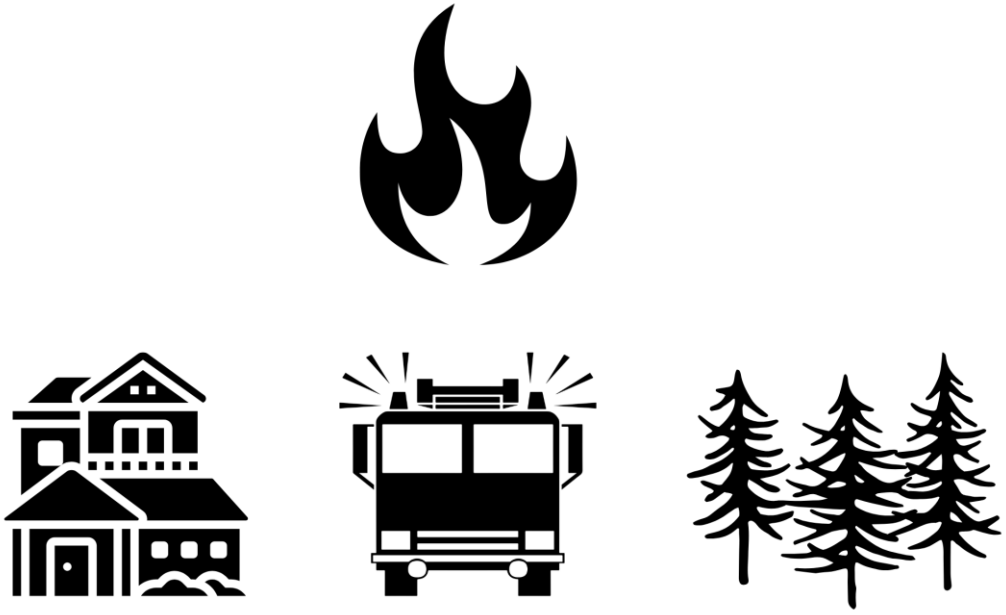
Williamson County, Illinois
Community Wildfire Protection Plan



Williamson County, Illinois

Community Wildfire Protection Plan

Written and prepared by Greater Egypt Regional Planning and Development Commission
Kelsey Bowe, *Environmental Planning Coordinator*
Lilly Bolin, *Environmental Planner*
Tyler Carpenter, *Environmental Planning Director*

Primary Contact:
Eric Miller, Battalion Chief
Williamson County Fire Protection District
3232 S. Park Ave.
Herrin, Il 62948

Office: 618-997-4802
Fax: 618-993-5878

This Plan was funded through a USDA Forest Service Cohesive Fire Strategy: Cross-Boundary Wildfire Hazard Mitigation on Non-Federal Lands Grant

This project was a large collaborative effort; partners included the following organizations along with many other local leaders:

Contents

1. Introduction & Planning Process

The Williamson County Wildfire Protection Plan (Plan) will outline goals for the county as a whole and goals for individual fire departments, fire protection districts, and landowners to increase landscape resiliency to wildfire, create a fire adapted community, and increase wildfire response capabilities. The Plan will also align its goals with the Northeast Region Cohesive Wildland Fire Management Strategy and the Illinois Forest Action Plan. The Williamson County CWPP is a multi-jurisdictional project that will focus on wildfire and WUI safety, forestry management, and fire response at local scales. This plan will be created with input from many community groups including rural and municipal fire departments and protection districts, federal lands including the Shawnee National Forest, Crab Orchard National Wildlife Refuge, and not-for-profit organizations.

The creation and implementation of the Williamson County CWPP will better protect life, property, and infrastructure within the WUI of the county. It will also benefit Crab Orchard National Wildlife Refuge and the Shawnee National Forest, federal lands within and surrounding Williamson County. The Plan will improve first responder knowledge and capabilities to manage hazardous fuels and reduce wildfires. It will increase public awareness of wildfire risk and provide strategies for landowners to increase the safety of their property.

The history of Community Wildfire Protection Plans began with the Federal Land Assistance, Management, and Enhancement Act of 2009 (FLAME Act).

Creation and adoption of this Plan will qualify participating jurisdictions within Williamson County for future USDA Forest Service wildfire grant programs for project implementation, equipment, and training.

1.1. The National Cohesive Wildland Fire Management Strategy: Northeast Regional Action Plan

The Northeast Region Consists of 20 States and the District of Columbia (see map below), the Regional Action Plan identifies voluntary actions that are needed at Regional, State, and Local levels to achieve an efficient, effective, and collaborative wildland fire management strategy. The Williamson County CWPP will align with the three main goals of this strategy, with smaller scale goals outlined that are specific to Williamson County and the southern Illinois region:

Goal 1: Resilient Landscapes

- Maintain and restore native oak-hickory forests
- Remove excessive fuels on the landscape
- Expand training and opportunities for prescribed fire

Goal 2: Fire Adapted Community

- Educate property owners in the WUI about risk and mitigation techniques
- Provide maps relating to wildfire risk for the county
- Explore possible building and roofing code adoptions at the county level to increase wildfire safety
- Conduct surveys to gather public opinion

Goal 3: Safe and Effective Wildfire Response

- Create a uniform definition of "wildfire" for all jurisdictions in Williamson County. Create a multijurisdictional database for wildfire reporting.
- Prepare for large, long-duration wildfires
- Evaluate current capacity and future needs of evacuation routes, water sources, and emergency shelters

Planning Timeline

Table 1

CWPP Planning Timeline	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
	Year 1 2023			Year 2 2024												Year 3 2025				
Organize Resources																				
Assess Hazards/Risk																				
Meetings: Goals and Objectives																				
Meetings: Public involvement																				
Meetings: Mitigation Activities																				
Meetings: Review, Final Public Input																				
Write Plan																				
Review Plan																				
Finalize Plan																				
Print Plan																				
State/ Federal Review																				

Meeting 1 – October 26, 2023: Planning Team Project Overview

- Introduce and meet planning team members
- Greater Egypt reviewed grant award details and planning process

Meeting 2 – April 29, 2024: Public Meeting

- Exhibit style meeting
- Display wildfire history data and wildfire models
- Provide opportunity for public survey responses

Meeting 3 – June 2025: Draft Review

- Review draft of the CWPP, provide comments and edits as necessary

- Review and adjust priority rank mitigation projects and equipment needs from fire jurisdictions

Other Meetings

- June 8, 2024– Southern Illinois Prescribed Burn Association Mtg: Presentations form SIPBA staff and Jenny Lesko - IDNR District Forester, to learn about various land management programs for private landowners in southern IL. Information learned will be incorporated into the CWPP.
- June 25, 2024 – Fire Protection Staff meeting: Eric Miller and staff at WCFPD held an internal meeting to discuss on equipment and apparatus needs, long term goals, community awareness and education, etc.
- August 15 2024: Annual Fire Practitioners Meeting, Hosted by Shawnee RC&D and SIPBA. Meet up of forestry and wildfire professionals from across IL, Overviews on current programs in the state and much discussion on ways to collaborate more in the future.
- September 10-11, 2024: Northeast Midwest Wildfire Tools Training: Hosted by Timmons Group at John A Logan College. Overview and hands on training of the tools available, Created Project file and communities to assess in the Northeast-Midwest CAT. Provided feedback to website/software admins
- December 23, 2024: Meeting with WCFPD to train staff on using the Community Assessment Tool
- January 30, 2025: Annual Fire Practitioners Meeting, Hosted by Shawnee RC&D and SIPBA. Meet up of forestry and wildfire professionals from across IL. Equipment demos, case studies of successful programs, and discussions on new project ideas and ways to increase collaboration between agencies.
- Feb 3, 2025: Meeting with LEFPD to train staff on using the Community Assessment Tool

Planning Team

Table 2

State/Federal		
Jurisdiction	**Name**	**Title**
Forest Service, Eastern Region	Scott Crist	Regional Fuels Program Manager
	Jesse Riechman	
IDNR	Ben Snyder	Fire Program Manager
	Taryn Bieri	District Forester
	Jacob Hess	District Forester
Crab Orchard National Wildlife Refuge	David Jones	Fire Specialist
	Donovan Henry	Assistant manager
Regional		
Jurisdiction	**Name**	**Title**
Greater Egypt Regional Planning and Development Commission	Tyler Carpenter	GIS & Environmental Planning Director
	Kelsey Bowe	Environmental Planning Coordinator
	Lilly Bolin	Environmental Planner
Shawnee Resource Conservation & Development, Inc.	Ray Bieri	Executive Director
Southern Illinois Prescribed Burn Association (SIPBA)	Zack Stawicki	Executive Director
SIU Touch of Nature	Brummer, Tom	Assistant Director
	Brian Croft	Director
	Charles Ruffner	Professor of Forestry
Illinois Prescribed Fire Council	David Holman	Member, GIS specialist
	Bill Kleiman	Director

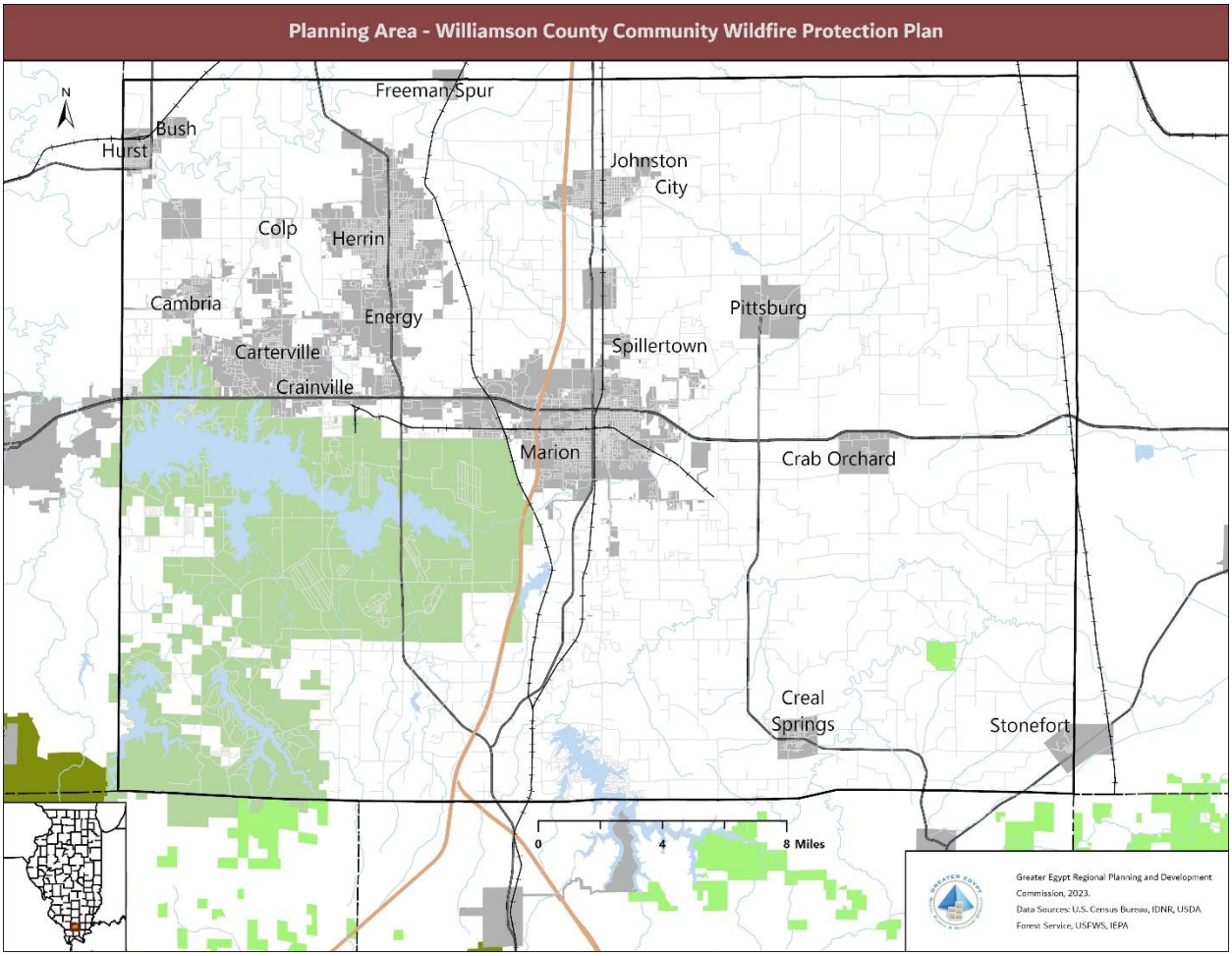
Williamson County		
Jurisdiction	**Name**	**Title**
Williamson County EMA	Creek, Patrick	Deputy Director
	Burgess Brian	EMA Coordinator
Williamson County Highway Department	J Travis Emery	County Engineer (retired)
	George Shepard	County Engineer (current)
Williamson County Fire Protection District	Eric Miller	Battalion Chief
	Jeremy Norris	Fire Chief
Carterville Fire Dept	Jason Sheraden	Fire Chief
Herrin Fire Dept	Shawn Priddy	Fire Chief
Cambria Volunteer Fire Dept	Randall Simmons	Fire Chief
Cambria Volunteer Fire Dept	Matthew Morgan	Lieutenant
Marion Fire Dept	Tim Barnett	Fire Chief
Marion Police Dept	William Barret	911/EMA
Johnston City Fire Dept	Thomas Burton	Fire Chief
Johnston City Fire Dept	Wayne Rice	Interim Fire Chief
Hurst Fire Dept	Tom Gottschalk	Fire Chief
Energy Fire Dept	Andrew Barclay	Fire Chief
Bush Fire Dept	James Byrley	Fire Chief
Pittsburg Volunteer Fire Dept	Scott Cutsinger	Fire Chief
Pittsburg Volunteer Fire Dept	Hilary Davis	Administrator
Stonefort Fire Department	Lauren McFarland	Assistant Chief
Stonefort Fire Department	Monty Dunn	Fire Chief

1.2. Background

Williamson County is located in Southern Illinois and is one of the more populous counties in the region. It is bordered by Franklin County to the north, Jackson to the west, Union and Johnson to the south, and Saline County to the east. It is located roughly 120 miles southeast of St. Louis, MO and 180 miles south of Springfield, IL.

Williamson County was founded in 1839 when Franklin County was divided in two. The county was named after Hugh Williamson, who was a signatory to the U.S. Constitution. The county seat was placed in Marion, named after General Francis Marion, where it resides today.

Figure 1



1.3. Demographics

Based on the 2020 decennial census, Williamson County has 67,153 residents. This is an increase of 796 persons, or 0.01% from the 2010 population. The tables below show populations of incorporated areas and precincts within the County (Williamson County does not have townships). The unincorporated population is roughly 21,876.

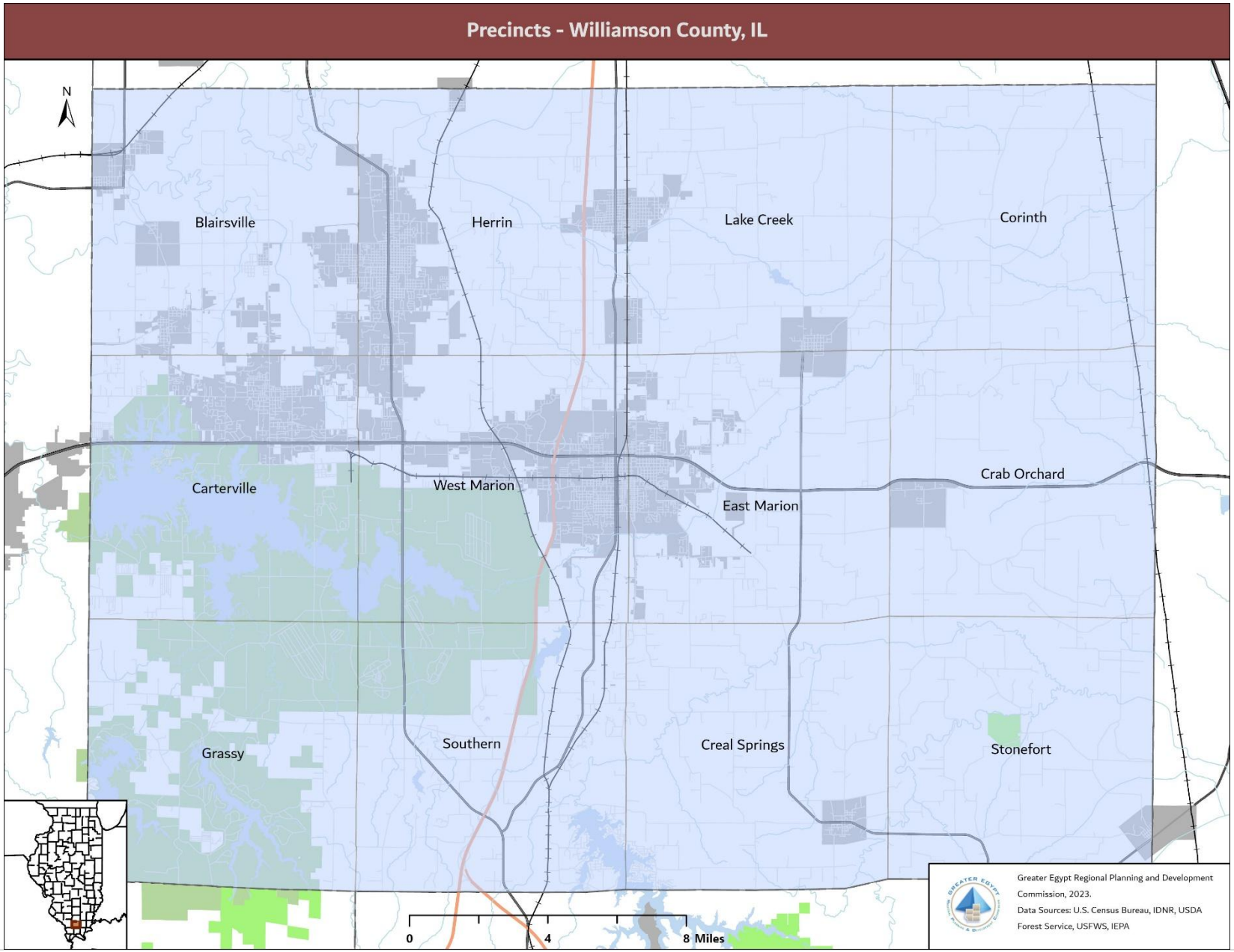
Table 3

Municipality	Population
Bush	241
Cambria	1505
Carterville	5848
Carbondale*	21857
Colp	168
Crainville	1443
Creal Springs	505
Energy	974
Freeman Spur*	268
Herrin	12352
Hurst	764
Johnston City	3384
Marion	16855
Pittsburg	565
Spillertown	181
Stonefort*	224

Table 4

Precinct	Population
Grassy	676
Corinth	966
Stonefort	1,147
Crab Orchard	1,487
Creal Springs	2,475
Southern	3,745
Lake Creek	4,135
Blairsville	5,799
Carterville	9,799
East Marion	10,471
West Marion	11,722
Herrin	14,731

*Municipality within multiple counties, the majority of Carbondale is in Jackson County.


Precincts - Williamson County, IL
N
Blairsville
Herrin
Lake Creek
Corinth
Carterville
West Marion
East Marion
Crab Orchard
Grassy
Southern
Creal Springs
Stonefort
0
4
8 Miles
Greater Egypt Regional Planning and Development Commission, 2023.
Data Sources: U.S. Census Bureau, IDNR, USDA Forest Service, USFWS, IEPA

2. Fire Environment

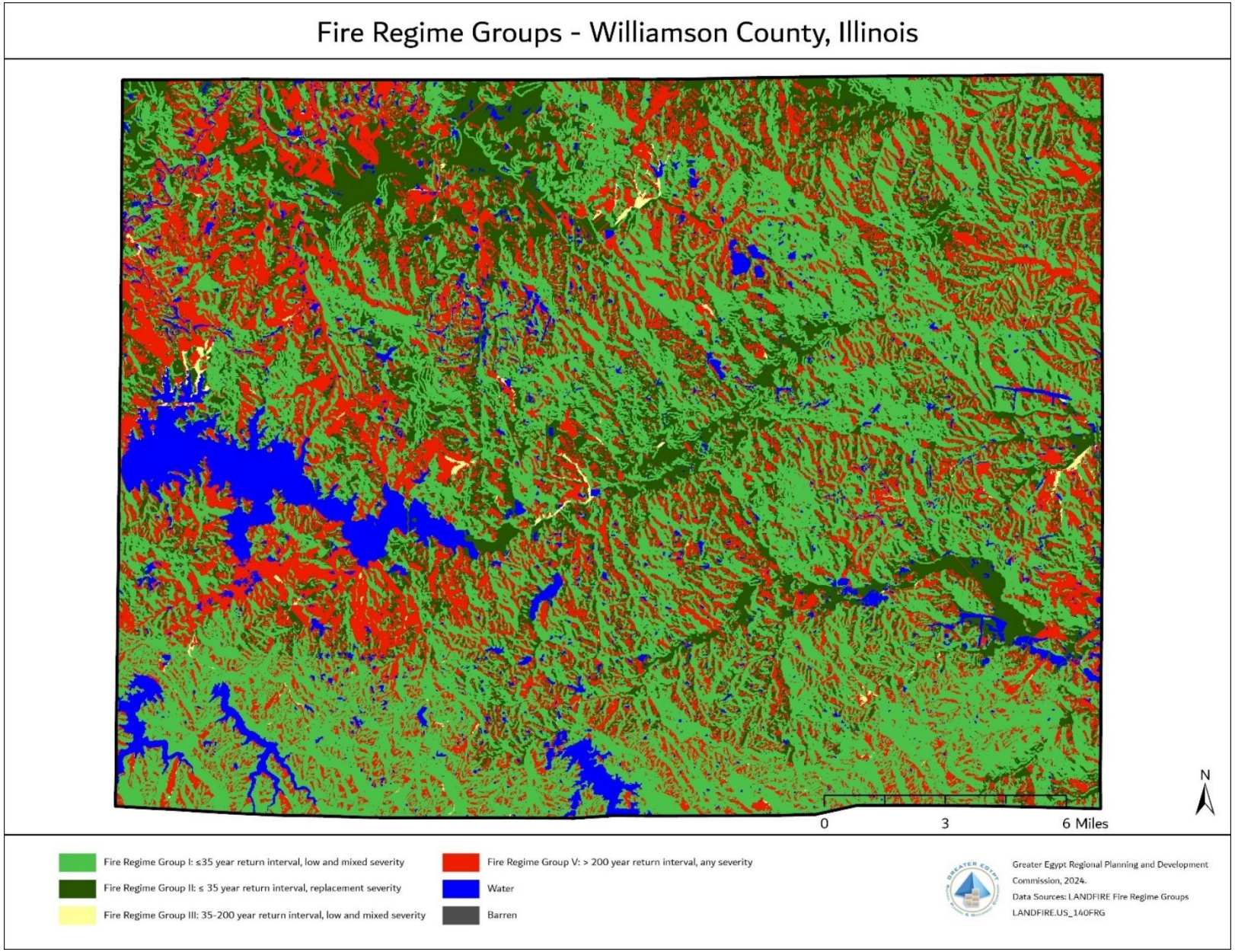
2.1. Land Use and Fire History

Fire is a fundamental ecological component for many ecosystems, including those in southern Illinois. Historically, the majority of Williamson County experienced wildfires every 35 years or less, with the majority of the landscape being oak hickory hardwood forests and tallgrass prairies. Area with a return period of greater than 200 years were historically hardwood forests of sugar maple, beech, and basswood. While much of Williamson County and southern Illinois is still covered in forests- logging, development, fire suppression, and the spread of invasive species has left native forests fragmented and with varied species composition. Nearly all of the historical prairies in Illinois have been converted to agricultural lands.

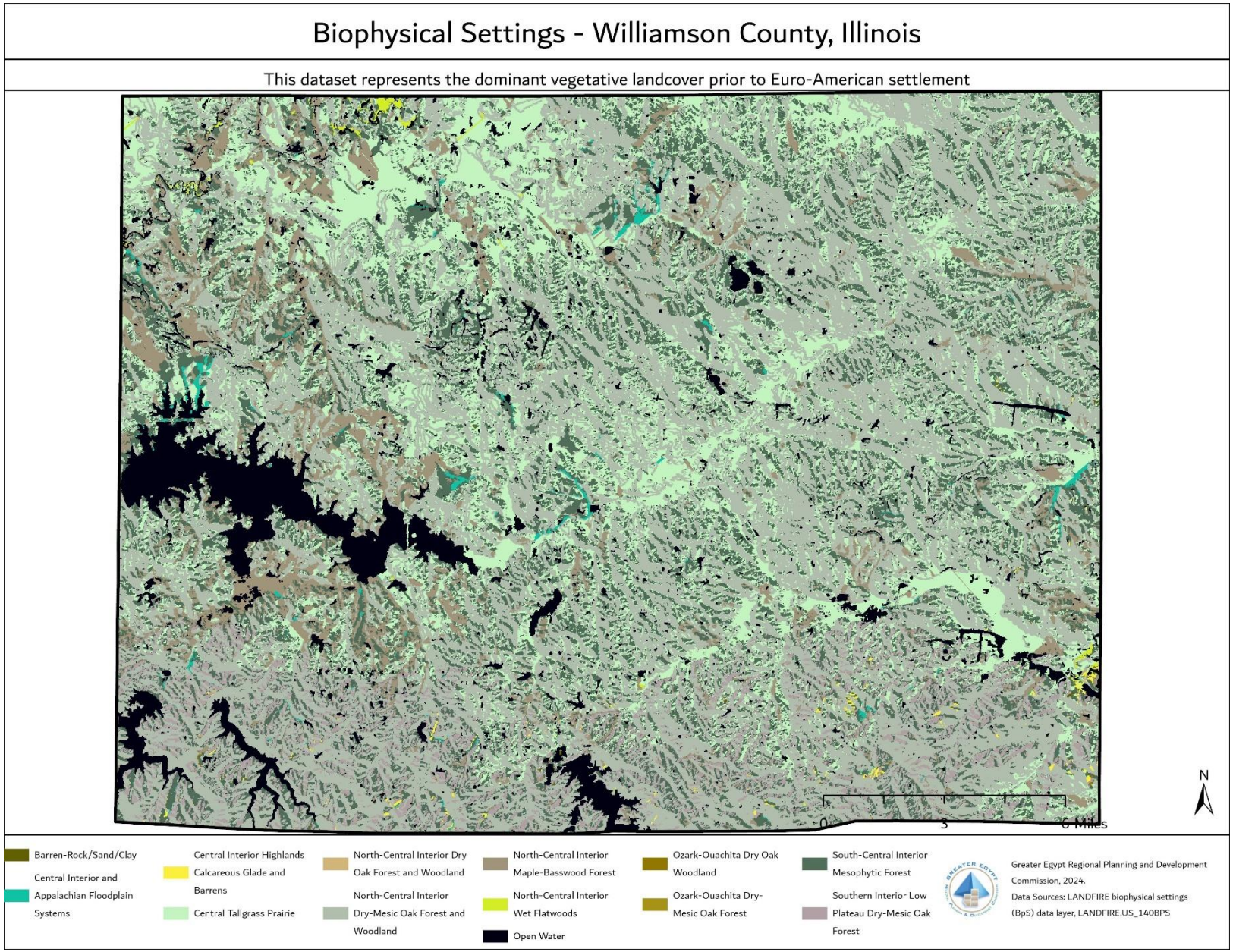
Table 5

Regime Group	Return Interval	Acres	% of County
Fire Regime Group I	<= 35 Year Fire Return Interval, Low and Mixed Severity	138720.31	48.81
Fire Regime Group II	<= 35 Year Fire Return Interval, Replacement Severity	55633.43	19.57
Fire Regime Group III	35 - 200 Year Fire Return Interval, Low and Mixed Severity	1068.35	0.38
Fire Regime Group V	> 200 Year Fire Return Interval, Any Severity	71193.18	25.05
Water	Water	17576.35	6.18
Barren	Barren	36.69	0.01

Figure 2


Fire Regime Groups - Williamson County, Illinois
0
3
6 Miles
N
Fire Regime Group I: ≤35 year return interval, low and mixed severity
Fire Regime Group II: ≤ 35 year return interval, replacement severity
Fire Regime Group III: 35-200 year return interval, low and mixed severity
Fire Regime Group V: > 200 year return interval, any severity
Water
Barren
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: LANDFIRE Fire Regime Groups LANDFIRE.US_140FRG

BPS NAME	GROUP NAME	Acres	% of County
North-Central Interior Dry-Mesic Oak Forest and Woodland	White Oak-Black Oak-Mockernut Hickory-1	127660.56	44.91
Central Tallgrass Prairie	Big Bluestem-Switchgrass-2	55633.43	19.57
South-Central Interior Mesophytic Forest	Sugar Maple-Beech-Basswood-3	52745.52	18.56
North-Central Interior Maple-Basswood Forest	Sugar Maple-Beech-Basswood-5	18058.27	6.35
Open Water	Open Water	17576.35	6.18
Southern Interior Low Plateau Dry-Mesic Oak Forest	White Oak-Black Oak-Chestnut Oak-2	10631.21	3.74
Central Interior and Appalachian Floodplain Systems	Silver Maple-American Sycamore-Black Willow-3	1068.35	0.38
North-Central Interior Wet Flatwoods	Pin Oak-Swamp White Oak-Maple-5	389.40	0.14
Central Interior Highlands Calcareous Glade and Barrens	Little Bluestem-Big Bluestem-Rosinweed-1	385.84	0.14
Barren-Rock/Sand/Clay	Barren-Rock/Sand/Clay	36.69	0.01
Ozark-Ouachita Dry Oak Woodland	Post Oak-Blackjack Oak-Farkleberry-1	32.25	0.01
North-Central Interior Dry Oak Forest and Woodland	White Oak-Black Oak-Mockernut Hickory-1	10.23	0.00
Ozark-Ouachita Dry-Mesic Oak Forest	White Oak-Red Oak-Sugar Maple-1	0.22	0.00

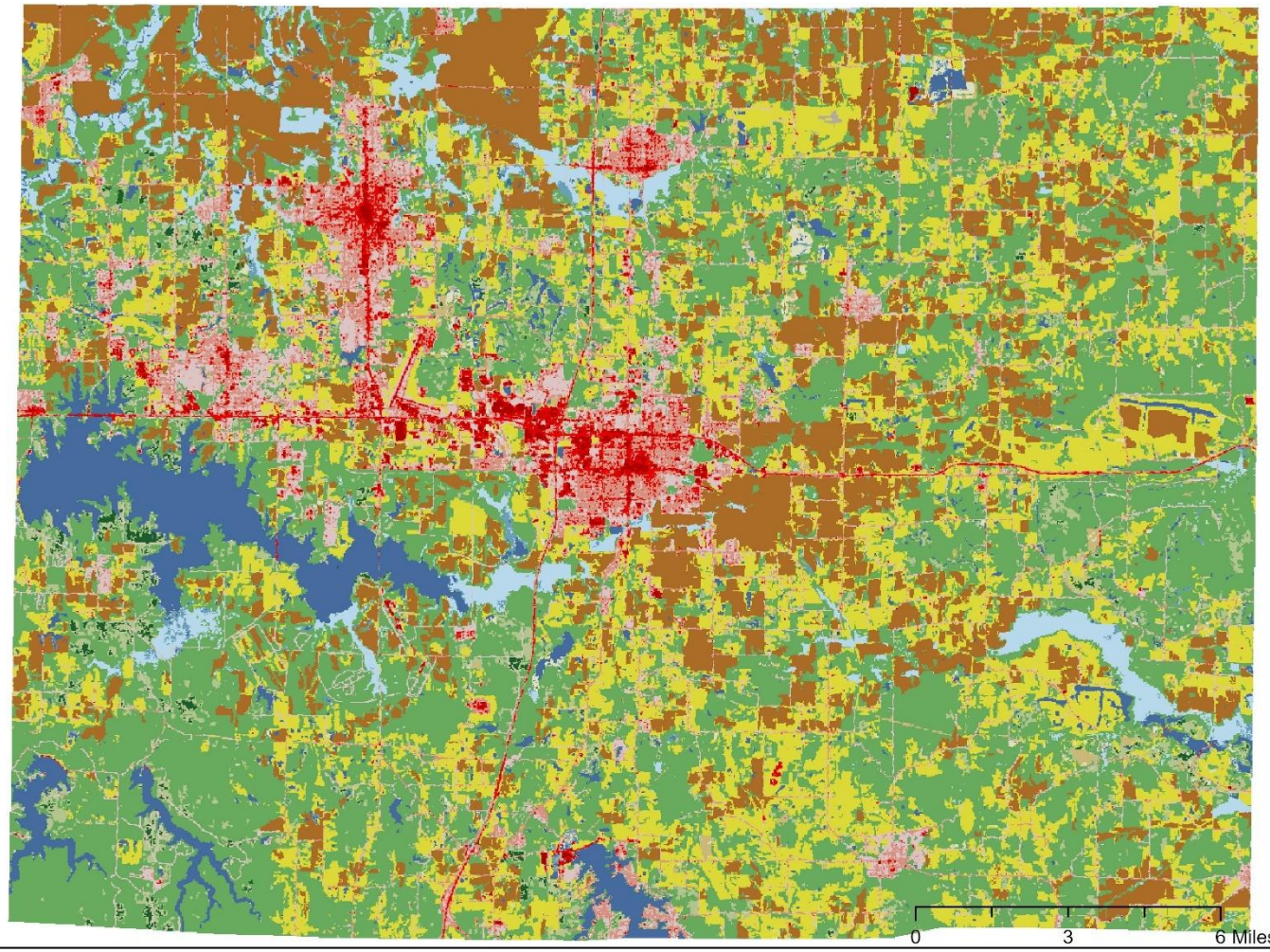

Biophysical Settings - Williamson County, Illinois
This dataset represents the dominant vegetative landcover prior to Euro-American settlement
0
3
6 Miles
N
Barren-Rock/Sand/Clay
Central Interior and Appalachian Floodplain Systems
Central Interior Highlands Calcareous Glade and Barrens
Central Tallgrass Prairie
North-Central Interior Dry Oak Forest and Woodland
North-Central Interior Dry-Mesic Oak Forest and Woodland
North-Central Interior Maple-Basswood Forest
North-Central Interior Wet Flatwoods
Open Water
Ozark-Ouachita Dry Oak Woodland
Ozark-Ouachita Dry-Mesic Oak Forest
South-Central Interior Mesophytic Forest
Southern Interior Low Plateau Dry-Mesic Oak Forest
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: LANDFIRE biophysical settings (BpS) data layer, LANDFIRE.US_140BPS

Land Use – Present Day

Williamson County is largely covered by forests and agriculture, only 13.2% of the total county area is considered developed.

