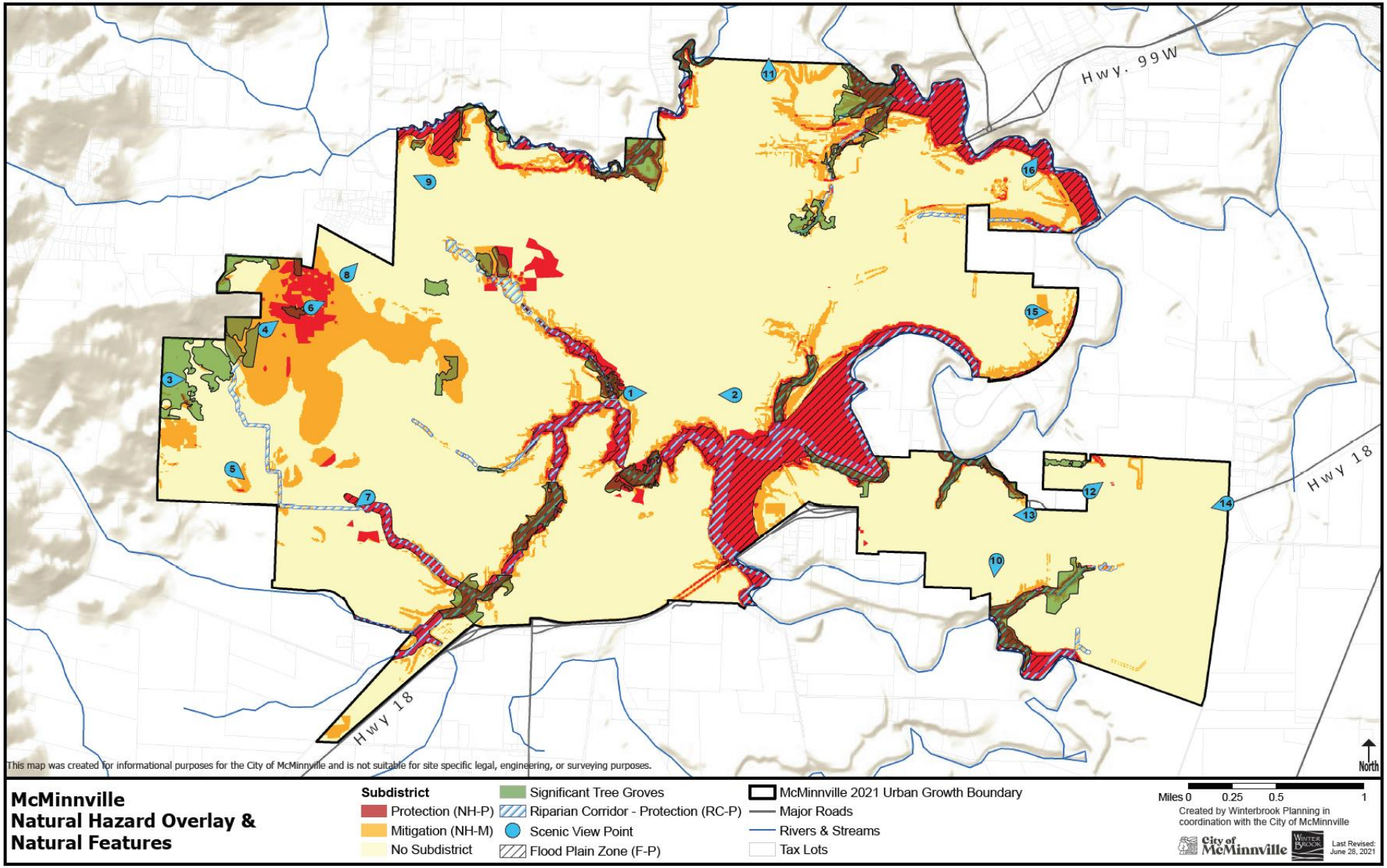
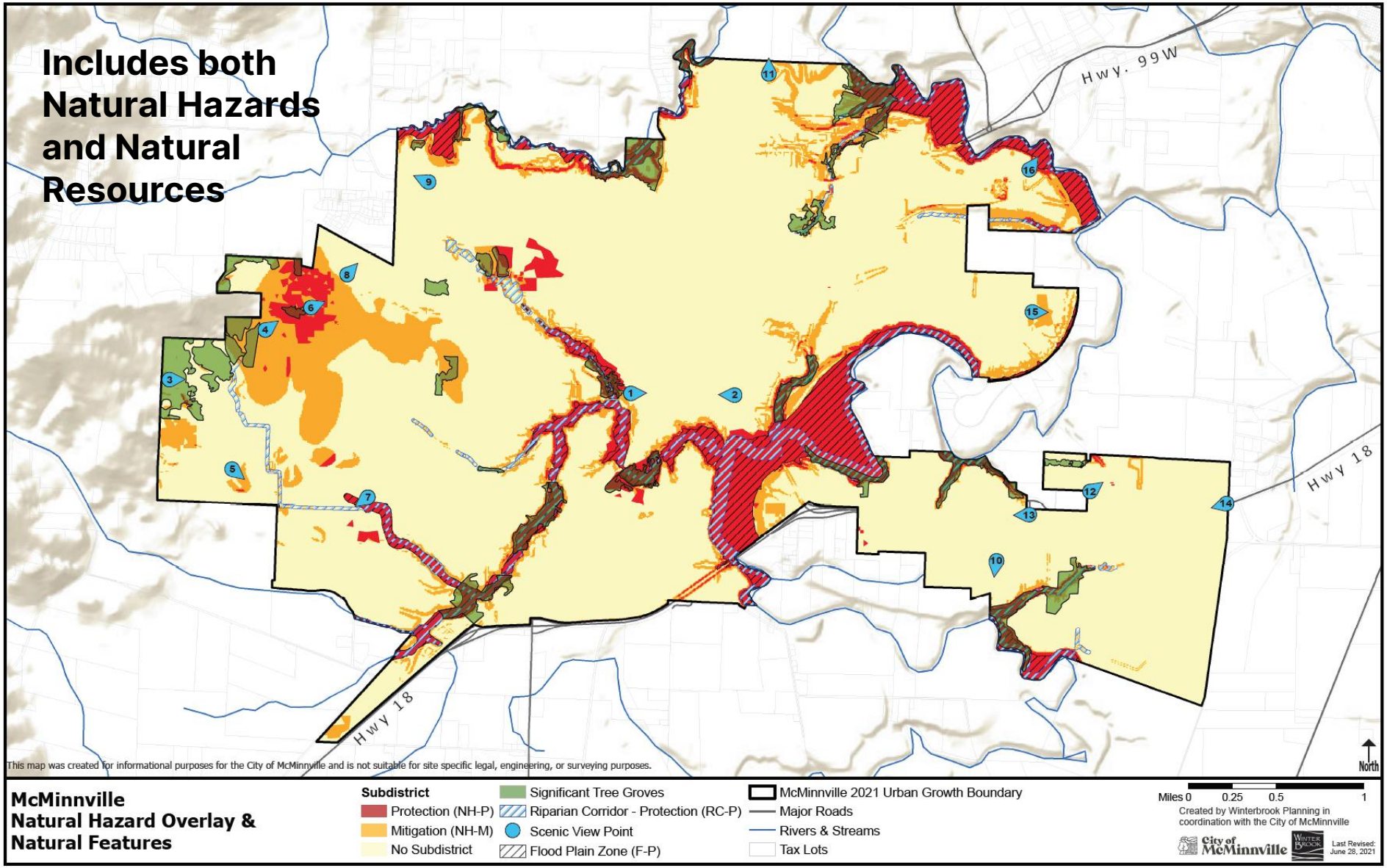
NATURAL FEATURES PLANNING



