEMBERS OF THE SPARTANBURG COUNTY HAZARD MITIGATION PLANNING TEAM

NAME	POSITION	DEPARTMENT/AGENCY
Adrian Acosta	Director of Public Relations	Spartanburg School District Two
Winston Anderson	Director of Campus Operations	Spartanburg Community College
Drew Harris	GIS Manager	Spartanburg County
Scott Miller	Public Works Director	Town of Lyman
Noel Blackwell	Assistant Town Administrator	Town of Lyman
Buddy Bush	Building Official	City of Spartanburg
Rich Caplan	City Administrator	City of Landrum
Jason McCraw	Director of Operations	Spartanburg School District One
Marion Blackwell	Fire Chief	City of Spartanburg Fire Department
Michael Brown	EM Coordinator	Spartanburg County Emergency Management

NAME	POSITION	DEPARTMENT/AGENCY
Doug Bryson	Director	Spartanburg County Emergency Management
Dorian Flowers	Fire Chief	City of Greer Fire Department
Charles Jolley	Fire Chief	Pelham-Batesville Fire District
Ron Kirby	Floodplain Manager	Spartanburg County Public Works
Scott Messenger	Mayor	Town of Reidville
Jay Squires	Streets and Stormwater Manager	City of Spartanburg Streets and Stormwater Management
Robbie Swofford	Assistant Director	Spartanburg County Emergency Management
James Shehan	SRO Sargent	Landrum Police Department
Kimberly Shiverdecker	Region 2 Manager	SC Emergency Management Division
Catrina Woodruff	Risk Manager	City of Greer

Table 2.2 lists points of contact for municipalities who elected to designate county officials to represent their jurisdiction on the Planning Team, generally because they did not have the time or staff to be able to attend on their own. Although these members designated county officials to represent them at in-person meetings, each was involved throughout the planning process and participated by providing suggestions and comments on the Plan via email and phone conversations.

TABLE 2.2: MEMBERS DESIGNATING REPRESENTATIVES TO THE SPARTANBURG COUNTY HAZARD MITIGATION PLANNING TEAM

NAME	POSITION	DEPARTMENT/AGENCY
Kim Hyder	Clerk	Town of Campobello
Delisa Coggins	Clerk/Treasurer	City of Chesnee
Steve Bolin	Administrator	Town of Cowpens
Cameron Fant	Administrator	Town of Duncan
April Gibson	Planning Director	City of Inman
Warren Ashmore	Fire Chief	Landrum Fire and Rescue District
Patrick Kay	Town Administrator	Town of Pacolet
Jay Squires	Public Works Director	City of Spartanburg
Chris Guy	City Manager	City of Wellford
Lee Bailey	City Manager	City of Woodruff

2.4.1 Multi-Jurisdictional Participation

The *Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan* includes Spartanburg County and 13 of its incorporated municipalities. To satisfy multi-jurisdictional participation requirements, the county and its participating jurisdictions were required to perform the following tasks:

- ❖ Participate in mitigation planning workshops
- ❖ Identify completed mitigation projects, if applicable

- ❖ Develop and adopt (or update) their local Mitigation Action Plan

Each jurisdiction participated in the planning process and has developed a local Mitigation Action Plan unique to their jurisdiction. Each jurisdiction will adopt the Plan which includes the individual Mitigation Action Plan that provides the means for jurisdictions to monitor and update their Plan on a regular basis.

2.5 MEETINGS AND WORKSHOPS

The preparation of this Plan required a series of meetings and workshops for facilitating discussion, gaining consensus, and initiating data collection efforts with the planning team, local government staff, community officials, and other identified stakeholders. More importantly, the meetings and workshops prompted continuous input and feedback from relevant participants throughout the drafting stages of the Plan. In many cases, routine discussions and additional meetings were held by local staff to accomplish planning tasks specific to their department or agency, such as the approval of specific mitigation actions for their department or agency to undertake and include in the Mitigation Action Plan.

April 13, 2022 Hazard Mitigation Planning Team Kick-off Meeting

Robbie Swofford, Spartanburg County Emergency Management Coordinator, opened up the meeting by introducing himself and explaining that this meeting was to support an update to the Multi-jurisdictional Hazard Mitigation Plan (HMP) and then introduced the consultant, Atkins. The Project Manager for Atkins, Margaret Walton, outlined the agenda and began introductions. Sara Seremak from Atkins also introduced herself.

Ms. Walton began by discussing the meetings needed for the plan update and asked who was new to the hazard mitigation planning process. She started the presentation by providing a mitigation overview and what it means to have actions planned to reduce and eliminate long-term risk to life and property. She also discussed how mitigation supports overall resiliency efforts as well as the status of the current plan and the timeline for the entire project. Ms. Walton stated that the current plan expires in February 2023 and that it is vital to have all of the jurisdictions participate as this planning efforts allows access to mitigation funding for the communities. She also mentioned that the City of Greer will be participating in the county level plans of Spartanburg and Greenville as they are not intending to update their municipal level plan.

Ms. Walton then laid out all of the mitigation techniques/categories:

- ❖ Prevention
- ❖ Property Protection
- ❖ Natural Resources Protection
- ❖ Structural Projects
- ❖ Emergency Services
- ❖ Public Education and Awareness

She walked through the PowerPoint presentation to outline various examples of each technique and began a discussion of projects that the county and participating jurisdictions might pursue. Following this discussion, Ms. Walton gave a project overview.

During the project overview, Ms. Walton summarized the key objectives:

- ❖ 5-year HMP update
- ❖ Maintain mitigation funding eligibility for participating jurisdictions
- ❖ Identify potential projects
- ❖ Public education and awareness
- ❖ State and federal compliance

She then dove into the actual project tasks of the planning process, risk assessment, capability assessment, mitigation strategy and how the Hazard Mitigation Planning Team would be involved.

Planning Process

For the planning process, Ms. Walton stated that the data collection for the planning efforts had already begun as the team had completed a dam annex in December 2021 based on the new local mitigation planning standards. She also stated that the initial Steering Committee for this effort met in February earlier this year and that it is crucial for the Hazard Mitigation Planning Committee to be actively engaged in the overall planning process.

Risk Assessment

Following the outline of the planning process, Ms. Walton detailed the risk assessment portion of the project. She explained that the next meeting will solely be focused on that and the review of the project team's findings and assessment. Ms. Walton clarified that in the risk assessment portion of the plan development, FEMA requires that plans address natural hazards, however, an all-hazards approach is becoming more prevalent. She discussed the previous hazards that were identified in the plan and asked the group to possibly decide if there were additional hazards they would like to add to the list. No additional hazards were added. However, Ms. Walton did discuss dam/levee failure as a highlighted hazard that is connected to a national initiative and priority of dam safety. FEMA has made funding available for dam mitigation and Spartanburg County is the first jurisdiction in SC to develop a dam annex or dam-specific mitigation action. A discussion on Lyman Lake Dam then took place and additional information regarding the status of the annex was shared.

Capability Assessment

Ms. Walton explained the community capability assessment and discussed how capability is divided primarily into 3 categories:

- ❖ Administrative
- ❖ Technical
- ❖ Fiscal

She stated at the completed capability assessments would be disseminated to each jurisdiction for review, assessment, and verification of the information.

Mitigation Strategy

Ms. Walton also discussed mitigation strategy and how it is developed. She stated that mitigation goals come from the existing plan and maybe adjusted, and objectives may be added if the county desires to do that. The current mitigation actions will be updated as well with their status. However, all of the jurisdictions will need to develop new actions as well based on the risk assessment, any updates in the capability assessment, and the changes locally.

She continued the presentation by discussing the necessary documentation for the planning process and plan maintenance, the current project schedule, and the Hazard Mitigation Planning Committee and the roles and responsibilities of the group.

Project Schedule

Ms. Walton laid out a tentative project schedule with a risk assessment meeting to be held in June and for the draft plan to be completed in the fall. Public meetings were discussed and a plan for the county Community Emergency Response Team's (CERT) participation was supported. Deliverable deadlines were discussed for the project schedule that would be included in a final draft sent for review to FEMA in November 2022.

Public Involvement

Ms. Walton explained how public comment and participation is a required component of the planning process. A public survey was developed that the county will be placing on their website. The deadline was slated for May 31, 2022, and it was requested for the survey to be disseminated. The Town of Lyman, City of Spartanburg, and Spartanburg County all stated that they could post the survey on their websites. The website link was shared electronically following the meeting. An in-depth discussion on utilizing social media followed and it was determined that the county would use Facebook, Twitter, and the Next Door sites.

The next steps were to initiate data collection with the risk assessment and capability assessment. The floor was opened for questions and comments. Next, Ms. Walton wrapped up the meeting by thanking everyone for their time and asking that the participants stay involved in the overall process. She stated that the presentation would also be sent out electronically.

Ms. Walton then adjourned the meeting.

June 21, 2022

Hazard Mitigation Planning Team

Risk Assessment and Mitigation Strategy Meeting

Ms. Walton initiated the meeting with introductions and shared the outline of the agenda. She stated that this would be an interactive meeting. Further introductions were made, and Ms. Walton began by providing an overview of the current status of the project. The jurisdictions of Landrum, Greer, Spartanburg (city), and the County were present.

Ms. Walton reviewed the activities of the kick-off meeting, the hazards that were being addressed in the plan, and discussed public involvement. There was also a discussion of the public meeting held in earlier in June (discussed in Section XXX). She then presented the findings of the risk assessment and stated that the risk assessment is the base of the mitigation plan and that we now have better data to update the hazard history. Ms. Walton outlined the pieces of each hazard profile and the components of the Priority Risk Index (PRI).

She then explained the process for preparing hazard profiles and discussed how each hazard falls into one of four basic categories: atmospheric, hydrologic, geologic, and other. She indicated that each hazard must be evaluated and formally ruled out if it is not applicable to the study area, even where it seems obvious.

Ms. Walton reviewed the hazard profiles, and the following bullets summarize the information presented:

- ❖ DROUGHT. There have been several years since 2009 where drought conditions have been reported as exceptional levels in the area. Future occurrences are likely.
- ❖ HEAT WAVE/EXTREME HEAT. The highest record of extreme heat was 107 degrees in 2012. Future occurrences are possible.
- ❖ HAILSTORM. There have been 359 recorded events since 1955. There were 14 reported hailstorm events in 2020 alone. Future occurrences are highly likely.
- ❖ HURRICANES AND TROPICAL STORMS. NOAA data shows that more than 42 storm tracks have come within 75 miles of the region since 1850. Future occurrences are possible.
- ❖ LIGHTNING. There have been 36 recorded lightning events since 1996 causing over \$2 million in reported property damages. Two deaths and 12 injuries occurred from the events. Future occurrences are highly likely.
- ❖ THUNDERSTORM/HIGH WINDS. There have been 569 severe thunderstorm/high wind events reported since 1955 with \$15.1 million in reported property damages. One death and 12 injuries have been reported. Future occurrences are highly likely.
- ❖ TORNADOES. There have been 36 recorded tornado events reported in the region since 1955. There was \$57.4 million in property damages. Four deaths and 103 injuries were reported. Future occurrences are likely.
- ❖ WINTER STORM AND FREEZE. There have been 95 recorded winter events in the region since 1955 resulting in \$22.9 million in reported property damages. Future occurrences are highly likely.
- ❖ FLOOD. There have been 73 flood and flash flood events recorded in the County since 1955, resulting in \$14.3 million in property damage. There have been 113 NFIP claims since 1980 and approximately \$1.3 million in claims. Future occurrences are highly likely. There are only 9 repetitive loss properties in the entire County.
- ❖ EARTHQUAKES. There have been 9 recorded earthquake events in the area since 2015. All of the tornadoes were recorded below a 3.0 magnitude on the Richter Scale. Future occurrences are likely.
- ❖ LANDSLIDE. No major events have been recorded. Landslide probability is possible with a 1 percent to 10 percent annual probability. Future occurrences are possible.
- ❖ WILDFIRE. There is an average of 35 fires per year reported in the County. In 2016, Pinnacle Mountain Fire burned 10,623 acres. Future occurrences are likely.
- ❖ HAZARDOUS MATERIALS INCIDENTS. There have been 224 toxic release incidents within the County reported by the US EPA. Chemicals, transportation equipment, and fabricated materials were the industries responsible. Future occurrences are highly likely.

- ❖ **TRANSPORTATION INCIDENT.** Two plane incidents were reported in July 2013 and October 2015 as well as one train incident in March 2011. Future occurrences are possible. There was disruption of normal commerce.

The results of the hazard identification process were used to generate a Priority Risk Index (PRI), which categorizes and prioritizes potential hazards as high, moderate, or low risk based on probability, impact, spatial extent, warning time, and duration. The highest PRI was assigned to Winter Storm and Freeze, followed by Severe Thunderstorm/High Winds, Tornado, and Hazardous Materials Incident. It was decided that Transportation Incident should be moderate risk because there is a high frequency of those type of events. It was decided that lightning is a significant risk and should be in alignment with heat wave. A question was raised as to whether drought and wildfire should remain as moderate risk. There was an agreement from the fire chiefs regarding that being an appropriate level of risk for those hazards. The low risk hazards of earthquake, landslide, and hurricane/tropical storm were determined to remain at low risk.

Ms. Walton then began the next portion of the presentation to review the critical facilities. She defined the meaning of critical facility and how to address any considerations for those facilities. She also reviewed facility types. Ms. Walton displayed the critical facilities mapped in the county.

Next, she shared how the capability assessment is used in a mitigation plan and its importance. She shared that the capabilities were mixed between limited and moderate to high based on the size of the municipality and staffing. Each jurisdiction was asked to provide their comments or updates on the capability assessment by July 22. Ms. Walton also reviewed the highlights of the public survey (discussed in Section 2.6.1) that had a response of 449 completed surveys. The hazards of highest concern were tornado and severe thunderstorm/high winds, and 87 percent of respondents were interested in becoming even more prepared. Overall, the mitigation techniques were ranked in order of importance as follows:

- ❖ Highest importance
 - Prevention
 - Natural Resource Protection
 - Emergency Services
- ❖ Moderate importance
 - Public Education and Awareness
- ❖ Lowest importance
 - Property Protection
 - Structural Projects

Then Ms. Walton reviewed the existing mitigation goals and asked for feedback. Next, she explained the two-step process to the mitigation strategy update. The team walked through some of the existing mitigation actions and examples of how to update them with their current status. She also provided examples of potential new actions. Then the Planning Team was instructed to develop new actions for each hazard and to ensure that they had an action addressing all of the hazards. She stated that she would disseminate all of the worksheets electronically to use and they should be returned by July 22. Ms. Walton stated that she would be available to assist with mitigation action development as needed and adjourned the meeting.

June 1, 2022

Public Meeting

Spartanburg County Multi-jurisdictional Hazard Mitigation Plan Update

The public meeting was opened up by Robbie Swofford, Emergency Management Coordinator of Spartanburg County Office of Emergency Management, via zoom. He introduced the project contractor, Margaret Walton of Atkins. Ms. Walton then allowed everyone to introduce themselves and outlined the agenda.

She then provided an overview of mitigation and the definition and how it impacts the community. Ms. Walton provided synopsis of the current plan and the listed the participating jurisdictions. Next, she explained the six categories of the hazard mitigation techniques and provided in depth examples of each. Ms. Walton delivered a more detailed summary of the project to update the current Hazard Mitigation Plan with key objectives, project tasks, and a description of the Spartanburg County Hazard Mitigation Planning Team. She described the planning process, risk assessment, hazard identification, capability assessment, mitigation strategy, plan maintenance, and required documentation for the development of the Plan update.

Ms. Walton opened the floor for questions and discussion. She then closed the meeting by sharing the next steps of the process and asking for feedback and for individuals to take the public participation survey.

2.6 INVOLVING THE PUBLIC

44 CFR Requirement

44 CFR Part 201.6(b)(1): The planning process shall include an opportunity for the public to comment on the plan during the drafting stage and prior to plan approval.

An important component of the mitigation planning process involved public participation. Individual citizen and community-based input provides the entire Planning Team with a greater understanding of local concerns and increases the likelihood of successfully implementing mitigation actions by developing community “buy-in” from those directly affected by the decisions of public officials. As citizens become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the hazards present in their community and take the steps necessary to reduce their impact. Public awareness is a key component of any community’s overall mitigation strategy aimed at making a home, neighborhood, school, business, or entire city safer from the potential effects of hazards.

Public involvement in the development of the *Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan* was sought using two methods: (1) public survey instruments were made available in hard copy and online and (2) copies of the draft Plan were made available for public review on county and municipal websites and at government offices. The public was provided two opportunities to be involved in the development of the regional plan at two distinct periods during the planning process: (1) during the drafting stage of the Plan and (2) upon completion of a final draft Plan, but prior to official plan approval and adoption. A public participation survey (discussed in greater detail in Section 2.6.1) was made available during the planning process at various locations including on county and municipal websites.

Each of the participating jurisdictions will hold public meetings before the final plan is officially adopted by the local governing bodies. These meetings will occur at different times once FEMA has granted conditional approval of the Plan. Adoption resolutions will be included in Appendix A.

2.6.1 Public Survey

The Hazard Mitigation Planning Team was successful in getting citizens to provide input to the mitigation planning process through the use of the *Public Participation Survey*. The *Public Participation Survey* was designed to capture data and information from residents of Spartanburg County who might not be able to attend public meetings or participate through other means in the mitigation planning process.

Hard copies of the *Public Participation Survey* were distributed to the Hazard Mitigation Planning Team to be made available for residents to complete at local public offices. A link to an electronic version of the survey was also posted on the county and municipal websites. A total of 449 survey responses were received, which provided valuable input for the Hazard Mitigation Planning Team to consider in the development of the Plan update. Selected survey results are presented below.

- ❖ Approximately 43 percent of survey respondents had been impacted by a disaster, mainly tornadoes, hurricanes/tropical storms, flood, hail, high winds, and winter/ice storms.
- ❖ Respondents ranked the top three hazards to their neighborhood as Tornado (73 percent), Severe Thunderstorm/High Wind (68 percent), Hailstorm (33 percent), and Winter Storm and Freeze (25 percent).
- ❖ Approximately 49 percent of respondents have taken actions to make their homes more resistant to hazards and 87 percent are interested in making their homes more resistant to hazards.
- ❖ 67 percent of respondents do not know what office to contact regarding reducing their risks to hazards.
- ❖ Prevention, Natural Resource Protection, and Emergency Services were ranked as the most important activities for communities to pursue in reducing risks.

A copy of the survey is provided in Appendix B and a detailed summary of the survey results is provided in Appendix D.

2.7 INVOLVING THE STAKEHOLDERS

44 CFR Requirement

44 CFR Part 201.6(b)(2): The planning process shall include an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other non-profit interests to be involved in the planning process.

At the beginning of the planning process for the development of this Plan, the project consultant worked with the County Emergency Management lead to initiate outreach to stakeholders to be involved in the planning process. The project consultant sent out a list of recommended stakeholders

provided from FEMA Publication 386-1 titled **Getting Started: Building Support for Mitigation Planning**. The list of recommended stakeholders from FEMA is found in Appendix C of that publication (Worksheet #1: Build the Planning Team) and has been included in Appendix B of this plan to demonstrate the wide range of stakeholders that were considered to participate in the development of this Plan. The County Emergency Management Coordinator used that list for reference as they invited stakeholders to participate in the planning process.

In addition to the outreach efforts described above, the Hazard Mitigation Planning Team encouraged more open and widespread participation in the mitigation planning process by designing and distributing the *Public Participation Survey*. In addition to the public, this survey was provided for local officials, residents, businesses, academia, and other private interests in the county to be involved and offer input throughout the local mitigation planning process.

Moreover, the Hazard Mitigation Planning Team pushed to get input from stakeholders outside of the planning area including surrounding counties. Surrounding counties were contacted during the planning process and invited to a public meeting held June 1, 2022. When the draft Plan was developed, the surrounding counties were asked to review the Plan and provide suggestions/comments to the consultant's project manager. These suggestions and comments were vetted through the Hazard Mitigation Planning Team before they were implemented to ensure that they met the needs of the communities for whom the Plan was developed. Surrounding counties that were contacted included: Laurens County, Cherokee County, Chester County, Union County, York County, and Lancaster County. The email documenting this contact can be found in Appendix D.

2.8 DOCUMENTATION OF PLAN PROGRESS

Progress in hazard mitigation planning for the participating jurisdictions in Spartanburg County is documented in this plan update. Since hazard mitigation planning efforts officially began in the county with the development of the initial Hazard Mitigation Plans in the late 1990s and early 2000s, many mitigation actions have been completed and implemented in the participating jurisdictions. These actions have helped to reduce the overall risk to natural hazards for the people and property in Spartanburg County. The actions that have been completed are documented in the *Mitigation Action Plan* found in Section 9.

In addition, community capability continues to improve with the implementation of new plans, policies, and programs that help to promote hazard mitigation at the local level. The current state of local capabilities for the participating jurisdictions is captured in Section 7: *Capability Assessment*. The participating jurisdictions continue to demonstrate their commitment to hazard mitigation and hazard mitigation planning and have proven this by developing the Hazard Mitigation Planning Team to update the Plan and by continuing to involve the public in the hazard mitigation planning process.

SECTION 3

COMMUNITY PROFILE

This section of the Plan provides a general overview of Spartanburg County and its participating municipalities. It consists of the following four subsections:

- ❖ 3.1 Geography and the Environment
- ❖ 3.2 Population and Demographics
- ❖ 3.3 Housing, Infrastructure, and Land Use
- ❖ 3.4 Employment and Industry

3.1 GEOGRAPHY AND THE ENVIRONMENT

Spartanburg County is located in the northwest portion of South Carolina, southeast of the Blue Ridge Mountains in the piedmont plateau. For the purposes of this plan, Spartanburg County includes the Town of Campobello, City of Chesnee, Town of Cowpens, Town of Duncan, City of Greer, City of Inman, City of Landrum, Town of Lyman, Town of Pacolet, Town of Reidville, City of Spartanburg, City of Wellford, City of Woodruff, and all unincorporated areas within the county.¹ An orientation map is provided in **Figure 3.1**.

The county is characterized by subdued topographic features and moderate relief. Hills have a well-rounded appearance with no conspicuously prominent ridges or peaks, valley floors are generally about 100 feet deep, and there are a few swamp-like areas. The topography across the county generally slopes southeastward with a range in elevation from over 1,000 feet to under 600 feet.

Spartanburg County has a total area of 819 square miles, comprising 808 square miles of land and 11 square miles of water. The major surface water resources include Lake Blalock, Lake Bowen, the Pacolet River, and the Tyger River. Approximately 52 percent of the land cover is forested with most large, forested stands located in the south and east.

The total land area of each of the participating jurisdictions is presented in **Table 3.1**.

TABLE 3.1: TOTAL LAND AREAS OF PARTICIPATING JURISDICTIONS

Jurisdiction	Total Land Area
Spartanburg County	807.9 square miles
Campobello	2.8 square miles
Chesnee*	1.1 square miles
Cowpens	2.4 square miles
Duncan	4.7 square miles
Greer*	20.6 square miles

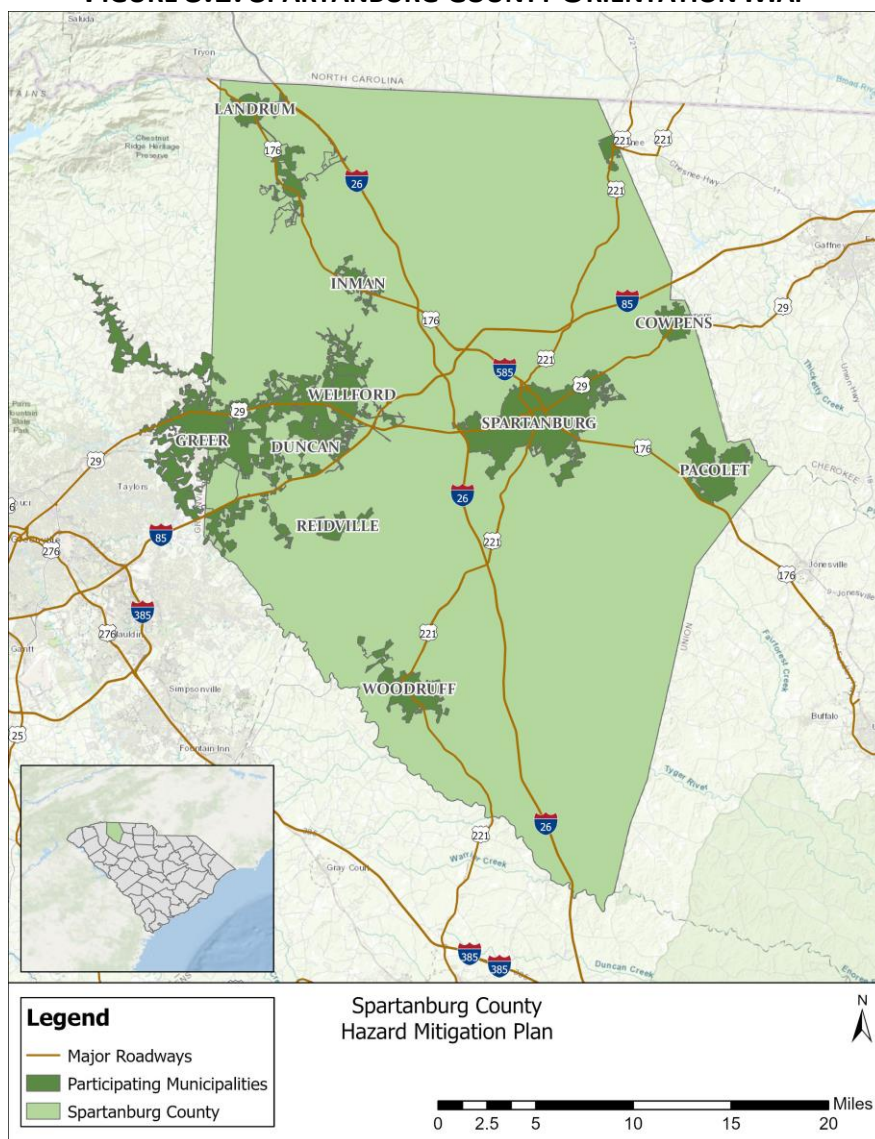
¹ Although the Town of Central Pacolet is located in Spartanburg County, the town is not participating in the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan. Therefore, municipal-specific information for the town is not included in this section.

Jurisdiction	Total Land Area
Inman	1.4 square miles
Landrum	2.7 square miles
Lyman	6.0 square miles
Pacolet	3.5 square miles
Reidville	1.7 square miles
Spartanburg (city)	19.8 square miles
Wellford	4.3 square miles
Woodruff	3.9 square miles

*Portions of land that make up Chesnee and Greer (0.02 and 10.8 square miles) are located in Cherokee County and Greenville County, respectively. Note: these areas are not included in the Spartanburg County total.

Source: United States Census Bureau

FIGURE 3.1: SPARTANBURG COUNTY ORIENTATION MAP



The geographic location of Spartanburg County helps to promote various outdoor recreational opportunities for hiking, biking, fishing, and water activities. Historical features also exist throughout the county including battlefields, historic homes, museums, and downtown areas. Spartanburg County is home to the only North American BMW facility, which includes the BMW Zentrum Museum that is open to visitors. There are multiple higher education institutions within the county correlating a working partnership between public and private accredited colleges and universities with businesses and the community.

Municipalities

The Town of Campobello is located within the northwestern portion of the county. The area offers multiple attractions including rose gardens, peach and apple orchards, and various farms located throughout the town. The town keeps tradition thriving through an annual folk festival every October. Several parks operate within the town providing various outdoor activity opportunities.

The City of Chesnee is located in both Spartanburg and Cherokee Counties. The city is located in the northeastern corner of Spartanburg County. Various events are hosted in the city including Concert on Main, Carolina Farm Festival, and Antique Bikes on Main. Other attractions within the city are a national battlefield and a family-owned farm offering a café, ice cream parlor, and produce market.

The Town of Cowpens is located along the eastern border of Spartanburg County. The town offers historic opportunities for residents and visitors along with various annual festivals and events. The Cowpens National Battlefield is located north of the town, but other various important historic sites are located throughout the town. The Cowpens Depot Museum and Civic Center displays historic clothing, photos, medals, and personal letters from former Cowpens depot crewman.

The Town of Duncan is in the western portion of the county. There are various things to do such as eating at local restaurants and taking part in various outdoor activities. Tyger River Park and Ballpark are located within the Town of Duncan along with Stoneledge Park. Tyger River Park contains 13 baseball fields, a training facility, playground, and amphitheater. River Falls Plantation Golf Course is an 18-hole Gary Player Signature Golf Course along the South Tyger River. Duncan also has a water park available with various family activities.

The City of Greer is located across both Greenville and Spartanburg Counties, along the western border of central Spartanburg County. There are two major highways that run through the city, Interstate 85, and US Route 29. The BMW manufacturing facility, which employs over 4,600 employees, is located within the city. Also, the Zentrum Museum as well as plant tours are available at the BMW facility. The South Carolina Inland Port, an intermodal facility, operates within the city and transfers goods via rail to the Port of Charleston. There are various buildings within the city that appear on the National Register of Historic Places. Sports opportunities are available within the city through the Greer Parks and Recreation Department at the City Stadium, Greer City Park, Century Park, Steven Field, Country Club Sports Complex, in addition to various other park and recreation facilities. Lake Robinson and Lake Cunningham offer additional outdoor activities. Greer Station is the city's central business district with 12 blocks of retail, dining, entertainment, and service organizations. Huber Mill, Heritages Museum, and other diverse attractions operate within the city.

The City of Inman is located in the northwestern part of Spartanburg County and experiences a weather phenomenon called the Isothermal Belt which keeps the climate mild year-round. Lake Bowman offers outdoor water recreational sports and fishing. The Inman Harvest Day Festival is an annual event

highlighting different community aspects. There are multiple trails within the city. Hollywild Animal Park, North Wood Farm and North Woods Fiber and Yarn Shop, and Gramling Farms offer fun and educational opportunities for residents and visitors.

The City of Landrum is in the northwestern corner of Spartanburg County. The city is located at the transportation junction of US Route 17 and South Carolina State Route 14. It is the most northwestern municipality within Spartanburg County. Outdoor activities are popular within the city, such as golf, boating, fishing, cycling, hiking, and horseback riding. Brookwood Park and W. Simmons Street Park operate as recreational areas for residents.

The Town of Lyman is a suburb of the City of Greer. The town has a vast history with the most significant resource being the location of a large textile mill, Pacific Mills, in the town. River Place Park offers scenic hiking and walking opportunities.

The Town of Pacolet is located near the eastern border of central Spartanburg County. The Pacolet River Paddling Trail runs within the town for great outdoor activities in a canoe, large raft, or kayak. The Pacolet Nature Trail is over one mile of easy-to-follow trails along the banks of the Pacolet River. Local attractions include an amphitheater, geocaching, library, parks, and community center. The Pacolet Indian Summer Festival is an annual festival that occurs in the month of October.

The Town of Reidville is a small town located in the western half of Spartanburg County. The town has a rich history and numerous historic buildings. The town contains a youth baseball field offering residents outdoor recreational activities.

The City of Spartanburg is located in the center of Spartanburg County and is the largest city in the county (excluding the City of Greer which is only partially located in the county). It contains various points of interests including historic features, natural aspects, and educational facilities. Some attractions include Chapman Cultural Center, Sparkle Mint Putt, Hub City Hunt, Spartanburg Music Trail, Spartanburg Art Museum, other cycling/trails, and Hatcher Garden. The city is a college town with six colleges operating within the city: Converse College, Edward Via College of Osteopathic Medicine, Spartanburg Community College, Spartanburg Methodist College, University of South Carolina Upstate, and Wofford College. Multiple large employers operate within the city such as American Credit Acceptance, Advance America, Denny's Corporation, and QS/1 Headquarters.

The City of Wellford is in the western half of Spartanburg County. The city has a strong historic presence dating back to the Revolutionary War. The city is working in conjunction with Spartanburg County Parks Department to establish parks and open green space throughout the city.

The City of Woodruff is a historic mill town with a downtown center featuring shops, restaurants, stores, and salons located in southwestern portion of Spartanburg County. There are multiple multi-use trails and walking areas located throughout the city. The city contains a new Greenway Trail and renovated McKinney Park. There are several annual festivals that take place in city bringing visitors and tourists to the area. The city promotes business growth due to its close proximity to major transportation corridors.

Climate

The climate in Spartanburg County is characterized as humid and temperate with mild winters and hot, humid summers. Being located on the lee side of the mountains, the county is protected from cold air masses that move toward the southeast during the winter months. The average temperatures (°F) range

from 32 degrees in the winter to 90 degrees in the summer, and the average annual precipitation is about 50 inches.

From March through May, temperatures have average lows in the high 30s with highs in the 80s. Typically, the weather is milder by late March and warm by late April.

In the summer, afternoon showers and thunderstorms are common, and average temperatures increase with afternoon highs reaching the low 90s in July and August. The highest recorded daily rainfall within the county was 9.3 inches on August 26, 1995.

September through mid-November is typified by clear skies and cooler weather that alternates between warm days and cool nights. Average temperatures are similar to those experienced in the spring with a tendency to have a lower monthly average temperature.

Winter in Spartanburg County is generally moderate. High temperatures are usually in the mid-50s, and winter lows are in the lower 30s. Snow and ice do occur. The most snowfall to occur in one day within Spartanburg County was 14.2 inches on March 2, 1942.

3.2 POPULATION AND DEMOGRAPHICS

Greer is the largest participating municipality by area (including the area located in Greenville County), but Spartanburg has the largest population. Between 2000 and 2010, the majority of participating municipalities and the unincorporated county experienced population growth; however, three municipalities did experience declines. During the span of 2010 to 2020, only two municipalities decreased in population slightly. Reidville had the most significant growth with Greer continuing to grow at a fast rate of 38.4%. Population counts from the US Census Bureau for 1990, 2000, 2010, and 2020 for each of the participating jurisdictions are presented in **Table 3.2**.

TABLE 3.2: POPULATION COUNTS FOR PARTICIPATING JURISDICTIONS

Jurisdiction	1990 Census Population	2000 Census Population	2010 Census Population	2020 Census Population	% Change 2010-2020
Spartanburg County	226,800	253,791	284,307	327,997	15.4%
Campobello	--	449	502	675	34.5%
Chesnee*	1,280	1,003	868	829	-4.5 %
Cowpens	2,176	2,279	2,162	2,023	-6.4%
Duncan	2,152	2,870	3,181	4,041	27.0%
Greer*	10,322	16,843	25,515	35,308	38.4%
Inman	1,742	1,884	2,321	2,990	28.82%
Landrum	2,347	2,472	2,376	2,481	4.4%
Lyman	2,271	2,659	3,243	6,173	90.3%
Pacolet	1,736	2,690	2,235	2,274	1.7%
Reidville	--	478	601	1,634	100.9%
Spartanburg (city)	43,467	39,673	37,013	38,732	4.6%
Wellford	2,511	2,030	2,378	3,293	38.5%

Jurisdiction	1990 Census Population	2000 Census Population	2010 Census Population	2020 Census Population	% Change 2010-2020
Woodruff	4,365	4,229	4,090	4,212	2.9%

*The 2010 total population of Chesnee and Greer include population (70 people and 18,635 people) residing in Cherokee County and Greenville County, respectively. Note: these populations are not included in the Spartanburg County total.

Source: United States Census Bureau

Based on the 2021 American Community Survey data, the median age of residents in Spartanburg County is 38.0. The racial characteristics of the participating jurisdictions are presented in **Table 3.3**. Generally, whites make up the majority of the population in the county, accounting for almost 67 percent of the population.

TABLE 3.3: DEMOGRAPHICS OF PARTICIPATING JURISDICTIONS

Jurisdiction	White, Percent (2020)	Black or African American, Percent (2020)	American Indian or Alaska Native, Percent (2020)	Asian, Percent (2020)	Native Hawaiian or Other Pacific Islander, Percent (2020)	Other Race, Percent (2020)	Two or More Races, Percent (2020)	Persons of Hispanic Origin, Percent (2020)*
Spartanburg County	66.9%	19.6%	0.4%	2.5%	0.1%	4.6%	5.9%	8.5%
Campobello	84.2%	4.5%	0.2%	2.4%	0.0%	1.5%	7.4%	5.19%
Chesnee	67.4%	23.3%	0.4%	0.5%	0.0%	1.8%	6.7%	5.7%
Cowpens	72.3%	17.7%	0.8%	0.6%	0.2%	2.5%	5.9%	6.1%
Duncan	71.4%	7.7%	3.7%	1.0%	0.1%	4.7%	11.3%	11.3%
Greer	60.9%	15.9%	0.5%	5.3%	0.0%	8.2%	9.1%	15.9%
Inman	78.3%	11.3%	0.3%	2.8%	0.0%	2.0%	5.2%	3.9%
Landrum	83.2%	9.1%	0.1%	0.4%	0.0%	2.9%	4.3%	4.2%
Lyman	75.3%	12.5%	0.5%	1.8%	0.0%	3.5%	6.5%	7.3%
Pacolet	72.9%	19.0%	0.6%	0.7%	0.0%	1.3%	5.6%	2.7%
Reidville	69.7%	16.5%	0.3%	3.6%	0.3%	2.8%	6.9%	6.1%
Spartanburg (city)	45.3%	44.1%	0.3%	2.1%	0.2%	2.9%	5.1%	5.9%
Wellford	44.9%	41.0%	0.1%	1.4%	0.0%	5.1%	7.6%	8.4%
Woodruff	68.5%	17.6%	1.3%	0.6%	0.0%	4.5%	7.4%	9.1%

*Hispanics may be of any race, so also are included in applicable race categories.

Source: United States Census Bureau

3.3 HOUSING, INFRASTRUCTURE, AND LAND USE

3.3.1 Housing

According to the 2020 US Census, there are 131,725 housing units in Spartanburg County, the majority of which are single-family homes or mobile homes. Housing information for the participating jurisdictions is presented in **Table 3.4**. As shown in the table, Spartanburg County has a low percentage of seasonal housing throughout the county.

TABLE 3.4: HOUSING CHARACTERISTICS OF PARTICIPATING JURISDICTIONS

Jurisdiction	Housing Units (2000)	Housing Units (2010)	Housing Units (2020)	Seasonal Units, Percent (2020)	Median Home Value (2020)
Spartanburg County	106,986	122,628	131,725	0.75%	\$165,800
Campobello	176	225	226	0.4%	\$175,000
Chesnee*	460	471	364	5.5 %	\$114,200
Cowpens	991	967	951	0.0%	\$132,000
Duncan	1,274	1,401	1,421	17.6%	\$134,800
Greer*	7,386	11,127	14,942	1.6%	\$195,600
Inman	829	1,134	1,362	1.3%	\$107,800
Landrum	1,107	1,191	1,222	1.3%	\$128,700
Lyman	1,224	1,497	2,365	1.5%	\$162,500
Pacolet	1,178	1,134	1,093	0.3%	\$82,700
Reidville	209	296	566	1.6%	\$240,800
Spartanburg (city)	17,696	17,516	17,419	0.0%	\$146,500
Wellford	910	1,120	1,379	1.5%	\$183,600
Woodruff	1,869	1,846	1,856	2.9%	\$189,700

*The 2020 housing units for Chesnee and Greer include units (417 units and 14,942 units) located in Cherokee County and Greenville County, respectively. Note: these units are not included in the Spartanburg County total.

Source: United States Census Bureau

3.3.2 Infrastructure

Transportation

There are several major highways that travel through Spartanburg County including Interstates 85 and 26 and US Highways 29, 176, and 221. Interstate 85 runs southwest to northeast while Interstate 26 runs generally north to south. US Highway 29 cuts across the mid-portion of the county from east to west while US Highway 176 runs northwest to southeast, and the two intersect in the City of Spartanburg. US Highway 221 travels from northeast to southwest.

The Greenville-Spartanburg International Airport is located just off of Interstate 85 along the western border of the county outside of the City of Greer's city limits. Since becoming an international airport in 1995, passenger and cargo traffic has significantly increased. The airport is now served by five major airlines with 49 non-stop average daily departures to 14 cities and 18 airports across the US.

The Spartanburg Downtown Memorial Airport is located within the City of Spartanburg. The airport services local and private aircrafts along with general aviation airports. Flight instruction is also available at the airport.

Rail service in Spartanburg County is provided by CSX Transportation and Norfolk Southern Corporation which operate the first and second longest track routes in the state, respectively. The county is also served by Amtrak.

The Spartanburg Area Regional Transit Agency (SPARTA) offers public bus service within the City of Spartanburg. Bus transportation service is provided along multiple routes throughout the city and adjacent areas.

Utilities

Electric power in Spartanburg County is provided by Duke Energy, Broad River Electric Cooperative, Laurens Electric Cooperative, Lockhart Power Company, and Greer Commission of Public Works (CPW). The largest electric provider is Duke Energy, and it extends to all but one incorporated area as well as most urban developed areas in the county.

The Spartanburg Water Commission is the principal provider of water in the county. In addition to the direct water service it offers to the central area of the county, it also supplies treated water for distribution throughout most of the remainder of the county. Water service areas and providers not supplied by the Spartanburg Water Commission include the Greer CPW, City of Landrum, and Blue Ridge Rural Water Company. Several water districts also serve the county including the Startex-Jackson-Wellford-Duncan (SJWD) Water District, Woodruff-Roebuck Water District (WRWD), and Inman-Campobello Water District (ICWD).

There are 11 public sewer systems within Spartanburg County. These are operated by Spartanburg Sanitary Sewer District (with the City of Spartanburg and Metro B Special Purpose District as sub-districts), Town of Lyman, Town of Inman, Town of Woodruff, Town of Landrum, Town of Chesnee, Town of Duncan, Greer CPW, Town of Wellford, Inman Mills, and Riverdale Mills Water and Sewer District. Renewable Water Resources (ReWa) also provides wastewater treatment services to a small area in the west-central portion of the county.

Community Facilities

There are a number of public buildings and community facilities located throughout Spartanburg County. According to the data collected for the vulnerability assessment (Section 6.3.3), there are 114 schools, 64 fire stations, 18 law enforcement stations, 6 hospitals, and 1 Emergency Operations Center within the study area.

Two hospitals are located within the City of Spartanburg. These include Spartanburg Medical Center and Mary Black Memorial Hospital. Spartanburg Medical Center is a 540-bed major teaching and research hospital and is one of the largest employers in the county, employing more than 3,500 people. Mary Black Memorial Hospital is a hospital with a 24-bed emergency department, an intensive care unit, geriatric psychiatric services, a joint care program, cardiology services, inpatient rehabilitation, and a sleep center.

There are additional medical facilities in the City of Greer that are located in Greenville County. Greer Medical Campus, part of the Greenville Health System, is located in the city and delivers personalized care to patients for various medical-related services such as emergency care service, diagnostic services, and imaging services. Pelham Medical Center is also within the City of Greer and offers emergency care service, physician care needs, diagnostic capabilities, and medical and surgery specialties.

Spartanburg County Public Libraries operates 11 library branches throughout the county. The Spartanburg Parks System maintains numerous community and regional parks, and one South Carolina State Park (Croft State Park) is located in the county. There are also additional recreational facilities

provided by the Spartanburg County Parks Department such as ball parks, playing fields, community centers, recreation centers, trails/greenways, river access/blueways, and lakes.

The county also currently operates seven school districts. Higher education programs are also available from institutions including The University of South Carolina Upstate, Spartanburg Technical College, Wofford College, Converse College, Spartanburg Methodist College, and Sherman College.

Spartanburg County offers a variety of recreational activities throughout the county. There are many parks that offer biking, hiking, fishing, boating, picnicking, camping, playgrounds, and outdoor concerts. Various lakes provide outdoor opportunities for boating, fishing, picnicking, and canoe/kayaking. Boat ramps and pontoon sites are available at certain park and lake locations in the county. There are nine golf courses within Spartanburg County allowing golf services to residents and visitors. Bowling, disc golf, horseback riding, public hunting, rock climbing, and a skate park are all additional recreational opportunities available in Spartanburg County.

3.3.3 Land Use

Land use and development patterns in Spartanburg County are the result of a complex interaction of demographic trends, economic circumstances, and social attitudes. Technological changes in areas such as transportation and construction, as well as the availability and cost of natural resources, including land, water, and energy, have also helped shape existing development patterns.

The forces that influence land development are constantly evolving. Consequently, factors impacting forms of land use are dramatically different today from those that shaped land use patterns in the past. Lifestyle preferences, size and configuration of households, levels of personal income, available transportation modes, and the composition of the economy are a few of the variables responsible for the current geographic distribution of land use and activities.

As the county grows and continues to develop, more and more land is changing from farmland and woodland to residential, commercial, and industrial use; supported by more roads, schools, churches, and other public and semi-public uses. Local land use and associated regulations are further discussed in *Section 7: Capability Assessment*.

3.4 EMPLOYMENT AND INDUSTRY

Agriculture was the original mainstay of Spartanburg County's economy, but industrial development started with the completion of grist and textile mills in the early 1800s which led to the growth of the textile industry. As traditional textiles began their decline in the mid-1900s, the county's industrial base broadened, eventually making it one of the most internationally diverse locations for business in the nation. The manufacturing industry in Spartanburg County has grown to include automotive manufacturing, plastics, packaging, metalworking, and distribution.

Today, Spartanburg County has a diverse economy with large industrial companies including over 80 international companies. BMW Manufacturing Company operates within Spartanburg County. Milliken, Michelin, Cryovac, Advance America, and Denny's all operate within Spartanburg bringing jobs and economic revenue to the area. Localized employers also operate within the county and provide numerous jobs to residents. The Spartanburg Regional Hospital System is a major employer within the

county along with the Spartanburg County School System. Economic growth is occurring within the county and is projected to continue from an economic and population perspective.

According to the American Community Survey (ACS) 5-year estimates, in 2021, Spartanburg County had an average annual employment of 158,735 workers. In 2022, the unemployment rate has averaged about 3.0 percent as compared to about 3.2 percent for the state. According to the U.S. Bureau of Labor Statistics, in 2022 the manufacturing industry employed close to 40 percent of the county's workforce followed by trade, transportation, and utilities at 37.4 percent, and government at 27.6 percent. For 2022, the average annual median household income in Spartanburg County was \$27,305 compared to \$28,569 for the state of South Carolina.

SECTION 4

HAZARD IDENTIFICATION

This section describes how the Planning Team identified the hazards to be included in the Plan. It consists of the following five subsections:

- ❖ 4.1 Overview
- ❖ 4.2 Description of Full Range of Hazards
- ❖ 4.3 Disaster Declarations
- ❖ 4.4 Hazard Evaluation
- ❖ 4.5 Hazard Identification Results

44 CFR Requirement

44 CFR Part 201.6(c)(2)(i): The risk assessment shall include a description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

4.1 OVERVIEW

Spartanburg County is vulnerable to a wide range of natural and human-caused hazards that threaten life and property. Current FEMA regulations and guidance under the Disaster Mitigation Act of 2000 (DMA 2000) require, at a minimum, an evaluation of a full range of natural hazards. An evaluation of man-made hazards (i.e., technological hazards, terrorism, etc.) is encouraged, though not required, for plan approval. Spartanburg County has included an assessment of primarily natural hazards, but some man-made hazards have also been identified.

Upon a review of the full range of natural hazards suggested under FEMA planning guidance, Spartanburg County and its 13 participating municipalities have identified several hazards that are to be addressed in their Multi-Jurisdictional Hazard Mitigation Plan. These hazards were identified through an extensive process that utilized input from the Spartanburg County Hazard Mitigation Planning Team members, research of past disaster declarations in the county,¹ and review of the South Carolina State Hazard Mitigation Plan. Readily available information from reputable sources (such as federal and state agencies) was also evaluated to supplement information from these key sources.

Table 4.1 lists the full range of hazards initially identified for inclusion in the Plan and provides a brief description for each. This table includes 24 individual hazards. Some of these hazards are considered to be interrelated or cascading, but for preliminary hazard identification purposes, these individual hazards are broken out separately.

Next, **Table 4.2** lists the disaster declarations in Spartanburg County.

¹ A complete list of disaster declarations for Spartanburg County can be found below in Section 4.3.

Next, **Table 4.3** documents the evaluation process used for determining which of the initially identified hazards are considered significant enough to warrant further evaluation in the risk assessment. For each hazard considered, the table indicates whether or not the hazard was identified as a significant hazard to be further assessed, how this determination was made, and why this determination was made. The table works to summarize not only those hazards that *were* identified (and why) but also those that *were not* identified (and why not). Hazard events not included at this time may be addressed during future evaluations and updates of the risk assessment if deemed necessary by the Hazard Mitigation Planning Team during the plan update process.

Lastly, **Table 4.4** provides a summary of the hazard identification and evaluation process noting that 14 of the 24 initially identified hazards are considered significant enough for further evaluation through this Plan's risk assessment (marked with a "☑").

4.2 DESCRIPTION OF FULL RANGE OF HAZARDS

TABLE 4.1: DESCRIPTIONS OF THE FULL RANGE OF INITIALLY IDENTIFIED HAZARDS

Hazard	Description
ATMOSPHERIC HAZARDS	
Avalanche	A rapid fall or slide of a large mass of snow down a mountainside.
Drought	A prolonged period of less than normal precipitation such that the lack of water causes a serious hydrologic imbalance. Common effects of drought include crop failure, water supply shortages, and fish and wildlife mortality. High temperatures, high winds, and low humidity can worsen drought conditions and also make areas more susceptible to wildfire. Human demands and actions have the ability to hasten or mitigate drought-related impacts on local communities.
Extreme Cold	Extreme cold is generally considered to occur when the temperature is at or below freezing for a period of time. Often these events are associated with winter storms and other winter weather, but extreme cold events can occur on their own. Dangers associated with extreme cold events include frostbite and hypothermia among other impacts to people and these events can often last for several days or weeks in a row.
Hailstorm	Any storm that produces hailstones that fall to the ground; usually used when the amount or size of the hail is considered significant. Hail is formed when updrafts in thunderstorms carry raindrops into parts of the atmosphere where the temperatures are below freezing.
Heat Wave/Extreme Heat	A heat wave may occur when temperatures hover 10 degrees or more above the average high temperature for the region and last for several weeks. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a "dome" of high atmospheric pressure traps hazy, damp air near the ground. Excessively dry and hot conditions can provoke dust storms and low visibility. A heat wave combined with a drought can be very dangerous and have severe economic consequences on a community.

Hurricane/Tropical Storm	Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and with a diameter averaging 10 to 30 miles across. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes. Coastal areas are also vulnerable to the additional forces of storm surge, wind-driven waves, and tidal flooding which can be more destructive than cyclone wind. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season, which extends from June through November.
Lightning	Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges within a thunderstorm, creating a “bolt” when the buildup of charges becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes, but the surrounding air cools following the bolt. This rapid heating and cooling of the surrounding air causes thunder. On average, 73 people are killed each year by lightning strikes in the United States.
Nor’easter	Similar to hurricanes, nor’easters are ocean storms capable of causing substantial damage to coastal areas in the Eastern United States due to their associated strong winds and heavy surf. Nor'easters are named for the winds that blow in from the northeast and drive the storm up the East Coast along the Gulf Stream, a band of warm water that lies off the Atlantic coast. They are caused by the interaction of the jet stream with horizontal temperature gradients and generally occur during the fall and winter months when moisture and cold air are plentiful. Nor’easters are known for dumping heavy amounts of rain and snow, producing hurricane-force winds, and creating high surf that causes severe beach erosion and coastal flooding.
Severe Thunderstorm/High Wind	Thunderstorms are caused by air masses of varying temperatures meeting in the atmosphere. Rapidly rising warm moist air fuels the formation of thunderstorms. Thunderstorms may occur singularly, in lines, or in clusters. They can move through an area very quickly or linger for several hours. Thunderstorms may result in hail, tornadoes, or straight-line winds. Windstorms pose a threat to lives, property, and vital utilities primarily due to the effects of flying debris that can down trees and power lines.
Tornado	A tornado is a violently rotating column of air that has contact with the ground and is often visible as a funnel cloud. Its vortex rotates cyclonically with wind speeds ranging from as low as 40 mph to as high as 300 mph. Tornadoes are most often generated by thunderstorm activity when cool, dry air intersects and overrides a layer of warm, moist air forcing the warm air to rise rapidly. The destruction caused by tornadoes ranges from light to catastrophic depending on the intensity, size, and duration of the storm.

SECTION 4: HAZARD IDENTIFICATION

Winter Storm and Freeze	Winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Blizzards, the most dangerous of all winter storms, combine low temperatures, heavy snowfall, and winds of at least 35 miles per hour, reducing visibility to only a few yards. Ice storms occur when moisture falls and freezes immediately upon impact on trees, power lines, communication towers, structures, roads, and other hard surfaces. Winter storms and ice storms can down trees, cause widespread power outages, damage property, and cause fatalities and injuries to human life.
GEOLOGIC HAZARDS	
Expansive Soils	Soils that will exhibit some degree of volume change with variations in moisture conditions. The most important properties affecting degree of volume change in a soil are clay mineralogy and the aqueous environment. Expansive soils will exhibit expansion caused by the intake of water and, conversely, will exhibit contraction when moisture is removed by drying. Generally speaking, they often appear sticky when wet and are characterized by surface cracks when dry. Expansive soils become a problem when structures are built upon them without taking proper design precautions into account with regard to soil type. Cracking in walls and floors can be minor or can be severe enough for the home to be structurally unsafe.
Earthquake	A sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the surface. This movement forces the gradual building and accumulation of energy. Eventually, strain becomes so great that the energy is abruptly released, causing the shaking at the earth's surface which we know as an earthquake. Roughly 90 percent of all earthquakes occur at the boundaries where tectonic plates meet, although it is possible for earthquakes to occur entirely within plates. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of persons and disrupt the social and economic functioning of the affected area.
Landslide	The movements of a mass of rock, debris, or earth down a slope when the force of gravity pulling down the slope exceeds the strength of the earth materials that comprise to hold it in place. Slopes greater than 10 degrees are more likely to slide, as are slopes where the height from the top of the slope to its toe is greater than 40 feet. Slopes are also more likely to fail if vegetative cover is low and/or soil water content is high.
Land Subsidence/Sinkhole	The gradual settling or sudden sinking of the Earth's surface due to the subsurface movement of earth materials. Causes of land subsidence include groundwater pumpage, aquifer system compaction, drainage of organic soils, underground mining, hydrocompaction, natural compaction, sinkholes, and thawing permafrost.
Tsunami	A series of waves generated by an undersea disturbance such as an earthquake. The speed of a tsunami traveling away from its source can range from up to 500 miles per hour in deep water to approximately 20 to 30 miles per hour in shallower areas near coastlines. Tsunamis differ from regular ocean waves in that their currents travel from the water surface all the way down to the sea floor. Wave amplitudes in deep water are typically less than one meter; they are often barely detectable to the human eye. However, as they approach shore, they slow in shallower water, essentially causing the waves from behind to effectively "pile up," and wave heights increase dramatically. As opposed to typical waves which crash at the shoreline, tsunamis bring with them a continuously flowing 'wall of water' with the potential to cause devastating damage in coastal areas located immediately along the shore.

Volcano	A mountain that opens downward to a reservoir of molten rock below the surface of the earth. While most mountains are created by forces pushing up the earth from below, volcanoes are different in that they are built up over time by an accumulation of their own eruptive products: lava, ash flows, and airborne ash and dust. Volcanoes erupt when pressure from gases and the molten rock beneath becomes strong enough to cause an explosion.
HYDROLOGIC HAZARDS	
Erosion	Erosion is the gradual breakdown and movement of land due to both physical and chemical processes of water, wind, and general meteorological conditions. Natural, or geologic, erosion has occurred since the Earth's formation and continues at a very slow and uniform rate each year.
Dam and Levee Failure	Dam failure is the collapse, breach, or other failure of a dam structure resulting in downstream flooding. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage if development exists downstream of the dam. Dam failure can result from natural events, human-induced events, or a combination of the two. The most common cause of dam failure is prolonged rainfall that produces flooding. Failures due to other natural events such as hurricanes, earthquakes, or landslides are significant because there is generally little or no advance warning.
Flood	The accumulation of water within a water body which results in the overflow of excess water onto adjacent lands, usually floodplains. The floodplain is the land adjoining the channel of a river, stream, ocean, lake, or other watercourse or water body that is susceptible to flooding. Most floods fall into the following three categories: riverine flooding, coastal flooding, or shallow flooding (where shallow flooding refers to sheet flow, ponding, and urban drainage).
Storm Surge	A storm surge is a large dome of water often 50 to 100 miles wide and rising anywhere from four to five feet in a Category 1 hurricane up to more than 30 feet in a Category 5 storm. Storm surge heights and associated waves are also dependent upon the shape of the offshore continental shelf (narrow or wide) and the depth of the ocean bottom (bathymetry). A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water close to the shoreline, tends to produce a lower surge but higher and more powerful storm waves. Storm surge arrives ahead of a storm's actual landfall and the more intense the hurricane is, the sooner the surge arrives. Storm surge can be devastating to coastal regions, causing severe beach erosion and property damage along the immediate coast. Further, water rise caused by storm surge can be very rapid, posing a serious threat to those who have not yet evacuated flood-prone areas.

OTHER HAZARDS	
Wildfire	An uncontrolled wildfire burning in an area of vegetative fuels such as grasslands, brush, or woodlands. Heavier fuels with high continuity, steep slopes, high temperatures, low humidity, low rainfall, and high winds all work to increase risk for people and property located within wildfire hazard areas or along the urban/wildland interface. Wildfires are part of the natural management of forest ecosystems, but most are caused by human factors. Over 80 percent of forest fires are started by negligent human behavior such as smoking in wooded areas or improperly extinguishing campfires. The second most common cause for wildfire is lightning.
Hazardous Materials Incident	Hazardous material (HAZMAT) incidents can apply to fixed facilities as well as mobile, transportation-related accidents in the air, by rail, on the nation's highways and on the water. HAZMAT incidents consist of solid, liquid and/or gaseous contaminants that are released from fixed or mobile containers, whether by accident or by design as with an intentional terrorist attack. A HAZMAT incident can last hours to days, while some chemicals can be corrosive or otherwise damaging over longer periods of time. In addition to the primary release, explosions and/or fires can result from a release, and contaminants can be extended beyond the initial area by persons, vehicles, water, wind and possibly wildlife as well.
Transportation Incident	Transportation incidents come in many forms in the United States, especially given the many forms of transportation available today. The most common types of transportation incidents are motor vehicle accidents, but plane, train, and watercraft accidents occur as well and often have higher magnitude impacts.

4.3 DISASTER DECLARATIONS

Disaster declarations provide initial insight into the hazards that may impact the Spartanburg County planning area. Since 1990, nine presidential disaster declarations have been reported in Spartanburg County. This includes three events related to severe storms and flooding, three severe winter weather events, one hurricane, one tropical storm, and one pandemic. However, this list is not inclusive of many of the major disaster events that impacted the county and which may have resulted in Small Business Administration disaster loan assistance or no federal assistance.

TABLE 4.2: SPARTANBURG COUNTY DISASTER DECLARATIONS

Year	Disaster Number	Description
1990	881	SEVERE STORMS & FLOODING
2000	1313	SEVERE WINTER STORM
2003	1451	SEVERE ICE STORM
2004	1566	TROPICAL STORM FRANCES
2006	1625	SEVERE ICE STORM
2015	4241	SEVERE STORMS AND FLOODING
2017	4346	HURRICANE IRMA
2020	4479	SEVERE STORMS, TORNADOES, AND FLOODING

SECTION 4: HAZARD IDENTIFICATION

Year	Disaster Number	Description
2020	4492	COVID-19 PANDEMIC

Source: www.fema.gov

4.4 HAZARD EVALUATION

TABLE 4.3: DOCUMENTATION OF THE HAZARD EVALUATION PROCESS

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
ATMOSPHERIC HAZARDS			
Avalanche	NO	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of US Forest Service National Avalanche Center website (https://avalanche.org) 	<ul style="list-style-type: none"> • The United States avalanche hazard is limited to mountainous western states including Alaska as well as some areas of low risk in New England. • Avalanche was not included in the SC State Hazard Mitigation Plan. • Avalanche was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan. • There is no risk of avalanche events in South Carolina.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Drought	YES	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of US Drought Monitor website 	<ul style="list-style-type: none"> • Drought is a normal part of virtually all climatic regimes, including areas with high and low average rainfall. • The SC State Hazard Mitigation Plan found the entire state to be vulnerable to drought, and all buildings and facilities are considered to be equally exposed to this hazard. • Drought was included in the previous Spartanburg County Hazard Mitigation Plan. • There are reports of moderate to exceptional drought conditions in 19 of the last 23 years in Spartanburg County according to the US Drought Monitor.
Extreme Cold	NO	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of NOAA NCEI Storm Events Database 	<ul style="list-style-type: none"> • Because South Carolina is located in the southeastern United States, it rarely experiences extreme cold events that are on par with other locations in the country. • Extreme cold was not included in the SC State Hazard Mitigation Plan. • Extreme cold was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan. • NCEI reports 1 extreme cold/wind chill and 7 cold/wind chill events for Spartanburg County since 1996.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Hailstorm	YES	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of NOAA NCEI Storm Events Database 	<ul style="list-style-type: none"> • Although hailstorms occur primarily in the Midwestern states, they do occur in every state on the mainland U.S. Most inland regions experience hailstorms at least two or more days each year. • Hail is discussed in the SC State Hazard Mitigation Plan, and due to its unpredictability, all buildings and facilities are considered to be equally exposed to this hazard. According to the state plan, the historical annualized losses from hail are \$387,995 in Spartanburg County. Historically, Spartanburg County has the highest number of loss-causing hail events in the state. • Hail was included in the previous Spartanburg County Hazard Mitigation Plan. • NCEI reports 358 hailstorm events (0.75 to 4.0 inch size hail) for Spartanburg County since 1957. These events resulted in 1 injury and \$24.4 million (2022 dollars) in damages.
Heat Wave/Extreme Heat	YES	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of NOAA NCEI Storm Events Database 	<ul style="list-style-type: none"> • Many areas of the United States are susceptible to heat waves, including South Carolina. • The SC State Hazard Mitigation Plan identifies extreme heat as a hazard with the potential to affect the state. • Extreme heat was included in the previous Spartanburg County Hazard Mitigation Plan. • NCEI reports 3 heat events for Spartanburg County since 1996. These events resulted in 1 death.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Hurricane/Tropical Storm	YES	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Analysis of NOAA historical tropical cyclone tracks and National Hurricane Center Website • Review of NOAA NCEI Storm Events Database • Review of historical presidential disaster declarations • Review of FEMA Hazus-MH storm return periods 	<ul style="list-style-type: none"> • The Atlantic and Gulf regions are most prone to landfall by hurricanes and tropical storms. • The SC State Hazard Mitigation Plan found the entire state to be vulnerable to hurricanes. According to the state plan the historical annualized losses from hurricanes are \$6,901 in Spartanburg County. • Annualized loss estimations (building damage, contents damage, and inventory loss) due to hurricane wind hazards in Spartanburg County total \$1,722,000 • NOAA historical records indicate 42 hurricanes/tropical storms have come within 75 miles of Spartanburg County since 1859. • NCEI reports one tropical storm event for Spartanburg County, Tropical Storm Zeta (2020), which resulted in the injury of at least one person by falling trees. • 2 of the 9 disaster declarations in Spartanburg County were directly related to a tropical storm or hurricane event. • The 50-year return period peak gust for hurricane and tropical storm events in Spartanburg County is 60 mph.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Lightning	YES	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of NOAA NCEI Storm Events Database • Review of Vaisala's NLDN Lightning Flash Density Map 	<ul style="list-style-type: none"> • The central region of Florida has the highest density of lightning strikes in the US; however, lightning events are experienced in nearly every region. • Lightning is discussed in the SC State Hazard Mitigation Plan, and due to its unpredictability, all buildings and facilities are considered to be equally exposed to this hazard. According to the state plan the historical annualized losses from lightning are \$104,000 in Spartanburg County. • Lightning was included in the previous Spartanburg County Hazard Mitigation Plan. • NCEI reports 36 lightning events for Spartanburg County since 1996. These events have resulted in 2 deaths, 12 injuries, and \$2.7 million (2022 dollars) in property damage. • According to Vaisala's U.S. National Lightning Detection Network, Spartanburg County is located in an area that experienced an average of 4 to 8 lightning flashes per square kilometer per year between 2010 and 2019.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Nor'easter	NO	<ul style="list-style-type: none"> • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of NOAA NCEI Storm Events Database 	<ul style="list-style-type: none"> • Nor'easters are discussed in the SC State Hazard Mitigation Plan as part of the winter storm hazard. • Nor'easter was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan. • NCEI does not report any nor'easter activity for Spartanburg County. However, nor'easters may have affected the area as severe winter storms. In this case, the activity would be reported under winter storm events.
Severe Thunderstorm/High Wind	YES	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of NOAA NCEI Storm Events Database • Review of historical presidential disaster declarations 	<ul style="list-style-type: none"> • Over 100,000 thunderstorms are estimated to occur each year on the U.S. mainland, and they are experienced in nearly every region. • Severe thunderstorms are discussed in the SC State Hazard Mitigation Plan, and due to its unpredictability, all buildings and facilities are considered to be equally exposed to this hazard. According to the state plan the historical annualized losses from severe thunderstorm are \$605,000 in Spartanburg County. • Severe thunderstorm/High Wind was included in the previous Spartanburg County Hazard Mitigation Plan. • NCEI reports 569 thunderstorm/high wind events in Spartanburg County since 1955. These events have resulted in 1 death, 12 injuries, and \$15.1 million (2022 dollars) in property damage. • 3 of the 9 disaster declarations in Spartanburg County were directly related to severe storm events.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Tornado	YES	<ul style="list-style-type: none">• Review of FEMA's Multi-Hazard Identification and Risk Assessment• Review of SC State Hazard Mitigation Plan• Review of previous Spartanburg County Hazard Mitigation Plan• Review of NOAA NCEI Storm Events Database• Review of historical presidential disaster declarations	<ul style="list-style-type: none">• The U.S. reports over 800 tornadoes nationwide, resulting in an average of 80 deaths and 1,500 injuries.• Tornadoes are discussed in the SC State Hazard Mitigation Plan, and because the location of tornado strikes are not limited to specific geographic regions of the state, all buildings and facilities are considered to be equally exposed to this hazard. According to the state plan the historical annualized losses from tornadoes are \$83,026 in Spartanburg County.• Tornado was also included in the previous Spartanburg County Hazard Mitigation Plan.• NCEI reports 36 tornado events (F0 to F4 in intensity) in Spartanburg County since 1952. These events have resulted in 4 deaths, 103 injuries, and \$57.5 million (2022 dollars) in property damage.• 1 of the county's 9 disaster declarations was directly related to tornado events.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Winter Storm and Freeze	YES	<ul style="list-style-type: none">• Review of FEMA's Multi-Hazard Identification and Risk Assessment• Review of SC State Hazard Mitigation Plan• Review of previous Spartanburg County Hazard Mitigation Plan• Review of NOAA NCEI Storm Events Database• Review of historical presidential disaster declarations	<ul style="list-style-type: none">• Winter storms affect every state in the continental U.S. and Alaska.• Severe winter storms, including blizzard, ice storm, and nor'easter, are discussed in the SC State Hazard Mitigation Plan, and while South Carolina does not regularly encounter winter storms, they can occur anywhere in the state and all buildings and facilities are considered to be equally exposed to this hazard. According to the state plan the historical annualized losses from winter storms are \$748,115 in Spartanburg County. Historically, Spartanburg County is one of the 4 counties that has the highest number of loss-causing winter storm events in the state.• Winter storm and freeze were included in the previous Spartanburg County Hazard Mitigation Plan.• NCEI reports that Spartanburg County has been affected by 94 winter weather events since 1996. These events resulted in \$22.9 million (2022 dollars) in damages.• 3 of the 9 disaster declarations in Spartanburg County were directly related to winter storm events.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
GEOLOGIC HAZARDS			

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Earthquake	YES	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of National Geophysical Data Center website • Review of USGS Earthquake Hazards Program website • Review of FEMA Hazus-MH earthquake module 	<ul style="list-style-type: none"> • Although the zone of greatest seismic activity in the United States is along the Pacific Coast, eastern regions have experienced significant earthquakes. • Earthquakes are discussed in the SC State Hazard Mitigation Plan, and the Piedmont/Blue Ridge region (which includes Spartanburg County) is generally considered at a low risk of major (magnitude 6+ on the Richter Scale) earthquakes but is susceptible to smaller earthquakes (magnitude 2-4). • Earthquake was included in the previous Spartanburg County Hazard Mitigation Plan. • Earthquakes have occurred in and around the State of South Carolina in the past. The state is affected by the Charleston Fault line which has generated one magnitude 8.0 earthquake in the last 200 years. • Since 2015, 9 earthquakes have been reported within 150 km of Spartanburg County, all below a 3.0 magnitude. • Annualized loss estimations (building damage, contents damage, and inventory loss) due to earthquake hazards in Spartanburg County total \$1,586,000. • According to USGS seismic hazard maps, the peak ground acceleration (PGA) with a 10% probability of exceedance in 50 years for Spartanburg County is approximately 5 to 7%g. FEMA recommends that earthquakes be further evaluated for mitigation purposes in areas with a PGA of 3%g or more.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Expansive Soils	NO	<ul style="list-style-type: none">• Review of FEMA's Multi-Hazard Identification and Risk Assessment• Review of SC State Hazard Mitigation Plan• Review of previous Spartanburg County Hazard Mitigation Plan• Review of USGS Swelling Clays Map of the Conterminous US	<ul style="list-style-type: none">• The effects of expansive soils are most prevalent in parts of the Southern, Central, and Western U.S.• Expansive soils were not included in the SC State Hazard Mitigation Plan.• Expansive soils were not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan.• Spartanburg County is located in an area that has little to no clay swelling potential.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Landslide	YES	<ul style="list-style-type: none">• Review of FEMA's Multi-Hazard Identification and Risk Assessment• Review of SC State Hazard Mitigation Plan• Review of previous Spartanburg County Hazard Mitigation Plan• Review of United States Geological Survey (USGS) Landslide Incidence and Susceptibility Hazard Map• Review of South Carolina Geological Survey database of historic landslides	<ul style="list-style-type: none">• Landslides occur in every state in the U.S., and they are most common in the coastal ranges of California, the Colorado Plateau, the Rocky Mountains, and the Appalachian Mountains.• The SC State Hazard Mitigation Plan did not analyze landslides because while South Carolina is susceptible to landslides, no major events have occurred in the past and no loss data is collected at this time. However, the plan indicates that upstate South Carolina most closely fits the typical landslide topography as outlined by the USGS.• Landslide was included in the previous Spartanburg County Hazard Mitigation Plan.• USGS landslide hazard maps indicate that there is a moderate incidence rate and high susceptibility to landslides in the northern portion of the county and a low rate of incidence and moderate susceptibility in the southern portion.• The South Carolina Geological Survey does not have any historical records of landslide events for Spartanburg County.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Land Subsidence/Sinkhole	NO	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan 	<ul style="list-style-type: none"> • Land subsidence affects at least 45 states, including South Carolina. However, because of the broad range of causes and impacts, there has been limited national focus on this hazard. • The SC State Hazard Mitigation Plan did not analyze sinkholes because while South Carolina does experience sinkholes, no loss data has been collected at this time. • Land subsidence was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan.
Tsunami	NO	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of FEMA "How-to" mitigation planning guidance (Publication 386-2, "Understanding Your Risks – Identifying Hazards and Estimating Losses") 	<ul style="list-style-type: none"> • No record exists of a catastrophic Atlantic basin tsunami impacting the mid-Atlantic coast of the United States. • Tsunami inundation zone maps are not available for communities located along the U.S. East Coast. • Tsunamis are described in the SC State Hazard Mitigation Plan as an extremely low threat for South Carolina, and any tsunamis impacting the state would likely be small and mostly inundate the beaches exclusively. • Tsunami was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan. • FEMA mitigation planning guidance suggests that locations along the U.S. East Coast have a relatively low tsunami risk and do not need to conduct a tsunami risk assessment at this time.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Volcano	NO	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of USGS Volcano Hazards Program website 	<ul style="list-style-type: none"> • More than 65 potentially active volcanoes exist in the United States, and most are located in Alaska. The Western states and Hawaii are also potentially affected by volcanic hazards. • Volcano was not included in the SC State Hazard Mitigation Plan. • Volcano was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan. • There has not been a volcanic eruption in South Carolina in over 750 million years. However, the red clay soil found in the area is a result of iron that flowing lava brought to the area. • No volcanoes are located in or near Spartanburg County.
HYDROLOGIC HAZARDS			
Dam and Levee Failure	NO	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan 	<ul style="list-style-type: none"> • The National Inventory of Dams shows dams are located in every state. • Dam/levee failure is discussed in the SC State Hazard Mitigation Plan as part of the flood hazard. • Dam and levee failure was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Erosion	NO	<ul style="list-style-type: none">• Review of SC State Hazard Mitigation Plan• Review of previous Spartanburg County Hazard Mitigation Plan	<ul style="list-style-type: none">• Erosion is discussed in the SC State Hazard Mitigation Plan under costal hazards. Only coastal erosion is identified as a hazard of concern for South Carolina (not riverine or soil erosion).• Erosion was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Flood	YES	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) Storm Events Database • Review of historical disaster declarations • Review of FEMA Flood Insurance Rate Maps (DFIRM) data • Review of FEMA's National Flood Insurance Program (NFIP) Community Status Book and Community Rating System (CRS) 	<ul style="list-style-type: none"> • Floods occur in all 50 states and in the U.S. territories. Flooding is the most frequent and costly hazard in the US; 75% of all presidential disasters have been related to flooding. • Flood is thoroughly discussed in the SC State Hazard Mitigation Plan. The State is found to be at risk of riverine flooding, coastal flooding, flash flooding, local drainage problems, and dam/levee failure. According to the state plan the historical annualized losses from flood are \$419,426 in Spartanburg County. • Flood was included in the previous Spartanburg County Hazard Mitigation Plan. • NCEI reports that Spartanburg County has been affected by 72 flood events since 1996. These events resulted in 1 death, 2 injuries, and \$14.4 million (2022 dollars) in damages. • 3 of the 9 disaster declarations in Spartanburg County were directly related to flood events. • 5.0% of Spartanburg County is located in an identified floodplain (100- or 500-year). • 13 jurisdictions in the county participate in the NFIP; however, no jurisdictions currently participate in the CRS.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Storm Surge	NO	<ul style="list-style-type: none">• Review of FEMA's Multi-Hazard Identification and Risk Assessment• Review of SC State Hazard Mitigation Plan• Review of previous Spartanburg County Hazard Mitigation Plan• Review of NOAA NCEI Storm Events Database	<ul style="list-style-type: none">• Given the inland location of Spartanburg County, storm surge would not affect the area.• Storm surge is discussed in the SC State Hazard Mitigation Plan under the hurricane hazard, and the state plan indicates that only the coastal shoreline counties are subject to storm surge.• Storm surge was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan.• NCEI does not report any historical storm surge events for Spartanburg County.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
OTHER HAZARDS			
Wildfire	YES	<ul style="list-style-type: none"> • Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Review of Southern Wildfire Risk Assessment (SWRA) Data • Review of the SC Forestry Commission website and data 	<ul style="list-style-type: none"> • Wildfires occur in virtually all parts of the United States. Wildfire hazard risks will increase as low-density development along the urban/wildland interface increases. • Wildfire is discussed in the SC State Hazard Mitigation Plan, and since the majority of wildfires are human-caused or from lightning strikes, they can occur anywhere in South Carolina and all buildings and facilities are considered to be equally exposed to this hazard. According to the state plan, the historical annualized losses from wildfire are \$6,555 in Spartanburg County. • Wildfire was included in the previous Spartanburg County Hazard Mitigation Plan. • A review of SWRA data indicates that there are some areas of elevated concern in Spartanburg County. • According to the South Carolina Forestry Commission, Spartanburg County experiences an average of 52 fires which burn a combined average of 405.5 acres each year.

SECTION 4: HAZARD IDENTIFICATION

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Hazardous Materials Incident	YES	<ul style="list-style-type: none">• Review of FEMA's Multi-Hazard Identification and Risk Assessment• Review of SC State Hazard Mitigation Plan• Review of previous Spartanburg County Hazard Mitigation Plan• Review of EPA Toxic Release Inventory (TRI)• Review of USDOT Pipeline and Hazardous Materials Safety Administration (PHMSA) incident database• Discussions with local officials	<ul style="list-style-type: none">• Cities, counties, and towns where hazardous materials fabrication, processing, and storage sites are located, and those where hazardous waste treatment, storage or disposal facilities operate, are at risk for hazardous materials events.• Although hazardous materials incidents are discussed in the SC State Hazard Mitigation Plan, annualized losses from hazardous materials incidents are not reported.• The SC State Hazard Mitigation Plan indicates the following hazardous materials sites are located within Spartanburg County: 118 TRI sites, 2 Superfund sites, 8 Hazardous Material Treatment/Storage/Disposal sites, and 77 Solid Waste Landfills.• In 2020, the EPA reported 239 TRI facilities located in Spartanburg County.• 35 of the 676 PHMSA-reported HAZMAT incidents in the county were classified as "serious" incidents. In total, these incidents have resulted in 6 deaths and \$5 million (2022 dollars) in property damages.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Transportation Incident	YES	<ul style="list-style-type: none"> • Review of SC State Hazard Mitigation Plan • Review of previous Spartanburg County Hazard Mitigation Plan • Discussions with local officials 	<ul style="list-style-type: none"> • Transportation incident was not included in the SC State Hazard Mitigation Plan. • Transportation incident was not identified as a hazard in the previous Spartanburg County Hazard Mitigation Plan. • Given the number of transportation corridors and hubs located within Spartanburg County, it is highly likely that more transportation incidents will occur in the future.

4.5 HAZARD IDENTIFICATION RESULTS

TABLE 4.4: SUMMARY RESULTS OF THE HAZARD IDENTIFICATION AND EVALUATION PROCESS

ATMOSPHERIC HAZARDS	GEOLOGIC HAZARDS
<input type="checkbox"/> Avalanche	<input checked="" type="checkbox"/> Earthquake
<input checked="" type="checkbox"/> Drought	<input type="checkbox"/> Expansive Soils
<input type="checkbox"/> Extreme Cold	<input checked="" type="checkbox"/> Landslide
<input checked="" type="checkbox"/> Hailstorm	<input type="checkbox"/> Land Subsidence/Sinkhole
<input checked="" type="checkbox"/> Heat Wave/Extreme Heat	<input type="checkbox"/> Tsunami
<input checked="" type="checkbox"/> Hurricane/Tropical Storm	<input type="checkbox"/> Volcano
<input checked="" type="checkbox"/> Lightning	HYDROLOGIC HAZARDS
<input type="checkbox"/> Nor'easter	<input type="checkbox"/> Dam and Levee Failure
<input checked="" type="checkbox"/> Severe Thunderstorm/High Wind	<input type="checkbox"/> Erosion
<input checked="" type="checkbox"/> Tornado	<input checked="" type="checkbox"/> Flood
<input checked="" type="checkbox"/> Winter Storm and Freeze	<input type="checkbox"/> Storm Surge
	OTHER HAZARDS
	<input checked="" type="checkbox"/> Wildfire
	<input checked="" type="checkbox"/> Hazardous Materials Incident
	<input checked="" type="checkbox"/> Transportation Incident

☒ = Hazard considered significant enough for further evaluation in the Spartanburg County hazard risk assessment.