Color Code	NLCD Land Cover Class	Acres	% of County Area
	Deciduous Forest	103711	36.4886815
	Hay/Pasture	58162	20.46297427
	Cultivated Crops	48043	16.90280138
	Developed, Open Space	16547	5.821839567
	Open Water	14719	5.178532867
	Developed, Low Intensity	14534	5.113357182
	Woody Wetlands	8606.4	3.027969993
	Mixed Forest	7742.8	2.724155846
	Developed, Medium Intensity	5136.5	1.807158215
	Herbaceous	1744	0.613574695
	Shrub/Scrub	1494.7	0.52586528
	Developed, High Intensity	1375.9	0.484083988
	Emergent Herbaceous Wetlands	1136.2	0.399738984
	Evergreen Forest	1116.4	0.392775436
	Barren Land	160.56	0.05649081

Landcover - Williamson County, Illinois



- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Herbaceous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: USGS National Land Cover Database (NLCD) 2019

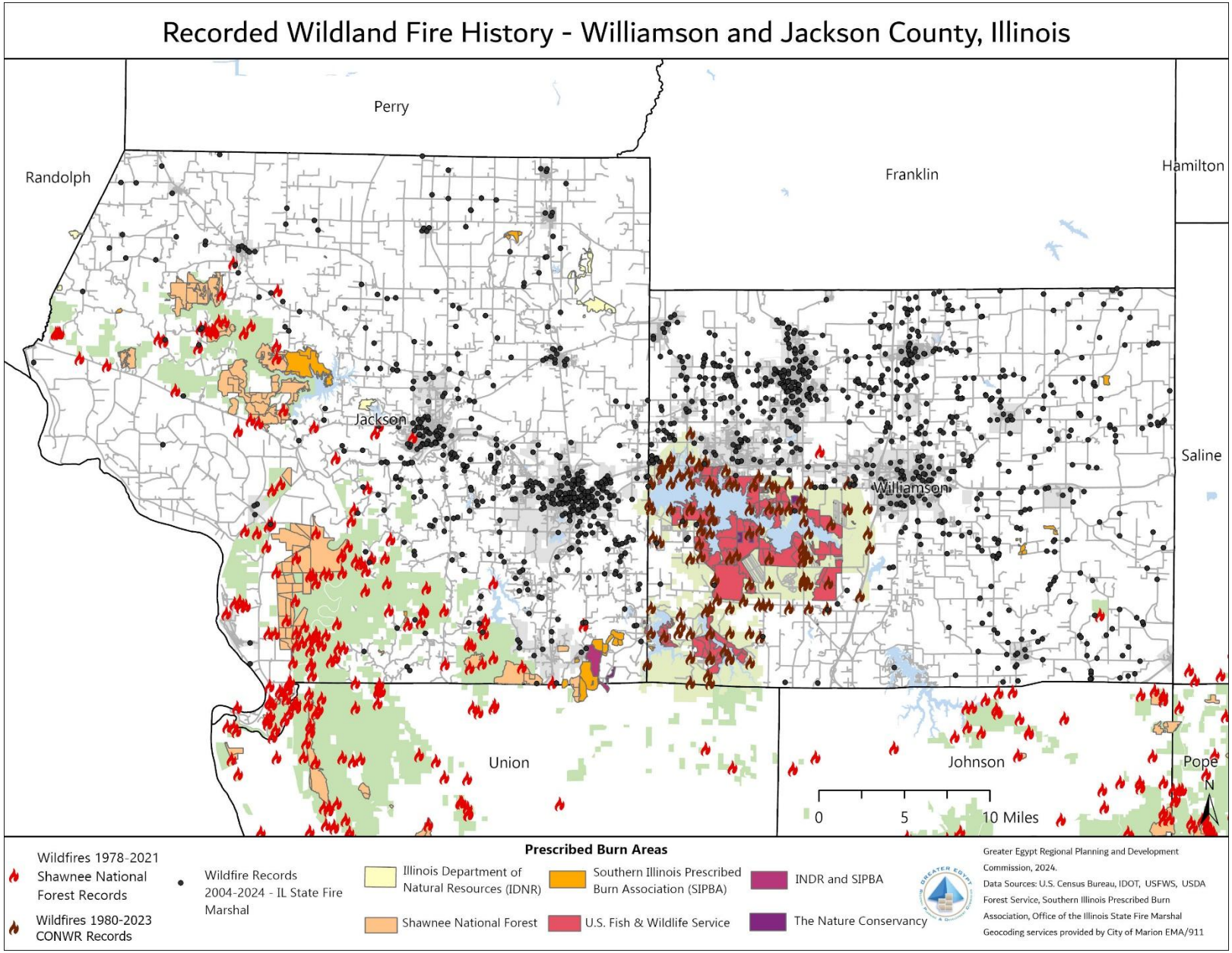
Wildfires are defined in this Plan as any unwanted or unplanned fire occurring in forests, grasslands, and agricultural fields. Williamson County has an 89% risk of wildfire to homes by the state ranking system, and 27% by the national rank. There is a 92% wildfire hazard potential by state rank and a 20% wildfire hazard potential by national rank. Since the majority of wildfires are human caused, risk is high near camping areas and along the Wildland Urban Interface (WUI). Risk is also elevated during droughts and high wind. Many state and federal natural areas have fire danger signs posted that are adjusted daily, including on Rte. 148 through Crab Orchard National Wildlife Refuge.

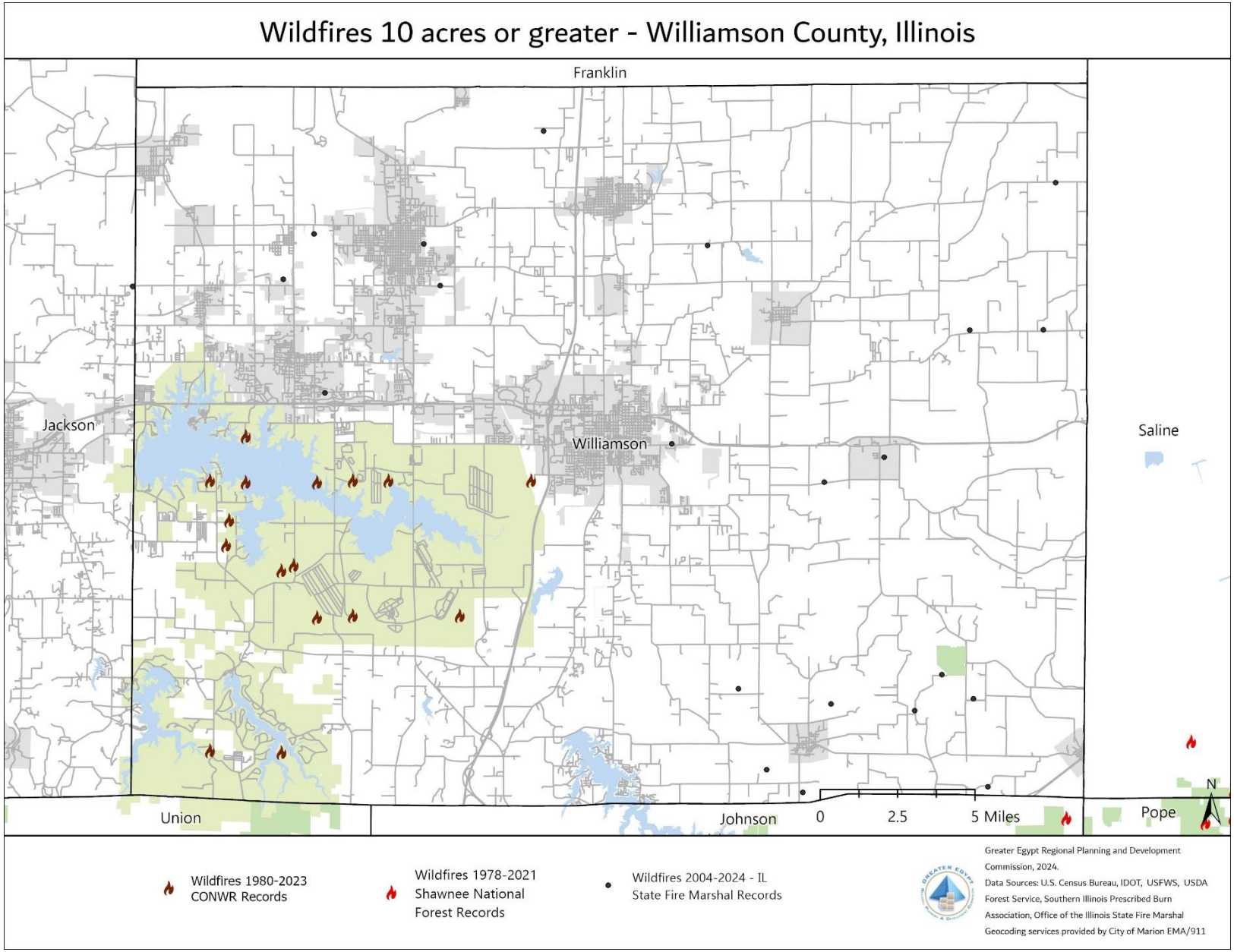
Federal, State and Private agencies in southern Illinois regularly work to conduct prescribed burns to mimic the historic fire regime, remove excessive and dangerous fuels on the landscape, and maintain forest health. In Williamson County these prescribed burns occur mostly in Crab Orchard National Wildlife Refuge, although a small amount occurs on privately owned forests through the Southern Illinois Prescribed Burn Association.

There are currently 11 Fire Protection Districts & Departments that operate in the County, plus 3 federal land managers: U.S. Fish and Wildlife Service (Crab Orchard National Wildlife Refuge), The U.S. Department of Agriculture (Shawnee Nation Forest), and the Federal Bureau of Prisons (USP Marion). Each jurisdiction has differing definitions of "wildfire" and variations in reporting and record keeping. A records request from the Office of the Illinois State Fire marshal for wildfire records from both Jackson and Williamson Counties returned 2,820 records from 2004-2024. However, due to incomplete records only 1,466 of these were able to have a location verified and mapped.

The tables and maps below display wildfire and prescribed burn history obtained from all available data sources.

From 2004- April of 2024, there were 1,034 wildfire occurrences with verifiable locations. Of these records, only 30 were greater than 10 acres and only 176 were greater than 1 acre. Due to differences in reporting and record keeping, the number of small scale wildfires is an underestimate.


Recorded Wildland Fire History - Williamson and Jackson County, Illinois
Perry
Randolph
Franklin
Hamilton
Jackson
Saline
Williamson
Union
Johnson
Pope
0
5
10 Miles
N
Wildfires 1978-2021 Shawnee National Forest Records
Wildfires 1980-2023 CONWR Records
Wildfire Records 2004-2024 - IL State Fire Marshal
Prescribed Burn Areas
Illinois Department of Natural Resources (IDNR)
Southern Illinois Prescribed Burn Association (SIPBA)
INDR and SIPBA
Shawnee National Forest
U.S. Fish & Wildlife Service
The Nature Conservancy
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, IDOT, USFWS, USDA Forest Service, Southern Illinois Prescribed Burn Association, Office of the Illinois State Fire Marshal
Geocoding services provided by City of Marion EMA/911


Wildfires 10 acres or greater - Williamson County, Illinois
Franklin
Jackson
Williamson
Saline
Union
Johnson
Pope
0
2.5
5 Miles
N
Wildfires 1980-2023 CONWR Records
Wildfires 1978-2021 Shawnee National Forest Records
Wildfires 2004-2024 - IL State Fire Marshal Records
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, IDOT, USFWS, USDA Forest Service, Southern Illinois Prescribed Burn Association, Office of the Illinois State Fire Marshal
Geocoding services provided by City of Marion EMA/911

2.2. Risk Assessment

The following maps and information were obtained from the Northeast-Midwest State Foresters Alliance Advanced Risk Explorer. The data from this risk explorer is a part of the Eastern Region Wildfire Risk Assessment (ERRA) project. Pyrologix was contracted by the Eastern Region of the USDA Forest Service to assess wildfire hazards for the region, the project was completed in 2021.

Northeast-Midwest WRAP Layer	Description
Burn Probability	This dataset is a 30-m cell size raster representing annual burn probability (BP) across the analysis area.
Conditional Risk to Potential Structures	The conditional risk to potential structures (cRPS) dataset or "Risk to Homes" represents the potential consequences of fire to a home at a given location, if a fire occurs there and if a home were located there.
Risk to Potential Structures	The expected risk to potential structures (RPS) dataset represents a measure that integrates wildfire likelihood and intensity with generalized consequences to a home on every pixel.
Probability of Exceeding Manual Control	This dataset represents the probability of heading flame lengths exceeding 4 feet, which is generally considered the threshold for exceeding the possibility of manual control during fire operations.
Probability of Exceeding Mechanical Control	This dataset represents the probability of heading flame lengths exceeding 8 feet, which is generally considered the threshold for exceeding the possibility of mechanical control during fire operations.
Probability of Extreme Fire Behavior	This dataset represents the probability of heading flame lengths exceeding 11 feet, which is generally considered the threshold for extreme fire behavior during fire operations.
Suppression Difficulty Index	Wildfire Suppression Difficulty Index is a quantitative rating of relative difficulty in performing fire control work.
Wildfire Hazard Potential	The wildfire hazard potential (WHP) dataset represents an index that quantifies the relative potential for wildfire that may be difficult to control.
Flame Length	This dataset represents the weighted-average flame length (FL) in feet for a given pixel in the fuelscape (including any contribution of crown fuel). Note: Burnable cornfields have been excluded from this dataset.
Flame Length (burnable cornfields included)	This dataset represents the weighted-average flame length (FL) in feet for a given pixel in the fuelscape (including any contribution of crown fuel).
Rate of Spread	This dataset represents the weighted-average rate of spread (ROS) in chains per hour for a given pixel in the fuelscape (including any contribution of crown fire spread rate). Note: Burnable cornfields have been excluded from this dataset.
Rate of Spread (burnable cornfields included)	This dataset represents the weighted-average rate of spread (ROS) in chains per hour for a given pixel in the fuelscape (including any contribution of crown fire spread rate).
Heat per Unit Area	This dataset represents the weighted-average heat per unit area (HPA) in kilojoules per square meter for a given pixel in the fuelscape (including any contribution of crown fuel). Note: Burnable cornfields have been excluded from this dataset.
Heat per Unit Area (burnable cornfields included)	This dataset represents the weighted-average heat per unit area (HPA) in kilojoules per square meter for a given pixel in the fuelscape (including any contribution of crown fuel).

Northeast-Midwest WRAP Layer	Description
Surface Fuels	Surface fuels contain the parameters required by the surface fire spread model to compute surface fire behavior characteristics. Surface fuels are defined as loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branchwood, downed logs, and stumps interspersed with or partially replacing the litter.
Potential Impacts to People and Property	This dataset is a 30-m cell size representation of wildfire risk to a Highly Valued Resource or Assets (HVRA) - People and Property. These results do not include burn probability and represent "conditional" effects of wildfire on HVRA.
Potential Impacts to Infrastructure	This dataset is a 30-m cell size representation of wildfire risk to a Highly Valued Resource or Assets (HVRA) – Infrastructure. These results do not include burn probability and represent "conditional" effects of wildfire on HVRA.
Potential Impacts to Cultural Resources	This dataset is a 30-m cell size representation of wildfire risk to a Highly Valued Resource or Assets (HVRA) - Cultural Resources. These results do not include burn probability and represent "conditional" effects of wildfire on HVRA.
Potential Impacts to All HVRA	This dataset is a 30-m cell size representation of wildfire risk to all of the Highly Valued Resource or Assets (HVRA). These results do not include burn probability and represent "conditional" effects of wildfire on HVRA.
Annualized Impacts to People and Property	This dataset is a 30-m cell size representation of wildfire risk to a Highly Valued Resource or Assets (HVRA) - People and Property. This dataset has been multiplied by burn probability and considers the likelihood of wildfire, or "expected" wildfire risk.
Annualized Impacts to Infrastructure	This dataset is a 30-m cell size representation of wildfire risk to a Highly Valued Resource or Assets (HVRA) - Infrastructure. This dataset has been multiplied by burn probability and considers the likelihood of wildfire, or "expected" wildfire risk.
Annualized Impacts to Cultural Resources	This dataset is a 30-m cell size representation of wildfire risk to a Highly Valued Resource or Assets (HVRA) - Cultural Resources. This dataset has been multiplied by burn probability and considers the likelihood of wildfire, or "expected" wildfire risk.
Annualized Impacts to All HVRA	This dataset is a 30-m cell size representation of wildfire risk to all Highly Valued Resource or Assets (HVRA). This dataset has been multiplied by burn probability and considers the likelihood of wildfire, or "expected" wildfire risk.
Housing-Unit Density (HUDEN)	This layer displays housing-unit density.

Surface Fuels

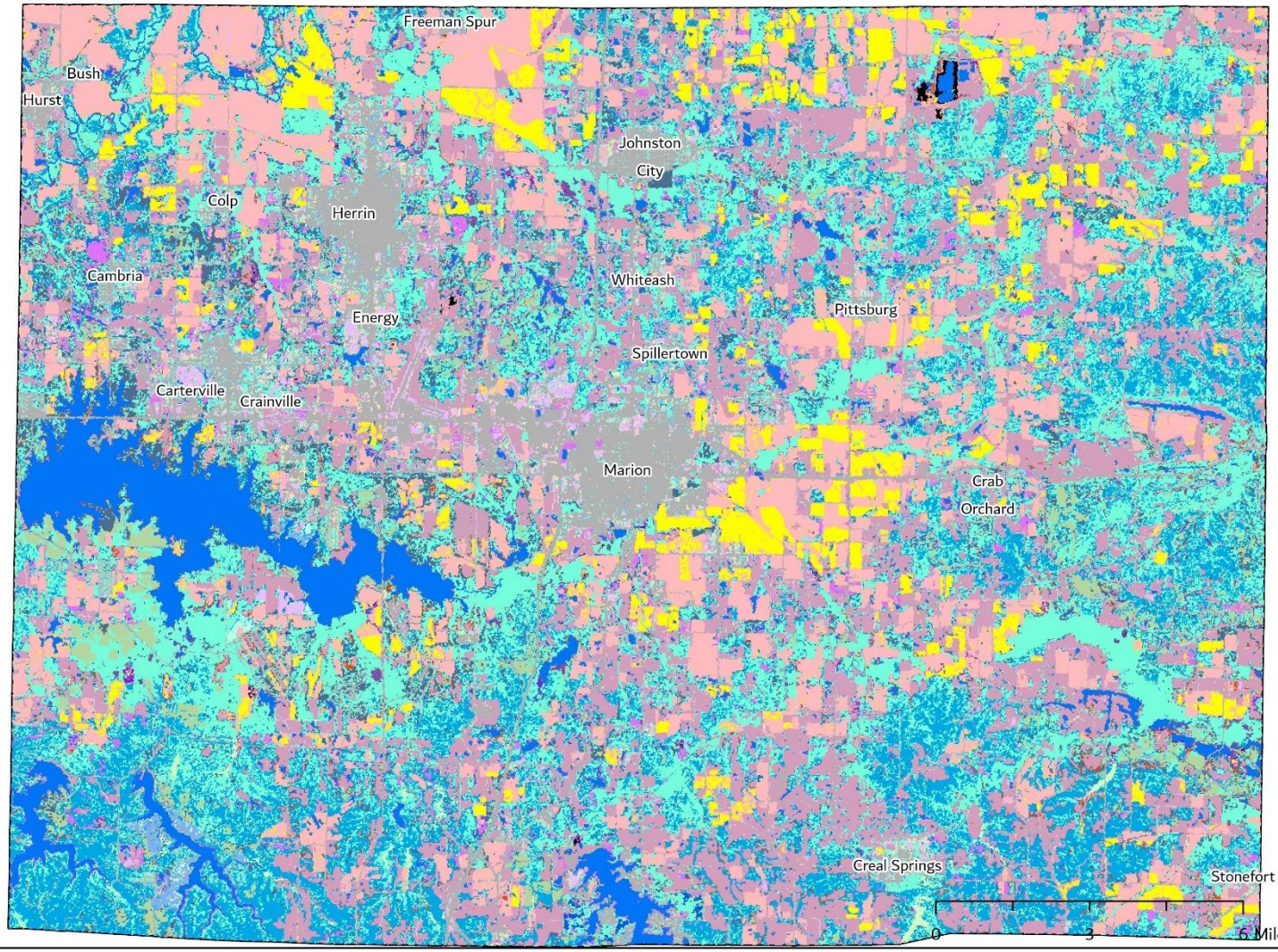
Surface fuels are defined by fire behavior fuel models (Scott & Burgan 2005). A fuel model contains the parameters required by the surface fire spread model to compute surface fire behavior characteristics, including rate of spread, flame length, fireline intensity, and other fire behavior metrics. As the name might suggest, surface fuels account only for surface fire potential and surface fuels are generally defined to be less than six feet in height off the ground.

Surface fuels typically are categorized into one of six primary fuel types based on the primary carrier of the surface fire: 1) Grass, 2) Grass/Shrub, 3) Shrub, 4) Timber/Understory, 5) Timber Litter, and 6) Slash. These surface fuel models provide the input parameters needed to compute surface fire behavior.

LANDFIRE 2016 Remap 2.0.0 (LF Remap) data was leveraged to generate a calibrated fuelscape for this regionwide assessment. The fuelscape consists of geospatial datasets representing surface fuel model (FM40), canopy cover (CC), canopy height (CH), canopy bulk density (CBD), canopy base height (CBH), and topography characteristics (slope, aspect, elevation). The FM40 dataset can be seen below in groups of similar fuel types.

Surface Fuel Model	Description	Acres	Percent
NB1	Urban/Developed	24,866	8.7 %
NB3	Agriculture	39,776	14.0 %
NB8	Water	14,044	4.9 %
NB9	Barren	140	0.0 %
GR1	Short, sparse, dry climate grass	5,656	2.0 %
GR2	Low load, dry climate grass	48,927	17.2 %
GR3	Low load, very coarse, humid climate grass	4,942	1.7 %
GR4	Moderate load, dry climate grass	121	0.0 %
GR5	Low load, dry climate grass-shrub	0	0.0 %
GR6	Moderate load, humid climate grass	93	0.0 %
GR7	High load, dry climate grass	0	0.0 %
GR8	High load, very coarse, humid climate grass	2,041	0.7 %
AG9	Burnable cornfields	12,776	4.5 %
GS1	Low load, dry climate grass-shrub	3,049	1.1 %
GS2	Moderate load, dry climate grass-shrub	124	0.0 %
GS3	Moderate load, humid climate grass-shrub	0	0.0 %
GS4	High load, humid climate grass-shrub	2	0.0 %
SH1	Low load, dry climate shrub	0	0.0 %
SH2	Moderate load, dry climate shrub	0	0.0 %
SH3	Moderate load, humid climate shrub	136	0.0 %
SH4	Low load, humid climate timber-shrub	0	0.0 %
SH5	High load, humid climate grass-shrub	0	0.0 %
SH6	Low load, humid climate shrub	1,599	0.6 %
SH7	Very high load, dry climate shrub	0	0.0 %
SH8	High load, humid climate shrub	0	0.0 %
SH9	Very high load, humid climate shrub	0	0.0 %
TU1	Light load, dry climate timber-grass-shrub	619	0.2 %
TU2	Moderate load, humid climate timber-shrub	5,210	1.8 %
TU3	Moderate load, humid climate timber-grass-shrub	0	0.0 %
TU5	Very high load, dry climate timber-shrub	0	0.0 %
TL1	Low load, compact conifer litter	220	0.1 %
TL2	Low load, broadleaf litter	67,327	23.7 %
TL3	Moderate load, conifer litter	1,970	0.7 %
TL4	Small downed logs	0	0.0 %
TL5	High load, conifer litter	2	0.0 %
TL6	Moderate load, broadleaf litter	35,643	12.5 %
TL8	Long-needle litter	158	0.1 %
TL9	Very high load, broadleaf litter	14,931	5.3 %
SB1	Low load, activity fuel	0	0.0 %
SB2	Moderate load, activity fuel or low load, blowdown	0	0.0 %
SB3	High load, activity fuel or moderate load, blowdown	0	0.0 %
	Total	**284,372**	**100.0 %**

Surface Fuels - Williamson County, Illinois



Surface fuels contain the parameters required by the surface fire spread model to compute surface fire behavior characteristics. Surface fuels are defined as loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branchwood, downed logs, and stumps interspersed with or partially replacing the litter.

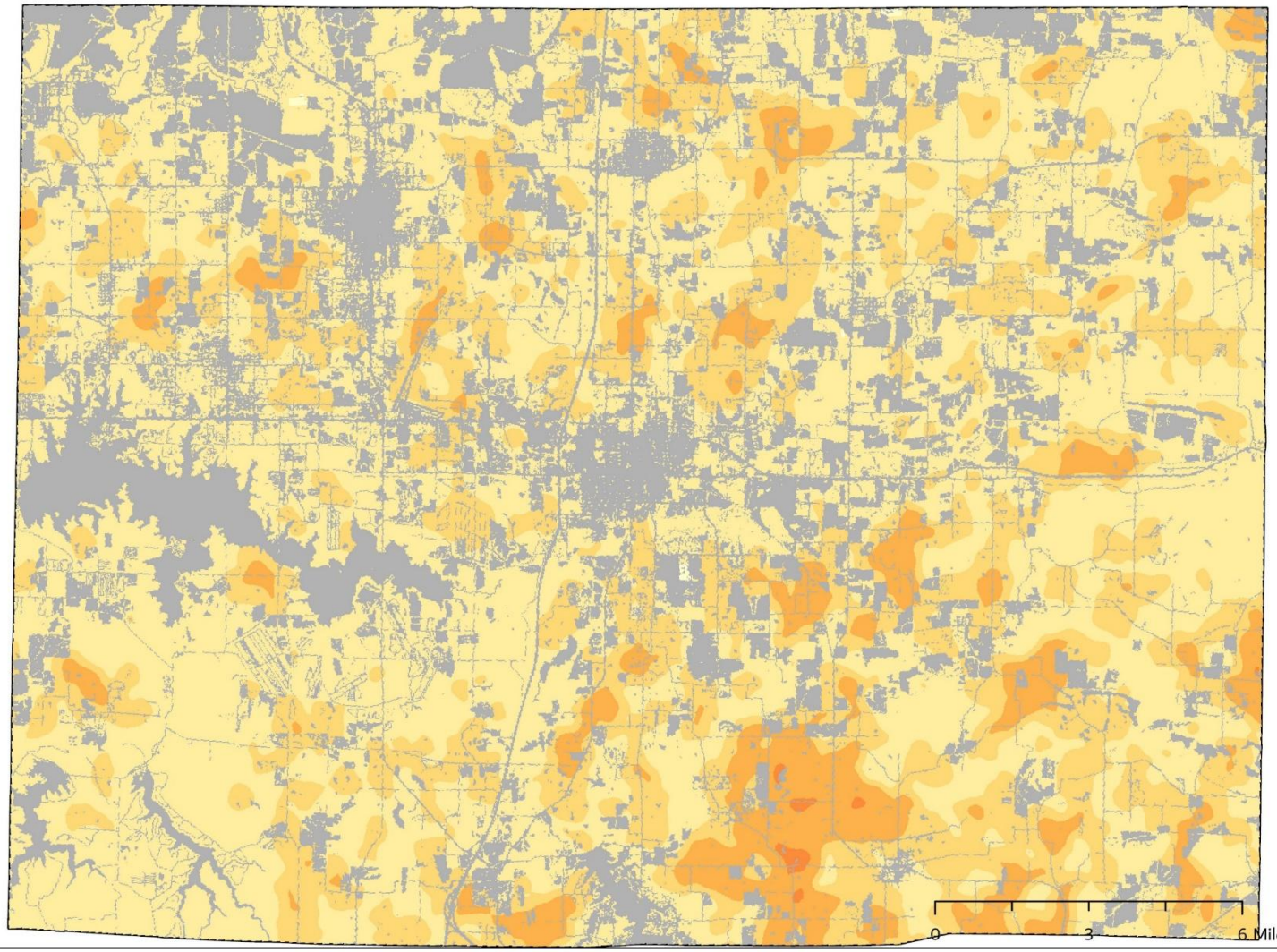
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

Burn Probability

This dataset is a 30-m cell size raster representing annual burn probability (BP) across the analysis area.

	Burn Probability Category	Acres	Percent
	0	78,826	27.7 %
	0 to 1-in-46,425	154	0.1 %
	1-in-46,425 to 1-in-10,000	126,773	44.6 %
	1-in-10,000 to 1-in-4,643	62,024	21.8 %
	1-in-4,643 to 1-in-2,154	16,302	5.7 %
	1-in-2,154 to 1-in-1,000	291	0.1 %
	1-in-1,000 to 1-in-464	0	0.0 %
	1-in-464 to 1-in-215	0	0.0 %
	1-in-215 to 1-in-100	0	0.0 %
	1-in-100 to 1-in-10	0	0.0 %
	> 1-in-10	0	0.0 %
	Total	**284,370**	**100.0 %**

Burn Probability - Williamson County, Illinois



Burn probability is the annual probability of wildfire burning in a specific location. At the community level, burn probability or wildfire likelihood is averaged where housing units occur. Burn Probability is based on fire behavior modeling across thousands of simulations of possible fire seasons. In each simulation, factors contributing to the probability of a fire occurring, including weather, topography, and ignitions are varied based on patterns derived from observations in recent decades. Burn Probability is not predictive and does not reflect any currently forecasted weather or fire danger conditions. Burn Probability is simply a probability that any specific location (pixel) may experience wildfire in any given year. It does not say anything about the intensity of fire if it occurs.

Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

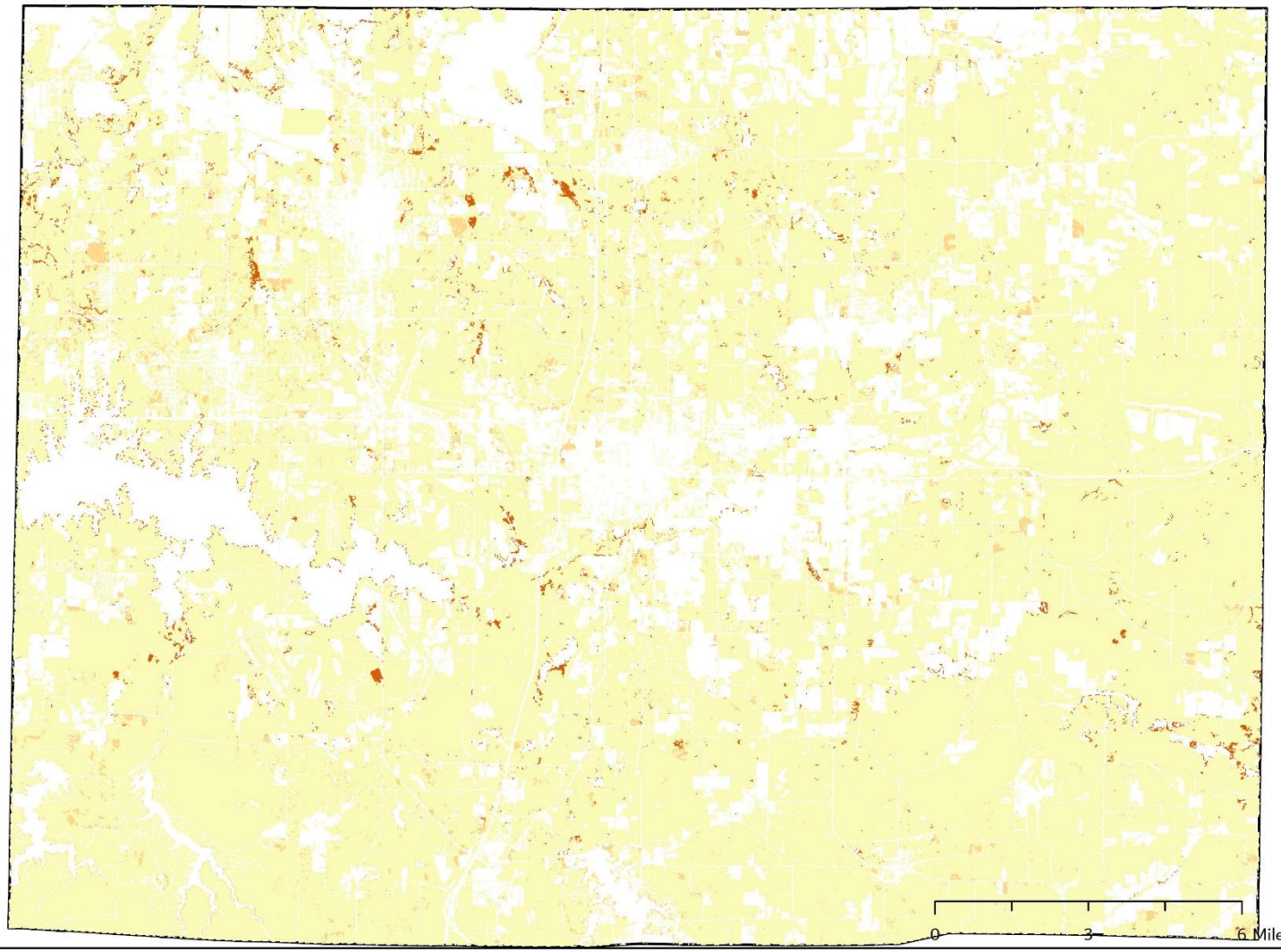
Flame Length

This dataset represents the weighted-average flame length (FL) in feet for a given pixel in the fuelscape (including any contribution of crown fuel). Note: Burnable cornfields have been excluded from this dataset.

	Flame Length Category	Acres	Percent
	0	91,602	32.2 %
	0 to 4 feet	185,632	65.3 %
	4 to 8 feet	5,081	1.8 %
	8 to 11 feet	12	0.0 %
	11 to 25 feet	2,045	0.7 %
	> 25 feet	0	0.0 %
	Total	**284,372**	**100.0 %**

Photo provided by Northeast-Midwest Wildfire Risk Viewer summary report

Flame Length - Williamson County, Illinois



Flame length is the distance (in feet) between the flame tip and the midpoint of the flame depth at the base (generally the ground surface). This is a good indicator of fire intensity. Flame length is a strong indicator of the potential damage to structures; longer flame lengths will likely have a greater negative consequence. Flame lengths are also utilized in fuel-break planning. Note: Burnable cornfields have been excluded from this dataset.

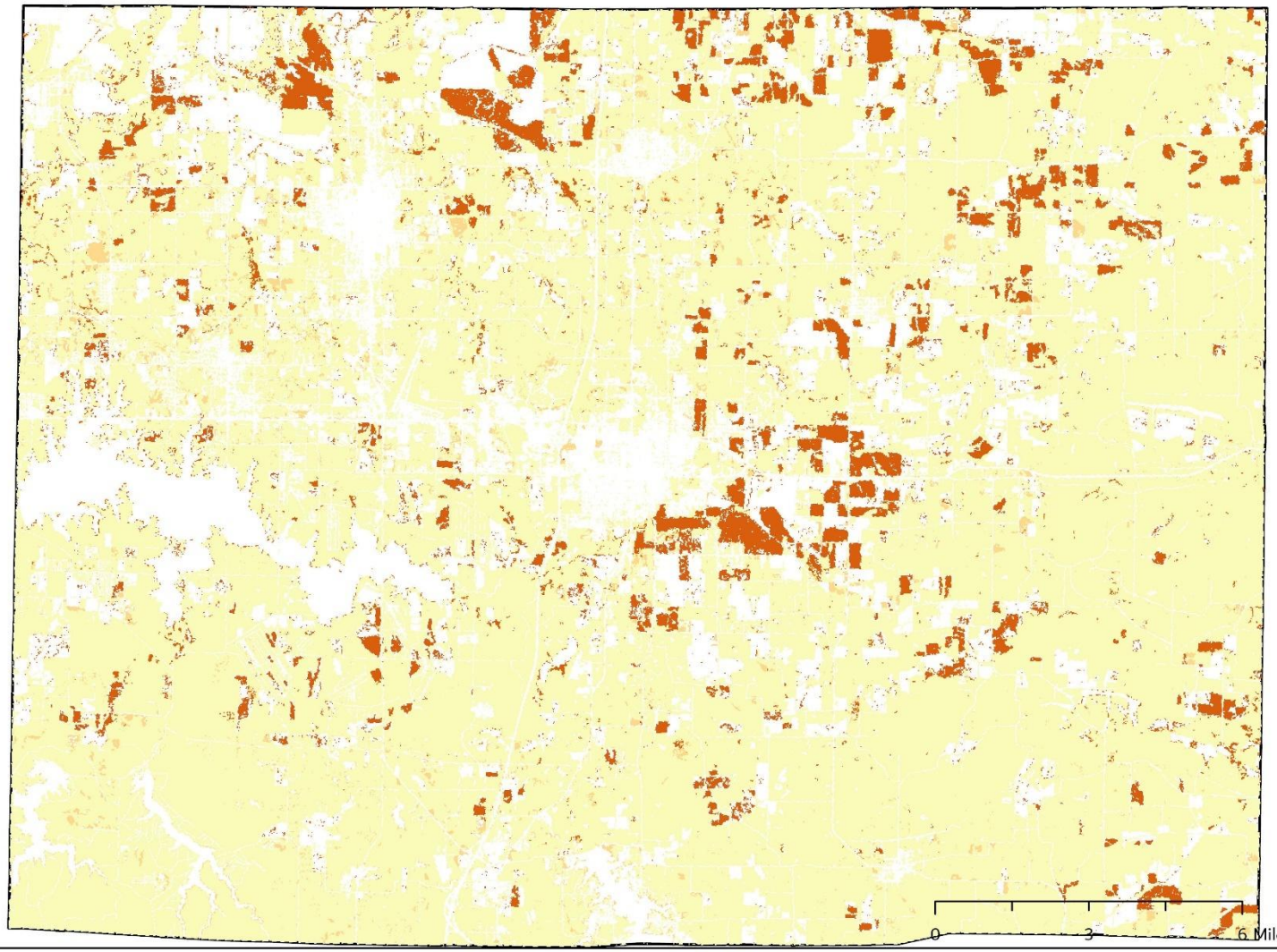
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

Flame Length (burnable cornfields included)

This dataset represents the weighted-average flame length (FL) in feet for a given pixel in the fuelscape (including any contribution of crown fuel).