NATURAL FEATURES PLANNING



Goal 7 – Natural Hazards

Areas subject to Natural Hazards

“Protecting people and property from natural hazards requires knowledge, planning, coordination, and education.

Good planning does not put buildings or people in harm’s way.

City of McMinnville

Goal 7 – Natural Hazards

Natural Hazard Planning

1) **Local governments shall adopt comprehensive plans (inventories, policies and implementing measures) to reduce risk to people and property from natural hazards.**

2) **Natural hazards for purposes of this goal are:**

- **Floods**
- **Landslides**
- **Earthquakes and Related Hazards**
- **Wildfire**
- **Tsunamis**
- **Coastal Erosion**

City of McMinnville

Goal 7 – Natural Hazards

Natural Hazard Planning

1) **Local governments shall adopt comprehensive plans (inventories, policies and implementing measures) to reduce risk to people and property from natural hazards.**

2) **Natural hazards for purposes of this goal are:**

- **Floods**
- **Landslides**
- **Earthquakes and Related Hazards**
- **Wildfire**
- ~~**Tsunamis**~~
- ~~**Coastal Erosion**~~

City of McMinnville

Goal 7 – Natural Hazards

Response to New Hazard Information:

1) **Evaluate and assess risk to people and property**

2) **Allow for citizen review and comments.**

3) **Adopt or amend comprehensive plan policies and implementing measures that:**