SECTION 5

HAZARD PROFILES

This section includes detailed hazard profiles for each of the hazards identified in Section 4 (*Hazard Identification*) as significant enough for further evaluation in the Spartanburg County Hazard Mitigation Plan. It contains the following subsections:

Overview

- ❖ 5.1 Overview
- ❖ 5.2 Study Area

Atmospheric Hazards

- ❖ 5.3 Drought
- ❖ 5.4 Hailstorm
- ❖ 5.5 Heat Wave/Extreme Heat
- ❖ 5.6 Hurricane/Tropical Storm
- ❖ 5.7 Lightning
- ❖ 5.8 Severe Thunderstorm/High Wind
- ❖ 5.9 Tornado
- ❖ 5.10 Winter Storm and Freeze

Geologic Hazards

- ❖ 5.11 Earthquake
- ❖ 5.12 Landslide

Hydrologic Hazards

- ❖ 5.13 Flood

Other Hazards

- ❖ 5.14 Wildfire
- ❖ 5.15 Hazardous Materials Incident
- ❖ 5.16 Transportation Incident

Conclusions

- ❖ 5.17 Conclusions on Hazard Risk
- ❖ 5.18 Final Determinations

44 CFR Requirement

44 CFR Part 201.6(c)(2)(i): The risk assessment shall include a description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events

Overview

5.1 OVERVIEW

This section includes detailed hazard profiles for each of the hazards identified in Section 4 (*Hazard Identification*) as significant enough for further evaluation in the Spartanburg County Hazard Risk Assessment by creating a hazard profile. Each hazard profile includes a general description of the hazard, its location and extent, notable historical occurrences, and the probability of future occurrences. Each profile also includes specific items noted by members of the Spartanburg County Hazard Mitigation Planning Team as it relates to unique historical or anecdotal hazard information for Spartanburg County or a participating municipality within it.

The following hazards were identified:

- ❖ **Atmospheric**
 - ❖ Drought

- ❖ Hailstorm
- ❖ Heat Wave/Extreme Heat
- ❖ Hurricane/Tropical Storm
- ❖ Lightning
- ❖ Severe Thunderstorm/High Wind
- ❖ Tornado
- ❖ Winter Storm and Freeze
- ❖ **Geologic**
 - ❖ Earthquake
 - ❖ Landslide
- ❖ **Hydrologic**
 - ❖ Flood
- ❖ **Other**
 - ❖ Wildfire
 - ❖ Hazardous Materials Incident
 - ❖ Transportation Incident

5.2 STUDY AREA

Spartanburg County includes 13 municipalities and the unincorporated area of the county. **Table 5.1** provides a summary table of the participating municipalities. In addition, **Figure 5.1** provides a base map of Spartanburg County for reference.

**TABLE 5.1: PARTICIPATING JURISDICTIONS IN THE
SPARTANBURG COUNTY HAZARD MITIGATION PLAN**

Spartanburg County	
Campobello	Lyman
Chesnee	Pacolet
Cowpens	Reidville
Duncan	Spartanburg (city)
Greer	Wellford
Inman	Woodruff
Landrum	

FIGURE 5.1: SPARTANBURG COUNTY BASE MAP

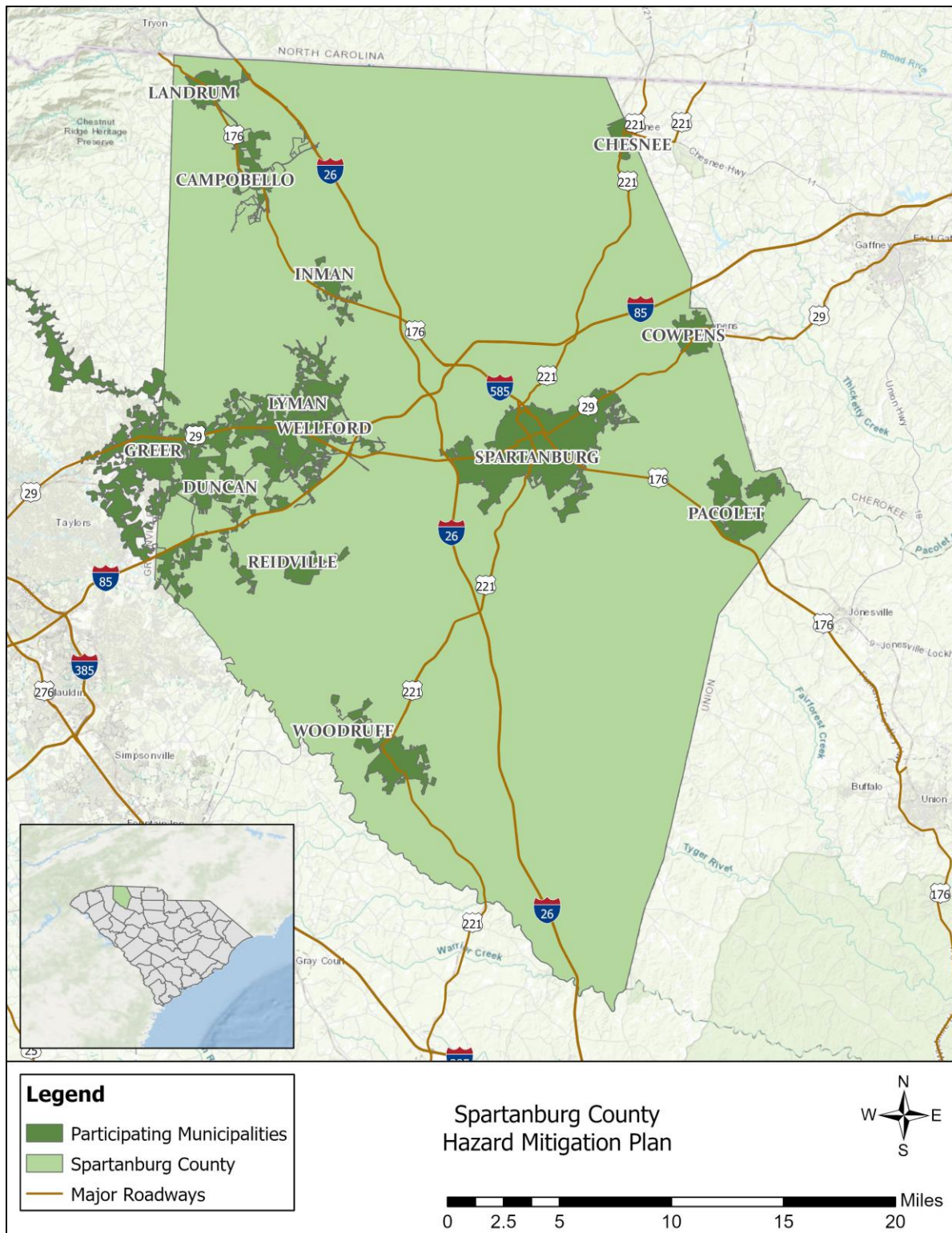


Table 5.2 lists each significant hazard for Spartanburg County and identifies whether it has been determined to be a specific hazard of concern for the 13 municipal jurisdictions and the county's unincorporated areas. This is based on the best available data and information from the Spartanburg County Hazard Mitigation Planning Team. (● = hazard of concern)

TABLE 5.2 SUMMARY OF IDENTIFIED HAZARD EVENTS IN SPARTANBURG COUNTY

Jurisdiction	Atmospheric								Geologic		Hydro	Other		
	Drought	Hailstorm	Heat Wave/ Extreme Heat	Hurricane/ Tropical Storm	Lightning	Severe Thunderstorm/ High Wind	Tornado	Winter Storm and Freeze	Earthquake	Landslide	Flood	Wildfire	HAZMAT Incident	Transportation Incident
Spartanburg County														
Campobello	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Chesnee	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cowpens	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Duncan	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Greer	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Inman	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Landrum	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Lyman	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Pacolet	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Reidville	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Spartanburg (city)	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Wellford	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Woodruff	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Unincorporated Area	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Atmospheric Hazards

5.3 DROUGHT

5.3.1 Background

Drought can occur in any climatic region, including areas with relatively high or low average rainfall. Drought is the consequence of a natural reduction in the amount of precipitation expected over an extended period, usually a season or more in length. High temperatures, high winds, and low humidity can exacerbate drought conditions. In addition, human actions and demands for water resources can hasten drought-related impacts. Drought may also lead to more severe wildfires.

Droughts are typically classified into one of four types: 1) meteorological, 2) hydrologic, 3) agricultural, or 4) socioeconomic. **Table 5.3** presents definitions for these types of drought.

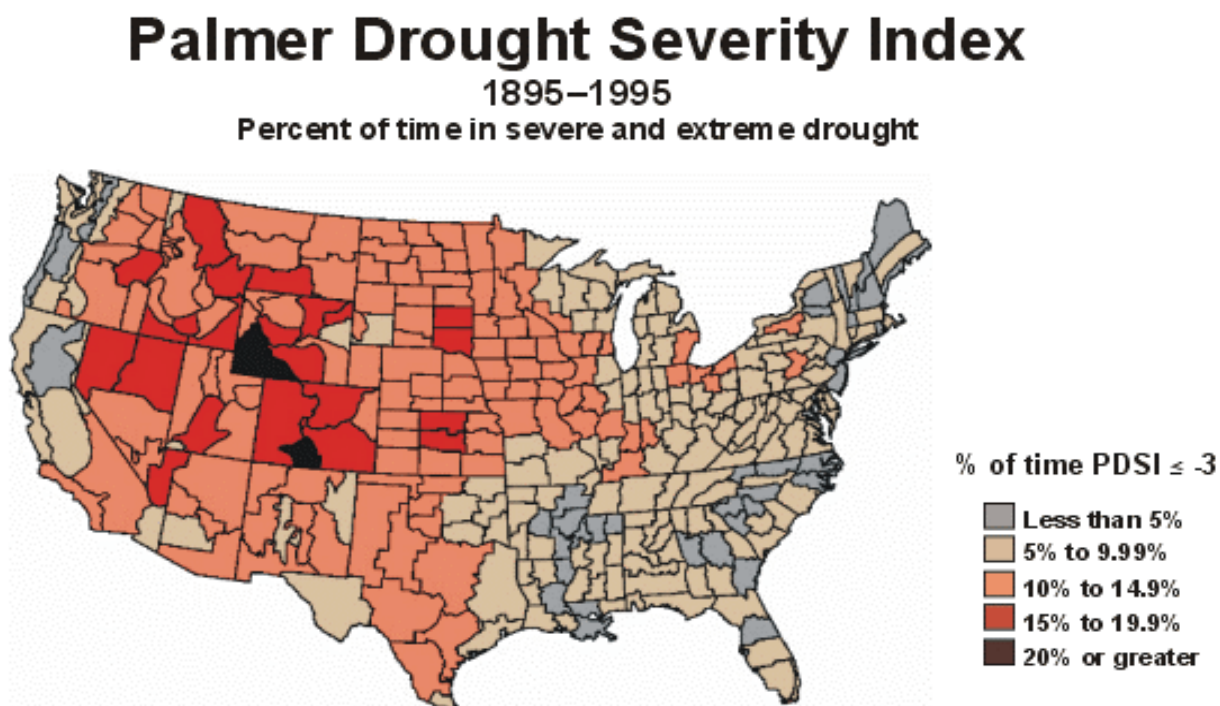
TABLE 5.3 DROUGHT CLASSIFICATION DEFINITIONS

Meteorological Drought	The degree of dryness or departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
Hydrologic Drought	The effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.
Agricultural Drought	Soil moisture deficiencies relative to water demands of plant life, usually crops.
Socioeconomic Drought	The effect of demands for water exceeding the supply as a result of a weather-related supply shortfall.

Source: Multi-Hazard Identification and Risk Assessment: A Cornerstone of the National Mitigation Strategy, FEMA

Droughts are slow-onset hazards but, over time, can have very damaging effects to crops, municipal water supplies, recreational uses, and wildlife. If drought conditions extend over a number of years, the direct and indirect economic impact can be significant.

The Palmer Drought Severity Index (PDSI) is a standard drought monitoring framework that utilizes readily available precipitation and temperature data to produce estimates of relative dryness. The full scope of PDSI classifications ranges from 4.0 (extremely wet) to -4.0 (extreme drought). However, maps featuring PDSI information often display index ranges from -0.5 (incipient dry spell) to -4.0 (extreme drought) to better visualize drought hazard. As is evident in **Figure 5.2** in the Palmer Drought Severity Index Summary Map for the United States, drought affects most areas of the United States but is less severe in the Eastern United States.

FIGURE 5.2: PALMER DROUGHT SEVERITY INDEX SUMMARY MAP FOR THE UNITED STATES

Source: National Drought Mitigation Center

5.3.2 Location and Spatial Extent

Drought typically covers a large area and cannot be confined to any geographic or political boundaries. According to the Palmer Drought Severity Index (**Figure 5.2**), northwestern South Carolina historically experiences less time in extreme drought conditions than other areas of the state. However, local areas may experience much more severe and/or frequent drought events than what is represented on the Palmer Drought Severity Index map. Furthermore, it is assumed that all jurisdictions within Spartanburg County are uniformly exposed to drought, making the spatial extent potentially widespread. It is also notable that drought conditions typically do not cause significant damage to the built environment such as the buildings we live and work in, distribution systems providing electricity and water, and the bridges, roads, and transportation systems that transport goods and people¹

5.3.3 Historical Occurrences

Data from the United States Drought Monitor was used to ascertain historical drought events in Spartanburg County. The United States Drought Monitor reports data on South Carolina drought conditions from year 2000 through present day. It classifies drought by county on a scale of D0 to D4 where:

- ❖ D0: Abnormally Dry
- ❖ D1: Moderate Drought
- ❖ D2: Severe Drought
- ❖ D3: Extreme Drought
- ❖ D4: Exceptional Drought

Although drought is widespread across the United States, impacts and damages from extreme drought is geographically varied. **Table 5.4**, United States Drought Monitor Historically Observed State Impacts, identifies historically observed impacts to South Carolina for each drought classification.

TABLE 5.4: UNITED STATES DROUGHT MONITOR HISTORICALLY OBSERVED STATE IMPACTS

Category	Historically Observed Impacts
D0	Row crop growth is stunted, irrigation begins early
	Brush fires increase
D1	Peach size is reduced; non-irrigated corn shows severe stress
	Fire risk increases; tree pests increase
	Water use is high; creeks, streams, and lakes are low
	Voluntary conservation of water and energy is requested
D2	Cattle are lighter, producers are selling calves early and feeding cattle earlier
	Number of fires increases, and fires are more intense
	Fisheries are impacted; duck hunting areas close

¹ <https://www.epa.gov/smm/basic-information-about-built-environment>

Category	Historically Observed Impacts
	Boating recreation is compromised
	River and lake levels are low; saltwater intrusion occurs; hydroelectric power production is reduced
D3	Hay is scarce and expensive; owners are giving away horses
	Soil moisture is low, winter crops are slow to germinate
	Burn bans begin
	Small aquatic species are stressed
	Mandatory water restrictions are implemented, violators are fined; lake outflow is low
D4	Producers are hauling water for cattle; auctions see record number of cattle
	Trees are stressed; fish are dying
	Daily life is compromised
	Wells are contaminated or running dry; lakes are extremely low with hazards exposed

Source: United States Drought Monitor

According to the United States Drought Monitor, Spartanburg County had drought occurrences (including D0: abnormally dry) in each of the last 21 years (2000-2021) as shown in **Table 5.5**. It should be noted that the United States Drought Monitor also estimates what percentage of the county is in each classification of drought severity. For example, the most severe classification reported may be exceptional, but a majority of the county may actually be in a less severe condition.

TABLE 5.5: SUMMARY OF DROUGHT OCCURRENCES IN SPARTANBURG COUNTY

Abnormally Dry (D0) Moderate Drought (D1) Severe Drought (D2) Extreme Drought (D3) Exceptional Drought (D4)

Year	Highest Drought Condition	Number of Weeks
2000	Extreme Drought	14
2001	Extreme Drought	22
2002	Exceptional Drought	6
2003	Abnormally Dry	9
2004	Moderate Drought	6
2005	Moderate Drought	1
2006	Severe Drought	10
2007	Exceptional Drought	13
2008	Exceptional Drought	36
2009	Extreme Drought	11
2010	Moderate Drought	17
2011	Extreme Drought	16
2012	Extreme Drought	3
2013	Severe Drought	8
2014	Abnormally Dry	12
2015	Severe Drought	6
2016	Extreme Drought	7
2017	Severe Drought	11

Year	Highest Drought Condition	Number of Weeks
2018	Abnormally Dry	8
2019	Extreme Drought	4
2020	Abnormally Dry	2
2021	Moderate Drought	4

Source: United States Drought Monitor

Of note, the period beginning in October 2007 through March 2008 and continuing from June 2008 to December 2008 is at a time in which the county remained in an exceptional drought. Conditions in Spartanburg County were not classified “normal” until June 2009.

5.3.4 Probability of Future Occurrences

Based on historical occurrence information, it is assumed that all of Spartanburg County has a probability level of “likely” (between 10 and 100 percent annual probability) for future drought events. This hazard may vary slightly by location, but each area has an equal probability of experiencing a drought. Regarding the impact of climate change on drought probability, The Center for Climate and Energy Solutions notes that some climate models find that atmospheric warming increases precipitation variability and therefore may lead to increased periods of both extreme precipitation and drought.²

5.4 HAILSTORM

5.4.1 Background

Hailstorms are a potentially damaging outgrowth of severe thunderstorms (thunderstorms are discussed separately). Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until they develop to a sufficient weight and fall as precipitation. Hail typically takes the form of spheres or irregularly shaped masses greater than 0.75 inches in diameter. The size of hailstones is a direct function of the size and severity of the storm. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a function of the intensity of heating at the Earth’s surface. Higher temperature gradients relative to elevation above the surface result in increased suspension time and hailstone size.³ **Table 5.6** shows the Tornado and Storm Research Organization’s (TORRO) Hailstorm Intensity Scale which is a way of measuring hail severity.⁴

TABLE 5.6: TORRO HAILSTORM INTENSITY SCALE

	Intensity Category	Typical Hail Diameter (mm)*	Probable Kinetic Energy, J-m ²	mm to inch conversion (inches)	Typical Damage Impacts
H0	Hard Hail	5	0-20	0 - 0.2	No damage

² <https://www.c2es.org/content/drought-and-climate-change/#:~:text=How%20climate%20change%20contributes%20to,the%20timing%20of%20water%20availability.>

³ <https://www.nssl.noaa.gov/education/svrwx101/hail/>

⁴ <https://www.torro.org.uk/v2021/>

	Intensity Category	Typical Hail Diameter (mm)*	Probable Kinetic Energy, J-m ²	mm to inch conversion (inches)	Typical Damage Impacts
H1	Potentially Damaging	5-15	>20	0.2 - 0.6	Slight general damage to plants, crops
H2	Significant	10-20	>100	0.4 - 0.8	Significant damage to fruit, crops, vegetation
H3	Severe	20-30	>300	0.8 - 1.2	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40	>500	1.0 - 1.6	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	>800	1.2 - 2.0	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60		1.6 - 2.4	Bodywork of grounded aircraft dented; brick walls pitted
H7	Destructive	50-75		2.0 - 3.0	Severe roof damage, risk of serious injuries
H8	Destructive	60-90		1.6 - 3.5	(Severest recorded in the British Isles) Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100		3.0 - 3.9	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100			Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

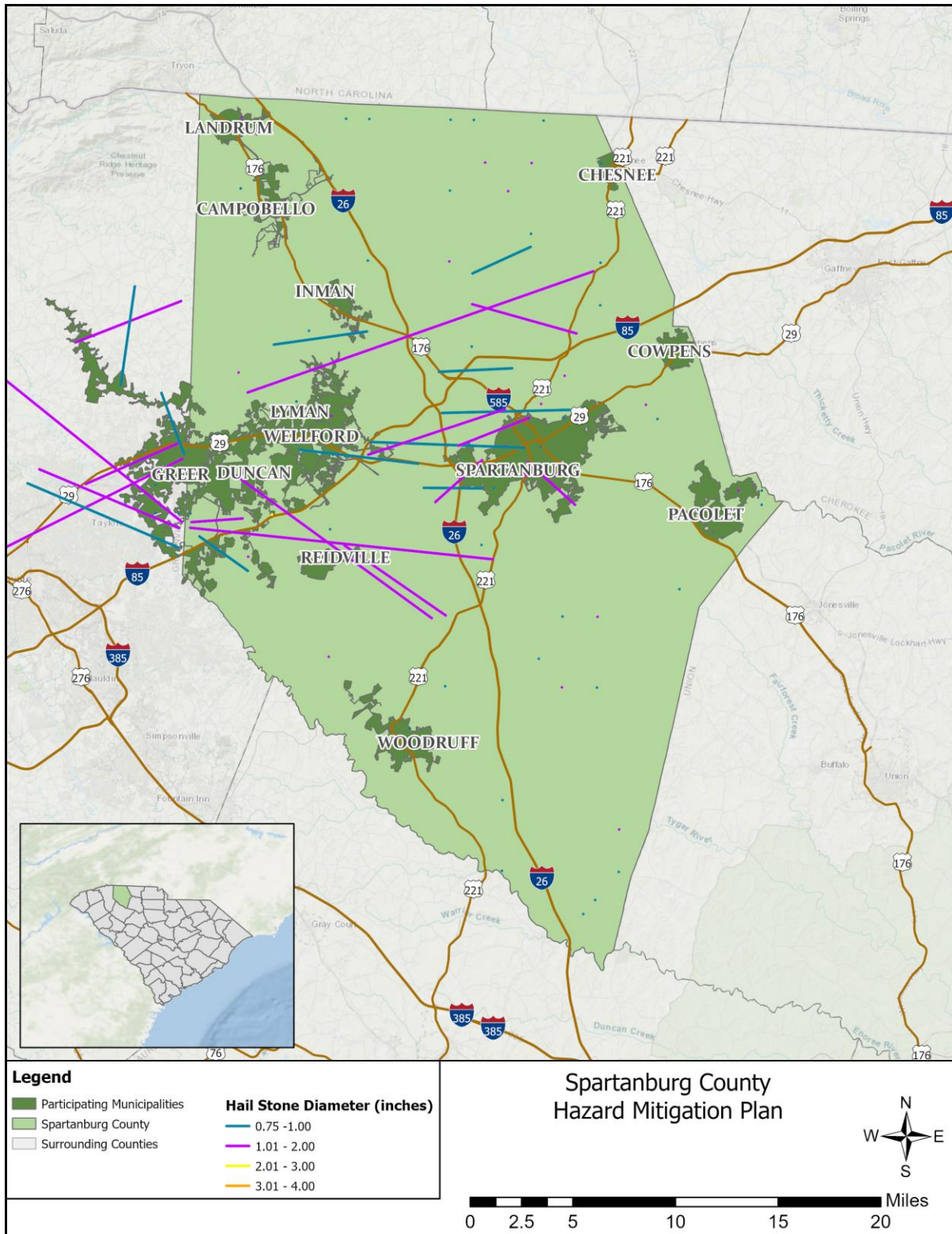
Source: <http://www.torro.org.uk/site/hscale.php>

5.4.2 Location and Spatial Extent

Hailstorms frequently accompany thunderstorms, so their locations and spatial extents coincide. Due to the large spatial extent of thunderstorms and their paths relative to the area of Spartanburg County, it is assumed that all jurisdictions within Spartanburg County are uniformly exposed to severe thunderstorms. Additionally, because there is no clear distinction between thunderstorms that produce hailstones and thunderstorms that do not, all areas of the county are equally exposed to hail.⁵ With that in mind, **Figure 5.3** shows the location of hail events that have impacted the county between 1955 and 2021.

⁵ <https://www.nssl.noaa.gov/education/svrwx101/hail/forecasting/>

FIGURE 5.3: HISTORICAL HAIL EVENTS IN SPARTANBURG COUNTY



5.4.3 Historical Occurrences

According to the National Centers for Environmental Information (NCEI), 356 recorded hail storm events have affected Spartanburg County since 1957.⁶ **Table 5.7** is a summary of the hail events in Spartanburg County. **Table 5.8** provides detailed information about each event that occurred in the county. In all, hail occurrences resulted in one injury and almost \$24.5 million (2022 dollars) in property damage, the majority of which were reported in the City of Spartanburg.⁷ Hail ranged in diameter from 0.75 inches to 4.0 inches. It should be noted that hail is notorious for causing substantial damage to cars, roofs, and other areas of the built environment and may not be reported to the NCEI. It is likely that damages are much greater than the reported value.

TABLE 5.7: SUMMARY OF HAIL OCCURRENCES IN SPARTANBURG COUNTY

Location	Number of Occurrences	Deaths/Injuries	Property Damage (20)	Annualized Property Loss
Campobello	6	0/0	\$0	\$0
Chesnee	11	0/0	\$0	\$0
Cowpens	2	0/0	\$0	\$0
Duncan	9	0/0	\$1,228,650	\$18,902
Greer	25	0/0	\$0	\$0
Inman	8	0/0	\$0	\$0
Landrum	11	0/0	\$0	\$0
Lyman	12	0/0	\$0	\$0
Pacolet	11	0/0	\$0	\$0
Reidville	7	0/0	\$0	\$0
Spartanburg (city)	42	0/0	\$21,593,428	\$332,206
Wellford	2	0/0	\$0	\$0
Woodruff	7	0/0	\$7,479	\$115
Unincorporated Area	202	0/1	\$1,307,915	\$20,121
SPARTANBURG COUNTY TOTAL	356	0/1	\$24,137,472	\$371,344

Source: National Centers for Environmental Information.

TABLE 5.8: HISTORICAL HAIL OCCURRENCES IN SPARTANBURG COUNTY

	Date	Magnitude	Deaths/Injuries	Property Damage*
Campobello				
CAMPOBELLO	6/2/1997	1.75 in.	0/0	\$0
CAMPOBELLO	6/2/1997	1.75 in.	0/0	\$0
CAMPOBELLO	4/3/2006	0.75 in.	0/0	\$0
CAMPOBELLO	5/20/2006	0.75 in.	0/0	\$0
CAMPOBELLO	7/21/2008	0.88 in.	0/0	\$0

⁶ These hail events are only inclusive of those reported by the National Centers for Environmental Information (NCEI) from 1955 through December 2020. It is likely that additional hail events have affected Spartanburg County. As additional local data becomes available, this hazard profile will be amended.

⁷ Adjusted dollar values were calculated based on the average Consumer Price Index for a given calendar year. This index value has been calculated every year since 1913. For 2022, the July 2022 monthly index was used.

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/Injuries	Property Damage*
CAMPOBELLO	6/15/2011	1.0 in.	0/0	\$0
Chesnee				
CHESNEE	2/11/1998	0.75 in.	0/0	\$0
CHESNEE	7/13/2005	1.0 in.	0/0	\$0
CHESNEE	5/20/2006	1.0 in.	0/0	\$0
CHESNEE	6/23/2006	0.75 in.	0/0	\$0
CHESNEE	7/21/2008	0.75 in.	0/0	\$0
CHESNEE	6/9/2011	0.88 in.	0/0	\$0
CHESNEE	6/9/2011	1.0 in.	0/0	\$0
CHESNEE	5/10/2014	0.88 in.	0/0	\$0
CHESNEE	5/10/2014	0.75 in.	0/0	\$0
CHESNEE	5/10/2014	1.0 in.	0/0	\$0
CHESNEE	6/16/2014	1.75 in.	0/0	\$0
Cowpens				
COWPENS	5/20/2005	0.75 in.	0/0	\$0
COWPENS	4/5/2011	1.0 in.	0/0	\$0
Duncan				
DUNCAN	3/21/1995	1.75 in.	0/0	\$0
DUNCAN	5/13/1999	1.5 in.	0/0	\$0
DUNCAN	5/2/2000	0.75 in.	0/0	\$0
DUNCAN	8/4/2003	0.75 in.	0/0	\$0
DUNCAN	5/3/2007	0.75 in.	0/0	\$0
DUNCAN	4/26/2008	1.0 in.	0/0	\$0
DUNCAN	8/2/2008	0.88 in.	0/0	\$0
DUNCAN	4/5/2012	1.25 in.	0/0	\$0
DUNCAN	5/23/2014	1.75 in.	0/0	\$1,228,650
Greer				
GREER	1/19/1995	0.75 in.	0/0	\$0
GREER	6/2/1997	1.75 in.	0/0	\$0
GREER	5/21/1998	1.0 in.	0/0	\$0
GREER	7/28/2000	0.75 in.	0/0	\$0
GREER	4/1/2001	0.75 in.	0/0	\$0
GREER	10/25/2001	0.75 in.	0/0	\$0
GREER	5/3/2003	1.75 in.	0/0	\$0
GREER	5/3/2003	0.75 in.	0/0	\$0
GREER	7/12/2003	0.88 in.	0/0	\$0
GREER	7/5/2004	0.75 in.	0/0	\$0
GREER	7/5/2004	0.75 in.	0/0	\$0
GREER	5/10/2005	0.75 in.	0/0	\$0
GREER	6/20/2005	0.75 in.	0/0	\$0
GREER	4/8/2006	0.88 in.	0/0	\$0
GREER	4/21/2006	0.75 in.	0/0	\$0
GREER	5/26/2006	0.75 in.	0/0	\$0
GREER	6/23/2006	0.75 in.	0/0	\$0
GREER	2/21/2007	0.75 in.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/Injuries	Property Damage*
GREER	5/3/2007	1.25 in.	0/0	\$0
GREER	5/3/2007	1.0 in.	0/0	\$0
GREER	8/24/2007	0.75 in.	0/0	\$0
GREER	5/20/2008	0.75 in.	0/0	\$0
GREER	4/5/2012	1.0 in.	0/0	\$0
GREER	6/12/2014	0.75 in.	0/0	\$0
GREER	3/14/2016	0.75 in.	0/0	\$0
Inman				
INMAN	5/15/1995	1.5 in.	0/0	\$0
INMAN	5/24/1996	1.75 in.	0/0	\$0
INMAN	4/3/1998	1.0 in.	0/0	\$0
INMAN	5/13/1999	0.75 in.	0/0	\$0
INMAN	7/22/2000	1.5 in.	0/0	\$0
INMAN	4/26/2008	0.75 in.	0/0	\$0
INMAN	5/15/2010	1.0 in.	0/0	\$0
INMAN	4/5/2012	1.25 in.	0/0	\$0
Landrum				
LANDRUM	2/21/1993	1.75 in.	0/0	\$0
LANDRUM	3/27/1994	1.75 in.	0/0	\$0
LANDRUM	6/2/1997	0.88 in.	0/0	\$0
LANDRUM	8/20/1999	1.0 in.	0/0	\$0
LANDRUM	6/25/2001	0.75 in.	0/0	\$0
LANDRUM	4/3/2006	0.88 in.	0/0	\$0
LANDRUM	4/3/2006	1.5 in.	0/0	\$0
LANDRUM	6/23/2006	0.75 in.	0/0	\$0
LANDRUM	6/13/2007	0.88 in.	0/0	\$0
LANDRUM	6/8/2014	1.0 in.	0/0	\$0
LANDRUM	7/21/2015	1.0 in.	0/0	\$0
Lyman				
LYMAN	5/13/1999	1.0 in.	0/0	\$0
LYMAN	9/23/2001	0.88 in.	0/0	\$0
LYMAN	4/21/2006	0.75 in.	0/0	\$0
LYMAN	5/28/2009	0.75 in.	0/0	\$0
LYMAN	1/30/2013	0.75 in.	0/0	\$0
LYMAN	5/23/2014	1.0 in.	0/0	\$0
LYMAN	6/18/2014	1.0 in.	0/0	\$0
LYMAN	7/10/2014	0.75 in.	0/0	\$0
LYMAN	6/13/2017	1.0 in.	0/0	\$0
LYMAN	6/22/2019	0.75 in.	0/0	\$0
LYMAN	4/25/2020	1.0 in.	0/0	\$0
LYMAN	6/25/2020	0.75 in.	0/0	\$0
Pacolet				
PACOLET	3/31/1993	1.75 in.	0/0	\$0
PACOLET	6/2/1997	1.75 in.	0/0	\$0
PACOLET	6/24/1998	1.0 in.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/Injuries	Property Damage*
PACOLET	6/12/2004	1.75 in.	0/0	\$0
PACOLET	5/21/2006	0.88 in.	0/0	\$0
PACOLET	6/23/2006	0.88 in.	0/0	\$0
PACOLET	7/15/2007	0.75 in.	0/0	\$0
PACOLET	6/9/2008	1.0 in.	0/0	\$0
PACOLET	6/11/2008	0.75 in.	0/0	\$0
PACOLET	2/18/2009	0.88 in.	0/0	\$0
PACOLET	5/5/2020	1.0 in.	0/0	\$0
Reidville				
Reidville	8/19/1994	1.75 in.	0/0	\$0
REIDVILLE	5/24/1996	1.25 in.	0/0	\$0
REIDVILLE	6/7/1996	1.0 in.	0/0	\$0
REIDVILLE	6/21/1997	0.75 in.	0/0	\$0
REIDVILLE	5/2/2000	2.0 in.	0/0	\$0
REIDVILLE	7/5/2004	1.0 in.	0/0	\$0
REIDVILLE	5/23/2014	2.25 in.	0/0	\$0
Spartanburg (city)				
Spartanburg	5/15/1995	1.5 in.	0/0	\$0
SPARTANBURG	5/24/1996	1.0 in.	0/0	\$0
SPARTANBURG	6/2/1997	1.75 in.	0/0	\$0
SPARTANBURG	8/5/1997	0.75 in.	0/0	\$0
SPARTANBURG	5/21/1998	1.75 in.	0/0	\$0
SPARTANBURG	5/21/1998	0.75 in.	0/0	\$0
SPARTANBURG	5/21/1998	2.0 in.	0/0	\$0
SPARTANBURG	5/21/1998	1.75 in.	0/0	\$0
SPARTANBURG	6/19/1998	1.75 in.	0/0	\$0
SPARTANBURG	6/24/1998	1.0 in.	0/0	\$0
SPARTANBURG	2/28/1999	0.75 in.	0/0	\$0
SPARTANBURG	8/20/1999	1.75 in.	0/0	\$1,773,255
SPARTANBURG	8/20/1999	3.5 in.	0/0	\$15,959,299
SPARTANBURG	6/25/2001	0.75 in.	0/0	\$0
SPARTANBURG	5/3/2003	1.0 in.	0/0	\$174,922
SPARTANBURG	5/3/2003	0.88 in.	0/0	\$0
SPARTANBURG	7/28/2005	0.88 in.	0/0	\$0
SPARTANBURG	4/8/2006	0.75 in.	0/0	\$0
SPARTANBURG	4/8/2006	0.88 in.	0/0	\$0
SPARTANBURG	5/21/2006	1.75 in.	0/0	\$0
SPARTANBURG	5/25/2006	0.88 in.	0/0	\$0
SPARTANBURG	6/12/2006	0.88 in.	0/0	\$0
SPARTANBURG	7/15/2006	0.75 in.	0/0	\$0
SPARTANBURG	5/3/2007	0.75 in.	0/0	\$0
SPARTANBURG	4/26/2008	1.25 in.	0/0	\$0
SPARTANBURG	6/22/2008	0.75 in.	0/0	\$0
SPARTANBURG	6/23/2008	0.75 in.	0/0	\$0
SPARTANBURG	6/23/2008	0.75 in.	0/0	\$0
SPARTANBURG DWTN AR	2/18/2009	0.75 in.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG	2/18/2009	0.75 in.	0/0	\$0
SPARTANSBURG DWTN AR	2/18/2009	0.88 in.	0/0	\$0
SPARTANBURG	2/18/2009	0.75 in.	0/0	\$0
SPARTANBURG	6/13/2009	0.75 in.	0/0	\$0
SPARTANSBURG DWTN AR	6/22/2010	0.75 in.	0/0	\$0
SPARTANSBURG DWTN AR	6/2/2011	1.0 in.	0/0	\$0
SPARTANBURG	7/17/2012	1.0 in.	0/0	\$0
SPARTANSBURG DWTN AR	7/18/2012	1.0 in.	0/0	\$0
SPARTANBURG	5/23/2014	1.75 in.	0/0	\$3,685,952
SPARTANBURG	5/23/2014	1.0 in.	0/0	\$0
SPARTANBURG	7/13/2015	1.0 in.	0/0	\$0
SPARTANBURG	5/11/2016	1.0 in.	0/0	\$0
SPARTANBURG	7/21/2018	1.75 in.	0/0	\$0
Wellford				
WELLFORD	6/2/1997	1.75 in.	0/0	\$0
WELLFORD	6/2/2015	1.0 in.	0/0	\$0
Woodruff				
Woodruff	8/19/1994	0.75 in.	0/0	\$0
WOODRUFF	7/31/1999	1.75 in.	0/0	\$0
WOODRUFF	6/30/2002	0.88 in.	0/0	\$0
WOODRUFF	6/19/2005	0.75 in.	0/0	\$0
WOODRUFF	7/1/2005	0.75 in.	0/0	\$7,479
WOODRUFF	6/12/2007	1.0 in.	0/0	\$0
WOODRUFF	4/5/2012	1.0 in.	0/0	\$0
Unincorporated Area				
SPARTANBURG COUNTY	5/2/1957	4.0 in.	0/0	\$0
SPARTANBURG COUNTY	5/25/1960	2.0 in.	0/0	\$0
SPARTANBURG COUNTY	5/16/1963	1.5 in.	0/0	\$0
SPARTANBURG COUNTY	4/24/1964	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/14/1966	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/28/1967	0.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/12/1968	2.0 in.	0/0	\$0
SPARTANBURG COUNTY	3/30/1974	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	4/3/1974	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	4/3/1974	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/10/1975	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	4/18/1978	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/22/1979	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/19/1982	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/19/1982	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/10/1982	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/6/1984	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/6/1984	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/15/1985	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/3/1985	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/6/1985	1.0 in.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG COUNTY	6/7/1985	3.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/7/1985	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	7/22/1985	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	7/22/1985	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	8/2/1986	2.5 in.	0/0	\$0
SPARTANBURG COUNTY	8/2/1986	1.25 in.	0/0	\$0
SPARTANBURG COUNTY	8/8/1986	1.2 in.	0/1	\$0
SPARTANBURG COUNTY	5/1/1987	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	5/1/1987	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	5/29/1987	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/16/1988	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/17/1988	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/17/1988	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/24/1988	0.88 in.	0/0	\$0
SPARTANBURG COUNTY	6/18/1988	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	4/27/1989	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	4/27/1989	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	4/27/1989	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	4/27/1989	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	5/5/1989	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/5/1989	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	6/20/1989	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	7/7/1989	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	11/15/1989	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	4/30/1990	2.75 in.	0/0	\$0
SPARTANBURG COUNTY	4/30/1990	2.0 in.	0/0	\$0
SPARTANBURG COUNTY	5/1/1990	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/1/1990	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/1/1990	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	5/4/1990	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/9/1990	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	7/1/1990	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	7/1/1990	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	7/1/1990	1.25 in.	0/0	\$0
SPARTANBURG COUNTY	9/8/1990	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	4/8/1991	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	4/29/1991	1.75 in.	0/0	\$0
SPARTANBURG COUNTY	4/29/1991	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	3/19/1992	2.5 in.	0/0	\$0
SPARTANBURG COUNTY	3/19/1992	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/21/1992	0.75 in.	0/0	\$0
SPARTANBURG COUNTY	6/21/1992	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/21/1992	2.0 in.	0/0	\$0
SPARTANBURG COUNTY	6/26/1992	1.0 in.	0/0	\$0
SPARTANBURG COUNTY	11/22/1992	0.75 in.	0/0	\$0
NE Spartanburg	3/31/1993	1.0 in.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/Injuries	Property Damage*
NE portion	3/27/1994	1.0 in.	0/0	\$0
Little Chicago (near	5/15/1994	0.75 in.	0/0	\$10,044
West Side of	6/27/1994	0.75 in.	0/0	\$0
Drayton	9/24/1994	0.75 in.	0/0	\$991
SPARTANBURG COUNTY	4/23/1995	1.0 in.	0/0	\$0
Greenwood Co	4/24/1995	1.0 in.	0/0	\$0
Springfield	5/15/1995	0.88 in.	0/0	\$0
Converse	5/15/1995	1.75 in.	0/0	\$0
DRAYTON	3/19/1996	1.0 in.	0/0	\$0
BOILING SPGS	5/29/1996	0.75 in.	0/0	\$0
GRNVL SPRTNSBRG ARPT	7/17/1996	0.75 in.	0/0	\$0
MAYO	6/2/1997	0.75 in.	0/0	\$0
PAULINE	7/9/1997	1.75 in.	0/0	\$0
MOUNTAIN VIEW	4/3/1998	1.0 in.	0/0	\$0
PACOLET MILLS	6/6/1998	1.75 in.	0/0	\$0
PELHAM	7/6/1999	1.75 in.	0/0	\$0
ROEBUCK	8/20/1999	1.0 in.	0/0	\$0
MOORE	8/20/1999	2.5 in.	0/0	\$3,546
GRNVL SPRTNBRG ARPT	5/2/2000	0.75 in.	0/0	\$0
GRNVL SPRTNBRG ARPT	7/28/2000	0.75 in.	0/0	\$0
FINGERVILLE	7/2/2002	0.75 in.	0/0	\$0
CROSS ANCHOR	7/3/2002	0.88 in.	0/0	\$0
BOILING SPGS	5/3/2003	0.75 in.	0/0	\$0
BOILING SPGS	7/23/2003	0.75 in.	0/0	\$0
PAULINE	8/16/2003	0.75 in.	0/0	\$0
FINGERVILLE	5/16/2004	0.75 in.	0/0	\$0
FINGERVILLE	12/28/2005	0.75 in.	0/0	\$0
PAULINE	1/2/2006	0.75 in.	0/0	\$0
CROSS ANCHOR	4/21/2006	1.0 in.	0/0	\$0
PACOLET MILLS	4/22/2006	1.0 in.	0/0	\$0
CROSS ANCHOR	4/26/2006	0.88 in.	0/0	\$0
ENOREE	5/20/2006	0.88 in.	0/0	\$0
BOILING SPGS	5/26/2006	0.75 in.	0/0	\$0
MAYO	7/3/2006	0.75 in.	0/0	\$0
ARCADIA	4/26/2008	1.0 in.	0/0	\$0
GOLIGHTLY	4/26/2008	0.75 in.	0/0	\$0
ROEBUCK	4/27/2008	1.0 in.	0/0	\$0
BOILING SPGS	5/20/2008	0.75 in.	0/0	\$0
BOILING SPGS	6/22/2008	0.88 in.	0/0	\$0
PAULINE	6/26/2008	0.88 in.	0/0	\$0
BOILING SPGS	7/21/2008	1.0 in.	0/0	\$0
BOILING SPGS	7/21/2008	0.88 in.	0/0	\$0
BROOKLYN	7/21/2008	0.88 in.	0/0	\$0
HAYNE	7/23/2008	0.88 in.	0/0	\$0
HOBBYVILLE	5/5/2009	1.0 in.	0/0	\$0
INMAN MILLS	6/11/2009	0.75 in.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/Injuries	Property Damage*
HAYNE	6/11/2009	0.75 in.	0/0	\$0
BOILING SPGS	6/11/2009	0.75 in.	0/0	\$0
INMAN MILLS	9/9/2009	1.75 in.	0/0	\$0
JACKSON MILL	9/9/2009	0.88 in.	0/0	\$0
PAULINE	9/9/2009	1.0 in.	0/0	\$0
NEW PROSPECT	3/28/2010	0.88 in.	0/0	\$0
INMAN MILLS	3/28/2010	1.0 in.	0/0	\$0
FAIRMONT	3/28/2010	1.0 in.	0/0	\$0
ROEBUCK	3/28/2010	1.0 in.	0/0	\$0
ARCADIA	3/28/2010	1.25 in.	0/0	\$0
HOBBYVILLE	3/28/2010	1.0 in.	0/0	\$0
CROSS ANCHOR	3/28/2010	1.0 in.	0/0	\$0
SIGSBEE	4/27/2010	1.0 in.	0/0	\$0
FORSTER	5/15/2010	0.88 in.	0/0	\$0
CHEROKEE SPGS	7/26/2010	0.75 in.	0/0	\$0
NEW PROSPECT	5/10/2011	1.0 in.	0/0	\$0
FAIRMONT	6/2/2011	0.88 in.	0/0	\$0
SAXON	6/2/2011	1.0 in.	0/0	\$0
CLEVEDALE	6/2/2011	0.75 in.	0/0	\$0
COOLEY SPGS	6/5/2011	0.75 in.	0/0	\$0
GLENN SPGS	6/5/2011	0.88 in.	0/0	\$0
PELHAM	6/9/2011	1.0 in.	0/0	\$0
HOLLY SPGS	6/15/2011	1.25 in.	0/0	\$0
PELHAM	6/15/2011	0.75 in.	0/0	\$323,734
CASHVILLE	6/15/2011	1.25 in.	0/0	\$0
ENOREE	6/19/2011	1.25 in.	0/0	\$0
FAIRMONT	6/21/2011	0.88 in.	0/0	\$0
MARY LOUISE	7/4/2011	1.0 in.	0/0	\$0
DRAYTON	8/7/2011	1.75 in.	0/0	\$0
ROEBUCK	8/14/2011	1.0 in.	0/0	\$0
NEW PROSPECT	1/11/2012	1.0 in.	0/0	\$0
ROEBUCK	3/3/2012	1.0 in.	0/0	\$0
GRNVL SPRTNBRG ARPT	3/31/2012	0.75 in.	0/0	\$0
APPALACHIE	4/5/2012	1.75 in.	0/0	\$0
BOILING SPGS	4/5/2012	0.75 in.	0/0	\$0
BOILING SPGS	4/5/2012	1.75 in.	0/0	\$0
ARLINGTON	4/5/2012	1.0 in.	0/0	\$0
HOLLY SPGS	4/5/2012	0.88 in.	0/0	\$0
CAMP CROFT	4/5/2012	0.88 in.	0/0	\$0
PAULINE	4/27/2012	1.75 in.	0/0	\$0
MAYO	5/15/2012	1.0 in.	0/0	\$0
ROEBUCK	5/16/2012	0.75 in.	0/0	\$0
ROEBUCK	5/16/2012	1.0 in.	0/0	\$0
SAXON	7/1/2012	1.75 in.	0/0	\$1,275,822
PAULINE	7/1/2012	1.0 in.	0/0	\$0
CONVERSE	7/16/2012	1.0 in.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/Injuries	Property Damage*
GLENDAL	7/16/2012	0.75 in.	0/0	\$0
GLENDAL	8/15/2012	0.75 in.	0/0	\$0
NEW PROSPECT	5/23/2013	0.88 in.	0/0	\$0
BOILING SPGS	5/23/2013	1.0 in.	0/0	\$0
BOILING SPGS	6/9/2013	0.75 in.	0/0	\$0
GLENN SPGS	6/25/2013	0.75 in.	0/0	\$0
ARLINGTON	7/25/2013	1.0 in.	0/0	\$0
MOORE	5/23/2014	2.5 in.	0/0	\$0
BOILING SPGS	6/9/2014	0.75 in.	0/0	\$0
BOILING SPGS	6/18/2014	0.75 in.	0/0	\$0
MOORE	6/19/2014	0.75 in.	0/0	\$0
DELMAR	6/19/2014	1.5 in.	0/0	\$0
ARLINGTON	7/10/2014	1.0 in.	0/0	\$0
HOLLY SPGS	4/20/2015	1.0 in.	0/0	\$0
KILGORE	4/20/2015	1.0 in.	0/0	\$0
INMAN MILLS	6/24/2015	0.75 in.	0/0	\$0
BOILING SPGS	7/13/2015	1.0 in.	0/0	\$0
ROEBUCK	7/13/2015	1.0 in.	0/0	\$0
GRNVL SPRTNBRG ARPT	3/14/2016	1.75 in.	0/0	\$0
SPARTANSBURG DWTN AR	5/11/2016	1.0 in.	0/0	\$0
SIGSBEE	9/27/2016	1.0 in.	0/0	\$0
GRNVL SPRTNBRG ARPT	3/21/2017	1.75 in.	0/0	\$0
GRNVL SPRTNBRG ARPT	3/21/2017	3.0 in.	0/0	\$0
GRNVL SPRTNBRG ARPT	3/21/2017	1.75 in.	0/0	\$0
CAMPTON	3/21/2017	1.0 in.	0/0	\$0
FINGERVILLE	3/21/2017	1.0 in.	0/0	\$0
STARTEX	5/31/2017	0.75 in.	0/0	\$0
MARY LOUISE	6/13/2017	0.88 in.	0/0	\$0
ENOREE	4/15/2018	1.0 in.	0/0	\$0
MASCOT	6/25/2018	1.25 in.	0/0	\$0
INMAN MILLS	6/25/2018	1.0 in.	0/0	\$0
ROEBUCK	6/25/2018	1.75 in.	0/0	\$0
MOORE	6/22/2019	1.25 in.	0/0	\$0
ARLINGTON	7/11/2019	0.75 in.	0/0	\$0
MOORE	9/13/2019	0.75 in.	0/0	\$0
MOUNTAIN VIEW	4/7/2020	1.0 in.	0/0	\$0
HOLLY SPGS	4/25/2020	1.0 in.	0/0	\$0
MARY LOUISE	4/25/2020	1.0 in.	0/0	\$0
HOLLY SPGS	4/25/2020	1.75 in.	0/0	\$0
EAST GREER	5/4/2020	1.75 in.	0/0	\$0
CROSS ANCHOR	5/4/2020	1.75 in.	0/0	\$0
GRNVL SPRTNBRG ARPT	5/5/2020	0.75 in.	0/0	\$0
ROEBUCK	5/5/2020	0.75 in.	0/0	\$0
ROEBUCK	5/5/2020	1.25 in.	0/0	\$0
JACKSON MILL	5/5/2020	1.25 in.	0/0	\$0

	Date	Magnitude	Deaths/Injuries	Property Damage*
HAYNE	7/10/2020	0.88 in.	0/0	\$0

*Property damage is reported in 2022 dollars; all damage may not have been reported.

Source: National Centers for Environmental Information.

5.4.4 Probability of Future Occurrences

Based on historical occurrence information, it is assumed that the probability of future hail occurrences is highly likely (100 percent annual probability). Since hail is an atmospheric hazard (coinciding with thunderstorms), it is assumed that the entire area of Spartanburg County has equal exposure to this hazard. It can be expected that future hail events will continue to cause minor damage to property and vehicles throughout the county. Furthermore, the link between climate change and increases in the frequency and severity of extreme precipitation events indicates hailstorms may increase in frequency and magnitude within Spartanburg County as well.⁸

5.5 HEAT WAVE/EXTREME HEAT

5.5.1 Background

Extreme heat events, also known as heat waves, pose a serious risk to public health and safety. According to the National Weather Service, a heat wave is any event lasting at least three days where temperatures reach ninety degrees Fahrenheit or higher.⁹ However, it may also be defined as an event at least three days long where temperatures are ten degrees greater than the normal temperature for the affected area. Heat waves are typically accompanied by humidity but may also be very dry. These conditions can pose serious health threats causing an average of 1,300 deaths each summer in the U.S.¹⁰

According to the National Oceanic and Atmospheric Administration, heat is the number one weather-related killer among natural hazards, followed by frigid winter temperatures.¹¹ South Carolina currently averages 25 dangerous heat days per year.¹² The National Weather Service devised the Heat Index as a mechanism to better inform the public of heat dangers. The Heat Index Chart, shown in **Figure 5.4**, uses air temperature and humidity to determine the heat index or apparent temperature. **Table 5.9** shows the dangers associated with different heat index temperatures. Some populations, such as the elderly and young, are more susceptible to heat danger than other segments of the population.

⁸ <https://www.c2es.org/content/extreme-precipitation-and-climate-change/>

⁹ <https://www.weather.gov/safety/heat-during#:~:text=What%20is%20a%20heat%20wave,of%20people%20to%20hazardous%20heat.>

¹⁰ <https://www.epa.gov/climate-indicators/climate-change-indicators-heat-related-deaths>

¹¹ <https://www.weather.gov/hazstat/>

¹² <https://statesatrisk.org/south-carolina/extreme-heat>

FIGURE 5.4: HEAT INDEX CHART

		Relative Humidity (in percent)																				
Air Temp (in F)		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
	140	125																				
	135	120	128																			
	130	117	122	131																		
	125	111	116	123	131	141																
	120	107	111	116	123	130	139	148														
	115	103	107	111	115	120	127	135	143	151												
	110	99	102	105	108	112	117	123	130	137	143	150										
	105	95	97	100	102	105	109	113	118	123	129	135	142	149								
	100	91	93	95	97	99	101	104	107	110	115	120	126	132	138	144						
	95	87	88	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136				
	90	83	84	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113	117	122		
	85	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108
	80	73	74	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86	87	88	89	91
	75	69	69	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80
	70	64	64	65	65	66	66	67	67	68	68	69	69	70	70	70	70	71	71	71	71	72

Source: National Oceanic and Atmospheric Administration

TABLE 5.9: HEAT DISORDERS ASSOCIATED WITH HEAT INDEX TEMPERATURE

Heat Index Temperature (Fahrenheit)	Description of Risks
80°- 90°	Fatigue possible with prolonged exposure and/or physical activity
90°- 105°	Sunstroke, heat cramps, and heat exhaustion possible with prolonged exposure and/or physical activity
105°- 130°	Sunstroke, heat cramps, and heat exhaustion likely, and heatstroke possible with prolonged exposure and/or physical activity
130° or higher	Heatstroke or sunstroke is highly likely with continued exposure

Source: National Weather Service, National Oceanic and Atmospheric Administration

Finally, stagnant atmospheric conditions trap pollutants, thus adding unhealthy air to excessively hot temperatures. In addition, the “urban heat island effect” can produce significantly higher nighttime temperatures because asphalt and concrete (which store heat longer) gradually release heat at night. Thus, urban areas tend to be at greater risk to heat effects.¹³

5.5.2 Location and Spatial Extent

Excessive heat typically impacts a large area and cannot be confined to any geographic or political boundaries. All jurisdictions within Spartanburg County are uniformly susceptible to extreme heat

¹³ <https://www.epa.gov/green-infrastructure/reduce-urban-heat-island-effect#:~:text=%22Urban%20heat%20islands%22%20occur%20when,heat%2Drelated%20illness%20and%20mortality.>

conditions.¹⁴ However it should also be noted that urban areas may experience higher temperatures than surrounding rural areas due to the urban heat island effect.¹⁵

5.5.3 Historical Occurrences

Data from the National Centers for Environmental Information were used to determine historical extreme heat and heat wave events in Spartanburg County¹⁶. Two events were reported:

June 23, 1996 – Heat – A man died of heatstroke while relaxing beside his pool.

June 29-July 1, 2012 – Heat – An oppressively hot and humid air mass brought very hot conditions to upstate South Carolina. The high temperature at Greenville-Spartanburg International Airport hit 105 degrees on the 29th and 103 degrees on the 30th, both records for the day. The heat index hit 106 degrees. Even hotter conditions extended through July 1st, with Greenville-Spartanburg International Airport hitting an all-time record high temperature of 107 degrees. However, low dewpoints kept the heat index just below 110. Widespread thunderstorms developed during the afternoon hours of the 1st, bringing somewhat cooler conditions and a few days of relief from the heat.

In addition, information from the South Carolina State Climatology Office was reviewed to obtain historical temperature records in the county. The recorded maximum for the county can be found below in **Table 5.10**:

TABLE 5.10: HIGHEST RECORDED TEMPERATURE IN SPARTANBURG COUNTY

Location	Date	Temperature (°F)
Spartanburg 3SSE	07/20/1986	106

Source: South Carolina State Climatology Office

The State Climatology Office also reports average maximum temperatures at various stations in the county. The most centralized location is in Spartanburg. **Table 5.11** shows the average maximum temperatures from 1991 to 2020 at the Spartanburg 3 SSE observation station which can be used as a general comparison for the county.

TABLE 5.11: AVERAGE MAXIMUM TEMPERATURE IN SPARTANBURG COUNTY

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Avg. Max (°F)	54.1	58.5	66.0	74.8	81.0	87.0	90.1	88.3	83.4	74.4	63.8	55.8

Source: South Carolina State Climatology Office, National Centers for Environmental Information

5.5.4 Probability of Future Occurrences

Based on historical occurrence information, it is assumed that all of Spartanburg County has a probability level of “possible” (between 1 and 10 percent annual probability) for future extreme heat

¹⁴ <https://www.epa.gov/climate-indicators/climate-change-indicators-heat-waves>

¹⁵ <https://cpac.columbiasc.gov/urban-heat-island-mapping-initiative/>

¹⁶ <https://www.ncdc.noaa.gov/stormevents/>

events to impact the county. While Spartanburg County has only reported several instances of historical extreme heat events, trends related to climate change, such as the rapid increase in the average temperature across the continental United States, suggest the likelihood of this hazard will increase in the future.¹⁷ This hazard will be updated in subsequent plans as more climate model

5.6 HURRICANE/TROPICAL STORM

5.6.1 Background

Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. A tropical cyclone refers to any such circulation that develops over tropical waters. Tropical cyclones act as a “safety-valve,” limiting the continued build-up of heat and energy in tropical regions by maintaining the atmospheric heat and moisture balance between the tropics and the pole-ward latitudes. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes.¹⁸

The key energy source for a tropical cyclone is the release of latent heat from the condensation of warm water. Their formation requires a low-pressure disturbance, warm sea surface temperature, rotational force from the spinning of the earth, and the absence of wind shear in the lowest 50,000 feet of the atmosphere. Most hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season, which encompasses the months of June through November. The peak of the Atlantic hurricane season is in early to mid-September, and the average number of storms that reach hurricane intensity per year in the Atlantic basin is about six.¹⁹

As an incipient hurricane develops, barometric pressure (measured in millibars or inches) at its center falls and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. Hurricane intensity is further classified by the Saffir-Simpson Scale (**Table 5.12**), which rates hurricane intensity on a scale of 1 to 5, with 5 being the most intense.²⁰

¹⁷ <https://science2017.globalchange.gov/chapter/6/>

¹⁸ <https://www.noaa.gov/education/resource-collections/weather-atmosphere/hurricanes>

¹⁹

https://www.weather.gov/source/zhu/ZHU_Training_Page/tropical_stuff/hurricane_anatomy/hurricane_anatomy.html

²⁰ <https://secoora.org/education-outreach/hurricanes/hurricane-glossary/>






TABLE 5.12: SAFFIR-SIMPSON SCALE

Category	Maximum Sustained Wind Speed (MPH)	Minimum Surface Pressure (Millibars)
1	74–95	Greater than 980
2	96–110	979–965
3	111–129	964–945
4	130–156	944–920
5	157 +	Less than 920

Source: National Hurricane Center (2012)

The Saffir-Simpson Scale categorizes hurricane intensity linearly based upon maximum sustained winds and barometric pressure, which are combined to estimate potential damage. Categories 3, 4, and 5 are classified as “major” hurricanes and, while hurricanes within this range comprise only 20 percent of total tropical cyclone landfalls, they account for over 70 percent of the damage in the United States. **Table 5.13** describes the damage that could be expected for each category of hurricane. Damage during hurricanes may also result from spawned tornadoes, storm surge, and inland flooding associated with heavy rainfall that usually accompanies these storms.

TABLE 5.13: HURRICANE DAMAGE CLASSIFICATIONS

Storm Category	Damage Level	Description of Damages	Photo Example
1	MINIMAL	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage.	
2	MODERATE	Some roofing material, door, and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small craft in unprotected moorings may break their moorings.	
3	EXTENSIVE	Some structural damage to small residences and utility buildings, with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures, with larger structures damaged by floating debris. Terrain may be flooded well inland.	
4	EXTREME	More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.	
5	CATASTROPHIC	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.	

Source: National Hurricane Center; Federal Emergency Management Agency

5.6.2 Location and Spatial Extent

Hurricanes and tropical storms threaten the entire Atlantic and Gulf seaboard of the United States. While coastal areas are most directly exposed to the brunt of landfalling storms, their impact is often

felt hundreds of miles inland and they can affect Spartanburg County. All jurisdictions in Spartanburg County are equally susceptible to hurricane and tropical storms.²¹

5.6.3 Historical Occurrences

According to the National Hurricane Center's historical storm track records, 51 hurricane/tropical storm tracks have passed within 75 miles of Spartanburg County since 1850.²² This includes 1 Category 2 hurricane, 1 Category 1 hurricane, 22 tropical storms, and 26 tropical depressions.

Of the recorded storm events, ten have traversed directly through Spartanburg County as shown in **Figure 5.5**. **Table 5.14** provides the date of occurrence, name (if applicable), maximum wind speed (as recorded within 75 miles of Spartanburg County), and category of the storm based on the wind speed within the 75-mile buffer according to the Saffir-Simpson Scale.

²¹ <https://www.nhc.noaa.gov/climo/>

²² These storm track statistics do not include extra-tropical storms. Though these related hazard events are less severe in intensity, they may cause significant local impact in terms of rainfall and high winds.

FIGURE 5.5: HISTORICAL HURRICANE STORM TRACKS WITHIN 75 MILES OF SPARTANBURG COUNTY

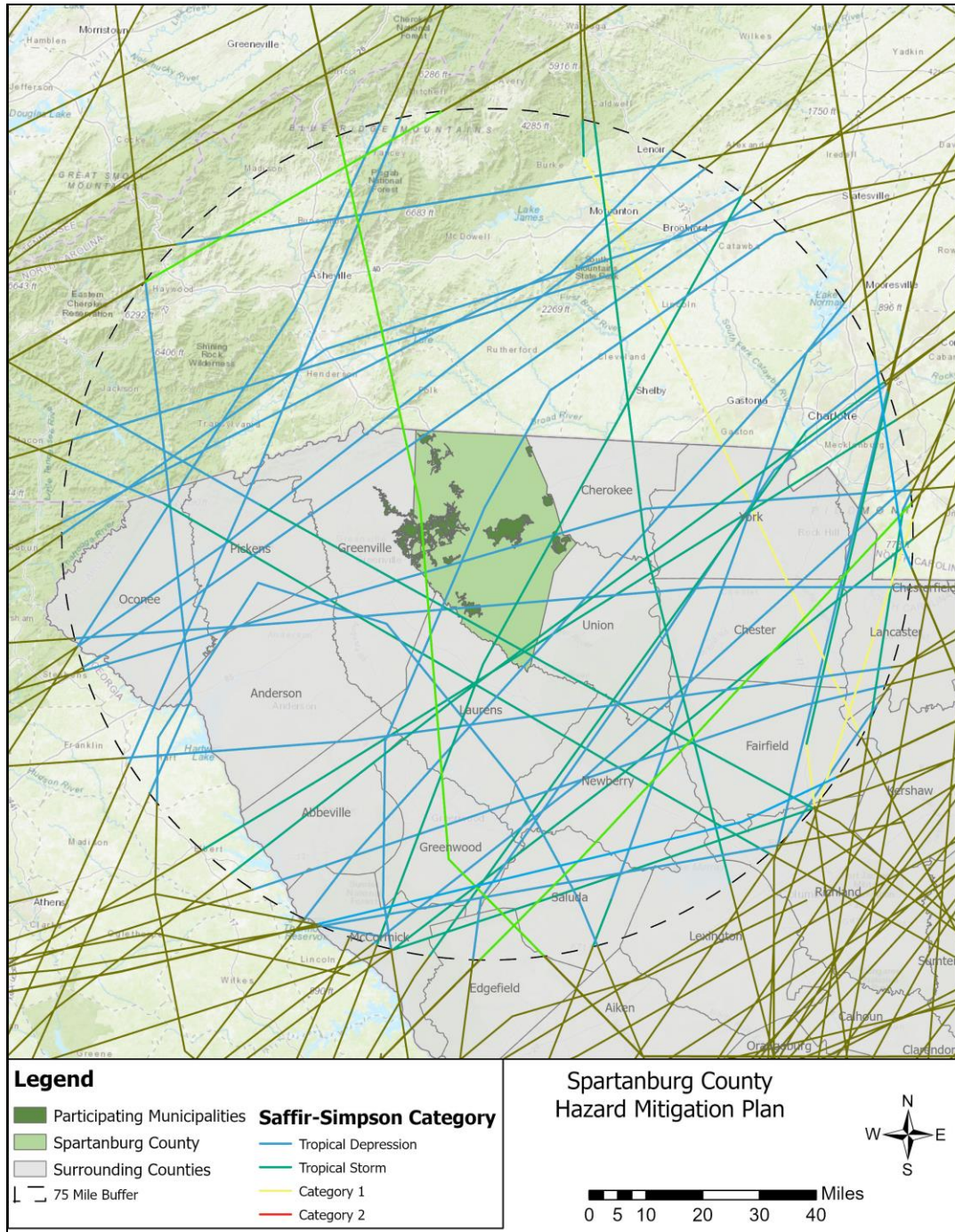


TABLE 5.14: HISTORICAL HURRICANE STORM TRACKS WITHIN 75 MILES OF SPARTANBURG COUNTY (1850–2022)

Date of Occurrence	Storm Name	Maximum Wind Speed (knots)	Storm Category
8/28/1852	UNNAMED	40	Tropical Storm
9/9/1854	UNNAMED	50	Tropical Storm
9/16/1859	UNNAMED	40	Tropical Storm
9/18/1863	NOT NAMED	-999	Tropical Depression
9/11/1882	UNNAMED	40	Tropical Storm
9/12/1885	UNNAMED	40	Tropical Storm
6/22/1886	UNNAMED	40	Tropical Storm
10/20/1887	UNNAMED	30	Tropical Depression
9/24/1889	UNNAMED	45	Tropical Storm
8/28/1893	UNNAMED	75	Category 1
10/3/1893	UNNAMED	45	Tropical Storm
7/8/1896	UNNAMED	35	Tropical Storm
9/28/1901	UNNAMED	35	Tropical Storm
9/16/1903	UNNAMED	30	Tropical Depression
9/18/1906	UNNAMED	60	Tropical Storm
9/4/1913	UNNAMED	30	Tropical Depression
8/3/1915	UNNAMED	40	Tropical Storm
7/15/1916	UNNAMED	50	Tropical Storm
10/3/1927	UNNAMED	40	Tropical Storm
8/11/1928	UNNAMED	30	Tropical Depression
10/9/1946	UNNAMED	40	Tropical Storm
10/9/1947	UNNAMED	20	Tropical Depression
8/28/1949	UNNAMED	55	Tropical Storm
8/28/1952	UNNAMED	30	Tropical Depression
8/31/1952	ABLE	45	Tropical Storm
6/2/1959	ARLENE	25	Tropical Depression
9/30/1959	GRACIE	60	Tropical Storm
7/23/1964	UNNAMED	20	Tropical Depression
8/30/1964	CLEO	30	Tropical Depression
6/16/1965	UNNAMED	40	Tropical Storm
6/8/1968	ABBY	30	Tropical Depression
9/8/1977	BABE	25	Tropical Depression
9/5/1979	DAVID	45	Tropical Storm
7/25/1985	BOB	45	Tropical Storm
8/18/1985	DANNY	25	Tropical Depression
8/29/1988	CHRIS	25	Tropical Depression
9/22/1989	HUGO	85	Category 2
7/21/1994	UNNAMED	20	Tropical Depression
8/17/1994	BERYL	15	Tropical Depression
8/28/1995	JERRY	20	Tropical Depression
7/23/1997	DANNY	20	Tropical Depression
9/23/2000	HELENE	25	Tropical Depression

Date of Occurrence	Storm Name	Maximum Wind Speed (knots)	Storm Category
7/2/2003	BILL	20	Tropical Depression
9/17/2004	IVAN	20	Tropical Depression
9/28/2004	JEANNE	25	Tropical Depression
6/14/2006	ALBERTO	30	Tropical Depression
9/17/2018	FLORENCE	25	Tropical Depression
10/11/2018	MICHAEL	45	Tropical Storm
5/28/2020	BERTHA	25	Tropical Depression
10/29/2020	ZETA	45	Tropical Storm
6/20/2021	CLAUDETTE	25	Tropical Depression

Source: National Hurricane Center

Flooding is generally the greatest hazard of concern with hurricane and tropical storm events in Spartanburg County though some events do carry winds that can have significant impacts on the county.

5.6.4 Probability of Future Occurrences

Given the inland location of the county, it is more likely to be affected by remnants of hurricane and tropical storm systems (as opposed to a major hurricane) which may result in flooding or high winds. The probability of being impacted is less than coastal areas but still remains a real threat to Spartanburg County due to induced events like flooding. Based on historical evidence, the probability level of future occurrence is “likely” (between 10 and 100 percent annual probability). Given the regional nature of the hazard, all areas in the county are equally exposed to this hazard. When the county is impacted, the damage could be widespread, threatening lives and property throughout the planning area.²³ Furthermore, the Center for Climate and Energy Solutions indicates climate change is exacerbating the effects of hurricanes by increasing the intensity and decreasing the speed at which storm systems travel. While researchers are currently uncertain whether the United States will see a change in the number of annual hurricanes, it is certain that the intensity and severity of this hazard will continue to increase.²⁴

5.7 LIGHTNING

5.7.1 Background

Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges within a thunderstorm, creating a “bolt” when the buildup of charges becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes, but the surrounding air cools following the bolt. This rapid heating and cooling of the surrounding air causes the thunder which often accompanies lightning strikes. While most often affiliated with severe

²³ <https://www.weather.gov/safety/lightning-temperature#:~:text=In%20fact%2C%20lightning%20can%20heat,bark%20to%20be%20blown%20off.>

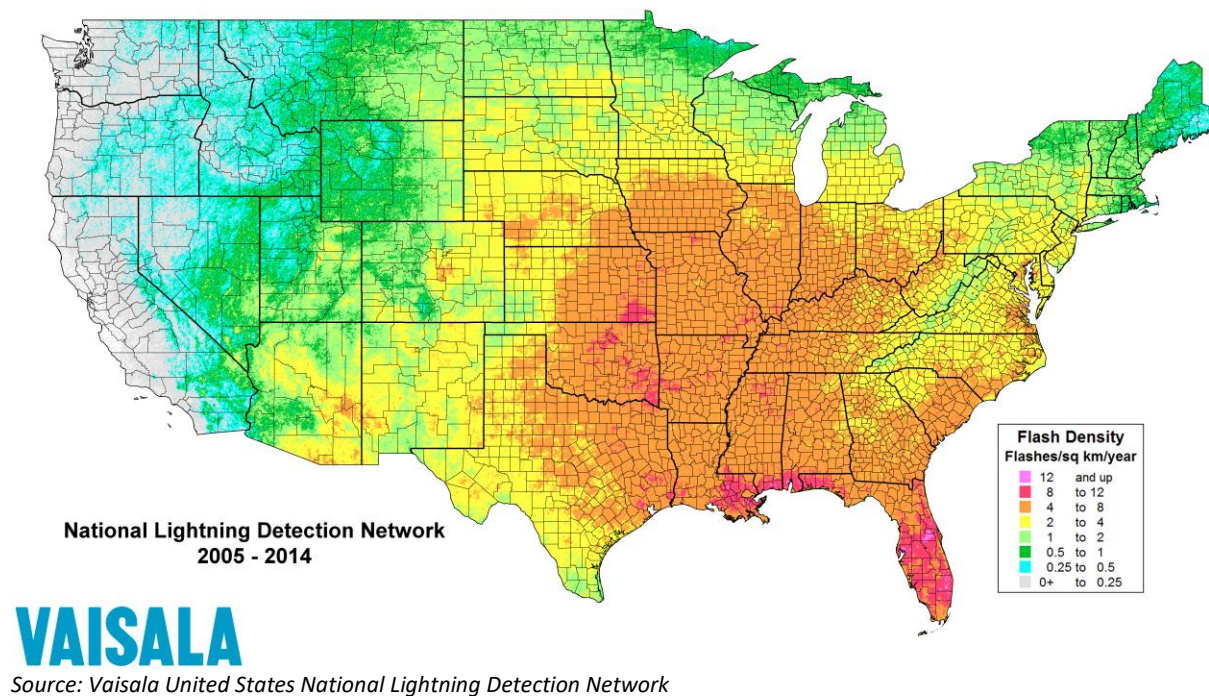
²⁴ <https://www.c2es.org/content/hurricanes-and-climate-change/>

thunderstorms, lightning may also strike outside of heavy rain and might occur as far as 10 miles away from any rainfall.²⁵

Lightning strikes occur in very small, localized areas. For example, they may strike a building, electrical transformer, or even a person. According to the National Weather Service (NWS), lightning injuries occur for an average of 300 people and kills 80 people each year in the United States.²⁶ Direct lightning strikes also have the ability to cause significant damage to buildings, critical facilities, and infrastructure largely by igniting a fire. Lightning is also responsible for igniting wildfires that can result in widespread damages to property.

Figure 5.6 shows a lightning flash density map for the years 2005-2014 based upon data provided by Vaisala's U.S. National Lightning Detection Network (NLDN®).

FIGURE 5.6: LIGHTNING FLASH DENSITY IN THE UNITED STATES



5.7.2 Location and Spatial Extent

Lightning occurs randomly, therefore it is impossible to predict where and with what frequency it will strike. Due to this characteristic, all jurisdictions within Spartanburg County are uniformly exposed to lightning events.

²⁵ <https://www.nssl.noaa.gov/education/svrwx101/lightning/>

²⁶ <https://www.weather.gov/phi/ThunderstormDefinition>

5.7.3 Historical Occurrences

According to the National Centers for Environmental Information, there have been a total of 36 recorded lightning events in Spartanburg County since 1996 as listed in summary **Table 5.15**.²⁷ These events resulted in 2 fatalities, 12 injuries, and over \$2.7 million (2022 dollars) in property damages.²⁸ Detailed information on historical lightning events can be found in **Table 5.16**.

Because NCEI reporting depends on human observation of an event, it is certain that more than 36 events have impacted Spartanburg County. Many of the reported events are those that caused damage though it should be expected that damages are likely much higher for the lightning hazard than what is reported.

TABLE 5.15: SUMMARY OF LIGHTNING OCCURRENCES IN SPARTANBURG COUNTY

Location	Number of Occurrences	Deaths/Injuries	Property Damage (2022)	Annualized Property Loss (1996-2022)
Campobello	1	0/0	\$1,539,210	\$167,338
Chesnee	0	0/0	\$0	\$0
Cowpens	1	0/0	\$0	\$0
Duncan	0	0/0	\$0	\$0
Greer	5	0/0	\$51,834	\$1,994
Inman	1	0/0	\$14,434	\$1,708
Landrum	1	0/0	\$26,301	\$2,232
Lyman	1	1/0	\$0	\$0
Pacolet	0	0/0	\$0	\$0
Reidville	0	0/0	\$0	\$0
Spartanburg (city)	6	1/2	\$451,429	\$19,260
Wellford	0	0/0	\$0	\$0
Woodruff	3	0/0	\$168,001	\$6,462
Unincorporated Area	17	0/10	\$450,903	\$17,342
SPARTANBURG COUNTY TOTAL	36	2/12	\$2,702,112	\$144,620

Source: National Centers for Environmental Information.

TABLE 5.16: HISTORICAL LIGHTNING OCCURRENCES IN SPARTANBURG COUNTY

	Date	Deaths/Injuries	Property Damage*	Details
Campobello				
CAMPOBELLO	9/16/2004	0/0	\$1,539,210	Lightning struck an industrial plant, igniting a fire which destroyed about 2/3 of the facility.

²⁷ These lightning events are only inclusive of those reported by the National Centers for Environmental Information (NCEI) from 1996 through May 2022. It is certain that additional lightning events have occurred in Spartanburg County. As additional local data becomes available, this hazard profile will be amended.

²⁸ Adjusted dollar values were calculated based on the average Consumer Price Index for a given calendar year. This index value has been calculated every year since 1913. For 2022, the July 2022 monthly index was used.

SECTION 5: HAZARD PROFILES

	Date	Deaths/Injuries	Property Damage*	Details
Chesnee				
<i>None Reported</i>	--	--	--	--
Cowpens				
COWPENS	6/14/1996	0/0	\$0	--
Duncan				
<i>None Reported</i>	--	--	--	--
Greer				
GREER	6/14/1996	0/0	\$0	--
GREER	11/7/1997	0/0	\$0	A fire late in the evening burned an old Boy Scout building. The lightning which caused the fire occurred in the late afternoon.
GREER	8/11/1998	0/0	\$8,944	Gusty winds or lightning, most likely lightning, caused a tree to split in downtown Greer. The tree fell on a storefront awning.
GREER	5/18/1999	0/0	\$35,174	Lightning struck a house and ignited a fire which burned one end of the house.
GREER	7/11/2004	0/0	\$7,716	Lightning ignited a fire at an outbuilding, destroying the building and its contents.
Inman				
INMAN	5/25/2006	0/0	\$14,434	Lightning ignited a fire that damaged a church.
Landrum				
LANDRUM	7/27/1999	0/0	\$26,301	A severe thunderstorm produced winds which downed power lines. About one half hour earlier, the same thunderstorm produced a lightning strike which killed 3 horses.
Lyman				
LYMAN	8/22/2006	1/0	\$0	Lightning struck a tree on Vernon St in Lyman, killing a 40-year-old woman who was tending to her dogs. Four dogs were killed as well.
Pacolet				
<i>None Reported</i>	--	--	--	--
Reidville				
<i>None Reported</i>	--	--	--	--
Spartanburg (city)				
SPARTANBURG	7/10/1997	0/0	\$182,115	Lightning struck a home in Spartanburg, burning it to the ground. A man perished in the fire (indirect fatality).

SECTION 5: HAZARD PROFILES

	Date	Deaths/Injuries	Property Damage*	Details
SPARTANBURG	5/29/1998	0/0	\$269,314	Lightning struck a large house on the west side of the city of Spartanburg which ignited a fire, destroying the second floor and all its contents.
SPARTANBURG	7/8/2001	0/0	\$0	--
SPARTANBURG	5/3/2003	0/1	\$0	--
SPARTANBURG	7/14/2005	0/0	\$0	Lightning ignited a house fire.
SPARTANBURG	8/29/2007	1/1	\$0	Lightning struck and killed a 17year old male and injured an adult at a soccer field in Spartanburg.
Wellford				
None Reported	--	--	--	--
Woodruff				
WOODRUFF	7/10/1997	0/0	\$0	Lightning caused extensive damage to a building in Woodruff.
WOODRUFF	7/31/2008	0/0	\$99,662	Lightning ignited a fire on Breezy Hill Lane, causing extensive damage to the structure.
WOODRUFF	5/5/2009	0/0	\$68,339	Lightning ignited a fire at the Woodruff High School football stadium, destroying the press box.
Unincorporated Area				
GSP INTL AIRPORT	7/17/1996	0/0	\$0	--
CROSS ANCHOR	6/22/1997	0/0	\$0	A house in Spartanburg County was struck by lightning and burned.
ROEBUCK	7/20/1998	0/0	\$44,775	Lightning ignited a fire which burned a mobile home in Roebuck.
ROEBUCK	8/20/1999	0/0	\$0	Several house fires in the Roebuck community were started by lightning.
BOILING SPGS	2/12/2000	0/0	\$0	A lightning bolt from a morning thunderstorm hit a garage and started a fire which destroyed the home.
GRNVL SPRTNBRG ARPT	7/28/2000	0/0	\$0	Lightning struck several trees on the GSP Airport property and knocked a basketball size hole in the runway.
PAULINE	6/24/2001	0/0	\$32,842	Lightning sparked a fire which destroyed an unoccupied, wooden frame house.
BOILING SPGS	8/17/2003	0/0	\$15,834	Lightning ignited fires at a house and a mobile home.
BOILING SPGS	6/12/2004	0/1	\$0	A 13-year-old boy suffered minor injuries when lightning struck nearby while he was holding his bicycle.