	Flame Length Category	Acres	Percent
	0	78,826	27.7 %
	0 to 4 feet	185,632	65.3 %
	4 to 8 feet	5,081	1.8 %
	8 to 11 feet	12	0.0 %
	11 to 25 feet	14,821	5.2 %
	> 25 feet	0	0.0 %
	Total	**284,372**	**100.0 %**

Flame Length (burnable cornfields included) - Williamson County, Illinois



Flame length is the distance (in feet) between the flame tip and the midpoint of the flame depth at the base (generally the ground surface). This is a good indicator of fire intensity. Flame length is a strong indicator of the potential damage to structures; longer flame lengths will likely have a greater negative consequence. Flame lengths are also utilized in fuel-break planning.

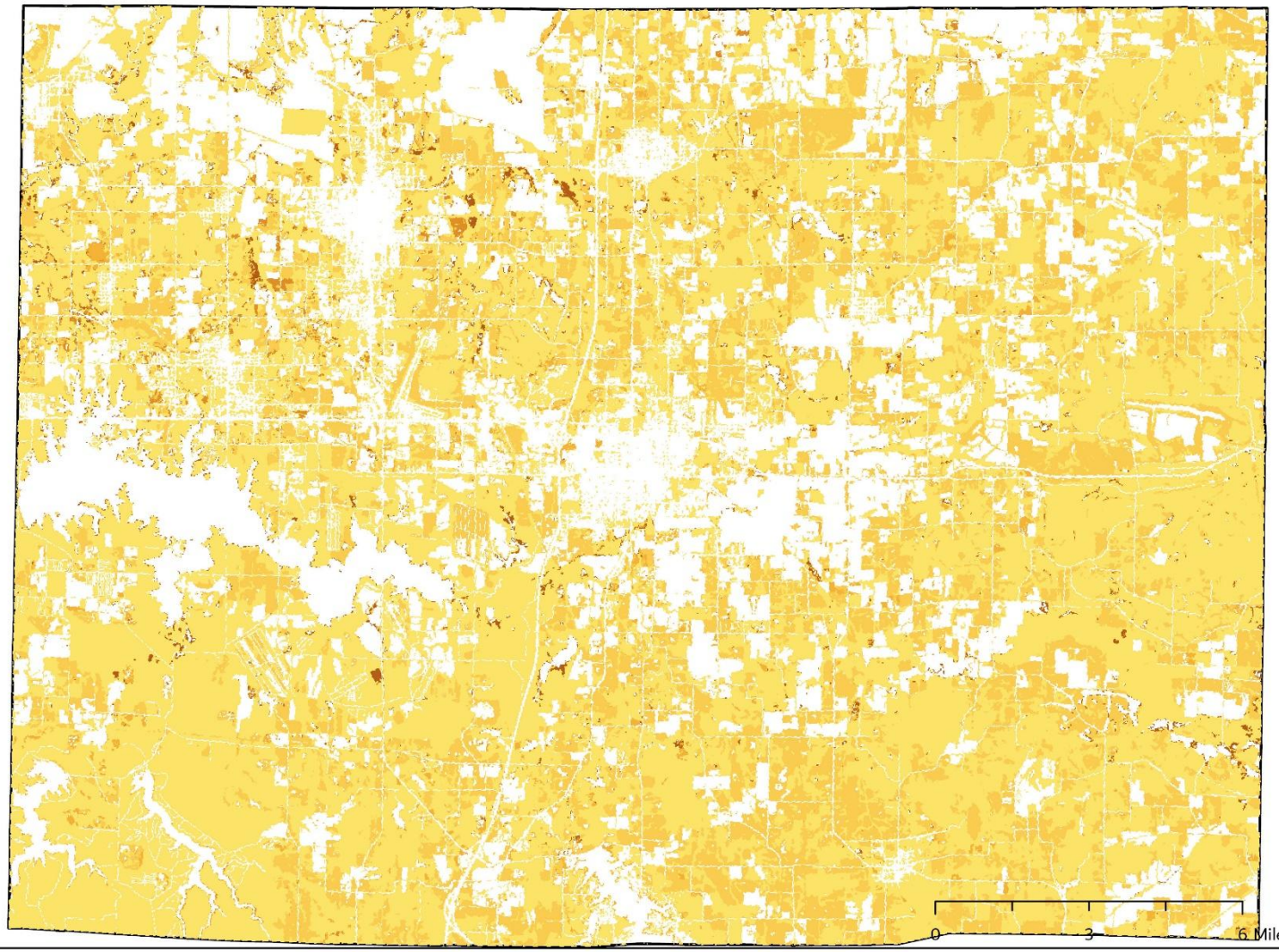
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

Rate of Spread

This dataset represents the weighted-average rate of spread (ROS) in chains per hour for a given pixel in the fuelscape (including any contribution of crown fire spread rate). Note: Burnable cornfields have been excluded from this dataset.

	Rate of Spread Category (chains/hr)	Acres	Percent
	0	91,602	32.2 %
	0 - 5.97	186,243	65.5 %
	5.98 - 11.93	4,486	1.6 %
	11.94 - 23.86	2,041	0.7 %
	23.87 - 47.72	0	0.0 %
	47.73 - 95.45	0	0.0 %
	95.46 - 190.89	0	0.0 %
	> 190.89	0	0.0 %
	Total	**284,372**	**100.0 %**

Rate of Spread - Williamson County, Illinois



Rate of Spread (ROS) represents the weighted-average rate of spread in chains per hour for a given pixel in the fuelscape (including any contribution of crown fire spread rate). Rate of spread can affect suppression efforts by "outrunning" direct attack and can have an impact on evacuation. Note: Burnable cornfields have been excluded from this dataset.

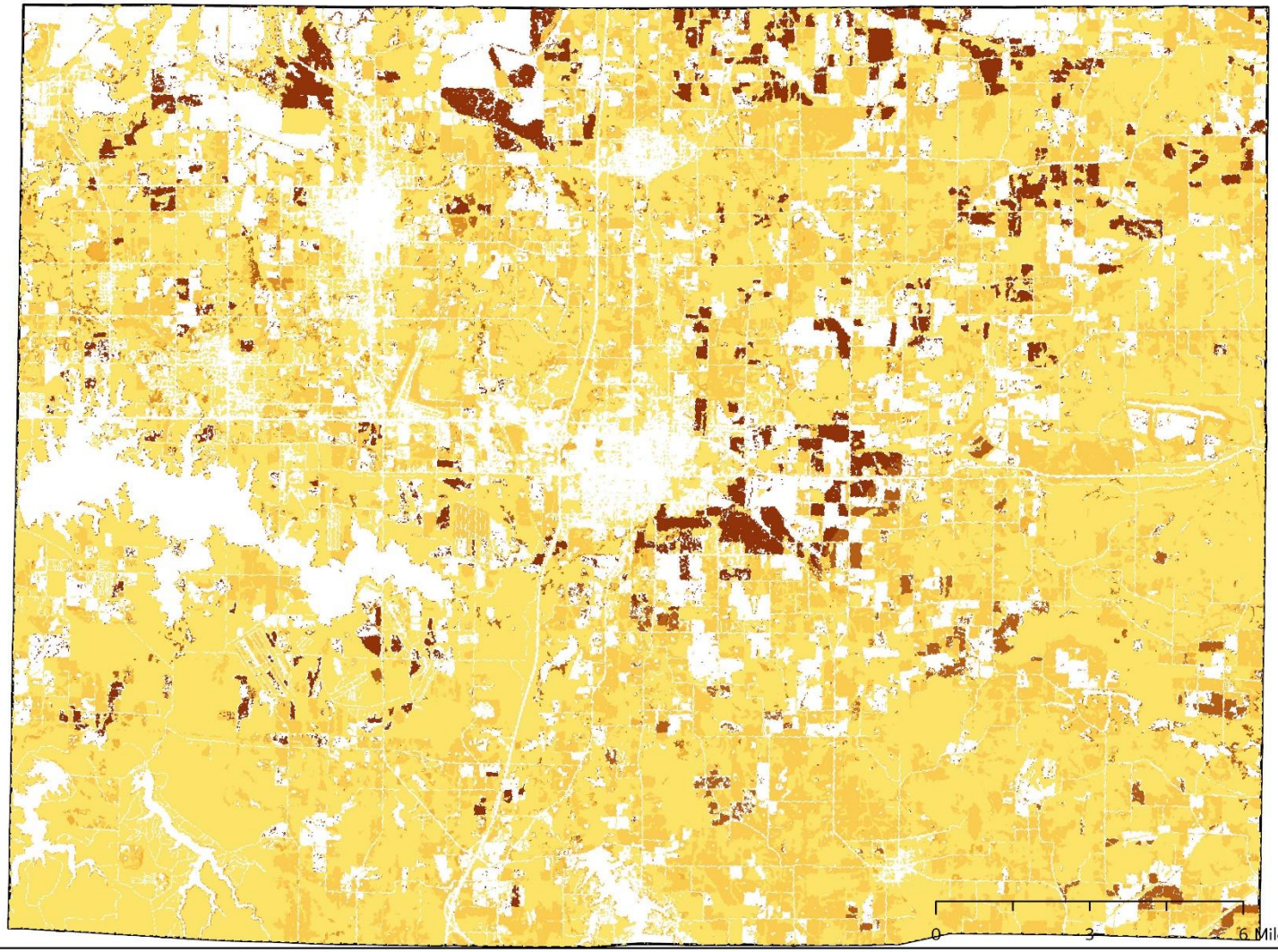
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

Rate of Spread (burnable cornfields included)

This dataset represents the weighted-average rate of spread (ROS) in chains per hour for a given pixel in the fuelscape (including any contribution of crown fire spread rate).

	Rate of Spread Category (chains/hr)	Acres	Percent
	0	78,826	27.7 %
	0 - 5.97	136,801	48.1 %
	5.98 - 11.93	49,415	17.4 %
	11.94 - 23.86	3,235	1.1 %
	23.87 - 47.72	1,277	0.4 %
	47.73 - 95.45	4,317	1.5 %
	95.46 - 190.89	10,499	3.7 %
	> 190.89	0	0.0 %
	Total	**284,370**	**100.0 %**

Rate of Spread (burnable cornfields included) - Williamson County, Illinois



Rate of Spread (ROS) represents the weighted-average rate of spread in chains per hour for a given pixel in the fuelscape (including any contribution of crown fire spread rate). Rate of spread can affect suppression efforts by "outrunning" direct attack and can have an impact on evacuation.

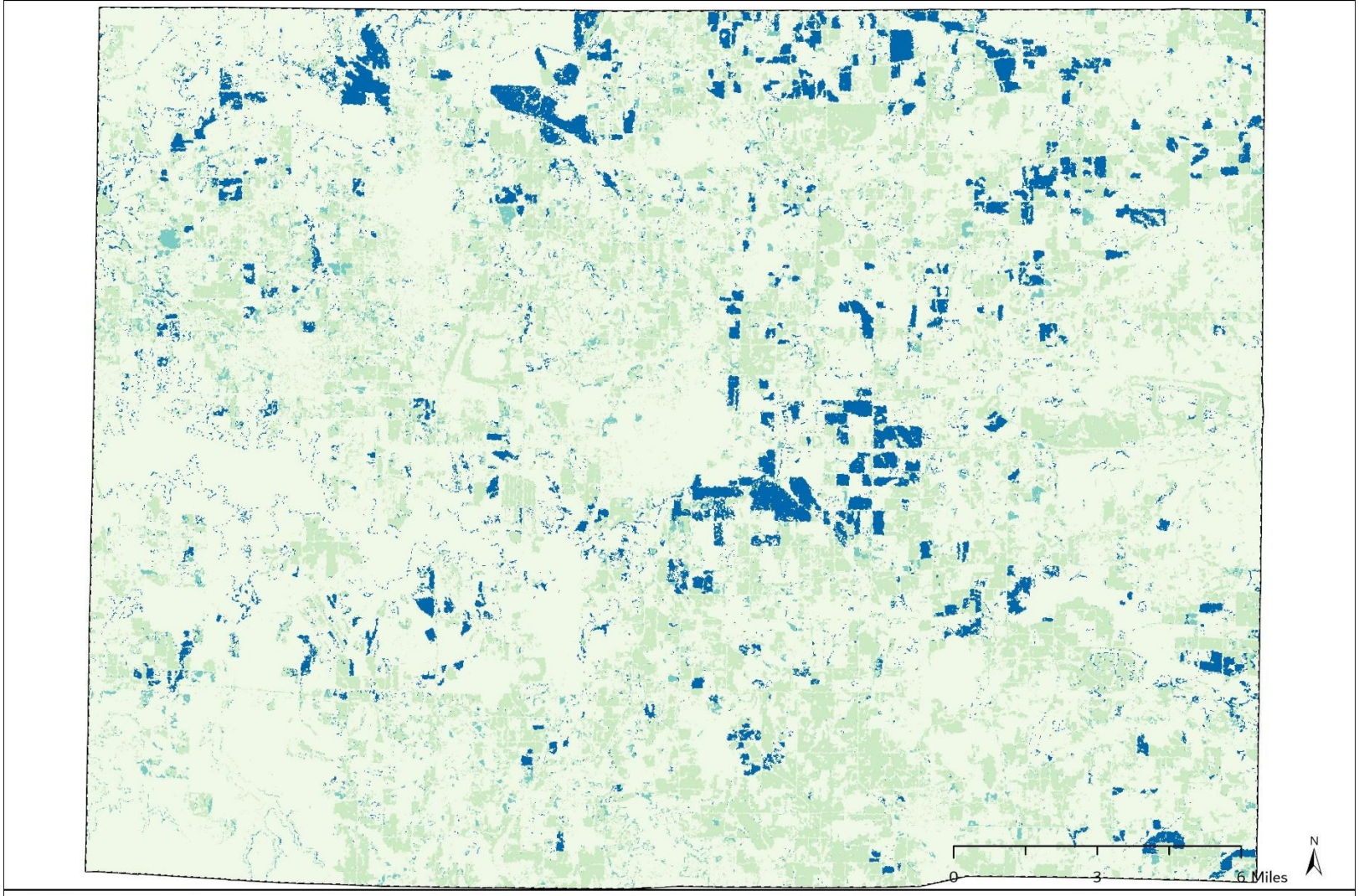
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

Probability of Exceeding Manual Control

This dataset represents the probability of heading flame lengths exceeding 4 feet, which is generally considered the threshold for exceeding the possibility of manual control during fire operations.

	Probability of Exceeding Manual Control Category	Acres	Percent
	0	206,534	72.6 %
	0 - 0.2	56,902	20.0 %
	0.2 - 0.4	923	0.3 %
	0.4 - 0.6	4,649	1.6 %
	0.6 - 0.8	437	0.2 %
	0.8 - 1	14,926	5.2 %
	Total	**284,371**	**100.0 %**

Probability of Exceeding Manual Control - Williamson County, Illinois



This dataset represents the probability of heading flame lengths exceeding 4 feet, which is generally considered the threshold for exceeding the possibility of manual control during fire operations.

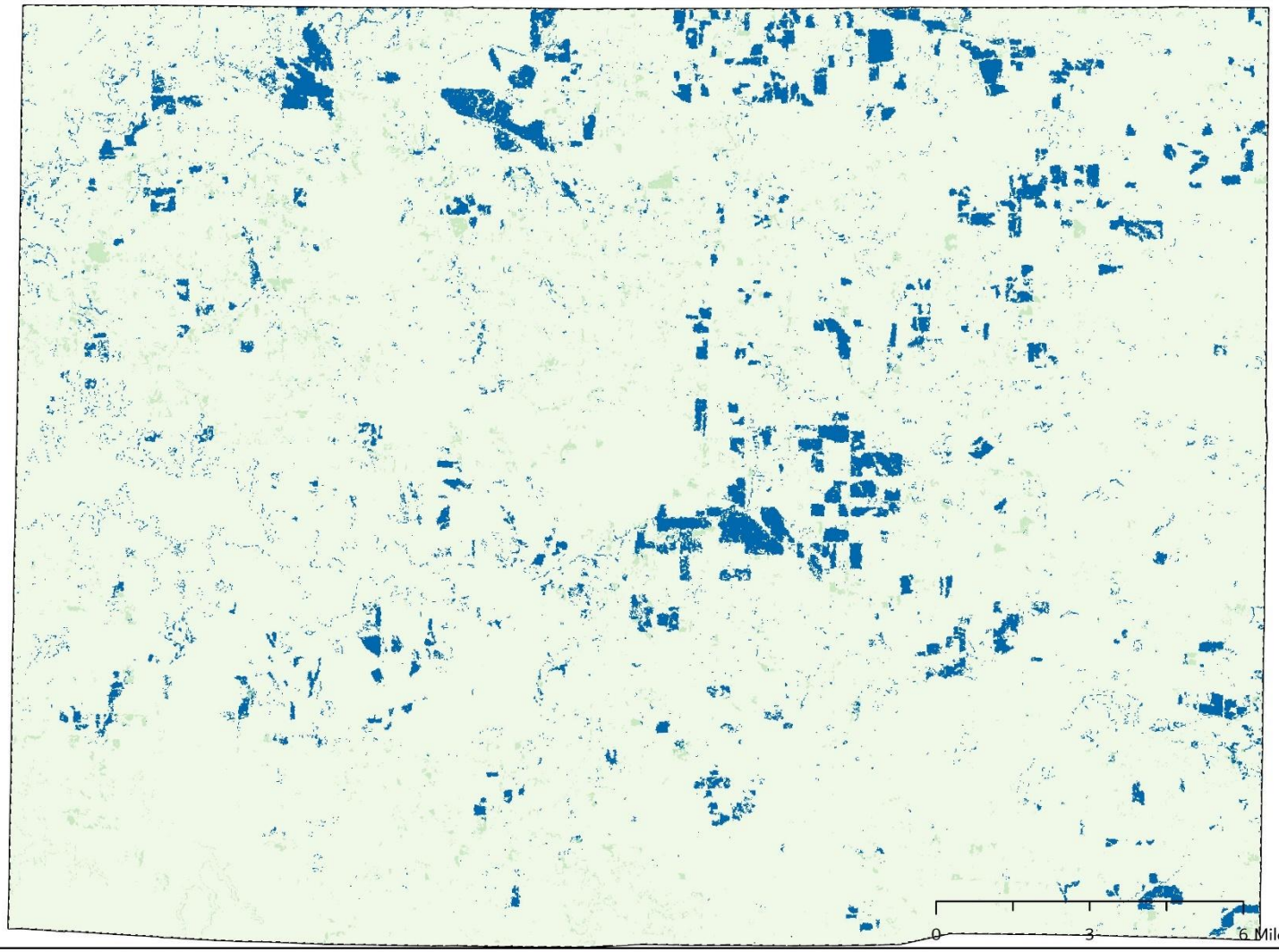
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

Probability of Exceeding Mechanical Control

This dataset represents the probability of heading flame lengths exceeding 8 feet, which is generally considered the threshold for exceeding the possibility of mechanical control during fire operations.

	Probability of Exceeding Mechanical Control Category	Acres	Percent
	0	264,501	93.0 %
	0 - 0.2	4,920	1.7 %
	0.2 - 0.4	103	0.0 %
	0.4 - 0.6	31	0.0 %
	0.6 - 0.8	0	0.0 %
	0.8 - 1	14,816	5.2 %
	Total	**284,371**	**100.0 %**

Probability of Exceeding Mechanical Control - Williamson County, Illinois



This dataset represents the probability of heading flame lengths exceeding 8 feet, which is generally considered the threshold for exceeding the possibility of mechanical control during fire operations.

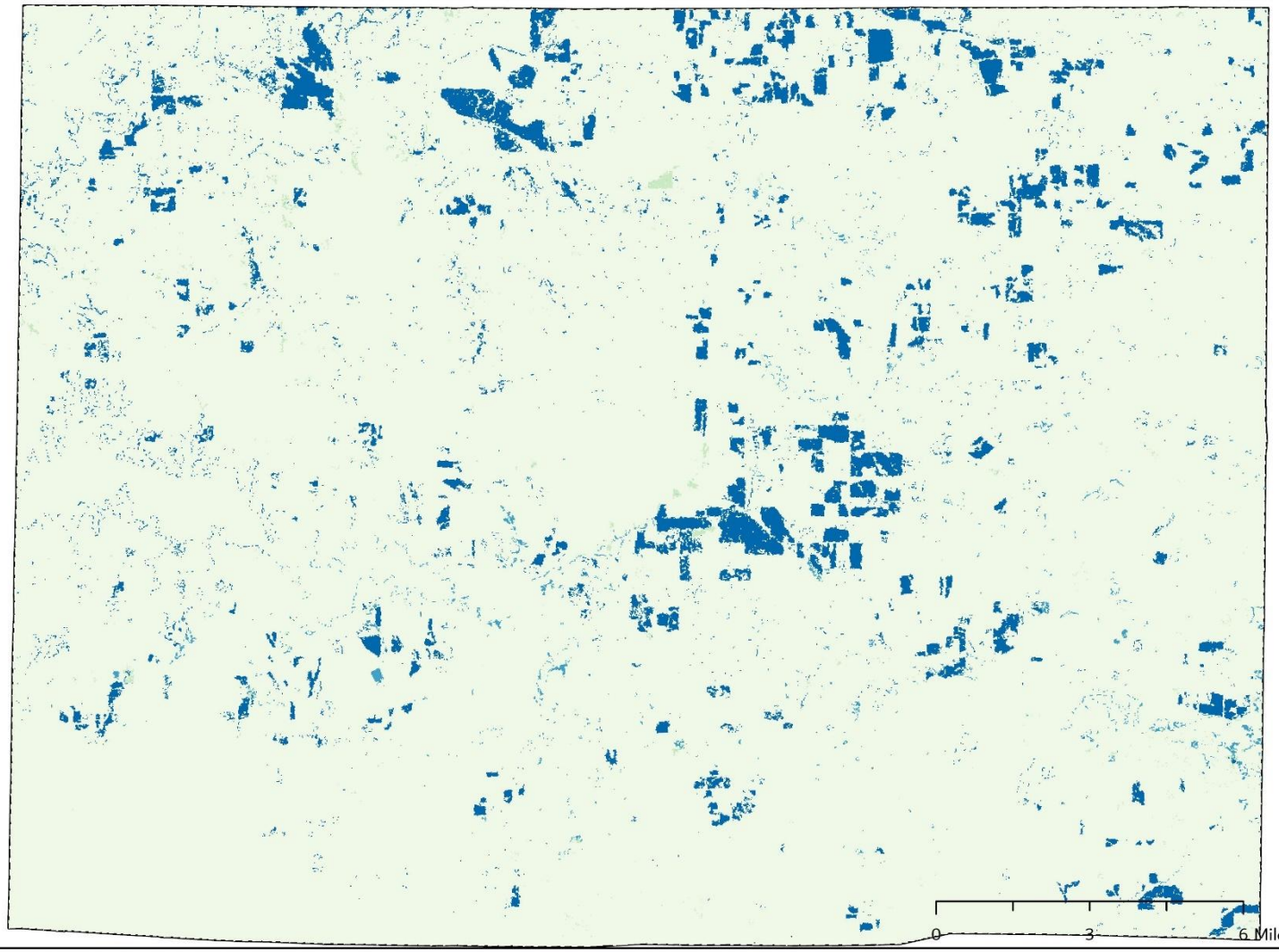
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

Probability of Extreme Fire Behavior

This dataset represents the probability of heading flame lengths exceeding 11 feet, which is generally considered the threshold for extreme fire behavior during fire operations.

	Probability of Extreme Fire Behavior Category	Acres	Percent
	0	268,795	94.5 %
	0 - 0.2	732	0.3 %
	0.2 - 0.4	27	0.0 %
	0.4 - 0.6	1	0.0 %
	0.6 - 0.8	968	0.3 %
	0.8 - 1	13,848	4.9 %
	Total	**284,371**	**100.0 %**

Probability of Extreme Fire Behavior - Williamson County, Illinois



This dataset represents the probability of heading flame lengths exceeding 11 feet, which is generally considered the threshold for exceeding extreme fire behavior during fire operations.

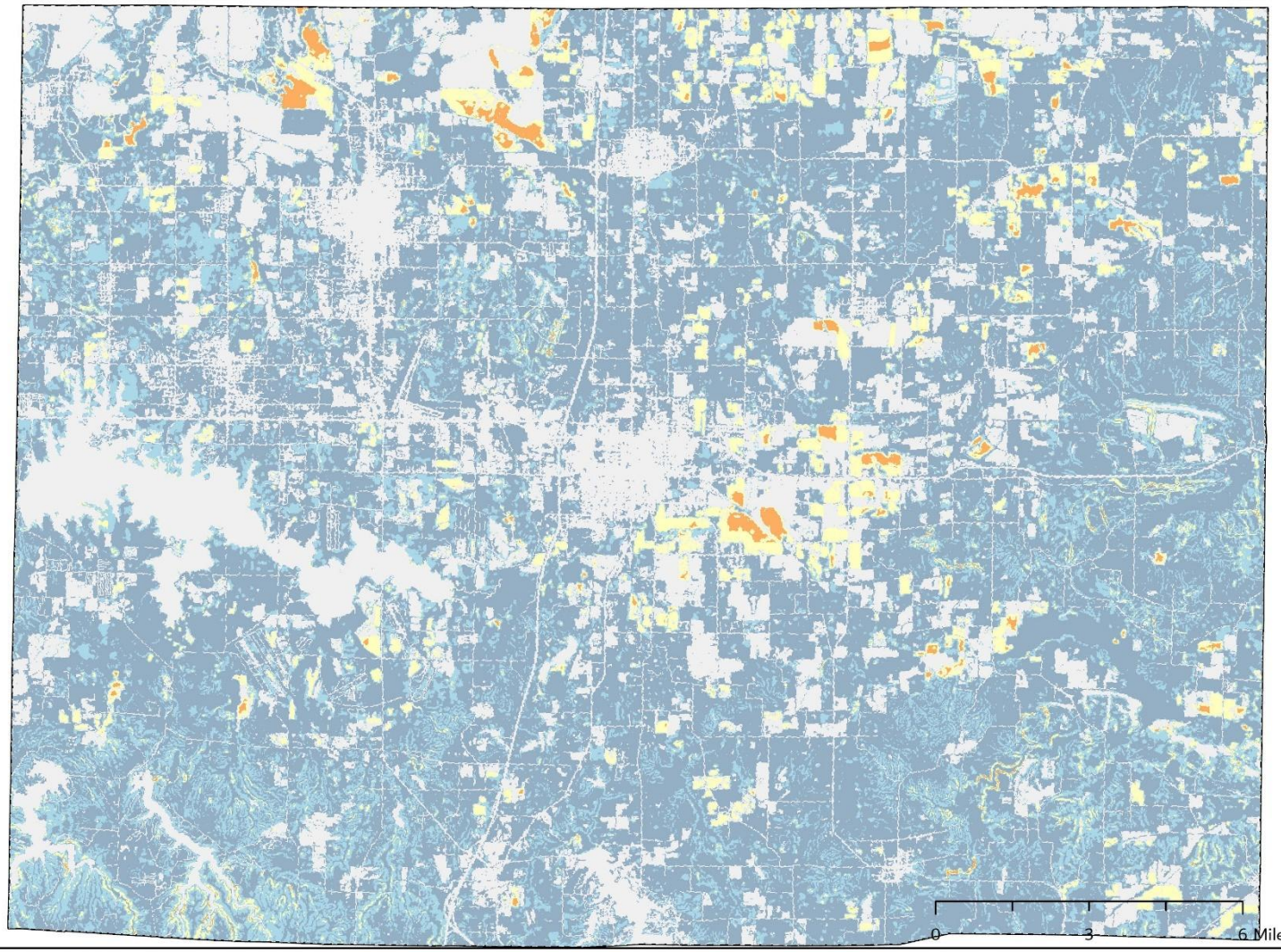
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

Suppression Difficulty Index

Wildfire Suppression Difficulty Index is a quantitative rating of relative difficulty in performing fire control work.

	Suppression Difficulty Index Category	Acres	Percent
	Little to No Difficulty	78,186	27.5 %
	Very Low Difficulty	147,673	51.9 %
	Low Difficulty	43,133	15.2 %
	Moderate Difficulty	13,327	4.7 %
	High Difficulty	2,052	0.7 %
	Very High Difficulty	0	0.0 %
	Extreme Difficulty	0	0.0 %
	Total	**284,371**	**100.0 %**

Wildfire Suppression Difficulty Index - Williamson County, Illinois



Wildfire Suppression Difficulty Index (SDI) is a quantitative rating of relative difficulty in performing fire control work. SDI factors in topography, fuels, expected fire behavior under severe fire weather conditions, firefighter line production rates in various fuel types, and accessibility (distance from roads/trails) to assess relative suppression difficulty.

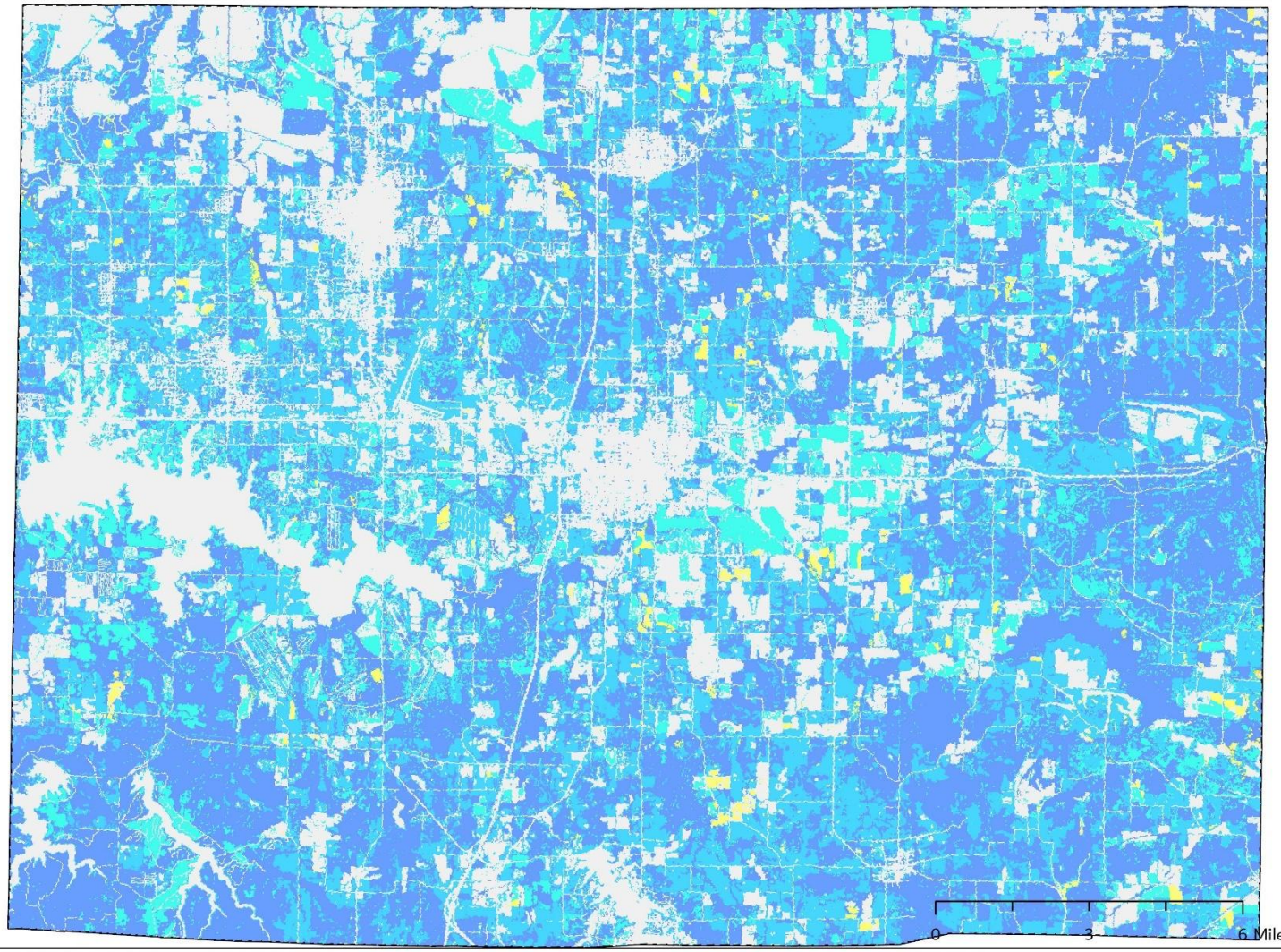
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

Wildfire Hazard Potential

The wildfire hazard potential (WHP) dataset represents an index that quantifies the relative potential for wildfire that may be difficult to control.

	Wildfire Hazard Potential Category	Acres	Percent
	Minimal Direct Wildfire Impacts	78,826	27.7 %
	1-Low	107,436	37.8 %
	2	65,772	23.1 %
	3	30,010	10.6 %
	4	2,322	0.8 %
	5	4	0.0 %
	6	0	0.0 %
	7	0	0.0 %
	8-High	0	0.0 %
	Total	**284,370**	**100.0 %**

Wildfire Hazard Potential - Williamson County, Illinois



The wildfire hazard potential (WHP) dataset represents an index that quantifies the relative potential for wildfire that may be difficult to control. WHP can be used as a measure to help prioritize where fuel treatments may be needed.

Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, Northeast-Midwest Wildfire Risk Assessment

2.3. Wildland Urban Interface

The Wildland Urban Interface (WUI) is where human development and wildlands meet. There are two classifications of WUI – the intermix and the interface (defined below). The WUI does not include urban areas – which this plan defines as being classified as medium or high density developed areas by the national landcover dataset; nor agricultural areas – which is any area where the landcover is cultivated crops or hay/pasture.

Intermix

Buildings are interspersed within canopy cover

Houses in a well forested neighborhood, southeast Williamson County

Interface

Buildings are nearby an area of dense vegetation

A subdivision of homes next to a wooded area, northern Williamson County.

*Photos from Williamson County 2021 Aerial Imagery, used with permission from County Assessor's Office.

Methodology for calculating the WUI

The WUI Intermix and Interface for Williamson County were calculated using LiDAR from the Illinois State Geological Survey (ISGS) data clearinghouse, building footprint datasets from the Illinois State Water Survey (ISWS) as well as the 2019 National Landcover Dataset from the Multi-Resolution Land Characteristics (MRLC) Consortium. Citations and available links for all GIS data used in this Plan is available in appendix #. A slightly modified version of the federal definition was used, described below.

WUI Intermix:
Step 1: Create a canopy cover raster from the LiDAR dataset at 50x50 foot cell size
Step 2: Remove any canopy cover that is less than 50%
Step 3: Calculate building densities from building footprint dataset
Step 4: Remove any canopy cover cells within medium or high density developed areas
Step 5: Remove any canopy cover cells where building densities are less than 6.17 building per square kilometer (Anything less than this density is considered "wildland" and not WUI since so few people are living in/near those areas.
Step 6 (optional): convert final raster into a polygon for easier sharing and editing.

The final Intermix area is then, any area (50 square feet) that has a building density greater than 6.17/ sq. km and has tree canopy cover at 50% or greater and is not developed/urbanized.

WUI Interface:
Step 1: Create a wildland file – areas with canopy cover at 75% or greater and that has a building density of less than 6.17/sq. km
Step 2: From the file of building densities over the threshold, select those areas that are within 1km or less of the wildland area.

The federal definition is described below:
The Federal Register definition distinguishes between intermix and interface WUI. Intermix WUI is defined in the Federal Register as an area above a threshold of 6.17 housing units/km2 that is dominated by wildland vegetation. We set the threshold for wildland vegetation at 50% of the terrestrial area of a given census block. Interface WUI is characterized by the Federal Register definition as developed areas in the vicinity of wildland vegetation. Thus, we mapped as interface WUI all census blocks above 6.17 housing units/km2 that contained ,50% wildland vegetation, but were within 2.4 km of an area that is heavily vegetated (.75% wildland vegetation) and larger than 5 km2. The 2.4-km distance follows the recommendation of the California Fire Alliance (2001) and represents an estimate of the distance a firebrand can fly ahead of a fire front. If a census block was only partially within the 2.4-km distance, then the census block was split, and only the portion within 2.4 km was included as interface. We set a minimum-size threshold at 5 km2 for the areas that are heavily vegetated to avoid including residential areas that are within 2.4 km of small urban parks.[1]

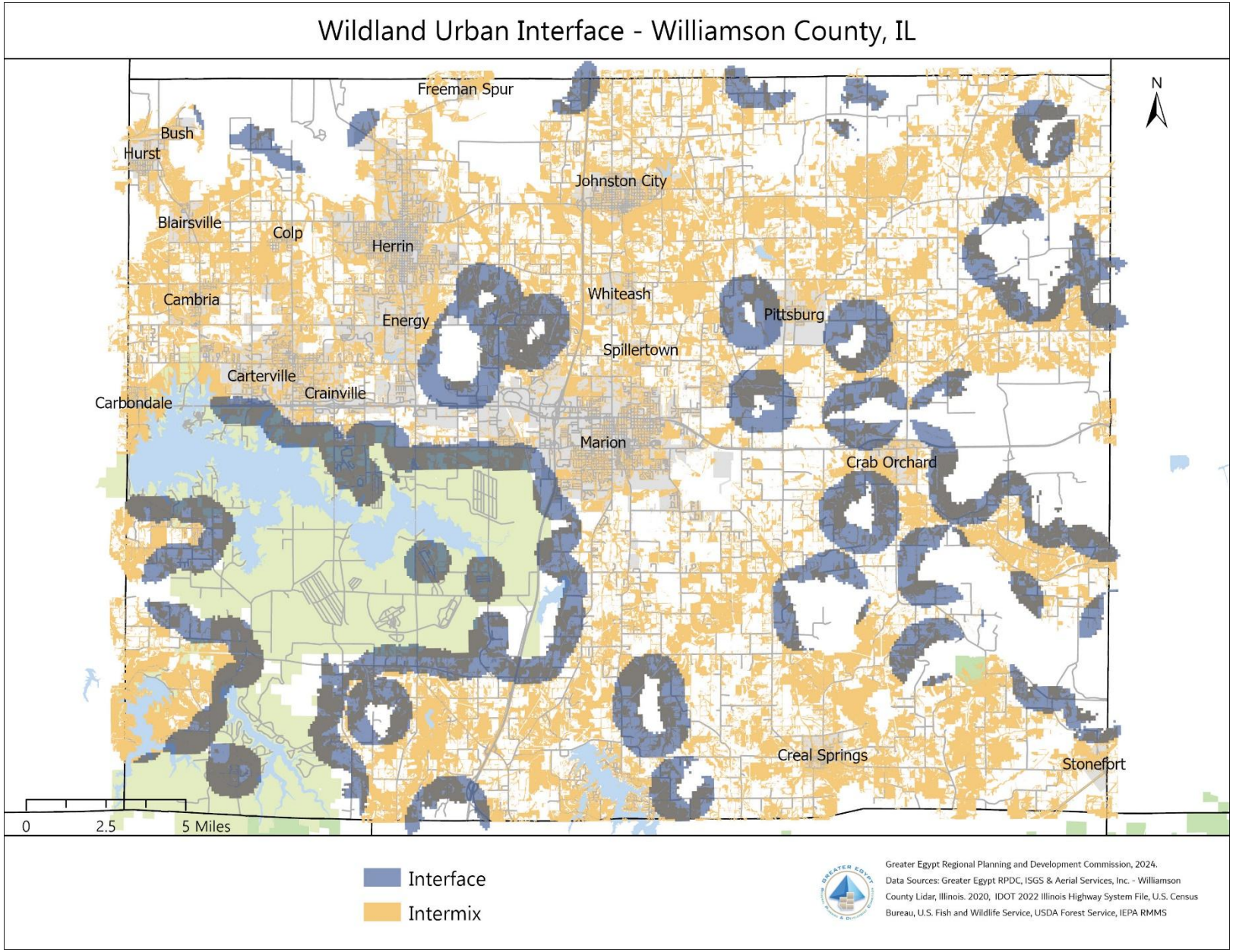
Differences between WUI definitions:
These original definitions were created for the landscape of the Western United States, which has a very different fuelscape, climate, and wildfire regime. Wildfires in the Midwest are typically on a much smaller scale, tens or hundreds of acres instead of thousands. Additionally, while Williamson County is largely rural, there are still many fuel breaks and access points for first responders – including roads, utility easements, and water bodies. Southern Illinois does not have large areas of inaccessible forest, and it would be atypical for fire to spread further than 1km from a front.
The Williamson County files are all based off a 50x50 foot pixel size, rather than 30x30 meter pixels that the federal GIS files have. The projection of available LiDAR data is in the State Plane Coordinate System which uses feet instead of meters as the unit of measurement. 50 feet was determined as a reasonable unit for analysis due to the small size of counties in Illinois, anything smaller was unnecessarily detailed and any larger cell sizes may miss important areas of canopy cover in savannah like habitat or on the edges of urban areas.

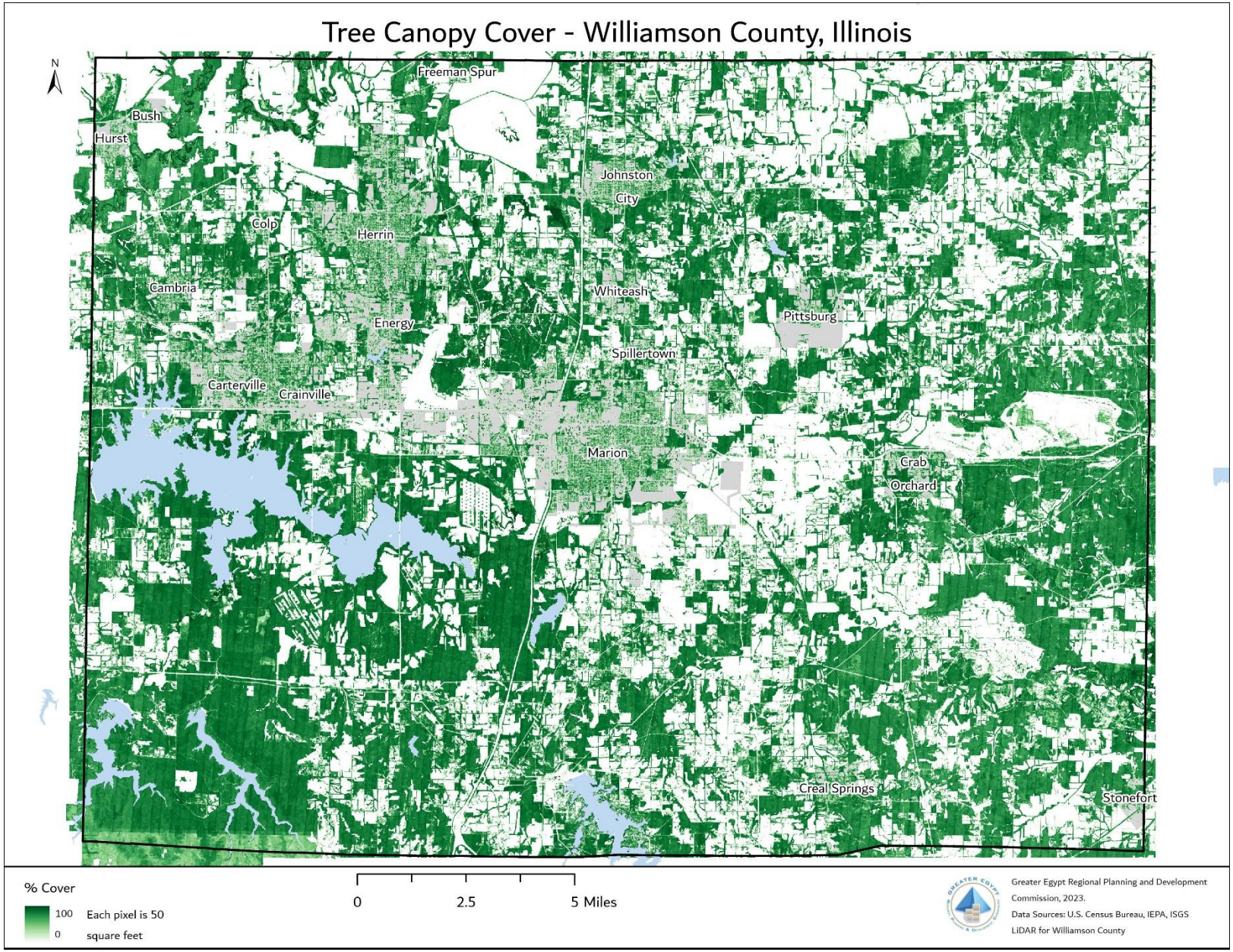
[1] Radeloff et. al 2005. "The Wildland Urban Interface in the United States" Ecological Applications, 15(3), pp. 799–805.

Wildfire Risk in the WUI

The WUI has a unique risk of wildfire due to the nature of the land use

- Most wildfires (90% or more) are human caused, and the WUI consists of populated areas
- Many homes and structures within the WUI do not have adequate defensible space
- The WUI is made up of primarily privately owned land, making fire and land management a challenge
- Southern Illinois often has steep and difficult terrain
- Often difficult to access by first responders, few roads, narrow driveways, no turn around points
- Lack of rural dry hydrants, difficult to get water to a fire even if there is vehicle access
- Illinois and unincorporated areas of Williamson County do not currently have building codes, and only six out of 15 municipalities within the county have building codes. Many homes in rural Illinois are not built with fire-safe materials.

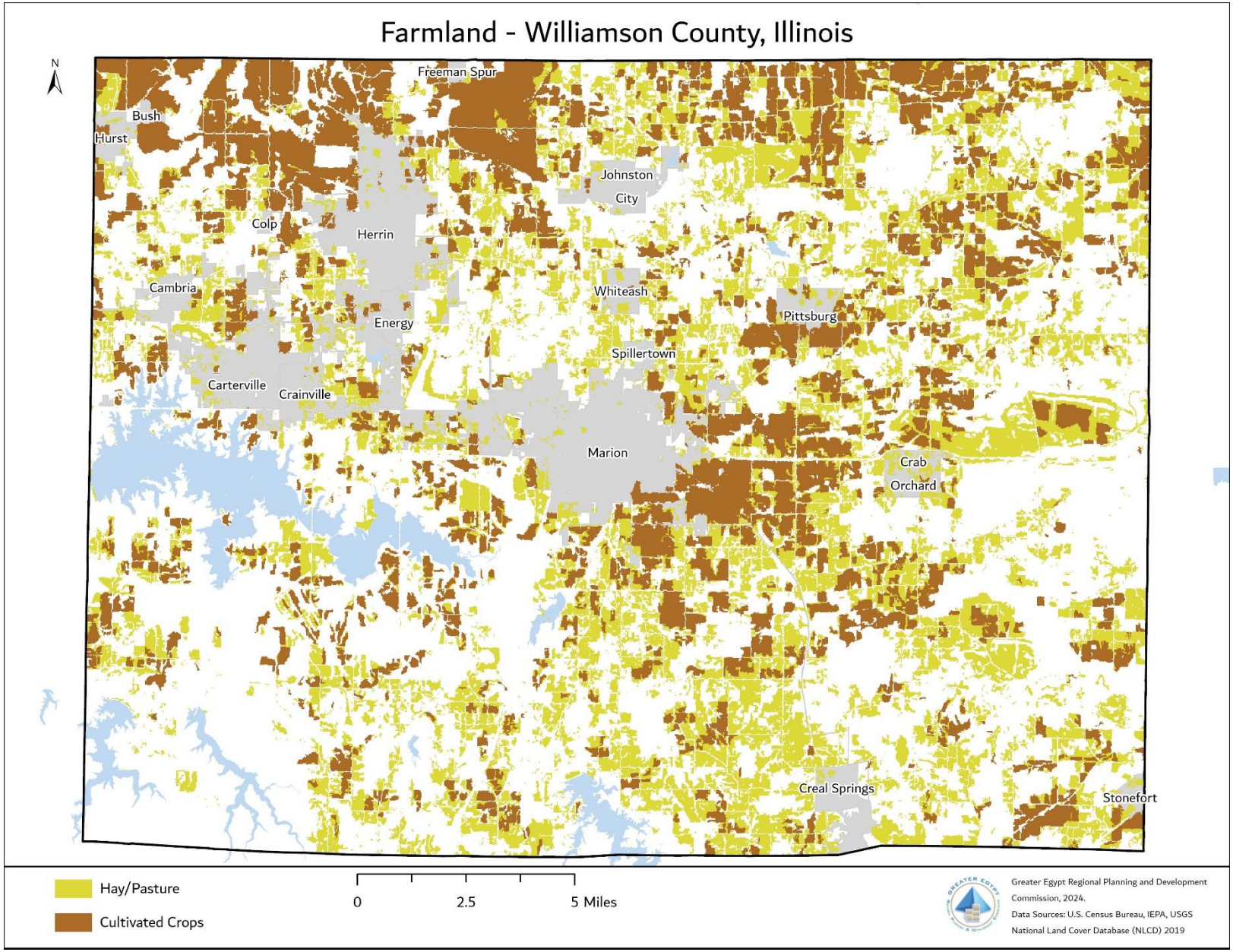

Wildland Urban Interface - Williamson County, IL
Freeman Spur
Bush
Hurst
Johnston City
Blairsville
Colp
Herrin
Cambria
Whiteash
Energy
Pittsburg
Spillertown
Carterville
Crainville
Carbondale
Marion
Crab Orchard
Creal Springs
Stonefort
N
0
2.5
5 Miles
Interface
Intermix
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: Greater Egypt RPDC, ISGS & Aerial Services, Inc. - Williamson County Lidar, Illinois. 2020, IDOT 2022 Illinois Highway System File, U.S. Census Bureau, U.S. Fish and Wildlife Service, USDA Forest Service, IEPA RMMS


Tree Canopy Cover - Williamson County, Illinois
N
Freeman Spur
Bush
Hurst
Johnston City
Colp
Herrin
Cambria
Whiteash
Pittsburg
Energy
Spillertown
Carterville
Crainville
Marion
Crab Orchard
Creal Springs
Stonefort
% Cover
100
0
Each pixel is 50 square feet
0
2.5
5 Miles
Greater Egypt Regional Planning and Development Commission, 2023.
Data Sources: U.S. Census Bureau, IEPA, ISGS LiDAR for Williamson County

2.4. Agriculture and Wildfire

Cultivated crops and pasture also carry a risk of wildfire, especially during periods of drought and just before harvest. Other factors contributing to fire risk include farm equipment, high winds, building and storage area conditions, and water access. To incorporate some of this risk into models, the Northeast-Midwest State Foresters Alliance uses "burnable cornfields AG9/119" as a customized fuel type in their fuelscape and fire risk models (see section 2.2). While any type of agriculture carries a risk, corn is the fuel type of greatest concern. This custom fuel model affects the following Northeast-Midwest states: Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan, Indiana, and Ohio.

Cropland and pasture do not show up in canopy cover datasets and is therefore not included in definitions of the WUI, however these landscapes carry a similar risk level of wildfire hazard and should be managed accordingly. 37.3% of Williamson County is agricultural land.


Farmland - Williamson County, Illinois
N
Freeman Spur
Bush
Hurst
Johnston
City
Colp
Herrin
Cambria
Whiteash
Pittsburg
Energy
Spillertown
Carterville
Crainville
Marion
Crab
Orchard
Creal Springs
Stonefort
Hay/Pasture
Cultivated Crops
0
2.5
5 Miles
Greater Egypt Regional Planning and Development Commission, 2024.
Data Sources: U.S. Census Bureau, IEPA, USGS National Land Cover Database (NLCD) 2019

2.5. Assets, essential facilities, and infrastructure at risk

The two highest burn probabilities in the County are 1-in-4,643 to 1-in-2,154 and 1-in-2,154 to 1-in-1,000. These medium risk areas make up 16, 593 acres within the county. The table below shows the estimated asset value of land parcels completely or partially within this burn probability area.

Land Value	Farmland Value	Bldg Value	Farm Bldg Value	Total Value	Total Buildings
$31,624,800.00	$13,269,510.00	$164,344,950.00	$4,035,060.00	$639,822,960.00	2,182

Also within this area are 1 railroad bridge (value - $5,065,000) and 2 communications towers (value - $222,000).

Other essential facilities and infrastructure within 1 kilometer of this area includes the following:

Facility/Infrastructure	Estimated Replacement Value
Johnston City High School	$13,200,000
Project Echo Alternative School	$720,120
Washington Middle School	$900,000
Heartland Regional Medical Center	$12,517,000
Williamson County Fire Protection District Station 7	$2,796,000
MedicOne Medical Response	$859,297
Creal Springs WWT	$149,533,000
Veteran's Airport of Southern Illinois	$13,175,000
15 RR Bridges	$227,925,000
37 Highway Bridges	$372,830,794

Data is from Williamson County Assessor's Office, FEMA Hazus CDMS, and input from Fire Chiefs. Hazus uses data from the 2010 U.S. Decennial Census and the 2019 Homeland Infrastructure Foundation Level Data. Land and asset values are estimations and may not reflect the most current cost of replacement.

There are many other assets in the county within lower risk areas including schools, hospitals, large employers, areas of cultural significance, churches, infrastructure, and many homes and businesses.

3. Codes and Ordinances

This section provides summary descriptions of laws, codes, and ordinances that pertain to fire protection and land management in Williamson Couty, IL.

State

70 ILCS 705 – Fire Protection District Act

This document lays out the provisions for the creation and dissolution of fire protection districts and the duties and authorities they may have as a municipal corporation. Sections related to wildfires are as follows:

Section 8.20 Open Burning –

- a fire protection district may extinguish any open burn that presents a clear, present, and unreasonable danger to persons or adjacent property or that presents an unreasonable risk because of wind, weather, or the types of combustibles
- fire protection districts may prohibit open burning on an emergency basis
- fire protection districts may charge for services of extinguishing an open burn during times of a burn ban

Section 11 –

- The board of trustees of any fire protection district incorporated under this Act has the power and it is its legal duty and obligation to provide as nearly adequate protection from fire for all persons and property within the said district as possible and to prescribe necessary regulations for the prevention and control of fire therein. The board of trustees may provide and maintain life saving and rescue equipment, services and facilities, including an emergency ambulance service. Except in cities having a population of500,000 or more inhabitants and except in municipalities in which fire prevention codes have been adopted, the board of trustees has the express power to adopt and enforce fire prevention codes and standards parallel to national standards.

County

Williamson County "No-Burn" Ordinance

Approved in 1996, this ordinance gives the Fire Chief of the Williamson County Fire Protection District the authority to declare No-Burn Orders for the area under their jurisdiction whenever conditions deem such an order necessary. Violating a No-Burn Order is punishable by fine.

Williamson County Building Permit Ordinance 21-05-11-05

This ordinance requires a Building Permit to be obtained for the construction, placement, alteration, removal, or demolition of a building, manufactured home, or other structure accommodating persons outside of incorporated municipalities but excluding farms. Building permits are issued to keep housing units reasonably safe from hazards of fire, explosion, collapse, electrocution, flooding, asphyxiation, contagion and the spread of infectious disease. Permit Applications are obtained from the Williamson County Supervisor of Assessments.

Williamson County Subdivision Ordinance 06-02-14-01

This Ordinance describes procedures for the subdivision and the re-division of land within the area of the jurisdiction of Williamson County, Illinois. This ordinance is not directly related to wildfire response nor land management; however, several provisions define driveway, road, and alley specifications; which are important for emergency vehicle access. Other segments of this ordinance lay out utility easement requirements, which is important for water lines and hydrant access.

- The layout should provide for proper circulation of traffic. In general, long blocks are desirable and minor streets should intersect main highways or arterial streets at right angles. Dead end roads shall be no longer than 1320 feet maximum. All dead end roads shall terminate with a cul-de-sac.
- All new subdivision along marked County Highways shall be arranged to provide access to such highways at intervals not less than 660 feet, except where impractical or impossible due to existing property divisions or topography.

- Private roads and streets shall be permitted only when a subdivider submits sufficient evidence that there can be no public interest in such private road or street.
- The minimum right-of-way width of any street shall be fifty (50) feet.
- The minimum roadway width shall be twenty-four (24) feet with a minimum surface width of twenty (20) feet.
- All materials used in the construction of the road surfaces shall conform to the Standard Specifications for Road and Bridge Construction as established by the Illinois Department of Transportation.
- The minimum width of an alley wherever provided, shall be twenty (20) feet. Alleys will not be maintained by the Williamson County Highway Department.
- Easements of not less than ten (10) feet in width shall be provided on each side of all rear lot lines where necessary, for poles, wires, conduits, storm and sanitary sewers, gas, water and heat mains or other utilities. Such easements shall also be provided along the front of all lots and along the sides of the exterior lots.
- Streets shall be laid out so that intersecting streets will meet at intersection angle of not less than sixty-five (65) degrees. As far as physically possible, all streets shall intersect at right angles.
- Circular courts at the termination of any street shall have the minimum radius of forty (40) feet, with a corresponding right of way radius of fifty (50) feet

Municipal

The following table displays municipal codes and ordinances. Updated for the *2023 Williamson County Multi-Hazard Mitigation Plan.* For details, contact your local city or village hall.

Community	Building	Electrical	Stormwater	Flooding	Subdivision	Fire	Land Use	Zoning
Williamson Co.	Building Permit Ordinance - 2020	-	Management Plan (1982)	State Model (Current)	Subdivision Control (2006)	Burning Ordinance (1981)	Comp. Plan (1964)	-
	(Current)							
Bush	-	-	-	-	-	-	-	-
Cambria	-	-	-	-	-	-	-	-
Carterville	ICC IBC	ICC EC (Current)	-	State Model (Current)	State Model (2012)	Burning Ordinance	Comp. Plan (1966)	State Standards (Current)
	(Current)							
Colp	-	-	-	-	-	-	Comp. Plan (1967)	-
Crainville	-	-	State Standards (Current)	State Model (Current)	State Standards (Current)	State Standards (Current)	Comp. Plan (1968)	Municipal Code (Current)
Creal Springs	-	-	-	-	-	-	Comp. Plan (1967)	-
Energy	ICC IBC	-	-	-	State Standards (Current)	NFPA (Current)	-	-
	(Current)							
Freeman Spur	Building Ordinance (2005)	-	-	State Model (Current)	-	Burning Ordinance (2005)	-	-
Herrin	ICC 2000 IBC	ICC 2000 EC	-	State Model (Current)	State Standards (Current)	State Standards (Current)	Comp. Plan (1963)	State Standards (Current)
Hurst	-	-	-	State Model (Current)	-	-	Comp. Plan (1967)	-
Johnston City	-	-	-	State Model (Current)	-	-	Comp. Plan (1964)	-
Marion	ICC 2009 IBC	NFPA 2008 EC	State Standards (2008)	State Model (Current)	City Standards (2013)	NFPA	Comp. Plan (1968)	State Standards (2013)
						-2006		
Pittsburg	NFPA 2000 Life Safety	-	-	-	-	Burning Ordinance (2005)	-	-
Spillertown	-	-	-	-	-	-	-	-
Stonefort	-	-	-	-	-	-	-	-

4. Climate Change

Global average temperature has increased by 1.8^{0}F from 1901 to 2016. Evidence consistently points to human related activities, mainly greenhouse gas emissions, as the cause[2] . Climate change is no longer a future problem as effects are being felt in the present time around the world, and events and trends associated with climate change are only expected to continue to increase in number of events and in severity[3] .

Our planet is a complex system of natural ecosystems and human infrastructure, and climate change can drive many different outcomes within a small area. In the Midwest, climate change is driving more dramatic shifts in seasonal hydrologic regimes. Areas are experiencing severe storms, floods, and extreme heat waves within generally short time periods. All of these factors can decrease infrastructure stability, agriculture productivity, water and air quality, and general community resiliency to natural hazards. Southern Illinois currently encompasses regions within Köppen-Geiger climate types Dfa (hot-summer humid continental) and Cfa (humid subtropical), but future models suggest most of the state will be classified as Cfa by 2071[4] . Figures 4.1 and 4.2 show the Köppen-Geiger climate classifications of Illinois and surrounding areas for present day (based on data from 1980-2016) and projected climate types for the future (based on 32 different climate models for years 2071-2100).

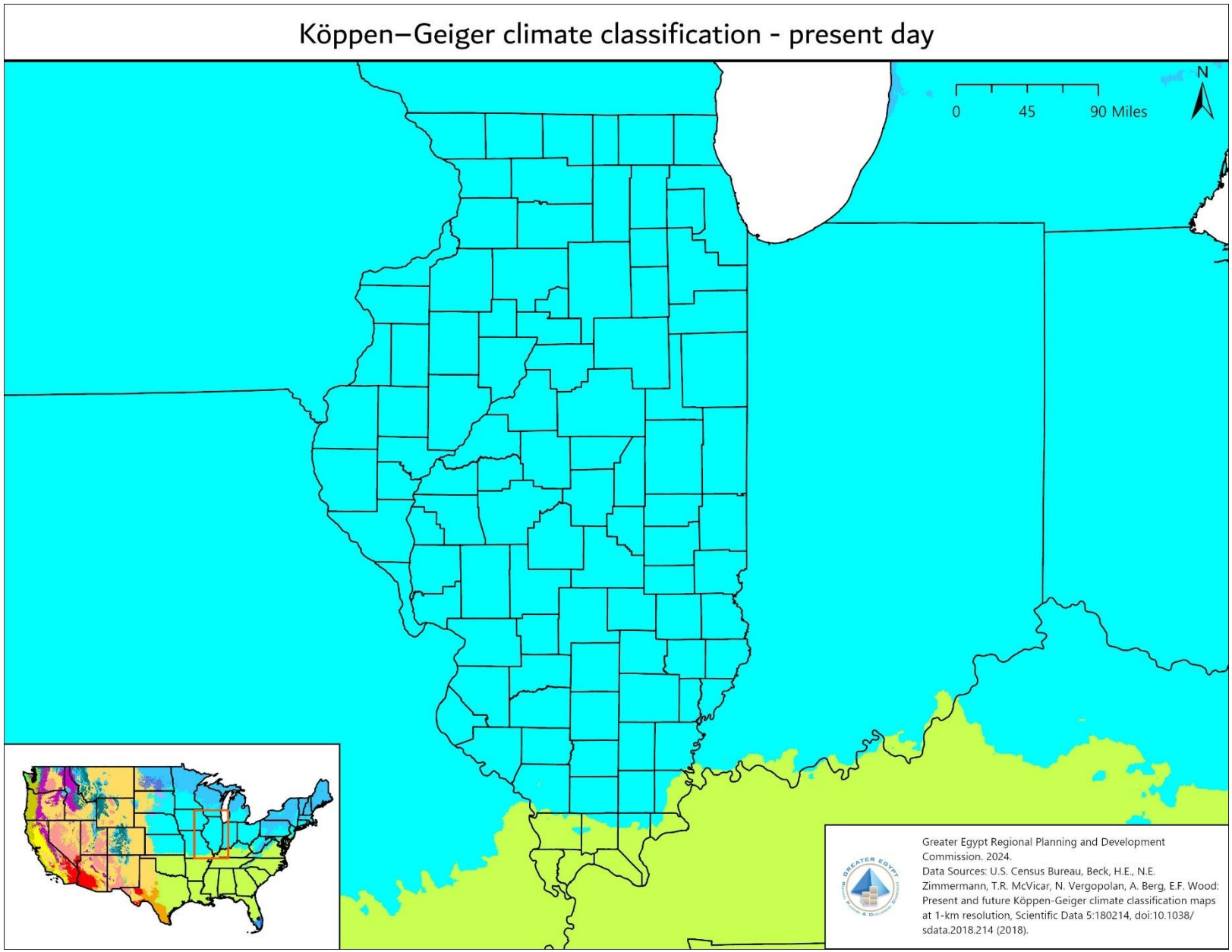
In the western U.S., the number of annual large wildfires have doubled since 1984; and from 2020-2022 the total acreage burned surpassed the national average every year[5]. These extreme fires can cause smoke to drift hundreds or thousands of miles and can affect air quality in the Midwest[6]. During periods of poor air quality, The Illinois Department of Public Health recommends staying indoors and keeping the air inside as clean as possible, or wearing a respirator when outdoor activities are not avoidable.

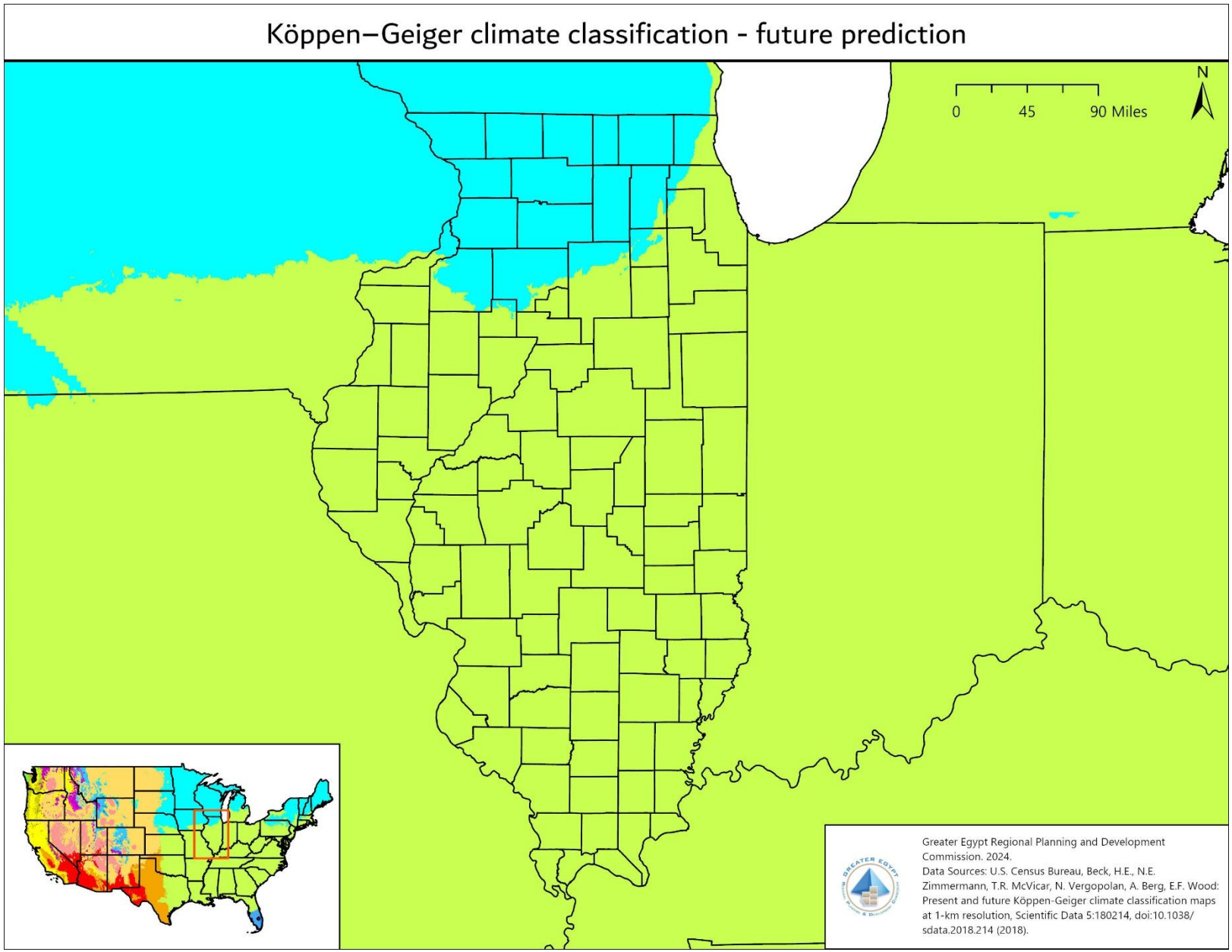
[2] Hayhoe, K. et al., 2018: Our Changing Climate. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II U.S. Global Change Research Program, Washington, DC, USA, pp. 72–144.
[3] Gray, E. and Merzdorf J. "Earth's Freshwater Future: Extreme Floods and Drought", NASA Global Climate Change, 2019.
[4] Beck, H.E., N.E. Zimmermann, T.R. McVicar, N. Vergopolan, A. Berg, E.F. Wood: Present and future Köppen-Geiger climate classification maps at 1-km resolution, Scientific Data 5:180214, doi:10.1038/sdata.2018.214 (2018).
[5] "Wildfire climate connection" National Oceanic and Atmospheric Administration. 2023.
[6] "Challenges in Predicting Smoke Concentrations" United States Environmental Protection Agency

The Midwest does not experience wildfires at the same severity as the Western U.S. and Canada; however, climate change is also leading to longer fire seasons here. Factors leading to increased fire risk include increased development in the WIU, warmer temperatures, increased lighting activity, insect outbreaks, and more frequent drought. Spring rains are becoming more severe, which can lead to higher forest production and more fuels on the landscape. Combined with hotter and drier summers (southern Illinois especially is expected to see an increase in consecutive dry days), wildfire risk will continue to increase in the Midwest[7]. Southern Illinois currently encompasses regions within Köppen-Geiger climate types Dfa (hot-summer humid continental) and Cfa (humid subtropical), but future models suggest most of the state will be classified as Cfa by 2071 . Figures 4.1 and 4.2 show the Köppen-Geiger climate classifications of Illinois and surrounding areas for present day (based on data from 1980-2016) and projected climate types for the future (based on 32 different climate models for years 2071-2100).[8]

[7] Neumann, Brad. "Climate change and wildfire in the Great Lakes Region". MSU Extension Bulletin E-3277. 2015.
[8] Beck, H.E., N.E. Zimmermann, T.R. McVicar, N. Vergopolan, A. Berg, E.F. Wood: Present and future Köppen-Geiger climate classification maps at 1-km resolution, Scientific Data 5:180214, doi:10.1038/sdata.2018.214 (2018).

	1: Af Tropical, rainforest
	2: Am Tropical, monsoon
	3: Aw Tropical, savannah
	4: BWh Arid, desert, hot
	5: BWk Arid, desert, cold
	6: BSh Arid, steppe, hot
	7: BSk Arid, steppe, cold
	8: Csa Temperate, dry summer, hot summer
	9: Csb Temperate, dry summer, warm summer
	10: Csc Temperate, dry summer, cold summer
	11: Cwa Temperate, dry winter, hot summer
	12: Cwb Temperate, dry winter, warm summer
	13: Cwc Temperate, dry winter, cold summer
	14: Cfa Temperate, no dry season, hot summer
	15: Cfb Temperate, no dry season, warm summer
	16: Cfc Temperate, no dry season, cold summer
	17: Dsa Cold, dry summer, hot summer
	18: Dsb Cold, dry summer, warm summer
	19: Dsc Cold, dry summer, cold summer
	20: Dsd Cold, dry summer, very cold winter
	21: Dwa Cold, dry winter, hot summer
	22: Dwb Cold, dry winter, warm summer
	23: Dwc Cold, dry winter, cold summer
	24: Dwd Cold, dry winter, very cold winter
	25: Dfa Cold, no dry season, hot summer
	26: Dfb Cold, no dry season, warm summer
	27: Dfc Cold, no dry season, cold summer
	28: Dfd Cold, no dry season, very cold winter
	29: ET Polar, tundra
	30: EF Polar, frost


Köppen–Geiger climate classification - present day
N
0
45
90 Miles
Greater Egypt Regional Planning and Development Commission. 2024.
Data Sources: U.S. Census Bureau, Beck, H.E., N.E. Zimmermann, T.R. McVicar, N. Vergopolan, A. Berg, E.F. Wood: Present and future Köppen-Geiger climate classification maps at 1-km resolution, Scientific Data 5:180214, doi:10.1038/sdata.2018.214 (2018).