	Date	Deaths/Injuries	Property Damage*	Details
COOLEY SPGS	7/29/2008	0/8	\$0	Eight men were struck by lightning in a peach orchard near the intersection of Burnetts Rd and Martin Camp Rd.
ENOREE	6/21/2011	0/0	\$6,474	Lightning hit a moving car on I-26 near mile marker 41, causing significant damage.
HAYNE	4/5/2012	0/0	\$63,519	Lighting started a fire at an apartment building, damaging the roof of the building as well as one apartment.
STARTEX	7/10/2014	0/1	\$0	Media reported a teenage male received minor injuries and a dog was killed when lightning struck a nearby chain link fence on Blue Springs Dr.
GLENDALE	7/15/2016	0/0	\$24,294	Media reported lightning struck and ignited a fire at a home on Indian Creek Rd.
HAYNE	7/16/2016	0/0	\$60,736	Newspaper reported lightning ignited a fire at an apartment complex on Turning Leaf Cir.
STARTEX	7/30/2016	0/0	\$2,429	County comms reported a lightning strike ignited a fire which burned down an outbuilding in the Startex community.
VALLEY FALLS	4/7/2022	0/0	\$200,000	Media reported lightning struck a house in the Boiling Springs area which ignited a fire that destroyed the structure.

*Property Damage is reported in 2022 dollars; all damage may not have been reported.

Source: National Climatic Data Center

5.7.4 Probability of Future Occurrences

Although there was not a high number of historical lightning events reported throughout Spartanburg County via NCEI data, it is considered a regular occurrence, especially accompanied by thunderstorms.²⁹ In fact, lightning events will assuredly happen on an annual basis though not all events will cause damage. According to Vaisala's U.S. National Lightning Detection Network (NLDN®), Spartanburg County is located in an area of the country that experienced an average of 2 to 4 lightning flashes per square kilometer per year between 2005 and 2014.³⁰ Therefore, the probability of future events is "highly likely" (100 percent annual probability). This likelihood is supported by trends in climate change such as the increase in frequency and severity of extreme precipitation events in the United States.³¹ In addition to increasing frequency and severity, climate change is expected to increase potential damages associated with lightning. Climate modelling in the Southeastern United States reported by the Center for Climate and Energy Solutions projects a 30% increase in the total area burned by lightning-ignited

²⁹ <https://www.ncdc.noaa.gov/stormevents/>

³⁰ <https://www.vaisala.com/en/products/national-lightning-detection-network-nldn>

³¹ <https://www.c2es.org/content/extreme-precipitation-and-climate-change/>

wildfire from 2011 to 2060.³² Considering historical data and the expected outlook due to climate change, it can be expected that future lightning events will continue to threaten life and cause minor property damages throughout the county.

5.8 SEVERE THUNDERSTORM/HIGH WIND

5.8.1 Background

Thunderstorms can produce a variety of accompanying hazards including wind (discussed here), hail, and lightning.³³ Although thunderstorms generally affect a small area, they are very dangerous and may cause substantial property damage.

Three conditions need to occur for a thunderstorm to form. First, a thunderstorm needs moisture to form clouds and rain. Second, it needs unstable air, such as warm air that can rise rapidly (this is often referred to as the “engine” of the storm). Third, thunderstorms need lift, which comes in the form of cold or warm fronts, sea breezes, mountains, or the sun’s heat. When these conditions occur simultaneously, air masses of varying temperatures meet, and a thunderstorm is formed. These storm events can occur singularly, in lines, or in clusters. Furthermore, they can move through an area very quickly or linger for several hours.

According to the National Weather Service, more than 100,000 thunderstorms occur each year though only about 10 percent of these storms are classified as “severe.”³⁴ A severe thunderstorm occurs when the storm produces at least one of these three elements: 1) hail at least one inch in diameter, 2) a tornado, or 3) winds of at least 58 miles per hour.

Thunderstorm events have the capability of producing straight-line winds that can cause severe destruction to communities and threaten the safety of a population. Such wind events, sometimes separate from a thunderstorm event, are common throughout Spartanburg County. Therefore, high winds are also reported in this section.

High winds can form due to pressure off the Northeast coast that combines with strong pressure moving through the Ohio Valley. This creates a tight pressure gradient across the region, resulting in high winds which increase with elevation. It is common for gusts of 30 to 60 miles per hour during the winter months.³⁵

Downbursts are also possible with thunderstorm events. Such events are an excessive burst of wind in excess of 125 miles per hour. They are often confused with tornadoes. Downbursts are caused by down drafts from the base of a convective thunderstorm cloud. It occurs when rain-cooled air within the cloud becomes heavier than its surroundings. Thus, air rushes towards the ground in a destructive yet isolated manner. There are two types of downbursts. Downbursts less than 2.5 miles wide with a duration of less than 5 minutes and winds up to 168 miles per hour are called “microbursts.” Larger events greater than

³² <https://www.c2es.org/content/wildfires-and-climate-change/>

³³ The hail and lightning hazards are discussed as separate hazards in this section.

³⁴

<https://www.weather.gov/key/tstmhazards#:~:text=Approximately%2016%20million%20thunderstorms%20occur,hail%20or%20larger%20or%20tornadoes.>

³⁵ <https://legacy.climate.ncsu.edu/edu/MidLatCyclones>

2.5 miles at the surface and longer than 5 minutes with winds up to 130 miles per hour are referred to as “macrobursts.”

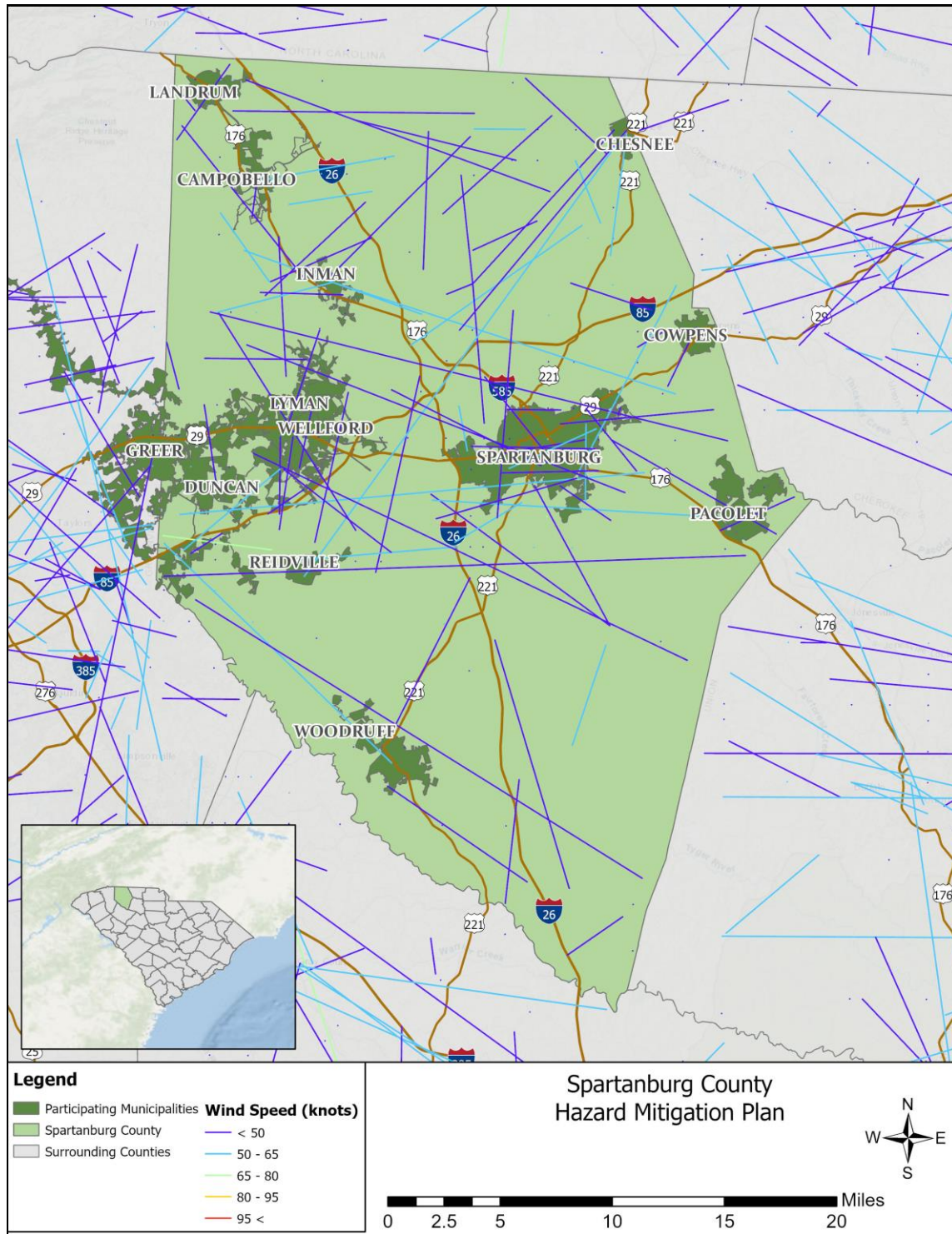
5.8.2 Location and Spatial Extent

A thunderstorm event is an atmospheric hazard and thus has no geographic boundaries. It is typically a widespread event that can occur in all regions of the United States. However, thunderstorms are most common in the central and southern states because atmospheric conditions in those regions are favorable for generating these powerful storms.³⁶ In addition to thunderstorms, Spartanburg County typically experiences several straight-line wind events each year. These wind events can and have caused significant damage. Due to the relatively large area that thunderstorms and wind events impact and the distance a storm track covers, all jurisdictions within Spartanburg County are uniformly exposed to the hazard. With that in mind, **Figure 5.7** shows the location of wind events that have impacted the county between 1955 and 2021.

³⁶

[https://www.weather.gov/jetstream/tstorms_intro#:~:text=The%20most%20frequent%20occurrence%20is,105%2B%20days%20per%20year\).](https://www.weather.gov/jetstream/tstorms_intro#:~:text=The%20most%20frequent%20occurrence%20is,105%2B%20days%20per%20year).)

FIGURE 5.7: HISTORICAL WIND EVENTS IN SPARTANBURG COUNTY



5.8.3 Historical Occurrences

Severe storms were at least partially responsible for three disaster declarations in Spartanburg County in 1990, 2015, 2020.³⁷ Information from the National Centers for Environmental Information (NCEI) was used to ascertain additional historical wind events. According to NCEI, there have been 571 reported thunderstorm and high wind events since 1955 in Spartanburg County.³⁸ These events caused approximately \$15.1 million (2022 dollars) in damages.³⁹ There were also reports of 1 fatality and 12 injuries. **Table 5.17** summarizes this information. **Table 5.18** provides detailed thunderstorm and high wind event reports including date, magnitude, and associated damages for each event.

TABLE 5.17: SUMMARY OF THUNDERSTORM/HIGH WIND OCCURRENCES IN SPARTANBURG COUNTY

Location	Number of Occurrences	Deaths/Injuries	Property Damage (2022)	Annualized Property Loss
Campobello	11	0/0	\$11,294,160	\$171,123
Chesnee	14	0/0	\$89,937	\$1,362
Cowpens	9	0/0	\$22,215	\$336
Duncan	12	0/0	\$0	\$0
Greer	30	1/3	\$399,633	\$6,055
Inman	17	0/0	\$145,505	\$2,204
Landrum	17	0/0	\$15,170	\$230
Lyman	7	0/0	\$1,625	\$25
Pacolet	9	0/0	\$12,992	\$197
Reidville	20	0/0	\$170,570	\$2,584
Spartanburg (city)	66	0/1	\$342,156	\$5,184
Wellford	2	0/0	\$71,553	\$1,084
Woodruff	18	0/0	\$38,205	\$579
Unincorporated Area	339	0/8	\$2,517,722	\$38,147
SPARTANBURG COUNTY TOTAL	571	1/12	\$15,121,443	\$581,209

Source: National Centers for Environmental Information

TABLE 5.18: HISTORICAL THUNDERSTORM/HIGH WIND OCCURRENCES IN SPARTANBURG COUNTY

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
Campobello					
CAMPOBELLO	5/15/1994	Thunderstorm Wind	0 kts.	0/0	\$9,908
CAMPOBELLO	6/14/1997	Thunderstorm Wind	50 kts.	0/0	\$0

³⁷ A complete listing of historical disaster declarations can be found in Section 4: *Hazard Profiles*.

³⁸ These thunderstorm and high wind events are only inclusive of those reported by the National Centers for Environmental Information (NCEI) from 1955 through December 2021. It is likely that additional thunderstorm and high wind events have occurred in Spartanburg County. As additional local data becomes available, this hazard profile will be amended.

³⁹ Adjusted dollar values were calculated based on the average Consumer Price Index for a given calendar year. This index value has been calculated every year since 1913. For 2022, the July 2022 monthly index was used.

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
CAMPOBELLO	6/19/1998	Thunderstorm Wind	50 kts.	0/0	\$0
CAMPOBELLO	7/28/2005	Thunderstorm Wind	55 kts.	0/0	\$0
CAMPOBELLO	6/14/2007	Thunderstorm Wind	60 kts.	0/0	\$11,223,160
CAMPOBELLO	7/31/2008	Thunderstorm Wind	50 kts.	0/0	\$0
CAMPOBELLO	8/4/2009	Thunderstorm Wind	55 kts.	0/0	\$0
CAMPOBELLO	6/10/2010	Thunderstorm Wind	50 kts.	0/0	\$0
CAMPOBELLO	4/3/2017	Thunderstorm Wind	60 kts.	0/0	\$0
CAMPOBELLO	4/5/2017	Thunderstorm Wind	50 kts.	0/0	\$0
CAMPOBELLO	6/24/2017	Thunderstorm Wind	40 kts.	0/0	\$0
CAMPOBELLO	7/4/2019	Thunderstorm Wind	50 kts.	0/0	\$0
CAMPOBELLO	6/20/2020	Thunderstorm Wind	55 kts.	0/0	\$0
Chesnee					
CHESNEE	7/4/1997	Thunderstorm Wind	50 kts.	0/0	\$0
CHESNEE	4/17/1998	Thunderstorm Wind	50 kts.	0/0	\$89,937
CHESNEE	7/8/2001	Thunderstorm Wind	50 kts.	0/0	\$0
CHESNEE	11/19/2003	Thunderstorm Wind	50 kts.	0/0	\$0
CHESNEE	6/23/2006	Thunderstorm Wind	50 kts.	0/0	\$0
CHESNEE	6/28/2007	Thunderstorm Wind	50 kts.	0/0	\$0
CHESNEE	8/1/2007	Thunderstorm Wind	55 kts.	0/0	\$0
CHESNEE	7/21/2008	Thunderstorm Wind	55 kts.	0/0	\$0
CHESNEE	7/21/2008	Thunderstorm Wind	50 kts.	0/0	\$0
CHESNEE	7/31/2011	Thunderstorm Wind	50 kts.	0/0	\$0
CHESNEE	7/17/2013	Thunderstorm Wind	55 kts.	0/0	\$0
CHESNEE	5/15/2014	Thunderstorm Wind	50 kts.	0/0	\$0
CHESNEE	10/23/2017	Thunderstorm Wind	50 kts.	0/0	\$0
CHESNEE	4/8/2019	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
Cowpens					
COWPENS	6/26/1994	Thunderstorm Wind	0 kts.	0/0	\$9,874
COWPENS	8/24/2000	Thunderstorm Wind	50 kts.	0/0	\$0
COWPENS	7/29/2003	Thunderstorm Wind	50 kts.	0/0	\$1,583
COWPENS	6/18/2009	Thunderstorm Wind	50 kts.	0/0	\$0
COWPENS	7/26/2009	Thunderstorm Wind	50 kts.	0/0	\$0
COWPENS	11/30/2010	Thunderstorm Wind	50 kts.	0/0	\$0
COWPENS	6/21/2011	Thunderstorm Wind	50 kts.	0/0	\$0
COWPENS	7/16/2012	Thunderstorm Wind	55 kts.	0/0	\$0
COWPENS	6/11/2021	Thunderstorm Wind	55 kts.	0/0	\$0
Duncan					
DUNCAN	6/21/1997	Thunderstorm Wind	50 kts.	0/0	\$0
DUNCAN	5/2/2000	Thunderstorm Wind	50 kts.	0/0	\$0
DUNCAN	5/5/2003	Thunderstorm Wind	60 kts.	0/0	\$0
DUNCAN	5/6/2003	Thunderstorm Wind	52 kts.	0/0	\$0
DUNCAN	5/25/2006	Thunderstorm Wind	50 kts.	0/0	\$0
DUNCAN	5/20/2008	Thunderstorm Wind	50 kts.	0/0	\$0
DUNCAN	7/8/2008	Thunderstorm Wind	50 kts.	0/0	\$0
DUNCAN	6/26/2010	Thunderstorm Wind	50 kts.	0/0	\$0
DUNCAN	7/22/2016	Thunderstorm Wind	50 kts.	0/0	\$0
DUNCAN	7/5/2017	Thunderstorm Wind	50 kts.	0/0	\$0
DUNCAN	7/23/2017	Thunderstorm Wind	50 kts.	0/0	\$0
DUNCAN	6/25/2018	Thunderstorm Wind	50 kts.	0/0	\$0
Greer					
GREER	3/31/1993	Thunderstorm Wind	0 kts.	0/0	\$10,177
GREER	9/25/1994	Thunderstorm Wind	0 kts.	0/0	\$0
GREER	3/15/1996	Thunderstorm Wind	--	1/3	\$187,730

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
GREER	7/26/1996	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	6/19/1998	Thunderstorm Wind	65 kts.	0/0	\$0
GREER	6/21/1998	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	7/20/1998	Thunderstorm Wind	53 kts.	0/0	\$0
GREER	7/22/1998	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	4/27/1999	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	7/10/1999	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	7/27/1999	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	2/14/2000	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	8/31/2001	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	7/3/2002	Thunderstorm Wind	55 kts.	0/0	\$0
GREER	5/2/2003	Thunderstorm Wind	75 kts.	0/0	\$159,289
GREER	5/5/2003	Thunderstorm Wind	60 kts.	0/0	\$0
GREER	8/1/2003	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	8/4/2003	Thunderstorm Wind	55 kts.	0/0	\$4,750
GREER	7/5/2004	Thunderstorm Wind	50 kts.	0/0	\$7,716
GREER	7/5/2004	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	4/22/2005	Thunderstorm Wind	60 kts.	0/0	\$22,530
GREER	6/6/2005	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	7/1/2005	Thunderstorm Wind	55 kts.	0/0	\$7,441
GREER	5/26/2006	Thunderstorm Wind	55 kts.	0/0	\$0
GREER	6/24/2007	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	2/26/2008	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	3/4/2008	Thunderstorm Wind	70 kts.	0/0	\$0
GREER	6/9/2008	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
GREER	6/9/2010	Thunderstorm Wind	50 kts.	0/0	\$0
GREER	7/5/2012	Thunderstorm Wind	50 kts.	0/0	\$0
Inman					
INMAN	4/27/1994	Thunderstorm Wind	0 kts.	0/0	\$9,915
INMAN	5/24/1996	Thunderstorm Wind	50 kts.	0/0	\$111,990
INMAN	7/24/1997	Thunderstorm Wind	50 kts.	0/0	\$0
INMAN	6/22/1998	Thunderstorm Wind	50 kts.	0/0	\$0
INMAN	5/13/1999	Thunderstorm Wind	50 kts.	0/0	\$0
INMAN	8/20/1999	Thunderstorm Wind	50 kts.	0/0	\$8,746
INMAN	7/22/2000	Thunderstorm Wind	60 kts.	0/0	\$0
INMAN	11/9/2000	Thunderstorm Wind	52 kts.	0/0	\$8,394
INMAN	6/28/2001	Thunderstorm Wind	50 kts.	0/0	\$0
INMAN	5/13/2002	Thunderstorm Wind	55 kts.	0/0	\$4,877
INMAN	7/15/2003	Thunderstorm Wind	50 kts.	0/0	\$1,583
INMAN	6/23/2006	Thunderstorm Wind	55 kts.	0/0	\$0
INMAN	12/31/2006	Thunderstorm Wind	50 kts.	0/0	\$0
INMAN	5/20/2008	Thunderstorm Wind	50 kts.	0/0	\$0
INMAN	7/18/2019	Thunderstorm Wind	50 kts.	0/0	\$0
INMAN	2/6/2020	Thunderstorm Wind	50 kts.	0/0	\$0
Landrum					
LANDRUM	4/27/1994	Thunderstorm Wind	0 kts.	0/0	\$0
LANDRUM	3/8/1995	Thunderstorm Wind	0 kts.	0/0	\$1,930
LANDRUM	6/14/1997	Thunderstorm Wind	50 kts.	0/0	\$1,848
LANDRUM	6/13/2001	Thunderstorm Wind	55 kts.	0/0	\$0
LANDRUM	11/11/2002	Thunderstorm Wind	50 kts.	0/0	\$0
LANDRUM	7/22/2005	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
LANDRUM	7/15/2006	Thunderstorm Wind	55 kts.	0/0	\$0
LANDRUM	8/12/2010	Thunderstorm Wind	50 kts.	0/0	\$0
LANDRUM	5/26/2011	Thunderstorm Wind	60 kts.	0/0	\$0
LANDRUM	6/18/2011	Thunderstorm Wind	50 kts.	0/0	\$0
LANDRUM	7/27/2012	Thunderstorm Wind	50 kts.	0/0	\$0
LANDRUM	6/23/2013	Thunderstorm Wind	50 kts.	0/0	\$0
LANDRUM	7/12/2013	Thunderstorm Wind	50 kts.	0/0	\$0
LANDRUM	7/20/2013	Thunderstorm Wind	50 kts.	0/0	\$0
LANDRUM	8/23/2013	Thunderstorm Wind	50 kts.	0/0	\$0
LANDRUM	10/14/2014	Thunderstorm Wind	50 kts.	0/0	\$0
LANDRUM	8/13/2019	Thunderstorm Wind	50 kts.	0/0	\$0
Lyman					
LYMAN	7/24/1996	Thunderstorm Wind	50 kts.	0/0	\$0
LYMAN	6/21/1997	Thunderstorm Wind	52 kts.	0/0	\$0
LYMAN	9/23/2001	Thunderstorm Wind	55 kts.	0/0	\$1,625
LYMAN	3/4/2008	Thunderstorm Wind	50 kts.	0/0	\$0
LYMAN	6/10/2011	Thunderstorm Wind	50 kts.	0/0	\$0
LYMAN	7/12/2013	Thunderstorm Wind	50 kts.	0/0	\$0
LYMAN	9/1/2016	Thunderstorm Wind	50 kts.	0/0	\$0
Pacolet					
PACOLET	6/2/1997	Thunderstorm Wind	50 kts.	0/0	\$0
PACOLET	7/28/1997	Thunderstorm Wind	50 kts.	0/0	\$0
PACOLET	5/2/2003	Thunderstorm Wind	55 kts.	0/0	\$1,592
PACOLET	7/21/2003	Thunderstorm Wind	50 kts.	0/0	\$0
PACOLET	6/12/2004	Thunderstorm Wind	50 kts.	0/0	\$0
PACOLET	8/5/2005	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
PACOLET	8/30/2006	Thunderstorm Wind	50 kts.	0/0	\$0
PACOLET	5/28/2020	Thunderstorm Wind	50 kts.	0/0	\$11,400
Reidville					
Reidville	5/13/1993	Thunderstorm Wind	0 kts.	0/0	\$10,135
Reidville	6/2/1994	Thunderstorm Wind	0 kts.	0/0	\$98,748
REIDVILLE	6/7/1996	Thunderstorm Wind	65 kts.	0/0	\$55,995
REIDVILLE	7/24/1996	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	7/26/1996	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	6/21/1997	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	7/9/1997	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	7/28/1997	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	4/17/1998	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	6/19/1998	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	5/25/2000	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	7/5/2004	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	7/17/2004	Thunderstorm Wind	55 kts.	0/0	\$0
REIDVILLE	5/20/2008	Thunderstorm Wind	55 kts.	0/0	\$0
REIDVILLE	7/26/2010	Thunderstorm Wind	55 kts.	0/0	\$0
REIDVILLE	6/21/2011	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	6/19/2014	Thunderstorm Wind	55 kts.	0/0	\$0
REIDVILLE	6/26/2015	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	9/13/2019	Thunderstorm Wind	50 kts.	0/0	\$0
REIDVILLE	5/4/2020	Thunderstorm Wind	50 kts.	0/0	\$0
Spartanburg (city)					
Spartanburg	7/18/1994	Thunderstorm Wind	0 kts.	0/0	\$0
Spartanburg	7/18/1994	Thunderstorm Wind	0 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
Spartanburg	1/14/1995	Thunderstorm Wind	0 kts.	0/0	\$1,944
SE Spartanburg	6/10/1995	Thunderstorm Wind	0 kts.	0/0	\$0
west Spartanburg	7/2/1995	Thunderstorm Wind	0 kts.	0/0	\$118,835
Spartanburg	7/2/1995	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG	1/19/1996	Thunderstorm Wind	50 kts.	0/0	\$66,258
SPARTANBURG	5/24/1996	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	5/27/1996	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/15/1996	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	2/21/1997	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/14/1997	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/16/1997	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/28/1997	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/16/1998	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/19/1998	Thunderstorm Wind	52 kts.	0/0	\$0
SPARTANBURG	6/19/1998	Thunderstorm Wind	75 kts.	0/0	\$0
SPARTANBURG	6/21/1998	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/22/1998	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/24/1998	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/19/1998	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/20/1998	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	4/27/1999	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	5/13/1999	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/5/1999	Thunderstorm Wind	52 kts.	0/0	\$0
SPARTANBURG	7/6/1999	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	4/3/2000	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG	8/10/2000	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	8/18/2000	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/13/2001	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/25/2001	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/8/2001	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	8/31/2001	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	10/25/2001	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	5/9/2002	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/4/2002	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/21/2002	Thunderstorm Wind	60 kts.	0/0	\$48,688
SPARTANBURG	9/14/2002	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	11/11/2002	Thunderstorm Wind	55 kts.	0/0	\$3,224
SPARTANBURG	5/2/2003	Thunderstorm Wind	65 kts.	0/1	\$79,644
SPARTANBURG	8/5/2003	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	8/22/2003	Thunderstorm Wind	55 kts.	0/0	\$0
SPARTANBURG	11/19/2003	Thunderstorm Wind	50 kts.	0/0	\$1,584
SPARTANBURG	6/24/2004	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	4/22/2005	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/6/2005	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/18/2005	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/7/2005	Thunderstorm Wind	50 kts.	0/0	\$7,441
SPARTANBURG	7/13/2005	Thunderstorm Wind	55 kts.	0/0	\$0
SPARTANBURG	7/28/2005	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	5/25/2006	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/22/2006	Thunderstorm Wind	60 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG	7/13/2006	Thunderstorm Wind	55 kts.	0/0	\$0
SPARTANBURG	7/14/2006	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/20/2006	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	9/10/2006	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/22/2010	Thunderstorm Wind	55 kts.	0/0	\$13,410
SPARTANBURG	4/5/2011	Thunderstorm Wind	55 kts.	0/0	\$0
SPARTANSBURG DWTN AR	8/15/2012	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/7/2013	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	6/13/2014	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/16/2016	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/8/2017	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/11/2019	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG	7/10/2020	Thunderstorm Wind	55 kts.	0/0	\$1,128
Wellford					
WELLFORD	9/7/1998	Thunderstorm Wind	65 kts.	0/0	\$71,553
WELLFORD	6/22/2019	Thunderstorm Wind	50 kts.	0/0	\$0
Woodruff					
WOODRUFF	8/5/1996	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	2/21/1997	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	5/27/1998	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	6/22/1998	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	8/20/1999	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	7/5/2001	Thunderstorm Wind	60 kts.	0/0	\$0
WOODRUFF	5/13/2002	Thunderstorm Wind	55 kts.	0/0	\$32,513
WOODRUFF	6/30/2002	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	7/10/2007	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
WOODRUFF	8/26/2007	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	7/31/2008	Thunderstorm Wind	60 kts.	0/0	\$0
WOODRUFF	5/6/2009	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	5/28/2010	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	8/12/2010	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	5/26/2011	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	9/8/2012	Thunderstorm Wind	50 kts.	0/0	\$0
WOODRUFF	9/13/2019	Thunderstorm Wind	50 kts.	0/0	\$5,692
WOODRUFF	8/13/2020	Thunderstorm Wind	50 kts.	0/0	\$0
Unincorporated Area					
SPARTANBURG COUNTY	5/14/1955	Thunderstorm Wind	65 kts.	0/0	\$0
SPARTANBURG COUNTY	4/6/1956	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/23/1957	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/28/1959	Thunderstorm Wind	60 kts.	0/0	\$0
SPARTANBURG COUNTY	1/15/1962	Thunderstorm Wind	60 kts.	0/0	\$0
SPARTANBURG COUNTY	8/27/1965	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	7/15/1966	Thunderstorm Wind	55 kts.	0/0	\$0
SPARTANBURG COUNTY	7/15/1966	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/15/1967	Thunderstorm Wind	55 kts.	0/0	\$0
SPARTANBURG COUNTY	6/7/1968	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/2/1970	Thunderstorm Wind	51 kts.	0/0	\$0
SPARTANBURG COUNTY	7/3/1970	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/8/1970	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	3/15/1971	Thunderstorm Wind	52 kts.	0/0	\$0
SPARTANBURG COUNTY	8/20/1973	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/2/1974	Thunderstorm Wind	0 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG COUNTY	4/3/1974	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/3/1974	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/3/1974	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	3/24/1975	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/29/1976	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/5/1977	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/6/1977	Thunderstorm Wind	70 kts.	0/0	\$0
SPARTANBURG COUNTY	6/26/1978	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/10/1980	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	4/19/1981	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/19/1982	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/19/1982	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/19/1982	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/10/1982	Thunderstorm Wind	52 kts.	0/0	\$0
SPARTANBURG COUNTY	6/10/1982	Thunderstorm Wind	78 kts.	0/0	\$0
SPARTANBURG COUNTY	7/25/1983	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/21/1983	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/21/1983	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	2/27/1984	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	3/28/1984	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	3/28/1984	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/12/1984	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/5/1985	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/6/1985	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/24/1985	Thunderstorm Wind	0 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG COUNTY	7/12/1985	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/17/1985	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/24/1986	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/28/1986	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/2/1986	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/27/1986	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/2/1986	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/6/1986	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/7/1986	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/4/1987	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/24/1987	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/25/1987	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/30/1987	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/6/1987	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/16/1988	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/23/1988	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/17/1988	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/18/1988	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	11/27/1988	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/4/1989	Thunderstorm Wind	62 kts.	0/0	\$0
SPARTANBURG COUNTY	4/4/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/5/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	5/6/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/5/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/15/1989	Thunderstorm Wind	0 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG COUNTY	6/20/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/7/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/30/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/30/1989	Thunderstorm Wind	52 kts.	0/0	\$0
SPARTANBURG COUNTY	7/30/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/30/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/18/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/23/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/23/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/23/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	11/15/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	11/15/1989	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/10/1990	Thunderstorm Wind	75 kts.	0/2	\$0
SPARTANBURG COUNTY	4/10/1990	Thunderstorm Wind	65 kts.	0/2	\$0
SPARTANBURG COUNTY	4/10/1990	Thunderstorm Wind	0 kts.	0/1	\$0
SPARTANBURG COUNTY	4/28/1990	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/30/1990	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/6/1990	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/8/1990	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/21/1990	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/29/1990	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/30/1990	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	8/30/1990	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	2/14/1991	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/2/1991	Thunderstorm Wind	0 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG COUNTY	7/10/1991	Thunderstorm Wind	80 kts.	0/0	\$0
SPARTANBURG COUNTY	7/24/1991	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/27/1991	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	8/9/1991	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/10/1991	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	8/10/1991	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	12/23/1991	Thunderstorm Wind	55 kts.	0/1	\$0
SPARTANBURG COUNTY	3/10/1992	Thunderstorm Wind	80 kts.	0/0	\$0
SPARTANBURG COUNTY	3/10/1992	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	4/21/1992	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	6/26/1992	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/21/1992	Thunderstorm Wind	57 kts.	0/0	\$0
SPARTANBURG COUNTY	7/21/1992	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/31/1992	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	7/31/1992	Thunderstorm Wind	52 kts.	0/0	\$0
SPARTANBURG COUNTY	8/12/1992	Thunderstorm Wind	0 kts.	0/0	\$0
Croft Area	3/31/1993	Thunderstorm Wind	0 kts.	0/0	\$0
Greenville- Spartanbu	3/27/1994	Thunderstorm Wind	0 kts.	0/0	\$0
Roebuck	6/16/1994	Thunderstorm Wind	0 kts.	0/0	\$0
near Inman	7/19/1994	Thunderstorm Wind	0 kts.	0/0	\$0
Holly Springs to	7/19/1994	Thunderstorm Wind	0 kts.	0/0	\$0
Btwn Landrum	7/19/1994	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	9/24/1994	Thunderstorm Wind	0 kts.	0/0	\$978
Glenn Springs	10/22/1994	Thunderstorm Wind	0 kts.	0/0	\$3,910
Northern	6/9/1995	Thunderstorm Wind	0 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
Greenville	6/10/1995	Thunderstorm Wind	0 kts.	0/0	\$0
SPARTANBURG COUNTY	1/18/1996	High Wind	50 kts.	0/0	\$0
CROSS ANCHOR	3/15/1996	Thunderstorm Wind	--	0/0	\$0
SPARTANBURG COUNTY	3/19/1996	High Wind	--	0/0	\$0
SPARTANBURG COUNTY	4/16/1996	High Wind	--	0/0	\$93,504
GRNVL SPRTNSBRG ARPT	6/4/1996	Thunderstorm Wind	50 kts.	0/0	\$0
GRNVL SPRTNSBRG ARPT	7/17/1996	Thunderstorm Wind	55 kts.	0/0	\$18,617
GLENN SPGS	7/26/1996	Thunderstorm Wind	50 kts.	0/0	\$0
GLENN SPGS	7/24/1997	Thunderstorm Wind	50 kts.	0/0	\$0
FINGERVILLE	7/28/1997	Thunderstorm Wind	50 kts.	0/0	\$0
PAULINE	8/5/1997	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	1/28/1998	High Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	2/3/1998	High Wind	--	0/0	\$13,883
SPARTANBURG COUNTY	2/24/1998	Strong Wind	--	0/0	\$0
SPARTANBURG COUNTY	4/9/1998	Strong Wind	--	0/0	\$0
PELHAM	4/17/1998	Thunderstorm Wind	50 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	5/27/1998	Thunderstorm Wind	50 kts.	0/0	\$0
ENOREE	6/19/1998	Thunderstorm Wind	55 kts.	0/0	\$0
GLENN SPGS	6/19/1998	Thunderstorm Wind	50 kts.	0/0	\$0
MAYO	6/21/1998	Thunderstorm Wind	50 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	6/29/1998	Thunderstorm Wind	54 kts.	0/0	\$0
MOORE	7/19/1998	Thunderstorm Wind	50 kts.	0/0	\$0
ROEBUCK	8/20/1999	Thunderstorm Wind	55 kts.	0/0	\$0
SPARTANBURG COUNTY	3/28/2000	High Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	4/8/2000	High Wind	50 kts.	0/0	\$0
ROEBUCK	5/25/2000	Thunderstorm Wind	65 kts.	0/0	\$0
MOORE	7/11/2000	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	11/9/2000	Strong Wind	--	0/0	\$0
ENOREE	11/9/2000	Thunderstorm Wind	50 kts.	0/0	\$0
PAULINE	11/9/2000	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG COUNTY	2/16/2001	High Wind	55 kts.	0/0	\$0
SPARTANBURG COUNTY	3/20/2001	High Wind	55 kts.	0/0	\$0
SPARTANBURG COUNTY	4/17/2001	High Wind	55 kts.	0/0	\$0
CROSS ANCHOR	6/27/2001	Thunderstorm Wind	50 kts.	0/0	\$0
MOORE	7/5/2001	Thunderstorm Wind	65 kts.	0/0	\$0
HOLLY SPGS	7/8/2001	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	2/4/2002	High Wind	50 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	6/4/2002	Thunderstorm Wind	60 kts.	0/0	\$8,123
DRAYTON	6/4/2002	Thunderstorm Wind	50 kts.	0/0	\$0
BOILING SPGS	7/3/2002	Thunderstorm Wind	65 kts.	0/0	\$162,296
ENOREE	11/11/2002	Thunderstorm Wind	50 kts.	0/0	\$1,612
ENOREE	6/11/2003	Thunderstorm Wind	50 kts.	0/0	\$1,589
GRNVL SPRTNBRG ARPT	7/11/2003	Thunderstorm Wind	65 kts.	0/0	\$79,170
BOILING SPGS	8/17/2003	Thunderstorm Wind	55 kts.	0/0	\$6,333
SPARTANBURG COUNTY	3/7/2004	High Wind	60 kts.	0/0	\$15,597
ROEBUCK	7/4/2004	Thunderstorm Wind	50 kts.	0/0	\$0
PELHAM	7/5/2004	Thunderstorm Wind	55 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	7/11/2004	Thunderstorm Wind	50 kts.	0/0	\$0
HOLLY SPGS	7/11/2004	Thunderstorm Wind	60 kts.	0/0	\$169,760
SPARTANBURG COUNTY	9/16/2004	High Wind	50 kts.	0/0	\$7,696
SPARTANBURG COUNTY	1/22/2005	High Wind	50 kts.	0/0	\$0
ROEBUCK	8/21/2005	Thunderstorm Wind	55 kts.	0/0	\$0
SPARTANBURG COUNTY	10/7/2005	Strong Wind	30 kts.	0/0	\$7,336
SPARTANBURG COUNTY	1/14/2006	High Wind	60 kts.	0/0	\$7,370
CROSS ANCHOR	4/26/2006	Thunderstorm Wind	50 kts.	0/0	\$0
PAULINE	5/5/2006	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	7/13/2006	Strong Wind	40 kts.	0/0	\$2,872
ROEBUCK	7/14/2006	Thunderstorm Wind	50 kts.	0/0	\$0
MOORE	8/6/2006	Thunderstorm Wind	50 kts.	0/0	\$0
ROEBUCK	1/5/2007	Thunderstorm Wind	55 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
SPARTANBURG COUNTY	4/15/2007	High Wind	60 kts.	0/0	\$0
SPARTANBURG COUNTY	4/16/2007	High Wind	60 kts.	0/0	\$707,101
ROEBUCK	6/25/2007	Thunderstorm Wind	65 kts.	0/0	\$70,144
MAYO	6/25/2007	Thunderstorm Wind	55 kts.	0/0	\$0
BOILING SPGS	6/27/2007	Thunderstorm Wind	50 kts.	0/0	\$0
FINGERVILLE	8/22/2007	Thunderstorm Wind	55 kts.	0/0	\$0
MAYO	8/25/2007	Thunderstorm Wind	55 kts.	0/0	\$0
PAULINE	6/26/2008	Thunderstorm Wind	55 kts.	0/0	\$0
PAULINE	6/26/2008	Thunderstorm Wind	50 kts.	0/0	\$0
SIGSBEE	7/4/2008	Thunderstorm Wind	55 kts.	0/0	\$0
WALNUT GROVE	7/6/2008	Thunderstorm Wind	50 kts.	0/0	\$0
ARLINGTON	7/8/2008	Thunderstorm Wind	55 kts.	0/0	\$0
BOILING SPGS	7/8/2008	Thunderstorm Wind	50 kts.	0/0	\$0
BOILING SPGS	7/21/2008	Thunderstorm Wind	50 kts.	0/0	\$0
MAYO	7/21/2008	Thunderstorm Wind	50 kts.	0/0	\$0
ENOREE	7/23/2008	Thunderstorm Wind	50 kts.	0/0	\$0
STONE STATION	7/31/2008	Thunderstorm Wind	50 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	8/2/2008	Thunderstorm Wind	70 kts.	0/0	\$13,341
MOORE	8/2/2008	Thunderstorm Wind	50 kts.	0/0	\$0
ENOREE	12/10/2008	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	1/7/2009	High Wind	50 kts.	0/0	\$66,708
SPARTANBURG COUNTY	1/8/2009	Strong Wind	40 kts.	0/0	\$27,687
GRNVL SPRTNBRG ARPT	2/11/2009	Thunderstorm Wind	50 kts.	0/0	\$0
WHITNEY	2/11/2009	Thunderstorm Wind	55 kts.	0/0	\$6,887
GLENN SPGS	5/28/2009	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	6/9/2009	Strong Wind	40 kts.	0/0	\$67,757
GRNVL SPRTNBRG ARPT	6/11/2009	Thunderstorm Wind	65 kts.	0/0	\$0
CAMP CROFT	6/13/2009	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
ARKWRIGHT	6/13/2009	Thunderstorm Wind	50 kts.	0/0	\$0
SAXON	6/13/2009	Thunderstorm Wind	50 kts.	0/0	\$0
PAULINE	6/16/2009	Thunderstorm Wind	60 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	6/18/2009	Thunderstorm Wind	50 kts.	0/0	\$0
PACOLET MILLS	6/18/2009	Thunderstorm Wind	50 kts.	0/0	\$0
FAIRMONT	7/28/2009	Thunderstorm Wind	50 kts.	0/0	\$0
DRAYTON	7/28/2009	Thunderstorm Wind	50 kts.	0/0	\$0
GRAMLING	9/9/2009	Thunderstorm Wind	50 kts.	0/0	\$0
ARCADIA	3/28/2010	Thunderstorm Wind	60 kts.	0/0	\$0
FORSTER	3/28/2010	Thunderstorm Wind	55 kts.	0/0	\$0
ENOREE	3/28/2010	Thunderstorm Wind	50 kts.	0/0	\$0
CAMPTON	5/15/2010	Thunderstorm Wind	50 kts.	0/0	\$0
KILGORE	5/28/2010	Thunderstorm Wind	50 kts.	0/0	\$0
CAMPOBELLO ARPT	6/10/2010	Thunderstorm Wind	50 kts.	0/0	\$0
CAMPTON	6/10/2010	Thunderstorm Wind	50 kts.	0/0	\$0
BROOKLYN	6/15/2010	Thunderstorm Wind	55 kts.	0/0	\$0
WHITNEY	6/26/2010	Thunderstorm Wind	50 kts.	0/0	\$0
PELHAM	7/11/2010	Thunderstorm Wind	50 kts.	0/0	\$0
CASHVILLE	7/16/2010	Thunderstorm Wind	75 kts.	0/0	\$0
FAIRMONT	7/26/2010	Thunderstorm Wind	50 kts.	0/0	\$0
MAYO	8/5/2010	Thunderstorm Wind	60 kts.	0/0	\$0
FINGERVILLE	11/16/2010	Thunderstorm Wind	50 kts.	0/0	\$0
INMAN MILLS	2/28/2011	Thunderstorm Wind	55 kts.	0/0	\$0
PAULINE	4/5/2011	Thunderstorm Wind	55 kts.	0/0	\$0
BOILING SPGS	5/10/2011	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
FINGERVILLE	6/5/2011	Thunderstorm Wind	50 kts.	0/0	\$0
GOLIGHTLY	6/5/2011	Thunderstorm Wind	55 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	6/15/2011	Thunderstorm Wind	60 kts.	0/0	\$0
HAYNE	6/18/2011	Thunderstorm Wind	50 kts.	0/0	\$0
FAIRMONT	6/21/2011	Thunderstorm Wind	55 kts.	0/0	\$0
ROEBUCK	6/21/2011	Thunderstorm Wind	50 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	6/22/2011	Thunderstorm Wind	50 kts.	0/0	\$0
SNODDY	7/4/2011	Thunderstorm Wind	50 kts.	0/0	\$0
CONVERSE	7/4/2011	Thunderstorm Wind	50 kts.	0/0	\$0
KILGORE	7/4/2011	Thunderstorm Wind	50 kts.	0/0	\$0
COOLEY SPGS	7/8/2011	Thunderstorm Wind	50 kts.	0/0	\$0
HOBBYVILLE	7/25/2011	Thunderstorm Wind	50 kts.	0/0	\$0
DRAYTON	8/8/2011	Thunderstorm Wind	50 kts.	0/0	\$0
MASCOT	8/14/2011	Thunderstorm Wind	60 kts.	0/0	\$0
BOILING SPGS	4/5/2012	Thunderstorm Wind	50 kts.	0/0	\$0
ROEBUCK	5/16/2012	Thunderstorm Wind	50 kts.	0/0	\$0
FINGERVILLE	6/12/2012	Thunderstorm Wind	50 kts.	0/0	\$0
ROEBUCK	7/1/2012	Thunderstorm Wind	50 kts.	0/0	\$0
GLENDALE	7/3/2012	Thunderstorm Wind	50 kts.	0/0	\$0
HOBBYVILLE	7/5/2012	Thunderstorm Wind	50 kts.	0/0	\$0
BOILING SPGS	7/16/2012	Thunderstorm Wind	55 kts.	0/0	\$0
GLENDALE	7/16/2012	Thunderstorm Wind	50 kts.	0/0	\$0
SAXON	7/18/2012	Thunderstorm Wind	50 kts.	0/2	\$0
BROOKLYN	7/19/2012	Thunderstorm Wind	50 kts.	0/0	\$0
DRAYTON	7/24/2012	Thunderstorm Wind	55 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
CROSS ANCHOR	7/24/2012	Thunderstorm Wind	50 kts.	0/0	\$0
WHITE STONE	8/15/2012	Thunderstorm Wind	50 kts.	0/0	\$0
CONVERSE	9/6/2012	Thunderstorm Wind	50 kts.	0/0	\$0
HOBBYVILLE	9/8/2012	Thunderstorm Wind	50 kts.	0/0	\$0
GRAMLING	5/22/2013	Thunderstorm Wind	55 kts.	0/0	\$0
CLEVEDALE	6/9/2013	Thunderstorm Wind	50 kts.	0/0	\$0
BOILING SPGS	6/9/2013	Thunderstorm Wind	50 kts.	0/0	\$0
CLIFTON	6/23/2013	Thunderstorm Wind	50 kts.	0/0	\$0
CHEROKEE SPGS	6/25/2013	Thunderstorm Wind	50 kts.	0/0	\$0
MOORE	6/25/2013	Thunderstorm Wind	50 kts.	0/0	\$0
CLEVEDALE	6/28/2013	Thunderstorm Wind	60 kts.	0/0	\$625,890
VALLEY FALLS	7/5/2013	Thunderstorm Wind	50 kts.	0/0	\$0
SIGSBEE	7/5/2013	Thunderstorm Wind	50 kts.	0/0	\$0
NEW PROSPECT	7/12/2013	Thunderstorm Wind	50 kts.	0/0	\$0
ROEBUCK	8/12/2013	Thunderstorm Wind	50 kts.	0/0	\$0
ENOREE	9/1/2013	Thunderstorm Wind	50 kts.	0/0	\$0
NEW PROSPECT	9/12/2013	Thunderstorm Wind	50 kts.	0/0	\$0
MOORE	1/11/2014	Thunderstorm Wind	50 kts.	0/0	\$0
FINGERVILLE	6/8/2014	Thunderstorm Wind	50 kts.	0/0	\$0
BOILING SPGS	6/9/2014	Thunderstorm Wind	50 kts.	0/0	\$0
HOLLY SPGS	6/10/2014	Thunderstorm Wind	50 kts.	0/0	\$0
COOLEY SPGS	6/18/2014	Thunderstorm Wind	50 kts.	0/0	\$0
ARLINGTON	7/10/2014	Thunderstorm Wind	50 kts.	0/0	\$0
MAYO	8/20/2014	Thunderstorm Wind	50 kts.	0/0	\$0
SPARTANBURG COUNTY	2/14/2015	High Wind	50 kts.	0/0	\$24,905
FORSTER	5/28/2015	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
BOILING SPGS	6/2/2015	Thunderstorm Wind	65 kts.	0/0	\$183,727
UNA	7/13/2015	Thunderstorm Wind	50 kts.	0/0	\$24,530
HOLLY SPGS	8/5/2015	Thunderstorm Wind	55 kts.	0/0	\$6,132
ENOREE	8/5/2015	Thunderstorm Wind	50 kts.	0/0	\$0
WHITE STONE	8/5/2015	Thunderstorm Wind	50 kts.	0/0	\$0
HOLLY SPGS	8/6/2015	Thunderstorm Wind	50 kts.	0/0	\$0
CONVERSE	8/6/2015	Thunderstorm Wind	60 kts.	0/0	\$18,397
BEN AVON	3/14/2016	Thunderstorm Wind	50 kts.	0/0	\$0
VALLEY FALLS	6/14/2016	Thunderstorm Wind	50 kts.	0/0	\$0
HOLLY SPGS	7/8/2016	Thunderstorm Wind	50 kts.	0/0	\$0
HOBBYVILLE	7/11/2016	Thunderstorm Wind	50 kts.	0/0	\$0
CHEROKEE SPGS	7/20/2016	Thunderstorm Wind	50 kts.	0/0	\$0
FINGERVILLE	7/21/2016	Thunderstorm Wind	50 kts.	0/0	\$0
ARLINGTON	3/1/2017	Thunderstorm Wind	50 kts.	0/0	\$0
PELHAM	3/1/2017	Thunderstorm Wind	50 kts.	0/0	\$6,137
CASHVILLE	4/3/2017	Thunderstorm Wind	50 kts.	0/0	\$11,953
MASCOT	5/5/2017	Thunderstorm Wind	50 kts.	0/0	\$0
DRAYTON	6/19/2017	Thunderstorm Wind	50 kts.	0/0	\$0
FINGERVILLE	7/8/2017	Thunderstorm Wind	50 kts.	0/0	\$0
CONVERSE	7/8/2017	Thunderstorm Wind	50 kts.	0/0	\$0
HOLLY SPGS	7/28/2017	Thunderstorm Wind	50 kts.	0/0	\$0
SAXON	10/23/2017	Thunderstorm Wind	65 kts.	0/0	\$11,850
KILGORE	4/15/2018	Thunderstorm Wind	50 kts.	0/0	\$0
ROEBUCK	4/15/2018	Thunderstorm Wind	50 kts.	0/0	\$0
PAULINE	4/15/2018	Thunderstorm Wind	50 kts.	0/0	\$0

SECTION 5: HAZARD PROFILES

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
ARKWRIGHT	5/10/2018	Thunderstorm Wind	50 kts.	0/0	\$11,618
SAXON	5/31/2018	Thunderstorm Wind	50 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	6/19/2018	Thunderstorm Wind	50 kts.	0/0	\$0
FAIR FOREST	6/22/2018	Thunderstorm Wind	50 kts.	0/0	\$0
MAYO	6/24/2018	Thunderstorm Wind	50 kts.	0/0	\$0
FINGERVILLE	6/24/2018	Thunderstorm Wind	50 kts.	0/0	\$0
MASCOT	6/25/2018	Thunderstorm Wind	50 kts.	0/0	\$0
HAYNE	6/25/2018	Thunderstorm Wind	50 kts.	0/0	\$0
ROEBUCK	6/26/2018	Thunderstorm Wind	50 kts.	0/0	\$0
PELHAM	6/27/2018	Thunderstorm Wind	50 kts.	0/0	\$0
WHITNEY	7/21/2018	Thunderstorm Wind	50 kts.	0/0	\$0
ROEBUCK	8/8/2018	Thunderstorm Wind	55 kts.	0/0	\$5,796
WHITE STONE	9/27/2018	Thunderstorm Wind	50 kts.	0/0	\$0
MASCOT	5/4/2019	Thunderstorm Wind	50 kts.	0/0	\$0
EAST SPARTANBURG	7/11/2019	Thunderstorm Wind	50 kts.	0/0	\$0
CHEROKEE SPGS	8/18/2019	Thunderstorm Wind	50 kts.	0/0	\$0
EAST GREER	8/22/2019	Thunderstorm Wind	50 kts.	0/0	\$0
INMAN MILLS	10/31/2019	Thunderstorm Wind	50 kts.	0/0	\$0
VALLEY FALLS	5/22/2020	Thunderstorm Wind	50 kts.	0/0	\$0
DRAYTON	5/29/2020	Thunderstorm Wind	50 kts.	0/0	\$0
MASCOT	6/20/2020	Thunderstorm Wind	50 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	6/20/2020	Thunderstorm Wind	50 kts.	0/0	\$0
GRNVL SPRTNBRG ARPT	6/21/2020	Thunderstorm Wind	55 kts.	0/0	\$11,400
FAIR FOREST	6/21/2020	Thunderstorm Wind	50 kts.	0/0	\$0
GRAMLING	7/18/2020	Thunderstorm Wind	50 kts.	0/0	\$0

	Date	Type	Magnitude	Deaths/Injuries	Property Damage*
PACOLET MILLS	7/18/2020	Thunderstorm Wind	50 kts.	0/0	\$0
DRAYTON	8/13/2020	Thunderstorm Wind	50 kts.	0/0	\$0
MARY LOUISE	8/13/2020	Thunderstorm Wind	50 kts.	0/0	\$0
HAYNE	4/10/2021	Thunderstorm Wind	60 kts.	0/0	\$0
GLENN SPGS	8/10/2021	Thunderstorm Wind	50 kts.	0/0	\$0
FAIRMONT	8/17/2021	Thunderstorm Wind	50 kts.	0/0	\$0
SNODDY	8/31/2021	Thunderstorm Wind	50 kts.	0/0	\$0
HARVEYTOWN	12/11/2021	Thunderstorm Wind	50 kts.	0/0	\$5,242

*Property damage is reported in 2022 dollars; all damage may not have been reported.

Source: National Climatic Data Center

5.8.4 Probability of Future Occurrences

Given the high number of previous events, it is certain that thunderstorm/high wind events, including straight-line wind and thunderstorm wind, will occur in the future. This results in a probability level of “highly likely” (100 percent annual probability) for future thunderstorm events for the entire county. This probability level is supported by reported trends due to climate change. In the continental United States, annual precipitation has increased by 0.2 inches since 1901.⁴⁰ This trend is expected to continue as warmer temperatures increase the capacity of air to hold water vapor, increasing the chance of heavy rainfall events.⁴¹

5.9 TORNADO

5.9.1 Background

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud extending to the ground. Tornadoes are most often generated by thunderstorm activity (but sometimes result from hurricanes and other tropical storms) when cool, dry air intersects and overrides a layer of warm, moist air forcing the warm air to rise rapidly. The damage caused by a tornado is a result of the high wind velocity and wind-blown debris, also accompanied by lightning or large hail. According to the National Weather Service, tornado wind speeds normally range from 65 miles per hour to more than 300 miles per hour. The most violent tornadoes have rotating winds of 250 miles per hour or more and are capable of causing extreme destruction and turning normally harmless objects into deadly projectiles.⁴²

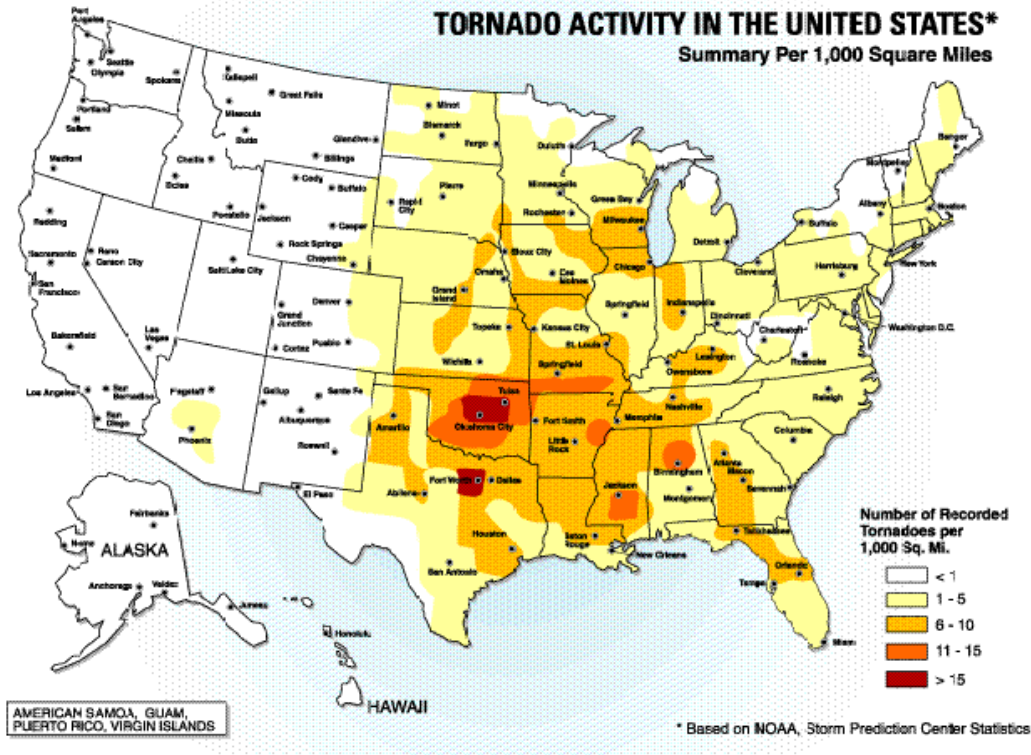
⁴⁰ <https://www.c2es.org/content/extreme-precipitation-and-climate-change/>

⁴¹ <https://www.epa.gov/climate-indicators/climate-change-indicators-heavy-precipitation#tab-2>

⁴² https://www.weather.gov/mkx/taw-tornado_classification_safety

Each year, an average of over 900 tornadoes is reported nationwide, resulting in an average of 86 deaths and 1,300 injuries.⁴³ According to the NOAA Storm Prediction Center (SPC), the highest concentration of tornadoes in the United States has been in Texas, Kansas, Oklahoma, and Florida respectively. Although the Great Plains region of the Central United States does favor the development of the largest and most dangerous tornadoes (earning the designation of “tornado alley”), Florida experiences the greatest number of tornadoes per square mile of all U.S. states (SPC, 2002). **Figure 5.8** shows tornado activity in the United States based on the number of recorded tornadoes per 1,000 square miles.

FIGURE 5.8: TORNADO ACTIVITY IN THE UNITED STATES



Source: Federal Emergency Management Agency

Tornadoes are more likely to occur during the months of March through May and are most likely to form in the late afternoon and early evening. Most tornadoes are a few dozen yards wide and touch down briefly, but even small short-lived tornadoes can inflict tremendous damage. Highly destructive tornadoes may carve out a path over a mile wide and several miles long.⁴⁴

The destruction caused by tornadoes ranges from light to inconceivable depending on the intensity, size, and duration of the storm. Typically, tornadoes cause the greatest damage to structures of light construction, including residential dwellings (particularly mobile homes). Tornadoic magnitude is reported according to the Fujita and Enhanced Fujita Scales. Tornado magnitudes prior to 2005 were determined using the traditional version of the Fujita Scale (**Table 5.19**). Tornado magnitudes that were determined in 2005 and later were determined using the Enhanced Fujita Scale (**Table 5.20**).

⁴³ NOAA Storm Prediction Center; *U.S. Tornadoes (1950-2021)*, 2022.

⁴⁴ <https://www.britannica.com/science/tornado>

TABLE 5.19: THE FUJITA SCALE (EFFECTIVE PRIOR TO 2005)

F-SCALE NUMBER	INTENSITY	WIND SPEED	TYPE OF DAMAGE DONE
F0	GALE TORNADO	40–72 MPH	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to sign boards.
F1	MODERATE TORNADO	73–112 MPH	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	SIGNIFICANT TORNADO	113–157 MPH	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	SEVERE TORNADO	158–206 MPH	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.
F4	DEVASTATING TORNADO	207–260 MPH	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown, and large missiles generated.
F5	INCREDIBLE TORNADO	261–318 MPH	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel re-enforced concrete structures badly damaged.
F6	INCONCEIVABLE TORNADO	319–379 MPH	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that would surround the F6 winds. Missiles, such as cars and refrigerators would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in some manner of ground swirl pattern, for it may never be identifiable through engineering studies.

Source: National Weather Service

TABLE 5.20: THE ENHANCED FUJITA SCALE (EFFECTIVE 2005 AND LATER)

EF-SCALE NUMBER	INTENSITY PHRASE	3 SECOND GUST (MPH)	TYPE OF DAMAGE DONE
EF0	GALE	65–85	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to sign boards.
EF1	MODERATE	86–110	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
EF2	SIGNIFICANT	111–135	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
EF3	SEVERE	136–165	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.
EF4	DEVASTATING	166–200	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown, and large missiles generated.
EF5	INCREDIBLE	Over 200	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel re-enforced concrete structures badly damaged.

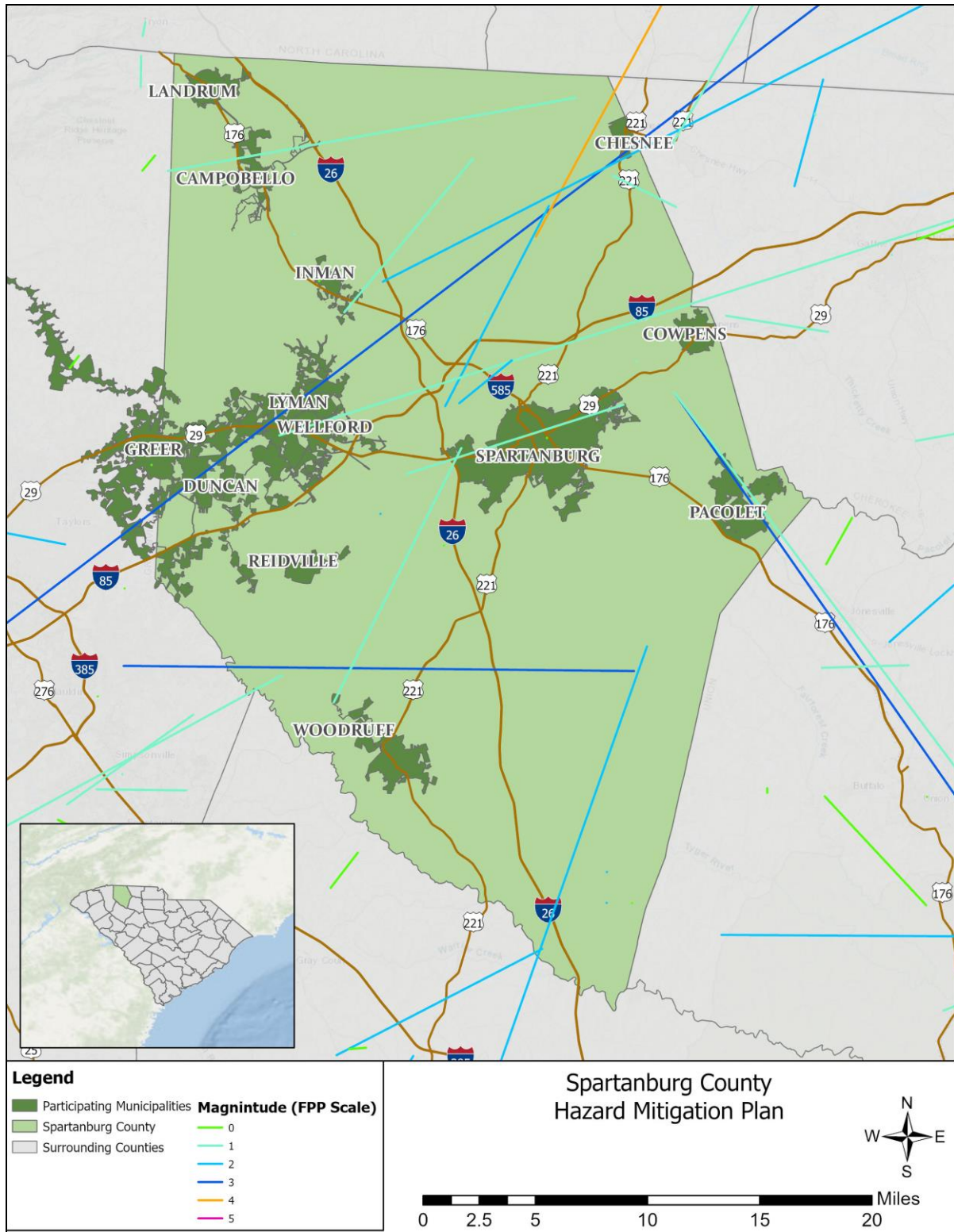
Source: National Weather Service

5.9.2 Location and Spatial Extent

Tornadoes occur throughout the state of South Carolina including Spartanburg County. Tornadoes typically impact a relatively small area; however, events are completely random and it is not possible to predict specific areas that are more susceptible to tornado strikes over time.⁴⁵ Therefore, it is assumed that all jurisdictions within Spartanburg County are uniformly exposed to this hazard. With that in mind, **Figure 5.9** shows tornado track data for many of the major tornado events that have impacted the county between 1950 and 2021. While no definitive pattern emerges from this data, some areas that have been impacted in the past may be potentially more susceptible in the future.

⁴⁵ <https://www.nssl.noaa.gov/education/svrwx101/tornadoes/>

FIGURE 5.9: HISTORICAL TORNADO TRACKS IN SPARTANBURG COUNTY



5.9.3 Historical Occurrences

According to the National Climatic Data Center, there have been a total of 35 recorded tornado events in Spartanburg County since 1952 (**Table 5.21**), resulting in \$57.5 million (2022 dollars) in property damages.^{46 47} In addition, 4 fatalities and 103 injuries were reported (**Table 5.22**). The magnitude of these tornadoes ranged from F0 to F4 in intensity although an F5 event is possible. It is important to note that only tornadoes that have been reported are factored into this risk assessment. It is likely that a high number of occurrences have gone unreported over the past 70 years.

TABLE 5.21: SUMMARY OF TORNADO OCCURRENCES IN SPARTANBURG COUNTY

Location	Number of Occurrences	Deaths/Injuries	Property Damage (2016)	Annualized Property Loss
Campobello	0	0/0	\$0	\$0
Chesnee	1	0/0	\$0	\$0
Cowpens	0	0/0	\$0	\$0
Duncan	0	0/0	\$0	\$0
Greer	0	0/0	\$0	\$0
Inman	0	0/0	\$0	\$0
Landrum	0	0/0	\$0	\$0
Lyman	0	0/0	\$0	\$0
Pacolet	0	0/0	\$0	\$0
Reidville	0	0/0	\$0	\$0
Spartanburg (city)	1	0/0	\$0	\$0
Wellford	0	0/0	\$0	\$0
Woodruff	0	0/0	\$0	\$0
Unincorporated Area	33	4/102	\$57,461,005	\$820,871
SPARTANBURG COUNTY TOTAL	35	4/103	\$57,461,005	\$820,871

Source: National Climatic Data Center

TABLE 5.22: HISTORICAL TORNADO OCCURRENCES IN SPARTANBURG COUNTY

	Date	Magnitude	Deaths/Injuries	Property Damage*	Details
Campobello					
<i>None Reported</i>	--	--	--	--	--
Chesnee					
CHESNEE	7/7/2005	F0	0/0	\$0	This tornado touched down in far northern Spartanburg County, just south of the North Carolina border, blowing down several trees before tracking northeast into North Carolina.

⁴⁶ These tornado events are only inclusive of those reported by the National Centers for Environmental Information (NCEI) from 1950 through May 2022. It is likely that additional tornadoes have occurred in Spartanburg County. As additional local data becomes available, this hazard profile will be amended.

⁴⁷ Adjusted dollar values were calculated based on the average Consumer Price Index for a given calendar year. This index value has been calculated every year since 1913. For 2022, the July 2022 monthly index was used.

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/ Injuries	Property Damage*	Details
Cowpens					
<i>None Reported</i>	--	--	--	--	--
Duncan					
<i>None Reported</i>	--	--	--	--	--
Greer					
<i>None Reported</i>	--	--	--	--	--
Inman					
<i>None Reported</i>	--	--	--	--	--
Landrum					
<i>None Reported</i>	--	--	--	--	--
Lyman					
<i>None Reported</i>	--	--	--	--	--
Pacolet					
<i>None Reported</i>	--	--	--	--	--
Reidville					
<i>None Reported</i>	--	--	--	--	--
Spartanburg (city)					
SPARTANBURG	5/25/2006	--	0/0	\$0	--
Wellford					
<i>None Reported</i>	--	--	--	--	--
Woodruff					
<i>None Reported</i>	--	--	--	--	--
Unincorporated Area					
SPARTANBURG COUNTY	5/10/1952	F3	2/4	\$332	--
SPARTANBURG COUNTY	4/7/1964	F1	0/0	\$2,364	--
SPARTANBURG COUNTY	4/28/1964	F0	0/0	\$283	--
SPARTANBURG COUNTY	4/28/1964	--	0/0	\$283	--
SPARTANBURG COUNTY	3/22/1968	F1	0/0	\$21,304	--
SPARTANBURG COUNTY	5/18/1969	F1	0/0	\$2,007,527	--
SPARTANBURG COUNTY	5/27/1973	F3	0/16	\$16,645,558	--
SPARTANBURG COUNTY	6/19/1976	F1	0/0	\$1,286	--
SPARTANBURG COUNTY	9/7/1977	F1	0/0	\$119,013	--
SPARTANBURG COUNTY	12/5/1977	F1	0/0	\$117,671	Tornado moved northeast 60 KTS. 2 mobile homes damaged, several homes and outbuildings damaged.

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/ Injuries	Property Damage*	Details
SPARTANBURG COUNTY	5/23/1980	F2	0/0	\$8,933,251	A tornado struck about 1 1/2 miles north of Cross Anchor, destroying 3 mobile homes, 2 homes, 1 large farm building and 7 cars demolished. Minor damage was done to several homes and other buildings. Trees were uprooted and/or snapped off. Considerable utility damage.
SPARTANBURG COUNTY	8/17/1985	F2	0/39	\$6,766,111	A tornado first appeared near New Cut Road in northwest Spartanburg and moved north-northeast through Valley Falls to near the Pacolet River. The tornado destroyed 9 homes and mobile homes, 4 businesses, a tractor trailer, 2 box cars and many automobiles.
SPARTANBURG COUNTY	4/4/1989	F2	0/0	\$593,614	--
SPARTANBURG COUNTY	5/5/1989	F4	2/35	\$5,902,584	--
SPARTANBURG COUNTY	2/10/1990	F1	0/0	\$570	A tornado touched down in Spartanburg County, near the border with Cherokee County, near Chesnee. This storm moved quickly into Cherokee County, where it damaged several homes, and one mobile home was picked up. Miraculously, the couple inside was uninjured. Virtually all of the damage occurred in Cherokee County, where early estimates of damage are near \$80,000.
SPARTANBURG COUNTY	4/28/1990	F0	0/0	\$566,904	--
SPARTANBURG COUNTY	4/28/1990	F1	0/4	\$566,904	--
Inman to 3 SE Ches	3/27/1994	F2	0/0	\$992,853	--
Lyman to Blackburg	3/27/1994	F1	0/4	\$992,853	--
Cross Anchor	10/22/1994	F0	0/0	\$7,820	A small tornado spun up as a thunderstorm moved across ridges in hilly terrain in southern Spartanburg County. The roofs of a home and barn were damaged, and an outbuilding was destroyed. Power was out in the area for a few hours. A similar storm produced some minor wind damage in the Glenn Springs/Pauline area.
WALNUT GROVE	7/26/1996	F1	0/0	\$0	--
ROEBUCK	2/21/1997	F2	0/0	\$604,371	--
PACOLET MILLS	6/6/1998	F0	0/0	\$0	A mile long swath of tree damage in a wooded area occurred as the result of a weak tornado near Pacolet Mills.

SECTION 5: HAZARD PROFILES

	Date	Magnitude	Deaths/ Injuries	Property Damage*	Details
ROEBUCK	8/20/1999	Funnel Cloud	0/0	\$0	Trees and power lines were downed in the Roebuck area; the same area that a funnel cloud was observed over US Hwy 221.
CHEROKEE SPGS	3/11/2000	F0	0/0	\$0	A fire chief observed a small and brief tornado touchdown in an open field. No property damage occurred, but there were broken limbs and evidence of a cyclonic circulation in the field. The tornado was spawned by one thunderstorm in a line of storms that was moving across the Upstate.
SPARTANBURG COUNTY	6/23/2001	Funnel Cloud	0/0	\$0	--
MOORE	1/5/2007	F0	0/0	\$14,440	A short damage track began on Bethany Church Rd northwest of Moore and extended northeast before ending on highway 290. Two sheds were destroyed, and the roof partially blown off a larger shed. Part of a deck was torn off a house. Also, several 8-inch diameter pine trees were snapped, and numerous limbs were blown down.
CRESCENT	11/30/2016	EF0	0/0	\$0	A weak tornado crossed into Spartanburg from Greenville County near the confluence of Gilder Creek with the Enoree River. Damage in Spartanburg County was limited to the downing of a few trees and numerous large limbs.
ENOREE	10/8/2017	EF1	0/0	\$59,250	A weak tornado crossed into Spartanburg from Greenville County near the confluence of Gilder Creek with the Enoree River. Damage in Spartanburg County was limited to the downing of a few trees and numerous large limbs.
CRESCENT	10/23/2017	EF1	0/0	\$59,250	NWS storm survey and dual pol radar data indicated a tornado crossed into Spartanburg County from Laurens County, just north of Highway 49. Damaged outbuildings and downed trees and large limbs were observed. The most significant damage in Spartanburg County was found in the Glenn Springs community where an outbuilding was destroyed and others damaged, numerous trees were downed, and homes received minor structural damage.

	Date	Magnitude	Deaths/ Injuries	Property Damage*	Details
UNA	10/23/2017	EF2	0/1	\$1,185,001	NWS storm survey found the path of a tornado that began near the intersection of Highway 101 and Neilson Rd. Some structural damage was noted to homes in this area, mainly minor roof damage and damage to gutters and siding.
CLEVEDALE	2/6/2020	EF1	0/0	\$11,299,608	NWS survey found that a tornado touched down on the northwest side of Spartanburg. Multiple trailers were damaged or destroyed and several cars flipped in a parking lot. A warehouse building also lost much of its roofing here.
FAIRMONT	4/10/2021	EF0	0/0	\$0	NWS storm survey found the path of an EF1 tornado that began in the west Spartanburg/Clevedale area. Tree damage was observed in downtown Spartanburg and in the Converse Heights neighborhood east of downtown. In all, more than 400 homes and businesses were damaged, either directly by wind or by falling trees

*Property damage is reported in 2022 dollars; all damage may not have been reported.

Source: National Centers for Environmental Information (NCEI)

5.9.4 Probability of Future Occurrences

According to historical information from NCEI, tornado events are not an annual occurrence for the county.⁴⁸ However, given the county's location in the southeastern United States and history of tornadoes, an occurrence is possible every few years. While the majority of the reported tornado events are small in terms of size, intensity, and duration, they do pose a significant threat should Spartanburg County experience a direct tornado strike. The probability of future tornado occurrences affecting Spartanburg County is "likely" (between 10 and 100 percent annual probability). It should be noted that the link between tornadoes and climate change is currently not fully understood by the research community.⁴⁹

5.10 WINTER STORM AND FREEZE

5.10.1 Background

A winter storm can range from a moderate snow over a period of a few hours to blizzard conditions with blinding wind-driven snow that lasts for several days. Events may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Some winter storms might be large enough to affect several states while others might affect only localized areas. Occasionally, heavy snow might also cause

⁴⁸ <https://www.ncdc.noaa.gov/stormevents/>

⁴⁹ <https://www.c2es.org/content/tornadoes-and-climate-change/>

significant property damages, such as roof collapses on older buildings. All winter storm events have the potential to present dangerous conditions to the affected area.

Snow Storms

Larger snowfalls pose a greater risk, reducing visibility due to blowing snow and making driving conditions treacherous. A heavy snow event is defined by the National Weather Service as an accumulation of 4 or more inches in 12 hours or less. A blizzard is the most severe form of winter storm. It combines low temperatures, heavy snow, and winds of 35 miles per hour or more, which reduces visibility to a quarter mile or less for at least 3 hours. Winter storms are often accompanied by sleet, freezing rain, or an ice storm. Such freeze events are particularly hazardous as they create treacherous surfaces.

Ice Storms

Ice storms are defined as storms with significant amounts of freezing rain and are a result of cold air damming (CAD). CAD is a shallow, surface-based layer of relatively cold, stably stratified air entrenched against the eastern slopes of the Appalachian Mountains. With warmer air above, falling precipitation in the form of snow melts, then becomes either super-cooled (liquid below the melting point of water) or re-freezes. In the former case, super-cooled droplets can freeze on impact (freezing rain); while in the latter case, the re-frozen water particles are ice pellets (or sleet). Sleet is defined as partially frozen raindrops or refrozen snowflakes that form into small ice pellets before reaching the ground. They typically bounce when they hit the ground and do not stick to the surface. However, it does accumulate like snow, posing similar problems and has the potential to accumulate into a layer of ice on surfaces. Freezing rain, conversely, usually sticks to the ground, creating a sheet of ice on the roadways and other surfaces.⁵⁰

All of the winter storm elements – snow, sleet, ice, etcetera – have the potential to cause significant hazard to a community. Even small accumulations can down power lines and tree limbs and create hazardous driving conditions. Furthermore, communication and power may be disrupted for days.

5.10.2 Location and Spatial Extent

Nearly the entire continental United States is susceptible to winter storm events. Some ice and winter storms may be large enough to affect several states while others might affect limited, localized areas. The degree of exposure typically depends on the normal expected severity of local winter weather. Spartanburg County is accustomed to severe winter weather conditions and often receives winter weather during the winter months. Given the atmospheric nature of the hazard, all jurisdictions within the county are uniformly exposed to winter storms.

5.10.3 Historical Occurrences

Winter weather has resulted in three disaster declarations in Spartanburg County. This includes a severe winter storm in 2000 and two severe ice storms in 2003 and 2006.⁵¹ The National Centers for Environmental Information does not report winter storm events at the municipal level, however, there

⁵⁰ <https://www.nssl.noaa.gov/education/svrwx101/winter/forecasting/>

⁵¹ A complete listing of historical disaster declarations can be found in Section 4: *Hazard Profiles*.

have been a total of 86 recorded winter storm events in Spartanburg County since 1996 (**Table 5.23**).⁵² These events resulted in almost \$22.9 million (2022 dollars) in damages.⁵³ Detailed information on the recorded winter storm events can be found in **Table 5.24**.

TABLE 5.23: SUMMARY OF WINTER STORM EVENTS IN SPARTANBURG COUNTY

Location	Number of Occurrences	Deaths/Injuries	Property Damage (2022)	Annualized Property Loss
Spartanburg County	86	0/0	\$22,905,324	\$880,974

Source: National Centers for Environmental Information (NCEI)

TABLE 5.24: HISTORICAL WINTER STORM EVENTS IN SPARTANBURG COUNTY

Date	Type of Storm	Deaths/Injuries	Property Damage*
1/6/1996	Winter Storm	0/0	\$0
1/6/1996	Winter Storm	0/0	\$9,465
1/7/1996	Winter Storm	0/0	\$9,465
1/11/1996	Winter Storm	0/0	\$0
2/2/1996	Winter Weather	0/0	\$0
2/2/1996	Ice Storm	0/0	\$0
2/3/1996	Winter Weather	0/0	\$0
2/16/1996	Winter Weather	0/0	\$0
12/6/1996	Winter Weather	0/0	\$0
12/18/1996	Heavy Snow	0/0	\$0
1/8/1997	Winter Weather	0/0	\$0
1/9/1997	Ice Storm	0/0	\$45,929
2/13/1997	Winter Weather	0/0	\$0
2/13/1997	Ice Storm	0/0	\$0
12/29/1997	Heavy Snow	0/0	\$0
1/19/1998	Winter Weather	0/0	\$0
12/23/1998	Sleet	0/0	\$0
12/24/1998	Ice Storm	0/0	\$0
1/2/1999	Ice Storm	0/0	\$2,739,719
1/31/1999	Sleet	0/0	\$0
2/1/1999	Winter Weather	0/0	\$0
2/24/1999	Winter Weather	0/0	\$0
3/9/1999	Winter Storm	0/0	\$0
1/22/2000	Heavy Snow	0/0	\$0
1/23/2000	Ice Storm	0/0	\$0
1/24/2000	Heavy Snow	0/0	\$0
1/29/2000	Ice Storm	0/0	\$0
11/19/2000	Heavy Snow	0/0	\$0
12/3/2000	Heavy Snow	0/0	\$0

⁵² These ice and winter storm events are only inclusive of those reported by the National Centers for Environmental Information (NCEI) from 1996 through May 2022. It is likely that additional winter storm conditions have affected Spartanburg County. As additional local data becomes available, this hazard profile will be amended.

⁵³ Adjusted dollar values were calculated based on the average Consumer Price Index for a given calendar year. This index value has been calculated every year since 1913. For 2022, the July 2022 monthly index was used.

SECTION 5: HAZARD PROFILES

Date	Type of Storm	Deaths/Injuries	Property Damage*
12/13/2000	Winter Weather	0/0	\$0
12/19/2000	Heavy Snow	0/0	\$0
12/21/2000	Winter Weather	0/0	\$0
3/20/2001	Heavy Snow	0/0	\$0
4/17/2001	Winter Weather	0/0	\$0
1/3/2002	Heavy Snow	0/0	\$0
2/8/2002	Frost/Freeze	0/0	\$0
12/4/2002	Ice Storm	0/0	\$19,497,231
1/16/2003	Winter Weather	0/0	\$0
1/23/2003	Heavy Snow	0/0	\$0
2/16/2003	Winter Storm	0/0	\$0
12/4/2003	Winter Weather	0/0	\$0
1/25/2004	Sleet	0/0	\$0
1/27/2004	Winter Weather	0/0	\$0
2/2/2004	Winter Weather	0/0	\$0
2/26/2004	Heavy Snow	0/0	\$9,418
3/27/2004	Frost/Freeze	0/0	\$0
1/29/2005	Winter Weather	0/0	\$0
1/29/2005	Winter Storm	0/0	\$0
12/8/2005	Winter Weather	0/0	\$0
12/15/2005	Winter Weather	0/0	\$0
12/15/2005	Ice Storm	0/0	\$594,097
1/18/2007	Winter Weather	0/0	\$0
2/1/2007	Winter Storm	0/0	\$0
4/8/2007	Frost/Freeze	0/0	\$0
1/16/2008	Heavy Snow	0/0	\$0
1/19/2008	Winter Weather	0/0	\$0
1/20/2009	Winter Weather	0/0	\$0
3/1/2009	Heavy Snow	0/0	\$0
12/18/2009	Winter Weather	0/0	\$0
12/30/2009	Winter Weather	0/0	\$0
1/29/2010	Winter Storm	0/0	\$0
2/12/2010	Heavy Snow	0/0	\$0
3/2/2010	Winter Weather	0/0	\$0
12/16/2010	Winter Weather	0/0	\$0
12/25/2010	Heavy Snow	0/0	\$0
1/10/2011	Heavy Snow	0/0	\$0
1/25/2013	Winter Weather	0/0	\$0
2/16/2013	Winter Weather	0/0	\$0
3/2/2013	Winter Weather	0/0	\$0
11/26/2013	Winter Weather	0/0	\$0
1/28/2014	Winter Weather	0/0	\$0
2/11/2014	Winter Weather	0/0	\$0
11/1/2014	Winter Weather	0/0	\$0
2/16/2015	Winter Storm	0/0	\$0
2/23/2015	Winter Weather	0/0	\$0

Date	Type of Storm	Deaths/Injuries	Property Damage*
2/25/2015	Winter Weather	0/0	\$0
1/22/2016	Winter Storm	0/0	\$0
2/15/2016	Winter Weather	0/0	\$0
1/6/2017	Winter Storm	0/0	\$0
3/12/2017	Winter Weather	0/0	\$0
1/17/2018	Heavy Snow	0/0	\$0
2/4/2018	Winter Weather	0/0	\$0
12/8/2018	Winter Storm	0/0	\$0
1/12/2019	Winter Weather	0/0	\$0
2/6/2021	Winter Weather	0/0	\$0
1/16/2022	Heavy Snow	0/0	\$0

*Property damage is reported in 2022 dollars; all damage may not have been reported.

Source: National Climatic Data Center

There have been 86 severe winter weather events reported in Spartanburg County since 1996.⁵⁴ The text below describes two of the major events (one snow and one ice event) and associated impacts on the county. Similar impacts can be expected with most severe winter weather.

2000 Winter Storm – January 22-24, 2000

Light snow began during the afternoon of the 22nd and became heavy during the evening, with snow accumulations between four and seven inches across the northern half of Spartanburg County. No more than 36 hours later on the 24th, another storm followed, and by the time snow ended, accumulations ranged from 4 to 12 inches in a corridor no more than 100 miles wide that included southern Spartanburg County. Due to the heavy, wet snow, numerous power outages occurred. Flat roofs and metal buildings collapsed as well. Damage figures were estimated to be in millions of dollars.

2002 Ice Storm – December 4-5, 2002

An ice storm produced accumulations of 0.5 to 1.5 inches of ice, with the hardest hit areas being along the Interstate 85 corridor. Hundreds of thousands lost power, and the outages lasted for as long as two weeks in some areas.

Winter storms throughout the planning area have several negative externalities including hypothermia, cost of snow and debris cleanup, business and government service interruption, traffic accidents, and power outages. Furthermore, citizens may resort to using inappropriate devices to heat their homes that could lead to an accumulation of toxic fumes and potentially catch fire.

5.10.4 Probability of Future Occurrences

Winter storm events will remain a regular occurrence in Spartanburg County. According to historical information, Spartanburg County generally experiences several winter storm events each year. Fortunately, large-scale property damages and/or threats to human life and safety are rare with these events. Therefore, the probability of future occurrences is “highly likely” (100 percent annual probability). Furthermore, climate change is expected to increase the frequency and severity of precipitation events across the United States. While current climate models indicate global average

⁵⁴ <https://www.ncdc.noaa.gov/stormevents/>

temperatures may rise between 4.7 to 8.6 degrees by the end of the century, the increased rate of precipitation events will likely cause an increase in the frequency and severity of winter storms impacting Spartanburg County in the future.⁵⁵

Geologic Hazards

5.11 EARTHQUAKE

5.11.1 Background

An earthquake is movement or trembling of the ground produced by sudden displacement of rock in the Earth's crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of caverns. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of persons, and disrupt the social and economic functioning of the affected area.⁵⁶

Most property damage and earthquake-related deaths are caused by the failure and collapse of structures due to ground shaking. The level of damage depends upon the amplitude and duration of the shaking, which are directly related to the earthquake size, distance from the fault, site, and regional geology. Other damaging earthquake effects include landslides, the down-slope movement of soil and rock (mountain regions and along hillsides), and liquefaction, in which ground soil loses the ability to resist shear and flows much like quicksand. In the case of liquefaction, anything relying on the substrata for support can shift, tilt, rupture, or collapse.⁵⁷

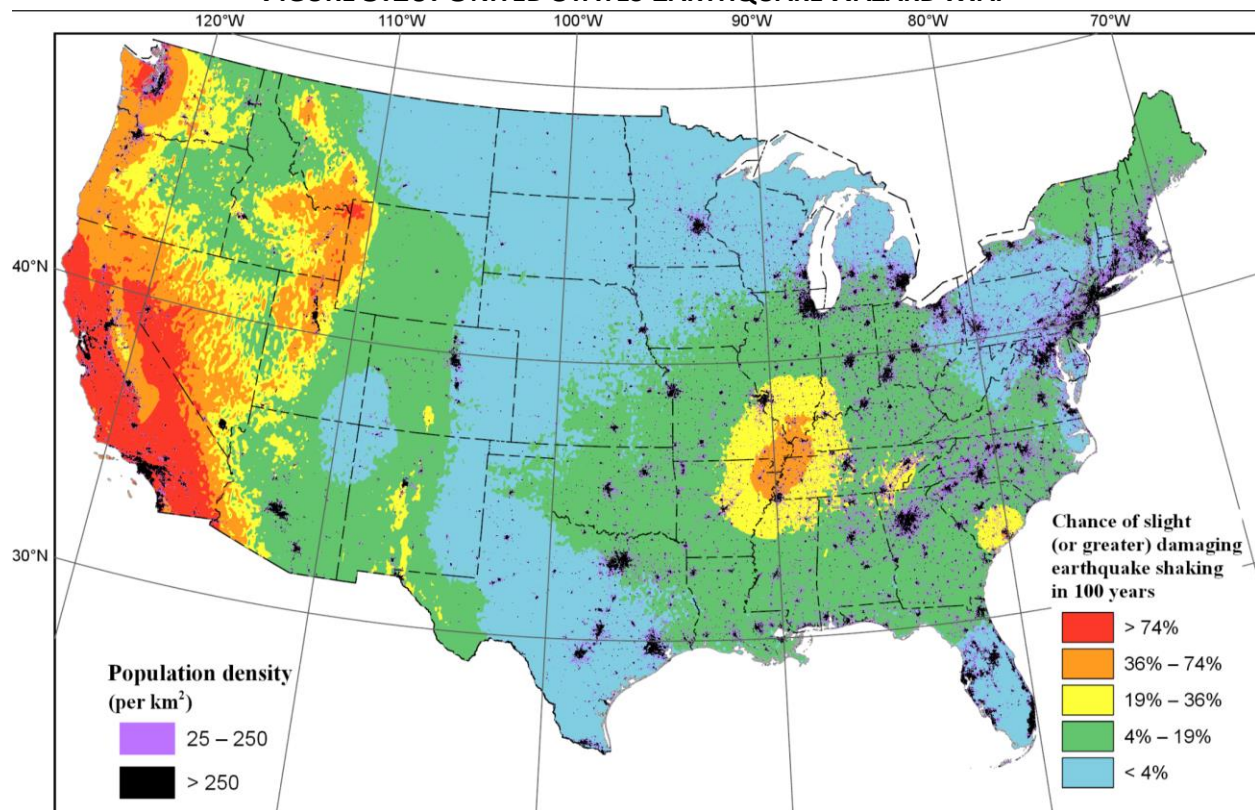
Most earthquakes are caused by the release of stresses accumulated as a result of the rupture of rocks along opposing fault planes in the Earth's outer crust. These fault planes are typically found along borders of the Earth's 10 tectonic plates. The areas of greatest tectonic instability occur at the perimeters of the slowly moving plates as these locations are subjected to the greatest strains from plates traveling in opposite directions and at different speeds. Deformation along plate boundaries causes strain in the rock and the consequent buildup of stored energy. When the built-up stress exceeds the rock's strength a rupture occurs. The rock on both sides of the fracture is snapped, releasing the stored energy, and producing seismic waves, generating an earthquake.

The greatest earthquake threat in the United States is along tectonic plate boundaries and seismic fault lines located in the central and western states; however, the Eastern United State does face moderate risk to less frequent, less intense earthquake events. **Figure 5.10** shows relative seismic risk for the United States.

⁵⁵ <https://www.c2es.org/content/climate-impacts/>

⁵⁶ <https://pubs.usgs.gov/unnumbered/70114860/report.pdf>

⁵⁷ <https://www.usgs.gov/programs/earthquake-hazards/what-are-effects-earthquakes>

FIGURE 5.10: UNITED STATES EARTHQUAKE HAZARD MAP

Source: United States Geological Survey

Earthquakes are measured in terms of their magnitude and intensity. Magnitude is measured using the Richter Scale, an open-ended logarithmic scale that describes the energy release of an earthquake through a measure of shock wave amplitude (**Table 5.25**). Each unit increase in magnitude on the Richter Scale corresponds to a 10-fold increase in wave amplitude or a 32-fold increase in energy. Intensity is most commonly measured using the Modified Mercalli Intensity (MMI) Scale based on direct and indirect measurements of seismic effects. The scale levels are typically described using roman numerals, ranging from “I” corresponding to imperceptible (instrumental) events to “XII” for catastrophic (total destruction). A detailed description of the Modified Mercalli Intensity Scale of earthquake intensity and its correspondence to the Richter Scale is given in **Table 5.26**.

TABLE 5.25: RICHTER SCALE

RICHTER MAGNITUDES	EARTHQUAKE EFFECTS
< 3.5	Generally, not felt but recorded.
3.5 - 5.4	Often felt, but rarely causes damage.
5.4 - 6.0	At most slight damage to well-designed buildings. Can cause major damage to poorly constructed buildings over small regions.
6.1 - 6.9	Can be destructive in areas up to about 100 kilometers across where people live.
7.0 - 7.9	Major earthquake. Can cause serious damage over larger areas.
8 or >	Great earthquake. Can cause serious damage in areas several hundred kilometers across.

Source: Federal Emergency Management Agency

TABLE 5.26: MODIFIED MERCALLI INTENSITY SCALE FOR EARTHQUAKES

SCALE	INTENSITY	DESCRIPTION OF EFFECTS	CORRESPONDING RICHTER SCALE MAGNITUDE
I	INSTRUMENTAL	Detected only on seismographs.	
II	FEEBLE	Some people feel it.	< 4.2
III	SLIGHT	Felt by people resting; like a truck rumbling by.	
IV	MODERATE	Felt by people walking.	
V	SLIGHTLY STRONG	Sleepers awake; church bells ring.	< 4.8
VI	STRONG	Trees sway; suspended objects swing, objects fall off shelves.	< 5.4
VII	VERY STRONG	Mild alarm; walls crack; plaster falls.	< 6.1
VIII	DESTRUCTIVE	Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged.	
IX	RUINOUS	Some houses collapse; ground cracks; pipes break open.	< 6.9
X	DISASTROUS	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread.	< 7.3
XI	VERY DISASTROUS	Most buildings and bridges collapse; roads, railways, pipes, and cables destroyed; general triggering of other hazards.	< 8.1
XII	CATASTROPHIC	Total destruction; trees fall; ground rises and falls in waves.	> 8.1

Source: Federal Emergency Management Agency

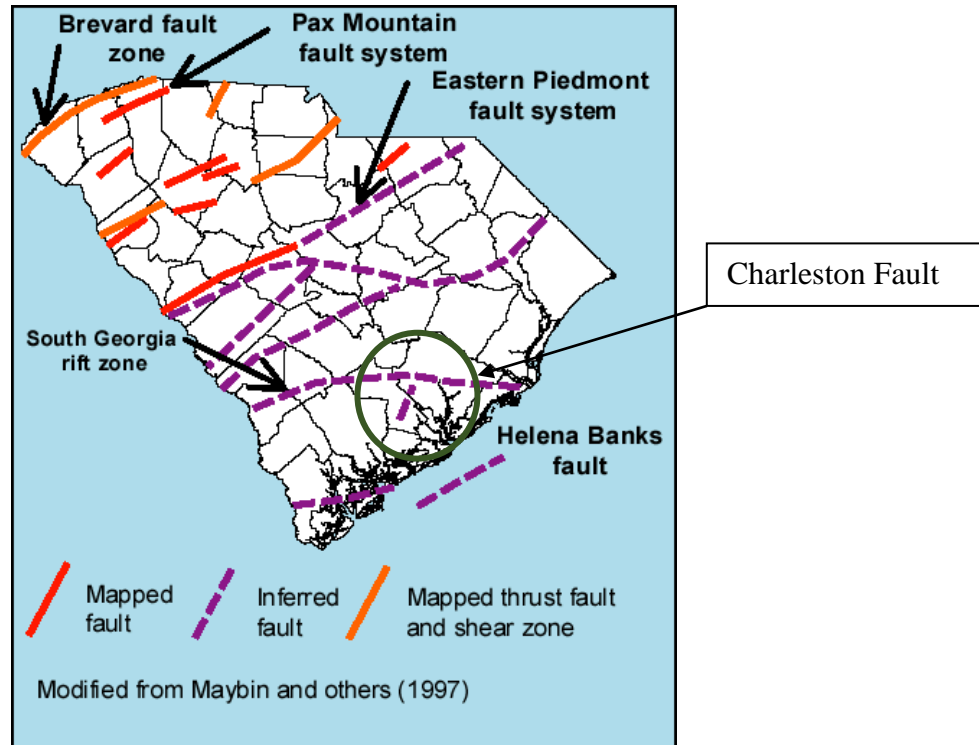
5.11.2 Location and Spatial Extent

Figure 5.11 shows the fault lines in South Carolina. The Charleston Fault, located near the southern coast, is the greatest threat to the state. This fault has generated an earthquake measuring greater than 8 on the Richter Scale in the last 200 years.⁵⁸ There are also several mapped thrust faults near

⁵⁸ <https://www.scmd.org/media/1055/eq-printer-friendly.pdf>

Spartanburg County including the Pax Mountain fault system.⁵⁹ Due to the location of faults within South Carolina and supported by the mapped liquefaction potential (Figure 5.13), all jurisdictions within Spartanburg County are uniformly exposed to this hazard.

FIGURE 5.11: GEOLOGICAL AND SEISMIC INFORMATION FOR SOUTH CAROLINA

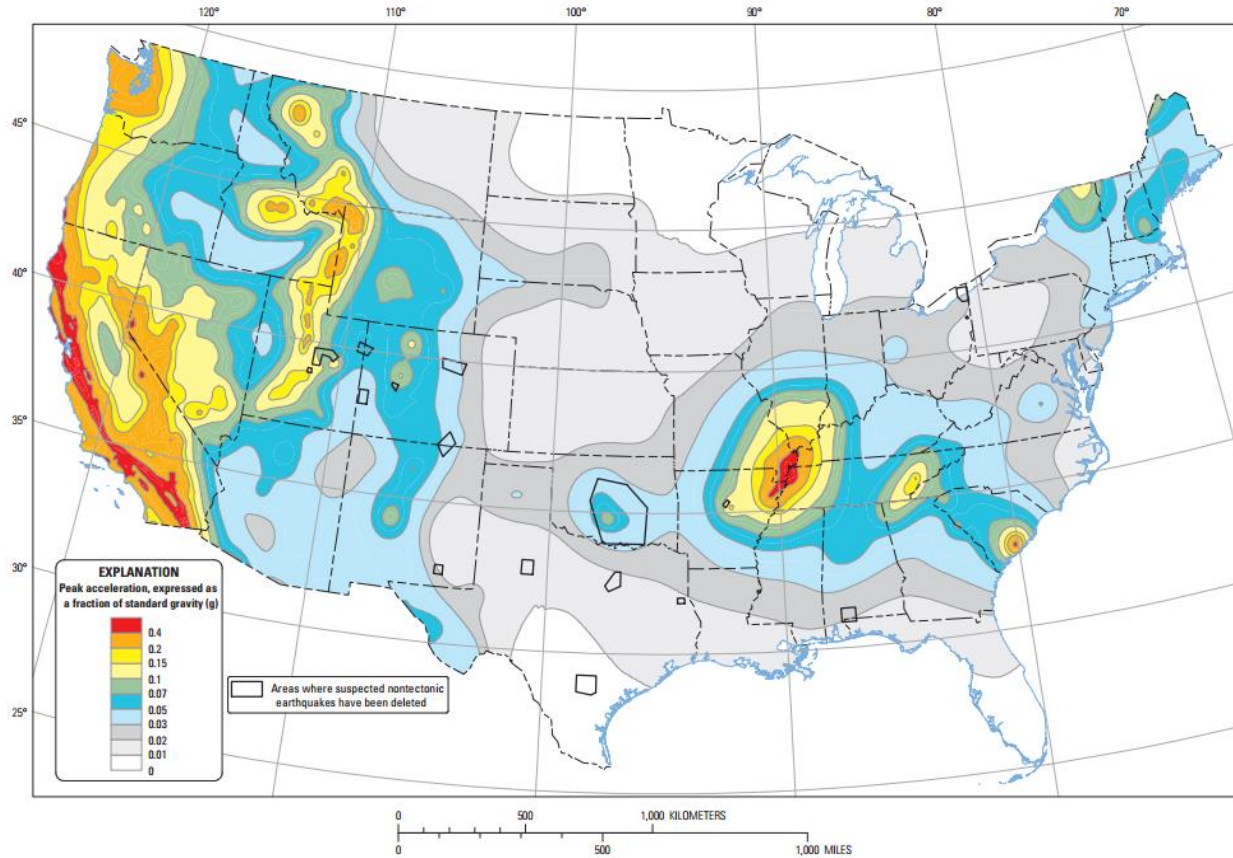


Source: South Carolina Geological Survey

Figure 5.12 shows the intensity level associated with Spartanburg County based on the national U.S. Geological Survey (USGS) map of peak acceleration with 10 percent probability of exceedance in 50 years. It is the probability that ground motion will reach a certain level during an earthquake. The data shows peak horizontal ground acceleration (the fastest measured change in speed for a particle at ground level that is moving horizontally due to an earthquake) with a 10 percent probability of exceedance in 50 years. The map was compiled by the USGS Geologic Hazards Team, which conducts global investigations of earthquake, geomagnetic, and landslide hazards. According to this map, Spartanburg County lies within an approximate zone of 0.05 to 0.07 peak ground acceleration. This indicates that the county as a whole exists within an area of moderate seismic risk.

⁵⁹ <https://www.dnr.sc.gov/geology/pdfs/Publications/GGMS/GGMS4.pdf>

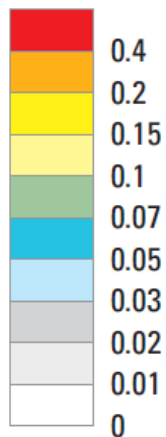
FIGURE 5.12: PEAK ACCELERATION WITH 10 PERCENT PROBABILITY OF EXCEEDANCE IN 50 YEARS



Ten-percent probability of exceedance in 50 years map of peak ground acceleration

EXPLANATION

Peak acceleration, expressed as a fraction of standard gravity (g)

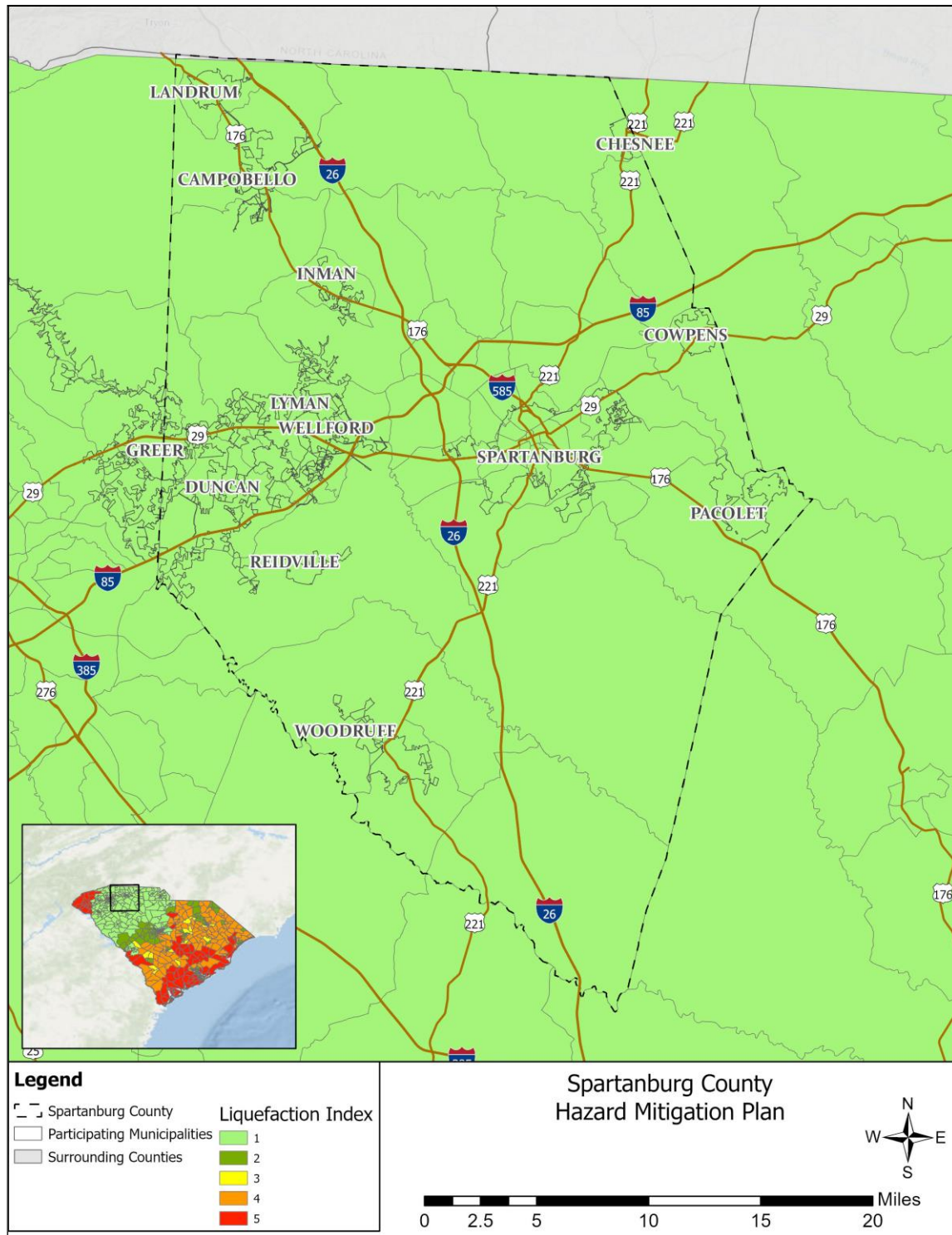


Areas where suspected nontectonic earthquakes have been deleted

Source: United States Geological Survey, 2014

Figure 5.13 indicates the level of vulnerability to liquefaction in Spartanburg County. According to this map, there is a low risk of liquefaction in the county.

FIGURE 5.13: LIQUEFACTION POTENTIAL IN SPARTANBURG COUNTY



Source: Spartanburg County

5.11.3 Historical Occurrences

Two significant earthquakes are known to have occurred in South Carolina, according to the South Carolina Geological Survey. The first and most severe was the Charleston Earthquake of 1886. The epicenter was near Charleston, South Carolina and the magnitude was an estimated 7.6. Nearly 60 people died and damage was extensive. The South Carolina Geological Survey also reports an earthquake in Union County, which borders Spartanburg County. In January 1913, the county experienced a strong, magnitude 5.5 earthquake. However, damage was minimal.⁶⁰

More recently, areas around Lugoff and Elgin, South Carolina have experienced a high frequency of small magnitude earthquakes known as an earthquake swarm. More than 56 earthquakes have been reported in the Interstate 20 corridor between Elgin and Lugoff between December 2021 and July 2022. The largest earthquakes in this swarm had magnitudes between 3.3 and 3.6.⁶¹

Due to the location of faults within the state, most earthquake events occur near Columbia, South Carolina, or further east.⁶² However, two earthquakes were reported in Spartanburg County. The first was a magnitude 2.5 earthquake recorded on October 28th, 2010, at 3.0 kilometers (km) (1.9 miles) deep and 2 km (1.2 miles) northwest of Pacolet. The second was a magnitude 2.0 earthquake recorded on July 24, 2012, at 2.6 km (1.6 miles) deep and also 2 km (1.2 miles) northwest of Pacolet.

The National Geophysical Data Center also provides historical earthquake information from 1638 to 1985. At least 49 earthquakes are known to have affected Spartanburg County since 1875. The strongest of these measured a VII on the Modified Mercalli Intensity (MMI) scale and was likely an aftershock felt from the Charleston Earthquake of 1886. **Table 5.27** provides a summary of earthquake events reported. **Table 5.28** presents a detailed report including the date, distance from the epicenter, magnitude, and Modified Mercalli Intensity (if known) for each event.⁶³

TABLE 5.27: SUMMARY OF SEISMIC ACTIVITY IN SPARTANBURG COUNTY

Location	Number of Occurrences	Greatest MMI Reported	Richter Scale Equivalent
Campobello	0	--	--
Chesnee	2	III	< 4.8
Cowpens	2	VII	< 6.1
Duncan	2	IV	< 4.8
Greer	6	VII	< 6.1
Inman	1	Unknown	--
Landrum	5	V	< 4.8
Lyman	0	--	--
Pacolet	1	VII	< 6.1
Reidville	2	IV	< 4.8
Spartanburg (city)	11	VII	< 6.1

⁶⁰ <https://earthquake.usgs.gov/earthquakes/eventpage/ushis251/impact>

⁶¹ *Report on Elgin-area Earthquakes*. South Carolina Department of Natural Resources. July 2022.

⁶² <https://www.scecmd.org/media/1055/eq-printer-friendly.pdf>

⁶³ Due to reporting mechanisms, not all earthquake events were recorded during this time. Furthermore, some are missing data, such as the epicenter location, due to a lack of widely used technology. In these instances, a value of “unknown” is reported.

Location	Number of Occurrences	Greatest MMI Reported	Richter Scale Equivalent
Wellford	1	III	< 4.8
Woodruff	2	IV	< 4.8
Unincorporated Area	14	VII	< 6.1
SPARTANBURG COUNTY TOTAL	49	VII	< 6.1

Source: National Geophysical Data Center

TABLE 5.28: SIGNIFICANT SEISMIC EVENTS IN SPARTANBURG COUNTY (1638-1985)

Location	Date	Epical Distance	Magnitude	MMI
Campobello				
None Reported	--	--	--	--
Chesnee				
CHESNEE	2/3/1972	227.0 km	4.5	III
CHESNEE	11/30/1973	203.0 km	4.7	III
Cowpens				
COWPENS	9/1/1886	288.0 km	Unknown	VII
COWPENS	2/3/1972	212.0 km	4.5	III
Duncan				
DUNCAN	2/3/1972	226.0 km	4.5	III
DUNCAN	11/30/1973	189.0 km	4.7	IV
Greer				
GREER	9/1/1886	306.0 km	Unknown	VII
GREER	10/20/1924	340. km	Unknown	IV
GREER	5/13/1957	Unknown	Unknown	III
GREER	12/13/1969	72.0 km	Unknown	IV
GREER	7/13/1971	75.0 km	Unknown	III
GREER	8/26/1979	67.0 km	3.7	IV
Inman				
INMAN	11/30/1973	188.0 km	4.7	Unknown
Landrum				
LANDRUM	2/21/1916	46.0 km	Unknown	IV
LANDRUM	10/20/1924	41.0 km	Unknown	V
LANDRUM	11/3/1928	99.0 km	Unknown	IV
LANDRUM	11/30/1973	174.0 km	4.7	Unknown
LANDRUM	5/5/1981	28.0 km	3.5	V
Lyman				
None Reported	--	--	--	--
Pacolet				
PACOLET	9/1/1886	275.0 km	Unknown	VII
Reidville				
REIDVILLE	2/3/1972	218.0 km	4.5	III
REIDVILLE	11/30/1973	197.0 km	4.7	IV
Spartanburg (city)				
SPARTANBURG	11/2/1875	130.0 km	Unknown	V

Location	Date	Epicentral Distance	Magnitude	MMI
SPARTANBURG	9/1/1886	286.0 km	Unknown	VII
SPARTANBURG	5/31/1897	291.0 km	Unknown	III
SPARTANBURG	4/20/1911	Unknown	Unknown	V
SPARTANBURG	2/21/1916	83.0 km	Unknown	V
SPARTANBURG	10/20/1924	58.0 km	Unknown	V
SPARTANBURG	11/3/1928	135.0 km	Unknown	III
SPARTANBURG	7/26/1945	62.0 km	5.6	III
SPARTANBURG	5/13/1957	Unknown	Unknown	III
SPARTANBURG	11/20/1969	292.0 km	4.3	IV
SPARTANBURG	2/3/1972	211.0 km	4.5	IV
Wellford				
WELLFORD	2/3/1972	225.0 km	4.5	III
Woodruff				
WOODRUFF	2/3/1972	204.0 km	4.5	IV
WOODRUFF	11/30/1973	210.0 km	4.7	IV
Unincorporated Area				
CAMPTON	9/1/1886	303.0 km	--	VII
WALNUT GROVE	9/1/1886	281.0 km	--	VII
ARCADIA	2/3/1972	218.0 km	4.5	IV
CONVERSE	2/3/1972	212.0 km	4.5	III
CROSS ANCHOR	2/3/1972	184.0 km	4.5	IV
MAYO	2/3/1972	221.0 km	4.5	III
PACOLET MILLS	2/3/1972	200.0 km	4.5	IV
PAULINE	2/3/1972	200.0 km	4.5	IV
STARTEX	2/3/1972	222.0 km	4.5	III
CROSS ANCHOR	11/30/1973	230.0 km	4.7	IV
GRAMLING	11/30/1973	184.0 km	4.7	II
PAULINE	11/30/1973	218.0 km	4.7	IV
STARTEX	11/30/1973	194.0 km	4.7	IV
GRAMLING	5/5/1981	38.0 km	3.5	IV

Note: As indicated previously, a 2.5 magnitude earthquake and a 2.0 magnitude earthquake occurred in unincorporated Spartanburg County in 2010 and 2012, respectively.

Source: National Geophysical Data Center

5.11.4 Probability of Future Occurrences

The probability of significant, damaging earthquake events affecting Spartanburg County is unlikely. However, it is possible that future earthquakes resulting in light to moderate perceived shaking and damages ranging from none to very light will affect the county. The annual probability level for the county is estimated between 10 and 100 percent (likely). Impacts from climate change are not expected to change the probability of earthquakes effecting Spartanburg County. One climate related variable that effects seismic activity is changing stress loads on faults due to increased surface water in the form of rain and snow. However, fault stressing from surface water changes primarily correlates with microseismicity, or tiny earthquakes with magnitudes less than 0 on the Modified Mercalli Intensity scale.⁶⁴

⁶⁴ <https://climate.nasa.gov/news/2926/can-climate-affect-earthquakes-or-are-the-connections-shaky/>

5.12 LANDSLIDE

5.12.1 Background

A landslide is the downward and outward movement of slope-forming soil, rock, and vegetation, which is driven by gravity. Landslides may be triggered by both natural and human-caused changes in the environment, including heavy rain, rapid snow melt, steepening of slopes due to construction or erosion, earthquakes, volcanic eruptions, and changes in groundwater levels.

There are several types of landslides: rock falls, rock topple, slides, and flows. Rock falls are rapid movements of bedrock, which result in bouncing or rolling. A topple is a section or block of rock that rotates or tilts before falling to the slope below. Slides are movements of soil or rock along a distinct surface of rupture, which separates the slide material from the more stable underlying material. Mudflows, sometimes referred to as mudslides, mudflows, lahars, or debris avalanches, are fast-moving rivers of rock, earth, and other debris saturated with water. They develop when water rapidly accumulates in the ground, such as heavy rainfall or rapid snowmelt, changing the soil into a flowing river of mud or “slurry.” Slurry can flow rapidly down slopes or through channels and can strike with little or no warning at avalanche speeds. Slurry can travel several miles from its source, growing in size as it picks up trees, cars, and other materials along the way. As the flows reach flatter ground, the mudflow spreads over a broad area where it can accumulate in thick deposits.

Landslides are typically associated with periods of heavy rainfall or rapid snow melt and tend to worsen the effects of flooding that often accompanies these events. In areas burned by forest and brush fires, a lower threshold of precipitation may initiate landslides. Some landslides move slowly and cause damage gradually, whereas others move so rapidly that they can destroy property and take lives suddenly and unexpectedly.

Among the most destructive types of debris flows are those that accompany volcanic eruptions. A spectacular example in the United States was a massive debris flow resulting from the 1980 eruptions of Mount St. Helens, Washington. Areas near the bases of many volcanoes in the Cascade Mountain Range of California, Oregon, and Washington are at risk from the same types of flows during future volcanic eruptions.

Areas that are generally prone to landslide hazards include previous landslide areas, the bases of steep slopes, the bases of drainage channels, and developed hillsides where leach-field septic systems are used. Areas that are typically considered safe from landslides include areas that have not moved in the past, relatively flat-lying areas away from sudden changes in slope, and areas at the top or along ridges set back from the tops of slopes.⁶⁵

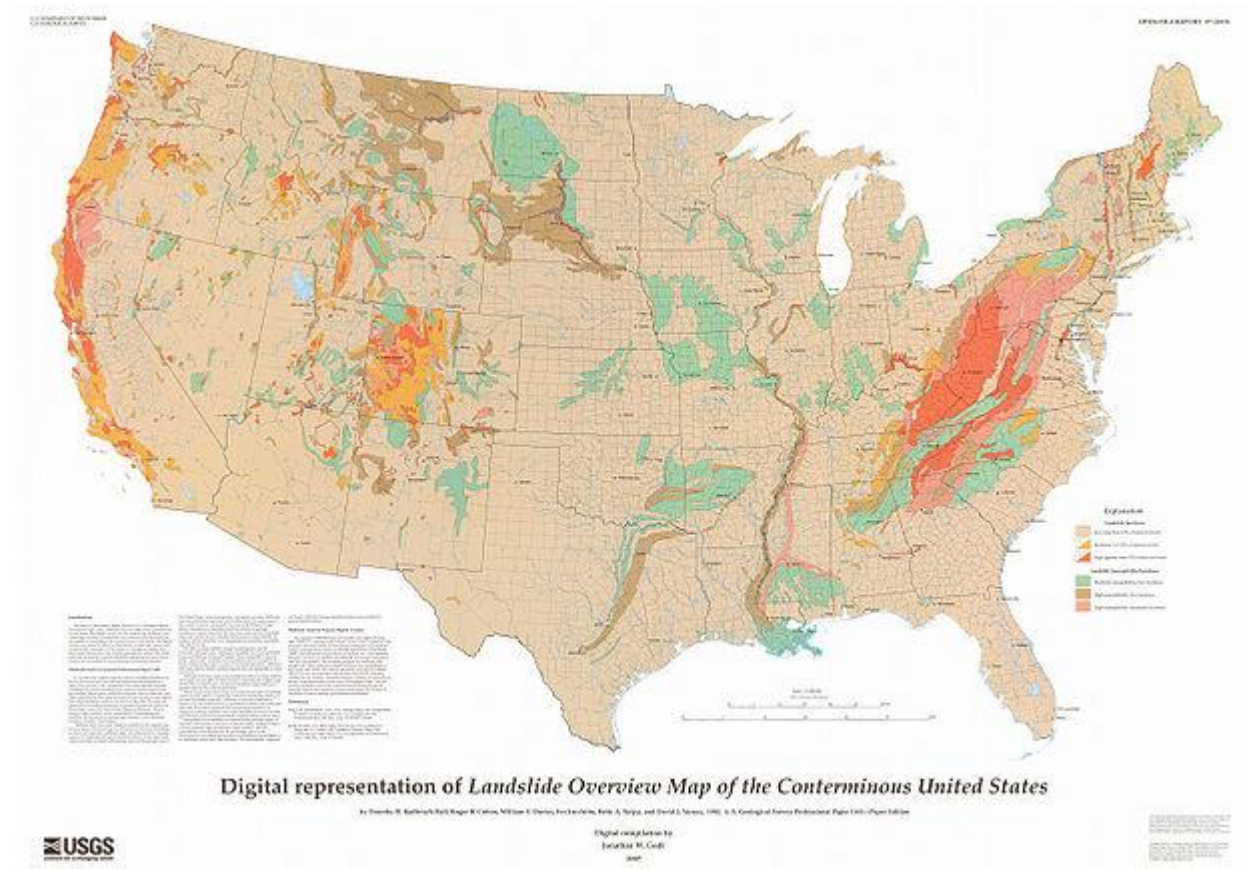
According to the United States Geological Survey, each year landslides cause \$1 billion in damage and between 25 and 50 deaths in the United States.⁶⁶ **Figure 5.14** delineates areas where large numbers of







⁶⁵ <https://pubs.usgs.gov/fs/2004/3072/fs-2004-3072.html#:~:text=The%20two%20major%20types%20of%20slides%20are%20rotational%20slides%20and%20translational%20slides>.

⁶⁶ <https://www.usgs.gov/programs/landslide-hazards/landslides-101#:~:text=Landslides%20are%20a%20serious%20geologic,to%2050%20deaths%20each%20year>.

landslides have occurred and areas that are susceptible to landslides in the conterminous United States.⁶⁷

FIGURE 5.14: LANDSLIDE OVERVIEW MAP OF THE CONTERMINOUS UNITED STATES⁶⁸



Landslide Incidence		Landslide Susceptibility/Incidence	
	Low Incidence (less than 1.5% of area involved)		Moderate susceptibility/low incidence
	Moderate Incidence (1.5%-15% of area involved)		High susceptibility/low incidence
	High Incidence (greater than 15% of area involved)		High susceptibility/moderate incidence

Source: United States Geological Survey

⁶⁷ This map layer is provided in the U.S. Geological Survey Professional Paper 1183, Landslide Overview Map of the Conterminous United States, available online at: http://landslides.usgs.gov/html_files/landslides/nationalmap/national.html.

⁶⁸ Susceptibility not indicated where same or lower than incidence. Susceptibility to landsliding was defined as the probable degree of response of [the area] rocks and soils to natural or artificial cutting or loading of slopes, or to anomalously high precipitation. High, moderate, and low susceptibility are delimited by the same percentages used in classifying the incidence of landsliding. Some generalization was necessary at this scale, and several small areas of high incidence and susceptibility were slightly exaggerated.

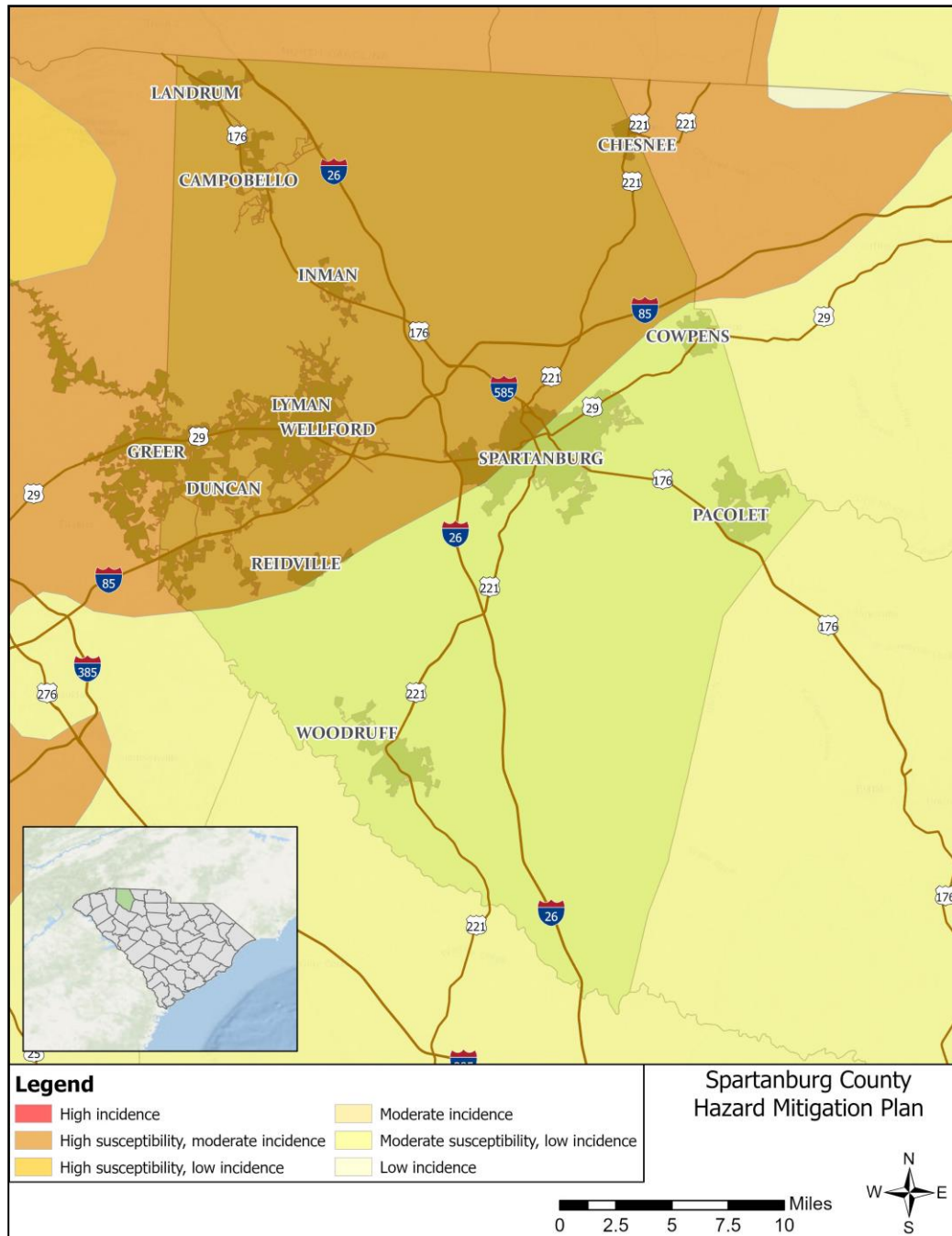
5.12.2 Location and Spatial Extent

Landslides occur along steep slopes when the pull of gravity can no longer be resisted (often due to heavy rain). Human development can also exacerbate risk by building on previously undevelopable steep slopes and constructing roads by cutting through hills or mountains. Landslides are possible throughout Spartanburg County.⁶⁹ However, some areas may experience more landslide activities than others.

According to **Figure 5.15** below, there are two zones of landslide incidence and susceptibility in Spartanburg County. The northern portion of the county is an area of high susceptibility and moderate incidence. Jurisdictions facing higher landslide susceptibility within this portion of the county include Landrum, Campobello, Chesnee, Inman, Lyman, Wellford, Greer, Duncan, Reidville, and the northern area of Spartanburg City. The lower portion of the county is in an area of moderate susceptibility and low incidence. Jurisdictions facing lower landslide susceptibility in this portion of the county include Woodruff, Pacolet, Cowpens, and the southern portion of Spartanburg City.

⁶⁹ <https://pubs.usgs.gov/fs/2004/3072/fs-2004-3072.html#:~:text=The%20two%20major%20types%20of%20slides%20are%20rotational%20slides%20and%20translational%20slides.>

FIGURE 5.15: LANDSLIDE SUSCEPTIBILITY AND INCIDENCE MAP OF SPARTANBURG COUNTY



Source: United States Geological Survey

5.12.3 Historical Occurrences

There are no recorded historical landslide occurrences in the county according to the South Carolina Geological Survey and the Spartanburg County Hazard Mitigation Planning Team. This hazard profile will be amended in future updates if data becomes available.

5.12.4 Probability of Future Occurrences

Based on historical information and the USGS susceptibility index, the probability of future landslide events within Spartanburg County is “possible” (between 1 and 10 percent annual probability). However, since there is no record of previous occurrences, it is difficult to determine the probability in the area. However, using data from USGS, it can be determined that the county has low to moderate incidence and moderate to high susceptibility for landsliding. Local conditions may become more favorable for landslides due to heavy rain, for example. This would increase the likelihood of occurrence. It should also be noted that some areas in the county have greater risk than others given factors such as steepness of slope and modification of slopes. It should be noted that increasing frequency and severity of precipitation events due to climate change may increase the likelihood of landslide events within Spartanburg County in the future.

Hydrologic Hazards

5.13 FLOOD

5.13.1 Background

Flooding is the most frequent and costly natural hazard in the United States and is a hazard that has caused more than 10,000 deaths since 1900. Nearly 90 percent of presidential disaster declarations result from natural events where flooding was a major component.⁷⁰

Floods generally result from excessive precipitation and can be classified under two categories: general floods, precipitation over a given river basin for a long period of time along with storm-induced wave action, and flash floods, the product of heavy localized precipitation in a short timeframe over a given location. The severity of a flooding event is typically determined by a combination of several major factors, including stream and river basin topography and physiography, precipitation and weather patterns, recent soil moisture conditions, and the degree of vegetative clearing and impervious surface.⁷¹

General floods are usually long-term events that may last for several days. The primary types of general flooding include riverine, coastal, and urban flooding. Riverine flooding is a function of excessive precipitation levels and water runoff volumes within the watershed of a stream or river. Coastal flooding is typically a result of storm surge, wind-driven waves, and heavy rainfall produced by hurricanes, tropical storms, and other large coastal storms. Urban flooding occurs where manmade development

⁷⁰ <https://www.govinfo.gov/content/pkg/GAOREPORTS-GAO-04-401T/html/GAOREPORTS-GAO-04-401T.htm>

⁷¹ <https://www.usgs.gov/faqs/what-are-two-types-floods>

has obstructed the natural flow of water and decreased the ability of natural groundcover to absorb and retain surface water runoff.

Most flash flooding is caused by slow-moving thunderstorms in a local area or by heavy rains associated with hurricanes and tropical storms. However, flash flooding events may also occur from a dam or levee failure within minutes or hours of heavy amounts of rainfall or from a sudden release of water held by a retention basin or other stormwater control facility. Although flash flooding occurs most often along mountain streams, it is also common in urbanized areas where much of the ground is covered by impervious surfaces.

The periodic flooding of lands adjacent to rivers, streams, and shorelines (land known as a floodplain) is a natural and inevitable occurrence that can be expected to take place based upon established recurrence intervals. The recurrence interval of a flood is defined as the average time interval, in years, expected between a flood event of a particular magnitude and an equal or larger flood. Flood magnitude increases with increasing recurrence interval.

Floodplains are designated by the frequency of the flood that is large enough to cover them. For example, the 10-year floodplain will be covered by the 10-year flood and the 100-year floodplain by the 100-year flood. Flood frequencies, such as the 100-year flood, are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. Another way of expressing the flood frequency is the chance of occurrence in a given year, which is the percentage of the probability of flooding each year. For example, the 100-year flood has a 1 percent chance of occurring in any given year and the 500-year flood has a 0.2 percent chance of occurring in any given year.⁷²

5.13.2 Location and Spatial Extent

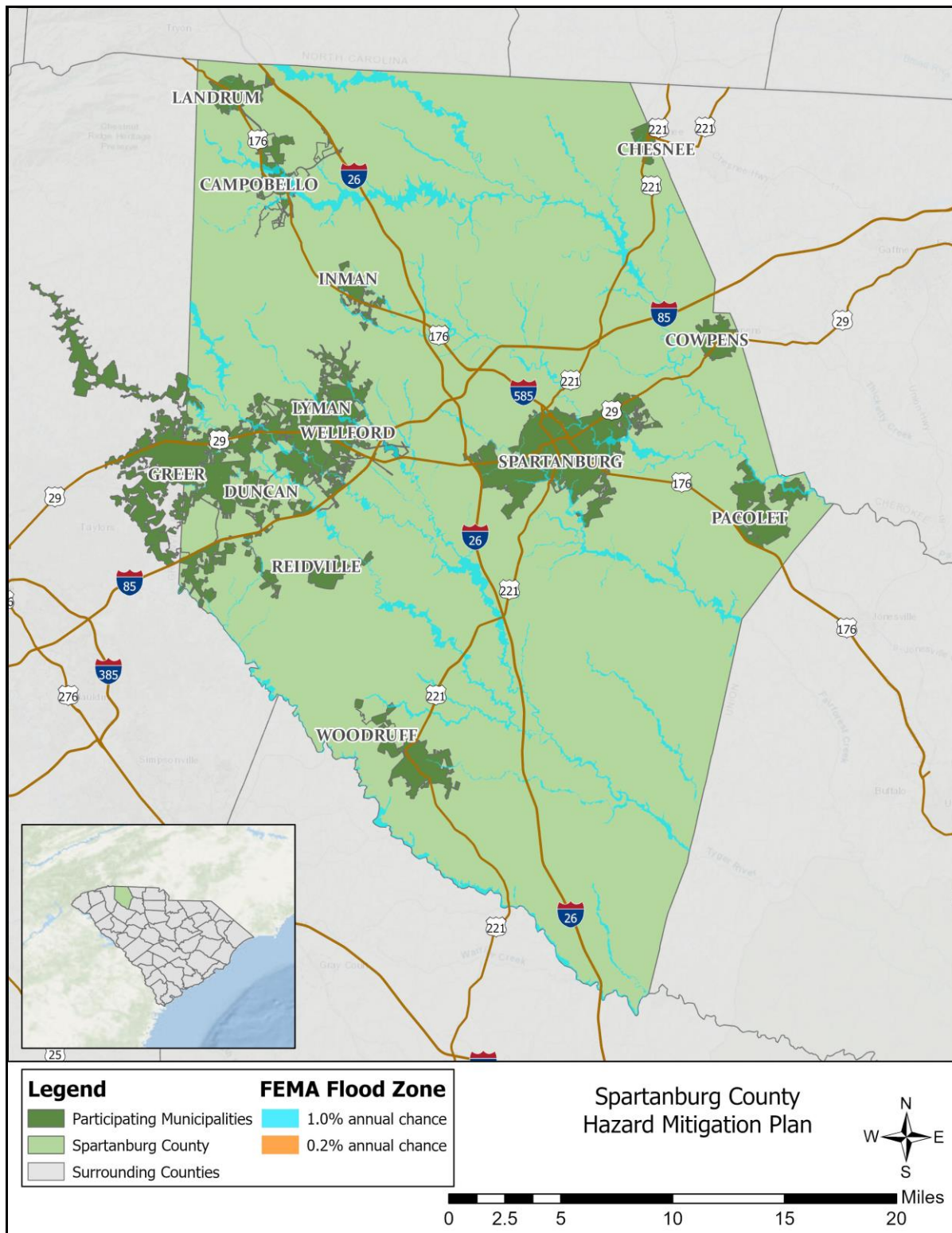
There are areas in Spartanburg County that are susceptible to flood events. Special flood hazard areas in Spartanburg County were mapped using Geographic Information System (GIS) and FEMA Digital Flood Insurance Rate Maps (DFIRM).⁷³ This includes Zone AE (1-percent annual chance floodplain with elevation) and Zone X500 (0.2-percent annual chance floodplain). According to GIS analysis, of the 819.1 square miles that make up Spartanburg County, there are 40.5 square miles of land in zone AE (1-percent annual chance floodplain/100-year floodplain) and 1.3 square miles of land in zone X500 (0.2-percent annual chance floodplain/500-year floodplain).

These flood zone values account for five percent of the total land area in Spartanburg County. It is important to note that while FEMA digital flood data is recognized as best available data for planning purposes, it does not always reflect the most accurate and up-to-date flood risk. Flooding and flood-related losses often do occur outside of delineated special flood hazard areas. **Figure 5.16, Figure 5.17, Figure 5.18, Figure 5.19, Figure 5.20, Figure 5.21, Figure 5.22, Figure 5.23, Figure 5.24, Figure 5.25, Figure 5.26, Figure 5.27, Figure 5.28, and Figure 5.29** illustrate the location and extent of currently mapped special flood hazard areas for Spartanburg County and its municipalities based on best available FEMA DFIRM data.

⁷² <https://www.usgs.gov/special-topics/water-science-school/science/100-year-flood>

⁷³ The county-level DFIRM used for Spartanburg County was updated in 2011.

FIGURE 5.16: SPECIAL FLOOD HAZARD AREAS IN SPARTANBURG COUNTY



Source: Federal Emergency Management Agency

FIGURE 5.17: SPECIAL FLOOD HAZARD AREAS IN CAMPOBELLO

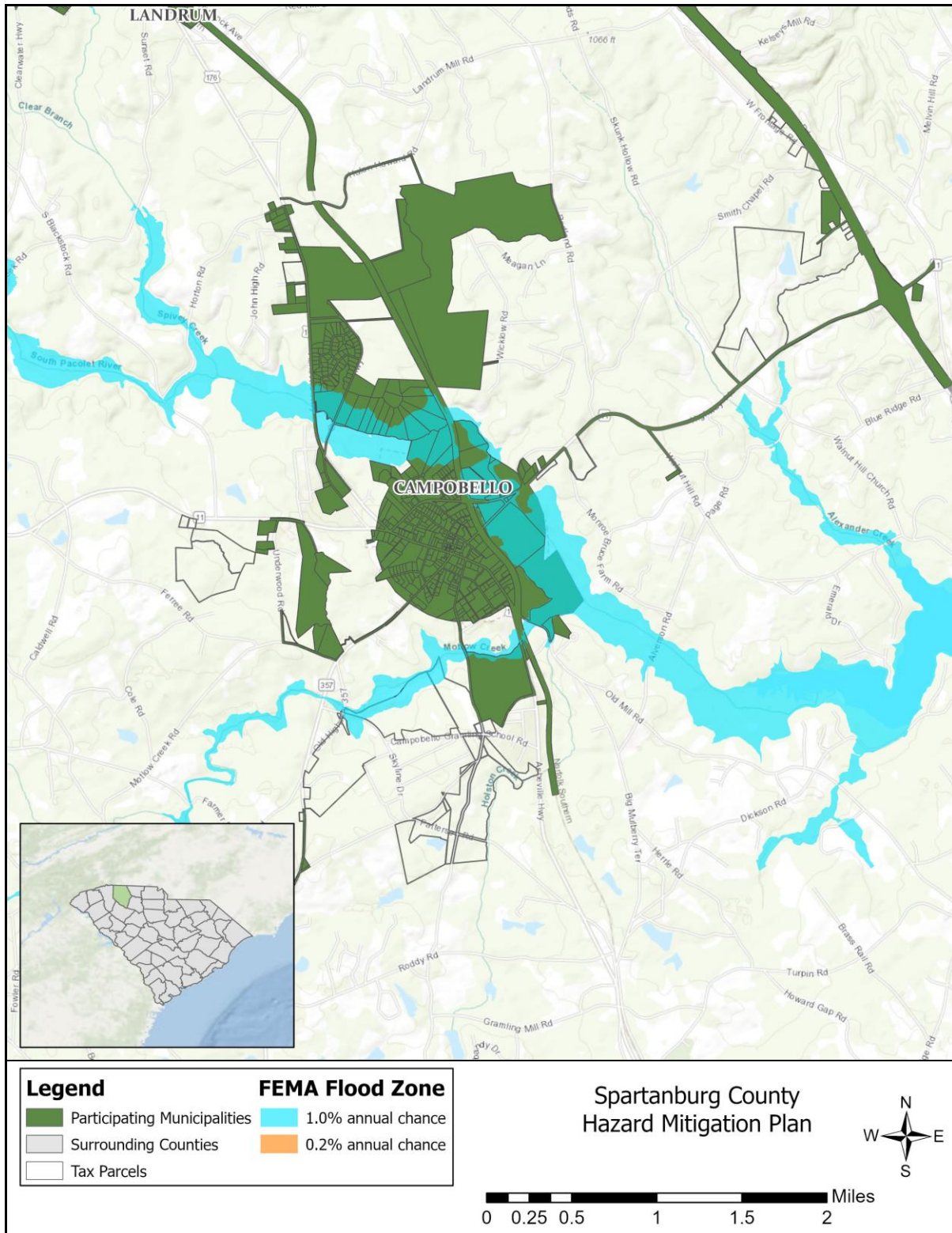


FIGURE 5.18: SPECIAL FLOOD HAZARD AREAS IN CHESNEE

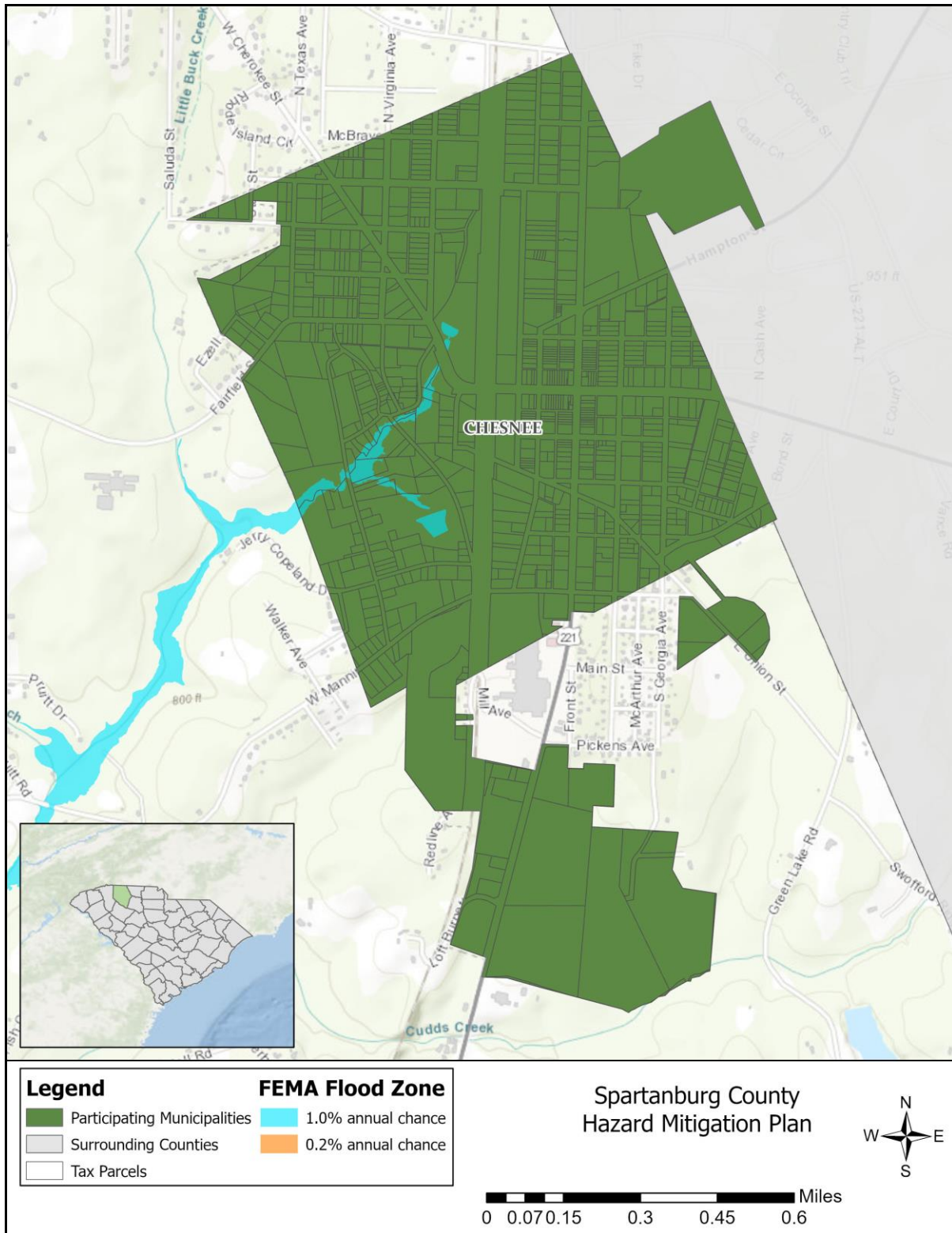
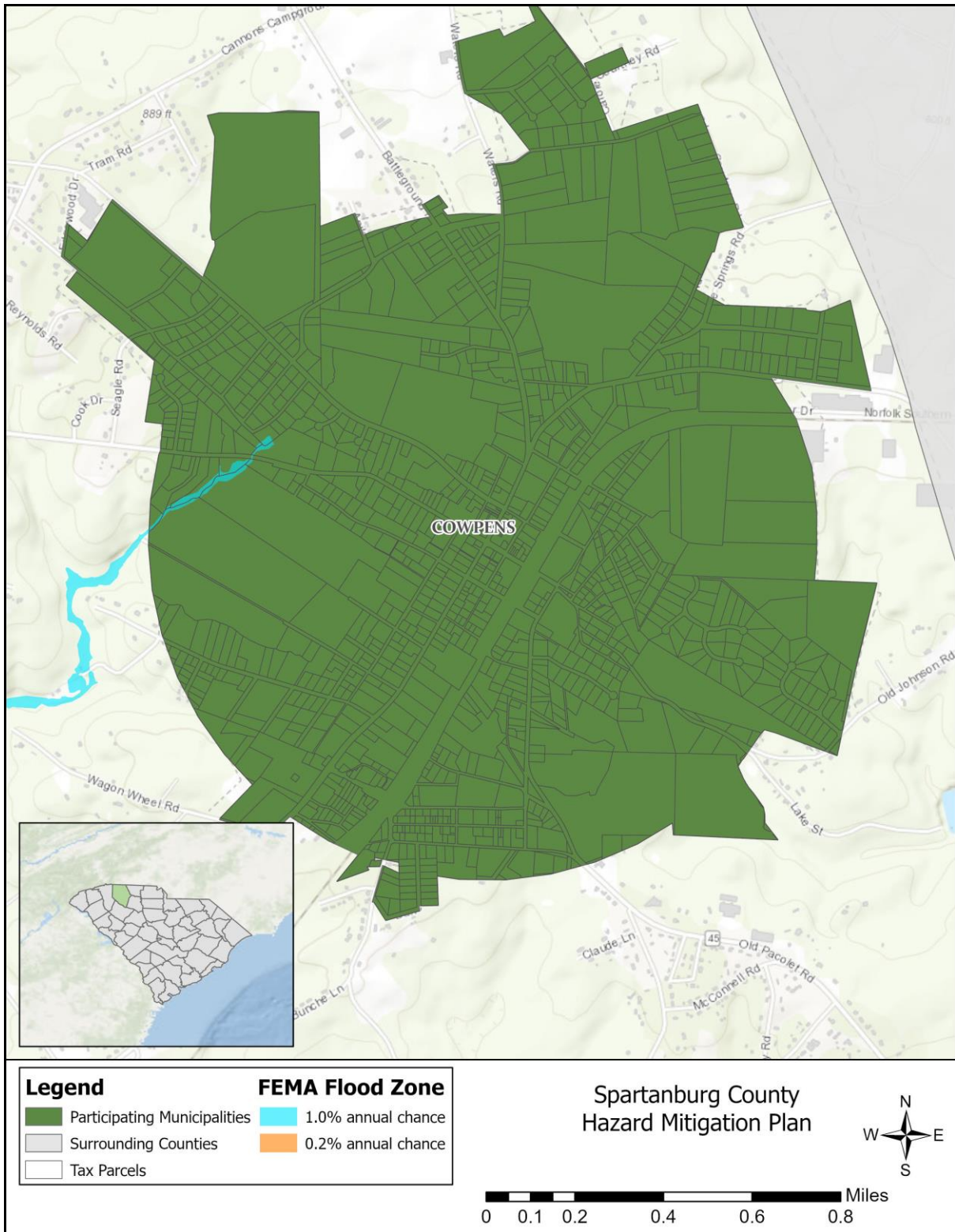
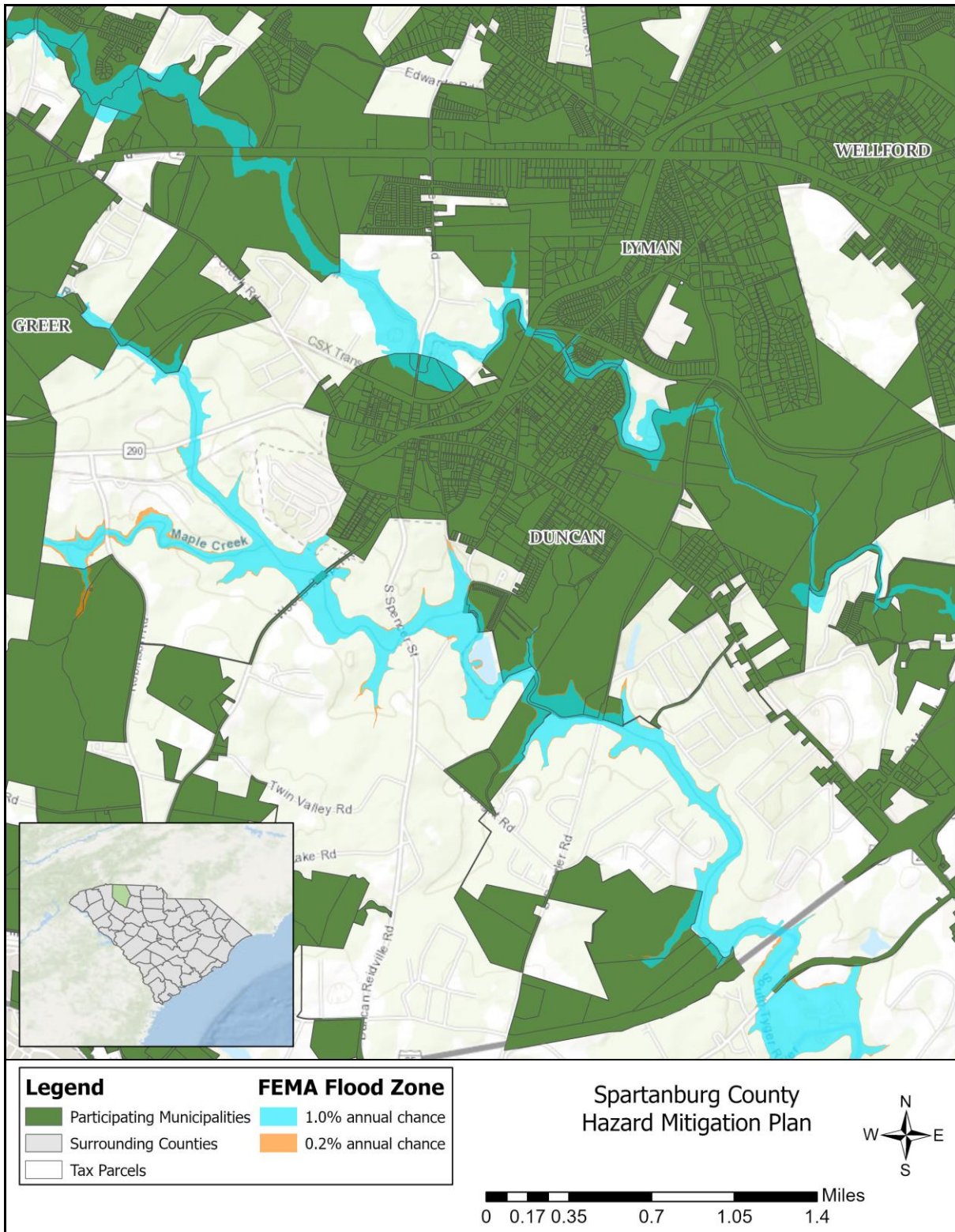


FIGURE 5.19: SPECIAL FLOOD HAZARD AREAS IN COWPENS



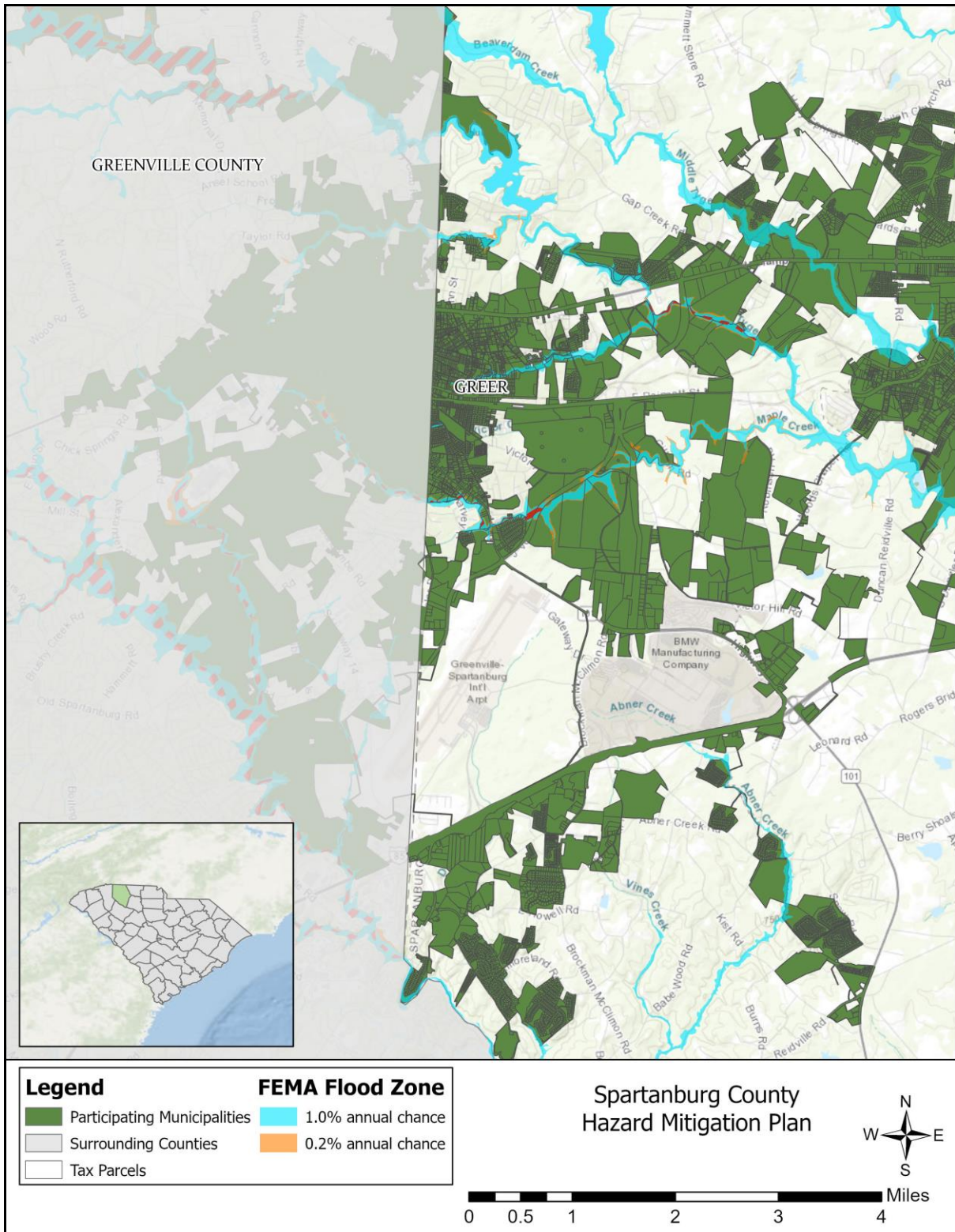
Source: Federal Emergency Management Agency