Köppen–Geiger climate classification - future prediction
N
0
45
90 Miles
Greater Egypt Regional Planning and Development Commission. 2024.
Data Sources: U.S. Census Bureau, Beck, H.E., N.E. Zimmermann, T.R. McVicar, N. Vergopolan, A. Berg, E.F. Wood: Present and future Köppen-Geiger climate classification maps at 1-km resolution, Scientific Data 5:180214, doi:10.1038/sdata.2018.214 (2018).

5. Severe Weather History

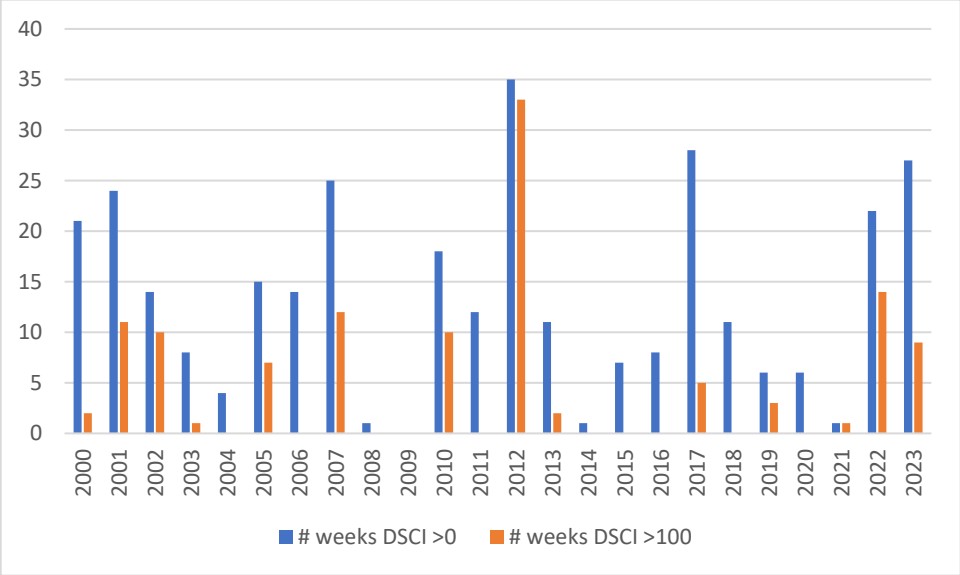
Severe weather can be a large factor in hazardous fuels on the landscape. Tornados, derechos, and other severe storms can leave areas with downed trees, limbs, and other burnable debris. Storms with large damage paths may leave local responders and landowners overwhelmed and unable to clear fuels in a timely manner. Long periods of drought can dry out fuels on the landscape and increase the risk of wildfires. Even seemingly unrelated events, like ice storms and floods, can contribute to an increased wildfire risk.

Williamson County is subject to wildly variable weather, often leading to weeks of stifling heat in the summer and/or very cold conditions in the winter. Average annual precipitation is 43.18 inches. Though daytime highs in the winter are often above freezing, cold spells with significant snowfall and/or ice buildup are not uncommon in the winter.

Drought & Heat

Year	# weeks DSCI >0	# weeks DSCI >100
2023	27	9
2022	22	14
2021	1	1
2020	6	0
2019	6	3
2018	11	0
2017	28	5
2016	8	0
2015	7	0
2014	1	0
2013	11	2
2012	35	33
2011	12	0
2010	18	10
2009	0	0
2008	1	0
2007	25	12
2006	14	0
2005	15	7
2004	4	0
2003	8	1
2002	14	10
2001	24	11
2000	21	2

The Drought Severity and Coverage Index is an experimental method for converting drought levels from the U.S. Drought Monitor map to a single value for an area. DSCI values are part of the U.S. Drought Monitor data tables. Possible values of the DSCI are from 0 to 500. Zero means that none of the area is abnormally dry or in drought, and 500 means that all of the area is in D4, exceptional drought. This data is only available as far back as the year 2000. The table and chart show data for Williamson County.



There are many different definitions of drought, but in general the term refers to conditions in which below average rainfall occurs and leads to water shortage problems in a given area. There is no official length of time for the conditions listed to be considered a drought, but they are generally measured in terms of weeks or growing seasons and may last over the span of several years. There is not much of a trend in DCSI since 2000 for Williamson County, but this is not a large enough timescale nor land area to make climatic predictions.

Drought conditions are often accompanied and exacerbated by extreme heat events. Elevated temperatures result in faster rates of evaporation. This results in worsening drought conditions and decreased soil moisture content. Drought and extreme heat

conditions can negatively impact agricultural productivity, urban and natural landscapes, and human health. Severity of drought events depends on duration and geographical extent of the conditions and can also be affected by land use demands, landcover, and water supply. Dry and hot conditions in agricultural areas, grasslands, and forests can increase risk of wildfire, and cause wildfires that do break out to be more severe that they would have been under normal conditions. Since data for periods of excessive heat only go back to 2015 for the county, it is again not enough data to state a climatic pattern, however the increase in number of extreme heat events from 2022-2024 is a cause for concern – and 2023 and 2024 were both a hottest year on record globally as reported by the NOAA.

Beginning	End	Max Heat Indices
7/27/2015	7/29/2015	110
7/19/2017	7/22/2017	115
7/5/2018	7/5/2018	110
7/14/2018	7/14/2018	115
7/18/2019	7/21/2019	111
8/12/2019	8/12/2019	112
6/12/2022	6/16/2022	115
7/4/2022	7/8/2022	120
7/20/2022	7/20/2022	116
7/22/2022	7/24/2022	110
6/29/2023	6/30/2023	115
7/27/2023	7/28/2023	110
8/20/2023	8/25/2023	120
6/25/2024	6/25/2024	112
7/4/2024	7/4/2024	114
7/29/2024	7/31/2024	116
8/1/2024	8/1/2024	112

Tornadoes, derechos, and severe thunderstorms

Tornado intensity is measured on the Enhanced Fujita (EF) Scale (adopted by the National Weather Service (NWS) in 2007). EF rating is determined by the 3-second wind gust speed (table 4.4). It is important to note these speeds are estimates based on observations from the point of damage after the tornado has passed and are not direct measurements of wind speed. The NWS service uses 28 Damage Indicators (DI) (Table 4.5) on a scale of Degrees of Damage (DOD) to estimate expected, lower, and upper bounds of wind gusts that occurred.

For the sake of this CWPP, we will focus on the DI table for hardwood and softwood trees. Tornados as small as an F1 can damage trees and leave woody debris on the ground in both forested and urban areas. At larger scales, downed trees and large limbs can create large fuel loads if not properly managed after the storm.

Hardwoods

Degree of Damage / EF Tornado scale	Damage Description	Expected Wind Speed (mph)	Lower Bound (mph)	Upper Bound (mph)
1	Small limbs broken	60	48	72
2	Large limbs broken	74	61	88
3	Tree uprooted	91	76	118
4	Trunk snapped	110	93	134
5	Trees debarked, most of limbs gone	143	123	167

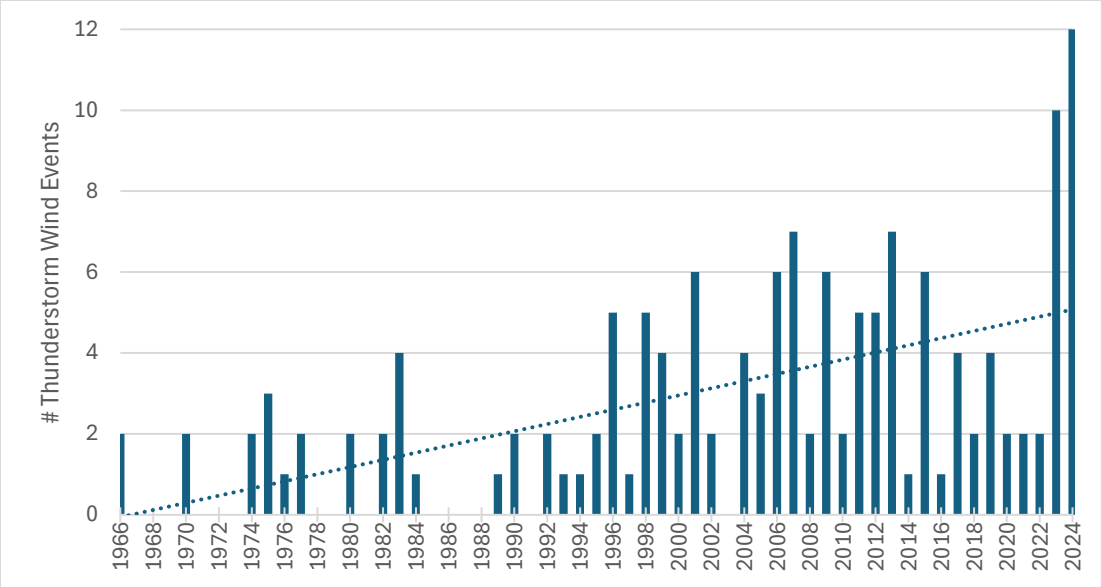
Softwoods

Degree of Damage / EF Tornado scale	Damage Description	Expected Wind Speed (mph)	Lower Bound (mph)	Upper Bound (mph)
1	Small limbs broken	60	48	72
2	Large limbs broken	75	62	88
3	Tree uprooted	87	73	113
4	Trunk snapped	104	88	128
5	Trees debarked, most of limbs gone	131	112	153

Derechos are long-lived windstorms continuing in one direction, usually over large areas. To be classified as a derecho, the storm must extend for over 240 miles and reach wind gusts of 58mph. Derechos are a unique weather phenomenon that almost exclusively occur in the eastern United States. They are also seasonal storms, with 70% occurring between May and August. Both tornados and derechos develop from and are associated with thunderstorms[9]. There has only been one major derecho in southern Illinois, in 2009, it had recorded wind speeds of 120mph.

There have been 139 recorded events of thunderstorm winds from 1966 – present, with number of events increasing in recent years. This follows other patterns of climate predictions for Illinois.

[9] "Derecho" National Weather Service



Location	Date	Rating	Path Length (miles)	Width (feet)
WILLIAMSON CO.	12/18/1957	F4	4.5	300
WILLIAMSON CO.	4/3/1968	F1	0.5	100
WILLIAMSON CO.	6/2/1973	F2	0	33
WILLIAMSON CO.	5/29/1982	F3	17	400
WILLIAMSON CO.	11/19/1991	F3	1.5	70
MARION	6/12/1998	F1	2	100
PULLEYS MILL	10/18/2004	F1	1.5	75
CORINTH	5/8/2009	EF1	3.1	150
WOLF CREEK	2/29/2012	EF2	14.91	300
CREAL SPGS	10/31/2013	EF1	6.43	175
PULLEYS MILL	4/3/2014	EF1	0.77	50
CRAINVILLE	2/28/2017	EF1	7.36	25
CARTERVILLE	4/5/2017	EF1	0.1	25
CRAINVILLE	4/3/2018	EF1	9.98	125
PITTSBURG	4/3/2018	EF1	1.93	150
CORINTH	4/3/2018	EF1	1.55	200
JOHNSTON CITY	6/28/2018	EF0	0.3	75
NEILSON	4/2/2024	EF2	6.66	250
CREAL SPGS	4/2/2024	EF1	6.21	250
WOLF CREEK	5/8/2024	EF1	3.41	75
NEILSON	5/8/2024	EF0	6.57	25

Winter Weather and Ice Storms

The typical definition of severe winter storm for Illinois is an event that produces six inches of snow or more in 48 hours. Severity of winter weather can also be classified by wind speeds and ice. When freezing rain comes into contact with surfaces, it forms an ice layer that can quickly become too heavy for power lines, trees, buildings, and roadways. Heavy buildup of ice on trees can cause limbs to snap or fall and can even down trees if enough weight accumulates. Winters with severe weather events can leave excess fuels across the landscape and increase wildfire risk in the warmer seasons if not cleared.

A major ice storm impacted the region on January 5, 2025. Impacts affected parts of southeast Missouri, southern Illinois, and northwest Kentucky. In the hardest hit areas of the ice storm, widespread ice totals of 0.25 to 0.75 inches were reported. Major damage to trees and limbs was evident across southern Illinois. Other ice storm records are below, but records only go back to the 1990s.

Location	Date	Property Damage Reported
Williamson Co.	1/15/1997	0
Williamson Co.	1/1/1999	$50,000
Williamson Co.	1/8/1999	0
Williamson Co.	1/25/2004	0
Williamson Co.	1/13/2017	$75,000

Tree and limb damage near Stonefort from the January 2025 ice storms, photos courtesy of Robert Fulcher.

Flooding

Flooding in southern Illinois is a significant and recurring hazard. This is a result of lying between the two largest rivers in the U.S. (when ranked by discharge), the Mississippi and Ohio; as well as climactic and seasonal factors. Characteristics of floods are uniquely influenced by precipitation intensity, infiltration rates, hydrogeologic features of a watershed, and interactions with the built environment. Flooding may occur anywhere during and following heavy precipitation events; In Williamson County, riverine floods are most likely to occur within the floodplains of the Big Muddy River, as well as its larger tributaries such as Pond Creek, Lake Creek, and Crab Orchard Creek.

Flooding and erosion in streams can lead to large buildups of flammable debris, which can be sources of fuels for wildfires during drought periods.

Flood debris piled up in Little Grassy Creek, photos from Nick Keller and Courtney McCowan

6. Response Capabilities and Water Availability

Williamson County has two fire protection districts and nine fire departments. There is also a County Emergency Management Agency, and staff at Crab Orchard National Wildlife Refuge and the Shawnee National Forest who also have experience in fire response and other emergencies. An info request form was sent to each fire protection organization that operates within Williamson County, results are summarized in the table below:

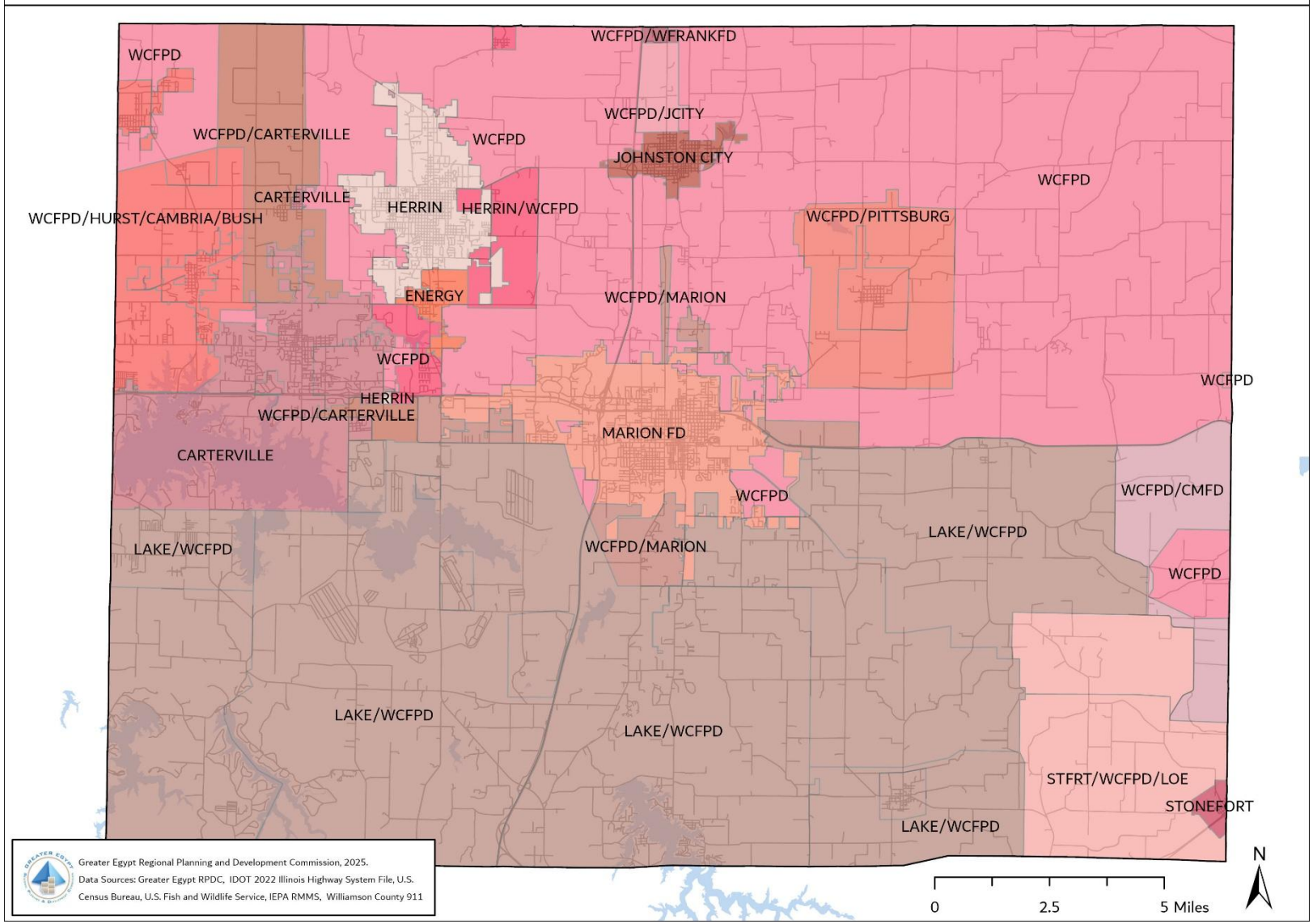
Jurisdiction	Average staff per shift	Current Mutual Aids and COAD agreements	What criteria does your jurisdiction currently use to define "wildfire"?
Williamson County FPD	3	M.A.B.A.S. (Mutual Aid Box Alarm System), LEPC, International Association of Fire Chiefs, International Association of Fire Protection Districts	An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.
Lake Egypt FPD	4	Auto Aid to WCFPD and Goreville. MABAS box card system	any fire that involves woodland or brush
Bush VFD	4 volunteers	Mutual Aid with Hurst and Cambria	Brush, Trees, Other Vegetation
Cambria VFD	7 responders/call	Auto Aid with WCFPD and Bush, MABAS Division 45 member	We use the criteria of bare land or natural vegetation on fire, such as a field or area that is wooded heavily.
Carterville FD	3	Mutual Aid with WCFPD	Any brush, grass, or woods fire consisting of natural vegetation.
Energy FD	2	MABAS Division 45 member	Any fire over 1 acre , including farm fields and wooded areas

Jurisdiction	Average staff per shift	Current Mutual Aids and COAD agreements	What criteria does your jurisdiction currently use to define "wildfire"?
Herrin FD	4	WCFPD responds autoaid with us for all fires and extrication starting at College St. and to the south and west in our jurisdiction. Carterville fire responds auto aid with us to SI Bowl and Ten Oaks Apartments. Marion responds to us, and us to them, auto aid on structure fires that go to an upgraded alarm (all call).	Over 1 acre
Hurst FD	3-5	Auto Aid to WCFPD, Bush, Royalton, Cambria, De Soto; MABAS Division 68 member	Any open field or wooded area with no commercial or residential structures within the area.
Johnston City FD	2 + volunteers when available	We have mutual aid agreements with WCFPD along with any MABAS calls that are needed.	Any unplanned burning of grass, leaves or woods.
Marion FD	6	Marion Fire Department is in a current agreement for automatic aid to Herrin Fire Department and Williamson County Fire Protection District.	Wildfire, uncontrolled fire in a forest, grassland, bushland, or land sown to crops. Fire occurs in vegetation more than 6 feet in height. Note: Fire danger in a wildland setting varies with weather conditions: drought, heat, and wind participate in drying out the timber or other fuel, making it easier to ignite. Topography also affects wildfire, which spreads quickly uphill and slowly downhill.
Pittsburg VFD	depends on volunteer availability	Pittsburg has an automatic mutual aid agreement with Williamson County Fire Protection District on all fires. Pittsburg is also a member of MABAS DIV 45.	a large destructive fire that spreads quickly through a woodland or brushy area.
Stonefort VFD	day shift -2 night shift - 8	Mutual Aid with Carrier Mills Fire, Coal Belt member, MABAS 45 member	Involve a combination of fuel, weather, and ignition sources, focusing on strong winds, and dry fuels.

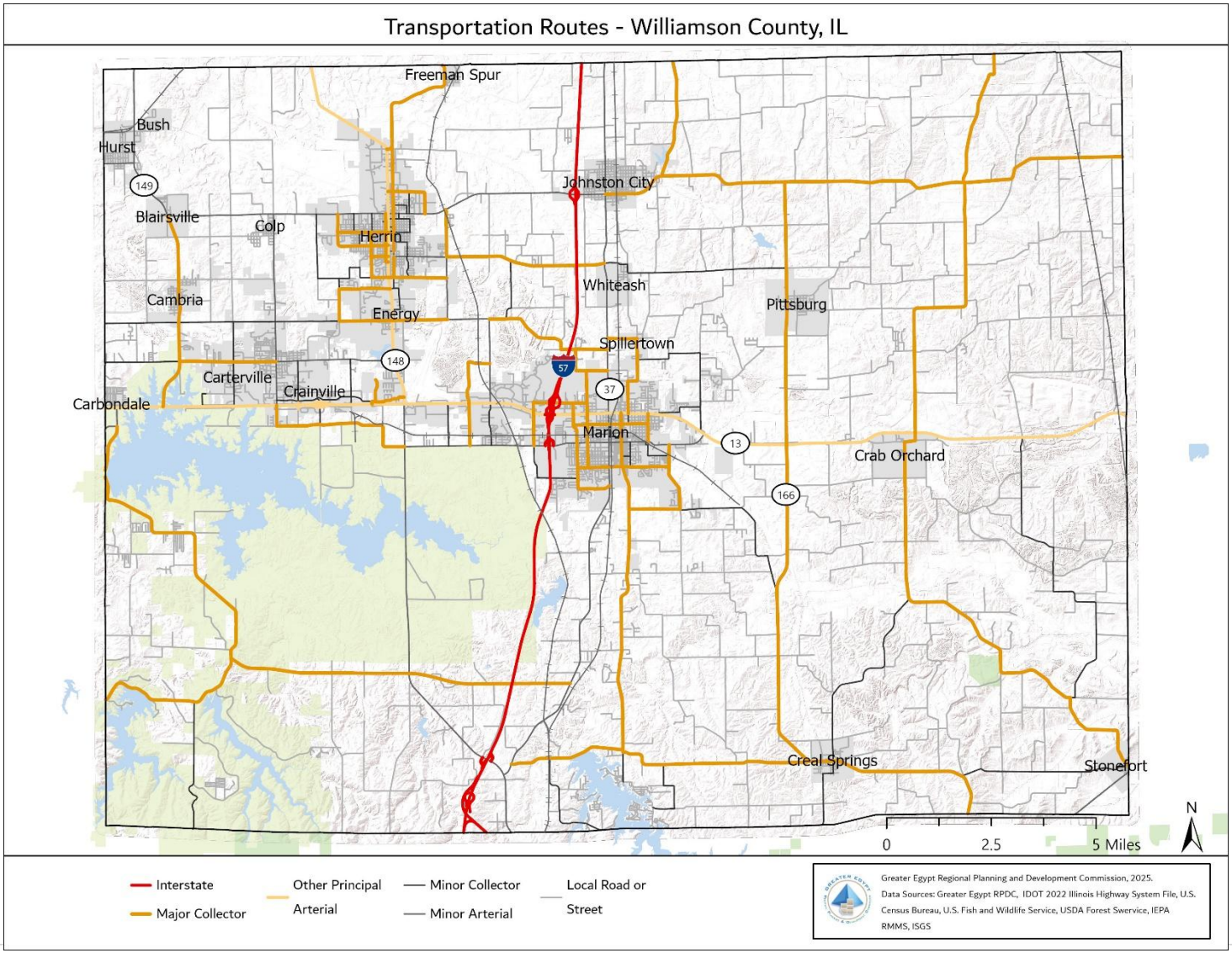
Jurisdiction	Average staff per shift	Current Mutual Aids and COAD agreements	What criteria does your jurisdiction currently use to define "wildfire"?
Shawnee National Forest	Oct-Apr (fire season) 14 staff; Apr-Oct: 8 staff	Mutual aid with Crab Orchard National Wildlife Refuge Mutual Aid with Williamson County FPD (expired but plan to renew) Mutual Aid with Lake of Egypt FPD (expired but plan to renew) Mutual Aid with Stonefort FPD (in draft) Coal Belt Fire Protective District (non-dues paying member) MABAS Division 45 (but our membership is different than local FDs) Many others in other southern Illinois counties	Any fire burning in vegetation or natural cover.
Crab Orchard National Wildlife Refuge	2-3 full time fire staff, 2-3 collateral fire staff	Refuge normally has Mutual Aid Agreements with the following fire departments. Lake of Egypt, Cambria, Carbondale, Carterville, Cobden and Williamson Co. FPD. We also have Master Cooperative Wildland Fire Management and Stanford Act Response Agreement with State of IL, National Forest Service, National Park Service, Bureau of Indian Affairs, Bureau of land Management.	Any fire on refuge lands that is not covered under approved burn plan.

Williamson County Fire Protection Response Boundaries

Note this map may not reflect every autoaid agreement. Official response boundaries are maintained by County 911 dispatch. CONWR Responds to calls on refuge property, and has aid agreements with local FPDs and FDs that surround the refuge.



Despite being mostly rural, Williamson County has a well-connected system of state, county, and local roads. There is not a need to construct any major evacuation routes; however, any new developments should consider creating at least two egress routes out of neighborhoods.



Williamson County Highway Department Information

Williamson County Highway Department maintains 660 miles of roadways in the county. Currently, the department does not have a land management plan nor established evacuation routes in place. While the highway department does not complete prescribed burns, they do mow and clear vegetation from the right-of-way (ROW). The ROW is the land alongside roadways, usually maintained by whatever jurisdiction has authority over the road. ROWs may be owned outright by a local government or maintained through an easement. ROWs may also contain sidewalks, utility lines, and other features. The width varies by road but is usually five to ten feet.

Current challenges in maintaining clear ROWs include a large number of dead/dying ash trees and a lack of adequate staff, equipment and funding to manage the highway system as efficiently as they would like.

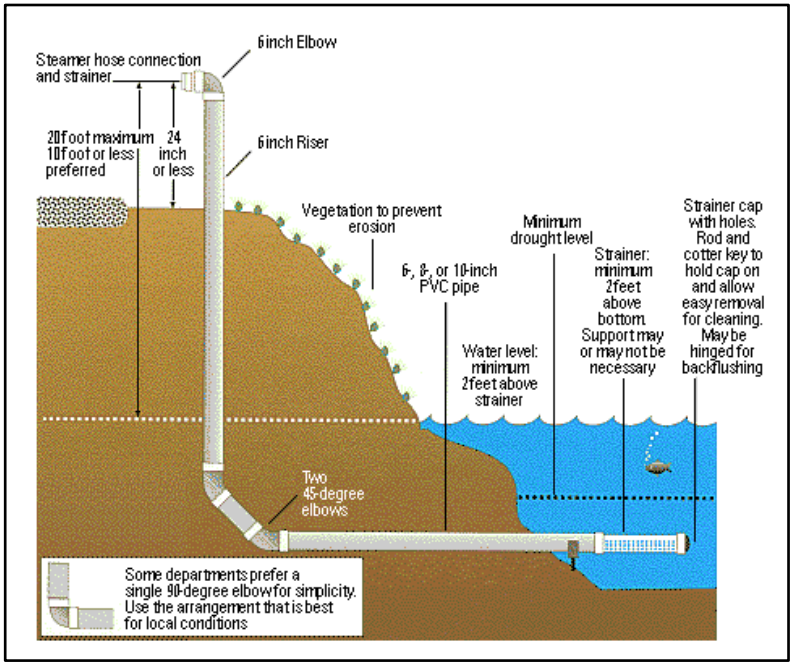
Sources: Information requests from the former and current county engineers.

Hydrant information and needs

There are two main types of hydrants for use by firefighters: wet and dry. Wet or pressurized hydrants are typically within a municipal area and maintained by the local government or water utility. These hydrants are installed to have specific pressure and flow rates depending on the type of buildings around them; for example a street with 1-2 family dwellings needs a flow of at least 500 gallons per minute (gpm) at a pressure of 20psi.

Dry hydrants are more typically installed in rural areas. These consist of a pvc or other pipe installed into a local water source – usually ponds; with a connection head for fire department to attach hoses to. These are unpressurized and water must be accessed with pumper trucks.

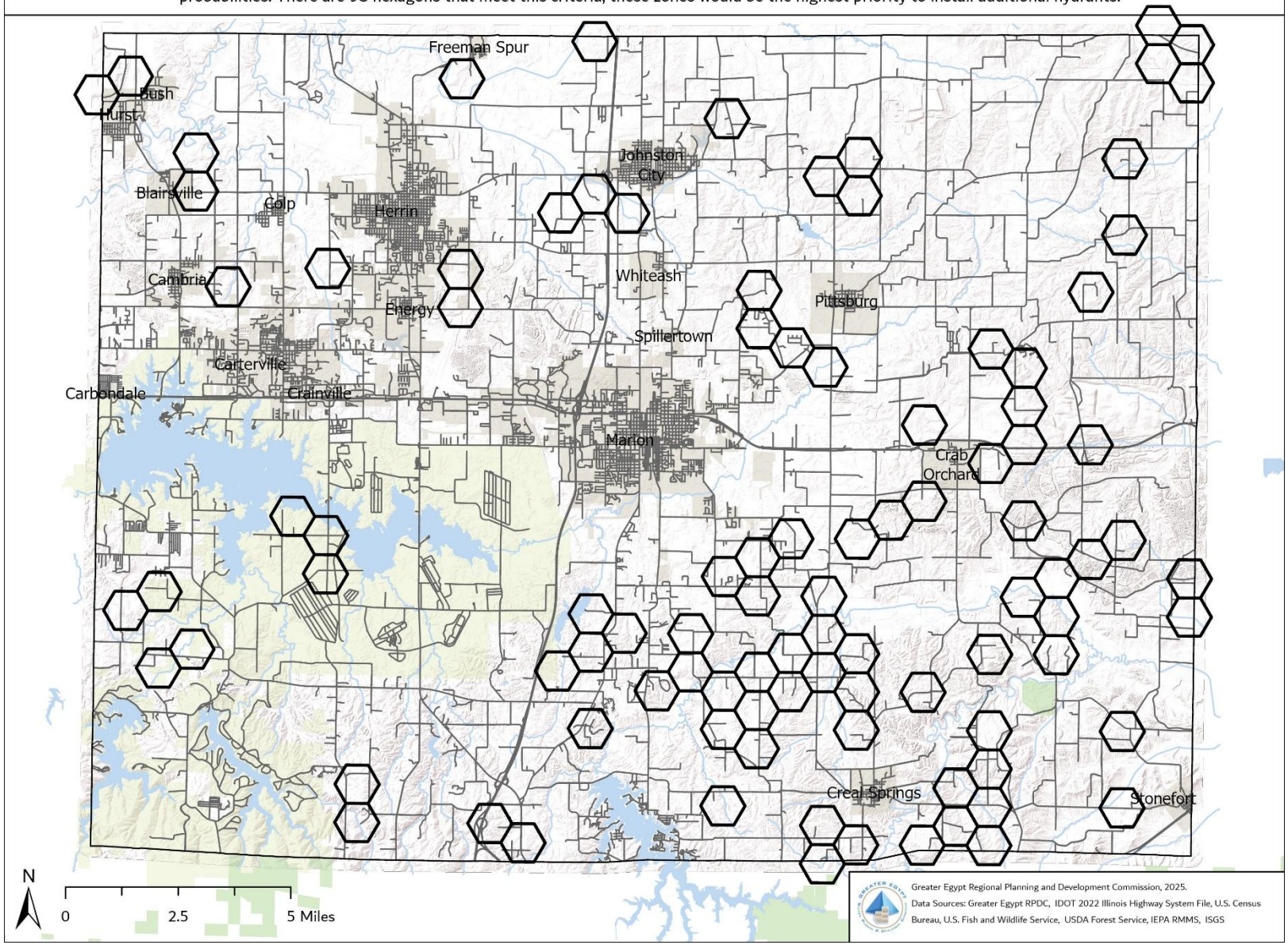
Some fire departments also have tanker trucks – which carry water with them to areas that may not have hydrants available. The amount of water is limited to the size of the tank on the truck



Dry hydrant diagram, photo source: Maryland Department of Natural Resources.

Williamson County, and most counties in southern Illinois are lacking sufficient rural dry hydrants. The map below shows priority areas to install more, should funds become available. Installation will also depend on proximity of the road to a suitable water source, and permission from private landowners.

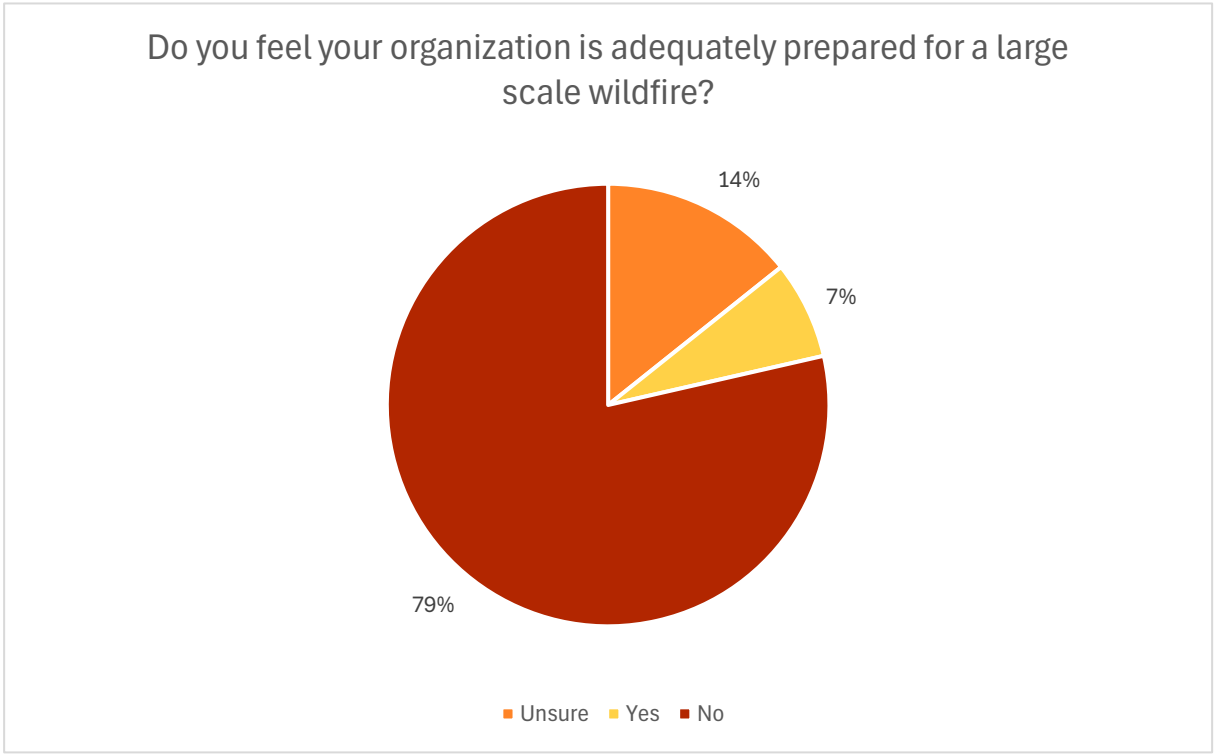
Water Source Needs: This map displays one square mile hexagons that have road access, no hydrants, and contain areas of identified WUI communities or the two highest burn probabilities. There are 98 hexagons that meet this criteria, these zones would be the highest priority to install additional hydrants.



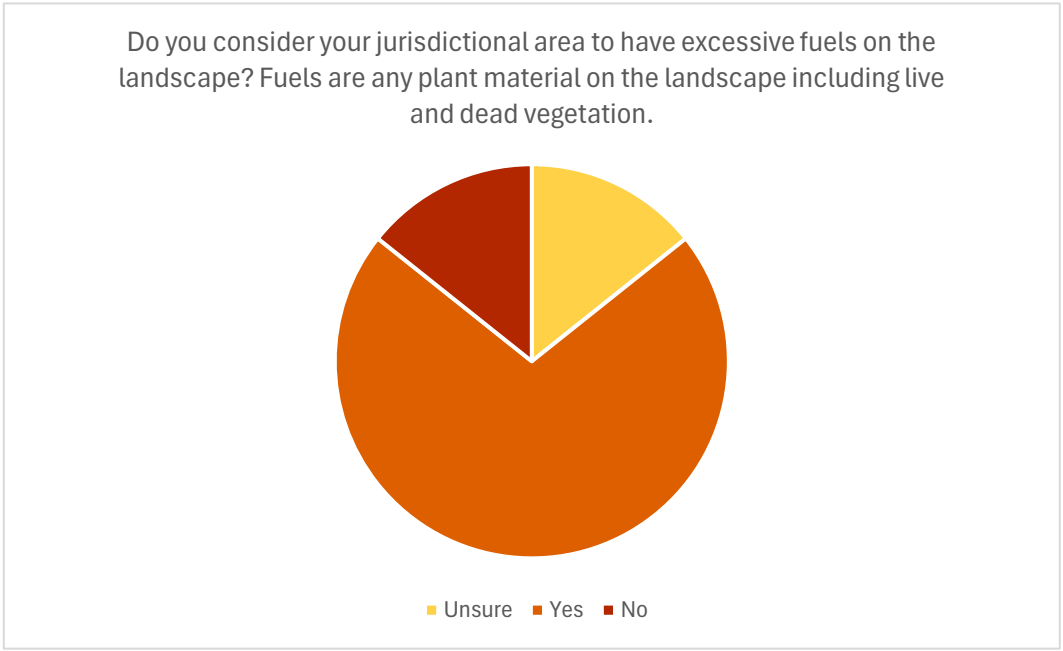
Fire Protection Survey

A second survey was sent to fire protection personnel to gather opinions about current capabilities, struggles, and suggestions for future improvements. Responses to the first section are summarized here and future suggestions are summarized in section 11.

What is your name?	What is your job title?	Which Fire Protection District/Department do you represent?
Brady Crane	Captain	Lake Egypt Fire Protection District
Zack Stawicki	SIPBA Executive Director	Southern Illinois Prescribed Burn Association
Jacob Hess	District Forester	IDNR
Eric Miller	Battalion Chief	Williamson County FPD
Jason Sheraden	Fire Chief	Carterville
Shawn Priddy	Fire Chief	Herrin Fire Department
Wayne Rice	Interim Fire Chief	Johnston city Fire
Michael Garland		Johnston city Fire
Hillary Davis	department secretary	Pittsburg Volunteer Fire Dept
Matthew Morgan	lieutenant	Cambria
Tim Barnett	Fire Chief	Marion Il.
Tom Gottschalk	Fire Chief	Hurst Fire Department
Andrew Barclay	Fire Chief/ Public Works Superintendent	Energy
Tom Gottschalk	Fire Chief	Hurst
James Bryley	Fire Chief	Bush VFD
Monty Dunn	Fire Chief	Stonefort VFD


Do you feel your organization is adequately prepared for a large scale wildfire?
14%
7%
79%
Unsure
Yes
No

Department	Do you complete any vegetation/fuels management strategies?	If yes, please describe:
Lake Egypt Fire Protection District	No	
Southern Illinois Prescribed Burn Association	Yes	Rx fire
IDNR	Yes	FSI, NNIS treatments, small-large scale prescribed burns on State, Federal and Private lands
Williamson County FPD	Yes	We have recently started a Prescribed Burn Program in 2024
Carterville	No	
Herrin Fire Department	No	
Johnston city Fire	No	
Pittsburg Volunteer Fire Dept	No	
Cambria	No	
Marion Il.	No	
Hurst Fire Department	No	
Energy	Yes	Public Works does roadside and ROW vegetation management
Bush	No	
Stonefort	No	


Do you consider your jurisdictional area to have excessive fuels on the landscape? Fuels are any plant material on the landscape including live and dead vegetation.
Unsure
Yes
No


What are some issues you face in managing your jurisdictional area for wildfire prevention and ecosystem health? Check all that apply
We lack the staff to remove fuels on the landscape
We lack the equipment necessary to remove fuels from the landscape
We only respond to calls and cannot provide any land management services
We lack funding to manage the landscape as effectively as we would like to
The landscape is challenging for land management (steep slopes, no road access, protected species, etc.)
Lack of water sources in areas prone to wildfire
We are interested in prescribed burning but need more information/resources/training
Lack of roads in areas prone to wildfire
There are important buildings or other infrastructure close to hazardous fuels
Lack of landowner knowledge on the local level dangers of wildfire and what can be done to mitigate those problems
Invasive species are a major issue on this property
There are regulations in place preventing prescribed burns or other fuel removal
0
2
4
6
8
10
12
14

Provide any other details related to issues you face managing the landscape:
As we discussed at the meeting, our biggest issue is the liability. Second biggest issue would be manpower to do prescribed burns. Also, overtime costs.
Lack of Staff
Lack of personnel to treat fuels and invasive species on the landscape, complexity of private land ownership reducing the amount of landscape level fuel reductions and large amounts of WUI encroachment.
Community awareness and public education. Getting buy in from community members
Manpower
lack of equipment

Of these issues, what do you consider to be the most important?
Liability
The WUI (Wildland Urban Interface)
Community awareness and public education
Equipment and staffing
the ability to reach areas during wildfire
Lack of equipment
Manpower
we lack the funding to properly equip our department

Land Managers Survey

An attempt was made to collect feedback from natural areas, parks, campgrounds, hunt clubs and utility companies that operate within Williamson County; responses are summarized below.

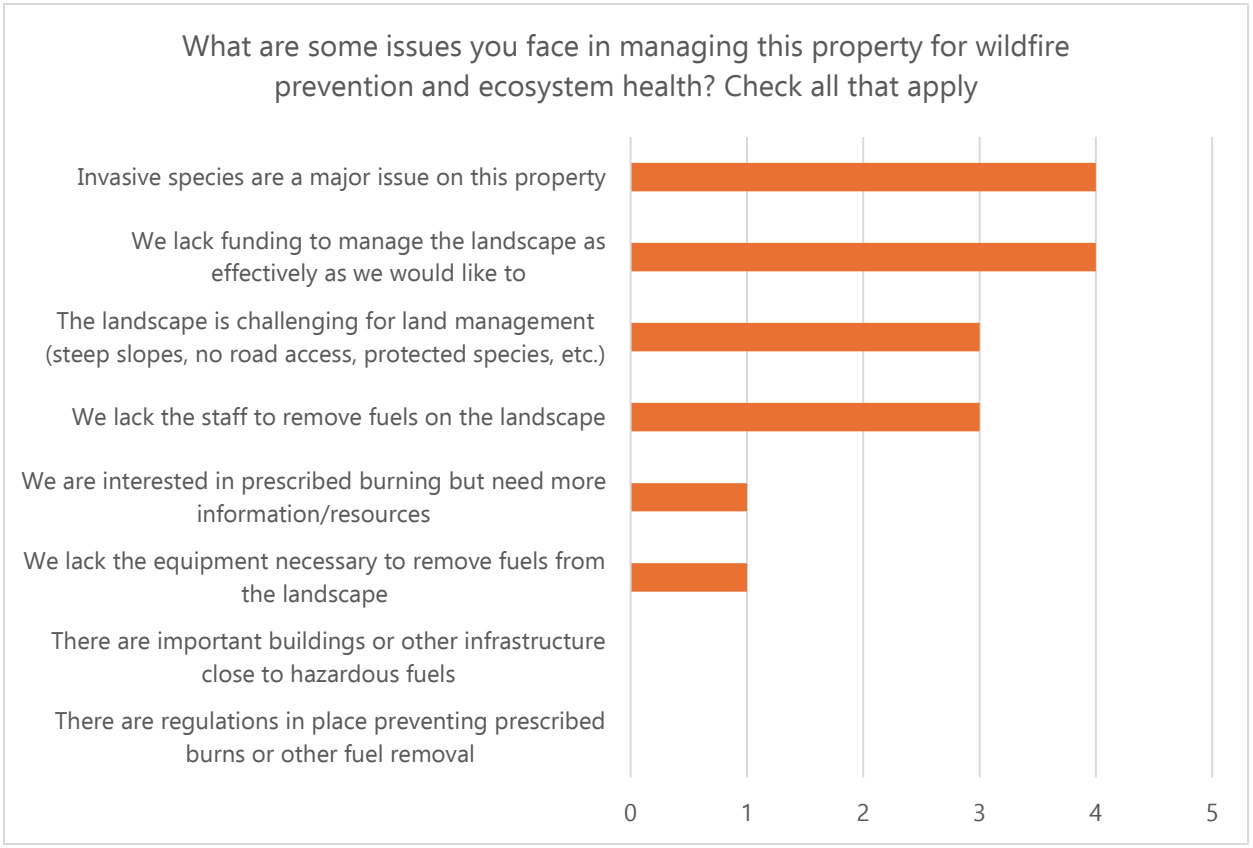
What is your name?	What is your job title?	What is the name of the Property/Organization?	Size of property managed
Candy Coulter	District Manager	Blairsville Public Water District	30 miles of water line
David Jones	Fire Management Specialist	Crab Orchard NWR	44,000
Travis Deterding	Forestry Manager	Egyptian Electric Cooperative Assn.	Approx. 145 acres
John Zeigler	Natural Resources Site Manager II	Little Grassy Fish Hatchery (IDNR)	100
Charles M Ruffner	Prof of Forestry	SIUC	1500
Taryn Bieri	District Forester	IL Dept of Natural Resources	n/a

Organization	Has there ever been a wildfire on the property?	Do you feel this property/organization is adequately prepared for a wildfire or other natural disaster?	Does this property/organization have an emergency plan on file?
Blairsville Public Water District	No	Unsure	Yes
Crab Orchard NWR	Yes	Yes	Yes
Egyptian Electric Cooperative Assn.	No	Yes	Yes
Little Grassy Fish Hatchery (IDNR)	No	Unsure	Yes
SIUC	No	No	Yes
IL Dept of Natural Resources	No	Unsure	Unsure

Organization	Do you have any concerns if a wildfire were to occur on this property?
Blairsville Public Water District	There is no source of water accessible for firefighters
Crab Orchard NWR	Access to some locations difficult.
Egyptian Electric Cooperative Assn.	accessibility, Public & First Responder/Firefighter Safety
Little Grassy Fish Hatchery (IDNR)	no
SIUC	Distance from fire station; considering this SIUC property is all wildland fuels, I would suspect the SIU Firedawgs and Crab Orchard would respond to wildfire out there.
IL Dept of Natural Resources	N/a

Organization	Do you complete prescribed burns on this property?	Do you complete any other vegetation/fuels management strategies?	If yes, please describe:
Blairsville Public Water District	No	No	
Crab Orchard NWR	Yes	Yes	Hazard Fuel Reduction Projects, Thinning, Clearing
Egyptian Electric Cooperative Assn.	No	No	
Little Grassy Fish Hatchery (IDNR)	No	Yes	Mowing open areas, removing fallen trees
SIUC	Yes	Yes	We are slowly doing TSI, invasive species treatments on many areas. However, as conducted by students, there is not a high hope for exceptional weedkill in these areas.
IL Dept of Natural Resources	Yes	Yes	timber stand improvements

Organization	Do you consider the property to have excessive fuels on the landscape? Fuels are any plant material on the landscape including live and dead vegetation.	If yes, are excessive fuels a result of specific weather event? (Such as the 2009 derecho, a severe winter storm, etc.)
Blairsville Public Water District	No	
Crab Orchard NWR	Yes	Lack of prescribed fire in years past and definitely from 2009 derecho.
Egyptian Electric Cooperative Assn.	No	
Little Grassy Fish Hatchery (IDNR)	No	
SIUC	Yes	Much of the derecho damage is now decomposed to an unflammable state. However, our fuels are a result of 80-100 years of fire suppression and limited application of forest treatments.
IL Dept of Natural Resources	Yes	


What are some issues you face in managing this property for wildfire prevention and ecosystem health? Check all that apply
Invasive species are a major issue on this property
We lack funding to manage the landscape as effectively as we would like to
The landscape is challenging for land management (steep slopes, no road access, protected species, etc.)
We lack the staff to remove fuels on the landscape
We are interested in prescribed burning but need more information/resources
We lack the equipment necessary to remove fuels from the landscape
There are important buildings or other infrastructure close to hazardous fuels
There are regulations in place preventing prescribed burns or other fuel removal
0
1
2
3
4
5

Organization	Provide any other details related to issues you face managing the landscape:	Of these issues, what do you consider to be the most important?
Blairsville Public Water District		
Crab Orchard NWR	Proximity to local communities make prescribed fire treatments difficult at times.	Wildland Fuel loading and access.
Egyptian Electric Cooperative Assn.		
Little Grassy Fish Hatchery (IDNR)	We have talked with Crab Orchard National Wildlife Refuge about doing a controlled burn on parts of our property if/when they do a controlled burn on their property that is adjacent to ours, but that portion of their property has not been burned in many years. We hope that they will get to that portion of their property in the next few years and include the burnable portions of our property in that management. There is abundant autumn olive on the refuge property adjacent to ours and some on portions of our property as well.	Getting a controlled burn done in cooperation with the refuge.
SIUC	A university landowner practicing benign neglect of its properties	Lack of funding and impetus from ownership
IL Dept of Natural Resources		

7. Prescribed (Rx) Burning

Wildfire risk is significantly reduced by the regular occurrence of controlled burns within the parameters of the forest's natural fire regime. As discussed in section *2.4. Land Use and Fire History*, most of Williamson County falls into group 1, which historically saw wildfires every 35 years or fewer. To maintain a healthy forest, landowners should focus not only on controlling the risk of wildfires but also on reinstating the natural fire regime of their privately owned land. Controlled or prescribed burning improves habitat quality for desirable species such as deer, quail, and turkey and reduces the buildup of hazardous fuels that could lead to dangerous, uncontrolled wildfires if left alone. In Williamson County, from 2006 - 2023 there were 326 private acres burned and 20,894 acres at Crab Orchard National Wildlife Refuge burned with prescribed fire methods.

New Rx Fire equipment is demonstrated at the 2025 Fire Practitioner Meeting at CONWR. Photos by Kelsey Bowe

Currently there are two programs in Williamson County that landowners can take advantage of to conduct a prescribed burn on their property:

WCFPD Prescribed Burn Program

The Williamson County Fire Protection District's Prescribed Burn Program is a land management program started in spring of 2024 for residents of Williamson County. Through the process of prescribed burns, we are able to reduce hazardous fuel loads near developed areas as well as rural areas of Williamson County. Prescribed burns also allow for removal of old vegetation to make room for new growth, help control plant diseases, and reduce the spread of invasive and pest species. Prescribed Burning consumes excess fuels such as dead and downed trees, reducing the possibilities of dangerous and intense wildfires through the land management process. Residents can apply for a prescribed burn by contacting the Williamson County Fire Protection District and arranging an appointment to preplan the burn area to make sure the property qualifies for a Prescribed Burn. Qualifications for Prescribed Burns are minimal. Some considerations are, structure endangerment, power lines, wildlife, neighboring properties, fuel types, potential smoke impacts, and safety of personnel. Some burn areas may require Fire Breaks to contain fires to a desired area. Cost of conducting a Prescribed Burn is typically $35.00 per acre with a $350.00 minimum charge. Larger plots of land can be burned at a lower rated dependent on fuel loads and manpower requirements. For more information call WCFPD at 618-993-5878 or email info@wcfpd.net

Southern Illinois Prescribed Burn Association

The Southern Illinois Prescribed Burn Association (SIPBA) is an easy and relatively inexpensive way to implement controlled burning on their property. The SIPBA program makes controlled burning safer and more accessible to private landowners by providing professional experience, equipment, and training that would otherwise be costly and confusing. Current requirements of membership are as follows:

- Pay annual membership dues of only $50
- Provide proof of liability insurance on property to be burned
- Attend at least one prescribed fire training in the first year of membership
- Assist on at least one burn each year for another member (or pay a $100 contract labor fee)
- Work with a Forester or SIPBA Coordinator to submit a Burn Plan for their property
- Take responsibility for the installation of suitable firebreaks per the burn plan
- Be present and assist on burns on their property (or supply a representative)
- Contribute $150 crew mobilization surcharge for each burn day on their property

For more information on the SIPBA program, visit the website at https://www.sipba.org/

8. Management Strategies for home and landowners

8.1. Background

Proper wildfire response and control starts with the individual citizens of Williamson County. Landowners can defend their homes by creating defensible spaces and firebreaks, reducing fuels, involvement in local and governmental fire protection programs, and controlled burning of forested lands. For decades, wildfire suppression has been the primary mode of management on both public and private property, but modern research has revealed the importance of fire to the forests of North America. Promoting healthy forests can only be done correctly by understanding and embracing fires.

With proper involvement between state, county, and individuals, broad tracts of land can be cooperatively managed with controlled burning and other BMPs to improve habitat quality, recreation activities, and overall safety.

8.2. Defensible Spaces

The creation of defensible spaces on private property is by far the best way to prevent expensive damages from unplanned wildfires. A defensible space acts as a starting point for controlling a wildfire, usually by preventing the spread of fire into areas where property or people reside.

Firewise landscaping[10] is an effective way to create a space where a wildfire would struggle to spread, thus creating a "survivable space" around vital parts of the property by removing fuels for the fire. Fuel within 30' of any houses or valuable structures should be virtually nonexistent. Removing flammable foliage and materials such as firewood, fallen branches, propane tanks, and wooden decorations can prevent the spread of fire to the home. Stone barriers such as pathways, fences, and décor can act as another barrier to fire movement.

Further from the home, 30'-100' away, planted areas such as gardens should be well-spaced and comprised of low-flammability plants. Any flammable materials, such as the ones mentioned above, must be well-spaced and ideally broken up by paths and stone barriers to prevent the spread of fire if ignited. Forests, trees, and tall or dry plants should be relatively thin or completely absent.

The region 100'-200' from the home or other important structures is still important to the firewise landscaping model. Forests should be thinned out and relatively free of debris.

10 Ruffner, C and Carril, D. "Developing a Community Wildfire Protection Plan for Jackson County, Illinois", SIUC Forestry, 2020.

Any accumulations of downed woody debris, especially debris with dry foliage still attached, should be removed or spread out. Ideally, the debris would be chipped and dispersed, but at the bare minimum, the debris should be well spaced to avoid large fires that could send sparks further into the property.

Figure 3: Infographic outlining the basics of firewise landscaping.

The material used in the construction of buildings on the property also matters. Homes with wood or shingle roofs are at a high risk of being destroyed during a wildfire, as are homes with flammable siding made from wood. Using metal, clay, tile, or another non-flammable material can greatly reduce the risk of damage in a wildfire. This is especially important for sheds and other structures closer to the edges of a property, as these are usually at a higher risk of exposure to embers or flames, and are more likely to be constructed using flammable materials.

8.3. Resources for Landowners

Prevention of wildfires starts with the upkeep of the forest itself. A healthy forest is far less likely to experience a catastrophic fire than one that is degraded and poorly managed. Thankfully, the state of Illinois has plenty of resources to help landowners take charge of managing their forests:

Online Risk Explorer

To assess the risk of a particular area, property, or address, the Northeast-Midwest State Foresters Alliance offers a free map viewer that displays wildfire risk and burn probability for the 10-state region. This interactive tool allows users to zoom into specific areas of interest. This can be accessed at https://northeastmidwestwildfirerisk.com/

Illinois Department of Natural Resources (IDNR)

Under the Illinois Forest Development Act, landowners can create a Forest Management Plan (FMP) with assistance from a District Forester. These 10-year plans will outline specific information and management goals tailored to your property, possible management actions may include invasive species control, Rx fire, forest stand improvement (FSI), and tree planting. Landowners must have at least 10 contiguous acres that do not contain a permanent building to qualify for this program, and certain tax incentives may apply. More information can be found at https://dnr.illinois.gov/conservation/forestry.html

The current district forester for Williamson County is Taryn Bieri:

90 Office Drive,
Goreville, IL 62939
Taryn.Bieri@Illinois.gov
217-855-0199

Other questions about IDNR wildfire and Rx programs can be directed to

Fire Program Manager
Benjamin Snyder
Region V Office
11731 State Hwy 37
Benton, IL 62812
Benjamin.Snyder@illinois.gov

National Resources Conservation Service (NRCS)

The National Resources Conservation Service offers several programs to help landowners manage their land more effectively. The NRCS provides avenues for landowners to access resources, technical tools, grant opportunities, management programs, and other helpful tools. Outside of simple wildfire prevention, the NRCS offers assistance for improving water quality, plant health, soil quality, and wildlife diversity, as well as financial aid. Landowners can find their nearest service center in the table below and visit their regional representatives online or in person to find the right resources for them.

Benton Service Center Natural Resources Conservation Service (618) 438-4021 Ext. 3	**Physical Address** 711 N Duquoin St Benton, IL 62812	**Mailing Address** Mailing Address not available.	**Contact** Adam Birkner adam.birkner@usda.gov
Harrisburg Service Center Natural Resources Conservation Service (618) 252-8621 Ext. 3	**Physical Address** 912 S Commercial St Harrisburg, IL 62946-2637	**Mailing Address** Mailing Address not available.	**Contact** Adam Birkner adam.birkner@usda.gov
Marion Service Center Natural Resources Conservation Service (618) 993-5396 Ext. 3	**Physical Address** 502 Comfort Dr Marion, IL 62959	**Mailing Address** 502 Comfort Drive, Suite C Marion, IL 62959	**Contact** Adam Birkner adam.birkner@usda.gov
Benton Service Center Farm Service Agency (618) 438-4021 Ext. 2	**Physical Address** 711 N Duquoin St Benton, IL 62812	**Mailing Address** 711 N Duquoin St Benton, IL 62812-1111	**Contact** Tony Lamczyk tony.lamczyk@usda.gov
Marion Service Center Farm Service Agency (618) 993-5396 Ext. 2	**Physical Address** 502 Comfort Dr Marion, IL 62959	**Mailing Address** 502 Comfort Dr Ste A Marion, IL 62959	**Contact** Tony Lamczyk tony.lamczyk@usda.gov
Marion Service Center Rural Development (618) 993-5396	**Physical Address** 502 Comfort Dr Marion, IL 62959	**Mailing Address** 502 Comfort Drive Marion, IL 62959	**Contact** Shelly Anderson shelly.a.anderson@usda.gov

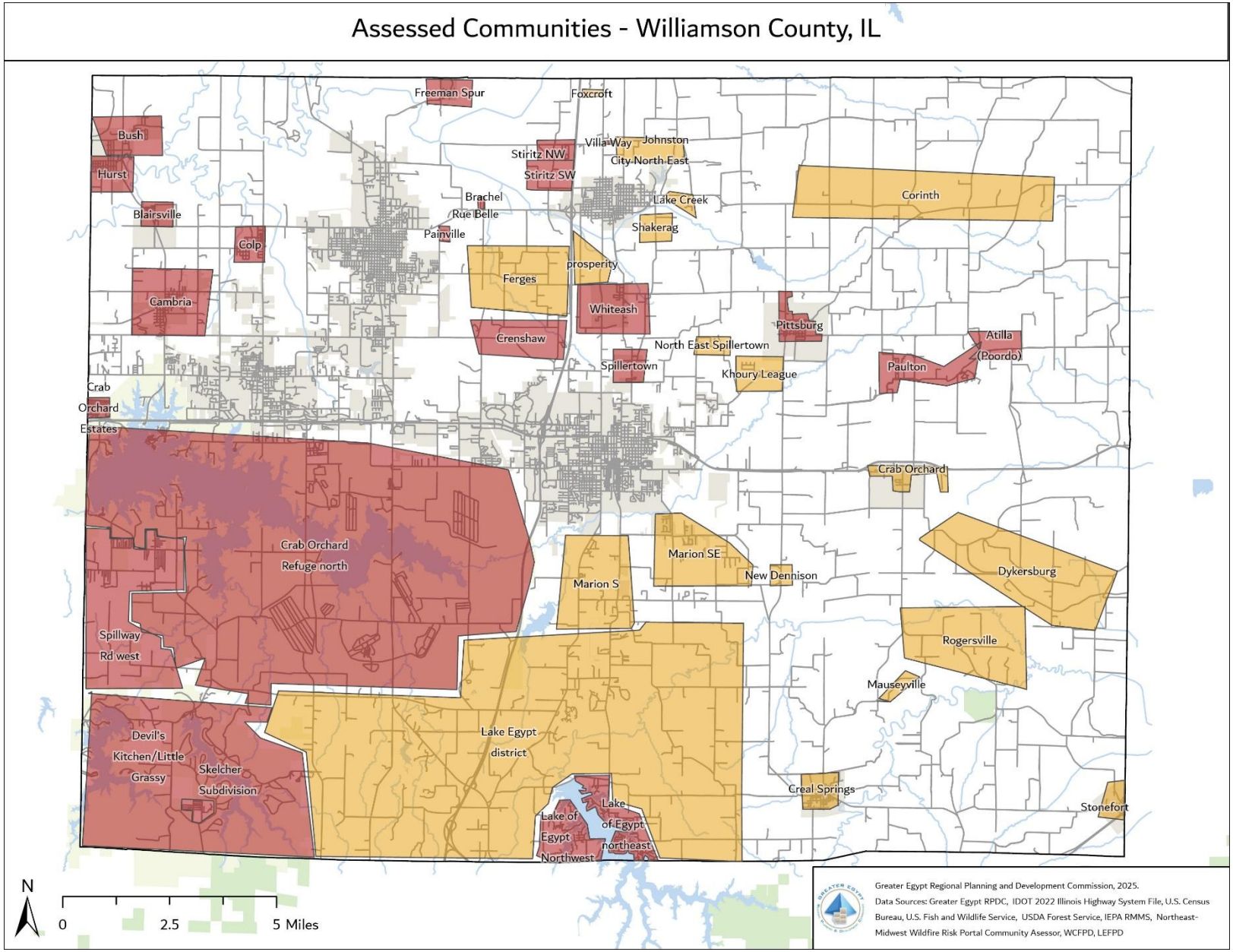
Private Contractors

Hiring an independent forestry consulting service is another way landowners can improve their forested property and decrease the chances of wildfire. Landowners can employ consulting companies to assess forests for fire risk, draft long-term management plans, and execute management practices that would improve the overall health of forested properties. Depending on a landowner's resources and individual goals, an independent consulting company can offer more freedom than a governmental team. The Illinois Department of Natural Resources (IDNR) provides a directory of consulting foresters throughout the state, an interactive version can be found on the IDNR Forestry webpage, found at the link above.

9. Community Risk Assessments

Because wildfire risk varies within the project area, planning team members assessed communities individually using the Community Assessor Tool (CAT) provided by the Northeast Midwest Wildfire Risk website. This tool includes a desktop and mobile version that allows users to manually create a shapefile for each community and then assess each community in the tool by following a series of multiple-choice questions. Assessment questions are related to community infrastructure and landscape and individual structures within the community. Responses are then compiled by the software into risk ratings and a final score, the software also provides a list of suggested mitigation strategies communities can use to reduce risk at a local level.

Communities were determined by WCFPD, LEFPD, and CONWR and generally consist of small towns and subdivisions in rural Williamson County that are within or adjacent to the WUI. Larger municipalities were excluded from this activity as urban areas do not have a risk of wildfire. Summarized results are displayed in the tables below, and full report summaries are available in Appendix 1.


Assessed Communities - Williamson County, IL
Freeman Spur
Foxcroft
Bush
Hurst
Stiritz NW
Villa Way
Johnston
City North East
Stiritz SW
Brachel
Rue Belle
Painville
Lake Creek
Shakerag
Corinth
Blairsville
Colp
prosperity
Ferges
Cambria
Whiteash
Pittsburg
Crenshaw
North East Spillertown
Atilla
(Poordo)
Spillertown
Paulton
Khoury League
Crab
Orchard
Estates
Crab Orchard
Crab Orchard
Refuge north
Marion SE
New Dennison
Marion S
Dykersburg
Spillway
Rd west
Rogersville
Mauseyville
Devil's
Kitchen/Little
Grassy
Skelcher
Subdivision
Lake Egypt
district
Creal Springs
Stonefort
Lake
of Egypt
northeast
Lake of
Egypt
Northwest
N
0
2.5
5 Miles
Greater Egypt Regional Planning and Development Commission, 2025.
Data Sources: Greater Egypt RPDC, IDOT 2022 Illinois Highway System File, U.S. Census Bureau, U.S. Fish and Wildlife Service, USDA Forest Service, IEPA RMMS, Northeast-Midwest Wildfire Risk Portal Community Asessor, WCFPD, LEFPD

Community	Assessed By	Acres	# housing units (estimate)	Residential type (majority)	Suppression Rating	Surrounding Environment Rating	Structure Rating	Total Wildfire Risk
Atilla (Poordo)	WCFPD	466.57	25	fixed	moderate	high	moderate	high - 113
Blairsville	WCFPD	274.31	20	fixed	moderate	high	high	high – 143
Brachel	WCFPD	29.48	30	fixed	high	high	moderate	high – 103
Bush	WCFPD	852.87	120	fixed	moderate	high	high	high – 139
Cambria	WCFPD	1,790.14	149	fixed	moderate	high	high	high – 129
Colp	WCFPD	375.17	112	mobile	moderate	high	moderate	high – 111
Corinth	WCFPD	4,341,5	35	fixed	low	high	moderate	moderate – 82
Crab Orchard	WCFPD	407.7	200	fixed	low	high	moderate	moderate – 98
Crab Orchard Estates	WCFPD	156.64	50	mobile	moderate	high	high	high – 134
Crab Orchard Refuge North	LEFPD	31,804.93	1	Fixed	high	extreme	moderate	High – 154
Creal Springs	WCFPD	450.19	180	fixed	low	high	moderate	moderate – 93
Crenshaw	WCFPD	1,155.76	100	fixed	moderate	high	moderate	high – 123
Devil's Kitchen/Little Grassy	LEFPD	10,949.05	1	fixed	high	high	high	High – 141
Dykersburg	WCFPD	3,880.37	25	fixed	low	high	moderate	moderate – 85
Ferges	WCFPD	2,269.12	50	fixed	moderate	high	moderate	moderate – 96
Foxcroft	WCFPD	53	30	fixed	high	high	moderate	moderate – 90
Freeman Spur	WCFPD	410.74	89	fixed	moderate	high	high	high – 138
Hurst	WCFPD	523.84	400	fixed	moderate	high	extreme	high – 159
Johnston City northeast	WCFPD	570.13	30	fixed	low	high	moderate	moderate – 83
Khoury League	WCFPD	569.36	60	fixed	low	moderate	moderate	moderate – 71
Lake Creek	WCFPD	150.56	25	fixed	low	high	moderate	moderate – 82
Lake Egypt district	LEFPD	28,919.56	1	fixed	moderate	moderate	moderate	moderate – 95
Lake of Egypt northeast	LEFPD	946.47	1	fixed	high	high	high	high – 137
Lake of Egypt northwest	LEFPD	984.2	1	fixed	high	high	high	high – 136
South Mation	WCFPD	2,300.2	100	fixed	low	high	moderate	moderate – 82
Southeast Marion	WCFPD	1,914.13	100	fixed	low	high	moderate	moderate – 82
Mauseyville	WCFPD	164.71	15	fixed	moderate	high	moderate	moderate – 89
New Dennison	WCFPD	162.54	20	fixed	low	high	moderate	moderate – 89
Northeast Spillertown	WCFPD	225.36	45	fixed	low	high	moderate	moderate – 84

Community	Assessed By	Acres	# housing units (estimate)	Residential type (majority)	Suppression Rating	Surrounding Environment Rating	Structure Rating	Total Wildfire Risk
Paineville	WCFPD	57.21	30	fixed	moderate	high	high	high – 137
Paulton	WCFPD	959.75	200	fixed	moderate	high	moderate	high – 104
Pittsburg	WCFPD	432.22	273	fixed	moderate	high	high	high – 122
Prosperity	WCFPD	470.18	50	fixed	low	high	moderate	moderate – 83
Rogersville	WCFPD	2,855.93	17	fixed	moderate	high	moderate	moderate – 83
Rue-Belle	WCFPD	7.61	30	fixed	high	high	moderate	moderate – 98
Shakerag	WCFPD	313.92	35	fixed	low	high	moderate	moderate – 89
Skelcher Subdivision	CONWR	187.79	50	fixed	high	high	moderate	high – 128
Spillertown	WCFPD	370.28	95	fixed	moderate	high	high	high – 145
Spillway Rd west	LEFPD	4,192.17	1	fixed	moderate	high	high	high – 115
Stiritz Northwest	WCFPD	265.58	10	fixed	high	high	moderate	high - 130
Stiritz Southwest	WCFPD	479.69	25	fixed	moderate	high	high	high – 138
Stonefort	WCFPD	278.06	72	fixed	low	high	moderate	moderate – 99
Villa-Way	WCFPD	13.59	30	fixed	moderate	high	moderate	high – 105
Whiteash	WCFPD	1,247.59	100	fixed	moderate	high	moderate	high – 112

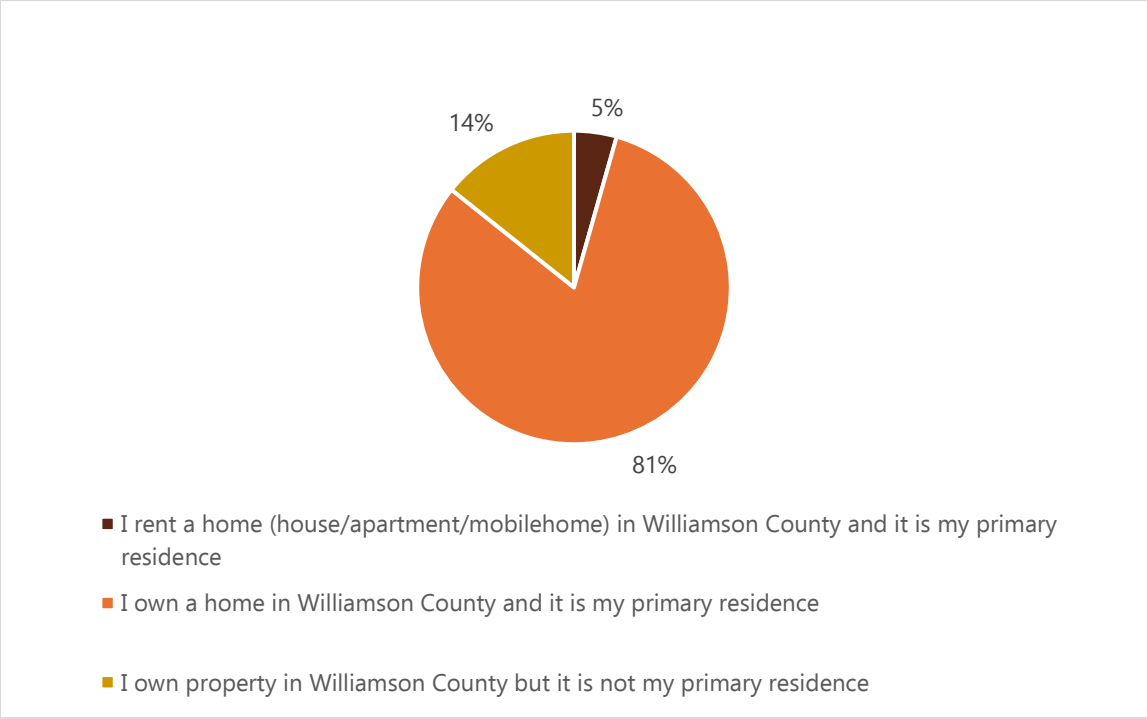
10. Survey Results

A public survey was conducted from April 1, 2024, to March 7, 2025; the survey link was shared via newspapers, social media, and was available to take at the public meeting on April 29, 2024. Results are summarized below.