FIGURE 5.20: SPECIAL FLOOD HAZARD AREAS IN DUNCAN



Source: Federal Emergency Management Agency

FIGURE 5.21: SPECIAL FLOOD HAZARD AREAS IN GREER



Source: Federal Emergency Management Agency

FIGURE 5.22: SPECIAL FLOOD HAZARD AREAS IN INMAN

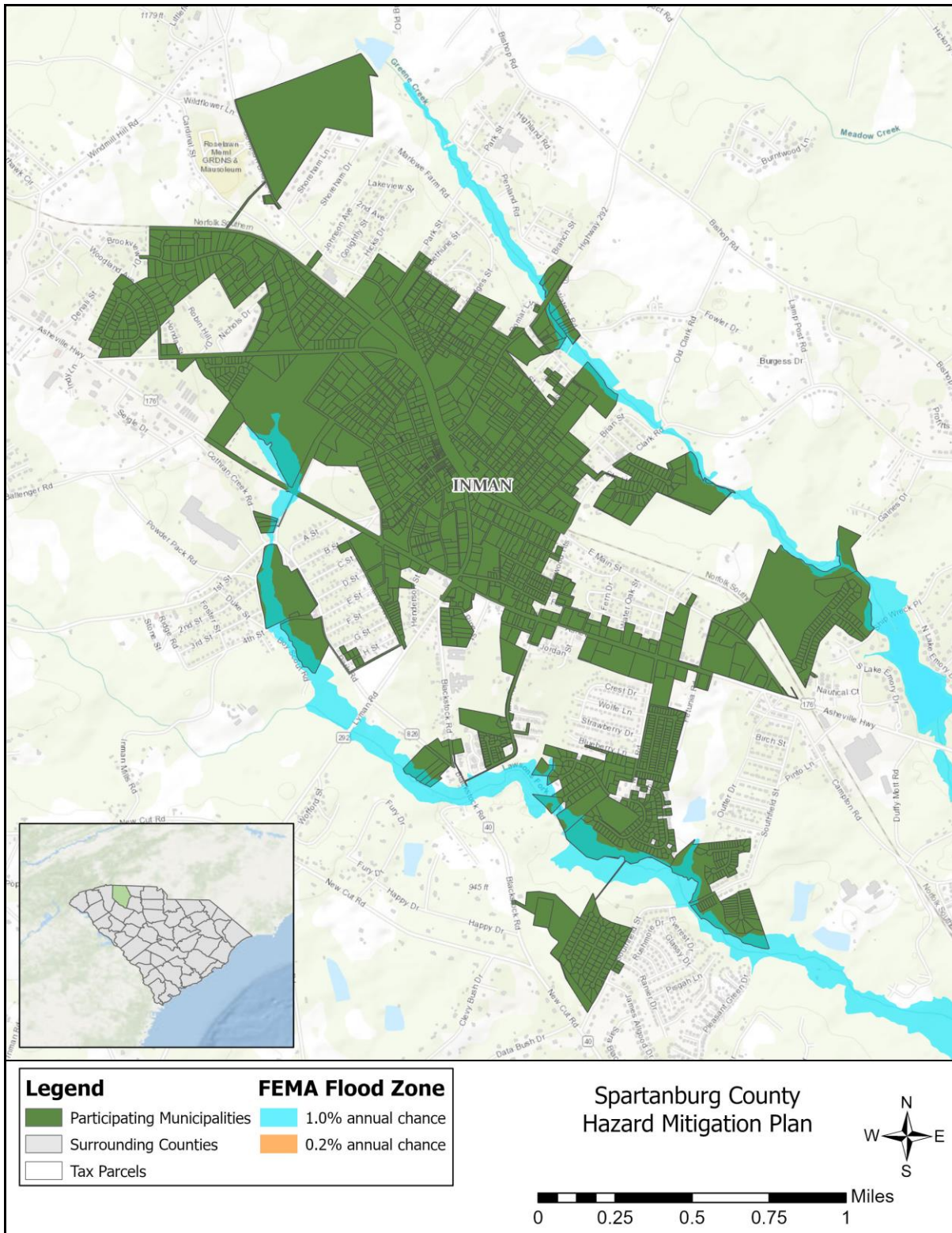
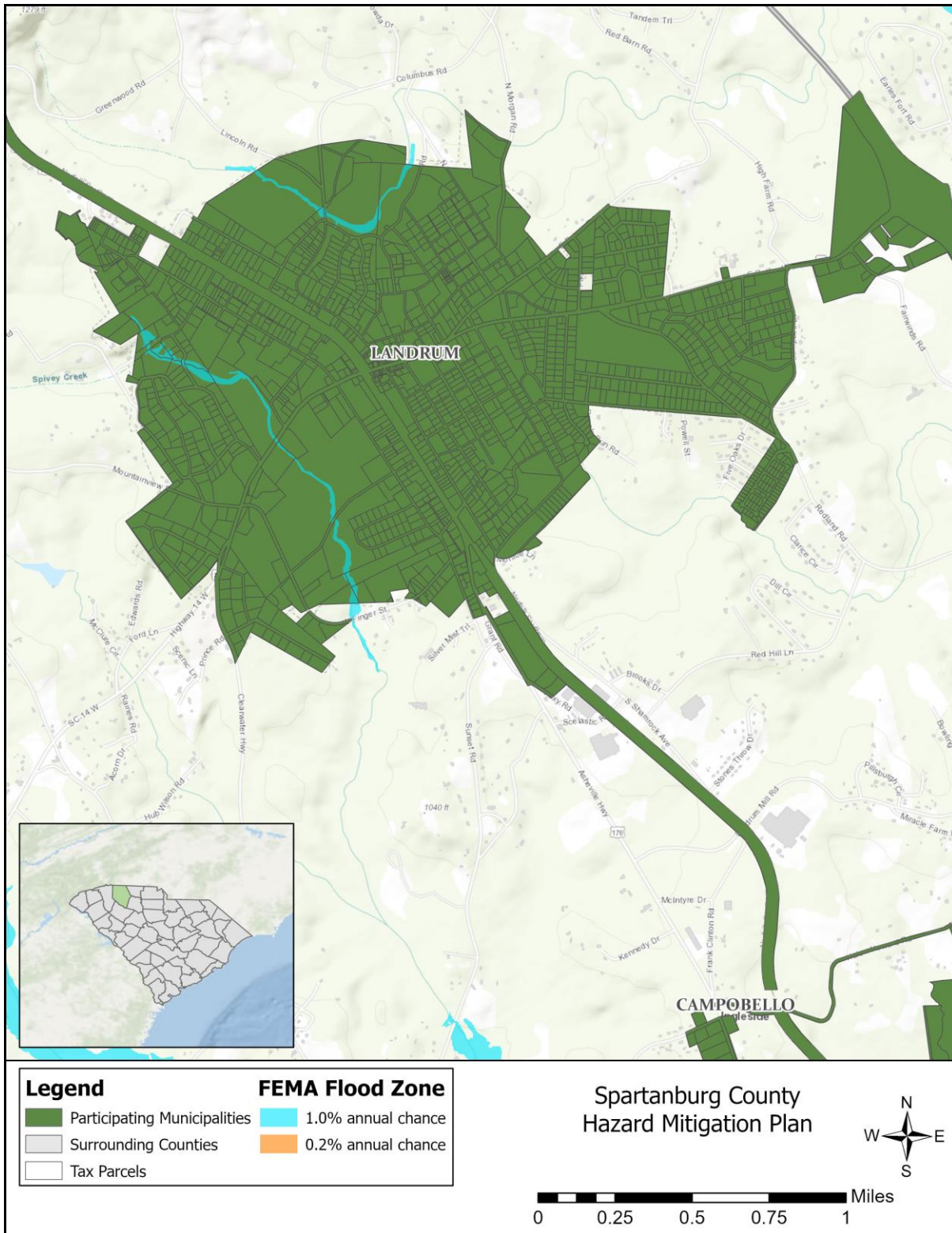
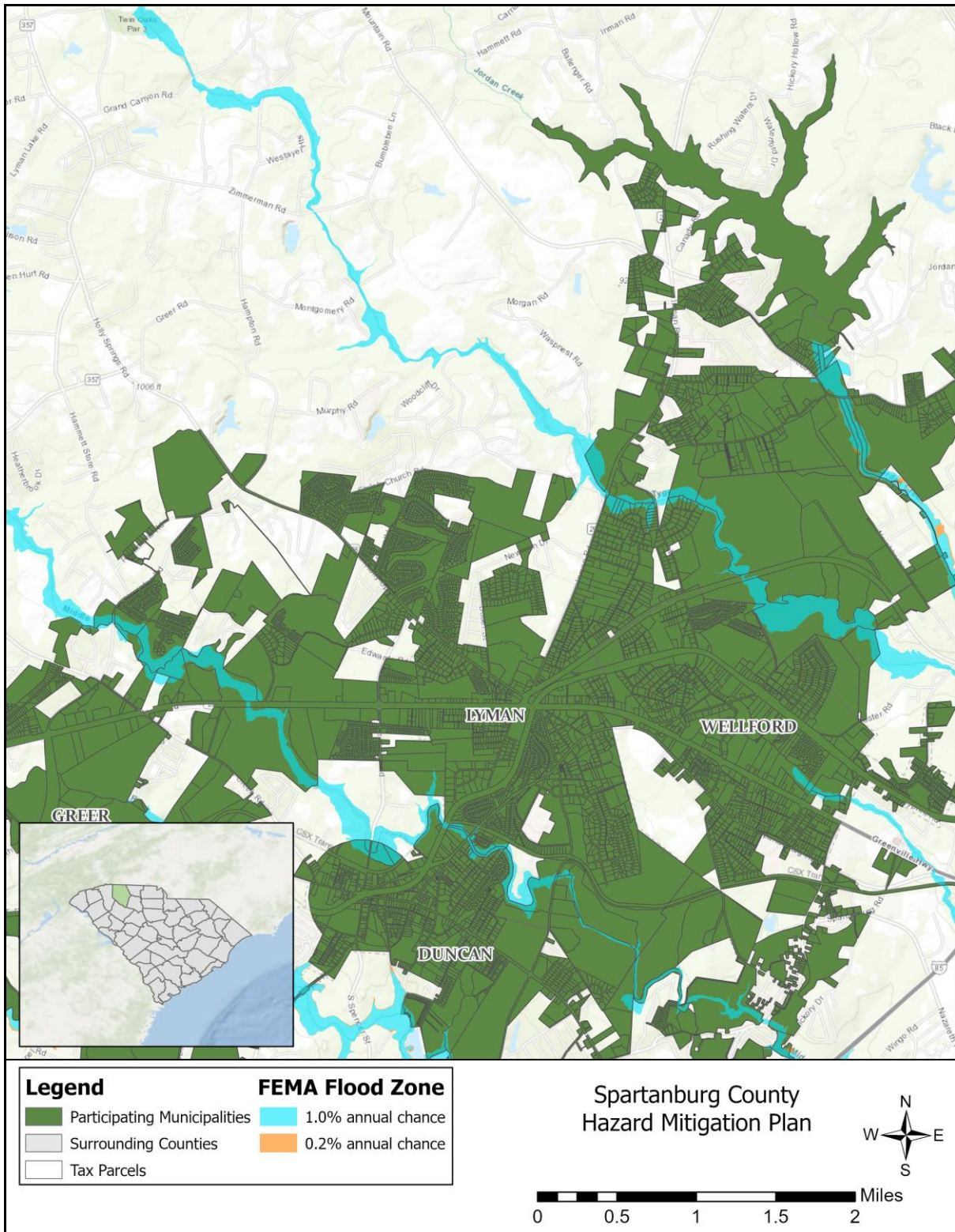


FIGURE 5.23: SPECIAL FLOOD HAZARD AREAS IN LANDRUM



Source: Federal Emergency Management Agency

FIGURE 5.24: SPECIAL FLOOD HAZARD AREAS IN LYMAN



Source: Federal Emergency Management Agency

FIGURE 5.25: SPECIAL FLOOD HAZARD AREAS IN PACOLET

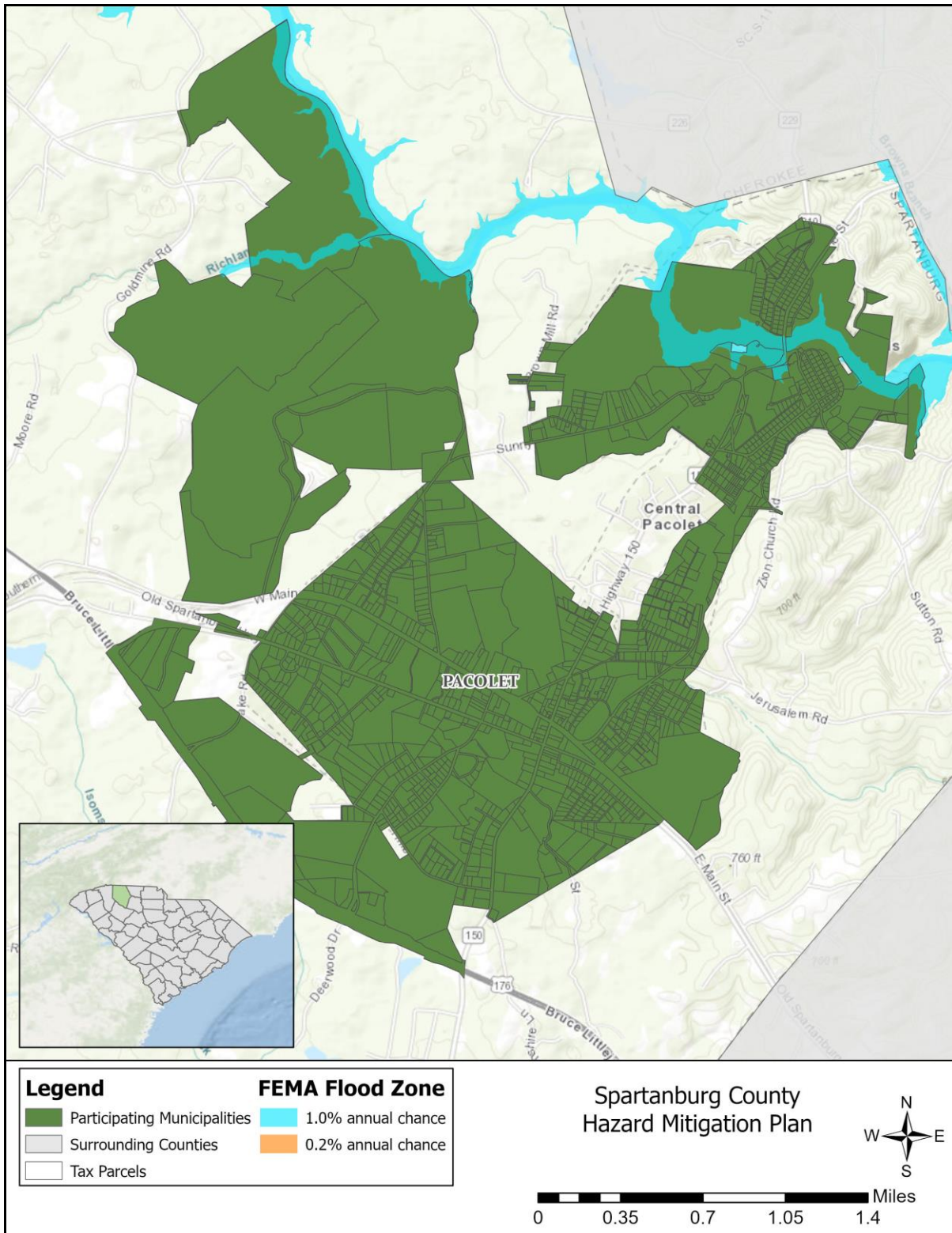


FIGURE 5.26: SPECIAL FLOOD HAZARD AREAS IN REIDVILLE

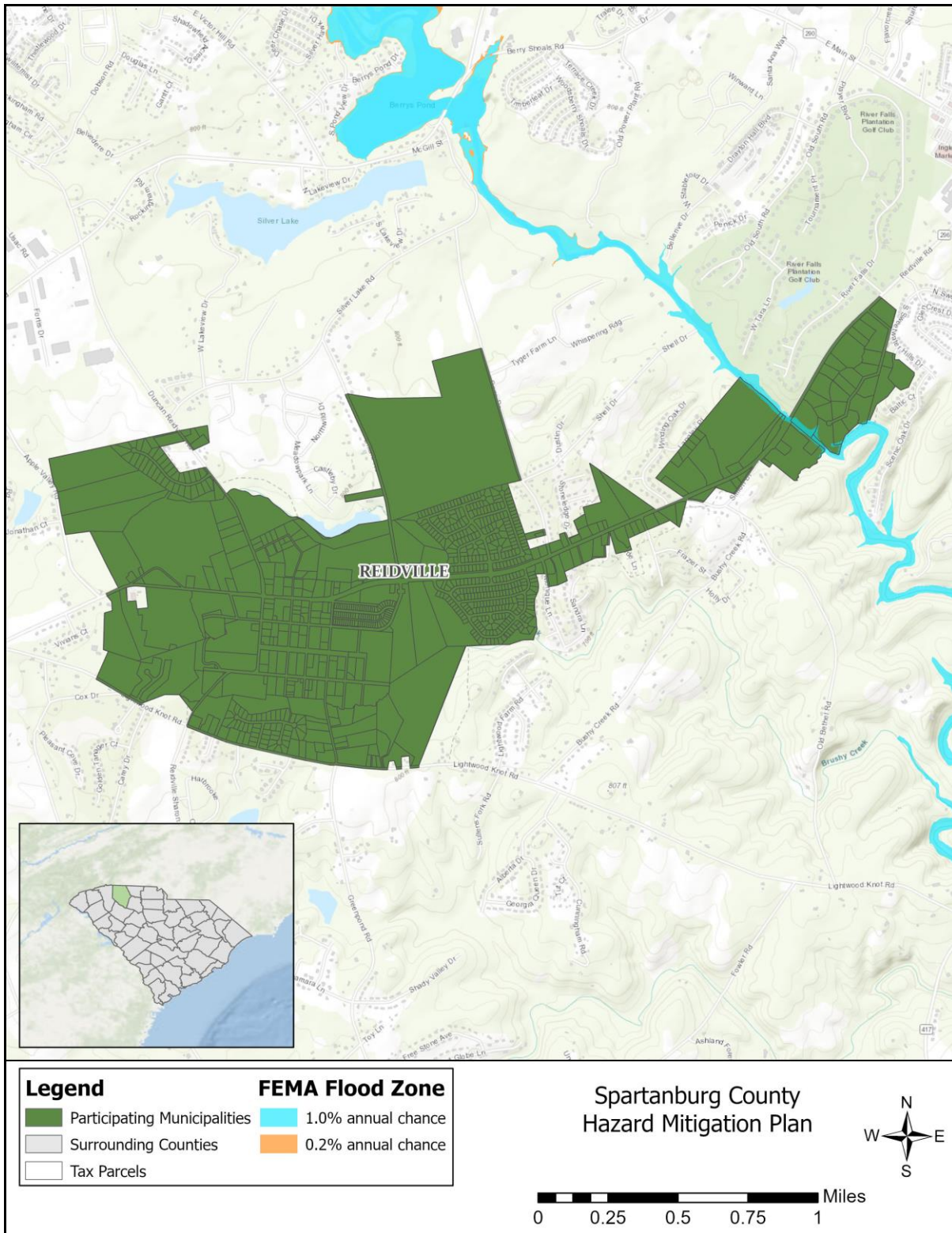


FIGURE 5.27: SPECIAL FLOOD HAZARD AREAS IN SPARTANBURG (CITY)

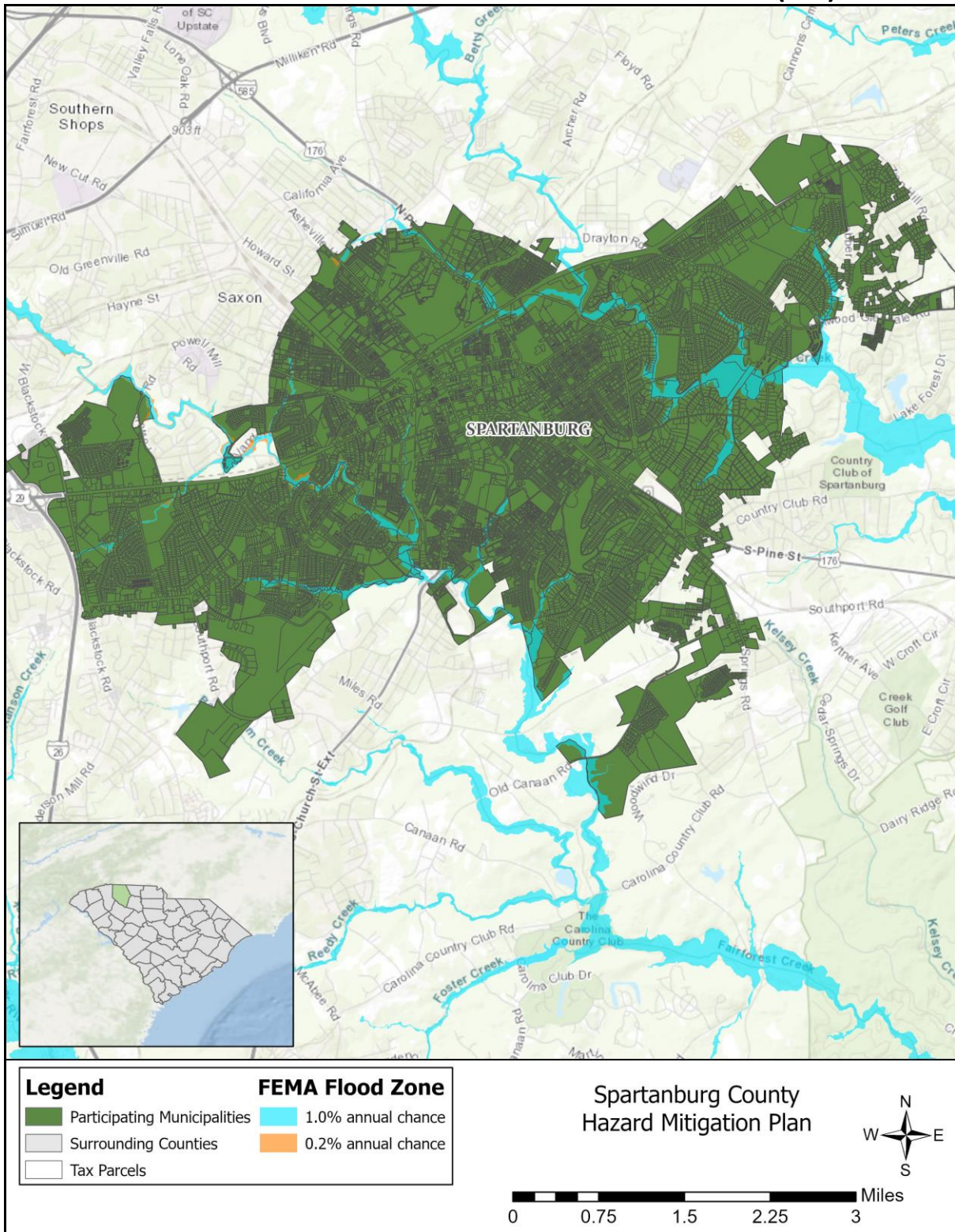


FIGURE 5.28: SPECIAL FLOOD HAZARD AREAS IN WELLFORD

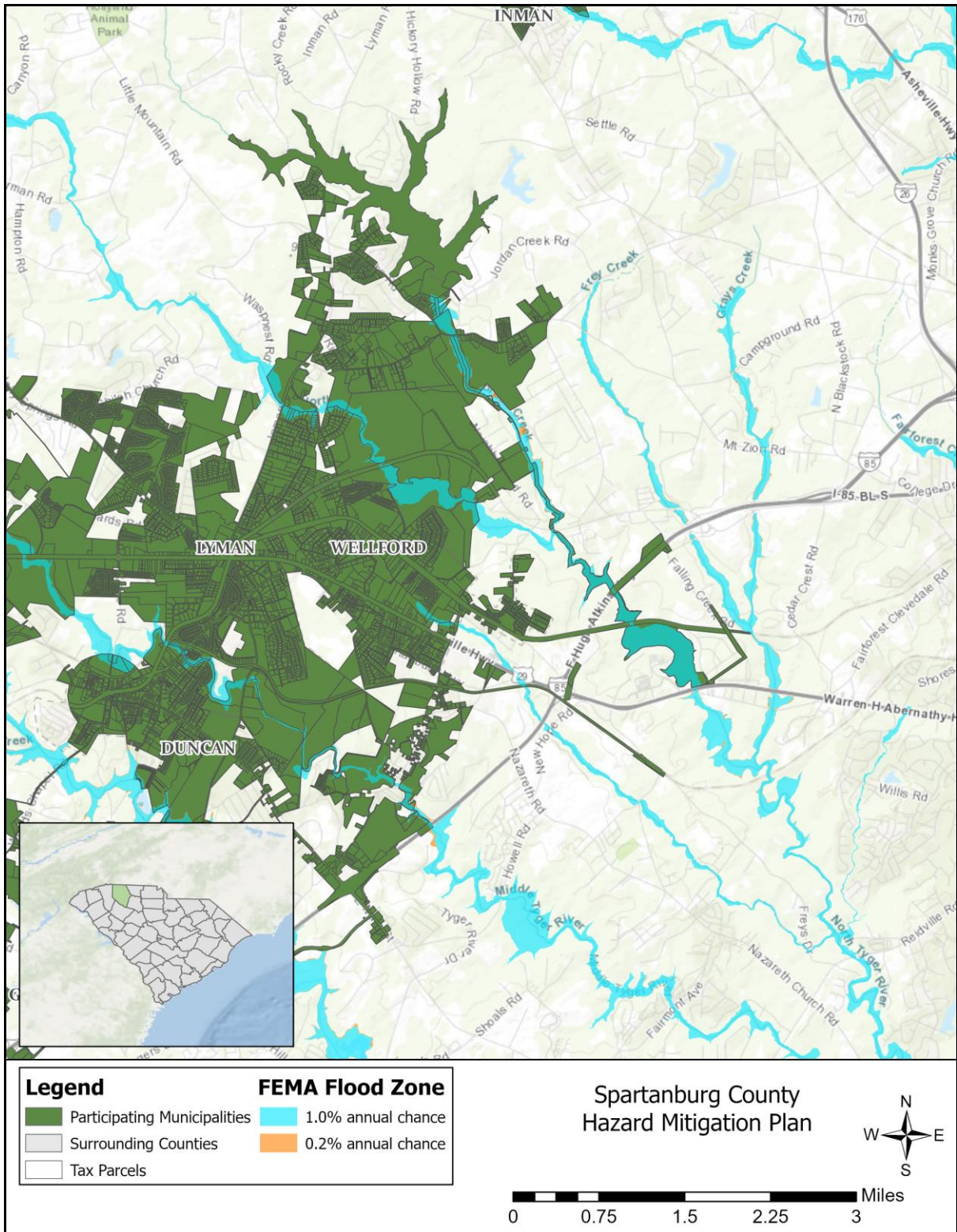
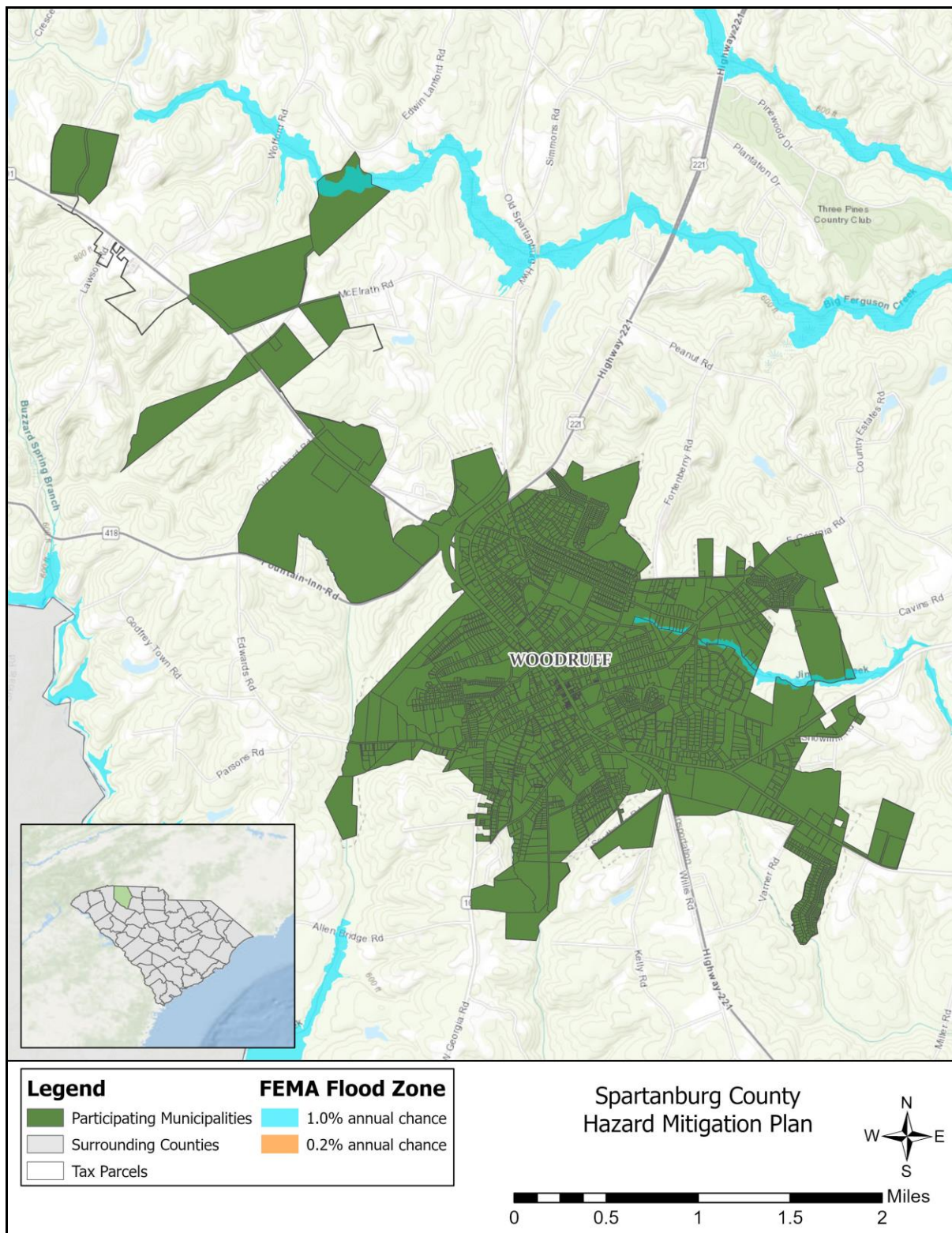


FIGURE 5.29: SPECIAL FLOOD HAZARD AREAS IN WOODRUFF



Source: Federal Emergency Management Agency

5.13.3 Historical Occurrences

Flooding was at least partially responsible for three disaster declarations in Spartanburg County in 1990, 2015, and 2020.⁷⁴ Information from the National Centers for Environmental Information (NCEI) was used to ascertain additional historical flood events. The NCEI reported a total of 72 events throughout Spartanburg County since 1996.⁷⁵ A summary of these events is presented in **Table 5.29**. These events accounted for over \$14.3 million (2022 dollars) in property damage throughout the county as well as one fatality and two injuries.⁷⁶ Specific information on flood events for each jurisdiction, including date, type of flooding, and deaths and injuries, can be found in **Table 5.30**.

TABLE 5.29: SUMMARY OF FLOOD OCCURRENCES IN SPARTANBURG COUNTY

Location	Number of Occurrences	Deaths/Injuries	Property Damage (2022)	Annualized Property Loss
Campobello	1	0/0	\$0	\$0
Chesnee	0	0/0	\$0	\$0
Cowpens	0	0/0	\$0	\$0
Duncan	2	0/0	\$0	\$0
Greer	6	0/0	\$1,291,883	\$49,687
Inman	3	0/0	\$0	\$0
Landrum	5	0/0	\$0	\$0
Lyman	2	0/0	\$0	\$0
Pacolet	0	0/0	\$0	\$0
Reidville	1	0/0	\$0	\$0
Spartanburg (city)	12	0/0	\$5,398,179	\$207,622
Wellford	0	0/0	\$0	\$0
Woodruff	0	0/0	\$0	\$0
Unincorporated Area	40	1/2	\$7,703,854	\$296,302
SPARTANBURG COUNTY TOTAL	72	1/2	\$14,393,916	\$553,611

Source: National Climatic Data Center

TABLE 5.30: HISTORICAL FLOOD OCCURRENCES IN SPARTANBURG COUNTY

	Date	Type	Deaths/Injuries	Property Damage*
Campobello				
CAMPOBELLO	7/14/2005	Flash Flood	0/0	\$0
Chesnee				
None Reported	--	--	--	--

⁷⁴ A complete listing of historical disaster declarations can be found in Section 4: *Hazard Profiles*.

⁷⁵ These flood events are only inclusive of those reported by the National Centers for Environmental Information (NCEI) from 1996 through May 2022. It is likely that additional occurrences have occurred and have gone unreported in Spartanburg County. As additional local data becomes available, this hazard profile will be amended.

⁷⁶ Adjusted dollar values were calculated based on the average Consumer Price Index for a given calendar year. This index value has been calculated every year since 1913. For 2022, the July 2022 monthly index was used.

SECTION 5: HAZARD PROFILES

	Date	Type	Deaths/Injuries	Property Damage*
Cowpens				
<i>None Reported</i>	--	--	--	--
Duncan				
DUNCAN	7/10/1997	Flash Flood	0/0	\$0
DUNCAN	3/20/2000	Flash Flood	0/0	\$0
Greer				
GREER	8/7/2003	Flash Flood	0/0	\$79,170
GREER	8/7/2003	Flash Flood	0/0	\$15,834
GREER	6/28/2005	Flash Flood	0/0	\$0
GREER	6/1/2010	Flash Flood	0/0	\$26,820
EAST GREER	8/9/2014	Flash Flood	0/0	\$24,577
GREER	2/6/2020	Flood	0/0	\$1,145,482
Inman				
INMAN	7/25/2001	Flood	0/0	\$0
INMAN	10/15/2002	Flood	0/0	\$0
INMAN	3/1/2007	Flood	0/0	\$0
Landrum				
LANDRUM	1/8/1998	Flash Flood	0/0	\$0
LANDRUM	12/24/2002	Flash Flood	0/0	\$0
LANDRUM	1/24/2010	Flash Flood	0/0	\$0
LANDRUM	1/25/2010	Flood	0/0	\$0
LANDRUM	2/5/2010	Flood	0/0	\$0
Lyman				
LYMAN	9/15/2002	Flash Flood	0/0	\$0
LYMAN	12/9/2004	Flash Flood	0/0	\$0
Pacolet				
<i>None Reported</i>	--	--	--	--
Reidville				
REIDVILLE	10/10/1999	Flash Flood	0/0	\$0
Spartanburg (city)				
SPARTANBURG	6/14/1997	Flash Flood	0/0	\$0
SPARTANBURG	10/26/1997	Flash Flood	0/0	\$0
SPARTANBURG	8/14/1998	Flash Flood	0/0	\$4,472,093
SPARTANBURG	8/15/1998	Flash Flood	0/0	\$894,418
SPARTANBURG	7/7/1999	Flood	0/0	\$0
SPARTANBURG	7/7/1999	Flash Flood	0/0	\$0
SPARTANBURG	7/23/2000	Flood	0/0	\$0
SPARTANBURG	9/1/2000	Flash Flood	0/0	\$0
SPARTANBURG	6/25/2001	Flash Flood	0/0	\$0
SPARTANBURG	12/24/2002	Flash Flood	0/0	\$0
SPARTANBURG	8/5/2003	Flash Flood	0/0	\$31,668
SPARTANBURG	12/10/2004	Flash Flood	0/0	\$0
Wellford				
<i>None Reported</i>	--	--	--	--

SECTION 5: HAZARD PROFILES

	Date	Type	Deaths/Injuries	Property Damage*
Woodruff				
<i>None Reported</i>	--	--	--	--
Unincorporated Area				
SPARTANBURG COUNTY	1/27/1996	Flood	0/0	\$0
SPARTANBURG COUNTY	12/1/1996	Flash Flood	0/0	\$0
ENOREE	7/23/1997	Flash Flood	0/0	\$364,231
CLIFTON	2/3/1998	Flash Flood	0/0	\$0
NORTH PORTION	5/29/1998	Flash Flood	0/0	\$0
PELHAM	9/15/2002	Flash Flood	0/0	\$0
NORTH PORTION	3/20/2003	Flash Flood	0/0	\$0
SPARTANBURG COUNTY	3/20/2003	Flood	0/0	\$1,586,840
SPARTANBURG COUNTY	4/18/2003	Flood	0/1	\$39,757
SPARTANBURG COUNTY	5/22/2003	Flood	0/0	\$0
SPARTANBURG COUNTY	2/6/2004	Flood	0/0	\$0
EAST CENTRAL PORTION	6/21/2004	Flash Flood	0/0	\$0
SPARTANBURG COUNTY	9/7/2004	Flood	0/0	\$30,784
SPARTANBURG COUNTY	9/17/2004	Flood	0/0	\$0
CENTRAL PORTION	9/27/2004	Flash Flood	0/0	\$30,784
SPARTANBURG COUNTY	9/27/2004	Flood	0/0	\$0
NORTH PORTION	7/7/2005	Flash Flood	0/0	\$1,645,473
SPARTANBURG COUNTY	7/7/2005	Flood	0/0	\$0
BOILING SPGS	8/10/2005	Flash Flood	0/0	\$2,232,403
SPARTANBURG COUNTY	10/7/2005	Flood	0/0	\$293,469
ARKWRIGHT	11/11/2009	Flash Flood	0/0	\$0
CAMPOBELLO ARPT	11/11/2009	Flash Flood	0/0	\$0
CAMPOBELLO ARPT	11/11/2009	Flood	0/0	\$0
HOLLY SPGS	12/2/2009	Flood	0/0	\$0
CAMPOBELLO ARPT	12/2/2009	Flood	0/0	\$0
WHITNEY	8/20/2011	Flash Flood	0/0	\$64,511
CASHVILLE	10/7/2013	Flash Flood	0/0	\$0
CAMPOBELLO ARPT	8/10/2014	Flood	0/0	\$12,288
WHITNEY	5/28/2015	Flash Flood	0/0	\$6,145
SAXON	10/1/2015	Flash Flood	1/1	\$245,794
GLENDALE	10/1/2015	Flood	0/0	\$1,228
CAMPOBELLO ARPT	8/11/2017	Flash Flood	0/0	\$603
CAMPOBELLO ARPT	5/29/2018	Flood	0/0	\$588
CAMPOBELLO ARPT	10/11/2018	Flood	0/0	\$585
CAMPOBELLO ARPT	11/12/2018	Flood	0/0	\$587
CAMPOBELLO ARPT	11/15/2018	Flood	0/0	\$587
CAMPOBELLO ARPT	12/21/2018	Flood	0/0	\$589
CAMPOBELLO ARPT	2/6/2020	Flash Flood	0/0	\$572,741
CAMPOBELLO ARPT	2/6/2020	Flood	0/0	\$572,741
FINGERVILLE	7/24/2021	Flash Flood	0/0	\$1,126

*Property damage is reported in 2022 dollars; all damage may not have been reported.

Source: National Climatic Data Center

5.13.4 Historical Summary of Insured Flood Losses

According to FEMA flood insurance policy records as of October 2022, there have been 76 flood losses reported in Spartanburg County through the National Flood Insurance Program (NFIP) since 1978, totaling more than \$1.3 million in claims payments. A summary of these figures for each jurisdiction is provided in **Table 5.31**. It should be emphasized that these numbers include only those losses to structures that were insured through the NFIP policies and for losses in which claims were sought and received. It is likely that many additional instances of flood loss in Spartanburg County were either uninsured, denied claims payment, or not reported.

TABLE 5.31: SUMMARY OF INSURED FLOOD LOSSES IN SPARTANBURG COUNTY

Location	Flood Losses	Claims Payments
Campobello	0	\$0
Chesnee	3	\$14,914
Cowpens*	2	\$81,187
Duncan	1	\$757
Greer	4	\$12,383
Inman	7	\$49,017
Landrum	0	\$0
Lyman	2	\$19,538
Pacolet	1	\$1,811
Reidville*	--	--
Spartanburg (city)	31	\$379,265
Wellford*	--	--
Woodruff	0	\$0
Unincorporated Area	25	\$761,764
SPARTANBURG COUNTY TOTAL	76	\$1,320,636

*These communities do not participate in the National Flood Insurance Program. The only 2 policies in Cowpens, SC were closed in 2004 and 2005 and the community does not currently participate in the NFIP.

Source: Federal Emergency Management Agency, National Flood Insurance Program

5.13.5 Repetitive and Severe Repetitive Loss Properties

FEMA defines a repetitive loss property as any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978. A repetitive loss property may or may not be currently insured by the NFIP. Currently there are over 150,000 repetitive loss properties nationwide.⁷⁷

As of September 2022, there are 9 repetitive loss properties located in Spartanburg County, one of which is mitigated. These include 6 properties in Spartanburg (city) as well as one property in each of the following municipalities: Chesnee, Cowpens, and Inman. One of these properties is a commercial property and 8 are single-family residential. Unmitigated repetitive and severe repetitive loss properties will likely continue to experience flood losses.

⁷⁷ https://www.fema.gov/sites/default/files/2020-05/fim_appendix-i-severe-repetitive-loss-properties_apr2020.pdf

5.13.6 Probability of Future Occurrences

Flood events will remain a threat in Spartanburg County, and the probability of future occurrences is “highly likely” (100 percent annual probability). The probability of future flood events based on magnitude and according to best available data is illustrated in the figures above, which indicates those areas susceptible to the 1-percent annual chance flood (100-year floodplain) and the 0.2-percent annual chance flood (500-year floodplain).

It can be inferred from the floodplain location maps, previous occurrences, and repetitive loss properties that risk varies throughout Spartanburg County. For example, Spartanburg (city) has more floodplains and thus likely has more property at risk of flood than the other municipalities. Mitigation actions may be warranted, particularly for repetitive loss properties. Furthermore, flooding is expected to increase due the impact of climate change increasing the frequency and intensity of precipitation events.⁷⁸ Because flooding is already highly likely under the current climactic conditions in Spartanburg County, damages related to flooding will likely increase where mitigation measures are not taken.

Other Hazards

5.14 WILDFIRE

5.14.1 Background

A wildfire is any outdoor fire (i.e., grassland, forest, brush land) that is not under control, supervised, or prescribed.⁷⁹ Wildfires are part of the natural management of forest ecosystems but may also be caused by human factors.

Nationally, over 80 percent of forest fires are started by negligent human behavior such as smoking in wooded areas or improperly extinguishing campfires. The second most common cause for wildfires is lightning. In South Carolina, 98 percent of wildfires are human-caused. The number one cause is woods arson followed by debris burning.

There are three classes of wildland fires: surface fire, ground fire, and crown fire.⁸⁰ A surface fire is the most common of these three classes and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire (muck fire) is usually started by lightning or human carelessness and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildfires are usually signaled by dense smoke that fills the area for miles around.

Wildfire probability depends on local weather conditions, outdoor activities such as camping, debris burning, and construction, and the degree of public cooperation with fire prevention measures. Drought conditions and other natural hazards (such as tornadoes, hurricanes, etc.) increase the probability of wildfires by producing fuel in both urban and rural settings.

⁷⁸ <https://www.c2es.org/content/extreme-precipitation-and-climate-change/>

⁷⁹ Prescription burning, or “controlled burn,” undertaken by land management agencies is the process of igniting fires under selected conditions, in accordance with strict parameters.

⁸⁰ <https://www.nps.gov/articles/wildland-fire-spread-and-suppression.htm>

Many individual homes and cabins, subdivisions, resorts, recreational areas, organizational camps, businesses, and industries are located within high wildfire hazard areas. Furthermore, the increasing demand for outdoor recreation places more people in wildlands during holidays, weekends, and vacation periods. Unfortunately, wildland residents and visitors are rarely educated or prepared for wildfire events that can sweep through the brush and timber and destroy property within minutes.

Wildfires can result in severe economic losses as well. Businesses that depend on timber, such as paper mills and lumber companies, experience losses that are often passed along to consumers through higher prices and sometimes jobs are lost. The high cost of responding to and recovering from wildfires can deplete state resources and increase insurance rates. The economic impact of wildfires can also be felt in the tourism industry if roads and tourist attractions are closed due to health and safety concerns.

State and local governments can impose fire safety regulations on home sites and developments to help curb wildfires. Land treatment measures such as fire access roads, water storage, helipads, safety zones, buffers, firebreaks, fuel breaks, and fuel management can be designed as part of an overall fire defense system to aid in fire control. Fuel management, prescribed burning, and cooperative land management planning can also be encouraged to reduce fire hazards.

5.14.2 Location and Spatial Extent

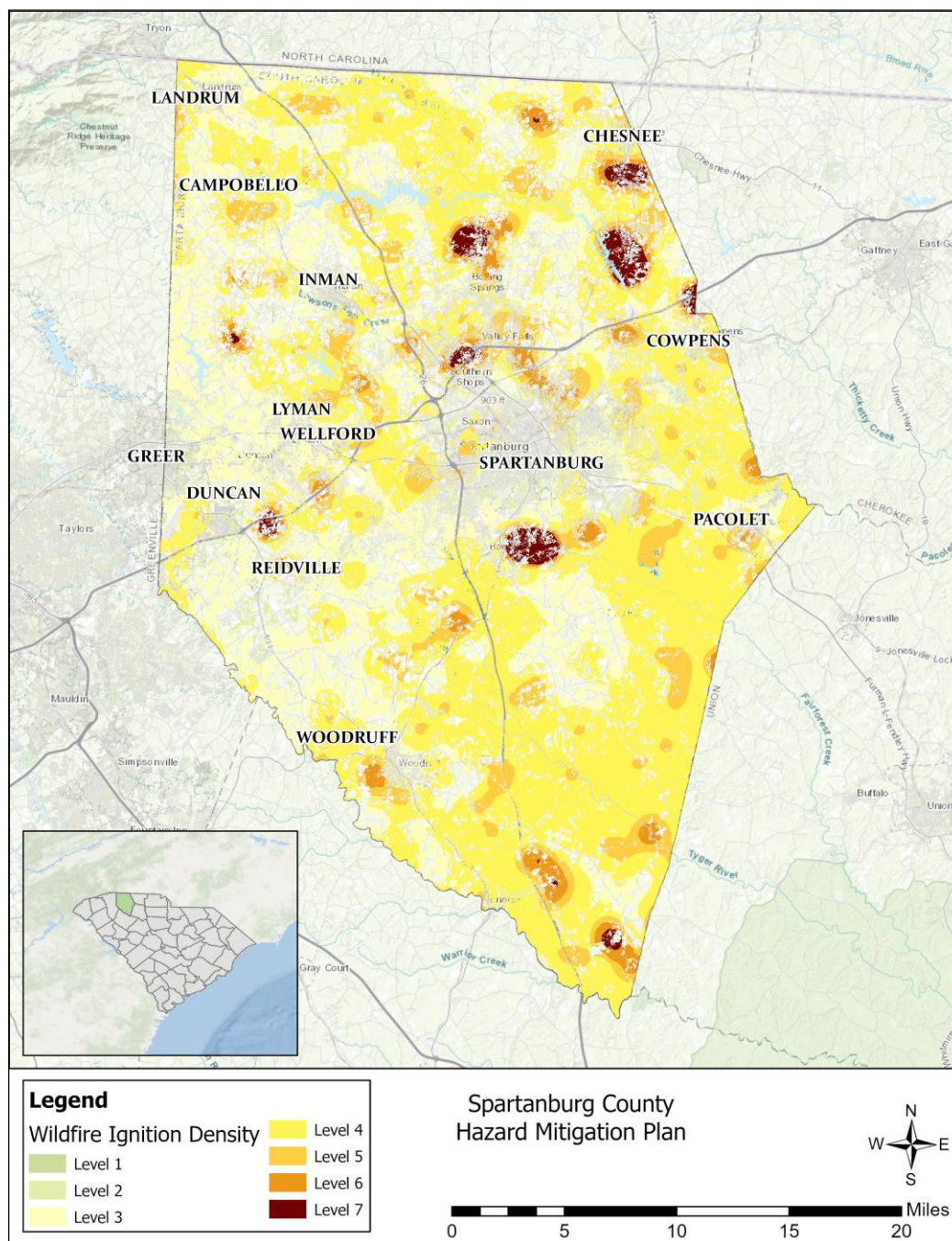
The entire county is at risk of a wildfire occurrence. However, several factors such as drought conditions or high levels of fuel on the forest floor may make a wildfire more likely in some locations. Furthermore, areas in the wildland-urban interface are particularly susceptible to fire hazard as populations abut formerly undeveloped areas. The Wildfire Ignition Density data shown in the figure below gives an indication of the historic locations of wildfires in Spartanburg County. These data from the Southern Wildfire Risk Assessment (**Figure 5.30**) indicate that the areas around the jurisdictions of Chesnee, Cowpens, and Duncan have greater levels of wildfire ignition density than other jurisdictions within Spartanburg County. Burn probability data from the Southern Wildfire Risk Assessment (**Figure 5.31**) shows that the jurisdictions of Spartanburg City and Pacolet have lower levels of burn probability than other jurisdictions within the county.

5.14.3 Historical Occurrences

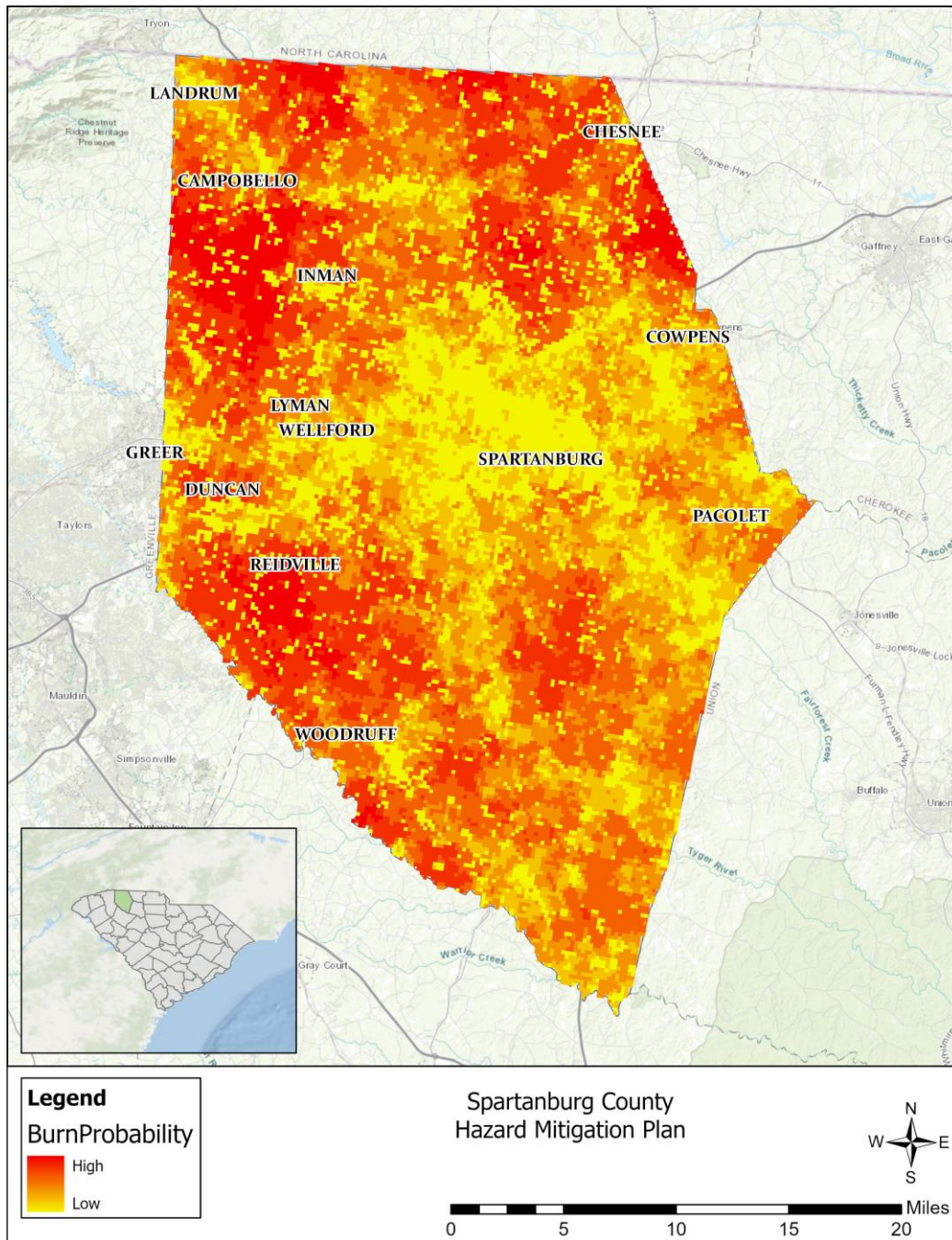
Figure 5.30 shows the Wildfire Ignition Density in Spartanburg County and **Figure 5.31** shows burn probability based on data from the Southern Wildfire Risk Assessment. This data is based on historical fire ignitions and the likelihood of a wildfire igniting in an area. Occurrence is derived by modeling historic wildfire ignition locations to create an average ignition rate map. This is measured in the number of fires per year per 1,000 acres.⁸¹

⁸¹ Southern Wildfire Risk Assessment, 2022.

FIGURE 5.30: WILDFIRE IGNITION DENSITY IN SPARTANBURG COUNTY



Source: Southern Wildfire Risk Assessment

FIGURE 5.31: BURN PROBABILITY IN SPARTANBURG COUNTY

Source: Southern Wildfire Risk Assessment

Based on data from the South Carolina Forestry Commission from 2010 through 2019, Spartanburg County experiences 18.5 fires per year on average. The greatest number of fires reported for a given year was 31 fires in 2010. The greatest number of acres burned in a given year was 244 acres in 2010. **Table 5.32** provides a summary table for wildfire occurrences in the county. **Table 5.33** lists the number of reported wildfire occurrences in the county between the years 2006 and 2015.

TABLE 5.32: SUMMARY TABLE OF ANNUAL WILDFIRE OCCURRENCES IN SPARTANBURG COUNTY (2010-2019) *

Spartanburg County	
Average Number of Fires per Year	18.5 fires
Average Number of Acres Burned per Year	75.34 fires
Average Number of Acres Burned per Fire	4.07 acres

*These values reflect averages over a 10-year period: 2010 - 20.

Source: South Carolina Forestry Commission

TABLE 5.33: HISTORICAL WILDFIRE OCCURRENCES IN SPARTANBURG COUNTY

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Spartanburg County										
Number of Fires	31	13	20	18	15	13	41	15	10	9
Number of Acres	244	21.8	112.1	54.1	43.7	38.3	144	30.1	17.2	48.1

Source: South Carolina Forestry Commission

5.14.4 Probability of Future Occurrences

Wildfire events will be an ongoing occurrence in Spartanburg County. **Figure 5.31** shows that there is some probability a wildfire will occur throughout the county. However, the likelihood of wildfires increases during drought cycles and abnormally dry conditions. Fires are likely to stay small in size but could increase due local climate and ground conditions. Dry, windy conditions with an accumulation of forest floor fuel (potentially due to ice storms or lack of fire) could create conditions for a large fire that spreads quickly. It should also be noted that some areas do vary somewhat in risk.

For example, highly developed areas are less susceptible unless they are located near the urban-wildland boundary, or the zone of transition between unoccupied land and human development.⁸² The risk will also vary due to assets. Areas in the urban-wildland interface will have much more property at risk, resulting in increased vulnerability and need to mitigate compared to rural, mainly forested areas.

The impacts of climate change will increase the probability of future wildfire for several reasons. Research reported by the Center for Climate and Energy Solutions found that the Southeastern United States will have increased wildfire risk and a prolonged fire season due to changing average temperatures. Furthermore, this climate modelling projects a 30% increase in total area burned by wildfire between 2011 and 2060.⁸³ The probability assigned to Spartanburg County for future wildfire events is “likely” (between 10 and 100 percent annual probability).

⁸² <https://www.usfa.fema.gov/wui/what-is-the-wui.html#:~:text=The%20WUI%20is%20the%20zone,undeveloped%20wildland%20or%20vegetative%20fuels.>

⁸³ <https://www.c2es.org/content/wildfires-and-climate-change/>

5.15 HAZARDOUS MATERIALS INCIDENT

5.15.1 Background

Hazardous materials can be found in many forms and quantities that can potentially cause death; serious injury; long-lasting health effects; and damage to buildings, homes, and other property in varying degrees. Such materials are routinely used and stored in many homes and businesses and are also shipped daily on the nation's highways, railroads, waterways, and pipelines.⁸⁴ This subsection on the hazardous materials hazard is intended to provide a general overview of the hazard. The threshold for identifying fixed and mobile sources of hazardous materials is limited to general information on rail, highway, and FEMA-identified fixed HAZMAT sites determined to be of greatest significance as appropriate for the purposes of this Plan.

Hazardous material (HAZMAT) incidents can apply to fixed facilities as well as mobile, transportation-related accidents in the air, by rail, on the nation's highways, and on the water. Approximately 6,774 HAZMAT incidents occur each year; 5,517 of which are highway incidents, 991 are railroad incidents, and 266 are due to other causes.⁸⁵ In essence, HAZMAT incidents consist of solid, liquid, and/or gaseous contaminants that are released from fixed or mobile containers, whether by accident or by design as with an intentional terrorist attack. A HAZMAT incident can last hours to days, while some chemicals can be corrosive or otherwise damaging over longer periods of time. In addition to the primary release, explosions and/or fires can result from a release, and contaminants can be extended beyond the initial area by persons, vehicles, water, wind, and possibly wildlife as well.

HAZMAT incidents can also occur as a result of or in tandem with natural hazard events, such as floods, hurricanes, tornadoes, and earthquakes, which in addition to causing incidents can also hinder response efforts. In the case of Hurricane Floyd in September 1999, communities along the Eastern United States were faced with flooded junkyards, disturbed cemeteries, deceased livestock, floating propane tanks, uncontrolled fertilizer spills, and a variety of other environmental pollutants that caused widespread toxicological concern.⁸⁶

Hazardous material incidents can include the spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of a hazardous material into the environment, but exclude: (1) any release which results in exposure to poisons solely within the workplace with respect to claims which such persons may assert against the employer of such persons; (2) emissions from the engine exhaust of a motor vehicle, rolling stack, aircraft, vessel, or pipeline pumping station engine; (3) release of source, byproduct, or special nuclear material from a nuclear incident; and (4) the normal application of fertilizer.⁸⁷

⁸⁴ https://www.epa.gov/sites/default/files/2014-09/documents/cleanrt10_12_distiller_complete.pdf

⁸⁵ FEMA, 1997.

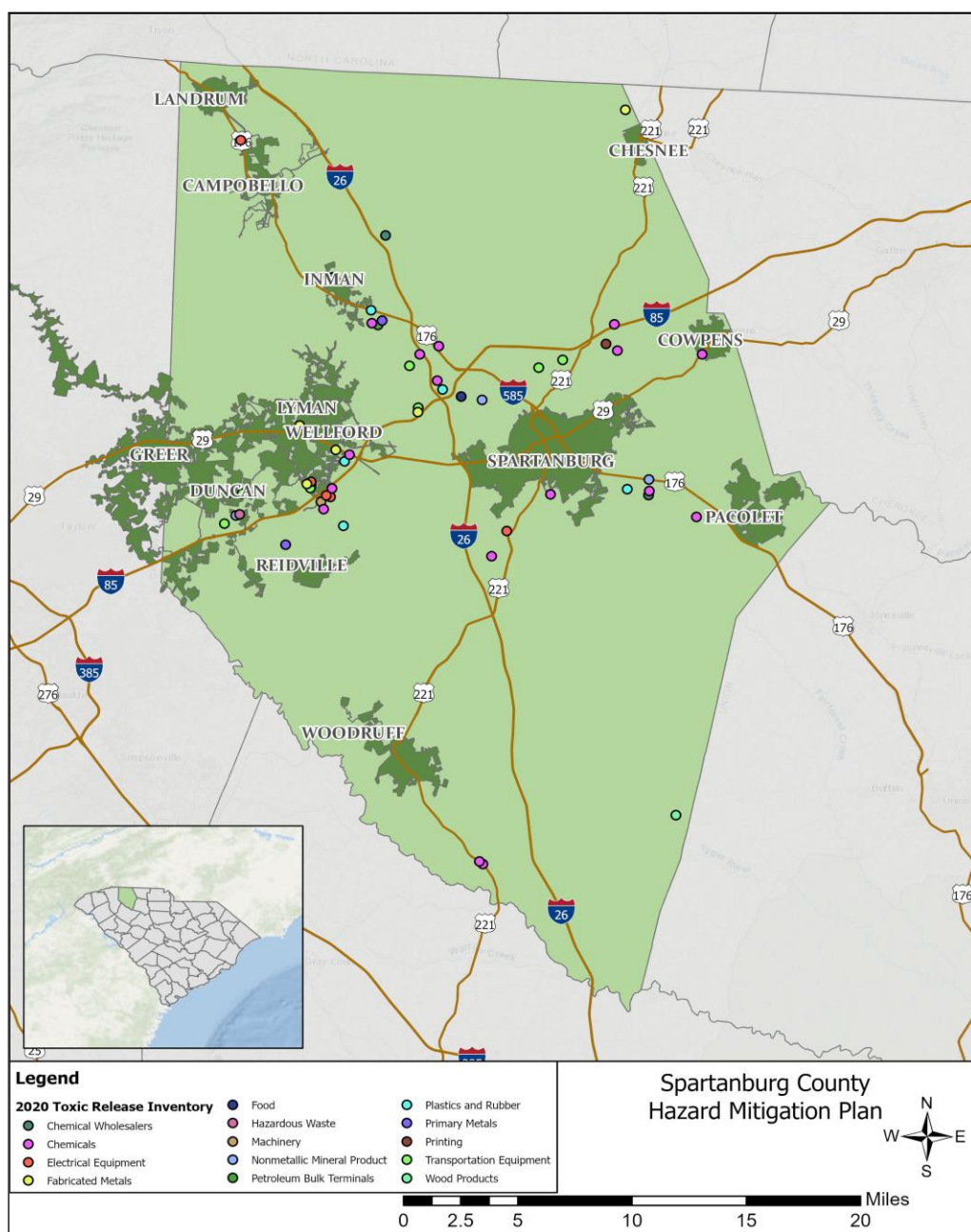
⁸⁶ <https://wtop.com/gallery/media-galleries/photos-looking-back-at-hurricane-floyds-destruction-20-years-later/>

⁸⁷ <https://www.epa.gov/epcra/definition-release>

5.15.2 Location and Spatial Extent

As a result of the 1986 Emergency Planning and Community Right to Know Act (EPCRA), the Environmental Protection Agency (EPA) provides public information on hazardous materials. One facet of this program is to collect information from industrial facilities on the releases and transfers of certain toxic agents. This information is then reported in the Toxic Release Inventory (TRI). TRI sites indicate where such activity is occurring. Spartanburg County has 239 TRI sites. These sites are shown in **Figure 5.32**.

FIGURE 5.32: TOXIC RELEASE INVENTORY (TRI) SITES IN SPARTANBURG COUNTY



Several participating jurisdictions within Spartanburg County contain TRI sites. There are no sites within Campobello, Chesnee, Landrum, Woodruff, Pacolet, Reidville, or Spartanburg City. Cowpens, Duncan, Inman, Lyman, and Wellford all contain 1 site each, and Greer contains 3 sites. Unincorporated areas within the county contain 231 sites total.

In addition to “fixed” hazardous materials locations, hazardous materials may also impact the county via roadways and rail. Many roads in the county are subject to hazardous materials transport and all roads that permit hazardous materials transport are considered potentially at risk to an incident.

5.15.3 Historical Occurrences

The U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) lists historical occurrences throughout the nation.⁸⁸ A “serious incident” is a hazardous materials incident that involves:

- ❖ a fatality or major injury caused by the release of a hazardous material,
- ❖ the evacuation of 25 or more persons as a result of release of a hazardous material or exposure to fire,
- ❖ a release or exposure to fire which results in the closure of a major transportation artery,
- ❖ the alteration of an aircraft flight plan or operation,
- ❖ the release of radioactive materials from Type B packaging,
- ❖ the release of over 11.9 gallons or 88.2 pounds of a severe marine pollutant, or
- ❖ the release of a bulk quantity (over 199 gallons or 882 pounds) of a hazardous material.

There have been a total of 677 recorded HAZMAT incidents in Spartanburg County since 1989 (**Table 5.34**). These events resulted in over \$5 million (2022 dollars) of property damage as well as 6 fatalities.⁸⁹ **Table 5.35** presents detailed information on historical HAZMAT incidents in Spartanburg County as reported by the PHMSA. However, due to the high number of reported incidents, detailed information is only provided for those incidents that are classified as serious incidents.

TABLE 5.34: SUMMARY OF HAZMAT INCIDENTS IN SPARTANBURG COUNTY

Location	Number of Occurrences	Deaths/Injuries	Property Damage (2022)	Annualized Property Loss
Campobello	1	0/0	\$1,972	\$60
Chesnee	5	0/0	\$366,539	\$11,107
Cowpens	4	0/0	\$3,823	\$115
Duncan	217	0/0	\$134,261	\$4,068
Greer	85	0/0	\$423,793	\$12,842
Inman	8	0/0	\$16,346	\$495
Landrum	2	0/0	\$17,336	\$525

⁸⁸ <https://www.phmsa.dot.gov/data-and-statistics/pipeline/national-pipeline-performance-measures#:~:text=%22Serious%20Incidents%22%20include%20a%20fatality,are%20excluded%20from%20this%20definition.>

⁸⁹ Adjusted dollar values were calculated based on the average Consumer Price Index for a given calendar year. This index value has been calculated every year since 1913. For 2022, the July 2022 monthly index was used.

SECTION 5: HAZARD PROFILES

Location	Number of Occurrences	Deaths/Injuries	Property Damage (2022)	Annualized Property Loss
Lyman	0	0/0	\$0	\$0
Pacolet	0	0/0	\$0	\$0
Reidville	2	0/0	\$130,091	\$3,942
Spartanburg (city)	215	6/0	\$3,447,745	\$104,477
Wellford	88	0/0	\$67,707	\$2,051
Woodruff	1	0/0	\$8,848	\$268
Unincorporated Area	47	0/0	\$47,050	\$1,425
SPARTANBURG COUNTY TOTAL	611	8/11	\$5,795,111	\$175,609

Source: United States Department of Transportation Pipeline and Hazardous Materials Safety Administration

TABLE 5.35: SERIOUS HAZMAT INCIDENTS IN SPARTANBURG COUNTY

Report Number	Date	City	Mode	Serious Incident?	Fatalities / Injuries	Damages (\$)*	Quantity Released
Campobello							
None Reported	--	--	--	--	--	--	--
Chesnee							
I-2001010113	12/14/2000	CHESNEE	Highway	Yes	0/0	\$7,021	500 LGA
I-200040183	3/1/2020	CHESNEE	Highway	Yes	0/0	\$359,518	500 LGA
Duncan							
I-1991110419	11/5/1991	DUNCAN	Highway	Yes	0/0	\$13,976	220 LGA
I-2002030621	11/8/2001	DUNCAN	Highway	Yes	0/0	\$2,199	300 LGA
E-2014030324	3/19/2014	DUNCAN	Highway	Yes	0/0	\$20,014	200 LGA
Greer							
I-1996100240	6/21/1996	GREER	Highway	Yes	0/0	\$6,333	300 LGA
I-2010070153	6/14/2010	GREER	Highway	Yes	0/0	\$820	200 LGA
E-2010060514	7/23/2018	GREER	Highway	Yes	0/0	\$268,974	200 LGA
E-2020040310	3/5/2020	GREER	Highway	Yes	0/0	\$11,486	250 LGA
Inman							
I-1997090962	9/14/1997	INMAN	Highway	Yes	0/0	\$58,638	6,000 LGA
I-2008090476	4/13/2008	INMAN	Highway	Yes	0/0	\$6,961	150 LGA
Landrum							
I-1996040982	4/4/1996	LANDRUM	Highway	Yes	0/1	\$15,214	292 LGA
Lyman							
None Reported	--	--	--	--	--	--	--
Pacolet							
None Reported	--	--	--	--	--	--	--
Reidville							
I-1990030045	2/2/1990	REIDVILLE	Highway	Yes	0/0	\$115,746	1,000 LGA
I-2018050186	4/13/2008	REIDVILLE	Highway	Yes	0/0	\$14,354	4,200 LGA
Spartanburg (city)							
I-1991100679	9/27/1991	SPARTANBURG	Highway	Yes	0/0	\$33,164	380 LGA
I-1992070089	6/3/1992	SPARTANBURG	Highway	Yes	0/0	\$156,186	2,000 LGA

Report Number	Date	City	Mode	Serious Incident?	Fatalities / Injuries	Damages (\$)*	Quantity Released
I-1994050223	4/4/1994	SPARTANBURG	Highway	Yes	0/0	\$133,993	8,700 LGA
I-1995050715	4/12/1995	SPARTANBURG	Highway	Yes	0/0	\$49,878	300 LGA
I-1996010906	1/3/1996	SPARTANBURG	Highway	Yes	0/0	\$26,171	180 LGA
I-1998111483	10/19/1998	SPARTANBURG	Highway	Yes	0/0	\$1,833	400 LGA
I-2003021146	5/24/2002	SPARTANBURG	Highway	Yes	0/0	\$297,301	6,347 LGA
I-2010050380	12/15/2009	SPARTANBURG	Highway	Yes	0/0	\$893,667	2,003 LGA
I-2010050380	12/15/2009	SPARTANBURG	Highway	Yes	0/0	\$893,667	6,032 LGA
I-2012030062	1/6/2012	SPARTANBURG	Highway	Yes	0/0	\$291,982	400 LGA
X-2014090002	8/27/2014	SPARTANBURG	Rail	Yes	0/2	\$12,667	400 LGA
I-2015030430	2/18/2015	SPARTANBURG	Highway	Yes	0/0	\$2,789	187.5 LGA
I-2015080223	6/27/2015	SPARTANBURG	Highway	Yes	3/1	\$145,829	802 LGA
I-2015080223	6/27/2015	SPARTANBURG	Highway	Yes	3/1	\$145,829	7,702 LGA
I-2019120177	11/11/2019	SPARTANBURG	Highway	Yes	0/0	\$38,757	5000 LGA
E-2022010578	12/28/2021	SPARTANBURG	Highway	Yes	0/0	\$21,522	122.5 LGA
Wellford							
None Reported	--	--	--	--	--	--	--
Woodruff							
None Reported	--	--	--	--	--	--	--
Unincorporated Area							
None Reported	--	--	--	--	--	--	--

*Adjusted dollar values were calculated based on the average Consumer Price Index for a given calendar year. This index value has been calculated every year since 1913. For 2022, the July 2022 monthly index was used

Source: United States Department of Transportation Pipeline and Hazardous Materials Safety Administration

5.15.4 Probability of Future Occurrences

Given the location of numerous TRI facilities in Spartanburg County as well as prior roadway, railway, air, and other incidents it is highly likely that a hazardous material incident may occur in the county (100 percent annual probability). However, county and municipal officials are mindful of this possibility and take precautions to prevent such an event from occurring. Additionally, there are detailed plans in place to respond to an occurrence.

5.16 TRANSPORTATION INCIDENT

5.16.1 Background

While transportation accidents occur on a daily basis, large-scale incidents involving commerce or mass transit are uncommon but can have significant impacts on the community. This section will focus on these large-scale incidents, which will include incidents involving airplanes on and off airport properties in Spartanburg County and incidents involving trains. The area has experienced several incidents involving either airplanes or trains, but occurrence is relatively infrequent and significant impacts are rare. The most common impacts involve how the incident will impact daily life, such as travel and commerce.

In Spartanburg County, the most prominent site for air travel is the Greenville-Spartanburg International Airport located in Greer. There are smaller airports within the county, such as Spartanburg Downtown Memorial Airport, which have much smaller operations that are of very low significance to national air travel. Incidents have and will occur both on and off of airport properties, as will be discussed below in Section 5.16.3.

Spartanburg County is also a major thoroughfare for rail commerce and travel. Major rail lines pass through each of the county's municipalities. Norfolk Southern and Amtrak are the two major carriers of cargo and passenger trains.

5.16.2 Location and Spatial Extent

Transportation incidents are most likely to occur along major transportation corridors such as highways, interstates, or railways. However, transportation incidents can occur throughout the county, especially given the number of planes that take flight in and out of regional and local airports. **Figure 5.33**, **Figure 5.34**, and **Figure 5.35** below show the location of major roadways, railways, and airports in Spartanburg County. All Jurisdictions within Spartanburg County are exposed to transportation incidents related to roadways and railways. However, Spartanburg City is uniquely vulnerable to this hazard due to the higher presence of roadways and railways within the jurisdiction. Spartanburg City is traversed by 4 major roadways and at least 6 railways. Other jurisdictions within the county have 2 or less major roadways and railways, reducing their risk to this hazard relative to the county seat.

FIGURE 5.33: MAJOR ROADWAYS IN SPARTANBURG COUNTY

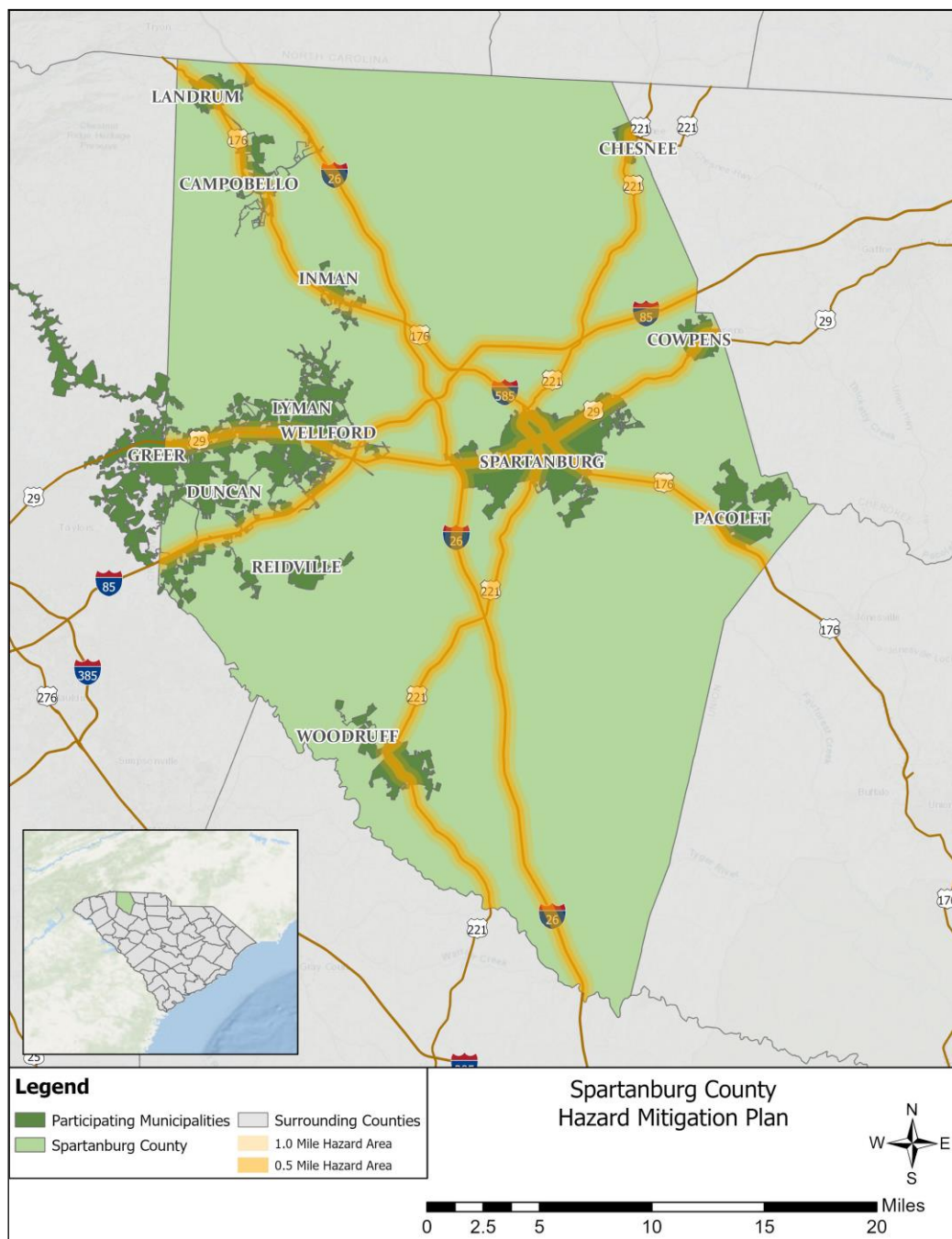
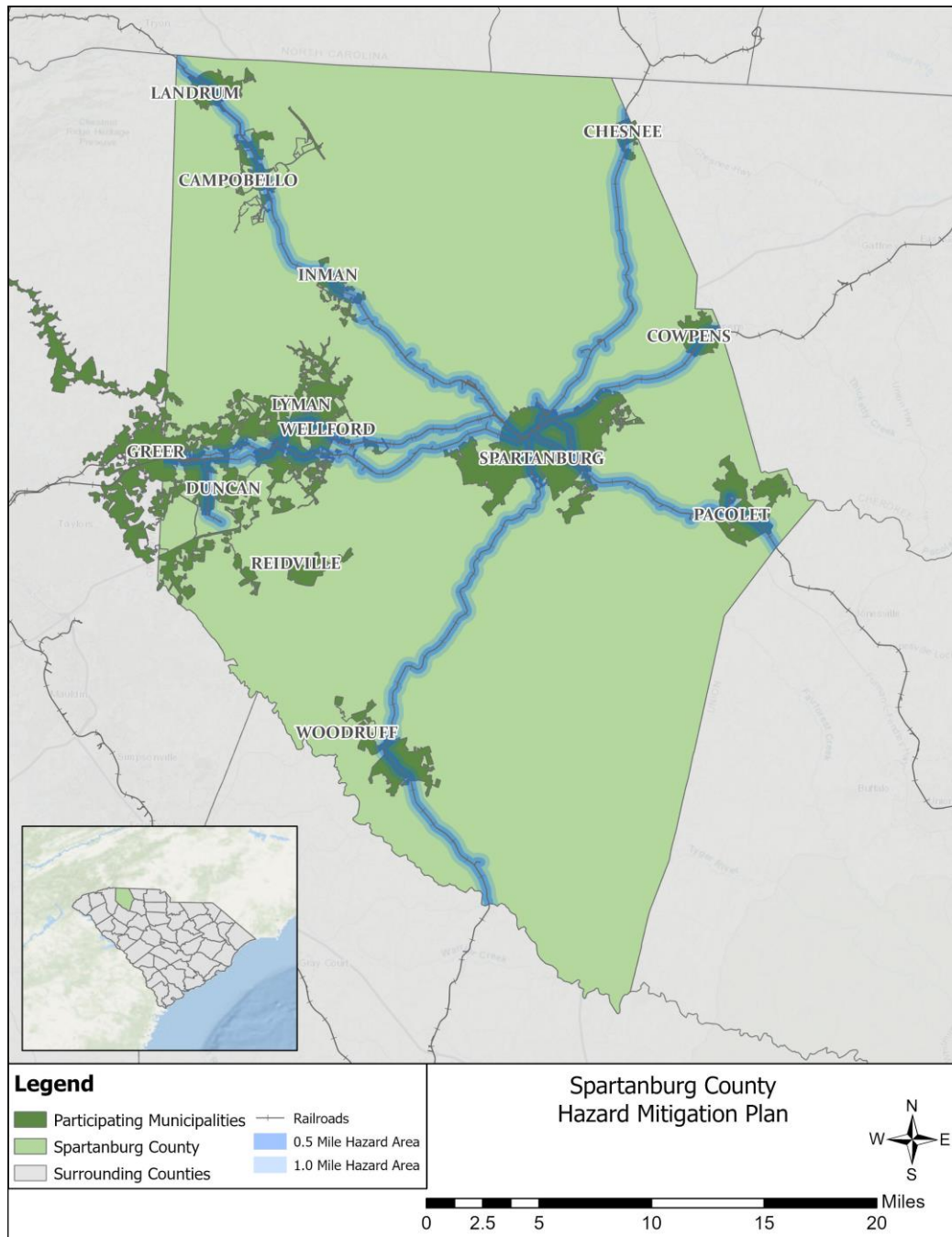
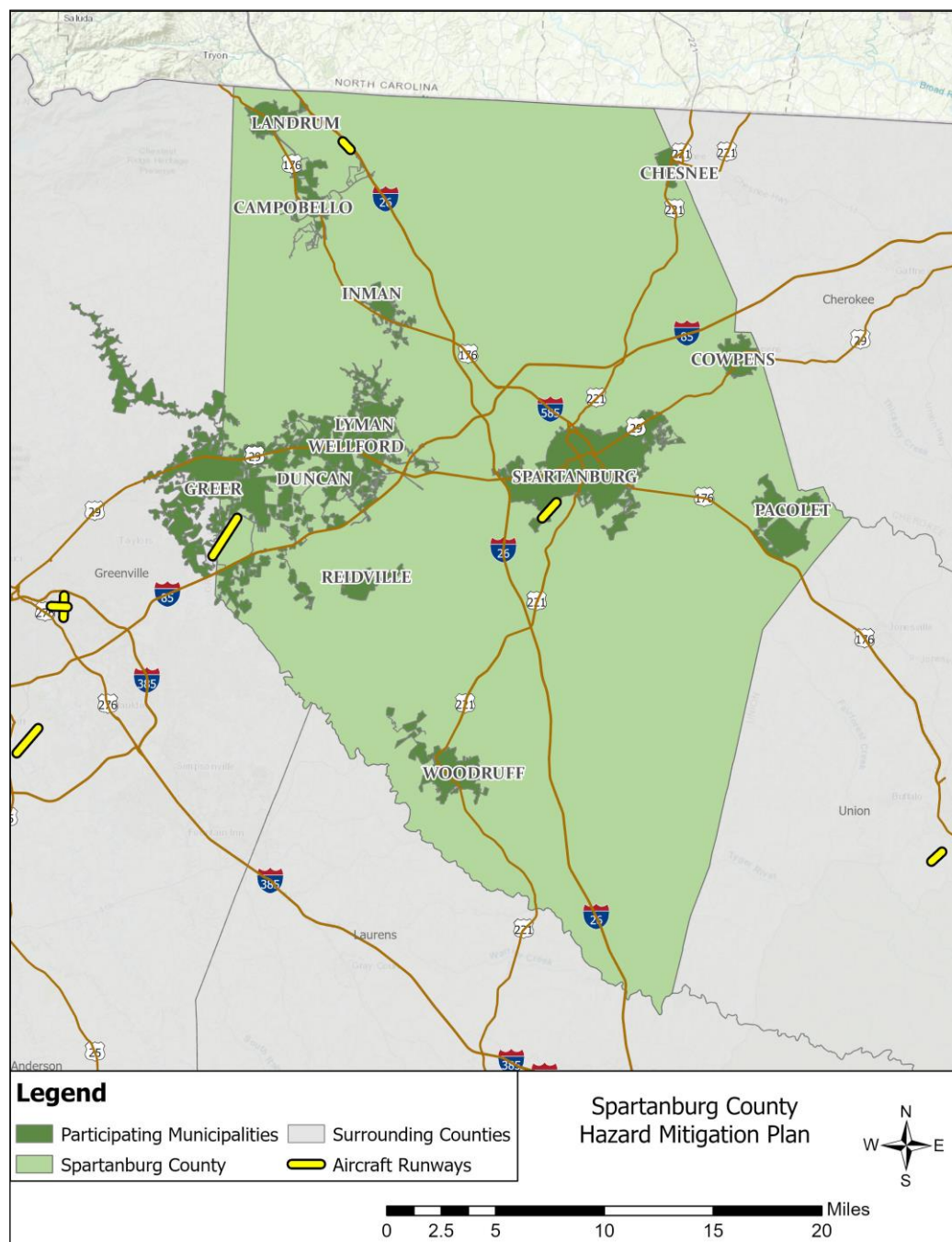


FIGURE 5.34: MAJOR RAILWAYS IN SPARTANBURG COUNTY



Source: United States Department of Transportation Federal Railroad Administration

FIGURE 5.35: AIRCRAFT RUNWAYS IN SPARTANBURG COUNTY



Source: Homeland Infrastructure Foundation-Level Data

5.16.3 Historical Occurrences

There have been several incidents in Spartanburg County involving airplanes. In July 2013, a small World War II biplane crashed near Highway 221 and Mary Hanna Road in Woodruff. The two people in the

plane were unharmed but the crash caused some property damage and also downed several trees. A second incident occurred in October 2015 when a single-engine aircraft went down in a field along Highway 11 in Campobello. The plane flipped when it landed but was not damaged, and the pilot and two passengers did not suffer any injuries that required medical attention. In August 2021 a small plane crashed in a wooded area near the Woodland Heights neighborhood in Spartanburg (city). The three occupants onboard this training flight were treated for their injuries at the Spartanburg Medical Center.

There have also been several incidents within Spartanburg County that involved trains. In March 2011, a children's train ride at Cleveland Park in the City of Spartanburg derailed, killing one child and injuring 28 others. The miniature train overturned near the bridge on Asheville Highway. A second incident occurred in March 2015 when a pedestrian was struck by a train in the unincorporated community of Una. It appeared that the woman attempted to climb over the train when the train slowed down. The woman's shoelaces may have got tangled in a coupling device, causing her to lose balance and go under the train. The woman was taken to the hospital and underwent surgery.

5.16.4 Probability of Future Occurrences

Transportation incidents are considered a highly likely event given that automobile accidents occur nearly every single day to some degree. However, these smaller-scale transportation incidents would have a relatively low impact overall on the community. That said, large-scale transportation incidents are fairly common, and the probability of a major future occurrence is "possible" (between 1 and 10 percent annual probability).

Conclusions

5.17 CONCLUSIONS ON HAZARD RISK

The hazard profiles presented in this section were developed using best available data, (NCEI event reports, NOAA Storm Prediction Center GIS storm data, FEMA NFIP data, and EPA Toxic Release Inventory information) and result in what may be considered principally a qualitative assessment as recommended by FEMA in its "How-to" guidance document titled *Understanding Your Risks: Identifying Hazards and Estimating Losses* (FEMA Publication 386-2). It relies heavily on historical and anecdotal data, stakeholder input, and professional and experienced judgment regarding observed and/or anticipated hazard impacts. It also carefully considers the findings in other relevant plans, studies, and technical reports.

5.17.1 Hazard Extent

Table 5.36 describes the extent of each natural hazard identified for Spartanburg County. The extent of a hazard is defined as its severity or magnitude as it relates to the planning area.

TABLE 5.36: EXTENT OF SPARTANBURG COUNTY HAZARDS

Atmospheric Hazards	
Drought	Drought extent is defined by the U.S. Drought Monitor Classifications which include Abnormally Dry, Moderate Drought, Severe Drought, Extreme Drought, and Exceptional Drought. According to the U.S. Drought Monitor Classifications, the most severe drought condition is Exceptional. Spartanburg County has received this ranking 3 times over the 16-year reporting period.
Hailstorm	Hail extent can be defined by the size of the hail stone. The largest hail stone reported in Spartanburg County was 4.0 inches (reported on May 2, 1957). It should be noted that future events may exceed this.
Heat Wave/Extreme Heat	The extent of extreme heat can be defined by the maximum temperature reached. The highest temperature recorded in Spartanburg County is 106 degrees Fahrenheit (reported on July 20, 1986).
Hurricane/Tropical Storm	Hurricane extent is defined by the Saffir-Simpson Scale which classifies hurricanes into Category 1 through Category 5. The greatest classification of hurricane to traverse directly through Spartanburg County was an unnamed storm in 1949, which reached a maximum wind speed of 50 knots (tropical storm) in the county's 75-mile buffer.
Lightning	Lightning extent is defined according to the Vaisala flash density map, Spartanburg County is located in an area that experiences 1 to 8 lightning flashes per square kilometer per year. It should be noted that future lightning occurrences may exceed these figures.
Severe Thunderstorm/High Wind	Thunderstorm extent is defined by the number of thunderstorm events and wind speeds reported. The strongest recorded wind event in Spartanburg County was last reported on March 10, 1992, at 80 knots (approximately 92 mph). It should be noted that future events may exceed this historical occurrence.
Tornado	Tornado hazard extent is measured by tornado occurrences in the US provided by FEMA as well as the Fujita/Enhanced Fujita Scale. The greatest magnitude reported in Spartanburg County was an F4 (reported on May 5, 1989). It should be noted that an F5 tornado is possible.
Winter Storm and Freeze	The extent of winter storms can be measured by the amount of snowfall received (in inches). The greatest 24-hour snowfall reported in the county was 14.2 inches on March 2, 1942. Due to unpredictable variations in snowfall throughout the county, extent totals will vary for each participating jurisdiction and reliable data on snowfall totals is not abundantly available.
Geologic Hazards	
Earthquake	Earthquake extent can be measured by the Richter Scale and the Modified Mercalli Intensity (MMI) scale and the distance of the epicenter from Spartanburg County. According to data provided by the National Geophysical Data Center, the greatest earthquake to impact the county had a MMI of VII (very strong) and an unknown Richter Scale measurement. However, a corresponding Richter Scale magnitude is < 6.1. This event was reported on September 1, 1886, and the epicenter of this earthquake was located 275.0 kilometers away.
Landslide	As noted above in the landslide profile, no historical landslide data was available. This provides a challenge when trying to determine an accurate extent for the landslide hazard. However, when using USGS landslide susceptibility index, extent can be measured with incidence, which is moderate throughout the northern half of the county and low throughout the southern half. There is also high susceptibility throughout northern half of the county and moderate susceptibility throughout the southern half.

Hydrologic Hazards

Flood

Flood extent can be measured by the amount of land and property in the floodplain as well as flood height and velocity. The amount of land in the floodplain accounts for 5.0 percent of the total land area in Spartanburg County. It should also be noted that local officials recall flooding depths of at least 2-3 feet in some historic events and this is loosely corroborated by NCEI narrative records.

Flood depth and velocity are recorded via USGS stream gages throughout the region. While a gage does not exist for each participating jurisdiction, there is one at or near many jurisdictions. The greatest peak discharge recorded for the region was reported on August 27, 1995. Water reached a discharge of 52,200 cubic feet per second and the stream crest height was recorded at 29.9 feet. Additional peak discharge readings and crest heights are in the table below.

Location/Jurisdiction	Date	Peak Discharge (cfs)	Gage Height (ft)
Spartanburg County			
NORTH PACOLET RIVER AT FINGERVILLE, SC	Aug. 14, 1940	12,500	27.13
SOUTH PACOLET RIVER NR CAMPOBELLO, SC	Feb 6, 2020	9,890	13.03
PACOLET RIVER NEAR FINGERVILLE, SC	Aug. 14, 1940	22,800	22.43
PACOLET RIVER BELOW LAKE BLALOCK NEAR COWPENS, SC	May 23, 2003	22,900	17.1
PACOLET RIVER NEAR CLIFTON, S. C.	May 7, 2020	14,400	23.32
LAWSON'S FORK CREEK AT DEWEY PLANT NR INMAN, SC	May 22, 2003	564	8.63
TRIBUTARY TO CHINQUEPIN CREEK @ SPARTANBURG, SC	Aug. 13, 1986	484	4.7
LAWSON'S FORK CREEK AT SPARTANBURG SC	Feb. 6, 2020	6,480	15.4
LAWSON FORK CREEK @ TREATMENT PLANT @ SPARTANBURG	Oct. 12, 1990	2,360	12.51
N. TYGER RIVER BELOW WELLFORD, SC	May 05, 2013	1,330	14.46
NORTH TYGER RIVER NEAR FAIRMONT, S. C.	Feb. 6, 2020	6,250	10.9
MIDDLE TYGER RIVER NEAR GRAMLING, SC	Aug. 10, 2014	3,040	11.27
BEAVERDAM CREEK ABOVE GREER, SC	Jul. 07, 2005	1,130	11.26
MIDDLE TYGER RIVER AT LYMAN, S.C.	Aug. 14, 1940	4,800	16.16
MIDDLE TYGER RIVER NEAR LYMAN, SC	Feb. 7, 2020	5,800	9.08

	NORTH TYGER RIVER NEAR MOORE, S. C.	Aug. 14, 1940	12,300	7.15
	MAPLE CREEK NEAR DUNCAN, SC	Aug. 17, 1994	N/A	5.83
	SOUTH TYGER RIVER BELOW DUNCAN, SC	Jul. 07, 2005	5,360	16.68
	SOUTH TYGER RIVER BELOW LYMAN, SC	Aug. 17, 1994	1,120	10.08
	SOUTH TYGER RIVER NEAR REIDVILLE, S. C.	Oct. 07, 1949	6,420	14.23
	SOUTH TYGER RIVER NEAR WOODRUFF, S. C.	Apr. 06, 1936	9,510	9.78
	TYGER RIVER NEAR WOODRUFF, S. C.	Oct. 02, 1929	28,000	19.1
	DUTCHMAN CREEK NEAR PAULINE, S.C.	Oct. 13, 1990	4,500	14.49
	TRIB TO FAIRFOREST CREEK AT SPARTANBURG, SC	Jun. 28, 1994	243	5.19
	FAIRFOREST CREEK BELOW SPARTANBURG, S.C.	Oct. 12, 1990	2,670	12.13
	ENOREE RIVER AT PELHAM, SC	Aug. 27, 1995	11,300	22.98
	ENOREE RIVER NEAR WOODRUFF, SC	Aug. 27, 1995	52,200	29.9
	ENOREE RIVER NEAR ENOREE S. C.	Oct. 02, 1929	30,000	10.5

Other Hazards

Wildfire	<p>Wildfire data was provided by the South Carolina Forestry Commission and is reported annually by county from 2010-2019.</p> <p>Analyzing the data indicates the following wildfire hazard extent for the county.</p> <ul style="list-style-type: none"> The greatest number of fires to occur in any year was 41 in 2016. The greatest number of acres to burn in a single year occurred in 2010 when 244 acres were burned. <p>Although this data lists the extent that has occurred, larger and more frequent wildfires are possible throughout the county.</p>
Hazardous Materials Incident	<p>Hazardous Materials Incident extent is defined by the USDOT PHMSA, the largest hazardous materials incident reported in the county was a release of 9,000 liquid gallons (LGA) of gasoline on a highway on April 6, 1978. It should be noted that larger events are possible.</p>
Transportation Incident	<p>Transportation Incident extent is defined as the area in which the incident might cause death or injury to those involved in the accident as well as to bystanders near the site of the incident. The main effects of a transportation incident might be fire or explosions and a shutdown of transportation corridors. Although these events are relatively common and emergency officials deal with them fairly often, the impacts to individuals might be severe with disruption to daily life at a minimum.</p>

5.17.2 Priority Risk Index

In order to draw some meaningful planning conclusions on hazard risk for Spartanburg County, the results of the hazard profiling process were used to generate countywide hazard classifications according to a “Priority Risk Index” (PRI). The PRI is a tool used to measure the degree of risk for identified hazards in a particular planning area. The purpose of the PRI is to categorize and prioritize all potential hazards for Spartanburg County as high, moderate, or low risk. Combined with the asset inventory and quantitative vulnerability assessment provided in the next section, the summary hazard classifications generated through the use of the PRI allows for the prioritization of those high hazard risks for mitigation planning purposes and, more specifically, the identification of hazard mitigation opportunities for the jurisdictions in Spartanburg County to consider as part of their proposed mitigation strategy. The PRI is not scientifically based but is rather meant to be utilized as an objective planning tool for classifying and prioritizing hazard risks in Spartanburg County based on standardized criteria.

The application of the PRI results in numerical values that allow identified hazards to be ranked against one another (the higher the PRI value, the greater the hazard risk). PRI values are obtained by assigning varying degrees of risk to five categories for each hazard (probability, impact, spatial extent, warning time, and duration). Each degree of risk has been assigned a value (1 to 4) and an agreed upon weighting factor,⁹⁰ as summarized in **Table 5.37**. To calculate the PRI value for a given hazard, the assigned risk value for each category is multiplied by the weighting factor. The sum of all five categories equals the final PRI value as demonstrated in the example equation below:

$$\text{PRI VALUE} = [(\text{PROBABILITY} \times .30) + (\text{IMPACT} \times .30) + (\text{SPATIAL EXTENT} \times .20) + (\text{WARNING TIME} \times .10) + (\text{DURATION} \times .10)]$$

According to the weighting scheme and point system applied, the highest possible value for any hazard is 4.0. When the scheme is applied for Spartanburg County, the highest PRI value is 3.0 (winter storm and freeze). Prior to being finalized, PRI values for each identified hazard were reviewed and accepted by the members of the Spartanburg County Hazard Mitigation Planning Team.

⁹⁰ The Spartanburg County Hazard Mitigation Planning Team, based upon any unique concerns or factors for the planning area, may adjust the PRI weighting scheme during future plan updates.

TABLE 5.37: PRIORITY RISK INDEX FOR SPARTANBURG COUNTY

PRI Category	Degree of Risk			Assigned Weighting Factor
	Level	Criteria	Index Value	
Probability	Unlikely	Less than 1% annual probability	1	30%
	Possible	Between 1 and 10% annual probability	2	
	Likely	Between 10 and 100% annual probability	3	
	Highly Likely	100% annual probability	4	
Impact	Minor	Very few injuries, if any. Only minor property damage and minimal disruption on quality of life. Temporary shutdown of critical facilities.	1	30%
	Limited	Minor injuries only. More than 10% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one day.	2	
	Critical	Multiple deaths/injuries possible. More than 25% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one week.	3	
	Catastrophic	High number of deaths/injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for 30 days or more.	4	
Spatial Extent	Negligible	Less than 1% of area affected	1	20%
	Small	Between 1 and 10% of area affected	2	
	Moderate	Between 10 and 50% of area affected	3	
	Large	Between 50 and 100% of area affected	4	
Warning Time	More than 24 hours	Self explanatory	1	10%
	12 to 24 hours	Self explanatory	2	
	6 to 12 hours	Self explanatory	3	
	Less than 6 hours	Self explanatory	4	
Duration	Less than 6 hours	Self explanatory	1	10%
	Less than 24 hours	Self explanatory	2	
	Less than one week	Self explanatory	3	
	More than one week	Self explanatory	4	

5.17.3 Priority Risk Index Results

Table 5.38 summarizes the degree of risk assigned to each category for all initially identified hazards based on the application of the PRI. Assigned risk levels were based on the detailed hazard profiles developed for this section as well as input from the Spartanburg County Hazard Mitigation Planning Team. The results were then used in calculating PRI values and making final determinations for the risk assessment.

TABLE 5.38: SUMMARY OF PRI RESULTS FOR SPARTANBURG COUNTY

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Atmospheric Hazards						
Drought	Likely	Minor	Large	More than 24 hours	More than 1 week	2.5
Hailstorm	Highly Likely	Minor	Small	Less than 6 hours	Less than 6 hours	2.4
Heat Wave/Extreme Heat	Possible	Limited	Large	More than 24 hours	Less than 1 week	2.4
Hurricane/Tropical Storm	Possible	Minor	Large	More than 24 hours	Less than 24 hours	2.0
Lightning	Highly Likely	Limited	Negligible	6 to 12 hours	Less than 6 hours	2.4
Severe Thunderstorm/ High Wind	Highly Likely	Limited	Moderate	6 to 12 hours	Less than 6 hours	2.8
Tornado	Likely	Critical	Small	Less than 6 hours	Less than 6 hours	2.7
Winter Storm and Freeze	Highly Likely	Limited	Large	More than 24 hours	Less than 1 week	3.0
Geologic Hazards						
Earthquake	Likely	Minor	Moderate	Less than 6 hours	Less than 6 hours	2.3
Landslide	Possible	Minor	Small	6 to 12 hours	Less than 24 hours	1.8
Hydrologic Hazards						
Flood	Likely	Limited	Small	6 to 12 hours	Less than 1 week	2.5
Other Hazards						
Wildfire	Likely	Minor	Moderate	Less than 6 hours	Less than 1 week	2.5
Hazardous Materials Incident	Highly Likely	Limited	Small	Less than 6 hours	Less than 24 hours	2.8
Transportation Incident	Possible	Critical	Negligible	Less than 6 hours	Less than 24 hours	2.3

5.18 FINAL DETERMINATIONS

The conclusions drawn from the hazard profiling process for Spartanburg County, including the PRI results and input from the Spartanburg County Hazard Mitigation Planning Team, resulted in the classification of risk for each identified hazard according to three categories: High Risk, Moderate Risk, and Low Risk (**Table 5.39**). For purposes of these classifications, risk is expressed in relative terms according to the estimated impact that a hazard will have on human life and property throughout all of Spartanburg County. A more quantitative analysis to estimate potential dollar losses for each hazard has been performed separately and is described in Section 6: *Vulnerability Assessment*. It should be noted that although some hazards are classified below as posing low risk, their occurrence of varying or

unprecedented magnitudes is still possible in some cases and their assigned classification will continue to be evaluated during future plan updates.

TABLE 5.39: CONCLUSIONS ON HAZARD RISK FOR SPARTANBURG COUNTY

HIGH RISK	Winter Storm and Freeze Severe Thunderstorm/High Wind Hazardous Materials Incident Tornado
MODERATE RISK	Drought Flood Wildfire Hailstorm Heat Wave/Extreme Heat
LOW RISK	Earthquake Lightning Hurricane/Tropical Storm Transportation Incident Landslide

SECTION 6

VULNERABILITY ASSESSMENT

This section identifies and quantifies the vulnerability of the jurisdictions within Spartanburg County to the significant hazards identified in the previous sections (Section 4: *Hazard Identification* and Section 5: *Hazard Profiles*). It consists of the following subsections:

- ❖ 6.1 Overview
- ❖ 6.2 Methodology
- ❖ 6.3 Explanation of Data Sources
- ❖ 6.4 Asset Inventory
- ❖ 6.5 Vulnerability Assessment Results
- ❖ 6.6 Conclusions on Hazard Vulnerability

44 CFR Requirement

44 CFR Part 201.6(c)(2)(ii): The risk assessment shall include a description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. The description shall include an overall summary of each hazard and its impact on the community. The plan should describe vulnerability in terms of: (A) The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas; (B) An estimate of the potential losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate; (C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

6.1 OVERVIEW

This section builds upon the information provided in Section 4: *Hazard Identification* and Section 5: *Hazard Profiles* by identifying and characterizing an inventory of assets in Spartanburg County. In addition, the potential impact and expected amount of damages caused to these assets by each identified hazard event is assessed. The primary objective of the vulnerability assessment is to quantify exposure and the potential loss estimates for each hazard. In doing so, Spartanburg County and the participating jurisdictions may better understand their unique risks to identified hazards and be better prepared to evaluate and prioritize specific hazard mitigation actions.

This section begins with an explanation of the methodology applied to complete the vulnerability assessment followed by a summary description of the asset inventory as compiled for jurisdictions in Spartanburg County. The remainder of this section focuses on the results of the assessment conducted.

6.2 METHODOLOGY

This vulnerability assessment was conducted using three distinct methodologies: (1) A stochastic risk assessment, (2) a geographic information system (GIS)-based analysis, and (3) a risk modeling software analysis. Each approach provides estimates for the potential impact of hazards by using a common,

systematic framework for evaluation, including historical occurrence information provided in the *Hazard Identification* and *Hazard Profiles* sections. A brief description of the three different approaches is provided on the following pages.

6.2.1 Stochastic Risk Assessment

The stochastic risk assessment methodology was applied to analyze hazards of concern that were outside the scope of hazard risk models and the GIS-based risk assessment. This involves the consideration of annualized loss estimates and impacts of current and future buildings and populations. Annualized loss is the estimated long-term weighted average value of losses to property in any single year in a specified geographic area (i.e., municipal jurisdiction or county). This methodology is applied primarily to hazards that do not have geographically definable boundaries and are therefore excluded from spatial analysis through GIS. A stochastic risk methodology was used for the following hazards:

- ❖ Drought
- ❖ Hailstorm
- ❖ Heat Wave/Extreme Heat
- ❖ Lightning
- ❖ Severe Thunderstorm/High Wind
- ❖ Tornado
- ❖ Transportation Incident
- ❖ Winter Storm and Freeze

All of the hazards listed above are considered to have the potential to affect all current and future buildings and all populations, either because they are atmospheric and will have similar effects county-wide or because they are human caused/technological hazards which are often unpredictable and do not have a defined area in which they are more likely to occur. **Table 6.1** provides information about all improved property in Spartanburg County that is vulnerable to these hazards. For all hazards, annualized loss estimates were determined using the best available data on historical losses from sources including the National Oceanic and Atmospheric Administration (NOAA)'s National Climatic Data Center records, county and municipal hazard mitigation plans, and local knowledge. Annualized loss estimates were generated by totaling the amount of property damage over the period of time for which records were available and calculating the average annual loss. Given the standard weighting analysis, losses can be readily compared across hazards providing an objective approach for evaluating mitigation alternatives.

For the human-caused/technological hazards, for example acts of terrorism or cyber security breaches, no data with historical property damages was available. Therefore, a detailed vulnerability assessment could not be completed for some of these hazards.

The results for these hazards are found near the end of this section in **Table 6.15**.

6.2.2 GIS-Based Analysis

Other hazards have specified geographic boundaries that permit additional analysis using Geographic Information Systems (GIS). These hazards include:

- ❖ Flood
- ❖ Hazardous Materials Incident
- ❖ Landslide
- ❖ Wildfire

The objective of the GIS-based analysis was to determine the estimated vulnerability of buildings, critical facilities, and populations for the identified hazards in Spartanburg County using best available geospatial data. Digital data was collected from local, regional, state, and national sources for hazards and buildings. This included local tax assessor records for individual parcels, tabular data from the U.S. Census, and geo-referenced point locations for identified assets (critical facilities and infrastructure, special populations, etc.) when available. ESRI® ArcGIS™ Pro 2.9 was used to assess hazard vulnerability utilizing digital hazard data as well as local parcel data.

Using the previously mentioned data layers, hazard vulnerability can be quantified by estimating the appraised value for parcels determined to be located in identified hazard areas. The results of the analysis provided an estimate of the number of parcels and critical facilities determined to be potentially at risk to the hazards with delineable geographic hazard boundaries.

6.2.3 Risk Modeling Software Analysis

A risk modeling software was used for the following hazards:

- ❖ Earthquake
- ❖ Hurricane/Tropical Storm

There are several modeling softwares that exist to model hazards. Hazus-MH was used in this vulnerability assessment to address the aforementioned hazards.

Hazus-MH

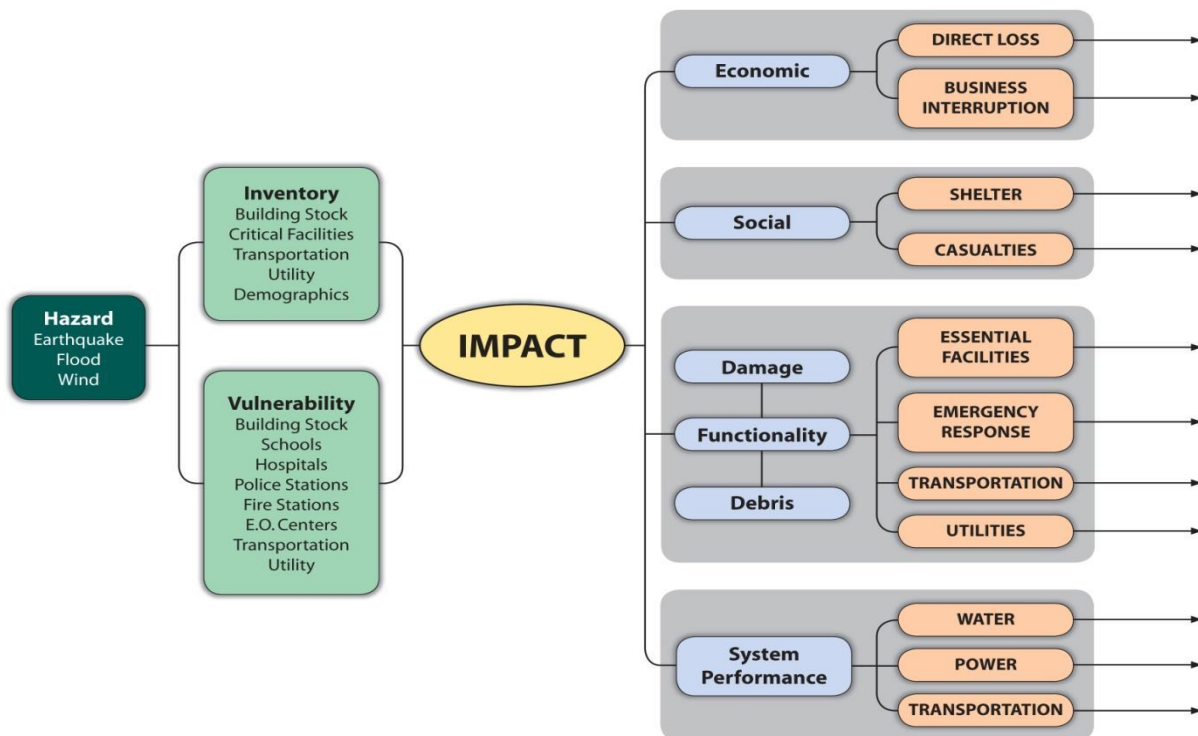
Hazus-MH (“Hazus”) is a standardized loss estimation software program developed by the Federal Emergency Management Administration (FEMA). It is built upon an integrated GIS platform to conduct analysis at a regional level (i.e., not on a structure-by-structure basis). The Hazus risk assessment methodology is parametric in that distinct hazard and inventory parameters (e.g., wind speed and building types) can be modeled using the software to determine the impact (i.e., damages and losses) on the built environment.



The Spartanburg County Risk Assessment utilized Hazus-MH to produce hazard damage loss estimations for hazards in the planning area. At the time this analysis was completed, Hazus-MH 5.1 was used to estimate potential damages from the hurricane winds and earthquake hazards using Hazus-MH methodology. Although the program can also model losses for flood and storm surge, it was not used in this Risk Assessment.

Figure 6.1 illustrates the conceptual model of the Hazus-MH methodology.

FIGURE 6.1: CONCEPTUAL MODEL OF HAZUS-MH METHODOLOGY



Hazus-MH is capable of providing a variety of loss estimation results. In order to be consistent with other hazard assessments, annualized losses are presented when possible. Loss estimates provided in this vulnerability assessment are based on best available data and methodologies. The results are an approximation of risk. These estimates should be used to understand relative risk from hazards and potential losses. Uncertainties are inherent in any loss estimation methodology, arising in part from incomplete scientific knowledge concerning natural hazards and their effects on the built environment. Uncertainties also result from approximations and simplifications that are necessary for a comprehensive analysis (e.g., incomplete inventories, non-specific locations, demographics, or economic parameters).

All conclusions are presented in “Conclusions on Hazard Vulnerability” at the end of this section.

6.3 EXPLANATION OF DATA SOURCES

Earthquake

Hazus-MH 5.1 (as described above) was used to assess earthquake vulnerability. A level 1, probabilistic scenario to estimate annualized loss was utilized. In this scenario, several return periods (events of varying intensities) are run to determine annualized loss. Default Hazus earthquake damage functions and methodology were used to determine the probability of damage. Results are calculated at the 2010 U.S. Census tract level in Hazus and presented at the county level.

Flood

FEMA Digital Flood Insurance Rate Maps (DFIRMs) were used to determine flood vulnerability. DFIRM data can be used in ArcGIS for mapping purposes, and they identify several features including floodplain boundaries and base flood elevations. Identified areas on the DFIRM represent some features of Flood Insurance Rate Maps including the 100-year flood areas (1.0-percent annual chance flood) and the 500-year flood areas (0.2-percent annual chance flood). For the vulnerability assessment, local parcel data and critical facilities were overlaid on the 100-year floodplain areas and 500-year floodplain areas. It should be noted that such an analysis does not account for building elevation.

Hazardous Materials Incident

For the fixed hazardous materials incident analysis, Toxic Release Inventory (TRI) data was used¹. The Toxics Release Inventory is a publicly available database from the federal Environmental Protection Agency (EPA) that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. This inventory was established under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and expanded by the Pollution Prevention Act of 1990. Each year, facilities that meet certain activity thresholds must report their releases and other waste management activities for listed toxic chemicals to the EPA and to their state or tribal entity. A facility must report if it meets the following three criteria:

- ❖ The facility falls within one of the following industrial categories: manufacturing; metal mining; coal mining; electric generating facilities that combust coal and/or oil; chemical wholesale distributors; petroleum terminals and bulk storage facilities; RCRA Subtitle C treatment, storage, and disposal (TSD) facilities; and solvent recovery services;
- ❖ Has 10 or more full-time employee equivalents; and
- ❖ Manufactures or processes more than 25,000 pounds or otherwise uses more than 10,000 pounds of any listed chemical during the calendar year. Persistent, bioaccumulative, and toxic (PBT) chemicals are subject to different thresholds of 10 pounds, 100 pounds, or 0.1 grams depending on the chemical.

For the mobile hazardous materials incident analysis, transportation data including major highways and railroads were obtained from the National Atlas, which is an extensive government sponsored online database of map products. This data is ArcGIS compatible, lending itself to buffer analysis to determine risk.

¹ <https://www.epa.gov/toxics-release-inventory-tri-program>

Hurricane and Tropical Storm Wind

Hazus-MH 5.1 (as described above) was used to assess wind vulnerability. For the hurricane wind analysis, a probabilistic scenario was created to estimate the annualized loss damage and probable peak wind speeds in Spartanburg County. Default Hazus wind speed data, damage functions, and methodology were used in to determine the probability of damage for 50-, 100-, 500-, and 1,000-year frequency events (also known as return periods) in the scenario. Results are calculated in Hazus at the 2010 U.S. Census tract level and presented at the county and municipal level.

Landslide

The United States Geological Survey (USGS) Landslide Susceptibility Index was used to determine vulnerability to landslides. The risk levels of low, moderate, and high correspond to the Landslide Susceptibility Index where “Moderate” indicates a zone of Low Incidence/Moderate Susceptibility, “High” indicates a zone of Moderate Incidence/High Susceptibility. For the vulnerability assessment, local parcel data and critical facilities were overlaid in GIS on these incident areas.

Wildfire

The data used to determine vulnerability to wildfires in Spartanburg County is based on GIS data called the Southern Wildfire Risk Assessment (SWRA). This data is available on the Southern Wildfire Risk Assessment website and can be downloaded and imported into ArcGIS. A specific layer known as “Wildland Urban Interface Risk Index” (WUIRI) was used to determine the vulnerability of people and property. The WUIRI is presented on a scale of 0 to -9. It combines data on housing density with the data on the impact and likelihood of a wildfire occurring in a specific area. The primary purpose of the data is to highlight areas of concern that may be conducive to mitigation actions. Due to the assumptions made, it is not a true probability. However, it does provide a comparison of risk throughout the county.

6.4 ASSET INVENTORY

An inventory of geo-referenced assets within Spartanburg County and its jurisdictions was compiled in order to identify and characterize properties potentially at risk to the identified hazards.² By understanding the type and number of assets that exist and where they are located in relation to known hazard areas, the relative risk and vulnerability for such assets can be assessed. Under this assessment, two categories of physical assets were created and then further assessed through GIS analysis. These are presented below in Section 6.4.1.

6.4.1 Physical and Improved Assets

The two categories of physical assets consist of:

1. **Improved Property:** Includes all land upon which a residential, commercial, or other building has been built in Spartanburg County according to local parcel data provided by the county. The information has been expressed in terms of the number of parcels and total assessed value of improvements (buildings) that may be exposed to the identified hazards.

² While potentially not all-inclusive for the jurisdictions in Spartanburg County, “georeferenced” assets include those assets for which specific location data is readily available for connecting the asset to a specific geographic location for purposes of GIS analysis.

2. Critical Facilities: Critical facilities vary by jurisdiction and the critical facilities provided by each jurisdiction are utilized in this section.

It should be noted that this list is not all-inclusive for assets located in the county, and it is anticipated that it may be expanded or adjusted during future plan updates as more geo-referenced data becomes available for use in GIS analysis.

The following tables provide a detailed listing of the geo-referenced assets that have been identified for inclusion in the vulnerability assessment for Spartanburg County.

Table 6.1 lists the number of parcels, the number of improved parcels, and the total assessed value of improved parcels for participating areas of Spartanburg County (study area of vulnerability assessment).³

TABLE 6.1: IMPROVED PROPERTY IN SPARTANBURG COUNTY

Location	Number of Parcels	Number of Improved Parcels	Total Assessed Value of Improved Parcels
Campobello	365	249	\$31,935,455
Chesnee	788	423	\$34,284,668
Cowpens	1,126	769	\$63,608,117
Duncan	1,408	1,019	\$124,800,690
Greer	4,577	3,478	\$761,437,379
Inman	1,346	992	\$115,296,157
Landrum	1,425	1,070	\$130,033,771
Lyman	2,876	2,295	\$360,037,288
Pacolet	1,300	922	\$60,175,216
Reidville	795	573	\$113,599,577
Spartanburg (city)	15,689	12,535	\$2,157,654,141
Wellford	1,701	1,049	\$105,243,476
Woodruff	2,720	1,794	\$179,616,579
Unincorporated Area	124,156	84,235	\$14,435,058,931
SPARTANBURG COUNTY TOTAL	160,272	115,398	\$18,672,781,445

Source: Spartanburg County GIS Department

Table 6.2 lists the critical facilities located in Spartanburg County and categorized by type. These facilities were identified as primary critical facilities in that they are necessary to maintain government functions and protect the life, health, safety, and welfare of citizens. These facilities were geospatially mapped and used as the basis for further geographic analysis of the hazards that could potentially affect critical facilities. All critical facility information has been provided by the Spartanburg County GIS department.

³ Total appraised values for improvements is based on tax assessor records as joined to digital parcel data. This data does not include dollar figures for tax-exempt improvements such as publicly-owned buildings and facilities. It should also be noted that, due to record keeping, some duplication is possible, thus potentially resulting in an inflated value exposure for an area.

In addition, **Figure 6.2** shows the locations of the primary critical facilities in Spartanburg County. **Table 6.16**, at the end of this section, shows a complete list of the critical facilities by name as well as the hazards that affect each facility. As noted previously, this list is not all-inclusive and only includes information provided by local governments.

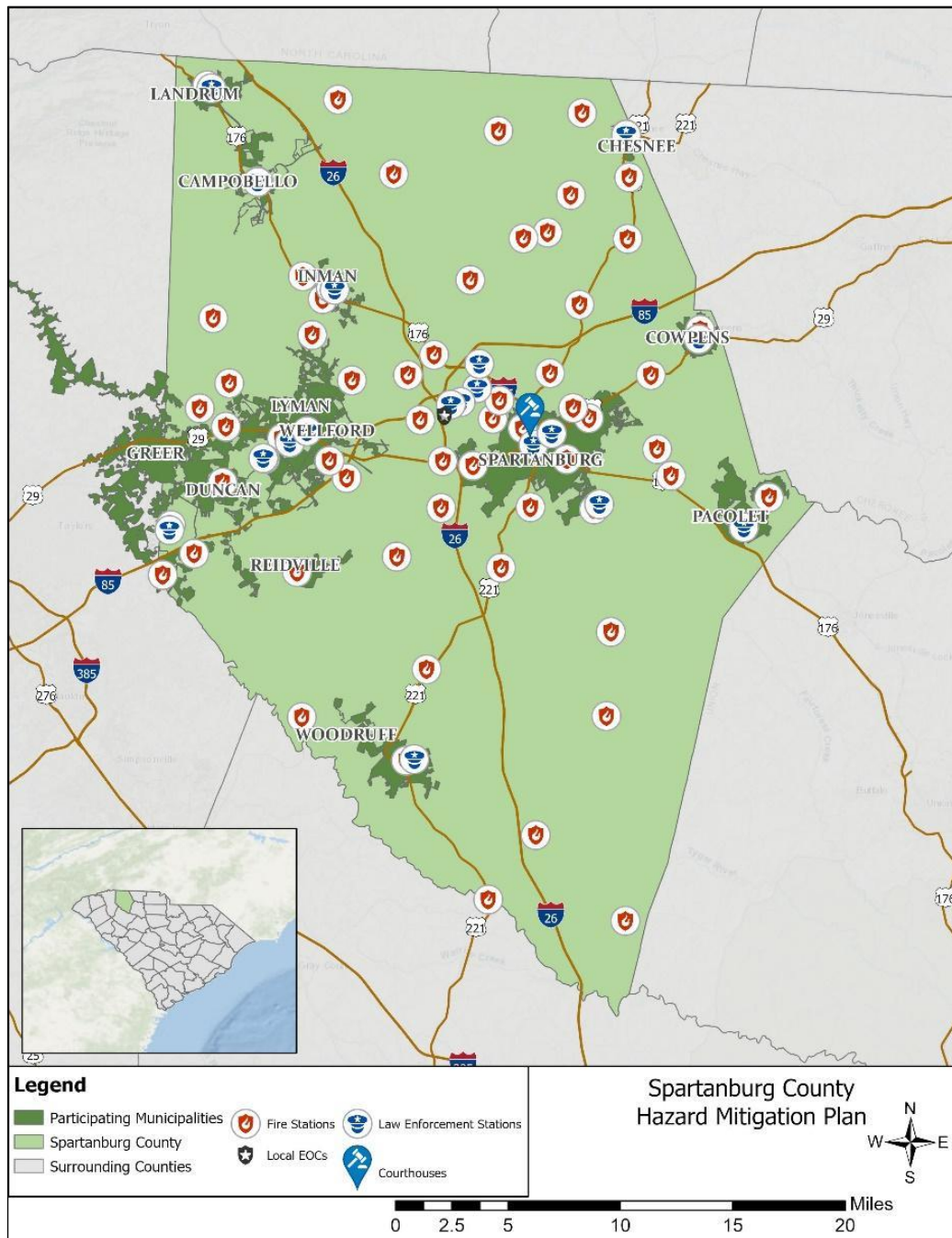
TABLE 6.2: EMERGENCY SERVICES CRITICAL FACILITY INVENTORY IN SPARTANBURG COUNTY

Location	Emergency Operations Centers	Fire Stations	Medical Care Facilities	Emergency Medical Service (EMS)	Local Law Enforcement	Schools
Campobello	0	3	0	0	1	1
Chesnee	0	1	0	0	1	3
Cowpens	0	1	0	0	1	2
Duncan	0	1	0	0	1	5
Greer*	0	1	1	0	0	1
Inman	0	2	0	0	1	4
Landrum	0	1	0	1	1	3
Lyman	0	1	0	1	1	1
Pacolet	0	2	0	2	1	2
Reidville	0	1	0	1	0	1
Spartanburg (city)	1	5	2	4	2	27
Wellford	0	1	0	1	1	1
Woodruff	0	1	0	1	1	4
Unincorporated Area	0	51	4	31	5	59
SPARTANBURG COUNTY TOTAL	1	72	7	42	17	114

**This value includes only those facilities located within Spartanburg County*

Source: Spartanburg County GIS Department, Homeland Infrastructure Foundation-Level Data.

FIGURE 6.2: EMERGENCY SERVICES AND CRITICAL FACILITIES IN SPARTANBURG COUNTY



Source: Spartanburg County GIS Department and Homeland Infrastructure Foundation Level Data

6.4.2 Social Vulnerability

In addition to identifying those assets potentially at risk to identified hazards, it is important to identify and assess segments of the resident population in Spartanburg County that are potentially at risk to these hazards.

The total population in Spartanburg County according to Census data is 327,997 persons. **Table 6.3** lists the population by jurisdiction recorded in the 2020 U.S. Census. Additional population estimates are presented in Section 3: *Community Profile*.

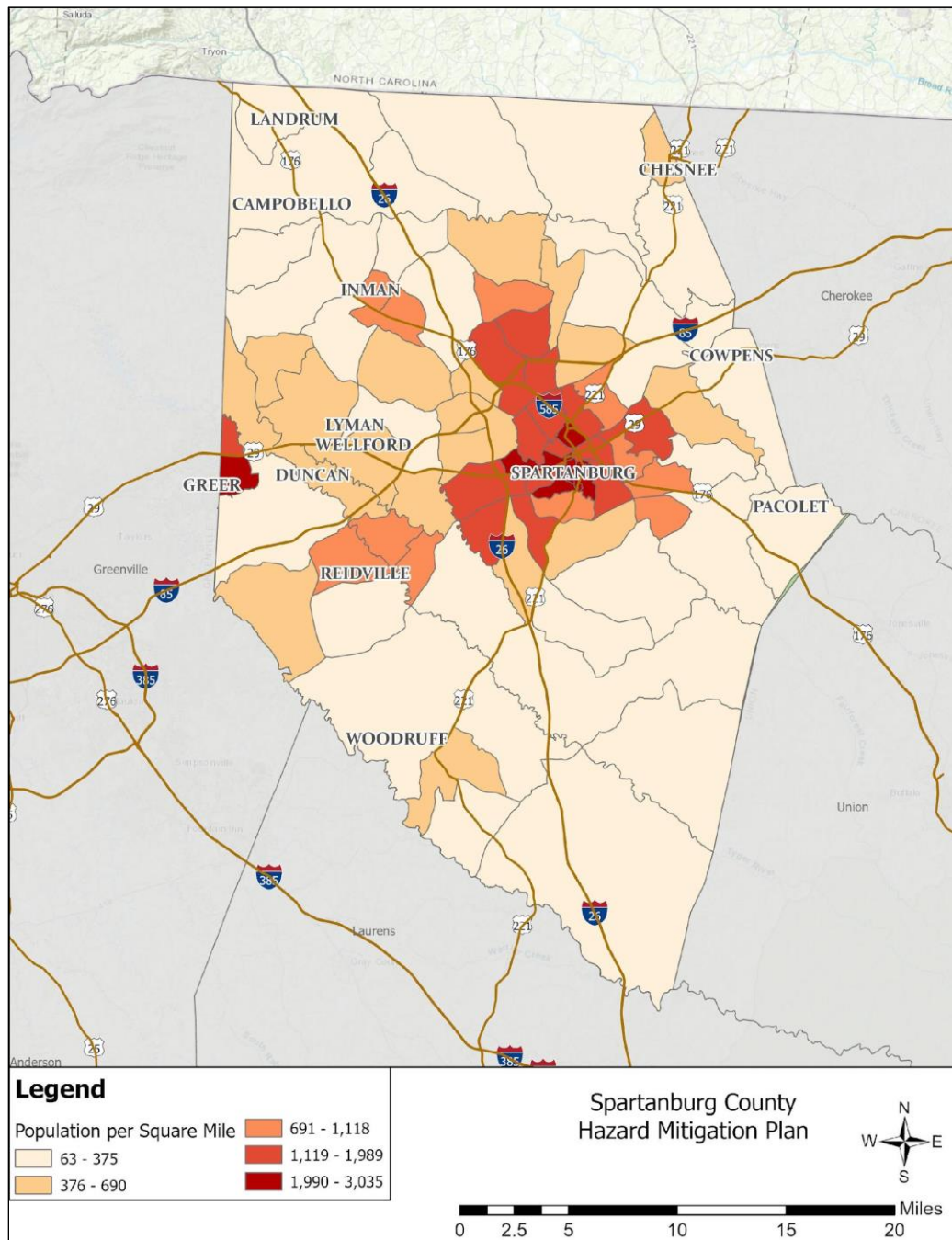
TABLE 6.3: TOTAL POPULATION IN SPARTANBURG COUNTY

Location	Total 2020 Population
Campobello	675
Chesnee*	829
Cowpens	2,023
Duncan	4,041
Greer*	35,308
Inman	2,990
Landrum	2,481
Lyman	6,173
Pacolet	2,274
Reidville	1,634
Spartanburg (city)	38,732
Wellford	3,293
Woodruff	4,212
SPARTANBURG COUNTY TOTAL	327,997

*The population counts of Chesnee and Greer include population residing in neighboring counties. Note: these populations are not included in the Spartanburg County total.

Source: United States Census Bureau, 2020 Census

In addition, **Figure 6.3** illustrates the population density by census tract as it was reported by the 2020 U.S. Census.



Since the previous hazard mitigation plans were approved, Spartanburg County has experienced moderate growth and development. **Table 6.4** shows the number of building units constructed since 2014 according to the U.S. Census American Community Survey (ACS).

TABLE 6.4: BUILDING COUNTS FOR SPARTANBURG COUNTY

Jurisdiction	Total Housing Units (2020)	Units Built 2014 or later	% Building Stock Built Post-2014
Campobello	226	29	12.8%
Chesnee*	364	0	0.0%
Cowpens	951	0	0.0%
Duncan	1,421	267	15.0%
Greer*	12,893	1,490	11.6%
Inman	1,558	201	12.9%
Landrum	1,370	19	1.4%
Lyman	1,311	244	18.6%
Pacolet	1,228	6	0.5%
Reidville	499	136	27.3%
Spartanburg (city)	17,601	459	2.6%
Wellford	1,103	306	27.7%
Woodruff	2,242	0	0.0%
SPARTANBURG COUNTY TOTAL	131,725	8,964	6.8%

*The housing unit counts for Chesnee and Greer include units located in neighboring counties. Note: these housing units are not included in the Spartanburg County total.

Source: United States Census Bureau, 2020 American Community Survey 5-Year Estimates

Table 6.5 shows population growth estimates for the county and municipalities from 2015 to 2020 based on the ACS five-year estimates.

TABLE 6.5: POPULATION GROWTH FOR SPARTANBURG COUNTY

Jurisdiction	Population Estimates						% Change 2015-2020
	2015	2016	2017	2018	2019	2020	
Campobello	525	562	512	468	532	665	26.7%
Chesnee*	717	782	719	664	686	597	-16.7%
Cowpens	1,702	1,772	1,855	1,782	1,942	1,944	14.2%
Duncan	3,231	3,283	3,327	3,375	3,473	3,556	10.1%
Greer*	27,186	27,739	28,587	29,717	30,854	32,229	18.5%
Inman	2,182	2,189	2,435	2,694	2,759	3,665	68.0%
Landrum	2,642	2,461	2,475	2,534	2,563	2,614	-1.1%
Lyman	3,350	3,378	3,411	3,481	3,567	3,629	8.3%
Pacolet	2,453	2,369	2,578	2,456	2,444	2,418	-1.4%
Reidville	764	827	811	869	1,002	1,317	72.4%
Spartanburg (city)	37,465	37,570	37,384	37,370	37,424	37,448	0.0%
Wellford	2,472	2,494	2,519	2,561	2,590	2,662	7.7%

Jurisdiction	Population Estimates						% Change 2015-2020
	2015	2016	2017	2018	2019	2020	
Woodruff	4,104	4,127	4,140	4,164	4,246	4,333	5.6%
SPARTANBURG COUNTY TOTAL	291,240	294,229	297,732	302,195	307,617	313,791	7.7%

*The population counts for Chesnee and Greer include populations residing in neighboring counties. Note: these populations are not included in the Spartanburg County total.

Source: United States Census Bureau, 2015, 2016, 2017, 2018, 2019, and 2020 American Community Survey 5-Year Estimates

Based on the data above, the county has experienced a moderate rate of residential population growth since 2015. During this period, Reidville saw the highest rate of population growth with a 72.4% change between 2015 and 2020. It should be noted that Reidville's growth rate has continued to increase steadily since 2010. According to the previous version of this plan, Reidville experienced a population growth rate of 35.1% between 2010 and 2015. Inman's population growth rate is another outlier among other jurisdictions within the county. With a 68.0% change between 2015 and 2020, the rate of population growth in Inman outpaced the county's overall growth rate of 7.7% throughout the same period.

Since the population has increased across the county, there is now a greater number of people exposed to the identified hazards. Therefore, development and population growth have impacted the county's vulnerability since the previous local hazard mitigation plans were approved and there has been a slight increase in the overall vulnerability.

It is also important to note that as development increases in the future, greater populations and more structures and infrastructure will be exposed to potential hazards if development occurs in the floodplains, wildfire risk areas, or other identified hazard areas.

6.5 VULNERABILITY ASSESSMENT RESULTS

As noted earlier, only hazards with a specific geographic boundary, modeling tool, or sufficient historical data allow for further analysis. The results of this analysis are presented here. All other hazards are assumed to impact the entire planning region (drought, hailstorm, heat wave/extreme heat, lightning, severe thunderstorm/high wind, tornado, winter storm/freeze) or, due to lack of data, analysis would not lead to credible results (transportation incident). The total county exposure, and thus risk, was presented in **Table 6.1**.

The annualized loss estimate for all hazards is presented near the end of this section in **Table 6.15**.

The hazards presented in these subsections include: hurricane/tropical storm winds, earthquake, flood, landslide, hazardous materials incident, and wildfire.

6.5.1 Hurricane/Tropical Storm

Historical evidence indicates that hurricanes and tropical storms pose a relatively low risk to Spartanburg County. While these types of storms impact the county infrequently, hurricanes and tropical storms have the potential to cause severe damage over large areas. Detailed in Section 5: *Hazard Profiles*, the

consequences of Tropical Storm Frances (2004) and Hurricane Irma (2017) triggered two of the county's nine federally declared disasters since 1990.

Hurricanes and tropical storms can cause damage through numerous additional hazards such as flooding, erosion, tornadoes, high winds, and precipitation; thus, it is difficult to estimate total potential losses from these cumulative effects. The current Hazus-MH hurricane model only analyzes hurricane winds and is not capable of modeling and estimating cumulative losses from all hazards associated with hurricanes; therefore, only hurricane winds are analyzed in this section. It can be assumed that all existing and future buildings and populations are at risk to the hurricane and tropical storm hazard.

Hazus-MH 5.1 was used to determine annualized losses for the county as shown below in **Table 6.6**. Hazus-MH reports losses at the U.S. Census tract level, so determining losses at the municipal level was not possible. Losses reported include losses to building, contents, and inventory. However, in the comparative annualized loss figure for the county presented near the end of this section in **Table 6.15**, only losses to buildings are reported in order to best match annualized losses reported for other hazards.

TABLE 6.6: ANNUALIZED LOSS ESTIMATIONS FOR HURRICANE WIND HAZARD

Location	Building Damage	Contents Damage	Inventory Loss	Total Annualized Loss
Spartanburg County	\$1,220,000	\$375,000	\$5,000	\$1,722,000

Source: Hazus-MH 5.1

In addition, probable peak wind speeds were calculated in Hazus. These are shown below in **Table 6.7**.

TABLE 6.7: PROBABLE PEAK HURRICANE/TROPICAL STORM WIND SPEEDS (MPH)

Location	50-year event	100-year event	500-year event	1,000-year event
Campobello	56.4	64.7	82.4	88.2
Chesnee	57.4	65.7	83.0	90.8
Cowpens	58.8	67.3	84.9	91.5
Duncan	57.7	66.1	83.5	89.3
Greer	57.5	65.9	83.2	89.5
Inman	57.3	65.7	83.3	88.8
Landrum	56.1	64.3	81.6	87.9
Lyman	57.8	66.2	83.6	89.4
Pacolet	59.5	68.1	85.8	92.2
Reidville	58.1	66.4	84.1	90.7
Spartanburg (city)	58.6	66.7	84.5	91.0
Wellford	58.1	66.4	83.9	90.0
Woodruff	59.3	67.7	85.4	91.8
Unincorporated Area	60.0	66.5	86.2	92.8
MAXIMUM WIND SPEED REPORTED	60.0	68.4	86.2	92.8

Source: Hazus-MH 5.1

Social Vulnerability

Given equal susceptibility across Spartanburg County, it is assumed that the total population is at risk to the hurricane and tropical storm hazard.

Critical Facilities

Given equal vulnerability across Spartanburg County, all critical facilities are considered to be at risk. Some buildings may perform better than others in the face of such an event due to construction and age among other factors. Determining individual building response is beyond the scope of this plan. However, this plan will consider mitigation actions for vulnerable structures, including critical facilities, to reduce the impacts of the hurricane wind hazard. A list of specific critical facilities and their associated risk can be found in **Table 6.16** at the end of this section.

In conclusion, a hurricane event has the potential to impact many existing and future buildings, critical facilities, and populations in Spartanburg County. Hurricane events can cause substantial damage in their wake including fatalities, extensive debris clean-up, and extended power outages.

6.5.2 Earthquake

Historical evidence indicates that any earthquake activity in the county is likely to inflict minor to moderate damage to the planning area. At least 49 earthquakes are known to have affected Spartanburg County since 1875 as discussed in Section 5: *Hazard Profiles*.

For the earthquake hazard vulnerability assessment, a probabilistic scenario was created to estimate the annualized loss for the county. The results of the analysis reported at the U.S. Census tract level do not make it feasible to estimate losses at the municipal level. Since the scenario is annualized, no building counts are provided. Losses reported included losses due to building damage (structural and non-structural), contents, and inventory. However, like the analysis for hurricanes, the comparative annualized loss figure presented near the end of this section in **Table 6.15** only utilizes building losses in order to provide consistency with the other hazards. **Table 6.8** summarizes the findings.

TABLE 6.8: ANNUALIZED LOSS ESTIMATIONS FOR EARTHQUAKE HAZARD

Location	Structural Building Loss	Non-Structural Building Loss	Contents Loss	Inventory Loss	Total Annualized Loss
Spartanburg County	\$230,000	\$673,000	\$278,000	\$16,000	\$1,568,000

Source: Hazus-MH 5.1

Social Vulnerability

It can be assumed that all existing and future populations are at risk to the earthquake hazard.

Critical Facilities

The Hazus probabilistic analysis indicated that no critical facilities would sustain measurable damage in an earthquake event. However, all critical facilities should be considered at-risk to minor damage should an event occur. A list of individual critical facilities and their risk can be found in **Table 6.16** at the end of this section.

In conclusion, an earthquake has the potential to impact all existing and future buildings, facilities, and populations in Spartanburg County. Minor earthquakes may rattle dishes and cause minimal damage while stronger earthquakes may result in some structural damage as indicated in the Hazus scenario above. Impacts of earthquakes include debris clean-up, service disruption, and, in severe cases, fatalities due to building collapse. Specific vulnerabilities for assets will be greatly dependent on their individual design. Such site-specific vulnerability determinations are outside the scope of this assessment but will be considered during future plan updates if data becomes available. Furthermore, mitigation actions to address earthquake vulnerability will be considered.

6.5.3 Flood

Historical evidence indicates that Spartanburg County is susceptible to flood events. The National Centers for Environmental Information reports a total of 72 flood events throughout Spartanburg County since 1996. These events contributed to over \$14.3 million (2022 dollars) in property damage in addition to one fatality and two injuries.

In order to assess flood risk, a GIS-based analysis was used to estimate exposure to flood events using Digital Flood Insurance Rate Map (DFIRM) data in combination with local tax assessor records for each of the Spartanburg County municipalities. The determination of value at-risk (exposure) was calculated using GIS analysis by summing the appraised values for parcels and properties that were confirmed to be located within an identified floodplain. **Table 6.9** presents the potential at-risk property. The number of parcels, improved property, and the approximate value are presented.

TABLE 6.9: ESTIMATED EXPOSURE OF PARCELS/BUILDINGS TO THE FLOOD HAZARD

Location	1.0-percent Annual Chance Floodplain			0.2-percent Annual Chance Floodplain		
	Approx. Number of Parcels	Approx. Number Improved Properties	Approx. Improved Value ⁴	Approx. Number of Parcels	Approx. Number Improved Properties	Approx. Improved Value ⁵
Campobello	21	4	\$513,100	0	0	\$0
Chesnee	17	8	\$285,188	0	0	\$0
Cowpens	9	4	\$459,421	0	0	\$0
Duncan	27	11	\$1,645,343	2	0	\$0
Greer	7	2	\$125,175	0	0	\$0
Inman	28	3	\$325,001	0	0	\$0
Landrum	20	8	\$480,067	0	0	\$0
Lyman	43	18	\$2,001,329	0	0	\$0
Pacolet	11	1	\$69,328	0	0	\$0
Reidville	7	3	\$378,000	0	0	\$0
Spartanburg (city)	575	341	\$110,789,720	64	37	\$16,216,838
Wellford	34	11	\$1,006,927	7	2	\$207,995

⁴ Improved value is estimated based on the improved value associated with parcels that have been identified as being located in the 1.0-percent annual chance floodplain.

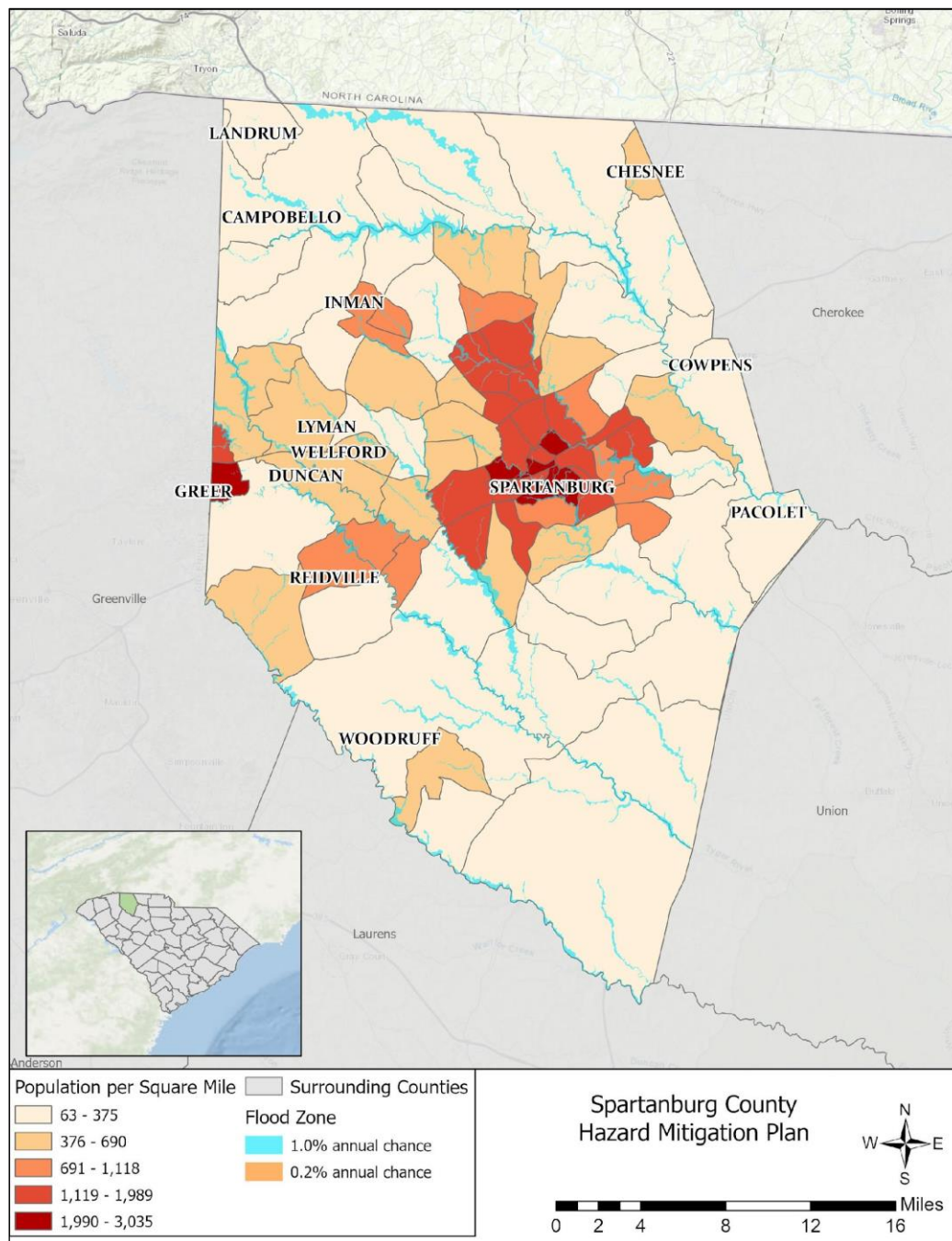
⁵ Improved value is estimated based on the improved value associated with parcels that have been identified as being located in the 0.2-percent annual chance floodplain.

Location	1.0-percent Annual Chance Floodplain			0.2-percent Annual Chance Floodplain		
	Approx. Number of Parcels	Approx. Number Improved Properties	Approx. Improved Value ⁴	Approx. Number of Parcels	Approx. Number Improved Properties	Approx. Improved Value ⁵
Woodruff	23	11	\$1,214,722	0	0	\$0
Unincorporated Area	6,482	3,717	\$777,745,074	2,464	1,503	\$373,393,513
SPARTANBURG COUNTY TOTAL	7,748	3,966	\$668,972,149	213	161	\$28,241,200

Source: Federal Emergency Management Agency DFIRM

Social Vulnerability

U.S. Census 2020 population at the tract level was used for analysis to determine where areas of high population concentration intersect with flood prone areas in the county. **Figure 6.4** is presented to gain a better understanding of the at-risk population.



The critical facility

In conclusion, a flood has the potential to impact many existing and future buildings, facilities, and populations in Spartanburg County though some areas are at a higher risk than others.

6.5.4 Landslide

Steeper topography in some areas of Spartanburg County makes the planning area susceptible to landslides. Although major historic landslide incidents are not well-documented in the county, there may be additional historical landslide occurrences that were not reported.

In order to complete the vulnerability assessment for landslides in Spartanburg County, GIS analysis was used. The potential dollar value of exposed property can be determined using the USGS Landslide Susceptibility Index (detailed in Section 5: *Hazard Profiles*), county level tax parcel data, and GIS analysis. **Table 6.10** presents the potential at-risk properties where available. Roughly half of the county is identified as being in a moderate incidence/high susceptibility area by the USGS landslide data. This incidence level was used to identify an area of concern for the analysis below.

TABLE 6.10: TOTAL POTENTIAL AT-RISK PARCELS FOR THE LANDSLIDE HAZARD

Location	Moderate Incidence/High Susceptibility Area		
	Approx. Number of Parcels	Approx. Number Improved Properties	Approx. Improved Value ⁶
Campobello	365	249	\$31,935,455
Chesnee	788	423	\$34,284,668
Cowpens	0	0	\$0
Duncan	1,408	1,019	\$124,800,690
Greer	4,577	3,478	\$761,437,379
Inman	1,346	992	\$115,296,157
Landrum	1,425	1,070	\$130,033,771
Lyman	2,876	2,295	\$360,037,288
Pacolet	0	0	\$0
Reidville	795	573	\$113,599,577
Spartanburg (city)	4,737	3,647	\$625,597,749
Wellford	1,701	1,049	\$105,243,476
Woodruff	0	0	\$0
Unincorporated Area	81,318	53,147	\$10,131,744,369
SPARTANBURG COUNTY TOTAL	101,336	67,942	\$12,534,010,579

Source: United States Geological Survey

⁶ Improved value is estimated based on the improved value associated with parcels that have been identified as being located in the moderate incidence/moderate susceptibility area.

Social Vulnerability

Given some susceptibility across the entire county, it is assumed that the total population is at relatively low to moderate risk though some populations in the northern part of the county are considered at a slightly higher risk due to their location in an area of moderate incidence.

Critical Facilities

Several critical facilities in the county are located in a moderate incidence/high susceptibility area. There are 119 critical facilities located in an area of moderate incidence/high susceptibility. This includes 1 EOC, 43 fire stations, 4 medical care facilities, 12 police stations, and 59 schools. A list of specific critical facilities and their associated risk can be found in **Table 6.16** at the end of this section.

In conclusion, a landslide has the potential to impact all existing and future buildings, facilities, and populations in Spartanburg County. Specific vulnerabilities for Spartanburg County assets will be greatly dependent on their individual design and the mitigation measures in place where appropriate. Such site-specific vulnerability determinations are outside the scope of this assessment but will be considered during future plan updates if data becomes available.

6.5.5 Hazardous Materials Incident

Historical evidence indicates that Spartanburg County is susceptible to hazardous materials events. A total of 677 HAZMAT incidents have been reported by the Pipeline and Hazardous Materials Safety Administration (PHMSA), resulting in over \$4.7 million (2022 dollars) in property damage, 6 deaths, and 9 injuries. On an annualized level, these damages amount to \$144,333 for Spartanburg County.

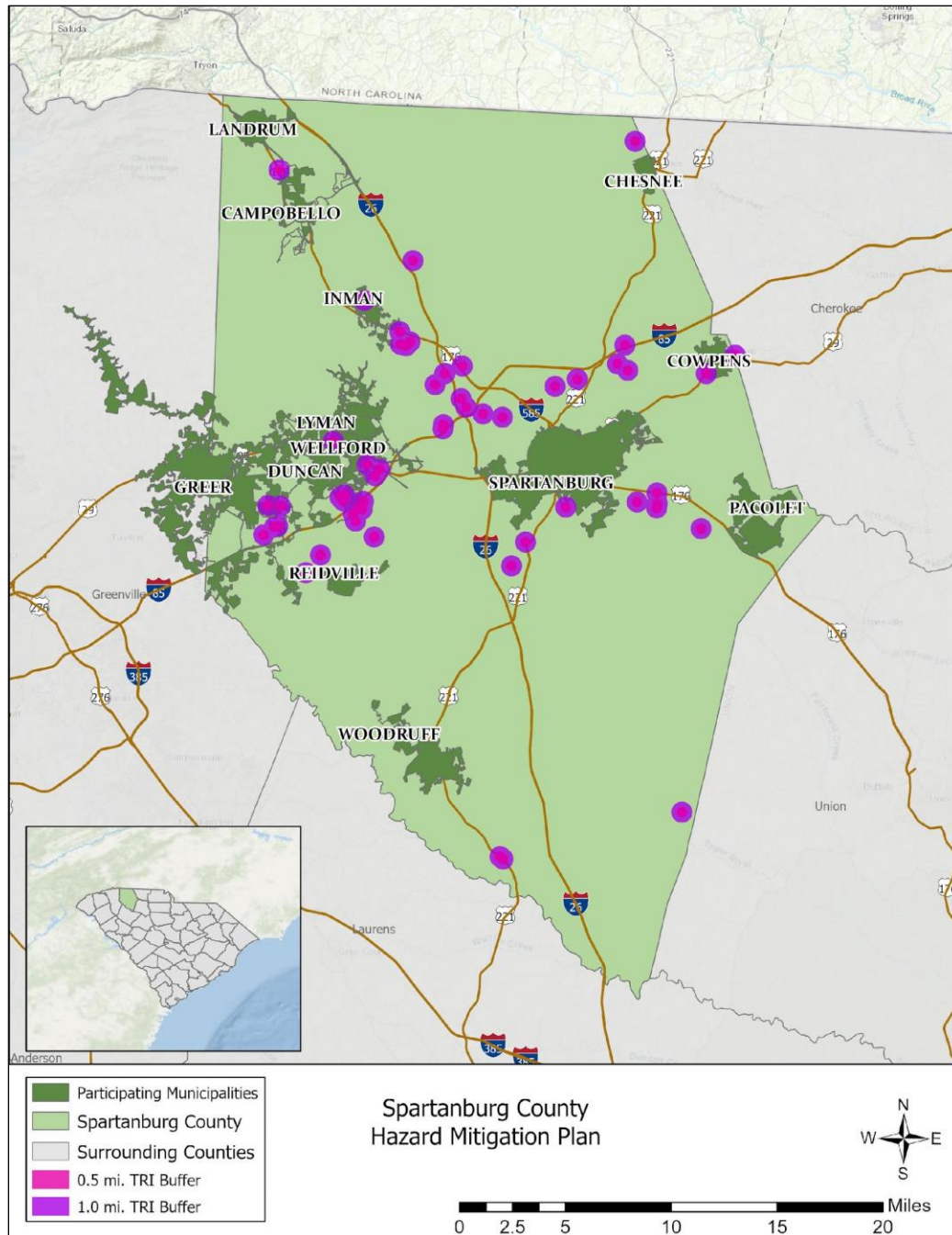
Most hazardous materials incidents that occur are contained and suppressed before destroying any property or threatening lives. However, they can have a significant negative impact on people and property. In a hazardous materials incident, solid, liquid, and/or gaseous contaminants may be released from fixed or mobile containers. Weather conditions will directly affect how the hazard develops. Certain chemicals may travel through the air or water, affecting a much larger area than the point of the incidence itself. Non-compliance with fire and building codes, as well as failure to maintain existing fire and containment features, can substantially increase the damage from a hazardous materials release. The duration of a hazardous materials incident can range from hours to days. Warning time is minimal to none.

In order to conduct the vulnerability assessment for this hazard, GIS intersection analysis was used for fixed and mobile areas and parcels.⁷ In both scenarios, two sizes of buffers—0.5-mile and 1.0-mile—were used. These areas are assumed to respect the different levels of effect: immediate (primary) and secondary. Primary and secondary impact sites were selected based on guidance from the PHMSA Emergency Response Guidebook. For the fixed site analysis, geo-referenced TRI listed toxic sites in Spartanburg County, along with buffers, were used for analysis as shown in **Figure 6.5**. For the mobile analysis, the major roads (Interstate highway, U.S. highway, and State highway) and railroads, where hazardous materials are primarily transported that could adversely impact people and buildings, were used for the GIS buffer analysis. **Figure 6.6** and **Figure 6.7** show the areas used for the mobile toxic release

⁷ This type of analysis will likely yield inflated results (generally higher than what is actually reported after an actual event).

buffer analyses. The results indicate the approximate number of parcels and improved value, as shown in **Table 6.11** (fixed sites), **Table 6.12** (mobile road sites) and **Table 6.13** (mobile railroad sites).⁸

FIGURE 6.5: TRI SITES WITH BUFFERS IN SPARTANBURG COUNTY



Source: Environmental Protection Agency, Toxic Release Analysis 2020.

⁸ Note that parcels included in the 1.0-mile analysis are also included in the 0.5-mile analysis.

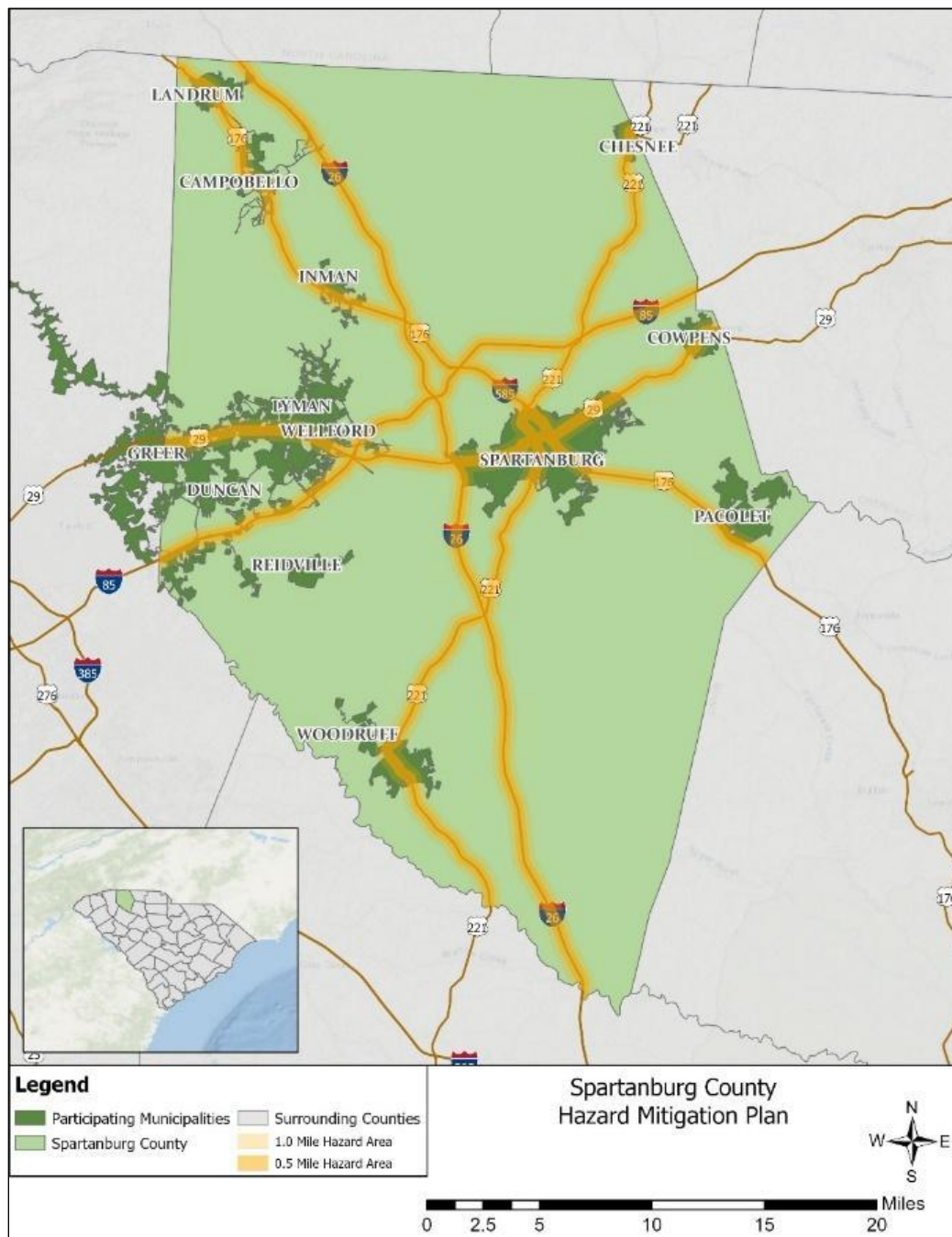
TABLE 6.11: EXPOSURE OF IMPROVED PROPERTY TO HAZARDOUS MATERIALS (FIXED SITES)

Location	0.5-mile buffer			1.0-mile buffer		
	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value ⁹	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value ¹⁰
Campobello	9	6	\$555,046	11	7	\$629,146
Chesnee	0	0	\$0	0	0	\$0
Cowpens	169	99	\$13,603,988	515	312	\$29,838,939
Duncan	78	52	\$20,575,858	135	86	\$34,167,494
Greer	28	10	\$14,026,500	171	105	\$48,661,629
Inman	296	242	\$32,235,989	451	293	\$32,079,127
Landrum	0	0	\$0	0	0	\$0
Lyman	124	101	\$10,399,485	391	320	\$50,913,298
Pacolet	0	0	\$0	0	0	\$0
Reidville	0	0	\$0	15	3	\$312,400
Spartanburg (city)	3	1	\$547,800	17	2	\$560,700
Wellford	92	63	\$4,333,999	1,056	304	\$26,294,437
Woodruff	0	0	\$0	0	0	\$0
Unincorporated Area	1,502	982	\$338,674,666	5,730	4,064	\$904,590,709
SPARTANBURG COUNTY TOTAL	2,301	1,556	\$434,953,331	8,492	5,496	\$1,128,047,879

⁹ Improved value is estimated based on the building value associated with parcels that have been identified as being located in the 0.5-mile buffer, since building footprints were not associated with dollar value data.

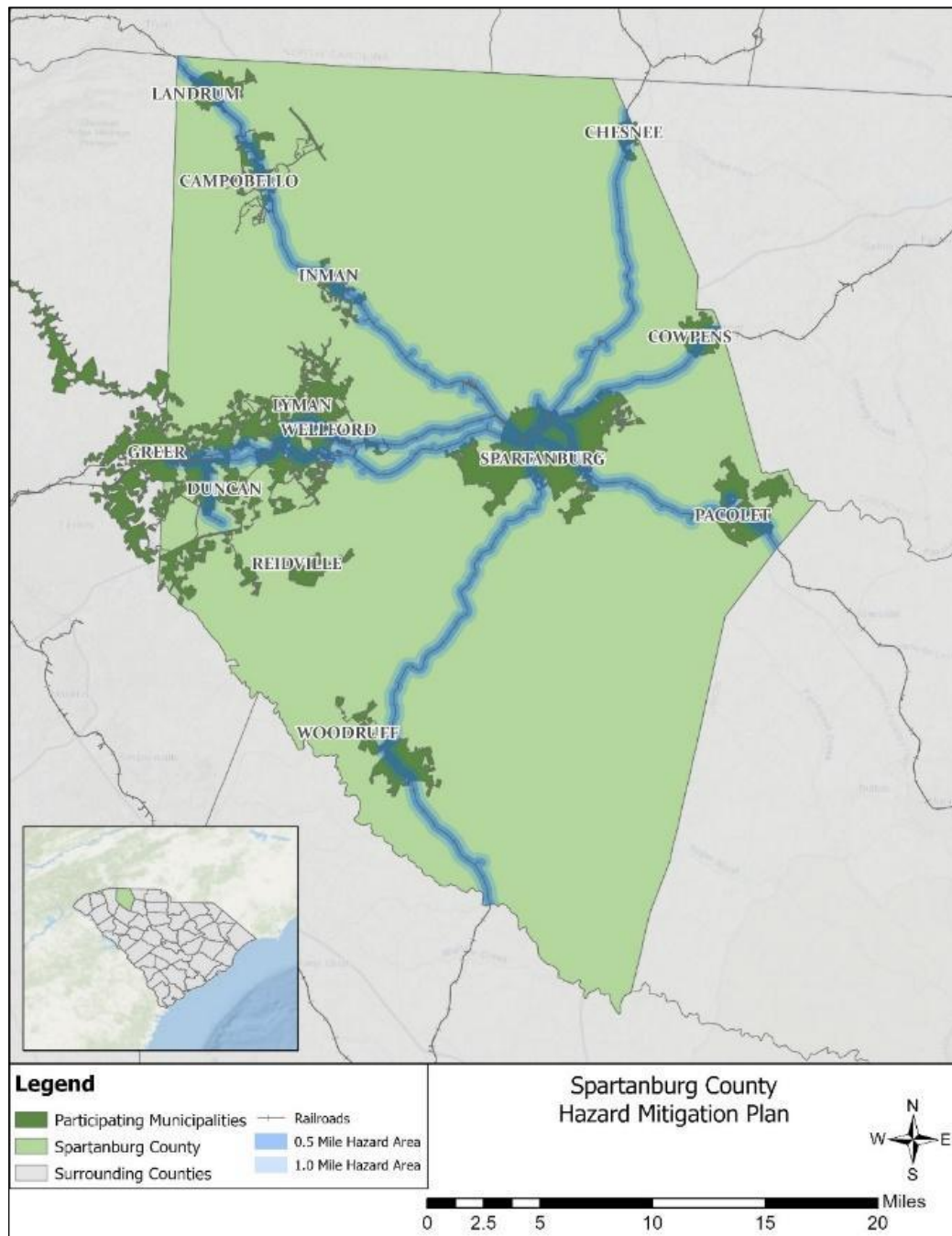
¹⁰ Improved value is estimated based on the building value associated with parcels that have been identified as being located in the 1.0-mile buffer, since building footprints were not associated with dollar value data.