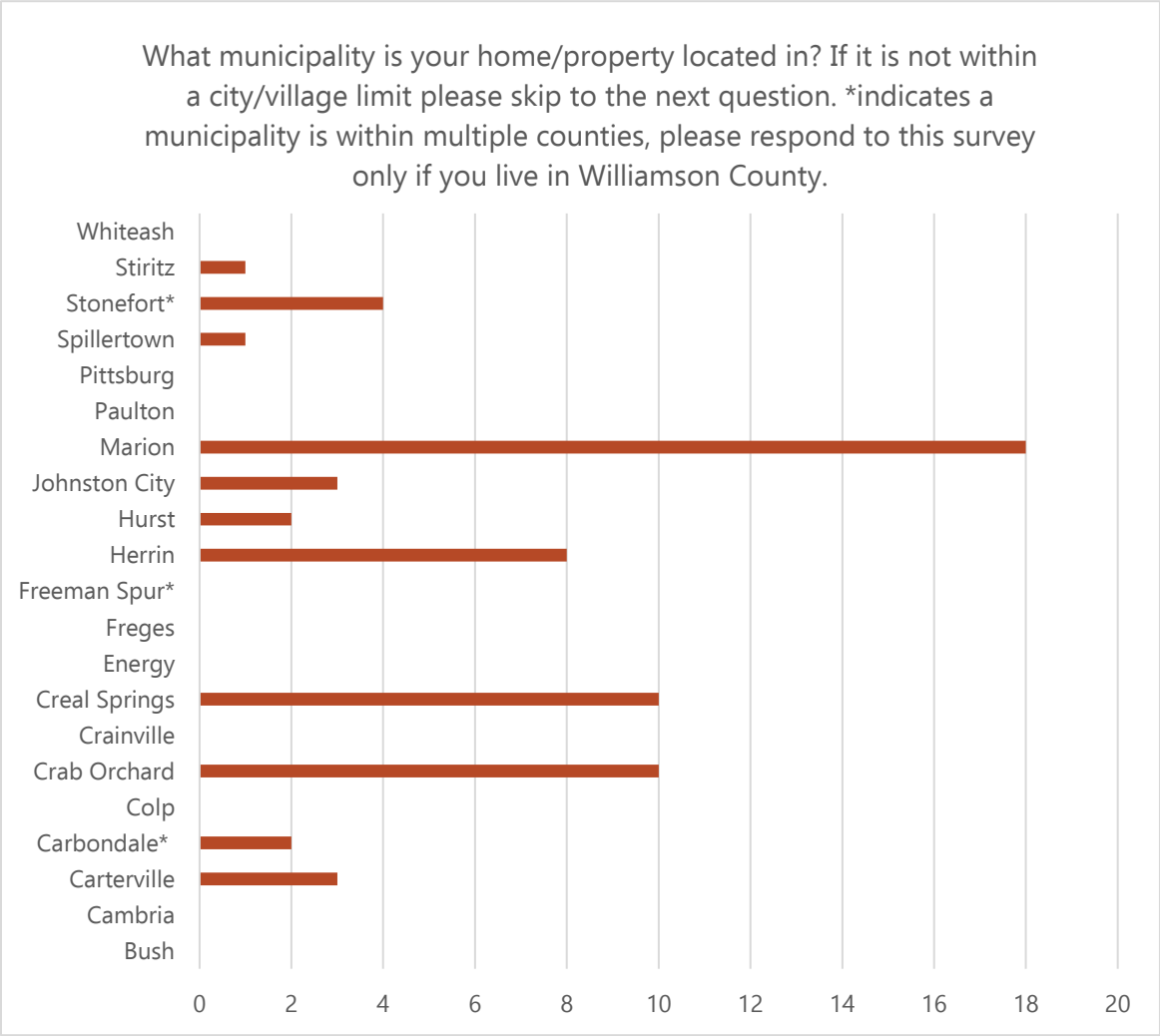
Public Survey – Total Responses: 95

Section 1: General property info

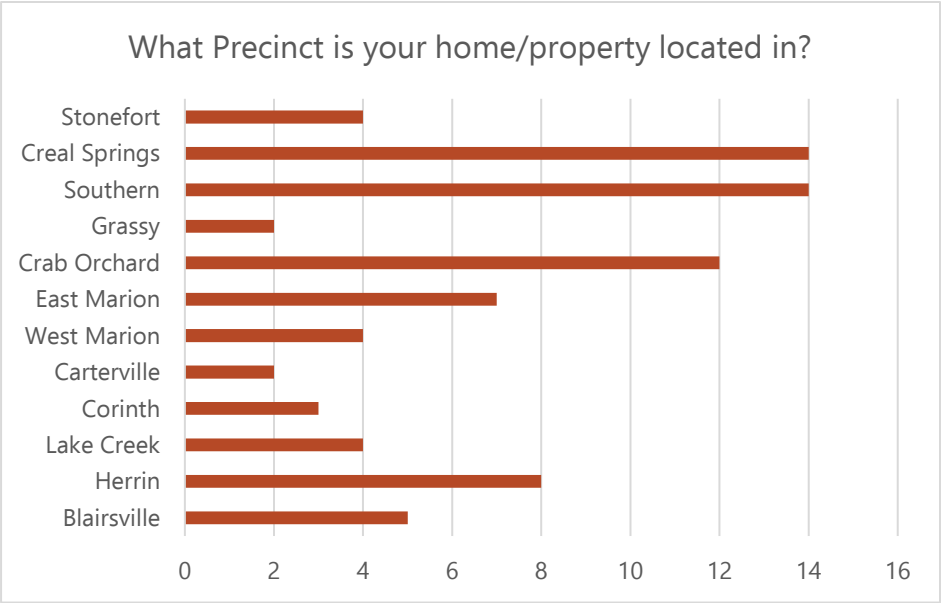
1. What Best Describes you?



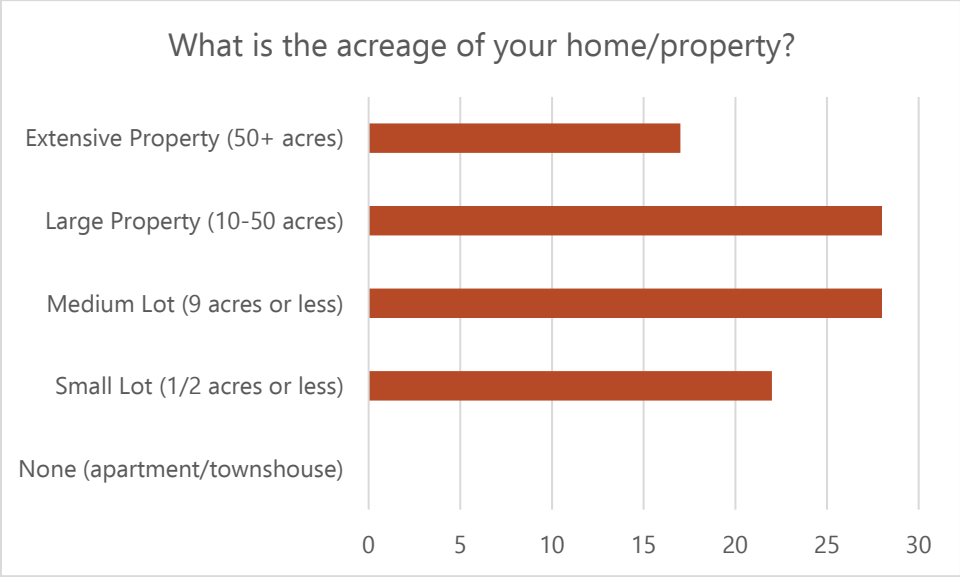
2.


What municipality is your home/property located in? If it is not within a city/village limit please skip to the next question. *indicates a municipality is within multiple counties, please respond to this survey only if you live in Williamson County.
Whiteash
Stiritz
Stonefort*
Spillertown
Pittsburg
Paulton
Marion
Johnston City
Hurst
Herrin
Freeman Spur*
Freges
Energy
Creal Springs
Crainville
Crab Orchard
Colp
Carbondale*
Carterville
Cambria
Bush
0
2
4
6
8
10
12
14
16
18
20

3.

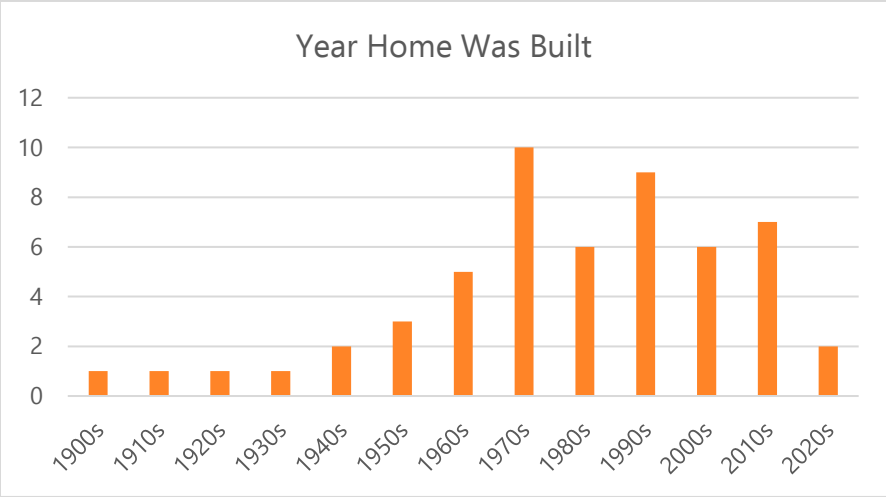

What Precinct is your home/property located in?
Stonefort
Creal Springs
Southern
Grassy
Crab Orchard
East Marion
West Marion
Carterville
Corinth
Lake Creek
Herrin
Blairsville
0
2
4
6
8
10
12
14
16

4.

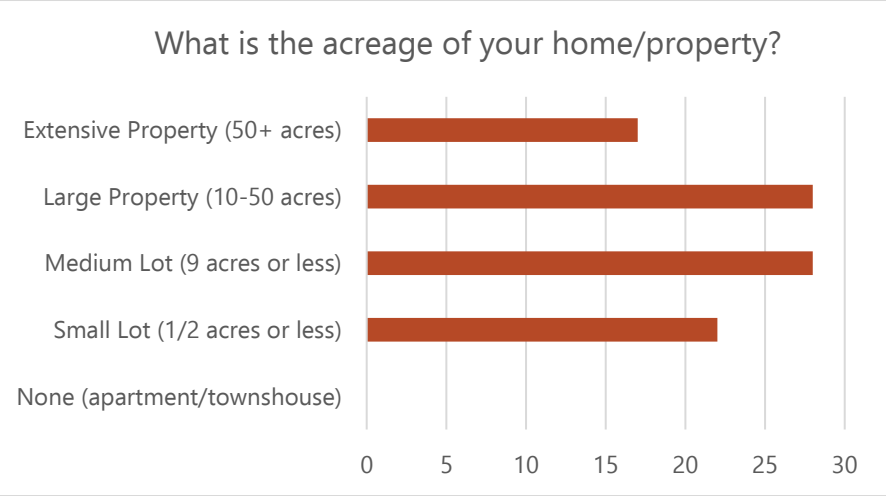

What is the acreage of your home/property?
Extensive Property (50+ acres)
Large Property (10-50 acres)
Medium Lot (9 acres or less)
Small Lot (1/2 acres or less)
None (apartment/townshouse)
0
5
10
15
20
25
30

Section 2: Home Structure Data

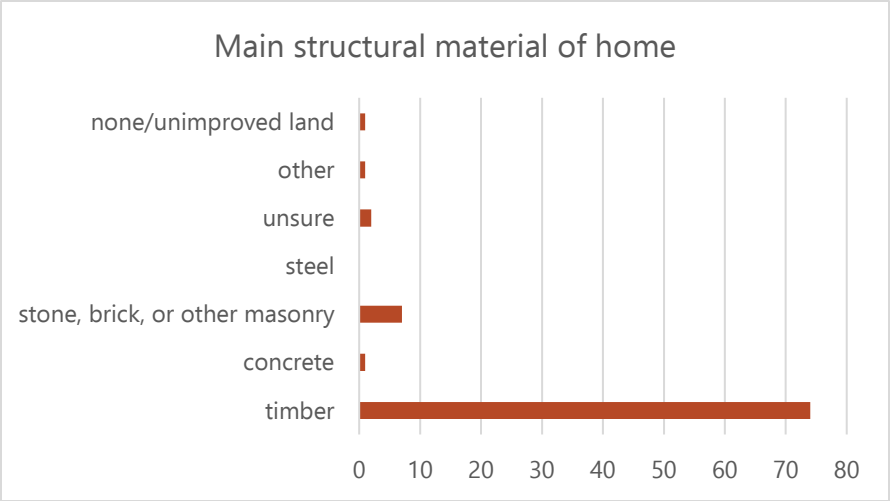
1.



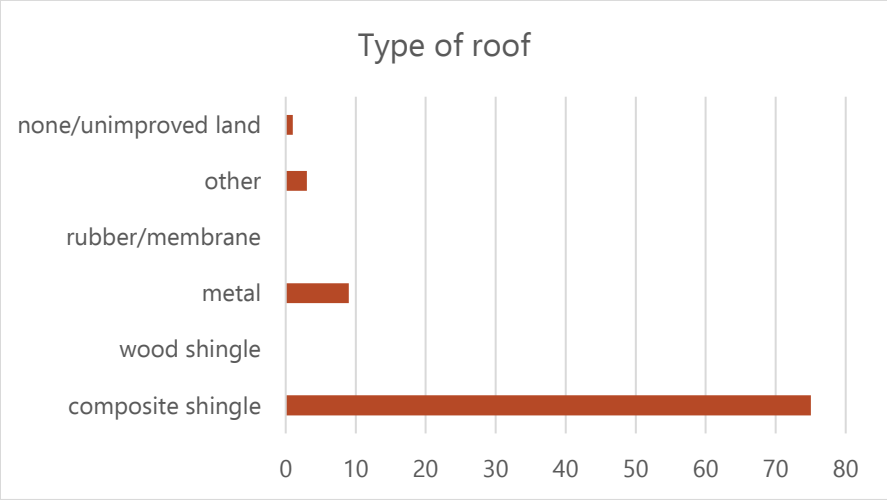
2.



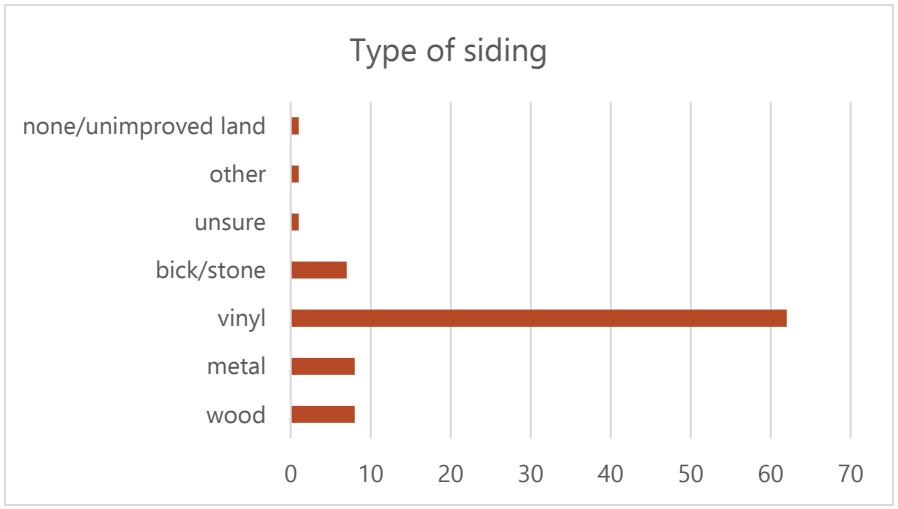
3.


Main structural material of home
none/unimproved land
other
unsure
steel
stone, brick, or other masonry
concrete
timber
0
10
20
30
40
50
60
70
80

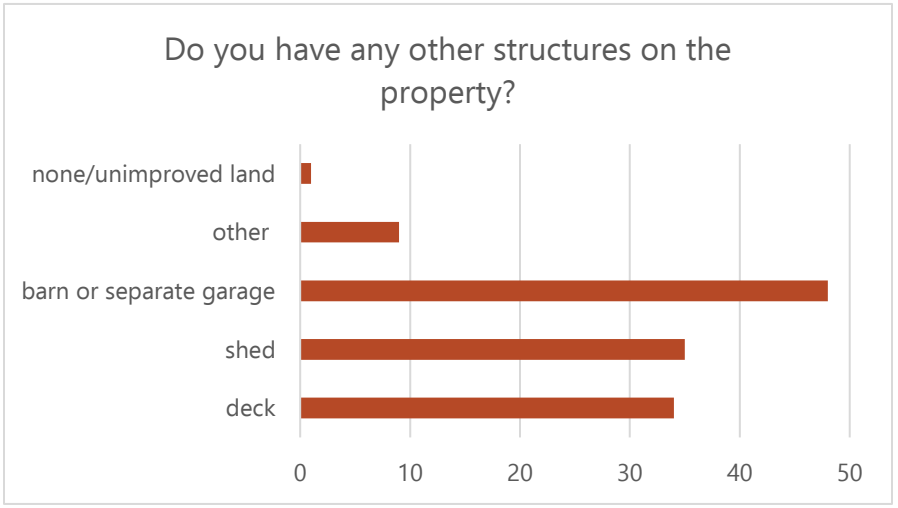
4.


Type of roof
none/unimproved land
other
rubber/membrane
metal
wood shingle
composite shingle
0
10
20
30
40
50
60
70
80

5.

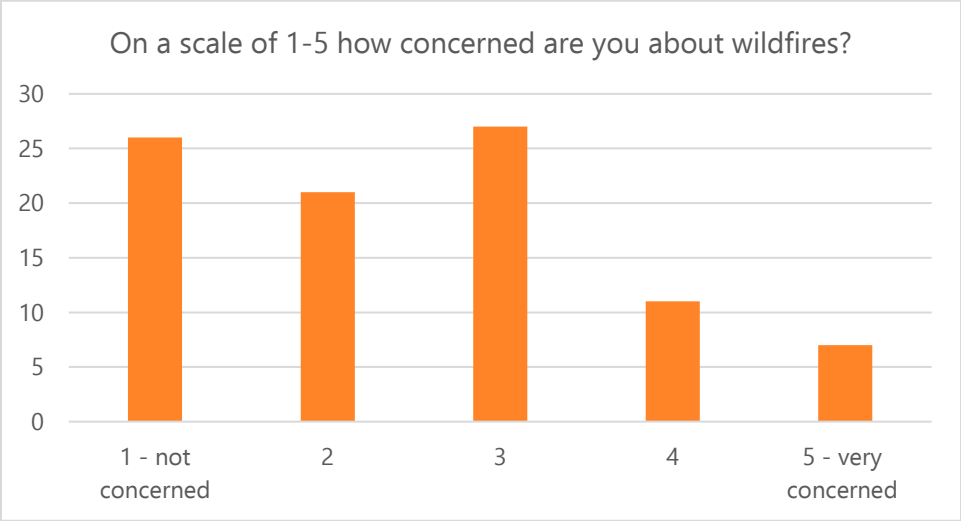

Type of siding
none/unimproved land
other
unsure
bick/stone
vinyl
metal
wood
0
10
20
30
40
50
60
70

6.

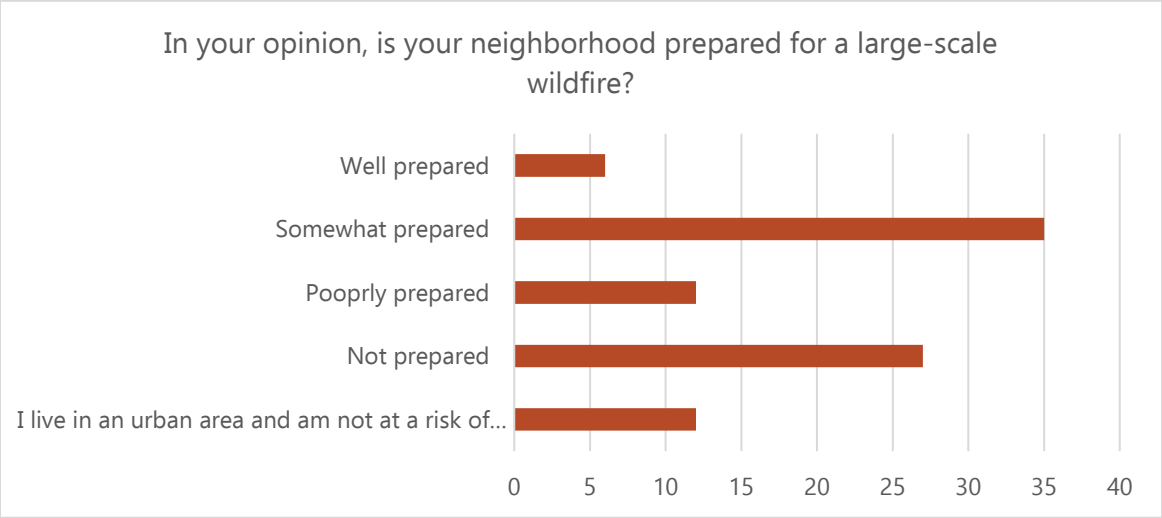

Do you have any other structures on the property?
none/unimproved land
other
barn or separate garage
shed
deck
0
10
20
30
40
50

Section 3: Perceptions of wildfire risk

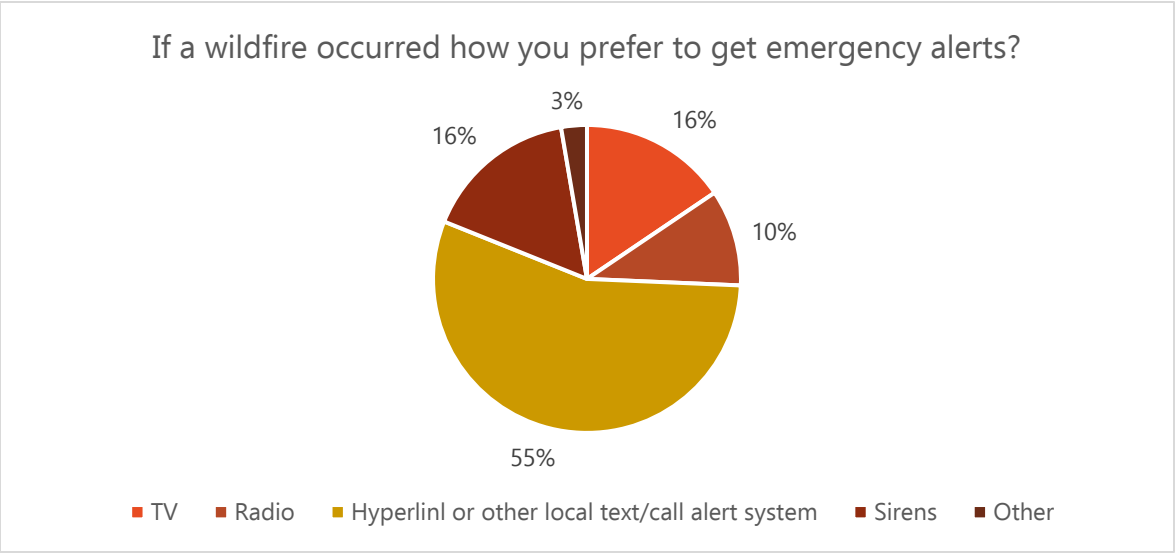
1.



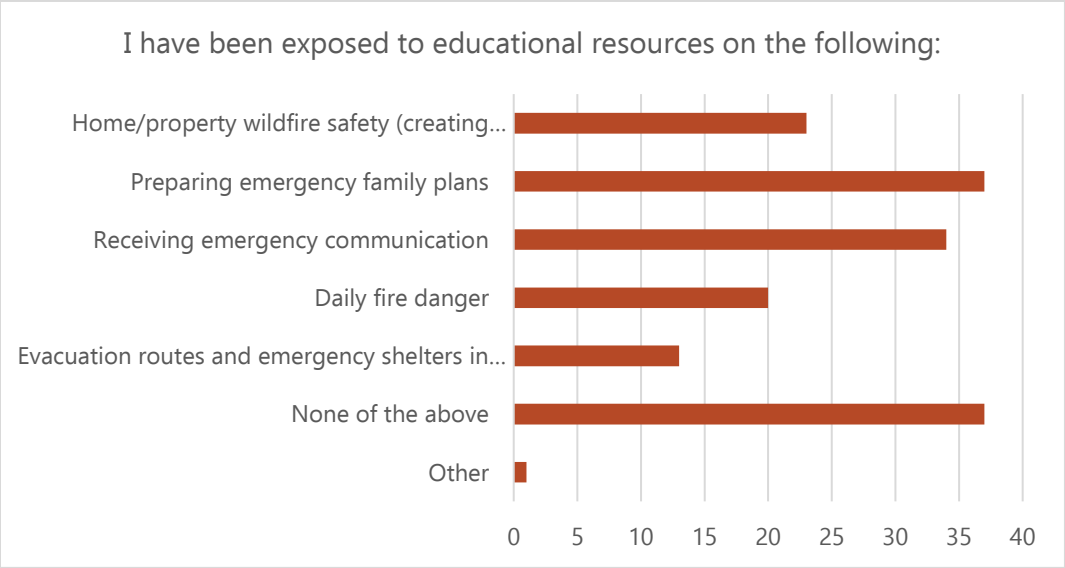
2.



3.


If a wildfire occurred how you prefer to get emergency alerts?
3%
16%
16%
10%
55%
TV
Radio
Hyperlinl or other local text/call alert system
Sirens
Other

4.


I have been exposed to educational resources on the following:
Home/property wildfire safety (creating...
Preparing emergency family plans
Receiving emergency communication
Daily fire danger
Evacuation routes and emergency shelters in...
None of the above
Other
0
5
10
15
20
25
30
35
40

Perception of Wildfire risk factors: the following two questions asked respondents to rank potential wildfire factors on a descriptive scale that was weighted to create a score representing general public level of concern for each factor.

Rank	Weight
Not contributing at all	0.5
Contributing a small amount	1.0
Contributing a moderate amount	1.5
Contributing a large amount	2.0
Contributing the most	2.5

5.

In your neighborhood, how would you rank each of the following factors contributing to overall wildlife risk?	**Level of concern:**
Vegetation on neighboring properties	119
Vegetation on your property	101
Dead/downed trees on neighboring properties	98
Dead/downed trees on your property	75
Invasive plant species	74
Distance to fire station	71
Lack of water supply	65
Climate change	61
Insect infestations	61
Limited road access	61
Tourism/camping	29

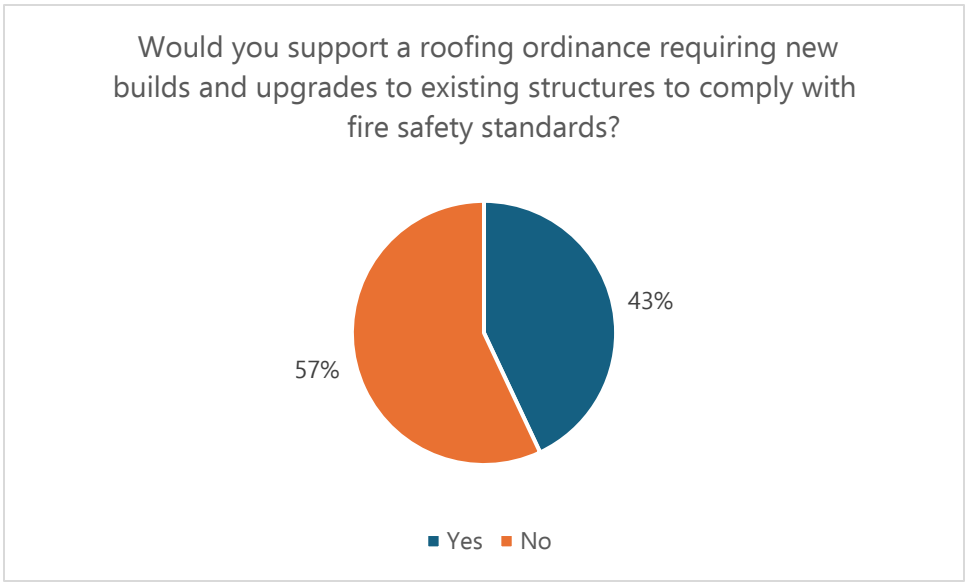
6.

In Williamson County as a whole, how would you rank each of the following factors contributing to overall wildlife risk?	**Level of concern:**
Vegetation on private property	124
Vegetation on public lands	121
Dead/downed trees on neighboring lands	111
Invasive plant species	98
Distance to fire station	94
Limited road access	92
Lack of water supply	90
Dead/downed trees on private property	83
Tourism/camping	83
Insect infestations	83
Climate change	71

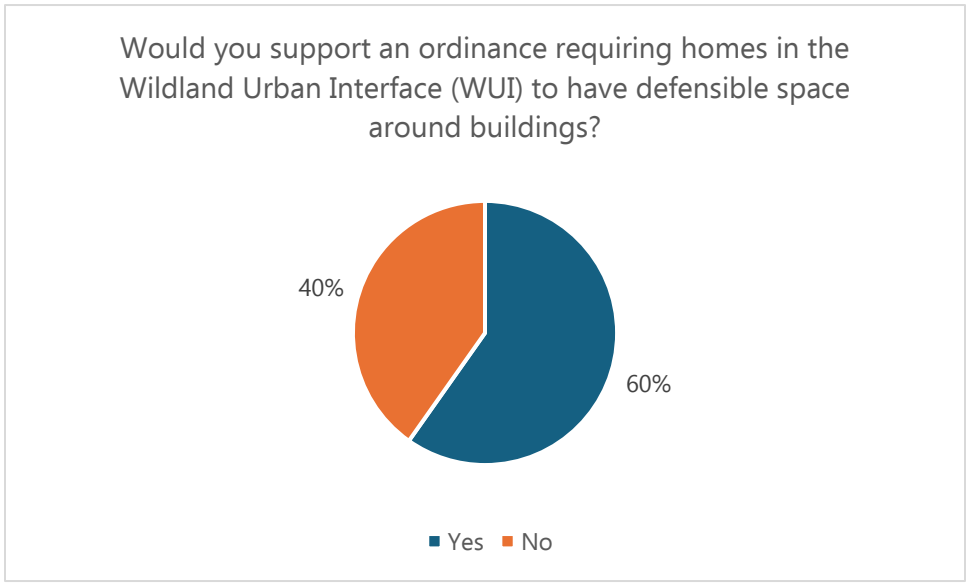
7. If you have any other comments regarding wildfire planning, please let us know here:

The county's fire department which responds to a majority of brush fires in the county, has next to no career firefighters. 3 full time guys that work 8-10 hour days, plus the chief and 50ish volunteers. They need actual staffing
Add more hydrants to rual areas I know the closest one to my farm is 2 miles away and the next closest is 5 miles
N/A
Promoting controlled burns could be very beneficial in preventing wild fires.
Lived here over 50 years. Wildfires aren't an issue.
This has never been a problem so yall need to stop acting like it is
My yes answers to the last two questions would be contingent on details.
No
We live at the County Boulder in Johnson County to Williamson County... We live on Lake of Egypt... The Lake water is HERE . We would very much like to have DRY HYDRANTS available for Quick access and unlimited supply of water if needed !
Invasive species, such as Autumn Olive is everywhere and extremely overgrown in Williamson County. There are limited resources to address the invasive species that pose significant fire risk.
Wildfire issues may need to be resolved
Williamson County is low risk. Expend resources elsewhere.
None
educating the public is crucial for preventing fires along with giving them the tools they need to evacuate from fires. Some of these older communities aren't connected to the internet so it's important to take that into consideration with any approach
I would welcome assistance in having a control burn on my property. Presently I have been unable to find anyone able to help me.

8.

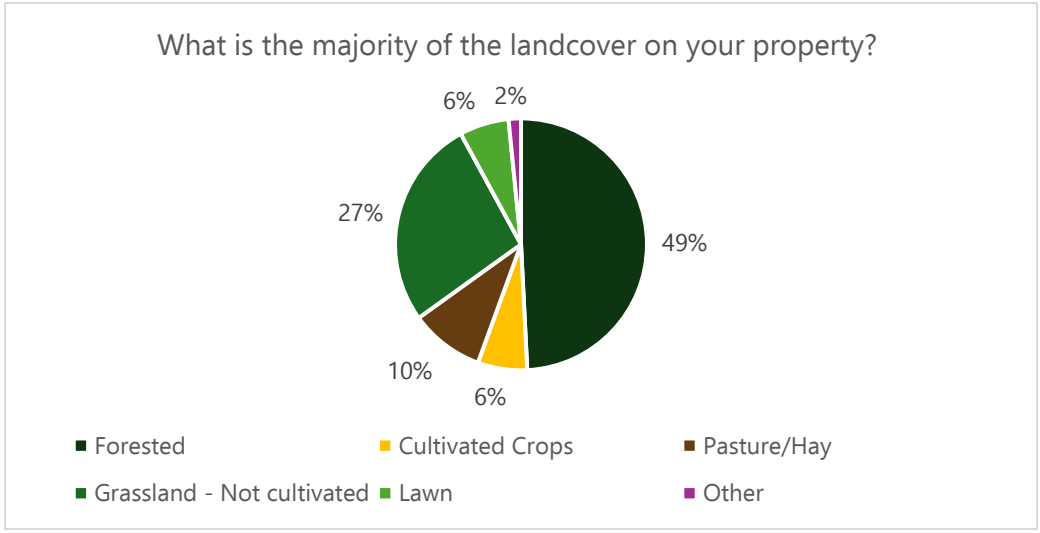

Would you support a roofing ordinance requiring new builds and upgrades to existing structures to comply with fire safety standards?
43%
57%
Yes
No

9.

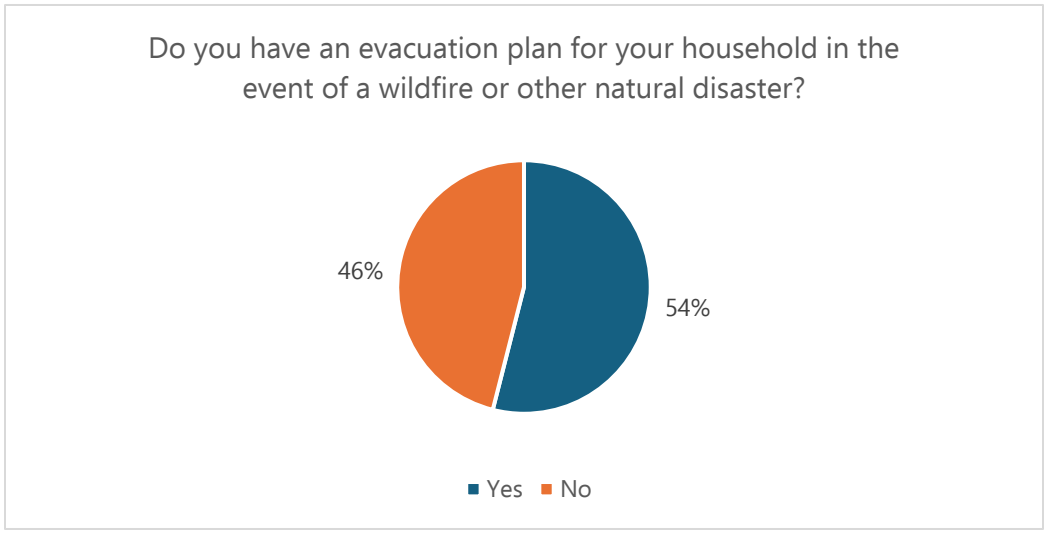

Would you support an ordinance requiring homes in the Wildland Urban Interface (WUI) to have defensible space around buildings?
40%
60%
Yes
No

Section 4: Large Property Owners, If you own 10 or more acres in Williamson County, please continue to the next section. Otherwise, you are finished with the survey. Thank you for participating!

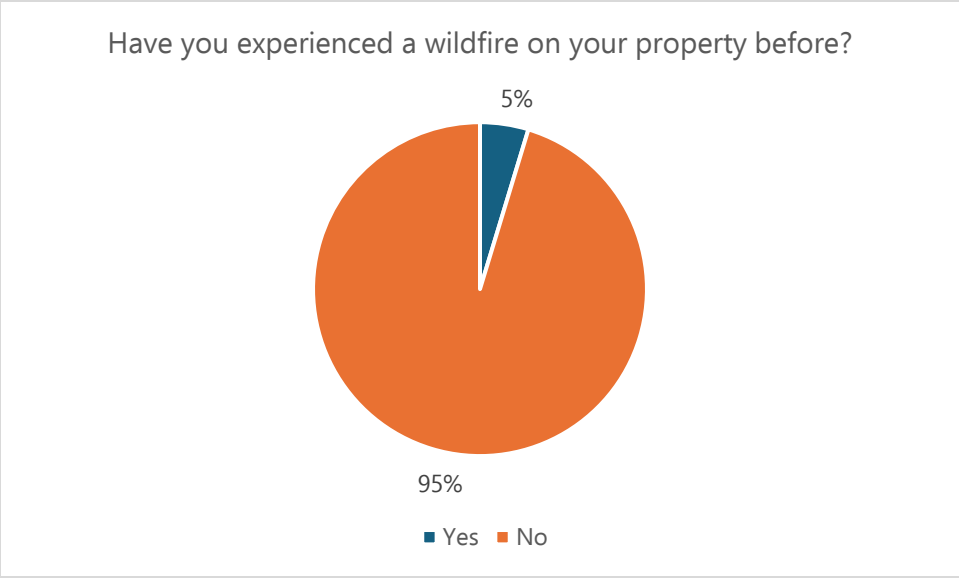
1.



2.



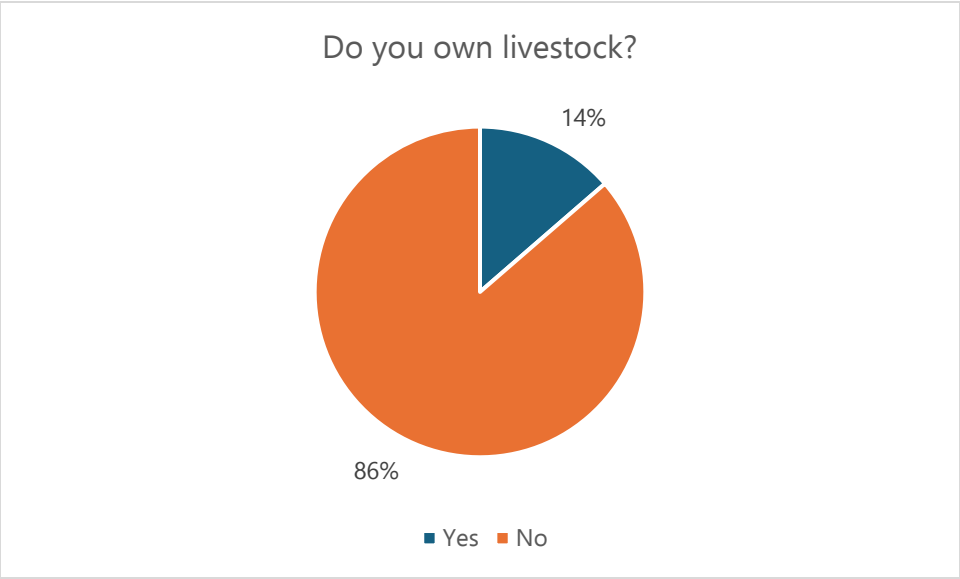
3.



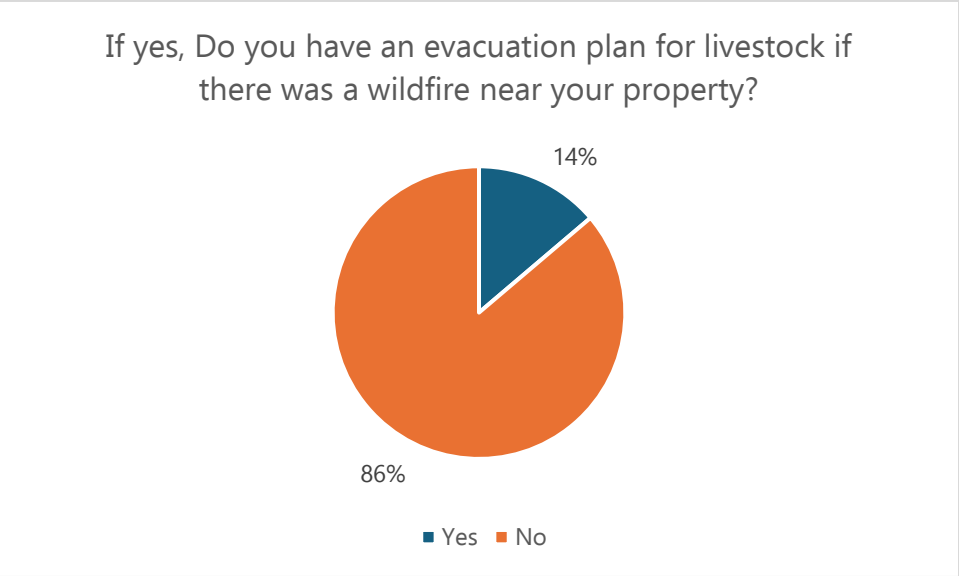
4. If yes, what year did the wildfire occur and how many acres burned?

Year of wildfire	**Acres burned**
2022	15
2022	30
Not reported	an IDNR prescribed burn of 200 acres
* a prescribed burn is not considered wildfire by the definition of this Plan, but that is how the respondent answered the survey	

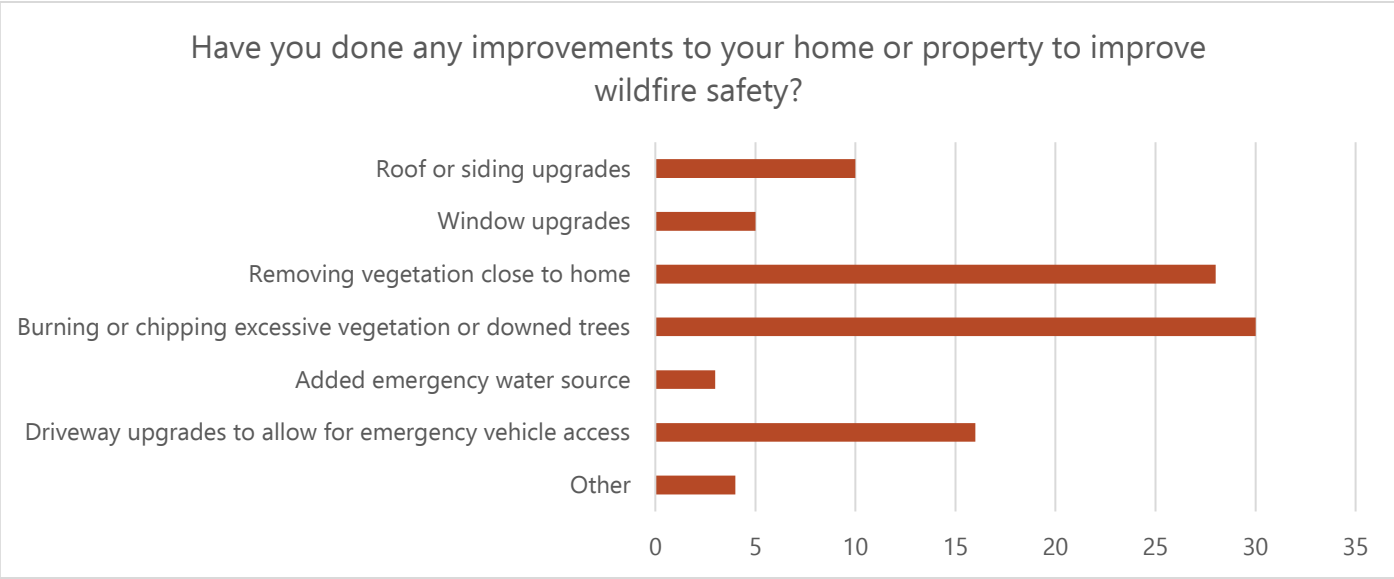
5.


Do you own livestock?
14%
86%
Yes
No

6.


If yes, Do you have an evacuation plan for livestock if there was a wildfire near your property?
14%
86%
Yes
No

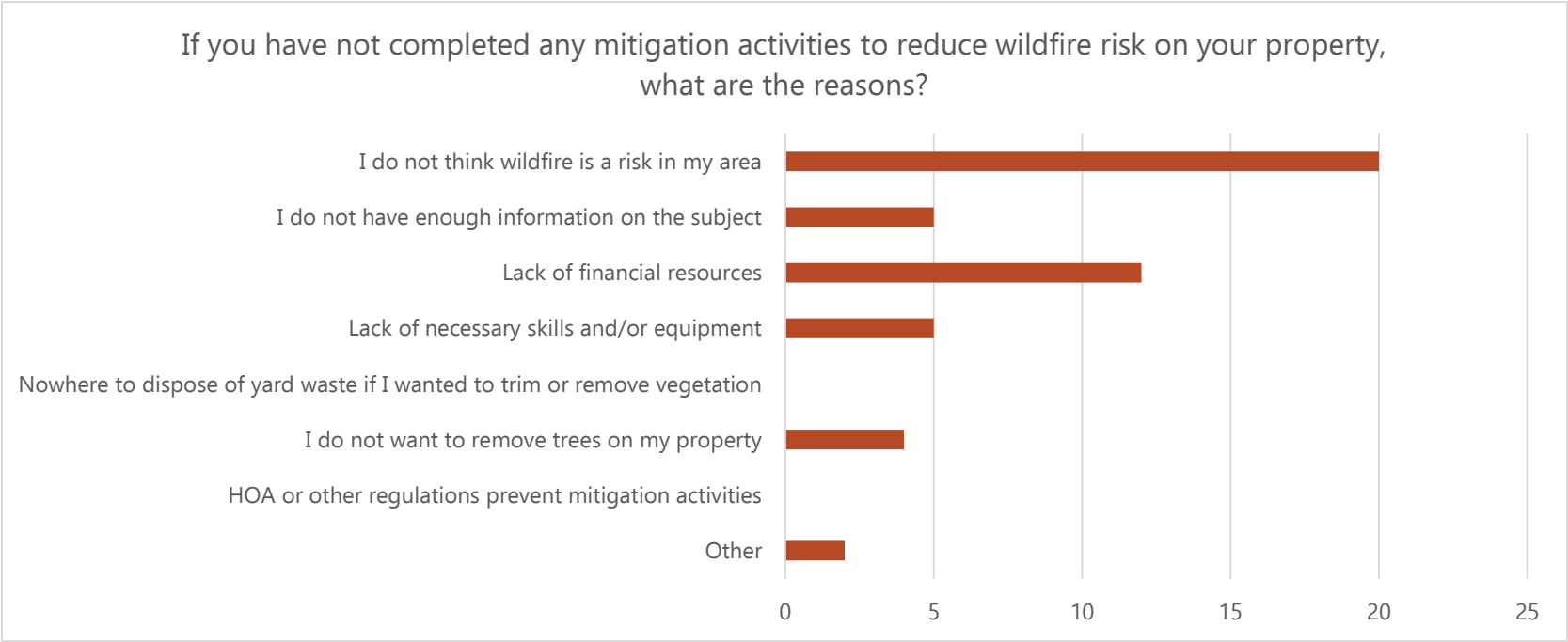
7.



Responses for "other"

Keep a mowed path around my crops between the woods
clear brush groves on property
Removing invasive plants
unimproved land

8.



Responses for "other":

.
No assistance available to do a control burn.

11. Mitigation Strategies

Mitigation strategies include any equipment purchases, staff training, public education programs/events, and land management/fuels reduction activities that will be utilized to reduce wildfire risk in Williamson County. Strategies were proposed by many different planning partners, including fire protection personnel, forestry professionals, and other partners. Additionally, mitigation strategies were generated from the Community Assessor Tool and are listed in this section as well.

Planning Team Suggested Strategies

Sorted alphabetically by strategy code.

Codes: **FR**: fuels reduction **T**: training **E**: Equipment **WS**: water source **OE**: outreach/education **C**: communication **O**: Other

Code	Project/Equipment Need	Funding Source/ Potential Grants	Priority	Jurisdictions Involved	Strategy Proposed by
C	WCFPD is in need of better radio equipment. We would like to see more repeaters where possible.	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	WCFPD	Eric Miller, Battalion Chief – WCFPD
C	the current radio system is hard to reach dispatch from areas on the west of our town. perhaps another repeater would fix this issue	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Cambria FD	Matthew Morgan, Lieutenant – Cambria FD

Code	Project/Equipment Need	Funding Source/ Potential Grants	Priority	Jurisdictions Involved	Strategy Proposed by
C	Radio interoperability needs updating all area Fire dept. with newer radios coms	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Marion FD	Chief Barnett, Marion FD
C	We need upgraded radio equipment and an additional repeater that would benefit western Williamson County	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Hurst VFD	Tom Gottschalk, Fire Chief - Hurst VFD
C	More state and federal response to assist local volunteer/understaffed fire departments	NA	High	IDNR, other State/Fed partners	Jacob Hess, District Forester
C	we need additional warning siren and updated communication equipment	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Energy FD	Andrew Barclay, Fire Chief & Public Works Superintendent – Village of Energy
C	New radio equipment needed	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Bush VFD	James Bryley, Fire Chief – Bush VFD
C	In need of communication equipment upgrades	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Stonefort VFD	Monty Dunn, Fire Chief – Stonefort VFD

Code	Project/Equipment Need	Funding Source/ Potential Grants	Priority	Jurisdictions Involved	Strategy Proposed by
E	Side by side, skid unit, trailer to haul skid unit	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	LEFPD	Brady Crane, captain - Lake Egypt Fire Protection District
E	skid steer and excavator with appropriate attachments, update UTV fleet, PPE	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	WCFPD	Eric Miller, Battalion Chief – WCFPD
E	4x4 side by side for fire response	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Herrin FD	Shawn Priddy, Fire Chief – Herrin FD
E	Cambria VFD is in need of a UTV, torches, fire rakes, shovels, and chainsaw. They could also use an additional vehicle to fight brush fires.	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Cambria FD	Matthew Morgan, Lieutenant – Cambria FD
E	Additional Brush truck and bigger brush pump, along with additional breathing apparatus and possibly a skid steer for clearing ditch lines and overgrowth	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Marion FD	Chief Barnett, Marion FD
E	Brush truck & UTV, Wildland PPE, & Wildland hand tools and suppression supplies	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Hurst VFD	Tom Gottschalk, Fire Chief – Hurst VFD
E	3 utvs, 1 atv with water tanks	USDA CWDG or Cohesive Strategy grant programs	High	SIPBA, Shawnee RC&D	Zack Stawicki - SIPBA
E	More equipment for more efficient fuels treatments and fire break establishment	USDA CWDG or Cohesive Strategy grant programs	High	IDNR	Jacob Hess, District Forester
E	Fecon Mower on skidsteer	USDA CWDG or Cohesive Strategy grant programs	High	SIU TON	Dr Charles Ruffner – SIU TON

Code	Project/Equipment Need	Funding Source/ Potential Grants	Priority	Jurisdictions Involved	Strategy Proposed by
E	forestry head for excavator	USDA CWDG or Cohesive Strategy grant programs	High	Williamson County Highway Dept	Travis Emery, County Engineer
E	the Village of Energy Fire Department needs additional small equipment for wildland fires.	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Energy FD	Andrew Barclay, Fire Chief & Public Works Superintendent – Village of Energy
E	Brush truck, chainsaws, Indian packs, SCBAs, UTV	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Bush VFD	James Bryley, Fire Chief – Bush VFD
E	In need of respirators, updates to brush unit vehicle, and a pump system.	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Stonefort VFD	Monty Dunn, Fire Chief – Stonefort VFD
FR	Property owned by the Southern Illinois Power Coop, west and south of the power plant. Marion Country Club Subdivision - Arcadia Lake Rd. Pleasant Valley Subdivision - Bloodworth Lane Areas east of Pharaoh's Garden Subdivision and Egyptian Hills Pulleys Mill Rd.	USDA CWDG or Cohesive Strategy grant programs	Medium	LEFPD, WCFPD, EECA, Landowners, SIPBA, Shawnee RC&D, State/Fed partners	Brady Crane, captain - Lake Egypt Fire Protection District
FR	We would like to have a healthy land management program as well as 3-4 Chipping days a year. Chipping days would allow materials to be recycled. We need to clear and remove vegetation on several miles of roadways on the eastern side of Williamson County.	USDA CWDG or Cohesive Strategy grant programs	Medium	LEFPD, WCFPD, County Hwy Dept, Landowners, SIPBA, Shawnee RC&D, State/Fed partners	Eric Miller, Battalion Chief – WCFPD

Code	Project/Equipment Need	Funding Source/ Potential Grants	Priority	Jurisdictions Involved	Strategy Proposed by
FR	Tree removal programs near structures and roadways	USDA CWDG or Cohesive Strategy grant programs	High	LEFPD, WCFPD, County Hwy Dept, Landowners, SIPBA, Shawnee RC&D, State/Fed partners	Tom Gottschalk, Fire Chief - Hurst VFD
FR	Larger, contiguous forested acres/grasslands that provide better resilient communities for fauna and flora that could be at higher risk for damage from wildfire, lack of management or development in Williamson County. More prescribed fire and invasives treatments done on private property within the county to promote better land stewardship and overall fire wise communities.	USDA CWDG or Cohesive Strategy grant programs	High	Fire Protection jurisdictions, County Hwy Dept, Landowners, SIPBA, Shawnee RC&D, State/Fed partners, TNC Illinois	Jacob Hess, District Forester
FR	RX or Mechanical Treatment of private property adjacent to Refuge lands.	USDA CWDG or Cohesive Strategy grant programs	High	Fire Protection jurisdictions, County Hwy Dept, Landowners, SIPBA, Shawnee RC&D, State/Fed partners, TNC Illinois	Dave Jones, Fire Specialist - CONWR
FR	I would like to see fuel treatments (Prescribed fire, Thinning, Mastication) across the county especially in our larger forested blocks. This will increase access for equipment and response to wildland fires.	USDA CWDG or Cohesive Strategy grant programs	Medium	Fire Protection jurisdictions, County Hwy Dept, Landowners, SIPBA, Shawnee RC&D, State/Fed partners, TNC Illinois	Dave Jones, Fire Specialist - CONWR

Code	Project/Equipment Need	Funding Source/ Potential Grants	Priority	Jurisdictions Involved	Strategy Proposed by
FR	We intend to begin active land management activities in the next 2-3 years on our SIUC properties	USDA CWDG or Cohesive Strategy grant programs	Medium	SIU TON	Dr Charles Ruffner – SIU TON
FR	Cross-boundary collaborative RX burn and fuels reduction projects with landowners, Shawnee RCD, Fire Protection Districts, and other forestry professional	USDA CWDG or Cohesive Strategy grant programs	High	SIU TON, Fire Protection jurisdictions, Landowners, SIPBA, Shawnee RC&D, State/Fed partners, TNC Illinois	Kelsey Bowe CWPP coordinator
O	Update building codes, building codes and ordinances can significantly reduce damage from future natural disasters, including wildfire	FEMA Building code plus-up funds, contact IEMA or Kelsey Bowe for more information on programs	High	City Councils, County Board, FPD Boards	Tom Gottschalk, Fire Chief - Hurst VFD ; Kelsey Bowe CWPP coordinator
O	would like to increase permanent fire staff to a crew of 8. That would be an increase of 4 personnel at this time.	Other federal funding	High	CONWR	Dave Jones, Fire Specialist - CONWR
O	Better access points needed	USDA CWDG or Cohesive Strategy grant programs	Medium	SIU TON	Dr Charles Ruffner – SIU TON
OE	More education programs for homeowners' associations	USDA CWDG or Cohesive Strategy grant programs	Medium	LEFPD	Brady Crane, captain - Lake Egypt Fire Protection District
OE	We would like to have at least 2 education events each year, spring and fall.	USDA CWDG or Cohesive Strategy grant programs	Medium	WCFPD	Eric Miller, Battalion Chief – WCFPD
OE	Increase education/outreach programs	USDA CWDG or Cohesive Strategy grant programs	Medium	Marion FD, Stonefort VFD	Chief Barnett, Chief Monty Dunn – Marion & Stonefort FDs

Code	Project/Equipment Need	Funding Source/ Potential Grants	Priority	Jurisdictions Involved	Strategy Proposed by
OE	Programs to assist landowners looking into land management tools and better understanding what hazardous fuels are in/on their area/land.	USDA CWDG or Cohesive Strategy grant programs	High	IDNR	Jacob Hess, District Forester
OE	Public outreach of the potential for damaging wildfires in our area so landowners realize the risks from lack of property management.	USDA CWDG or Cohesive Strategy grant programs	Medium	CONWR, FPDs	Dave Jones, Fire Specialist - CONWR
OE	1-2 Firewise events/year	USDA CWDG or Cohesive Strategy grant programs	Medium	Bush VFD	James Bryley, Fire Chief – Bush VFD
T	We have approximately 5 people that need the basic S130/190 courses and others that would be interested in higher level certifications/classes.	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	LEFPD	Brady Crane, captain - Lake Egypt Fire Protection District
T	More wildfire training needed for department personnel	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	WCFPD	Eric Miller, Battalion Chief – WCFPD
T	we would like 8 of our staff members to take new training	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Carterville FD	Jason Sheraden, Fire Chief – Carterville FD
T	We would like to have 3 members take new trainings	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Pittsburg VFD	Hilary Davis, secretary – Pittsburg VFD
T	yes we would like all staff(roughly 15) to have more wildland training classes	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Cambria FD	Matthew Morgan, Lieutenant – Cambria FD
T	Any and all training would be beneficial	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Marion FD, Stonefort VFD	Chief Barnett, Chief Monty Dunn – Marion & Stonefort FDs

Code	Project/Equipment Need	Funding Source/ Potential Grants	Priority	Jurisdictions Involved	Strategy Proposed by
T	We would like 5 of our staff members to take new training for prescribed burning.	USDA CWDG or Cohesive Strategy grant programs	High	Hurst VFD	Tom Gottschalk, Fire Chief – Hurst VFD
T	minimum 2 trainings a year on Rx fire	USDA CWDG or Cohesive Strategy grant programs	High	SIPBA, Shawnee RC&D, local, state, & fed partners	Zack Stawicki - SIPBA
T	Offer RX burn trainings to landowners and/or fire departments	USDA CWDG or Cohesive Strategy grant programs	Medium	SIU TON, Fire Protection jurisdictions, Landowners, SIPBA, Shawnee RC&D, State/Fed partners, TNC Illinois	Dr Charles Ruffner – SIU TON
T	Annual training events for fire protection staff to learn RX burning and other fuels mgmt. techniques	USDA CWDG or Cohesive Strategy grant programs	High	Fire Protection jurisdictions, SIPBA, Shawnee RC&D, State/Fed partners, TNC Illinois	Kelsey Bowe CWPP coordinator
T	Would like all of their staff to take trainings on Rx burning, wildfire response, and property inspections/assessments	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	Bush VFD	James Bryley, Fire Chief – Bush VFD
WS	more dry hydrants	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	FPDs, FDs, Landowners, water districts	Brady Crane, captain - Lake Egypt Fire Protection District

Code	Project/Equipment Need	Funding Source/ Potential Grants	Priority	Jurisdictions Involved	Strategy Proposed by
WS	more dry hydrants in the southeast, and central parts of the county.	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	Medium	FPDs, FDs, Landowners, water districts	Eric Miller, Battalion Chief – WCFPD
WS	Water sources needed in the following areas: South dykersburg area btw Rte 13 and Stonefort, Freeman Spur area (currently has pressure issues), Blairsville area S of Hurst, Clifford Rd area N of Colp, Stiritz area, Ferges area	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	Medium	FPDs, FDs, Landowners, water districts	Eric Miller, Battalion Chief – WCFPD
WS	Additional dry hydrants would be a huge help	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	FPDs, FDs, Landowners, water districts	Chief Barnett, Marion FD
WS	Dry hydrant Big Muddy River along Lockeyville Road and near the Blairsville bridge	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	FPDs, FDs, Landowners, water districts	Tom Gottschalk, Fire Chief
WS	We do not have hydrants that are rated for fire protection. They are rated for flushing only. We would love to have the funding to replace our hydrants with those that are rated for fire protection.	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	High	FPDs, FDs, Landowners, water districts	Candy Coulter, District Manager - Blairsville Public Water District
WS	New hydrants	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	Medium	FPDs, FDs, Landowners, water districts	James Bryley, Fire Chief – Bush VFD
WS	In need of larger tank for Tendor	USDA CWDG or Cohesive Strategy grant programs, IDNR Volunteer Fire Assistance Program, FEMA Assistance to Firefighters Grants Program	Medium	Stonefort VFD	Monty Dunn, Fire Chief – Stonefort VFD

Community Assessment Tool Mitigation Strategies

The following strategies are generated by the CAT based on the risk rating of each community. Appendix 1 contains the full assessment reports including specific strategies for each community.

Click here to view the Northeast-Midwest State Foresters Alliance web tools

Suppression

- Keep community ingress/egress open and maintained (cleared of vegetation)
- Develop community plan for evacuation routes, safe zones, staging areas
- If community is gated, develop evacuation plan and ensure emergency responder access
- Ensure residents know their closest exit in case of emergency
- Evaluate adding a secondary ingress / egress route for use in emergencies
- Keep shoulders of road clear for emergency vehicle use whenever possible
- Consider providing pull-offs every 100 yards
- Coordinate with fire department to ensure they are aware of road width limitations
- Be aware road width could limit emergency vehicles to brush trucks only
- Ensure that road maintenance plan is in place
- Keep hydrants clear of obstructions and vegetation
- Ensure hydrants and water source are marked, accessible, and properly maintained
- Maintain unobstructed access into cul-de-sacs
- Ensure cul-de-sacs are free of vehicles and/or other items
- Coordinate with emergency responders to test cul-de-sac turnaround with their emergency response vehicles
- Keep street signs visible and clear of vegetation and fine fuels
- Maintain driveway access and clearance
- Be aware of your limited access to a water source and coordinate with the closest Fire Department accordingly
- Establish and maintain contact with the closest Fire Department
- Be aware of local hazardous features and plan appropriately in the event of a wildfire approaching your area

- Ensure emergency responders are aware of local hazardous features that can hinder fire suppression efforts
- Be aware of the importance of early detection and reporting of any emergency
- Work with community to become more proactive towards protecting your life and property against wildfires

Surrounding Environment

- Identify heavy fuels and consider removal or breaking them up
- Consider removal of ladder fuels that allow fire to climb from lower to higher vegetation
- Trim tree canopies regularly to keep their branches a minimum of 10' from structures and other trees
- Leave 30 feet between clusters of two to three trees, or 20 feet between individual trees
- Prune trees 6'10 feet from the ground
- Be aware of the risks from falling embers in relation to nearby fuels and defensible space
- Mow lawns regularly
- Water grass, plants, trees and mulch regularly
- Create a spacing of 30 feet between tree crowns
- Create a 'fire-free' area within 5 feet of your home, using non-flammable landscaping materials
- Remove dead vegetation from under the deck and within 10 feet of the house
- Consider xeriscaping if you are affected by water restrictions
- Plant a mixture of deciduous trees (e.g. oak and maple) and coniferous trees (e.g. pine)
- Create fuel breaks like driveways and gravel walkways
- Remove smaller conifers that are growing between taller trees
- Remove heavy accumulations of woody debris
- Reduce the density of tall trees so canopies do not touch
- When possible, install firebreaks and reduce fuel loads around community boundary to reduce risk from adjacent wildlands
- Provide FIREWISE construction guidelines to developers / owners
- Consider developing covenant restrictions, if applicable

Structures

- Use fire-resistant roofing material such as metal, tile or Class A shingles
- Inspect for and address gaps in roofing that can expose roof decking or supports
- Place angle flashing over openings between the roof decking and fascia board
- Clear branch, leaf-litter and other debris from roof regularly
- Prune tree limbs away from roof
- Clean vents to keep them free of debris, allowing them to keep embers out while allowing air flow for ventilation
- Enclose or box-in eaves with non-combustible materials such as metal, cement board or stucco
- Install a 1/8 inch metal screen behind roof vents
- Keep landscaping materials and vegetation away from combustible siding
- Increase defensible space from combustible siding
- Replace with noncombustible siding when possible
- Remove combustible vegetation and leaf litter
- Spread gravel or other non-combustible material under the deck
- Screen in the bottom of the deck with metal 1/8-inch screening
- Separate wooden fences from the house with a stone or metal barrier
- Maintain debris-free decks (e.g. remove ignitable furniture, planters and covering propane grills, especially during high fire danger periods)
- Consider disconnecting fences from structures, or replacing materials directly attached to structures with fire resistant materials
- Be aware that wooden attachments can act as a fuse to the structure
- Keep gutters clear of fine fuels and debris
- Use metal framing or aluminum coverings for wood or vinyl
- Use a fiberglass or metal screen
- Use drapes and shutters that are fire resistant to help reduce the likelihood of fire spread
- Keep vegetation pruned to a minimal level near gas utilities

- When possible, place propane tanks 20' away from home and structures
- Keep vegetation pruned and mowed around electric cabinets
- Place non-flammable mulch (rock, stone) around base of electrical cabinets
- Plant less flammable bushes and shrubs around electrical cabinets

12. Related Plan Summaries

12.1. Touch of Nature Plan

The Touch of Nature Outdoor Education Center (TON) is a 1500 acre, mostly forested property owned and maintained by Southern Illinois University. They are well known for hosting summer camps, educational programs, and a variety of community events.

Touch of Nature created a land management plan to support the Illinois Wildlife Action Plan (IWAP) – Forests and Woodlands Campaign by reintroducing fire disturbances to a significant portion of their land. TON's forests have historically been comprised of oak-hickory species that are reliant on consistent fires to maintain their structure. The overstory provides evidence of this history, but the understory has been overrun by species that indicate a pattern of mesophication, or the process of advanced succession whereby shade tolerant, and mostly fire intolerant, species tend to thrive in the absence of recent disturbance. There are also areas where invasive species have started to take over, and burning has been proposed as a method of removing or suppressing their spread.

To promote the use of prescribed fire, Touch of Nature will partner with established burn associations to conduct field training and leadership workshops; offering education to SIU students, faculty, and staff as well as local landowners and volunteers. One established group that TON has focused on is the SIUC Fire Dawgs, which uses both the Illinois Wildlife Action Plan (IWAP) and Illinois Forest Action Plan (IFAP) strategies for improving oak forest health.

Within TON, there are multiple land management units (LMUs) that are each split into one or more bun units. These burn units are of a manageable size, and many of them have already been on a burning regime for many years, while others have only recently been proposed and established. TON's burn units and LMUs have undergone extensive research and data collection to provide answers on the health and history of forest stands, and are burned according to the needs of each unit. Some units, such as the "Trainer" burn unit are used for educational exercises, which serve an even more important purpose. Trained professionals are in short supply, so TONEC's training actions provide an important service to the larger Southern Illinois region.

12.2. IL Forest Action Plan

The Illinois Forest Action Plan (IFAP) begins by acknowledging that oak-hickory forests across the state are threatened by a lack of disturbance. Reductions in the frequency of

beneficial disturbances, including fire, have added to the suppression of oak seedlings and increased the frequency of non-oak seedlings and saplings. To counteract this, prescribed fire should be used alongside other manufactured disturbances such as timber harvests and manual thinning of saplings.

Prescribed fire is described as a priority issue for the state of Illinois, and the IFAP actively encourages its use. Prescribed burns can reduce fuel loads in forests, cutting down the risk of wildfires, while also improving forest stand quality as described earlier. The IFAP encourages the education of landowners on the benefits of fire, while also emphasizing the risks and requirements. Incentive programs and assistance are offered to encourage safe, legal burning on forested lands. The state of Illinois requires a burn plan, as well as oversight by a certified burn boss before any prescribed burns can begin.

While encouraging the use of prescribed fire, the IFAP also expresses a desire to reduce wildfire frequency and intensity. Many factors can threaten the state's forests and its residents, and overall, the risk of wildfire is low, but the southern portion of the state is at a significantly higher risk than most other areas. The state's government limits burning, especially in high-risk areas, to specific seasons; even issuing burn bans when droughts and other risk factors reach high levels of intensity.

Overall, the Illinois state government favors local planning over state-wide plans. Recently, Community Wildfire Protection Plans (CWPPs) have been heavily promoted as the best method of spreading information and developing cohesive response plans for local fire services. The state offers incentives such as funding opportunities and grants to encourage planning on a local level, which promotes the involvement of individuals and departments that would benefit most from these plans. The state also encourages the participation of fire district personnel by offering training and funding to their programs, and it encourages forestry professionals to stick around while promoting the addition of new people into the field.

12.3. Crab Orchard Wildland Fire Management Plan

The Crab Orchard Wildland Fire Management Plan was drafted as a comprehensive plan for the control and execution of fires across the refuge. As of 2013, the refuge was 60% forest and shrubland, but it was historically 90-95% forested. The 10-year plan outlined in the document includes steps to use prescribed burning to improve habitats, monitoring and research objectives, and what they plan to do to combat wildfires.

An interagency plan to monitor and research the refuge lands will contribute to the efficacy of prescribed burns, and the response to wildfires. Monitoring of prescribed

burns will be carried out, and after each burn, they will measure ongoing ecological changes and impacts of the burn plan. Individual plans for each area with burnable vegetation will accompany these measures, allowing swift and educated action when dealing with any kind of fire.

All wildfires will be extinguished by trained professionals before they spread and cause damage. Detection of wildfires will be predominantly done through public contact with authorities, but there will be increased patrolling during times of high fire risk. The strict response to wildfires is important because there is a significant amount of WUI in and around Crab Orchard Wildlife Refuge. This WUI is largely composed of industrial complexes that would present significant challenges if they were to catch fire. To further protect structures in the event of an uncontrolled wildfire, mitigation efforts such as firewise landscaping, mechanical fuel reduction, creation of wide buffer zones, and regular prescribed fire will be used. These practices will be applied to all structures within the refuge, but also along areas adjacent to private property. The refuge will conduct community education programs to prevent accidental fires, and they will use grants, community assistance, and personnel trainings to further decrease the risk of uncontrolled wildfires.

As mentioned earlier, prescribed fire will be a large part of the Crab Orchard plan in the future. To manage the land effectively, four management units were created based on function and purpose. These units are categorized as restricted use, public use, research areas, and wilderness areas. Trained burning personnel with proper licensing will carry out controlled burns, taking safety into account not only for themselves but for the people surrounding the land. Smoke management is a very important part of planning since there are several roads and highways near the refuge, as well as an airport with consistent air traffic. When burning, the main goal is to restore historic conditions to degraded portions of the habitat. Of course, this goal should not outweigh the importance of threatened and endangered (T&E) species currently present on the property. There are two confirmed T&E species of bat present in the refuge area, as well as several T&E species with the potential to use Crab Orchard land. When planning their burns, personnel must take these species into account, and avoid damaging habitats or structures important to their continued use of the area.

While the Crab Orchard Wildland Fire Management Plan is comprehensive and well-written, it requires more staffing and funds than available at the time of its writing. The refuge staff plans on working to acquire extra funding and personnel through training, grants, and funding from local and state governments.

12.4. Multi-Hazard Mitigation Plans

Williamson County updated its multi-hazard mitigation plan (MHMP) in 2023. While the documents cover a wide array of hazards and disasters, some sections do mention wildfires and how they should be handled; classifying them as a 2 out of 4 on the risk scale as it applies to the county. The plans discuss possible catalysts for fires, including lightning, drought, earthquakes, excessive heat, and explosions of hazardous material. Many of these risk factors apply to forests, WUI, and urban areas. A main concern highlighted in these plans is the impact that uncontrolled fires could have on critical facilities and infrastructure, causing structural failures that could lead to further failings and damage if the fire is paired with another serious event such as an earthquake or flood.

To combat the risk of wildfires, the plans recommend awareness of at-risk facilities and increased funding and improvements to fire departments. The plans each list every fire department in their respective counties as a resource for readers. Completing this CWPP was a mitigation strategy outlined in the MHMP.