FIGURE 6.6: ROADWAY HAZMAT BUFFERS IN SPARTANBURG COUNTY



Source: United States Department of Transportation Federal Railroad Administration

FIGURE 6.7: RAILWAY HAZMAT BUFFERS IN SPARTANBURG COUNTY



Source: United States Department of Transportation Federal Railroad Administration

**TABLE 6.12: EXPOSURE OF IMPROVED PROPERTY TO HAZARDOUS MATERIALS SPILL
(MOBILE ANALYSIS - ROAD)**

Location	0.5-mile buffer			1.0-mile buffer		
	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value ¹¹	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value ¹²
Campobello	348	248	\$32,336,380	408	270	\$35,094,924
Chesnee	461	265	\$25,020,230	717	394	\$32,560,026
Cowpens	595	415	\$40,028,116	926	625	\$54,644,678
Duncan	56	26	\$16,979,590	162	50	\$26,944,667
Greer	572	402	\$97,122,060	1,412	958	\$191,820,455
Inman	500	382	\$70,394,094	1,160	868	\$120,907,805
Landrum	702	477	\$57,860,466	1,014	722	\$88,028,883
Lyman	642	520	\$83,706,267	1,152	918	\$135,483,470
Pacolet	24	7	\$677,175	136	90	\$8,920,823
Reidville	0	0	\$0	0	0	\$0
Spartanburg (city)	5,647	4,219	\$1,114,245,857	9,789	7,642	\$1,539,012,384
Wellford	491	334	\$42,890,776	987	709	\$75,073,319
Woodruff	973	700	\$90,059,471	1,875	1,362	\$145,154,283
Unincorporated Area	16,993	11,735	\$1,998,530,854	31,559	22,810	\$3,634,010,686
SPARTANBURG COUNTY TOTAL	28,004	19,730	\$3,669,851,336	51,297	37,418	\$6,875,791,801

**TABLE 6.13: EXPOSURE OF IMPROVED PROPERTY TO HAZARDOUS MATERIALS SPILL
(MOBILE ANALYSIS - RAILROAD)**

Location	0.5-mile buffer			1.0-mile buffer		
	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value ¹³	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value ¹⁴
Campobello	159	78	\$6,544,321	332	213	\$25,424,643
Chesnee	443	247	\$24,529,964	727	388	\$32,395,567
Cowpens	584	397	\$34,527,961	810	532	\$45,093,009
Duncan	403	304	\$33,997,525	655	491	\$54,783,112
Greer	667	471	\$76,500,435	1,146	796	\$116,838,891
Inman	783	605	\$60,862,095	1,288	914	\$114,240,613
Landrum	615	412	\$43,111,700	888	613	\$63,631,333
Lyman	665	575	\$70,339,861	1,056	884	\$119,466,716

¹¹ Improved value is estimated based on the building value associated with parcels that have been identified as being located in the 0.5-mile buffer, since building footprints were not associated with dollar value data.

¹² Improved value is estimated based on the building value associated with parcels that have been identified as being located in the 1.0-mile buffer, since building footprints were not associated with dollar value data.

¹³ Improved value is estimated based on the building value associated with parcels that have been identified as being located in the 0.5-mile buffer, since building footprints were not associated with dollar value data.

¹⁴ Improved value is estimated based on the building value associated with parcels that have been identified as being located in the 1.0-mile buffer, since building footprints were not associated with dollar value data.

Location	0.5-mile buffer			1.0-mile buffer		
	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value ¹³	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value ¹⁴
Pacolet	421	290	\$19,036,717	654	437	\$31,511,947
Reidville	0	0	\$0	0	0	\$0
Spartanburg (city)	4,671	3,328	\$618,804,909	7,712	5,750	\$1,066,742,338
Wellford	722	498	\$44,262,625	1,225	762	\$66,195,788
Woodruff	721	498	\$70,019,141	1,505	1,060	\$118,345,202
Unincorporated Area	9,603	6,217	\$958,475,738	18,035	12,039	\$1,660,222,298
SPARTANBURG COUNTY TOTAL	20,457	13,920	\$2,061,012,992	36,033	24,879	\$3,514,891,457

Social Vulnerability

Given high susceptibility across Spartanburg County, it is assumed that the total population is at risk to hazardous materials incidents. It should be noted that areas of higher population concentration may be at an elevated risk due to a greater burden to evacuate the population quickly.

Critical Facilities

Fixed Site Analysis:

The critical facility analysis for fixed TRI sites revealed that there are 22 facilities located in a HAZMAT risk zone. The primary impact zone includes two facilities: one fire station and one school. The remaining facilities are in the secondary, 1.0-mile, zone. A list of specific critical facilities and their associated risk can be found in **Table 6.16** at the end of this section.

Mobile Analysis:

The critical facility analysis for road corridors revealed that there are 219 critical facilities located in the primary and secondary mobile HAZMAT buffer areas and 182 critical facilities located in the railroad HAZMAT buffer areas. It should be noted that many of the facilities located in the buffer areas for railroad are also located in the buffer areas for road and/or the fixed site analysis. A list of specific critical facilities and their associated risk can be found in **Table 6.16** at the end of this section.

In conclusion, a hazardous material incident has the potential to impact many existing and future buildings, critical facilities, and populations in Spartanburg County. Those areas in a primary buffer are at the highest risk, though all areas carry some vulnerability due to variations in conditions that could alter the impact area such direction and speed of wind, volume of release, etc.

6.5.6 Wildfire

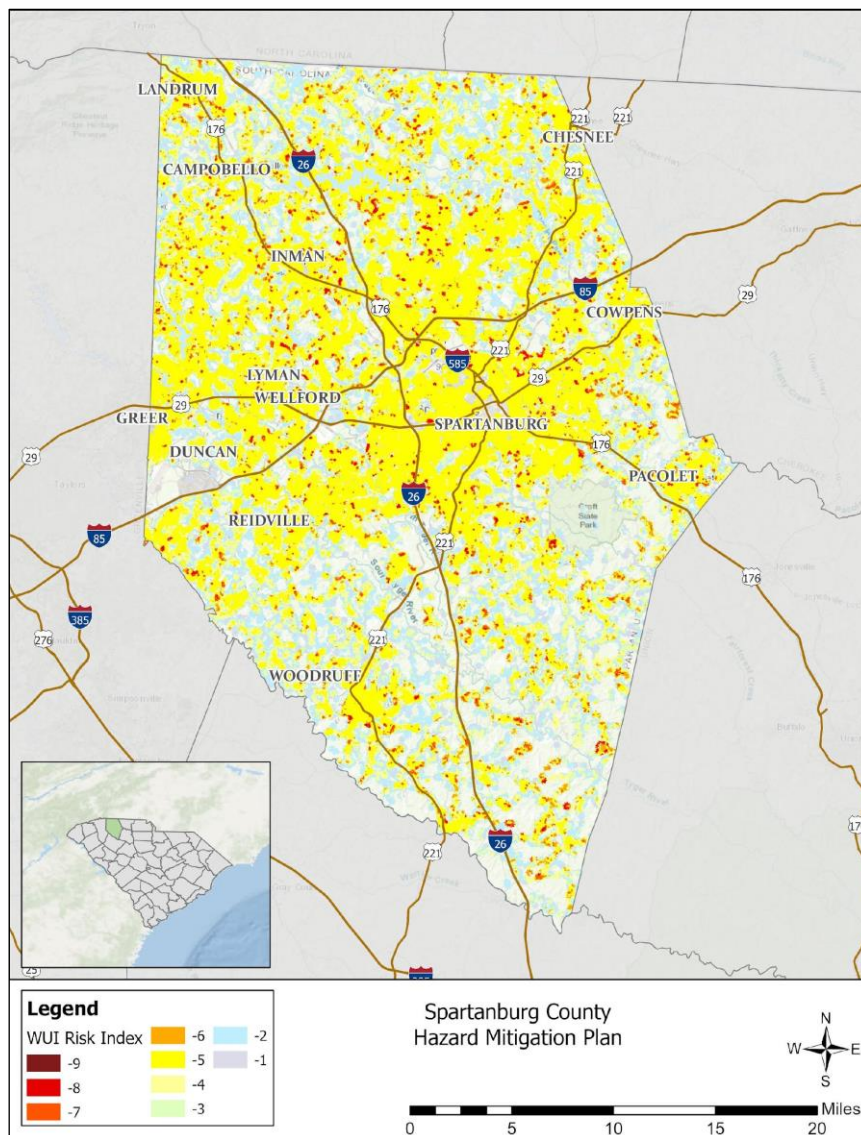
Historical evidence indicates that Spartanburg County is susceptible to wildfire events. An annual average of 32 wildfires were reported by the South Carolina Forestry Commission from 2006 to 2015.

To estimate exposure to wildfire, the approximate number of parcels and their associated improved value was determined using GIS analysis. For the critical facility analysis, areas of risk were intersected with critical facility locations. **Figure 6.8** shows the Wildland Urban Interface Risk Index (WUIRI) data, which is a data layer that shows a rating of the potential impact of a wildfire on people and their homes. The key

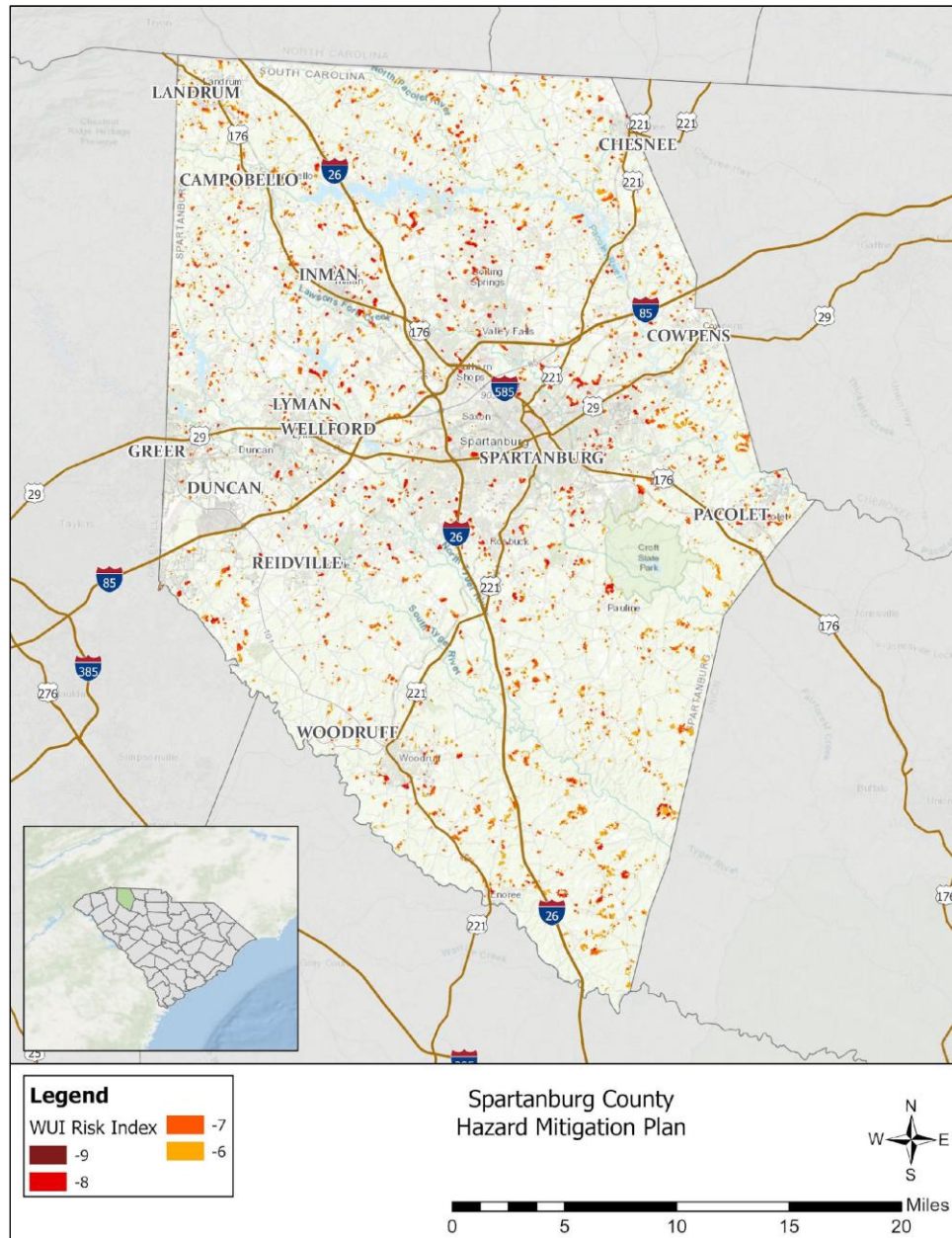
input, Wildland Urban Interface (WUI), reflects housing density (houses per acre) consistent with Federal Register National standards. The location of people living in the WUI, and rural areas is key information for defining potential wildfire impacts to people and homes. Initially provided as raster data, it was converted to a polygon to allow for analysis. The Wildland Urban Interface Risk Index data ranges from 0 to -9 with lower values being most severe (as noted previously, this is only a measure of relative risk). **Figure 6.9** shows the areas of analysis where any grid cell is less than -5. Areas with a value below -5 were chosen to be displayed as areas of risk because this showed the upper echelon of the scale and the areas at highest risk.

Table 6.14 shows the results of the analysis.

FIGURE 6.8: BURN PROBABILITY INDEX AREAS IN SPARTANBURG COUNTY



Source: Southern Wildfire Risk Assessment Data

FIGURE 6.9 BURN PROBABILITY – HIGH RISK AREAS IN SPARTANBURG COUNTY

Source: Southern Wildfire Risk Assessment Data

TABLE 6.14: EXPOSURE OF IMPROVED PROPERTY TO WILDFIRE RISK AREAS

Location	HIGH WILDFIRE RISK AREA		
	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value
Campobello	67	43	\$10,046,755
Chesnee	14	4	\$201,120
Cowpens	17	9	\$7,185,768

6:28

	HIGH WILDFIRE RISK AREA		
Location	Approx. Number of Parcels	Approx. Number Improved	Approx. Improved Value
Duncan	49	26	\$6,203,115
Greer	208	77	\$14,895,431
Inman	67	31	\$3,026,647
Landrum	55	30	\$5,297,316
Lyman	243	192	\$37,743,494
Pacolet	122	60	\$6,212,985
Reidville	20	0	\$0
Spartanburg (city)	394	321	\$117,558,985
Wellford	249	96	\$13,997,331
Woodruff	205	69	\$8,631,103
Unincorporated Area	14,639	8,592	\$1,799,488,796
SPARTANBURG COUNTY TOTAL	16,329	9,550	\$2,030,488,279

Source: Southern Wildfire Risk Assessment Data

Social Vulnerability

Although not all areas have equal vulnerability, there is some susceptibility across the entire county. It is assumed that the total population is at low to moderate risk to the wildfire hazard. Determining the exact number of people in wildfire risk areas is difficult with existing data and could be misleading.

Critical Facilities

The critical facility analysis revealed that there are 4 critical facilities located in the wildfire risk area (areas where the WUIRI is less than -5): 2 fire stations and 2 schools. However, it should also be noted, that several factors could impact the spread of a wildfire putting all facilities at some risk. A list of specific critical facilities and their associated risk can be found in **Table 6.16** at the end of this section.

In conclusion, a wildfire event has the potential to impact some existing and future buildings, critical facilities, and populations in Spartanburg County.

6.6 CONCLUSIONS ON HAZARD VULNERABILITY

The results of this vulnerability assessment are useful in at least three ways:

- ❖ Improving our understanding of the risk associated with the hazards in Spartanburg County through better understanding of the complexities and dynamics of risk, how levels of risk can be measured and compared, and the myriad of factors that influence risk. An understanding of these relationships is critical in making balanced and informed decisions on managing the risk.
- ❖ Providing a baseline for policy development and comparison of mitigation alternatives. The data used for this analysis presents a current picture of risk in Spartanburg County. Updating this risk “snapshot” with future data will enable comparison of the changes in risk with time. Baselines of this type can support the objective analysis of policy and program options for risk reduction in the region.

- ❖ Comparing the risk among the hazards addressed. The ability to quantify the risk to all these hazards relative to one another helps in a balanced, multi-hazard approach to risk management at each level of governing authority. This ranking provides a systematic framework to compare and prioritize the very disparate hazards that are present in Spartanburg County. This final step in the risk assessment provides the necessary information for local officials to craft a mitigation strategy to focus resources on only those hazards that pose the most threat to Spartanburg County and its municipalities.

Exposure to hazards can be an indicator of vulnerability. Economic exposure can be identified through locally appraised values for improvements (buildings), and social exposure can be identified by estimating the population exposed to each hazard. This information is especially important for decision makers to use in planning for evacuation or other public safety related needs.

The types of assets included in these analyses include all building types in the participating jurisdictions. Specific information about the types of assets that are vulnerable to the identified hazards is included in each hazard subsection (for example, all building types are considered at risk to the winter storm hazard and only residential and commercial structures are at risk to repetitive flooding, etc.).

Table 6.15 presents a summary of annualized loss for each hazard in Spartanburg County. Due to the reporting of hazard damages primarily at the county level, it was difficult to determine an accurate annualized loss estimate for each municipality. Therefore, an annualized loss was determined using the damage reported from historical occurrences at the county level. These values should be used as an additional planning tool or measure risk for determining hazard mitigation strategies throughout the county.

TABLE 6.15: ANNUALIZED LOSS FOR SPARTANBURG COUNTY*

Event	Spartanburg County
Atmospheric Hazards	
Drought	Negligible
Hailstorm	\$371,344
Heat Wave/Extreme Heat	Negligible
Hurricane/Tropical Storm†	\$1,722,000
Lightning	\$144,620
Severe Thunderstorm/High Wind	\$581,209
Tornado	\$820,871
Winter Storm and Freeze	\$880,974
Geologic Hazards	
Earthquake†	\$1,568,000
Landslide	Negligible
Hydrologic Hazards	
Flood	\$553,611
Other Hazards	
Wildfire	Negligible

Event	Spartanburg County
Hazardous Materials Incident	\$175,609
Transportation Incident	Negligible

*In this table, the term “Negligible” is used to indicate that no property damage for the particular hazard was recorded. This could be the case either because there were no events that caused dollar damage or because documentation of that particular type of event is not well kept or readily available.

†Annualized loss estimate for buildings only from Hazus 5.1.

As noted previously, all existing and future buildings and populations (including critical facilities) are vulnerable to atmospheric hazards including drought, hailstorm, heat wave/extreme heat, hurricane/tropical storm, lightning, severe thunderstorm/high wind, tornado, and winter storm and freeze. All existing and future buildings are also considered vulnerable to several of the other natural hazards such as earthquake, as well as the man-made hazards including transportation incident. Some buildings may be more vulnerable to these hazards based on locations, construction, and building type. **Table 6.16** shows the critical facilities vulnerable to additional hazards analyzed in this section. The table lists those assets that are determined to be exposed to each of the identified hazards (marked with an “X”).

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TABLE 6.16: AT-RISK CRITICAL FACILITIES IN SPARTANBURG COUNTY

FACILITY NAME	FACILITY TYPE	Atmospheric							Geo		Hydro		Other								
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
CAMPOBELLO																					
CAMPOBELLO FD STATION 1	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
CAMPOBELLO FD STATION 2	Fire Station	X	X	X	X	X	X	X	X	X	X			X							
CAMPOBELLO FD STATION 3	Fire Station	X	X	X	X	X	X	X	X	X	X										
CAMPOBELLO TOWN HALL & POLICE	Police Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
CAMPOBELLO GRAMLING SCHOOL	School	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
CHESNEE																					
CHESNEE CITY FIRE DEPARTMENT	FIRE STATION	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
CHESNEE POLICE DEPARTMENT	Police Station	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X
CHESNEE ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X
CHESNEE HIGH SCHOOL	School	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X
CHESNEE MIDDLE	School	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X
COWPENS																					
Cowpens Fire Department	Fire Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
COWPENS POLICE DEPARTMENT	Police Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo	Hydro	Other									
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
COWPENS ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X								X			X
COWPENS MIDDLE SCHOOL	School	X	X	X	X	X	X	X	X	X							X	X	X	X	X
DUNCAN																					
DUNCAN FIRE DEPARTMENT	Fire Station	X	X	X	X	X	X	X	X	X	X								X	X	X
POLICE DUNCAN	Police Station	X	X	X	X	X	X	X	X	X	X								X	X	X
BEECH SPRINGS INTERMEDIATE	School	X	X	X	X	X	X	X	X	X	X										
D R HILL MIDDLE SCHOOL	School	X	X	X	X	X	X	X	X	X	X										
DUNCAN ELEMENTARY	School	X	X	X	X	X	X	X	X	X	X										
JAMES BYRNES FRESHMAN ACADEMY	School	X	X	X	X	X	X	X	X	X	X										
JAMES F BYRNES HIGH SCHOOL	School	X	X	X	X	X	X	X	X	X	X										
GREER																					
TYGER RIVER FIRE SERVICE AREA	Fire Station	X	X	X	X	X	X	X	X	X	X							X			X
VILLAGE OF PELHAM	Medical Care Facility	X	X	X	X	X	X	X	X	X	X						X	X			X
ABNER CREEK ACADEMY	School	X	X	X	X	X	X	X	X	X	X										
INMAN																					
Inman Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
Inman Mills Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X		X	X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo	Hydro	Other									
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
INMAN POLICE DEPT	Police Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
INMAN ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
INMAN INTERMEDIATE	School	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X
T E MABRY JR HIGH SCHOOL	School	X	X	X	X	X	X	X	X	X	X	X					X	X		X	X
Inman Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
LANDRUM																					
LANDRUM FIRE DEPARTMENT	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
LANDRUM CITY OF POLICE DEPT	Police Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
LANDRUM HIGH SCHOOL	School	X	X	X	X	X	X	X	X	X	X										
LANDRUM JR. HIGH SCHOOL	School	X	X	X	X	X	X	X	X	X	X										
O P EARLE ELEMENTARY	School	X	X	X	X	X	X	X	X	X	X										
LYMAN																					
LYMAN FIRE DEPT	Fire Station	X	X	X	X	X	X	X	X	X	X							X		X	X
LYMAN POLICE DEPT	Police Station	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X
LYMAN ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X	X										
PACOLET																					
Pacolet Fire District STATION 1	Fire Station	X	X	X	X	X	X	X	X	X										X	X
Pacolet Fire District STATION 2	Fire Station	X	X	X	X	X	X	X	X	X											X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo	Hydro	Other									
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
PACOLET POLICE DEPARTMENT	Police Station	X	X	X	X	X	X	X	X	X							X			X	X
PACOLET ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X				X					X	X	X
PACOLET MIDDLE SCHOOL	School	X	X	X	X	X	X	X	X	X											
REIDVILLE																					
REIDVILLE AREA FIRE DISTRICT	Fire Station	X	X	X	X	X	X	X	X	X	X										
REIDVILLE ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X	X										
SPARTANBURG																					
SPARTANBURG COUNTY EOC AT COURTHOUSE	EOC	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
Spartanburg City Fire Department	Fire Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
Spartanburg FD SOUTHSIDE	Fire Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
Spartanburg FD NORTHSIDE	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
Spartanburg FD WESTGATE	Fire Station	X	X	X	X	X	X	X	X	X							X	X			X
Spartanburg FD HILLCREST	Fire Station	X	X	X	X	X	X	X	X	X							X	X			X
Spartanburg Hospital for Restoration	Medical Care Facility	X	X	X	X	X	X	X	X	X	X						X	X		X	X
Spartanburg Regional Medical Center	Medical Care Facility	X	X	X	X	X	X	X	X	X	X						X	X		X	X
CITY OF SPARTANBURG	Police Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo		Hydro		Other							
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
NORFOLK SOUTHERN CORP POLICE D	Police Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
CARVER MIDDLE SCHOOL	School	X	X	X	X	X	X	X	X	X							X	X		X	X
CLEVELAND ACADEMY OF LEADERSHIP	School	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
CONVERSE COLLEGE	School	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
DISTRICT 7 ADMINISTRATION OFFICE	School	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
DORMAN HIGH	School	X	X	X	X	X	X	X	X	X	X						X	X			X
EDDLEMON ADVENTIST SCHOOL	School	X	X	X	X	X	X	X	X	X							X	X			X
E P TODD ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X								X	X	X	X
GEORGE D JOHNSON SCHOOL OF BUSINESS	School	X	X	X	X	X	X	X	X	X							X	X	X	X	X
JESSE W BOYD ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X								X			X
KENNETH SHULER SCHOOL OF COSMETOLOGY	School	X	X	X	X	X	X	X	X	X											
MARY H WRIGHT ELEMENTARY	School	X	X	X	X	X	X	X	X	X							X	X		X	X
MCCRACKEN JR. HIGH	School	X	X	X	X	X	X	X	X	X							X	X		X	X
MEETING STREET ACADEMY-SPARTANBURG	School	X	X	X	X	X	X	X	X	X							X	X	X	X	X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo	Hydro	Other									
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
MONTESSORI ACADEMY	School	X	X	X	X	X	X	X	X	X							X	X	X	X	X
PALMETTO BEAUTY SCHOOL	School	X	X	X	X	X	X	X	X								X	X	X	X	X
WELLFORD																					
WELLFORD FD	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
WELLFORD POLICE DEPARTMENT	Police Station	X	X	X	X	X	X	X	X	X	X					X	X	X	X	X	X
WELLFORD FD	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X
WOODRUFF																					
Woodruff Fire	Fire Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
WOODRUFF POLICE DEPT	Police Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
WOODRUFF ELEMENTARY	School	X	X	X	X	X	X	X	X	X								X		X	X
WOODRUFF HIGH SCHOOL	School	X	X	X	X	X	X	X	X	X							X	X	X	X	X
WOODRUFF MIDDLE SCHOOL	School	X	X	X	X	X	X	X	X	X								X		X	X
WOODRUFF PRIMARY	School	X	X	X	X	X	X	X	X	X								X		X	X
UNINCORPORATED AREA																					
Boiling Springs Fire District	Fire Station	X	X	X	X	X	X	X	X	X	X										X
Cherokee Spring Fire District	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X			X
Chesnee Community Volunteer Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X		X	X
CHESNEE COMM FD STATION 2	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X		X	X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo	Hydro	Other									
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
Converse Fire Dept	Fire Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
Cooley Springs-Fingerville Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X										X
Croft Fire District	Fire Station	X	X	X	X	X	X	X	X	X											X
Drayton Fire Department	Fire Station	X	X	X	X	X	X	X	X	X				X				X	X	X	X
DUNCAN FD STATION 2	Fire Station	X	X	X	X	X	X	X	X	X	X										
Fairmont fd station	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X			X
Glendale Fire Department	Fire Station	X	X	X	X	X	X	X	X	X											X
GLENDALE FD STATION 2	Fire Station	X	X	X	X	X	X	X	X	X								X			x
Greenville-Spartanburg Airport Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X										X
GLENN SPRINGS-PAULINE FIRE DEPARTMENT	Fire Station	X	X	X	X	X	X	X	X	X											
GLENN SPRINGS-PAULINE FIRE DEPARTMENT 2	Fire Station	X	X	X	X	X	X	X	X	X											
GOWENSVILLE FIRE DEPARTMENT	Fire Station	X	X	X	X	X	X	X	X	X											
GSP RESPONSE POINT 1	Fire Station	X	X	X	X	X	X	X	X	X	X										
Hilltop Area Fire District	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X		X	X
Hobbysville Fire Department	Fire Station	X	X	X	X	X	X	X	X	X								X			X
Holly Springs Volunteer Fire Department	Fire Station	X	X	X	X	X	X	X	X	X											X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo	Hydro	Other									
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
INMAN COMM FD STATION 2	Fire Station	X	X	X	X	X	X	X	X	X	X			X			X	X	X	X	X
INMAN COMMUNITY FIRE DEPARTMENT HQ	Fire Station	X	X	X	X	X	X	X	X	X	X										
Mayo Fire Department	Fire Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
MOUNTAIN VIEW FIRE DEPARTMENT	Fire Station	X	X	X	X	X	X	X	X	X	X										
New Prospect Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X										X
NEW PROSPECT FD STATION 2	Fire Station	X	X	X	X	X	X	X	X	X	X			X							
North Spartanburg Fire and Emergency Ser	Fire Station	X	X	X	X	X	X	X	X	X	X				X	X	X	X			X
Pelham Batesville Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X							X			X
PELHAM FD STATION 1	Fire Station	X	X	X	X	X	X	X	X	X	X										
Poplar Springs Fire Service Area	Fire Station	X	X	X	X	X	X	X	X	X											X
POPLAR SPRINGS FD STATION 3	Fire Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
POPLAR SPRINGS FD STATION 4	Fire Station	X	X	X	X	X	X	X	X	X							X	X			X
Roebuck Fire District	Fire Station	X	X	X	X	X	X	X	X	X						X	X	X			X
SHADY GROVE FIRE DEPARTMENT	Fire Station	X	X	X	X	X	X	X	X	X											
SOUTHPORT FIRE DEPARTMENT	Fire Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
Startex Fire District	Fire Station	X	X	X	X	X	X	X	X	X	X					X		X	X	X	X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo		Hydro		Other							
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
TRINITY FD - CAVINS STATION	Fire Station	X	X	X	X	X	X	X	X	X											
TRINITY FD - CRESCENT STATION	Fire Station	X	X	X	X	X	X	X	X	X											
TRINITY FD - CROSS ANCHOR STATION	Fire Station	X	X	X	X	X	X	X	X	X											
TRINITY FD - ENOREE STATION	Fire Station	X	X	X	X	X	X	X	X	X							X	X	X	X	X
TRINITY FD - HOBBSVILLE STATION	Fire Station	X	X	X	X	X	X	X	X	X				X							
TYGER RIVER FD STATION 2	Fire Station	X	X	X	X	X	X	X	X	X	X										
TYGER RIVER FD STATION 3	Fire Station	X	X	X	X	X	X	X	X	X	X										
Una Community Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X								X	X	X
Westview - Fairforest Fire Department	Fire Station	X	X	X	X	X	X	X	X	X								X			X
WESTVIEW FD STATION 1	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X			X
WESTVIEW FD STATION 2	Fire Station	X	X	X	X	X	X	X	X	X											
WESTVIEW FD STATION 3	Fire Station	X	X	X	X	X	X	X	X	X	X							X			X
Whitney Area Volunteer Fire Department	Fire Station	X	X	X	X	X	X	X	X	X	X						X	X			X
WILLOW CREEK STATION	Fire Station	X	X	X	X	X	X	X	X	X											
WINGO PARK FIRE DEPARTMENT	Fire Station	X	X	X	X	X	X	X	X	X	X									X	X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo		Hydro		Other							
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
Childrens Habilitation Center	Medical Care Facility	X	X	X	X	X	X	X	X	X										X	X
Mary Black Memorial Hospital	Medical Care Facility	X	X	X	X	X	X	X	X	X								X	X	X	X
SPARTANBURG MEDICAL CENTER - MARY BLACK CAMPUS	Medical care facility	X	X	X	X	X	X	X	X	X							X	X	X	X	X
SPARTANBURG REHABILITATION INSTITUTE	Medical care facility	X	X	X	X	X	X	X	X	X	X			X							X
DUNCAN POLICE DEPT NON	Police Station	X	X	X	X	X	X	X	X	X	X										X
GREENVILLE SPARTANBURG INTERNATIONAL AIRPORT POLICE DEPARTMENT	Police STATION	X	X	X	X	X	X	X	X	X	X										X
GREER POLICE DEPARTMENT	Police Station	X	X	X	X	X	X	X	X	X	X							X	X	X	X
SPARTANBURG COUNTY SHERIFFS OFFICE	Police Station	X	X	X	X	X	X	X	X	X	X					X			X	X	X
SOUTH CAROLINA HIGHWAY PATROL - POST D HEADQUARTERS- SPARTANBURG PATROL OFFICE	Police Station	X	X	X	X	X	X	X	X	X	X					X					X
ANDERSON MILL ELEMENTARY	School	X	X	X	X	X	X	X	X	X								X			X
ARCADIA ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X								X	X	X	X
BERRY SHOALS INTERMEDIATE	School	X	X	X	X	X	X	X	X	X											X

SECTION 6: VULNERABILITY ASSESSMENT

FACILITY NAME	FACILITY TYPE	Atmospheric								Geo		Hydro		Other							
		Drought	Hailstorm	Heat Wave/Extreme Heat	Hurricane/Tropical Storm	Lightning	Severe Thunderstorm/High Wind	Tornado	Winter Storm/Freeze	Earthquake	Landslide	Flood- 100 year	Flood- 500 year	Wildfire	Hazmat Fixed Site 0.5 mile	Hazmat Fixed Site 1.0 mile	Hazmat Road 0.5 mile	Hazmat Road 1.0 mile	Hazmat Rail 0.5 mile	Hazmat Rail 1.0 mile	Transportation Incident
BOILING SPRINGS ELEMENTARY	School	X	X	X	X	X	X	X	X	X	X										X
BOILING SPRINGS HIGH NINTH GRADE CA	School	X	X	X	X	X	X	X	X	X	X										X
BOILING SPRINGS HIGH SCHOOL	School	X	X	X	X	X	X	X	X	X	X										X
BOILING SPRINGS JUNIOR HIGH	School	X	X	X	X	X	X	X	X	X	X										X
BOILING SPRINGS MIDDLE	School	X	X	X	X	X	X	X	X	X	X										X
BROOME HIGH SCHOOL	School	X	X	X	X	X	X	X	X	X							X	X	X	X	X
CANNONS ELEMENTARY SCHOOL	School	X	X	X	X	X	X	X	X	X	X					X				X	X
CARLISLE-FOSTER'S GROVE ELEMENTARY	School	X	X	X	X	X	X	X	X	X	X										X
CHARLES LEA/MCCARTHY TEIZLER	School	X	X	X	X	X	X	X	X	X	X								X	X	X

SECTION 7

CAPABILITY ASSESSMENT

This section of the Plan discusses the capability of the jurisdictions in Spartanburg County to implement hazard mitigation activities. It consists of the following four subsections:

- ❖ 7.1 What is a Capability Assessment?
- ❖ 7.2 Conducting the Capability Assessment
- ❖ 7.3 Capability Assessment Findings
- ❖ 7.4 Conclusions on Local Capability

7.1 WHAT IS A CAPABILITY ASSESSMENT?

The purpose of conducting a capability assessment is to determine the ability of a local jurisdiction to implement a comprehensive mitigation strategy and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs, or projects.¹ As in any planning process, it is important to try to establish which goals, objectives, and/or actions are feasible based on an understanding of the organizational capacity of those agencies or departments tasked with their implementation. A capability assessment helps to determine which mitigation actions are practical, and likely to be implemented over time, given a local government's planning and regulatory framework, level of administrative and technical support, amount of fiscal resources, and current political climate.

A capability assessment has two primary components: 1) an inventory of a local jurisdiction's relevant plans, ordinances, or programs already in place and 2) an analysis of its capacity to carry them out. Careful examination of local capabilities will detect any existing gaps, shortfalls, or weaknesses with ongoing government activities that could hinder proposed mitigation activities and possibly exacerbate community hazard vulnerability. A capability assessment also highlights the positive mitigation measures already in place or being implemented at the local government level, which should continue to be supported and enhanced through future mitigation efforts.

The capability assessment completed for Spartanburg County and its municipalities serves as a critical planning step and an integral part of the foundation for designing an effective hazard mitigation strategy. Coupled with the Risk Assessment, the Capability Assessment helps identify and target meaningful mitigation actions for incorporation in the Mitigation Strategy portion of the Hazard Mitigation Plan. It not only helps establish the goals and objectives for the county to pursue under this Plan, but it also ensures that those goals and objectives are realistically achievable under given local conditions.

¹ While the Final Rule for implementing the Disaster Mitigation Act of 2000 does not require a local capability assessment to be completed for local hazard mitigation plans, it is a critical step in developing a mitigation strategy that meets the needs of the region while taking into account their own unique abilities. The Rule does state that a community's mitigation strategy should be "based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools" (44 CFR, Part 201.6(c)(3)).

7.2 CONDUCTING THE CAPABILITY ASSESSMENT

In order to facilitate the inventory and analysis of local government capabilities for Spartanburg County and its municipalities, a detailed Capability Assessment Survey was completed for each of the participating jurisdictions based on the information found in the existing hazard mitigation plans and local government websites. The survey questionnaire compiled information on a variety of “capability indicators” such as existing local plans, policies, programs, or ordinances that contribute to and/or hinder the jurisdictions’ ability to implement hazard mitigation actions. Other indicators included information related to the communities’ fiscal, administrative, and technical capabilities, such as access to local budgetary and personnel resources for mitigation purposes. The current political climate, an important consideration for any local planning or decision-making process, was also evaluated with respect to hazard mitigation.

At a minimum, survey results provide an extensive inventory of existing local plans, ordinances, programs, and resources that are in place or under development in addition to their overall effect on hazard loss reduction. However, the survey instrument can also serve to identify gaps, weaknesses, or conflicts that the county and local jurisdictions can recast as opportunities for specific actions to be proposed as part of the hazard mitigation strategy.

The information collected in the survey questionnaire was incorporated into a database for further analysis. A general scoring methodology² was then applied to quantify each jurisdiction’s overall capability. According to the scoring system, each capability indicator was assigned a point value based on its relevance to hazard mitigation.

Using this scoring methodology, a total score, and an overall capability rating of “high,” “moderate,” or “limited” could be determined according to the total number of points received. These classifications are designed to provide nothing more than a general assessment of local government capability. The results of this capability assessment provide critical information for developing an effective and meaningful mitigation strategy.

7.3 CAPABILITY ASSESSMENT FINDINGS

The findings of the capability assessment are summarized in this Plan to provide insight into the relevant capacity of the jurisdictions in Spartanburg County to implement hazard mitigation activities. All information is based upon the review of the existing hazard mitigation plans and local government websites through the Capability Assessment Survey and input provided by local government officials during meetings of the Spartanburg County Hazard Mitigation Planning Team.

7.3.1 Planning and Regulatory Capability

Planning and regulatory capability is based on the implementation of plans, ordinances, and programs that demonstrate a local jurisdiction’s commitment to guiding and managing growth, development, and redevelopment in a responsible manner while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning, and transportation planning; the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built; as well as protecting environmental, historic, and

² The scoring methodology used to quantify and rank the jurisdictions’ capability can be found in Appendix B.

cultural resources in the community. Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate hazard mitigation principles and practices into the local decision-making process.

This assessment is designed to provide a general overview of the key planning and regulatory tools and programs that are in place or under development for the jurisdictions in Spartanburg County along with their potential effect on loss reduction. This information will help identify opportunities to address existing gaps, weaknesses, or conflicts with other initiatives in addition to integrating the implementation of this Plan with existing planning mechanisms where appropriate.

Table 7.1 provides a summary of the relevant local plans, ordinances, and programs already in place or under development for the jurisdictions in Spartanburg County. A checkmark (✓) indicates that the given item is currently in place and being implemented. An asterisk (*) indicates that the given item is currently being developed for future implementation. A dagger (†) indicates that the given item is administered for that municipality by the county. Each of these local plans, ordinances, and programs should be considered available mechanisms for incorporating the requirements of the Spartanburg County Hazard Mitigation Plan.

TABLE 7.1: RELEVANT PLANS, ORDINANCES, AND PROGRAMS

Planning/Regulatory Tool	SPARTANBURG COUNTY	Campobello	Chesnee	Cowpens	Duncan	Greer	Inman	Landrum	Lyman	Pacolet	Reidville	Spartanburg (city)	Wellford	Woodruff
Hazard Mitigation Plan	✓	†	†	†	†	✓	†	†	†	†	†	†	†	†
Threat and Hazard Identification and Risk Assessment (THIRA)	*													
Comprehensive Land Use Plan	✓		✓		✓	✓	✓	✓	✓	✓		✓		✓
Floodplain Management Plan/Flood Mitigation Plan	✓		✓						✓	✓		✓		✓
Open Space Management Plan (Parks & Rec/Greenway Plan)	✓		✓		✓	✓			✓	✓		✓		✓
Stormwater Management Plan/Ordinance	✓		✓	✓		✓			✓	✓		✓		✓
Natural Resource Protection Plan	✓		✓							✓				
Flood Response Plan	✓		✓	✓					✓			✓		
Emergency Operations Plan	✓			✓				✓	✓	✓		✓		✓
Emergency Management Accreditation Program (EMAP Accreditation)														
Continuity of Operations Plan	✓								✓	✓		✓		✓

Planning/Regulatory Tool	SPARTANBURG COUNTY	Campobello	Chesnee	Cowpens	Duncan	Greer	Inman	Landrum	Lyman	Pacolet	Reidville	Spartanburg (city)	Wellford	Woodruff
Evacuation Plan	✓								✓	✓		✓		
Disaster Recovery Plan	✓									✓		✓		✓
Capital Improvements Plan	✓		✓			✓			✓	✓		✓		✓
Economic Development Plan	✓		✓						✓	✓		✓		✓
Historic Preservation Plan			✓							✓		✓		✓
Flood Damage Prevention Ordinance	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓		✓
Zoning Ordinance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Subdivision Ordinance	✓		✓			✓		†	✓	✓		✓		
Unified Development Ordinance	✓		✓											
Post-Disaster Redevelopment/Reconstruction Plan/Ordinance			✓											
Building Code	✓	†	†	†		✓	†	†	✓	†	✓	✓		✓
Fire Code	✓	†	✓	✓		✓	†	✓	✓	✓		✓		✓
National Flood Insurance Program (NFIP)	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓		✓
NFIP Community Rating System (CRS Program)														

A more detailed discussion on the county's planning and regulatory capability follows.

7.3.2 Emergency Management

Hazard mitigation is widely recognized as one of the four primary phases of emergency management. The three other phases include preparedness, response, and recovery. In reality, each phase is interconnected with hazard mitigation as **Figure 7.1** suggests. Opportunities to reduce potential losses through mitigation practices are most often implemented before disaster strikes, such as the elevation of flood prone structures or the continuous enforcement of policies that prevent and regulate development that is vulnerable to hazards due to its location, design, or other characteristics. Mitigation opportunities will also be presented during immediate preparedness or response activities, such as installing storm shutters

in advance of a hurricane, and certainly during the long-term recovery and redevelopment process following a hazard event.

FIGURE 7.1: THE FOUR PHASES OF EMERGENCY MANAGEMENT



Planning for each phase is a critical part of a comprehensive emergency management program and a key to the successful implementation of hazard mitigation actions. As a result, the Capability Assessment Survey asked several questions across a range of emergency management plans in order to assess the participating jurisdictions' willingness to plan and their level of technical planning proficiency.

Hazard Mitigation Plan: A hazard mitigation plan represents a community's blueprint for how it intends to reduce the impact of natural and human-caused hazards on people and the built environment. The essential elements of a hazard mitigation plan include a risk assessment, capability assessment, and mitigation strategy.

- ❖ Spartanburg County has previously adopted a hazard mitigation plan. Each participating municipality was included in the county's plan. Previously, Greer had a single-jurisdiction city-level plan but has merged with the Spartanburg County plan during this plan update.

Disaster Recovery Plan: A disaster recovery plan serves to guide the physical, social, environmental, and economic recovery and reconstruction process following a disaster. In many instances, hazard mitigation principles and practices are incorporated into local disaster recovery plans with the intent of capitalizing on opportunities to break the cycle of repetitive disaster losses. Disaster recovery plans can also lead to the preparation of disaster redevelopment policies and ordinances to be enacted following a hazard event.

- ❖ Spartanburg County, Pacolet, Spartanburg (city), and Woodruff have adopted disaster recovery plans. The other participating jurisdictions should consider developing a plan to guide the recovery and reconstruction process following a disaster.

Emergency Operations Plan: An emergency operations plan outlines responsibilities and the means by which resources are deployed during and following an emergency or disaster.

- ❖ Spartanburg County maintains an emergency operations plan through the County Emergency Management Department.

- ❖ Cowpens, Landrum, Lyman, Pacolet, Spartanburg (city), and Woodruff have also adopted municipal-level emergency operations plans.

Continuity of Operations Plan: A continuity of operations plan establishes a chain of command, line of succession, and plans for backup or alternate emergency facilities in case of an extreme emergency or disaster event.

- ❖ Spartanburg County has developed a county continuity of operations plan.
- ❖ Lyman, Pacolet, Spartanburg (city), and Woodruff have developed municipal-level continuity of operations plans for their jurisdictions.

Flood Response Plan: A flood response plan establishes procedures for responding to a flood emergency including coordinating and facilitating resources to minimize the impacts of flood.

- ❖ Spartanburg County has adopted a flood response plan.
- ❖ Chesnee, Cowpens, Lyman, and Spartanburg (city) have also adopted municipal-level flood response plans.

7.3.3 General Planning

The implementation of hazard mitigation activities often involves agencies and individuals beyond the emergency management profession. Stakeholders may include local planners, public works officials, economic development specialists, and others. In many instances, concurrent local planning efforts will help to achieve or complement hazard mitigation goals even though they are not designed as such. Therefore, the Capability Assessment Survey also asked questions regarding general planning capabilities and the degree to which hazard mitigation is integrated into other on-going planning efforts in Spartanburg County.

Comprehensive Land Use Plan: A comprehensive land use plan establishes the overall vision for what a community wants to be and serves as a guide for future governmental decision making. Typically a comprehensive plan contains sections on demographic conditions, land use, transportation elements, and community facilities. Given the broad nature of the plan and its regulatory standing in many communities, the integration of hazard mitigation measures into the comprehensive plan can enhance the likelihood of achieving risk reduction goals, objectives, and actions.

- ❖ Spartanburg County has adopted a county comprehensive plan.
- ❖ Each of the participating municipalities except Campobello, Cowpens, Reidville, and Wellford has adopted a municipal land use or land development plan.

Capital Improvements Plan: A capital improvements plan guides the scheduling of spending on public improvements. A capital improvements plan can serve as an important mechanism for guiding future development away from identified hazard areas. Limiting public spending in hazardous areas is one of the most effective long-term mitigation actions available to local governments.

- ❖ Spartanburg County, Chesnee, Greer, Lyman, Pacolet, Spartanburg (city), and Woodruff have capital improvement plans in place.

Historic Preservation Plan: A historic preservation plan is intended to preserve historic structures or districts within a community. An often overlooked aspect of the historic preservation plan is the assessment of buildings and sites located in areas subject to natural hazards and the identification of ways to reduce future damages. This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards or are within a historic district that cannot easily be relocated out of harm's way.

- ❖ Spartanburg County has not developed a historic preservation plan; however, Chesnee, Pacolet, Spartanburg (city), and Woodruff do have historic preservation plans in place.

Zoning Ordinance: Zoning represents the primary means by which land use is controlled by local governments. As part of a community's police power, zoning is used to protect the public health, safety, and welfare of those in a given jurisdiction that maintains zoning authority. A zoning ordinance is the mechanism through which zoning is typically implemented. Since zoning regulations enable municipal governments to limit the type and density of development, a zoning ordinance can serve as a powerful tool when applied in identified hazard areas.

- ❖ Spartanburg County and each of the participating municipalities except Reidville have adopted zoning ordinances.
- ❖ The county and Chesnee include zoning regulations as part of their local unified development ordinances. The remaining participating municipalities have adopted standalone zoning ordinances.

Subdivision Ordinance: A subdivision ordinance is intended to regulate the development of residential, commercial, industrial, or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development.

- ❖ Spartanburg County, Chesnee, Greer, Landrum, Lyman, Pacolet, and Spartanburg (city) have adopted subdivision ordinances. Landrum utilizes the county's ordinance.
- ❖ The county and Chesnee include subdivision regulations as part of their local unified development ordinances. The remaining participating municipalities have adopted standalone subdivision ordinances.

Building Codes, Permitting, and Inspections: Building codes regulate construction standards. In many communities, permits and inspections are required for new construction. Decisions regarding the adoption of building codes (that account for hazard risk), the type of permitting process required both before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk faced by a community.

- ❖ Spartanburg County has adopted the South Carolina State Building Code. The county provides building code enforcement for all unincorporated areas of the county as well as Campobello, Chesnee, Cowpens, Inman, Landrum, and Pacolet.
- ❖ Greer, Lyman, Reidville, Spartanburg (city), and Woodruff are responsible for enforcement of the building code within their planning jurisdictions.

The adoption and enforcement of building codes by local jurisdictions is routinely assessed through the Building Code Effectiveness Grading Schedule (BCEGS) program developed by the Insurance Services Office, Inc. (ISO).³ In South Carolina, the South Carolina Building Codes Council, which is under the SC Department of Labor, Licensing, and Regulation, assesses the building codes in effect in a particular community and how the community enforces its building codes *with special emphasis on mitigation of losses from natural hazards*. The results of BCEGS assessments are routinely provided to ISO's member private insurance companies, which in turn may offer ratings credits for new buildings constructed in communities with strong BCEGS classifications. The concept is that communities with well-enforced, up-to-date codes should experience fewer disaster-related losses and, as a result, should have lower insurance rates.

In conducting the assessment, ISO collects information related to personnel qualification and continuing education as well as the number of inspections performed per day. This type of information combined with local building codes is used to determine a grade for that jurisdiction. The grades range from 1 to 10 with a BCEGS grade of 1 representing exemplary commitment to building code enforcement and a grade of 10 indicating less than minimum recognized protection.

Specific BCEGS rating for the participating jurisdictions can be obtained by contacting the department for building inspections within that jurisdiction.

7.3.4 Floodplain Management

Flooding represents the greatest natural hazard facing the nation. At the same time, the tools available to reduce the impacts associated with flooding are among the most developed when compared to other hazard-specific mitigation techniques. In addition to approaches that cut across hazards such as education, outreach, and the training of local officials, the National Flood Insurance Program (NFIP) contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. Participation in the NFIP is voluntary for local governments; however, program participation is strongly encouraged by FEMA as a first step for implementing and sustaining an effective hazard mitigation program. It is therefore used as part of this assessment as a key indicator for measuring local capability.

In order for a county or municipality to participate in the NFIP, they must adopt a local flood damage prevention ordinance that requires jurisdictions to follow established minimum building standards in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by a 100-year flood event and that new development in the floodplain will not exacerbate existing flood problems or increase damage to other properties.

A key service provided by the NFIP is the mapping of identified flood hazard areas. Once completed, the Flood Insurance Rate Maps (FIRMs) are used to assess flood hazard risk, regulate construction practices, and set flood insurance rates. FIRMs are an important source of information to educate residents, government officials, and the private sector about the likelihood of flooding in their community.

³ Participation in BCEGS is voluntary and may be declined by local governments if they do not wish to have their local building codes evaluated.

Table 7.2 provides NFIP policy and claim information for each participating jurisdiction in Spartanburg County.

TABLE 7.2: NFIP POLICY AND CLAIM INFORMATION

Jurisdiction	Date Joined NFIP	Current Effective Map Date	NFIP Policies in Force	Insurance in Force	Closed Claims	Total Payments to Date
SPARTANBURG COUNTY†	08/01/84	05/04/21	257 total / 22 unincorp	\$51,287,800	76	\$927,204
Campobello	11/24/78	01/06/11	2	\$700,000	1	\$0
Chesnee	01/06/11	01/06/11	--	--	5	\$14,914.07
Cowpens*	--	--	--	--	--	--
Duncan	05/27/77	05/04/21	2	\$525,000	3	\$757.33
Greer	09/28/79	05/04/21	7	\$1,558,000	4	\$12,383.66
Inman	11/24/78	01/06/11(M)	--	--	9	\$49,017.42
Landrum	07/16/81	01/06/11	2	\$630,000	0	\$0
Lyman	05/27/77	05/04/21	2	\$1,210,000	2	\$19,538.78
Pacolet	11/24/78	01/06/11	--	--	1	\$1,811.09
Reidville*	--	--	--	--	--	--
Spartanburg (city)	01/06/11	05/04/21	53	\$14,127,700	68	\$828,782.02
Wellford*	--	--	--	--	--	--
Woodruff	11/24/78	01/06/11(M)	--	--	2	\$0

†Includes unincorporated areas of county

*Community does not participate in the NFIP

(M) – No Elevation Determined – All Zone A, C and X

Source: NFIP Community Status information as of 10/17/22; NFIP claims and policy information as of 10/17/22

All jurisdictions listed above that are participants in the NFIP will continue to comply with all required provisions of the program and will work to adequately comply in the future utilizing a number of strategies. For example, the jurisdictions will coordinate with the South Carolina Department of Natural Resources (SCDNR) and FEMA to develop maps and regulations related to special flood hazard areas within their jurisdictional boundaries and, through a consistent monitoring process, will design and improve their floodplain management program in a way that reduces the risk of flooding to people and property.

The Town of Reidville does not participate in the NFIP because it currently does not have any identified flood hazard areas within its jurisdiction. The Town of Cowpens and Town of Wellford also do not participate in the NFIP due to lack of available funding and/or political support.

Community Rating System: An additional indicator of floodplain management capability is the active participation of local jurisdictions in the Community Rating System (CRS). The CRS is an incentive-based program that encourages counties and municipalities to undertake defined flood mitigation activities that go beyond the minimum requirements of the NFIP by adding extra local measures to provide protection from flooding. All of the 18 creditable CRS mitigation activities are assigned a range of point values. As points are accumulated and reach identified thresholds, communities can apply for an improved CRS class rating. Class ratings, which range from 10 to 1, are tied to flood insurance premium reductions as shown in **Table 7.3**. As class rating improves (the lower the number the better), the percent reduction in flood insurance premiums for NFIP policyholders in that community increases.

TABLE 7.3: CRS PREMIUM DISCOUNTS, BY CLASS

CRS Class	Premium Reduction
1	45%
2	40%
3	35%
4	30%
5	25%
6	20%
7	15%
8	10%
9	5%
10	0

Source: Federal Emergency Management Agency

Community participation in the CRS is voluntary. Any community that is in full compliance with the rules and regulations of the NFIP may apply to FEMA for a CRS classification better than class 10. The CRS application process has been greatly simplified over the past several years based on community comments. Changes were made with the intent to make the CRS more user-friendly and make extensive technical assistance available for communities who request it.

- ❖ Neither the county nor any of the participating municipalities currently participate in the CRS. Participation in the CRS program should be considered as a mitigation action by all of the jurisdictions. The program would be most beneficial to Spartanburg County and the City of Spartanburg, which have 257 and 53 NFIP policies, respectively.

Flood Damage Prevention Ordinance: A flood damage prevention ordinance establishes minimum building standards in the floodplain with the intent to minimize public and private losses due to flood conditions.

- ❖ All communities participating in the NFIP are required to adopt a local flood damage prevention ordinance. The county and each participating municipality except Cowpens, Reidville, and Wellford participate in the NFIP and they all have adopted flood damage prevention regulations.

Floodplain Management Plan: A floodplain management plan (or a flood mitigation plan) provides a framework for action regarding corrective and preventative measures to reduce flood-related impacts.

- ❖ Spartanburg County, Chesnee, Lyman, Pacolet, Spartanburg (city), and Woodruff have adopted floodplain management plans.

Open Space Management Plan: An open space management plan is designed to preserve, protect, and restore largely undeveloped lands in their natural state and to expand or connect areas in the public domain such as parks, greenways, and other outdoor recreation areas. In many instances, open space management practices are consistent with the goals of reducing hazard losses, such as the preservation of wetlands or other flood-prone areas in their natural state in perpetuity.

- ❖ Spartanburg County, Chesnee, Duncan, Greer, Lyman, Pacolet, Spartanburg (city), and Woodruff have adopted open space management plans, parks and recreation master plans, or trails and greenway master plans.

Stormwater Management Plan: A stormwater management plan is designed to address flooding associated with stormwater runoff. The stormwater management plan is typically focused on design and construction measures that are intended to reduce the impact of more frequently occurring minor urban flooding.

- ❖ Spartanburg County, Chesnee, Cowpens, Lyman, Pacolet, Spartanburg (city), and Woodruff have storm water management plans in places.
- ❖ Spartanburg County, Greer, and Spartanburg have adopted stormwater management ordinances.

7.3.5 Administrative and Technical Capability

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its ability to direct staff time and resources for that purpose. Administrative capability can be evaluated by determining how mitigation-related activities are assigned to local departments and if there are adequate personnel resources to complete these activities. The degree of intergovernmental coordination among departments will also affect administrative capability for the implementation and success of proposed mitigation activities.

Technical capability can generally be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in using geographic information systems (GIS) to analyze and assess community hazard vulnerability. The Capability Assessment Survey was used to capture information on administrative and technical capability through the identification of available staff and personnel resources.

Table 7.4 provides a summary of the capability assessment results for Spartanburg County with regard to relevant staff and personnel resources. A checkmark (✓) indicates the presence of a staff member(s) in that jurisdiction with the specified knowledge or skill. A dagger (†) indicates a county-level staff member(s) provides the specified knowledge or skill to that municipality.

TABLE 7.4: RELEVANT STAFF/PERSONNEL RESOURCES

Staff/Personnel Resource	SPARTANBURG COUNTY	Campobello	Chesnee	Cowpens	Duncan	Greer	Inman	Landrum	Lyman	Pacolet	Reidville	Spartanburg (city)	Wellford	Woodruff
Planners with knowledge of land development/land management practices	✓		✓			✓		✓		✓		✓		✓
Engineers or professionals trained in construction practices related to buildings and/or infrastructure	✓	†	✓	†		✓	†	†	✓	✓	✓	✓		✓
Planners or engineers with an understanding of natural and/or human-caused hazards	✓	†	✓	†		✓	†	†		✓		✓		✓
Emergency Manager	✓		✓							✓		✓		✓
Floodplain Manager	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓		✓
Land Surveyors	✓			✓						✓		✓		✓
Scientists familiar with the hazards of the community	✓	†	†	†	†	†	†	†	†	†	†	†	†	†
Staff with education or expertise to assess the community's vulnerability to hazards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Personnel skilled in GIS and/or Hazus	✓			✓		✓				✓		✓		✓
Resource development staff or grant writers	✓			✓				✓		✓		✓		✓

Credit for having a floodplain manager was given to those jurisdictions that have a flood damage prevention ordinance and therefore an appointed floodplain administrator, regardless of whether the appointee was dedicated solely to floodplain management. Credit was given for having a scientist familiar with the hazards of the community if a jurisdiction has a Cooperative Extension Service or Soil and Water Conservation Department. Credit was also given for having staff with education or expertise to assess the community's vulnerability to hazards if a staff member from the jurisdiction was a participant on the existing hazard mitigation plan's planning committee.

7.3.6 Fiscal Capability

The ability of a local government to take action is often closely associated with the amount of money available to implement policies and projects. This may take the form of outside grant funding awards or locally-based revenue and financing. The costs associated with mitigation policy and project implementation vary widely. In some cases, policies are tied primarily to staff time or administrative costs

associated with the creation and monitoring of a given program. In other cases, direct expenses are linked to an actual project, such as the acquisition of flood-prone homes, which can require a substantial commitment from local, state, and federal funding sources.

The Capability Assessment Survey was used to capture information on the county's fiscal capability through the identification of locally available financial resources.

Table 7.5 provides a summary of the results for Spartanburg County with regard to relevant fiscal resources. A checkmark (✓) indicates that the given fiscal resource has previously been used to implement hazard mitigation actions. A dagger (†) indicates that the given fiscal resource is locally available for hazard mitigation purposes (including match funds for state and federal mitigation grant funds).

TABLE 7.5: RELEVANT FISCAL RESOURCES

Fiscal Tool/Resource	SPARTANBURG COUNTY	Campobello	Chesnee	Cowpens	Duncan	Greer	Inman	Landrum	Lyman	Pacolet	Reidville	Spartanburg (city)	Wellford	Woodruff
Capital Improvement Programming	†		†			†		†	†			†		†
Community Development Block Grants (CDBG)	†		†			†				†		†		†
Special Purpose Taxes (or taxing districts)	†			†		†				†		†		†
Gas/Electric Utility Fees	†								†	†		†		†
Water/Sewer Fees			†	†					†	†				†
Stormwater Utility Fees	†								†			†		†
Development Impact Fees	†								†					†
General Obligation, Revenue, and/or Special Tax Bonds	†											†		†
Partnering Arrangements or Intergovernmental Agreements	†		†					†	†	†		†		†
Other: staff resources, general funding, enterprise funding, and other federal funding sources						†								

7.3.7 Political Capability

One of the most difficult capabilities to evaluate involves the political will of a jurisdiction to enact meaningful policies and projects designed to reduce the impact of future hazard events. Hazard mitigation may not be a local priority or may conflict with or be seen as an impediment to other goals of the

community, such as growth and economic development. Therefore, the local political climate must be considered in designing mitigation strategies as it could be the most difficult hurdle to overcome in accomplishing their adoption and implementation.

The Capability Assessment Survey was used to capture information on political capability of Spartanburg County. The previous hazard mitigation plan was reviewed for general examples of local political capability, such as guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum state or federal requirements (i.e., building codes, floodplain management, etc.).

- ❖ The previous local hazard mitigation plan identified existing ordinances that address natural hazards or are related to hazard mitigation such as flood damage prevention, soil erosion and sedimentation control, stormwater management, zoning, and subdivision.
- ❖ Spartanburg County is currently a participant in the NFIP and has adopted the required Flood Damage Prevention Ordinance. The county has also adopted a Stormwater Management Plan, Enforcement Response Plan, and Stormwater Management Ordinance. This demonstrates to some extent both favorable political support and a willingness to adopt hazard mitigation efforts in an active manner.

Table 7.6 provides a summary of the results for Spartanburg County with regard to political capability. A checkmark (✓) indicates the expected degree of political support by local elected officials in terms of adopting/funding information.

TABLE 7.6: LOCAL POLITICAL SUPPORT

Political Support	SPARTANBURG COUNTY	Campobello	Chesnee	Cowpens	Duncan	Greer	Inman	Landrum	Lyman	Pacolet	Reidville	Spartanburg (city)	Wellford	Woodruff
Limited		✓		✓	✓		✓	✓	✓	✓	✓		✓	
Moderate	✓					✓								✓
High			✓									✓		

7.4 CONCLUSIONS ON LOCAL CAPABILITY

In order to form meaningful conclusions on the assessment of local capability, a quantitative scoring methodology was designed and applied to the results of the Capability Assessment Survey. The maximum number of points possible (one, two, or three) was assigned to each plan, ordinance, program, or resource based on its relevance to hazard mitigation. If a plan, ordinance, program, or resource was under development or administered for a municipality at the county-level, one point became the highest score possible. The maximum total number of points possible under the scoring methodology is 86, and three

categories were established to classify capability level as limited (0-24 points), moderate (25-49 points), or high (50-86 points). This methodology, further described in Appendix B, attempts to assess the overall level of capability of Spartanburg County to implement hazard mitigation actions.

The overall capability to implement hazard mitigation actions varies among the participating jurisdictions. For planning and regulatory capability, the jurisdictions range from limited to moderate to high. There is also some variation in the administrative and technical capability among the jurisdictions with larger jurisdictions generally having greater staff and technical resources. All of the jurisdictions are in the limited to moderate range for fiscal capability.

Table 7.7 shows the results of the capability assessment using the designed scoring methodology. The capability score is based on the information found in the existing hazard mitigation plans and readily available on the jurisdictions' government websites. This information was reviewed by all jurisdictions and each jurisdiction provided feedback on the information included in the capability assessment. Local government input was vital to identifying capabilities. According to the assessment, the average local capability score for all jurisdictions is 33.5, which falls into the moderate capability ranking.

TABLE 7.7: CAPABILITY ASSESSMENT RESULTS

Jurisdiction	Overall Capability Score	Overall Capability Rating
SPARTANBURG COUNTY	63	High
Campobello	16	Limited
Chesnee	49	Moderate
Cowpens	20	Limited
Duncan	17	Limited
Greer	37	Moderate
Inman	19	Limited
Landrum	27	Moderate
Lyman	43	Moderate
Pacolet	54	High
Reidville	7	Limited
Spartanburg (city)	58	High
Wellford	5	Limited
Woodruff	54	High

As previously discussed, one of the reasons for conducting a Capability Assessment is to examine local capabilities to detect any existing gaps or weaknesses within ongoing government activities that could hinder proposed mitigation activities and possibly exacerbate community hazard vulnerability. These gaps or weaknesses have been identified for each jurisdiction in the tables found throughout this section. The participating jurisdictions used the Capability Assessment as part of the basis for the Mitigation Actions that are identified in Section 9; therefore, each jurisdiction addresses their ability to expand on and improve their existing capabilities through the identification of their Mitigation Actions.

7.4.1 Linking the Capability Assessment with the Risk Assessment and the Mitigation Strategy

The conclusions of the Risk Assessment and Capability Assessment serve as the foundation for the development of a meaningful hazard mitigation strategy. During the process of identifying specific mitigation actions to pursue, the Spartanburg County Hazard Mitigation Planning Team considered not only each jurisdiction's level of hazard risk, but also their existing capability to minimize or eliminate that risk.

SECTION 8

MITIGATION STRATEGY

This section of the Plan provides the blueprint for the participating jurisdictions in Spartanburg County to follow in order to become less vulnerable to its identified hazards. It is based on general consensus of the Spartanburg County Hazard Mitigation Planning Team and the findings and conclusions of the Capability Assessment and Risk Assessment. It consists of the following five subsections:

- ❖ 8.1 Introduction
- ❖ 8.2 Mitigation Goals
- ❖ 8.3 Identification and Analysis of Mitigation Techniques
- ❖ 8.4 Selection of Mitigation Techniques for Spartanburg County
- ❖ 8.5 Plan Update Requirement

8.1 INTRODUCTION

The intent of the Mitigation Strategy is to provide Spartanburg County with the goals that will serve as guiding principles for future mitigation policy and project administration along with an analysis of mitigation techniques available to meet those goals and reduce the impact of identified hazards. It is designed to be comprehensive, strategic, and functional in nature:

- ❖ In being *comprehensive*, the development of the strategy includes a thorough review of all hazards and identifies extensive mitigation measures intended to not only reduce the future impacts of high-risk hazards, but also to help the region achieve compatible economic, environmental, and social goals.
- ❖ In being *strategic*, the development of the strategy ensures that all policies and projects proposed for implementation are consistent with pre-identified, long-term planning goals.
- ❖ In being *functional*, each proposed mitigation action is linked to established priorities and assigned to specific departments or individuals responsible for their implementation with target completion deadlines. When necessary, funding sources are identified that can be used to assist in project implementation.

The first step in designing the Mitigation Strategy includes the identification of mitigation goals. Mitigation goals represent broad statements that are achieved through the implementation of more specific mitigation actions. These actions include both hazard mitigation policies (such as the regulation of land in known hazard areas through a local ordinance) and hazard mitigation projects that seek to address specifically targeted hazard risks (such as the acquisition and relocation of a repetitive loss structure).

The second step involves the identification, consideration, and analysis of available mitigation measures to help achieve the identified mitigation goals. This is a long-term, continuous process sustained through the development and maintenance of this Plan. Alternative mitigation measures will continue to be

considered as future mitigation opportunities are identified, as data and technology improve, as mitigation funding becomes available, and as this Plan is maintained over time.

The third and last step in designing the Mitigation Strategy is the selection and prioritization of specific mitigation actions for Spartanburg County and its municipalities (provided separately in Section 9: *Mitigation Action Plan*). The county and each participating jurisdiction have its own Mitigation Action Plan (MAP) that reflects the needs and concerns of that jurisdiction. The MAP represents an unambiguous and functional plan for action and is considered to be the most essential outcome of the mitigation planning process.

The MAP includes a prioritized listing of proposed hazard mitigation actions (policies and projects) for Spartanburg County and its municipalities to complete. Each action has accompanying information, such as those departments or individuals assigned responsibility for implementation, potential funding sources, and an estimated target date for completion. The MAP provides those departments or individuals responsible for implementing mitigation actions with a clear roadmap that also serves as an important tool for monitoring success or progress over time. The cohesive collection of actions listed in the MAP can also serve as an easily understood menu of mitigation policies and projects for those local decision makers who want to quickly review the recommendations and proposed actions of the Hazard Mitigation Plan.

In preparing each Mitigation Action Plan for Spartanburg County, officials considered the overall hazard risk and capability to mitigate the effects of hazards as recorded through the risk and capability assessment process in addition to meeting the adopted mitigation goals and unique needs of the community.

8.1.1 Mitigation Action Prioritization

Prioritization of the proposed mitigation actions was based on the following six factors:

- ❖ Effect on overall risk to life and property
- ❖ Ease of implementation
- ❖ Political and community support
- ❖ A general economic cost/benefit review¹
- ❖ Funding availability
- ❖ Continued compliance with the NFIP

The point of contact for each jurisdiction helped coordinate the prioritization process by reviewing each action and working with the lead agency/department responsible to determine a priority for each action using the six factors listed above.

¹ Only a general economic cost/benefit review was considered by the Hazard Mitigation Planning Team through the process of selecting and prioritizing mitigation actions. Mitigation actions with “high” priority were determined to be the most cost effective and most compatible with the participating jurisdictions’ unique needs. Actions with a “moderate” priority were determined to be cost-effective and compatible with jurisdictional needs but may be more challenging to complete administratively or fiscally than “high” priority actions. Actions with a “low” priority were determined to be important community needs, but the community likely identified several potential challenges in terms of implementation (e.g., lack of funding, technical obstacles). A more detailed cost/benefit analysis will be applied to particular projects prior to the application for or obligation of funding, as appropriate.

Using these criteria, actions were classified as high, moderate, or low priority by the participating jurisdiction officials.

8.2 MITIGATION GOALS

44 CFR Requirement

44 CFR Part 201.6(c)(3)(i): The mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

The primary goal of all local governments is to promote the public health, safety, and welfare of its citizens. In keeping with this standard, Spartanburg County and the participating municipalities have developed six goal statements for local hazard mitigation planning in the county. In developing these goals, the previous hazard mitigation plan was reviewed to determine if the goals remained applicable. Two goals were combined, and the remaining five goals were reworded and expanded. The modified goals were presented, reviewed, voted on, and accepted by the Hazard Mitigation Planning Team. Each goal, purposefully broad in nature, serves to establish parameters that were used in developing mitigation actions. The Spartanburg County Mitigation Goals are presented in **Table 8.1**. Consistent implementation of actions over time will ensure that community goals are achieved.

TABLE 8.1: SPARTANBURG COUNTY MITIGATION GOALS

	Goal
Goal #1	Local government and the community shall have the capability to initiate and sustain emergency response operations to include shelter designations and services.
Goal #2	Provide for continuity of local government operations during disasters to include plan development, resource identification, redundant equipment, facilities, and/or supplies to facilitate reestablishing local government operations after a disaster.
Goal #3	The health, safety, and welfare of the community's residents and visitors shall be provided for during disasters by ensuring adequate systems for notifying the public at risk and providing emergency instruction during a disaster is available in all identified hazard areas as well as adequate resources, equipment, and supplies to meet citizens' health and safety needs after a disaster.
Goal #4	The policies and regulations of local government shall support effective hazard mitigation programming throughout the community to include reducing the vulnerability of facilities in the community posing an extra health or safety risk when damaged or disrupted by a disaster. Land use policies, plans, and regulations shall discourage and/or prohibit inappropriate location of structures or infrastructure components in areas of higher risk and enforce appropriate development codes.
Goal #5	The availability and functioning of the community's infrastructure shall not be significantly disrupted by a disaster. Transportation facilities and systems serving the community shall be constructed and/or retrofitted to minimize the potential for disruption during a disaster.
Goal #6	Develop and maintain an education program to inform all members of the community of the risks/hazards threatening the local area and assist them in understanding their vulnerability to disasters and provide technique ideas to minimize vulnerability to those hazards.

8.3 IDENTIFICATION AND ANALYSIS OF MITIGATION TECHNIQUES

44 CFR Requirement

44 CFR Part 201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effect of each hazard, with particular emphasis on new and existing buildings and infrastructure.

In formulating the Mitigation Strategy for Spartanburg County, a wide range of activities were considered in order to help achieve the established mitigation goals in addition to addressing any specific hazard concerns. These activities were discussed during the Spartanburg County Hazard Mitigation Planning Team meetings. In general, all activities considered by the Hazard Mitigation Planning Team can be classified under one of the following six broad categories of mitigation techniques: Prevention, Property Protection, Natural Resource Protection, Structural Projects, Emergency Services, and Public Awareness and Education. These are discussed in detail below.

8.3.1 Prevention

Preventative activities are intended to keep hazard problems from getting worse and are typically administered through government programs or regulatory actions that influence the way land is developed and buildings are built. They are particularly effective in reducing a community's future vulnerability, especially in areas where development has not occurred, or capital improvements have not been substantial. Examples of preventative activities include:

- ❖ Planning and zoning
- ❖ Building codes
- ❖ Open space preservation
- ❖ Floodplain regulations
- ❖ Stormwater management regulations
- ❖ Drainage system maintenance
- ❖ Capital improvements programming
- ❖ Riverine/fault zone setbacks

8.3.2 Property Protection

Property protection measures involve the modification of existing buildings and structures to help them better withstand the forces of a hazard or removal of the structures from hazardous locations. Examples include:

- ❖ Acquisition
- ❖ Relocation
- ❖ Building elevation
- ❖ Critical facilities protection
- ❖ Retrofitting (e.g., windproofing, floodproofing, seismic design techniques, etc.)

- ❖ Safe rooms, shutters, shatter-resistant glass
- ❖ Insurance

8.3.3 Natural Resource Protection

Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas and their protective functions. Such areas include floodplains, wetlands, steep slopes, and sand dunes. Parks, recreation, or conservation agencies and organizations often implement these protective measures. Examples include:

- ❖ Floodplain protection
- ❖ Watershed management
- ❖ Riparian buffers
- ❖ Forest and vegetation management (e.g., fire resistant landscaping, fuel breaks, etc.)
- ❖ Erosion and sediment control
- ❖ Wetland preservation and restoration
- ❖ Habitat preservation
- ❖ Slope stabilization

8.3.4 Structural Projects

Structural mitigation projects are intended to lessen the impact of a hazard by modifying the environmental natural progression of the hazard event through construction. They are usually designed by engineers and managed or maintained by public works staff. Examples include:

- ❖ Reservoirs
- ❖ Dams/levees/dikes/floodwalls
- ❖ Diversions/detention/retention
- ❖ Channel modification
- ❖ Storm sewers

8.3.5 Emergency Services

Although not typically considered a “mitigation” technique, emergency service measures do minimize the impact of a hazard event on people and property. These commonly are actions taken immediately prior to, during, or in response to a hazard event. Examples include:

- ❖ Warning systems
- ❖ Evacuation planning and management
- ❖ Emergency response training and exercises
- ❖ Sandbagging for flood protection
- ❖ Installing temporary shutters for wind protection

8.3.6 Public Education and Awareness

Public education and awareness activities are used to advise residents, elected officials, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property. Examples of measures to educate and inform the public include:

- ❖ Outreach projects
- ❖ Speaker series/demonstration events
- ❖ Hazard map information
- ❖ Real estate disclosure
- ❖ Library materials
- ❖ School children's educational programs
- ❖ Hazard expositions

8.4 SELECTION OF MITIGATION TECHNIQUES FOR SPARTANBURG COUNTY

In order to determine the most appropriate mitigation techniques for the communities in Spartanburg County, the Hazard Mitigation Planning Team thoroughly reviewed and considered the findings of the Capability Assessment and Risk Assessment to determine the best activities for their respective communities. Other considerations included the effect of each mitigation action on overall risk to life and property, its ease of implementation, its degree of political and community support, its general cost-effectiveness, and funding availability (if necessary).

8.5 PLAN UPDATE REQUIREMENT

In keeping with FEMA requirements for plan updates, the Mitigation Actions identified in the previous plans were evaluated to determine their 2022 implementation status. Updates on the implementation status of each action are provided. The mitigation actions provided in Section 9: *Mitigation Action Plan* include the mitigation actions from the previous plans as well as any new mitigation actions proposed through the 2022 planning process.

SECTION 9

MITIGATION ACTION PLAN

This section includes the listing of the mitigation actions proposed by the participating jurisdictions in Spartanburg County. It consists of the following two subsections:

- ❖ 9.1 Overview
- ❖ 9.2 Mitigation Action Plans

44 CFR Requirement

44 CFR Part 201.6(c)(3)(iii): The mitigation strategy shall include an action plan describing how the actions identified in paragraph (c)(2)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction.

9.1 OVERVIEW

As described in the previous section, the Mitigation Action Plan, or MAP, provides a functional plan of action for each jurisdiction. It is designed to achieve the mitigation goals established in Section 8: *Mitigation Strategy* and will be maintained on a regular basis according to the plan maintenance procedures established in Section 10: *Plan Maintenance*.

Each proposed mitigation action has been identified as an effective measure (policy or project) to reduce hazard risk for Spartanburg County. Each action is listed in the MAP in conjunction with background information such as hazard(s) addressed and relative priority. Other information provided in the MAP includes potential funding sources to implement the action should funding be required (not all proposed actions are contingent upon funding). Most importantly, implementation mechanisms are provided for each action, including the designation of a lead agency or department responsible for carrying the action out as well as a timeframe for its completion. These implementation mechanisms ensure that the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan remains a functional document that can be monitored for progress over time. The proposed actions are not listed in priority order; though, each has been assigned a priority level of “high,” “moderate,” or “low” as described below and in Section 8 (page 8.2).

The Mitigation Action Plan is organized by mitigation strategy category (Prevention, Property Protection, Natural Resource Protection, Structural Projects, Emergency Services, or Public Education and Awareness). The following are the key elements described in the Mitigation Action Plan:

- ❖ Hazard(s) Addressed—Hazard which the action addresses.
- ❖ Relative Priority—High, moderate, or low priority as assigned by the jurisdiction.
- ❖ Lead Agency/Department—Department responsible for undertaking the action.
- ❖ Potential Funding Sources—Local, State, or Federal sources of funds are noted here, where applicable.
- ❖ Implementation Schedule—Date by which the action should be completed. More information is provided when possible.

- ❖ Implementation Status (2023)—Indication of completion, progress, deferment, or no change since the previous plan. If the action is new, that will be noted here.

9.2 MITIGATION ACTION PLANS

The mitigation actions proposed by each of the participating jurisdictions are listed in 14 individual MAPs on the following pages. **Table 9.1** shows the location of each jurisdiction’s MAP within this section as well as the number of mitigation actions proposed by each jurisdiction.

TABLE 9.1: INDIVIDUAL MAP LOCATIONS

Location	Page	Number of Mitigation Actions
Spartanburg County	9:3	32
Campobello	9:13	6
Chesnee	9:15	3
Cowpens	9:16	5
Duncan	9:18	4
Greer	9:20	67
Inman	9:40	10
Landrum	9:43	5
Lyman	9:45	5
Pacolet	9:47	6
Reidville	9:49	3
Spartanburg (city)	9:51	5
Wellford	9:55	3
Woodruff	9:54	5

Spartanburg County Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Utilize the existing Local Emergency Planning Committee to meet following disasters and to review response effectiveness and mitigation needs.	All	Moderate	County EPD	Local Funds	2022 to 2027	Deferred Continuing effort. When possible, the LEPC is utilized to review response effectiveness and mitigation needs. The Hazard Vulnerability Subcommittee plays a vital role in assessing local industry and making them safer prior to hazards occurring. Since this goal was established, we've had one declared disaster with little no impact on industry.
P-2	Develop a tracking system for mitigation activities that reviews effectiveness following disaster events.	All	Moderate	County EPD	Local Funds	2027	Deferred In 2020 we had our first declared disaster since 2015. Based on established tracking systems we should know the effectiveness of these mitigation measures and system set in place.
P-3	Review local government stormwater regulations to assess how well they prevent hazardous situations due to stormwater flooding.	All	Moderate	County Administration/ County Engineering	Local Funds	2022 to 2027	Deferred Continuing effort to review and assess stormwater regulations. This action to remain in place
P-4	Establish data backup options (i.e., laptops, off-site backups) for critical data that are easily removed and accessed at different locations in case evacuation of public facilities is necessary.	All	Moderate	County Administration, County IT	Local Funds	Completed	Completed Spartanburg County critical data (finances, email, etc.) are backed up on the Cloud and other physical systems.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
P-5	Establish procedures and location for setting up an operations center for local government in the event a natural disaster forces the evacuation of local government buildings and the primary Emergency Operations Center.	All	High	County	Local Funds	Completed	Completed Procedures have been established to location and set up an operations center in the event of evacuation of the primary Emergency Operations Center.
P-6	Strictly adhere to the ISO 9000 Building Code adopted in the community.	All	High	County Building Codes	Local Funds	2022 to 2027	Deferred Continuing effort to enforce the adopted ISO 9000 Building Code.
P-7	Examine ways to identify and acquire parcels of land subject to the effects of disasters that could provide for parks and open space in the community.	All	Moderate	County Administration, Parks and Recreation	Local Funds	Deleted	Deleted Realized that the funding will not be available to support this effort and enough of a reoccurring flood problem to warrant the county pursuing this.
P-8	Review local codes to determine whether they address the hazards identified for the community.	All	Moderate	County Buildings Codes, Municipalities	Local Funds	2022 to 2027	Deferred Continuing effort to review local codes and determine if they address identified hazards. The county will need to adopt revisions to these codes when those take place so this action will remain.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
P-9	Address resource needs for victims during times of disaster by taking pre-disaster measures.	All	High	County EPD, LEPC	Local Funds	2022 to 2027	Deferred We continue to work with LEPC to identify facilities and then work with these facilities that can pose large health/safety risk when damaged. In addition, we contact every landline/registered cell phone in the community each year to ensure we have connectivity following a disaster in an effort to provide our public with resource center locations. While we work on effective communication, we also practice delivery of resources through various POD/Donation center trainings or real-life activations.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Property Protection							
PP-1	Structurally analyze all buildings or rooms identified as shelters and strengthen these as necessary.	All	High	County EPD	Local Funds	2022 to 2027	Deferred Red Cross, with assistance from Emergency Management (as needed), analyzes their shelter locations and determine what hazard mitigation measures can be taken to address any potential problems. In addition, Spartanburg County CERT now partners with the Red Cross in all shelter activations and often opens Pet Shelter either in the same facility or nearby. However, as leadership changes in several of our designated shelter locations (e.g., churches) this is an ongoing process).
PP-2	Survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager	Local Funds	2022 to 2027	Deferred Various first response agencies continue to identify risks posed at their respective locations and as their structures continue to age, addressing these issues will always be ongoing. The responsibility for addressing these issues is that of each respective first response agency. However, when feasible, EM can assist with Mitigation grant proposals.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PP-3	Evaluate medical facilities within the community to ensure they are protected from the threats posed by natural disasters.	All	High	Hospital Systems, County EMD	Local Funds	Deleted	Deleted Hospital systems conduct their own HVA analysis for their respective facilities.
PP-4	Review all public building projects to prevent location in hazardous areas and ensure construction mitigates the risks of potential hazards.	All	High	County Engineering, County Planning, County Building Codes	Local Funds	2022 to 2027	Deferred Continuing reviews of all projects that take place. As new buildings are proposed, this action will need to be implemented so it will remain in place.
PP-5	Inspect water and sewer infrastructure for vulnerability to natural hazards. Identify and elevate vulnerable equipment and electrical controls at wastewater and potable water treatment facilities.	All	High	County Sewer Commission, Water Providers	Local Funds	2022 to 2027	Deferred All local water/sewer districts continually inspect and maintain their infrastructure to lessen their vulnerability to natural hazards.
PP-6	Identify roadways and traffic systems susceptible to natural hazards (i.e., flooding) and prioritize improvement projects to minimize disruption to the roadways.	All	High	SC DOT, County Public Works	Local Funds	2022 to 2027	Deferred Relevant stakeholders continually identify areas susceptible to natural hazards.
PP-7	Determine whether there are incremental mitigating improvements that can be made to facilities as part of ongoing maintenance and performance enhancement.	All	High	County Facilities Maintenance, County EM, Local Municipalities	Local Funds	2022 to 2027	Deferred Facilities Maintenance Departments all public service entities are taken the mitigations measures they are afforded to take with their respective budget constraints. With the natural aging of building or poor building placements this is an ongoing process.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PP-8	Replace low bridges or other obstructions that may induce flooding of houses or businesses.	All	Moderate	SC DOT, County Public Works	Local Funds	2022 to 2027	Deferred Continuing effort to replace low bridges and other obstructions. There are still a number of structures that need to be upgraded going forward so this action will remain in place.
PP-9	In conjunction with LEPC, identify facilities in the community posing serious health/safety risk on the community when damaged and identify mitigation measures that can be taken to lessen the impact.	All	High	County EPD, LEPC	Local Funds	2022 to 2027	Deferred We continue to work with LEPC to identify facilities and then work with these facilities that can pose large health/safety risk when damaged. However, as our area grows and new industries call Spartanburg home, this will always be an ongoing action item.
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							
Emergency Services							
ES-1	Identify special needs populations and establish procedures for providing transportation to shelters in the case of a natural disaster.	All	High	County EPD	Local Funds	2022 to 2027	Deferred SCOEM has added a Special Needs Registry and has utilized the ENS system to promote the registry. However, with the transient nature of our population and the reluctance of some of admit their loved one is special needs this will be an ongoing challenge for our department.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-2	Provide emergency back-up power to critical facilities: emergency generators, secondary feeds, etc.	All	High	County EPD, American Red Cross	Local Funds	2027	Deferred SCOEM is actively pursuing Hazard Mitigation funding to provide a General and Special Medical Needs Shelter with dedicated back-up generator power to the Spartanburg Community.
ES-3	Review communications procedures on a regular basis to ensure communication between response agencies is maintained during a disaster.	All	High	County EPD, EMS, Police, Fire, 911	Local Funds	2022 to 2027	Deferred Reviewing Communication Procedures to ensure interoperability and maintain communications during a disaster is an ongoing effort.
ES-4	Update communications equipment, especially the E-911 Center, as needed and funding is available.	All	High	County EPD, EMS, Police, Fire	Local Funds	2027	Deferred Automated Dispatch is currently being explored. An alternate 911 Center is being constructed in the new Emergency Services Building. Scheduled to open in 2022.
ES-5	Inventory Emergency Response personnel and equipment to identify areas where the community is deficient in disaster response and establish actions to remedy the situation.	All	High	County EPD	Local Funds	2022 to 2027	Deferred On a bi-annual basis, Emergency Management attempts to take an inventory of all essential Emergency Response Agency Resources (equipment and personnel). However, all agencies can refuse to participate; therefore, 100% participation is not likely. Emergency Management has an inventory list of current EM equipment.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-6	Establish a program to provide disaster training for all first responders.	All	High	County EPD, EMS, Police, Fire, ESA	Local Funds	2022 to 2027	Deferred As first responders come and go in this profession, training will always be an ongoing action item. With the cooperation of our Emergency Services Academy and all our first responders, we continue to provide disaster training that is NIMS/ICS compliant.
ES-7	Include utility providers in all planning and drills for mitigation planning.	All	High	County EPD, Utility Providers	Local Funds	2022 to 2027	Deferred Continuing effort to invite utility companies to EM exercises and special events. The county would like to continue efforts to try to get more participation from utilities going forward.
Public Education and Awareness							
PEA-1	Work with local relief groups (i.e., the Red Cross) to promote public training classes and events related to hazard preparation.	All	Moderate	County EPD	Local Funds	2022 to 2027	Deferred OEM/CERT has conducted over 500 PR Events since 2005 in an effort to promote public training classes and events related to Hazard Mitigation. In addition, over 1500 people have completed the CERT program since August 2005. Therefore, we'll continue our robust public education program as we arrive for a more prepared community.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PEA-2	Provide information to residents about the community warning systems and how to respond in case of a disaster.	All	High	County EMD	Local Funds	2022 to 2027	Deferred SCOEM constantly explores all options to educate the public about Community Warning Systems. Our newest initiative involves utilizing our ENS system to text, email, and call our citizens regarding potential weather/emergency situations. As of August 2022, our ENS System is Everbridge.
PEA-3	Develop informational pamphlets to notify tourists of the location of local shelters they can utilize in case of a disaster.	All	Moderate	County EPD, American Red Cross	Local Funds	2022 to 2027	Deferred In junction with ARC, continue to develop informational website, and social media posts about local sheltering, with reliable contact information since our local Red Cross will not release shelter locations prior to a disaster. In addition, continue our public education campaign about our joint Pet Sheltering initiative.
PEA-4	Develop a display to be used at public events. The display will provide information on natural hazards that threaten the area and what individuals can do to reduce these risks. Existing brochures and manuals from FEMA and SCEMD would be available for distribution.	All	High	County EPD	Local Funds	2022 to 2027	Deferred Continuing effort to modify and enhance public relations campaign as funding permits. Displays at public events are continually needed so this action will remain in place.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PEA-5	Utilize the media for the distribution and publication of hazard information. Send news releases and regular public relations pieces to local newspapers and radio stations. Promote pre-disaster planning.	All	High	County EPD	Local Funds	2022 to 2027	Deferred Continuing effort to distribute and publish hazard information and promote pre-disaster planning. Public education materials are continually needed so this action will remain in place.
PEA-6	Provide information to residents of the community regarding flood insurance availability.	All	Moderate	County Engineering	Local Funds	2022 to 2027	Deferred Continuing effort to provide information on flood insurance availability to residents. Materials on flood insurance availability are continually needed so this action will remain in place.
PEA-7	Develop information brochures in conjunction with visitor's bureau that informs tourists of the natural hazards present in the community and what they should do in case one occurs. This information would be available at welcome centers, hotels, and other tourist attractions.	All	Moderate	County EPD	Local Funds	2022 to 2027	Deferred Continuing effort to develop information brochures for visitors. Public education materials are continually needed so this action will remain in place.
Previously Completed Actions							
	Establish local regulations regulating development within floodplains.	All	High	County Engineering, Municipalities	Local Funds	Completed	Completed in 2004 and updated in December 2010.
	Acquire updated floodplain maps (current SCDNR mapping project in process) that more accurately reflect current flood areas for use in reviewing development proposals.	All	High	County Engineering	Local Funds	Completed	Completed. Firms dated January 6, 2011.

Town of Campobello Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Conduct drainage improvements to Old Mill Road for the purpose of mitigating flooding.	Flood	Moderate	Street Maintenance	Grant Project	2022 to 2027	Deferred Improvements have not been made to Old Mill Road due to a lack of funding. This action is still important and so the town will continue to work to make these improvements.
P-2	The town will continue to work with the county to enforce the floodplain ordinance within its jurisdiction. (NFIP action)	Flood	High	Floodplain Manager	Local Funds	2022 to 2027	Deferred The town has been working with the county to enforce the floodplain ordinance as part of the NFIP, but the town will likely be looking to improve and/or update its ordinance going forward as new maps and data become available so this action will remain in place.
Property Protection							
PP-1	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, Town of Campobello	Local Funds	2022 to 2027	Deferred
PP-2	Removal of debris, trees / clean out riverbed to avoid flooding in subdivisions and neighborhoods.	Flood	High	Floodplain Manager	Local Funds	2022 to 2027	New
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Emergency Services							
ES-1	Install and utilize an emergency warning system.	All	High	Emergency Management	Federal, State, Local	2022 to 2027	Deferred The town has not installed an emergency warning system due to lack of available funding, so this action will remain in place as the town continues to work towards implementing.
Public Education and Awareness							
PEA-1	Conduct PR campaign to include the school system to educate public about potential local hazards.	All	High	Fire Departments	General Fund	2022 to 2027	Deferred The town has implemented a PR campaign via the school system to educate the public about potential hazards, but there is a need to improve this program to try to reach a larger audience, so this action will remain in place.
Previously Completed Actions							

City of Chesnee Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Conduct drainage improvements to Richland Street to California Avenue for the purpose of mitigating flooding.	Flood	Moderate	Maintenance Department	Potential Mitigation Grant Project	Completed	Drainage improvements from Richland Street to California Avenue have not been completed.
Property Protection							
PP-1	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, Town of Chesnee	Local Funds	2023	Deferred The city will work with the county to survey critical risk to emergency response facilities.
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							
Emergency Services							
ES-1							
Public Education and Awareness							
PEA-1	Conduct PR campaign to educate public about potential local hazards.	All	High	Fire Departments	General Fund	2022	Deferred The town has implemented a PR campaign via the school system to educate the public about potential hazards, but there is a need to improve this program to try to reach a larger audience, so this action will remain in place.
Previously Completed Actions							

Town of Cowpens Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Increase coordination with neighboring jurisdictions on hazard mitigation projects/programs.	All	Moderate	Emergency Services	Local Funds	2022 to 2027	Deferred The town has worked to increase coordination with neighboring communities, especially the county, to improve hazard mitigation projects/programs. However, there are still many areas where this coordination can be improved so this action will remain in place.
Property Protection							
PP-1	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, Town of Cowpens	Local Funds	2022 to 2027	Deferred Added and improved some safety features (security cameras, lock systems, alternative power).
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							
Emergency Services							
ES-1	Identify and analyze all buildings identified as shelters and strengthen these as necessary.	All	Moderate	American Red Cross	Municipal Local Funds	2022 to 2027	Deferred The recent closing of Cowpens Middle School reduced our potential shelter capacity. Cowpens Elementary, Timken Community Center, CFD, Town Hall capabilities will be assessed, so this action will remain in place.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-2	Update and improve evacuation routes.	All	Moderate	Emergency Services	State, Local Funds	2022 to 2027	Deferred No route changes are possible nor necessary at this time. Evacuation route capacity and quality will be evaluated for planned new developments, so this action will remain in place.
Public Education and Awareness							
PEA-1	Conduct PR campaign to educate public about potential local hazards.	All	High	Fire Departments	General Fund	2022	Deferred Use of social media and "TextMyGov" to educate citizens on available resources and as alternate notification of emergency conditions.
Previously Completed Actions							

Town of Duncan Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Pass an ordinance that will not let building or rebuilding a structure in the flood zone area take place. (NFIP action)	Flood	High	Zoning and Planning	Local Funds	2022 to 2027	Deferred The town has not passed an ordinance to prevent building or rebuilding in flood zones. Therefore, this action will remain in place as the town continues to pursue implementation.
P-2	Increase coordination with neighboring jurisdictions on hazard mitigation projects/programs.	All	High	Emergency Services	Local Funds	2022 to 2027	Deferred The town has worked to increase coordination with neighboring communities, especially the county, to improve hazard mitigation projects/programs. However, there are still many areas where this coordination can be improved so this action will remain in place.
Property Protection							
PP-1	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, Town of Duncan	Local Funds	2022 to 2027	Deferred
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							
Emergency Services							
ES-1							

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Public Education and Awareness							
PEA-1	Conduct PR campaign to educate public to include the school system about potential local hazards.	All	High	Fire Departments	General Funds	2022 to 2027	Deferred The town has implemented a PR campaign via the school system to educate the public about potential hazards, but there is a need to improve this program to try to reach a larger audience, so this action will remain in place.
Previously Completed Actions							

City of Greer Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Increase access to drinking fountains at the city's parks and recreation facilities that have no indoor/air-conditioned spaces.	Drought, Extreme Heat	Moderate	Primary: Director of City of Public Services Secondary: City Administrator – City of Greer Administration	Local Funds	2028	Deferred Deferred due to budget limitations.
P-2	For new construction of city owned or maintained buildings, use cool roofs that are light in color or reflective, or green roofs to reduce the urban heat island effect.	Extreme Heat	Low	Primary: City Administrator – City of Greer Administration Secondary: City Engineer – Facilities & Project Manager	Local Funds	2025	Deferred The city has not constructed any new buildings but will keep this in place for future construction consideration.
P-3	Incorporate “risk mapping” components of the hazard mitigation plan, including mapping of vulnerable critical facilities and residential/commercial development, into new City Comprehensive Plan.	All	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administrator Secondary: City of Greer GIS Planner	Local Funds	Completed	Completed
P-4	Integrate new bikeway/greenway and public park improvements into comprehensive planning and capital improvements efforts.	Flooding	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City of Greer Recreation Director	Local Funds	2022 to 2025	Deferred The City has purchased property and is working with engineering firm to develop.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
P-5	Provide more specific analysis of manmade hazards associated with the railroad corridor within the city's planning jurisdiction, identify high risk development along this corridor, and prioritize proposed property protection initiatives.	Transportation Incident	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City of Greer GIS Planner	Local Funds	2022 to 2024	Deferred The city will incorporate by writing a new development/zoning ordinance.
P-6	Develop a zoning overlay district along the rail corridor that would serve to reduce subsequent development density, mitigate negative impacts, and preserve open space along the corridor.	Transportation Incident	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City of Greer GIS Planner	Local Funds	2025	Deferred The city has not developed a zoning overlay, but it will work on this and will incorporate into comp plan update.
P-7	Provide annual review development restrictions in floodplain areas and maintain initiatives to ensure limited residential and commercial development in the floodplain.	Flooding	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City of Greer GIS Planner	Local Funds	Completed	Completed Maps and ordinances have been updated.
P-8	Maintain map of floodplain and flood prone areas on city website and at building inspection offices.	Flooding	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City of Greer Engineering – Flood Plain Manager	Local Funds	Completed	Completed Flood Map updates occurred in 2021.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
P-9	Review existing/develop new/enforce building codes to mitigate potential economic and human losses during disasters as deemed necessary.	All	Low	Primary: Building Inspector – City of Greer Building Standards Secondary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration	Local Funds	Completed	Completed
P-10	For new construction or replacement of old fixtures in all city owned buildings, use only low flow faucet, showerheads, and toilets, to conserve water.	Drought	High	Primary: City Administrator – City of Greer Administration Secondary: City of Greer Engineering – Facilities Manager	Local Funds	2027	Deferred Will be addressed as new construction or replacement opportunities or needs arise.
P-11	Update landscaping around city owned facilities (around city owned buildings and in park areas) and along roadways to include shade=providing and drought resistant vegetation, while maintain proper buffers against wildfire.	Drought, Wildfire, Extreme Heat	Moderate	Primary: City Administrator – City of Greer Administration Secondary: City of Greer Engineering and Director – Public Services	Local Funds	2025	Deferred Deferred due to budget and staffing limitations.
P-12	Establish and maintain a comprehensive GIS inventory of the existing city-maintained storm drainage system.	Flooding	High	Primary: City Engineer Secondary: Storm Water Program Director	Local Funds	2030	Deferred Deferred due to staffing limitations.
P-13	Identify and map stormwater “hot spots” and develop prioritized capital improvement plan for upgrade of substandard storm drainage components.	Flooding	High	Primary: City Engineer Secondary: Storm Water Program Director	Local Funds	2022 to 2027	Deferred This was a pilot project in 2022. Insight from the pilot will dictate the program moving forward.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
P-14	Continue to stringently enforce state stormwater regulations.	Flooding	High	Primary: Storm Water Program Director Secondary: City Engineer	Local Funds	2022 to 2025	Deferred The city has worked to enforce state stormwater regulations, but there is still a great deal of effort that needs to be taken to implement this action fully. This action remains ongoing.
P-15	Develop a written policy and schedule for periodic clearing and maintenance of streams and watercourses in flood prone areas.	Flooding	Low	Primary: City Engineer Secondary: Storm Water Program Director	Local Funds	Deleted	Deleted City does not clear or maintain any streams or watercourses (private property), so this action will be deleted.
P-16	Apply to join the Community Rating System to offer discounts on flood insurance to the residents of Greer.	Flooding	Moderate	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City Engineer – City of Greer Engineering and Director – Storm Water Program	Local Funds	2022 to 2027	Deferred The city has not yet joined the CRS, so this action will remain in place.
P-17	At each plan maintenance meeting, identify and carry out additional activities to increase CRS Class rating.	Flooding	Low	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City Engineer – City of Greer Engineering and Director – Storm Water Program	Local Funds	2022 to 2027	New

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
P-18	Improve security at city fuel depot.	Hazardous Materials	Low	Primary: Director of Public Services – City Operations Center Secondary: Chief, City of Greer Police Chief	Local Funds	By the end of 2023	Deferred New fueling system to be installed during FY 22/23
P-19	Maintain a representative of the public electric power authority on the MAC.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: All Mitigation Advisory Committee members	Local Funds	Completed	Completed Since inception have had a CPW member.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
P-20	Evaluate rail crossing risks and develop schedule for mitigation of traffic hazards at high-risk rail crossings; incorporate this information into public awareness efforts.	Transportation Incident	High	Primary: Chief – City of Greer Police Secondary: Fire Chief – City of Greer Fire Department	Federal, State, Local Funds	Completed	<p>Completed</p> <p>Rail traffic has increased with the construction of the Inland Port. The increased rail traffic has caused some delays for traffic and has the potential to increase our response times to emergencies. Both fire and police have determined alternative routes to areas blocked by train traffic in emergencies. In addition, the working police shift will always have officers assigned to either side of the tracks to minimize this problem, when possible.</p> <p>We will be designing a public education program for both our website and TV spots emphasizing the importance of rail safety.</p> <p>In all three areas we have had little opportunity to test the effectiveness of our plans since we have not experienced any high risk emergencies in the past five years.</p>
P-21	Maintain dialogue with the Airport Authority to effectively regulate land use as the city continues to grow and encroach upon the airport environs defined within this plan.	All	Low	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City of Greer GIS Planner	Local Funds	Completed	Completed

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
P-22	Increase number of active traffic control devices at railway-roadway intersections.	Hazardous Materials, Transportation Incident	Low	Primary: City of Greer Engineering Secondary: Chief – City of Greer Police	Local Funds	By the end of 2025	Deferred Deferred due to staffing limitations
Property Protection							
PP-1	Install and maintain surge protection on critical electronic equipment in all critical facilities.	All	Moderate	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department	Local Funds	Completed	Completed
PP-2	Identify and harden critical lifeline systems (utilities, roads, etc.) to meet seismic design guidelines.	Earthquake	Low	Primary: City Engineer Secondary: General Manager, Greer CPW, Director – Public Services	Federal, State, Local Funds	Deleted	Deleted
PP-3	Work with SCDOT and the local counties to review all bridge construction plans to determine seismic susceptibility and strengthen bridges most at risk.	Earthquake	Low	Primary: City Engineer Secondary: Director – Public Services	Local Funds	By the end of 2025	Deferred The city needs to continue to work with SCDOT and local counties to review all bridge construction. This action will remain in place.
PP-4	The City of Greer will continue to work with Spartanburg County to identify funding sources that may assist in the demolition and removal of the “Old Mill.” This will be carried out in an effort to eliminate this significant fire hazard centrally located to affect properties located with the City of Greer.	Wildfire	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City Engineer – City of Greer Engineering and Director – Storm Water Program	Local Funds	Completed	Completed Site has been raised and is environmentally stable.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PP-5	Map and inventory all flood prone structures and develop priority list for elevation/retrofitting or acquisition based on cost/benefit analysis and overall feasibility.	Flooding	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City of Greer GIS Planner	Local Funds	Completed	Completed
PP-6	Elevate, retrofit, or acquire flood prone structures based on the previously developed priority list.	Flooding	Low	Primary: City of Greer Engineering Secondary: City Engineer – City of Greer Engineering	Federal, State, Local Funds	By the end of 2025	Deferred
PP-7	Map and inventory all structures posing a significant fire hazard and develop a priority list for code enforcement or acquisition based on potential risk.	Wildfire	High	Primary: Nuisance Abatement Division of Building Codes Department Secondary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration; City of Greer GIS Planner	Local Funds	2022-2024	Deferred Deferred due to budget and staffing limitations. The city has not started mapping and inventorying all structures posing a significant fire hazard, so this action will remain in place.
PP-8	Map and inventory all structures along the railroad corridor and develop a priority list for code enforcement, relocation, or acquisition based on potential risk.	Transportation Incident	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City of Greer GIS Planner	Local Funds	2022-2024	Deferred The city has not started mapping and inventorying all structures along railroad corridor, so this action will remain in place.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PP-9	Encourage owners of critical facilities to retrofit for lightning protection and evaluate the city's public facilities lightning protection capabilities.	Lightning	High	Primary: Fire Chief – City of Greer Fire Department Secondary: All Mitigation Advisory Committee members	Local Funds	2022 to 2024	Deferred Deferred due to staffing limitations and COVID-19 challenges. The city has not started encouraging critical facility owners to retrofit for lightning protection, so this action will remain in place.
PP-10	Establish measures to improve resistance of public electric system to wind and ice storm events.	Severe Winter Weather/Ice Storm, Severe Weather/ Thunderstorm, Tornado/ Windstorm	Low	Primary: General Manager – Greer CPW Secondary: Director of Public Services	Local Funds	Completed	Completed Measures in place on system.
Emergency Services							
ES-1	Complete an evaluation checklist for a defined local/regional shelter facility, including structural inspection, resource inventory, staffing plan, and vulnerability assessment. (1) Identify eligible shelters from the American Red Cross existing shelter list. (2) Determine which shelters will be best suited for activation for a localized event.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief– City of Greer Police Department & American Red Cross (ARC)	Local Funds	Completed	Completed Red Cross has provided a list of shelters in our area and will provide shelter workers and will determine what facility will be used. Fire Department inspects shelters annually that are in the city limits and/or coverage area.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-2	Formalize a local regional shelter plan with Greenville County, Spartanburg County, and the American Red Cross, including shelter identification and staffing plans for various types/magnitudes of disasters.	All	High	Fire Chief – City of Greer Fire Department City of Greer Secondary: Chief– City of Greer Police Department, Greenville County Emergency management, Spartanburg County Emergency Management & American Red Cross (ARC)	Local Funds	Completed	Completed Red Cross has provided a list of shelters in our area and will provide shelter workers and will determine what facility will be used. Fire Department inspects shelters annually that are in the city limits and/or coverage area.
ES-3	Establish an MOU with the American Red Cross to establish the city's capability for activating a local shelter for localized events: (1) Determine under which conditions activation will be necessary, (2) Determine who the primary point of contact will be for the city, (3) Coordinate all activation parameters with the ARC and incorporate into the MOU.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief– City of Greer Police Department & American Red Cross (ARC)	Local Funds	By the end of 2023	Deferred Deferred due to COVID-19 challenges. The city started working to establish an MOU for activating a local shelter, but there are still several steps that need to be taken so this action will remain in place.
ES-4	Identify and evaluate potential new city run shelter facilities (not sponsored by ARC), with emphasis on building local volunteer capability and creating locally staffed shelters for small magnitude disaster events.	All	Low	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department	Local Funds	By the end of 2027	Deferred Deferred due to COVID-19 challenges. The city is still working to identify potential locations for new city-run shelters and there is a need to continue working on this action to complete it.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-5	Install back-up generators and connections in each of the city run shelter facilities.	All	Low	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department	Federal, State, Local Funds	By the end of 2025 or 2026	Deferred Deferred due to ES-4 needing to be completed before this can be accomplished.
ES-6	Acknowledge the potential need for safe evacuation routes prior to or following natural and manmade disasters. Review annually.	Flooding, Tornado/Wind Storm, Wildfire, Earthquake	Low	Primary: Chief Chris Secondary: Chief – City of Greer Police Department	Local Funds	By the end of 2025 or 2026	Deferred Deferred due to staffing limitations. The city has noted the need for potential evacuation routes and will continue to work to identify those routes in the future so this action will remain in place.
ES-7	Meet annually with owners/managers of city nursing homes and healthcare facilities to review evacuation procedures, disaster staffing plans, emergency power capability, etc.	Flooding, Tornado/Wind Storm, Wildfire, Earthquake	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department	Local Funds	Completed	Completed This began in January 2010. Copies of evacuation procedures are updated and given to the fire department annually. These procedures will need to be updated and so this action will remain in place.
ES-8	Formalize an independent, local response/communication plan for both immediate and long-term disaster events, including definition of command hierarchy/response plans and primary/backup communication network plans for typical local disaster events. This plan is to assume dependence on existing communications equipment and response equipment.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department	Local Funds	2022 to 2024	Deferred Deferred due to staffing limitations and COVID-19 challenges. The city has not finished formalizing an independent, local response plan for disaster events, so this action will remain in place.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-9	Prepare a formal agreement with both County EM Departments that defines parameters for independent local disaster response to avoid redundancy by county emergency response teams and activation of county EOP's during smaller-scale disaster events.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department, Greenville County Emergency Management, Spartanburg County Emergency Management	Local Funds	2022 to 2024	Deferred Deferred due to COVID-19 challenges. The city is working on preparing a formal agreement with county EM departments defining parameters for local response, but those negotiations are still taking place so this action will remain.
ES-10	Evaluate adequacy of existing local emergency response communication equipment with regard to both local and regional disasters and prepare a capital improvements plan designed specifically to improve local communications capabilities and improve communications with county/state emergency response teams. This discussion should include communication flow with CPW representatives.	All	Low	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department, Greer Commission of Public Works (CPW)	Local Funds	Completed	Completed The city has evaluated adequacy of existing local emergency response communication equipment and there are still many needs so this action will remain in place.
ES-11	Monitor state and federal grant programs for opportunities that allow for the funding of expanded or improved communication equipment.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department	Local Funds	2022 to 2024	Deferred The city has monitored state and federal programs for grant opportunities, but these have often not been available, so this action will remain in place.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-12	Evaluate adequacy of existing local emergency response staffing and equipment with regard to both local and regional disasters and evaluate current ability to respond in accordance with requirements of existing county EOP's. Establish annual exercises to test preparedness and improve operations.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department, Greenville County Emergency Management, Spartanburg County Emergency Management	Local Funds	2022 to 2024	Deferred Deferred due to COVID-19 challenges. The city has evaluated the adequacy of existing local emergency response staffing and equipment to some degree, but there are still many needs so this action will remain in place.
ES-13	Develop standard protocols for training/certification of volunteer staff for shelter management, traffic control, first aid, etc., to improve volunteer response capacity during and following disaster events.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department	Local Funds	2022 to 2024	Deferred Deferred due to staffing limitations and COVID-19 challenges. The city has not begun developing standard protocols for training/certification of volunteers, so this action will remain in place.
ES-14	Develop specific annual disaster response training plans for city fire/EMS and police departments and improve capability of city to respond indecently to small-scale and large-scale disaster events and to improve the integration of city staff/equipment into response parameters required by county EOP's.	All	Low	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department, Greenville County Emergency Management, Spartanburg County Emergency Management	Local Funds	By the end of 2025	Deferred Deferred due to COVID-19 challenges. The city has not developed specific annual disaster response training plans for fire/EMS and police, so this action will remain in place.

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Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-15	Work on improving/training emergency response coordination and effectiveness between the city, CPW, and County Emergency Management Departments.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department	Local Funds	Completed	Completed The city does annual training in fire extinguishers, CPR, utility emergencies with Greer CPW.
ES-16	Work with Spartanburg County EMA, Greenville County EMA, DHEC, and dam owners to develop Emergency Action Plans for all C1 and C2 dams that have an impact on the residents of Greer.	Flooding	Moderate	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department, Greenville County Emergency Management, Spartanburg County Emergency Management.	Local Funds	2023 to 2025	Deferred Deferred due to COVID-19 challenges.
ES-17	Improve capability of secondary power source at city fuel depot.	All	Low	Primary: Director of Public Services – City Operations Center Secondary: City Engineer	Local Funds	Completed	Complete There is a manual generator at site.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-18	Improve generator response capabilities at high-risk traffic intersections.	Hazardous Materials Incident, Transportation Incident	Low	Primary: Chief – City of Greer Police Department Secondary: Fire Chief – City of Greer Fire Department	Local Funds	By the end of 2025 or 2026	Deferred Most of the most hazardous intersections are state run with computerized traffic signals and limited backup power. Due to fiscal limitations, we have not purchased any generators for these locations. We have good relations with both DOT and Highway and will continue to meet with them in an effort to minimize this risk. We are scheduling a meeting with both DOT and Highway in the next week to discuss the issue of traffic diversion on Interstate 85. In addition, we have developed an operational strategy to deal with hazardous weather. We will establish a command center in our police training room with representative of all our departments to create a central location for processing all information from the field that identifies emerging hazards. This will enable us to respond to these new contingencies more efficiently. The city is growing at a rapid rate which may require some modifications of hazards locations and new hazards. We constantly assess these issues to ensure that we have an effective mitigation plan for them.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-19	Encourage owners of critical facilities to provide secondary electrical power sources.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: All Mitigation Advisory Committee members	Local Funds	2022 to 2024	Deferred In some cases, owners of critical facilities have a secondary power source, but this is not the case across the board so this action will remain in place.
ES-20	Purchase NOAA Weather Radios for all city owned facilities and other critical facilities (schools, nursing homes, other facilities housing vulnerable populations) and provide training on use of radios.	All	Moderate	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department and City Administrator – City Administration	Local Funds	2023 to 2025	Deferred Deferred due to costs.
ES-21	Initiate communication with Highway Patrol and SCDOT concerning mitigation of safety risks associated with diversion of traffic from I-85 through city streets following a major accident.	Hazardous Materials Incident, Transportation Incident	Low	Primary: Chief – City of Greer Police Secondary: Fire Chief – City of Greer Fire Department	Local Funds	Completed	Completed This risk is minimal and has not occurred in the past ten years. We have instructed our patrol officers should this happen to go to the intersection of Pointsett and 14 to pull through traffic caused by a diversion. We will be meeting with DOT and Highway in the near future to reassess this strategy due to current changes in traffic volume flow.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Public Education and Awareness							
PEA-1	Establish city wide utilization of REACH SC program, including a public service campaign prompting citizens to register their unlisted or mobile telephone numbers.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: Chief – City of Greer Police Department	Local Funds	Completed	Completed The City of Greer went with the Greer Connect Program. We implemented the community contact element of Greer Connect in January 2013. We currently have 9,303 subscribers to that system. Citizens can sign up at any time, so the program is ongoing.
PEA-2	Mail hazard advisory/mitigation information summary to city citizens on an annual basis.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: City of Greer Communications Manager	Local Funds	Completed	Completed The Fire Department sends quarterly fire prevention mailings in CPW bills to city residents.
PEA-3	Incorporate risk mapping (natural and manmade hazard identification) into city website.	All	High	Primary: Planning and Zoning Coordinator – City of Greer Planning and Zoning Administration Secondary: City of Greer Communications Manager and GIS Planner	Local Funds	2022 to 2024	Deferred Deferred due to staffing limitations. The city has not begun incorporating risk mapping into the city website. This action will remain in place.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PEA-4	Provide hazard mitigation goals and actions/timelines/progress on city website.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: City of Greer Communications Manager	Local Funds	2022 to 2024	Deferred Deferred due to staffing limitations. The city has not begun providing goals/timelines and progress reports on the city's website. This action will remain in place.
PEA-5	Run periodic public advisories concerning the city's disaster response providers/efforts on local television and in local newspapers.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: City of Greer Communications Manager	Local Funds	Deleted	Deleted
PEA-6	Hold an annual public hazard mitigation meeting, attended by the MAC and City Council, to educate the public and elected officials and receive comments about the location of high risk facilities/development, the city's overall vulnerability to natural and manmade hazards, and the city's hazard mitigation efforts.	All	Low	Primary: Fire Chief – City of Greer Fire Department Secondary: All Mitigation Advisory Committee members and City of Greer elected officials	Local Funds	By the end of 2025 or 2026	Deferred The city has held annual public participation meetings to ensure involvement in hazard mitigation activities, but this effort will need to be continued to ensure maximum participation so this action will remain in place.
PEA-7	Maintain citizen representation on the MAC, to be involved in all discussions and decision making relating to plan implementation.	All	High	Primary: Fire Chief – City of Greer Fire Department Secondary: All Mitigation Advisory Committee members	Local Funds	2022 to 2024	Deferred Deferred due to COVID-19 challenges. Committee has been maintained, but additional efforts are needed to ensure that the committee is involved in efforts at plan implementation so this action will remain in place.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PEA-8	Provider Operations and Maintenance training for private dam owners, to mitigate against risks associated with potential dam failure and flooding as recommended in FEMA's Mitigation Dam Task Force Strategic White Paper on Dam Risk (November 2015).	Flooding, Drought	Moderate	Primary: Fire Chief – City of Greer Fire Department Secondary: Directors – Greenville County and Spartanburg County Emergency Management	Local Funds	2022 to 2025	Deferred Deferred due to staffing limitations and COVID-19 challenges.
PEA-9	Provide public education regarding water conservation efforts for homeowners (rail barrels, drought resistant landscaping, low-flow faucets, toilets, showerheads, etc.) in an effort to mitigate against the threat of drought.	Drought	High	Primary: City of Greer Engineering Secondary: City of Greer Communications Manager	Local Funds	2022 to 2024	Deferred Deferred due to staffing limitations.
PEA-10	Educate homeowners and business owners about retrofits to homes and other buildings to strengthen against earthquakes and to reflect the seismic design changes in the latest version of the IBC.	Earthquake	High	Primary: City of Greer Building Development Standards Department Secondary: City of Greer Communications Manager	Local Funds	Completed	Completed Ongoing- Building Development Standards Department does Public Education annually.
PEA-11	Educate homeowners and business owners about floodproofing homes and other buildings.	Flooding	High	Primary: City Engineering Department-Flood Plain Manager Secondary: City of Greer Building Development Standards Department	Local Funds	2022 to 2024	Deferred Deferred due to staffing limitations.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PEA-12	Educate homeowners and business owners about wildfire danger and measures, such as buffer zones, to protect their property.	Wildfire	High	Primary: Fire Chief – City of Greer Fire Department Secondary: City of Greer Communications Manager	Local Funds	2022 to 2024	Deferred Deferred due to COVID-19 challenges.
PEA-13	Conduct a public education campaign regarding rail corridor safety.	Hazardous Materials, Transportation Incident	High	Primary: Fire Chief – City of Greer Fire Department Secondary: City of Greer Communications Manager	Local Funds	2022 to 2024	Deferred Deferred due to staffing limitations and COVID-19 challenges.
PEA-14	Conduct a public education campaign regarding hazardous material safety, including how to dispose of household hazardous materials safely, where sources of information to turn to in the event of emergency and other specific information.	Hazardous Materials	High	Primary: Fire Chief – City of Greer Fire Department Secondary: City of Greer Communications Manager	Local Funds	2022 to 2024	Deferred Deferred due to staffing limitations and COVID-19 challenges.

Town of Inman Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Conduct drainage improvements to Mill Street for the purpose of mitigating flooding.	Flood	Moderate	Street Maintenance	Grant	Completed	Completed Have installed 2 additional drains and have plans to renovate the street and grade it for better run-off. Eliminate crown in the road with the Streetscape Program.
P-2	The town will continue to work with the county to enforce the floodplain ordinance within its jurisdiction. (NFIP action)	Flood	High	Floodplain Manager	Unknown	2027	Deferred Ongoing partnership with City and Spartanburg County Public Works.
P-3	Increase coordination with neighboring jurisdictions.	All	High	Emergency Services	None	2027?	Deferred Have been working with neighboring fire departments in unincorporated Spartanburg County to work through response to emergency calls. Outreach has expanded to additional jurisdictions such as Campobello and Landrum. Now Inman also has mutual aid with Polk County, NC, for high alarm fires.
Property Protection							
PP-1							
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1	Renovate the current fire station to accommodate the additional staff that is needed.	All	Moderate	Emergency Services	General Fund	2027?	Deferred Deferred due to budget concerns.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Emergency Services							
ES-1	Hire and train 6 additional firefighters to fulfill the response hours with paid employees instead of relying on volunteers part-time.	All	Moderate	Emergency Services	General Fund	2027	Deferred Deferred due to budget concerns.
ES-2	Outfit newly acquired gator to provide medical support and response in certain events.	All	High	Emergency Services	General Fund	Completed	Completed
ES-3	Continue to work with Spartanburg County Emergency Response teams for hazard preparedness.	All	High	Emergency Services	General Fund	2027	New
Public Education and Awareness							
PEA-1	Conduct PR campaign to educate public school system about potential local hazards.	All	High	Fire Department	General Fund	2027	Deferred Fire Services continues to work on community education plans. Outreach is conducted at Harvest Day with neighboring jurisdictions with an attendance of 20-30K. Twice a year, the elementary, intermediate, and middle schools are visited to provide educational material for the students. Annually, the high school is visited to disseminate information. The area churches are visited annually as well to provide emergency procedures information.
PEA-2	Increase city presence on social media by hiring staff to regularly post items on Facebook and Instagram and other platforms as needed.	All	Medium	Planning Department	General Fund / Hospitality Tax Budget	2022	New Staff was hired in January of 2022 and continues to post regularly on social media. Hazard issues such as road closures, inclement weather, etc. are posted.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PEA-3	Provide evacuation and preparedness information to the two nursing homes and two assisted living facilities in the Town and train the staff to respond accordingly.	All	High	Fire Department	General Fund	2027	Deferred Fire Chief regularly checks in with these facilities to ensure understanding and compliance.
Previously Completed Actions							

City of Landrum Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1							
Property Protection							
PP-1	Beginning in January 2012, the City of Landrum will prepare an annual report summarizing all development approved within the flood zones for the previous calendar year and will submit it to the County Office of Emergency Management. (NFIP action)	Flood	High	City of Landrum	City General Fund	2027	Deferred The city has conducted a zoning review before Building Permits were issued and inspections were conducted by Spartanburg County. Any development in a flood zone must meet the construction and elevation requirements of our ordinance. The city has annually prepared a report summarizing all development that was approved within the flood zones for the previous year, but this action will need to be implemented over the next 5 years and improvements may be necessary to ensure development in the floodplain is not adversely impacted in the future.
PP-2	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, City of Landrum	Local Funds	2022 to 2027	Deferred

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PP-3	Implement an All-Hazards Plan.	All Natural Hazards, Transportation Incidents, and Hazardous Materials Incidents	High	County EPD, EMS, Police, Fire, County Risk Manager, City of Landrum	Local Funds	2024	New
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							
Emergency Services							
ES-1	Develop a debris removal coordination plan with Spartanburg County for the removal and storage of storm debris due to ice storm/wind damage that has fallen in the county rights-of-way in the City of Landrum disrupting travel. The county will designate a debris removal contractor for this purpose and the City of Landrum has designated a large city-owned property to store the debris until it can be chipped into mulch. During an ice/wind event the Landrum City Administrator will identify which country roads in the city require debris removal and will notify the County Director of Road Maintenance.	Ice and Wind	High	Spartanburg County, City of Landrum	City and County General Fund, FEMA	2027	Deferred The city has worked with Spartanburg County to remove storm debris quickly and cost-effectively during past storm events. However, this program may need to be re-evaluated going forward so this action will remain in place.
Public Education and Awareness							
PEA-1	Conduct PR campaign to educate public about potential local hazards.	All	High	Fire Departments	General Fund	Completed	Completed The city used social media, Weather Announcements from Local Police Department, and Local Fire Department social media.
Previously Completed Actions							

Town of Lyman Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Identify stormwater drainage system failures and improve/repair capability of system to prevent flooding of property.	Flood	High	Public Works	Local Funds	2022 to 2027	Deferred A number of stormwater/drainage issues have been addressed over the past several years, however, there are still many areas where stormwater/drainage improvements could be implemented to reduce risk of future flooding so this action will remain in place.
P-2	The town will continue to work with the county to enforce the floodplain ordinance within its jurisdiction. (NFIP action)	Flood	High	Floodplain Manager	Local Funds	2022 to 2027	Deferred The town has been working with the county to enforce the floodplain ordinance as part of the NFIP, but the town will likely be looking to improve and/or update its ordinance going forward as new maps and data become available so this action will remain in place.
Property Protection							
PP-1	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, Town of Lyman	Local Funds	2022 to 2027	Deferred
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Emergency Services							
ES-1	Purchase and install a generator for the use at the Lyman Town Hall which will serve as Emergency Operations Center.	Winter Storm, Tornado, and other hazards	Moderate	Police	Searching for Grants	2022 to 2027	Deferred The town has not installed a generator at the town hall due to lack of funding so this action will remain in place going forward.
Public Education and Awareness							
PEA-1	Conduct PR campaign to include the school system to educate public about potential local hazards.	All	High	Fire Departments	General Fund	2022 to 2027	Deferred
Previously Completed Actions							

Town of Pacolet Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	The town will continue to work with the county to enforce the floodplain ordinance within its jurisdiction. (NFIP action)	Flood	High	Floodplain Manager	Local Funds	2022 to 2027	Deferred The town has been working with the county to enforce the floodplain ordinance as part of the NFIP, but the town will likely be looking to improve and/or update its ordinance going forward as new maps and data become available so this action will remain in place.
Property Protection							
PP-1	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, Town of Pacolet	Local Funds	2022 to 2027	Deferred
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							
Emergency Services							
ES-1	Address alternate power shortfalls at alternate municipal locations.	All	High	Town of Pacolet	Grant	2022 to 2027	Deferred Alternate power shortfalls have not been fully addressed over the past 5 years due to lack of staff time and funding, so this action will remain in place going forward.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
ES-2	Implement a heat wave/extreme heat response plan that identifies locations for residents to escape heat incidents and have access to water, air conditioning, and device charging stations.	Heat	High	Town of Pacolet, Pacolet Police Chief, Pacolet Fire Department, and Spartanburg EMS	Local	2023	New
Public Education and Awareness							
PEA-1	Conduct PR campaign to educate public about potential local hazards.	All	High	Fire Department	General Fund	2022 to 2027	Deferred The town has implemented a PR campaign via the school system to educate the public about potential hazards, but there is a need to improve this program to try to reach a larger audience, so this action will remain in place.
PEA-2	Form a safety committee to meet monthly to address concerns submitted from the community on weather hazards.	All	High	Town of Pacolet, Pacolet Police Chief, Pacolet Fire Department, and Spartanburg EMS	Local	2023	New
Previously Completed Actions							

Town of Reidville Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1							
Property Protection							
PP-1	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, Town of Reidville	Local Funds	2022 to 2027	Deferred
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							
Emergency Services							
ES-1	Update and improve evacuation routes.	All	High	Emergency Services	State, Local Funds	2022 to 2027	Deferred The town has worked with state and county officials to identify evacuation routes, but these will likely need to be re-evaluated in the future and will need input from the town so this action will remain in place.
Public Education and Awareness							
PEA-1	Conduct PR campaign to educate public including the public school system about potential local hazards.	All	High	Fire Department	General Fund	2022 to 2027	Deferred The town has implemented a PR campaign via the school system to educate the public about potential hazards, but there is a need to improve this program to try to reach a larger audience, so this action will remain in place.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Previously Completed Actions							

City of Spartanburg Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Strictly adhere to the building and fire codes adopted by the state and local government.	All	High	Building Codes and Fire Services	Local Funds	2022 to 2027	Deferred The city has adhered to the building and fire codes that were adopted by the state and local government, however, as these codes will be updated in the future, new implementation strategies will need to be developed so this plan will remain in place.
P-2	The city will continue to work with the county to enforce the floodplain ordinance within its jurisdiction. (NFIP action)	Flood	High	Floodplain Manager	Local Funds	2022 to 2027	Deferred The city has been working with the county to enforce the floodplain ordinance as part of the NFIP, but the town will likely be looking to improve and/or update its ordinance going forward as new maps and data become available so this action will remain in place.
Property Protection							
PP-1	Review all public building projects to prevent location in hazardous areas and ensure construction mitigates the risk of potential hazards.	All	High	Planning Department/ Building/ Fire Codes	Local Funds	2022 to 2027	Deferred The city has worked to ensure that all public building projects have not been constructed in hazardous areas when new development occurred. However, as hazardous areas change and as new information is collected, this action will need to be re-evaluated, so it will remain in place.

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
PP-2	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, City of Spartanburg	Local Funds	2022 to 2027	Deferred
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							
Emergency Services							
ES-1							
Public Education and Awareness							
PEA-1	Provide information to residents of the community regarding flood insurance available.	All	Moderate	City Storm Water Manager	Local Funds	2022 to 2027	Deferred The city has implemented a PR campaign via the school system to educate the public about potential hazards, but there is a need to improve this program to try to reach a larger audience, so this action will remain in place.
Previously Completed Actions							

City of Wellford Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Conduct drainage improvements to blocked storm drain on Main Street in Startex.	Flood	Moderate	Street Maintenance	Grant Project	2022 to 2027	Deferred Improvements have not been made to storm drain on Main Street due to a lack of funding. This action is still important and so the town will continue to work to make these improvements.
Property Protection							
PP-1	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, Town of Campobello	Local Funds	2022 to 2027	Deferred
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							
Emergency Services							
ES-1							
Public Education and Awareness							
PEA-1	Conduct PR campaign to educate public including the public school system about potential local hazards.	All	Moderate	Fire Department	General Fund	2022 to 2027	Deferred The town has implemented a PR campaign via the school system to educate the public about potential hazards, but there is a need to improve this program to try to reach a larger audience, so this action will remain in place.
Previously Completed Actions							

City of Woodruff Mitigation Action Plan

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Prevention							
P-1	Review and improve drainage to prevent localized flooding.	Flood, Hurricane	Moderate	Woodruff Public Works Department, SC DOT, Spartanburg County Roads and Bridges	City of Woodruff, State of South Carolina, South Carolina C-Funds, Spartanburg County	2022 to 2027	Deferred A number of drainage issues have been addressed over the past several years, however, there are still many areas where stormwater/drainage improvements could be implemented to reduce risk of future flooding so this action will remain in place.
P-2	The town will continue to work with the county to enforce the floodplain ordinance within its jurisdiction. (NFIP action)	Flood	High	Floodplain Manager	Local Funds	2022 to 2027	Deferred The city has been working with the county to enforce the floodplain ordinance as part of the NFIP, but the town will likely be looking to improve and/or update its ordinance going forward as new maps and data become available so this action will remain in place.
Property Protection							
PP-1	Work with county to survey critical emergency response facilities (fire stations, law enforcement centers, and emergency headquarters) to identify risks posed to structures and seek funding to mitigate the problems.	All	High	County EPD, EMS, Police, Fire, County Risk Manager, City of Woodruff	Local Funds	2022 to 2027	Deferred
Natural Resource Protection							
NRP-1							
Structural Projects							
SP-1							

SECTION 9: MITIGATION ACTION PLAN

Action #	Description	Hazard(s) Addressed	Relative Priority	Lead Agency/ Department	Potential Funding Sources	Implementation Schedule	Implementation Status (2023)
Emergency Services							
ES-1	The city of woodruff is growing at a rapid rate and our population is expected to triple in the next 5 years. We have made plans to construct a police and judicial court facility. However, it would be beneficial to look at a joint police and fire facility with the county.	All	High	City of Woodruff	Local Funds	2026	New
Public Education and Awareness							
PEA-1	Education of Woodruff citizens on preparedness for natural disasters and resources for after a disaster.	All	High	Woodruff Fire Department and Police Department	City of Woodruff	2022 to 2027	Deferred The city has implemented a number of programs to improve public awareness of hazards and what can be done to prepare for these hazards. However, there are still a number of public education activities that can be implemented to further increase public awareness so the city will keep this action in place.
Previously Completed Actions							

SECTION 10

PLAN MAINTENANCE

This section discusses how the Spartanburg County Mitigation Strategy and Mitigation Action Plan will be implemented and how the Multi-Jurisdictional Hazard Mitigation Plan will be evaluated and enhanced over time. This section also discusses how the public will continue to be involved in a sustained hazard mitigation planning process. It consists of the following four subsections:

- ❖ 10.1 Monitoring and Evaluating the Previous Plan
- ❖ 10.2 Implementation and Integration
- ❖ 10.3 Monitoring, Evaluation, and Enhancement
- ❖ 10.4 Continued Public Involvement

44 CFR Requirement

44 CFR Part 201.6(c)(4)(i):

The plan shall include a plan maintenance process that includes a section describing the method and schedule of monitoring, evaluating and updating the mitigation plan within a five-year cycle.

44 CFR Part 201.6(c)(4)(ii):

The plan maintenance process shall include a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

10.1 MONITORING AND EVALUATING THE PREVIOUS PLAN

Since the previous plans were adopted, each jurisdiction has worked to ensure that mitigation was integrated into local activities and that the mitigation plan was appropriately implemented. The participants outlined a process in the previous mitigation plans for monitoring and evaluating the plan throughout the interim period between plan updates.

All participants were ultimately successful in implementing the monitoring and evaluation processes that were outlined in previous plans as the county and participated in annual meetings to discuss the mitigation plans and the priorities that were outlined in them. The specific processes are outlined below with an explanation of how the monitoring and evaluating process was carried out as well as any changes that were identified that would be useful to implement during the next update.

Spartanburg County

The Spartanburg County Hazard Mitigation Plan (2018) included a review process and progress report on the plan. This review process was carried out by the County Emergency Management Coordinator to evaluate progress on the plan. During this review process, the Spartanburg County Hazard Mitigation Planning Team, which was composed of a representative from each jurisdiction, used established criteria to assess the plan's effectiveness as well as any issues encountered in terms of implementing the plan.

Once the progress and issues were documented, the Planning Team made recommendations for changes to the plan and the overall evaluation process. Although there were some minor revisions made to the plan during the interim update period, there were few major revisions identified during this time, and the Planning Team generally agreed that the plan was on course and that the monitoring and evaluating process itself was sufficient to ensure implementation of the plan.

The planning team noted that while reporting was done on the progress of the plan through the interim review period, a notable area of opportunity/improvement for the Spartanburg County Hazard Mitigation Team is to hold annual meetings wherein the entire Hazard Mitigation Planning Team meets at one time to discuss the progress reports.

City of Greer

The City of Greer Hazard Mitigation Plan (2016) included a formal review process of the plan. This review process was carried out by the Greer Fire Chief to evaluate progress on the plan. During this review process, the Mitigation Advisory Committee used established criteria to monitor changes in vulnerability as a result of plan implementation.

Once the progress and issues were documented, the Mitigation Advisory Committee made recommendations for changes to the plan and the overall evaluation process. Although there were some minor revisions made to the plan during the interim update period, there were few major revisions identified during this time, and the Mitigation Advisory Committee generally agreed that the plan was on course and that the monitoring and evaluating process itself was sufficient to ensure implementation of the plan.

The planning team noted that while reporting was done on the progress of the plan through the interim review period, one area of deficiency was that there was a failure to consistently hold bi-annual meetings wherein the entire Mitigation Advisory Committee met at one time to discuss the progress reports. However, on an annual basis to coincide with the budget year fiscal planning, the departments were requested to provide any updates to the mitigation plan and actions. This aligned with budgetary planning for funding to support mitigation efforts and actions.

10.2 IMPLEMENTATION AND INTEGRATION

Each agency, department, or other partner participating under the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan is responsible for implementing specific mitigation actions as prescribed in the Mitigation Action Plan. Every proposed action listed in the Mitigation Action Plan is assigned to a specific “lead” agency or department in order to assign responsibility and accountability and increase the likelihood of subsequent implementation.

In addition to the assignment of a local lead department or agency, an implementation time period or a specific implementation date has been assigned in order to assess whether actions are being implemented in a timely fashion. When applicable, potential funding sources have been identified for proposed actions listed in the Mitigation Action Plan.

The participating jurisdictions will integrate this Hazard Mitigation Plan into relevant city, town, and county government decision-making processes or mechanisms where feasible. This includes integrating the requirements of the Hazard Mitigation Plan into other local planning documents, processes, or mechanisms, such as comprehensive or capital improvement plans, when appropriate. The members of the Spartanburg County Hazard Mitigation Planning Team will remain charged with ensuring that the goals and mitigation actions of new and updated local planning documents for their agencies or departments are consistent with, or do not conflict with, the goals and actions of the Hazard Mitigation Plan and will not contribute to increased hazard vulnerability in Spartanburg County.

Since the previous plan was adopted, each jurisdiction has worked to integrate the hazard mitigation plan into other planning mechanisms where applicable/feasible. Examples of how this integration has occurred have been documented in the Implementation Status discussion provided for each of the mitigation actions found in Section 9. Specific examples of how integration has occurred include:

- ❖ Integrating the mitigation plan into reviews and updates of floodplain management ordinances
- ❖ Integrating the mitigation plan into reviews and updates of emergency operations plans
- ❖ Integrating information in the mitigation plan into county Geographic Information Systems
- ❖ Integrating the mitigation plan into the local reserve fund through identification of mitigation actions that require local funding

Opportunities to further integrate the requirements of this Plan into other local planning mechanisms shall continue to be identified through future meetings of the Planning Team and the review process described herein. Although it is recognized that there are many possible benefits to integrating components of this Plan into other local planning mechanisms, the development and maintenance of this stand-alone Multi-Jurisdictional Hazard Mitigation Plan is deemed by the Planning Team to be the most effective and appropriate method to implement local hazard mitigation actions at this time.

10.3 MONITORING, EVALUATION, AND ENHANCEMENT

Periodic revisions and updates of the Multi-Jurisdictional Hazard Mitigation Plan are required to ensure that the goals of the Plan are kept current, taking into account potential changes in hazard vulnerability and mitigation priorities. In addition, revisions may be necessary to ensure that the Plan is in full compliance with applicable federal and state regulations. Periodic evaluation of the Plan will also ensure that specific mitigation actions are being reviewed and carried out according to the Mitigation Action Plan.

The Spartanburg County Hazard Mitigation Planning Team shall meet once every year to evaluate the progress attained and to revise, where needed, the activities set forth in the Plan. This meeting shall be held in the month upon which final plan approval is attained; however, it may be necessary to schedule in the month prior or after in any given year, depending on the schedules of local officials. The findings and recommendations of the Planning Team will be documented in the form of a report that can be shared with interested municipalities, the county, and other stakeholders. The Planning Team will also meet following any disaster events warranting a reexamination of the mitigation actions being implemented or proposed for future implementation. This will ensure that the Plan is continuously updated to reflect changing conditions and needs within Spartanburg County. The Spartanburg County

Emergency Management Coordinator will be responsible for reconvening the Hazard Mitigation Planning Team for these reviews.

Five Year Plan Review

The Plan will be thoroughly reviewed by the Spartanburg County Hazard Mitigation Planning Team every five years to determine whether there have been any significant changes in Spartanburg County that may, in turn, necessitate changes in the types of mitigation actions proposed. New development in identified hazard areas, an increased exposure to hazards, an increase or decrease in capability to address hazards, and changes to federal or state legislation are examples of factors that may affect the necessary content of the Plan.

The plan review provides Spartanburg County/municipal officials with an opportunity to evaluate those actions that have been successful and to explore the possibility of documenting potential losses avoided due to the implementation of specific mitigation measures. The plan review also provides the opportunity to address mitigation actions that may not have been successfully implemented as assigned. The Spartanburg County Emergency Management Coordinator will be responsible for reconvening the Planning Team and conducting the five-year review.

During the five-year plan review process, the following questions will be considered as criteria for assessing the effectiveness and appropriateness of the Plan:

- ❖ Do the goals address current and expected conditions?
- ❖ Has the nature or magnitude of risks changed?
- ❖ Are the current resources appropriate for implementing the Plan?
- ❖ Are there implementation problems, such as technical, political, legal or coordination issues with other agencies?
- ❖ Have the outcomes occurred as expected?
- ❖ Did county departments participate in the plan implementation process as assigned?

Following the five-year review, any revisions deemed necessary will be summarized and implemented according to the reporting procedures and plan amendment process outlined herein. Upon completion of the review and update/amendment process, the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan will be submitted to the State Hazard Mitigation Officer at the South Carolina Emergency Management Division (SCEMD) for final review and approval in coordination with the Federal Emergency Management Agency (FEMA).

Because the plan update process can take several months to complete, and because Federal funding may be needed to update the plan, it is recommended that the five-year review process begin at the beginning of the third year after the plan was last approved. This will allow the participants in the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan to organize in order to seek Federal funding if necessary and complete required plan update documentation before the plan expires at the end of the fifth year.

Disaster Declaration

Following a disaster declaration, the Spartanburg County Multi-Jurisdictional Hazard Mitigation Plan will be revised as necessary to reflect lessons learned or to address specific issues and circumstances arising

from the event. It will be the responsibility of the Spartanburg County Emergency Management Coordinator to reconvene the Spartanburg County Hazard Mitigation Planning Team and ensure the appropriate stakeholders are invited to participate in the plan revision and update process following declared disaster events.

Reporting Procedures

The results of the five-year review will be summarized by the Planning Team in a report that will include an evaluation of the effectiveness of the Plan and any required or recommended changes or amendments. The report will also include an evaluation of implementation progress for each of the proposed mitigation actions, identifying reasons for delays or obstacles to their completion along with recommended strategies to overcome them.

Plan Amendment Process

Upon the initiation of the amendment process, representatives from Spartanburg County and the participating municipalities will forward information on the proposed change(s) to all interested parties including, but not limited to, all directly affected county/municipal departments, residents, and businesses. Information will also be forwarded to the South Carolina Emergency Management Division. This information will be disseminated in order to seek input on the proposed amendment(s) for no less than a 45-day review and comment period.

At the end of the 45-day review and comment period, the proposed amendment(s) and all comments will be forwarded to the Planning Team for final consideration. The Planning Team will review the proposed amendment along with the comments received from other parties, and, if acceptable, the committee will submit a recommendation for the approval and adoption of changes to the Plan.

In determining whether to recommend approval or denial of a Plan amendment request, the following factors will be considered by the Planning Team:

- ❖ There are errors, inaccuracies, or omissions made in the identification of issues or needs in the Plan.
- ❖ New issues or needs have been identified which are not adequately addressed in the Plan.
- ❖ There has been a change in information, data, or assumptions from those on which the Plan is based.

Upon receiving the recommendation from the Planning Team, and prior to adoption of the Plan, the participating jurisdictions will hold a public hearing. The governing bodies of each participating jurisdiction will review the recommendation from the Planning Team (including the factors listed above) and any oral or written comments received at the public hearing. Following that review, the governing bodies will take one of the following actions:

- ❖ Adopt the proposed amendments as presented
- ❖ Adopt the proposed amendments with modifications
- ❖ Refer the amendments request back to the Planning Team for further revision
- ❖ Defer the amendment request back to the Planning Team for further consideration and/or additional hearings

Incorporation into Existing Planning Documents

The Spartanburg County Hazard Mitigation Planning Team intends to make available to all of Spartanburg County and its municipalities a process by which the requirements of this hazard mitigation plan will be incorporated into other plans. During the planning process for new and updated local planning documents, such as a comprehensive plan, capital improvements plan, or emergency management plan to name a few examples, the Office of Emergency Management will provide a copy of the Hazard Mitigation Plan to the advisory committee of each relevant planning document. The Office of Emergency Management will advise the advisory committee members to ensure that all goals and strategies of new and updated local planning documents are consistent with the Hazard Mitigation Plan and will not increase hazard vulnerability in the jurisdictions.

This process will be carried out for each of the planning documents described in Section 7: *Capability Assessment* of this document. It should also be noted that most jurisdictions within the county are participants in the county-level version of each type of plan and do not have stand-alone municipal plans of their own. Therefore, when the Office of Emergency Management shares and advises on the Hazard Mitigation Plan, they are acting on behalf of the municipalities. It should be further noted that due to the smaller size of many municipalities, municipal representatives of the Hazard Mitigation Planning Team are often the same person who participates in the update of comprehensive plans, zoning ordinances, and other planning documents. As such, much of the engrained knowledge these officials have gained from participating in the hazard mitigation planning process is transferred to these processes.

Therefore, each municipality's process for integrating the Hazard Mitigation Plan into other planning mechanisms is the same as the county-level process because these planning mechanisms are carried out as countywide plans or ordinances and each community's stake in each process is intricately linked.

10.4 CONTINUED PUBLIC INVOLVEMENT

44 CFR Requirement
44 CFR Part 201.6(c)(4)(iii): The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process.

Public participation is an integral component to the mitigation planning process and will continue to be essential as this Plan evolves over time. As described above, significant changes or amendments to the Plan shall require a public hearing prior to any adoption procedures.

Other efforts to involve the public in the maintenance, evaluation, and revision process will also be made. These efforts include:

- ❖ Advertising meetings of the Hazard Mitigation Planning Team in local newspapers, public bulletin boards, and/or county and municipal office buildings
- ❖ Designating willing and voluntary citizens and private sector representatives as official members of the Planning Team
- ❖ Utilizing local media to update the public on any maintenance and/or periodic review activities taking place

- ❖ Utilizing the websites of participating jurisdictions to advertise any maintenance and/or periodic review activities taking place
- ❖ Keeping copies of the Plan in public locations



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Category Number:
Item Number: 4.



AGENDA
GREER CITY COUNCIL
3/28/2023

First Reading of Ordinance Number 6-2023

Summary:

AN ORDINANCE AMENDING CHAPTER 22 (CITY-OWNED CEMETERIES) OF THE CITY CODE OF ORDINANCES. (Action Required)

Executive Summary:

Andy Merriman, City Administrator

ATTACHMENTS:

Description	Upload Date	Type
Ordinance Number 6-2023	3/27/2023	Ordinance

ORDINANCE NUMBER 6-2023

AN ORDINANCE AMENDING CHAPTER 22 (CITY-OWNED CEMETERIES) OF THE GREER CITY CODE OF ORDINANCES.

WHEREAS, the City of Greer City Council reviews its Ordinances at various times to make necessary improvements and/or changes; and,

WHEREAS, the City of Greer desires to amend its existing ordinances governing city-owned cemeteries to establish a rebate for the purchase of cemetery spaces, to limit the sale of cemetery spaces, and to establish a uniform method of documenting the transfer of cemetery spaces; and,

WHEREAS, the Mayor and Council find that the amendments contained herein are in the best interests of the citizens and residents of the City of Greer.

NOW, THEREFORE, BE IT ORDAINED by the Mayor and Council of the City of Greer, South Carolina that the Greer City Code of Ordinances (City-Owned Cemeteries) be amended as follows:

Section 1.

Chapter 22- CITY-OWNED CEMETERIES

Sec. 22-1. - Authority to enact, amend and administer.

All city-owned cemeteries located within the City of Greer are owned by the municipality organized under the provisions of Article VIII of the South Carolina Constitution and Title 5 of the South Carolina Code of Laws, with all powers and privileges invested by those provisions of law. The Greer City Council hereby delegates to the city administrator and to employees designated by the city administrator the responsibility to administer these regulations.

(Code 1982, § 7-2; Ord. No. 15-2008, 6-10-2008)

Sec. 22-2. - Lot and niche prices; **resident rebate.**

- (a) *Cemetery to be divided into spaces.* The cemetery shall be divided into spaces, suitable in dimension for single grave locations. The city shall maintain a master plat of the cemetery that designates by numbers or letters, or both, such burial spaces and columbarium niche spaces in the cemetery. All records, cards, contracts, and like documents including electronically maintained records which are maintained by the city shall identify each space or niche by such number-letter designation. Those same records shall identify the purchaser. The date of initial acquisition and the date of any subsequent transfer shall be recorded in such municipal records.
- (b) *Burial space and columbarium niche price.* Prices for burial spaces and columbarium niches in city-owned cemeteries shall be established by the city council from time to time, as detailed in the comprehensive fee schedule. Payment for the purchase of a burial space is due in full at the time of purchase.
- (c) **Rebate offered to City Residents. In support of residents of the City of Greer, a rebate will be offered to the Responsible Party (as defined below) for the interred individual, provided that the interred individual was a resident of the City immediately prior to time of death. To receive the rebate, proof of residency of the interred individual must be provided at the time of interment. The Responsible Party shall be defined as the heirs of the interred individual making the burial arrangements and paying for such services to the mortuary. If the cemetery space is purchased during the lifetime of the interred individual, then the rebate shall be issued only upon an Affidavit signed by the person(s) requesting the rebate verifying their right to receive the rebate or to the Estate of the interred individual.**

(Code 1982, § 7-3; Ord. No. 15-2008, 6-10-2008)

(Ord. No. 48-2019, 12-10-2019)

Sec.22-3. – Sale of cemetery spaces.

Cemetery spaces are a limited resource in the cemetery. Therefore, cemetery spaces shall be sold for the purpose of burial of said purchaser, the legal heirs of said purchaser, or a person approved in writing by the city administrator or his/her designee. The legal heirs of the purchaser are defined as the purchaser's spouse, parents, children (including adopted children), grandparents, grandchildren, aunts, uncles, nieces and nephews, either by blood or by marriage. Spaces purchased to be held as inventory and/or for the purpose of resale or investment purposes shall be strictly prohibited.

Sec.22-~~34~~. - Care - and maintenance of city cemetery; no perpetual care.

The City of Greer shall provide maintenance to the cemetery grounds, including, but not necessarily limited to, cutting grass and providing road maintenance. At its discretion, the city may elect to make improvements such

as providing fencing, monuments, landscaping features and the like. The city shall not operate a perpetual care cemetery as defined by the South Carolina Cemetery Act of 1984.

(Code 1982, § 7-4; Ord. No. 15-2008, 6-10-2008)

Sec. 22-~~45~~5.- Signs designating absence of perpetual care in city cemetery.

The city in accordance with state law shall display signs at each entrance to its cemetery, containing letters not less than six inches in height, stating "No Perpetual Care."

(Code 1982, § 7-5)

Sec. 22-~~56~~6. - Opening and closing of graves by city discontinued; effect on burial plot deeds.

- (a) Effective after June 30, 1986, the city discontinues opening and closing any graves in city-owned cemeteries.
- (b) Beginning after June 30, 1986, the city clerk is hereby authorized and directed to strike the last paragraph on the current burial plot deeds which concerns the opening and closing of graves by the city in city-owned cemeteries.

(Code 1982, § 7-6)

Sec. 22-~~67~~7. - Beneficiary/occupant of burial space.

(a) The city ~~may~~ will not maintain records as to the names of persons whose remains are interred. ~~Nevertheless, The city administration shall may, in its discretion, maintain records showing the names of the purchasers and persons buried and the names of intended beneficiaries of unoccupied spaces, subject to the provisions of Section 22-3 above.~~ It is the responsibility of the purchaser to provide to the city the name and address ~~the name~~ of such beneficiary at the time of purchase. The purchaser shall be able to change ~~at will~~ the name of the beneficiary for any given burial space. In the event the purchaser transfers ownership, then the transferee shall be responsible for the space purchased and acquires the right to change the name of the beneficiary to the legal heir of the transferee. ~~However,~~

(b) The remains of no person shall be interred unless the purchaser of the space or the person responsible for interment arrangements has signed a document specifying the space for interment of the remains.

(c) Any transfer of ownership of rights of burial or change of beneficiary must be documented with the City of Greer through a form approved by the City of Greer. All such forms must be signed documenting the transfer or change prior to interment. Any other agreements or transfers, written or oral, made or agreed to by anyone other than the City shall not be valid.

(Ord. No. 15-2008, 6-10-2008)

Sec. 22-~~78~~9. - Use for interment purposes only.

The burial spaces will be used solely for the interment of human remains. The remains of no more than one person shall be interred in any one burial space. No interment of animals shall be permitted. No structures whether permanent or temporary shall be erected at any time for any reason., except a family crypt as expressly permitted by these regulations. No monument, other than ordinary grave and family plot markers, shall be placed at any time by private persons. At minimum, a grave liner shall be required with the burial of a casket. No more than one (1) casket or four (4) cremated remains shall be interred in any burial space. Burial spaces containing a casket shall not have cremated remains interred in the same burial space. The number of cremated remains allowed in each niche will be limited to the manufacturer's specifications.

(Ord. No. 15-2008, 6-10-2008)

(Ord. No. 48-2019, 12-10-2019)

Sec. 22-~~89~~9. - Interment services responsibility.

The City of Greer has contracted exclusive interment services with one third-party contractor. All interment arrangements will be made coordinated through a City of Greer representative. Such responsibility rests solely with the purchaser of a burial space or columbarium niche or with such other persons who exercise responsibility for interment arrangements. The cost for interment services will be the contracted standard published rate of the third-party provider. The City of Greer reserves the right for reasonable cause to deny access to the cemetery to any provider of any services.

(Ord. No. 15-2008, 6-10-2008)

(Ord. No. 48-2019, 12-10-2019)

Sec. 22-~~910~~10. - No curbing or fencing.

There shall be no placement of curbing or fencing of any material along the boundaries of individual spaces, family plots, or elsewhere within the boundaries of the cemetery.

(Ord. No. 15-2008, 6-10-2008)

Sec. 22-~~1011~~11. - Grave markers permitted.

Grave markers and family plot markers are expressly permitted for the purposes of identifying the persons interred in the cemetery and for purposes of providing such other information as is commonly and generally contained on such markers. The markers shall be made of such masonry, metallic, or other durable material as might reasonably be expected to endure, without unsightly deterioration. Effective January 1, 2020, flat grave markers shall be the only marker expressly permitted in Mountain View Cemetery West

Section II. The sole expressed permission of flat grave markers will also apply to any newly opened cemeteries or cemetery sections subsequent to December 31, 2019.

(Ord. No. 15-2008, 6-10-2008)

(Ord. No. 48-2019, 12-10-2019)

Sec. 22-~~11~~12. - Family crypts permitted; prohibited as of January 1, 2020.

Family crypts are expressly permitted for the purposes of interment of human remains and for purposes of providing such other information as is commonly and generally contained on such crypts. The crypts shall be designed and made of such masonry, metallic, or other durable material as to withstand the passage of time and weather without deterioration. Effective January 1, 2020, family crypts are prohibited.

(Ord. No. 15-2008, 6-10-2008)

(Ord. No. 48-2019, 12-10-2019)

Sec. 22-~~12~~13. - Landscaping.

No one other than the City of Greer may plant any tree, shrub, flower, or plant of any type within the cemetery. Placement of coping, borders, cement, gravel, rocks, benches, and other landscaping are prohibited at burial spaces.

(Ord. No. 15-2008, 6-10-2008)

(Ord. No. 48-2019, 12-10-2019)

Sec. 22-~~13~~14. - Recreation prohibited.

No recreational or exercise activities of any type, including, but not limited to, bicycle riding, roller skating, dog walking, and jogging, shall be permitted at any time on the grounds of the cemetery.

(Ord. No. 15-2008, 6-10-2008)

Sec. 22-14. - Food, alcohol, and tobacco prohibited.

The consumption of food and beverages of any kind, including, but not limited to, alcoholic beverages, within the cemetery boundaries is prohibited.

The use of tobacco products within the cemetery boundaries is prohibited.

(Ord. No. 15-2008, 6-10-2008)

Sec. 22-~~15~~16. - City may remove arrangements following interment.

The family is responsible for the removal of floral arrangements following interment. The city shall be authorized to remove wreaths, sprays, potted plants, floral arrangements, or like objects positioned at the grave location at the time of interment once they have begun to noticeably wilt, fade, or discolor.

(Ord. No. 15-2008, 6-10-2008)

(Ord. No. 48-2019, 12-10-2019)

Sec. 22-~~16~~17. - Periodic placement of arrangements and flags.

Floral arrangements and flags, whether in vases, pots, or otherwise, may be placed at burial spaces from time to time. Floral arrangements may not exceed two arrangements per burial space. Arrangements and flags shall be placed in such manner so as not to become dislodged or subject to becoming scattered on surrounding spaces. Such arrangements and flags shall be removed once they become wilted, faded, tattered or discolored. The City of Greer reserves the right to remove such floral arrangements and flags as may become necessary and to discard any which become wilted, faded, tattered, discolored, or scattered on surrounding premises. The placement of keepsakes and mementos are expressly prohibited.

(Ord. No. 15-2008, 6-10-2008)

(Ord. No. 48-2019, 12-10-2019)

Sec. 22-17~~17~~**18**. - Security and safety.

The City of Greer shall provide periodic patrols of the cemetery by law enforcement officers and shall take such security measures as are reasonable and appropriate to deter acts of vandalism, desecration, and property damage. The city does not warrant the safety or security of persons, graves, markers, floral arrangements, or the property against injury or damage.

(Ord. No. 15-2008, 6-10-2008)

Sec. 22-19. – Penalty.

Any person determined by the City Administrator to be in violation of this Chapter may be prohibited from any further purchase of cemetery spaces and/or a civil penalty not to exceed \$500.00. Any appeal of such finding and request for a hearing shall be to City Council and filed with the City Clerk in writing within thirty (30) days of issuance of the penalty. At such hearing, the council shall determine whether the penalty was in accordance with the provisions of this Chapter and the decision of Council shall be final.

Section 2: Severability: Severability is intended throughout and within the provisions of this Ordinance. If any section, subsection, sentence, clause, phrase or portion of this Ordinance is held to be invalid or unconstitutional by a court of competent jurisdiction, then that decision shall not affect the validity of the remaining portions of this Ordinance.

Section 3: Effective Date: This ordinance shall take effect upon second and final reading.

CITY OF GREER, SOUTH CAROLINA

Richard W. Danner, Mayor

ATTEST:

Tammela Duncan, Municipal Clerk

Introduced by:

First Reading: March 28, 2023

Second and
Final Reading: April 11, 2023

Approved as to Form:

Daniel Hughes, Esquire
City Attorney

Category Number:
Item Number: 5.



AGENDA
GREER CITY COUNCIL
3/28/2023

First Reading of Ordinance Number 7-2023

Summary:

AN ORDINANCE OF THE CITY OF GREER, SOUTH CAROLINA AMENDING THE COMPREHENSIVE FEE SCHEDULE FOR CITY OWNED CEMETERIES. (Action Required)

Executive Summary:

Andy Merriman, City Administrator

ATTACHMENTS:

Description	Upload Date	Type
Ordinance Number 7-2023	3/24/2023	Ordinance

ORDINANCE NUMBER 7 - 2023

**AN ORDINANCE OF THE CITY OF GREER, SOUTH CAROLINA
AMENDING THE COMPREHENSIVE FEE SCHEDULE FOR CITY
OWNED CEMETERIES.**

WHEREAS, the City of Greer from time to time must review its fees and charges and make adjustments as necessary; and

WHEREAS, the need to adopt certain fees for activities and services performed by the City of Greer in carrying out its responsibilities shall be as indicated in the following schedule; and

WHEREAS, the fees approved by the Mayor and Greer City Council are as follows:

CITY OF GREER COMPREHENSIVE FEE SCHEDULE

CEMETERY BURIAL SPACE (MOUNTAINVIEW)

Single Space (Resident)	\$750.00
Single Space (Non-Resident)	\$1,500.00
Each Space	\$3,500.00
Resident Rebate	\$2,750.00
<u>To receive resident rebate, proof of city residency of interred individual at time of interment must be provided.</u>	

NOW, THEREFORE, BE IT ORDAINED by the Mayor and Council of the City of Greer, the Comprehensive Fee Schedule is amended to include the above provisions.

This ordinance shall be effective upon second reading approval thereof.

CITY OF GREER, SOUTH CAROLINA

Richard W. Danner, Mayor

ATTEST:

Tammela Duncan, Municipal Clerk

Introduced by:

First Reading: March 28, 2023

Second Reading and
Final Approval: April 11, 2023

Approved as to Form:

Daniel Hughes, Esquire
City Attorney