   - **Avoid development in hazard areas where the risk to people and property cannot be mitigated**

   - **Prohibit the siting of essential facilities, major structures, hazardous facilities and special occupancy structures**

City of McMinnville

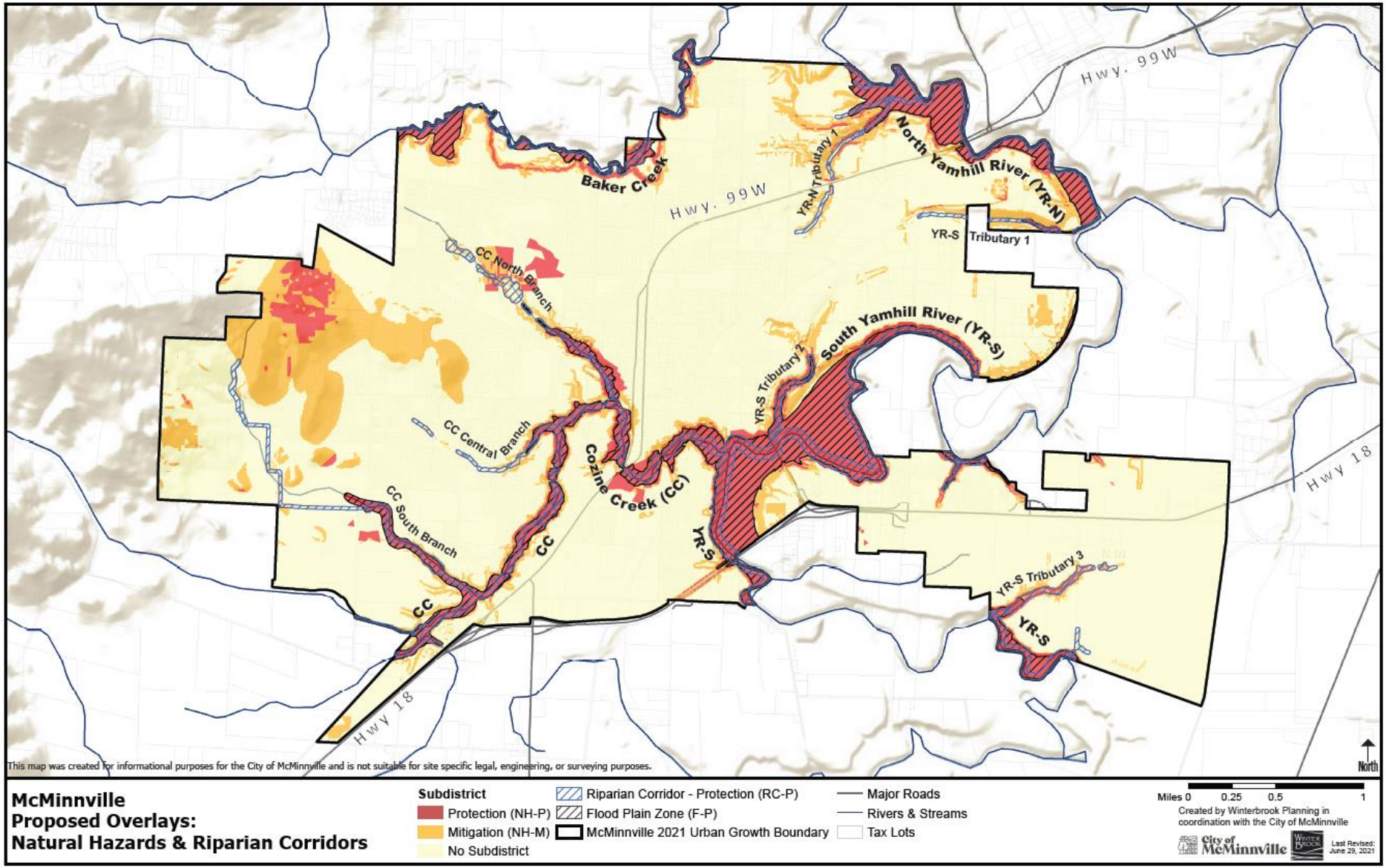
Goal 7 – Natural Hazards

Planning Guidelines:

1) **Local governments should consider**

- **The benefits of maintaining natural hazard areas as open space, recreation and other low density uses**
- **The beneficial effects that natural hazards can have on natural resources and the environment.**
- **The effects of development and mitigation measures on the management of natural resources.**

City of McMinnville



A Great Example: Flood Plain

City of McMinnville

McMinnville's Current Hazard Policies

Comprehensive Plan

2.00: The City of McMinnville shall continue to enforce appropriate development controls on lands with identified building constraints, including, but not limited to, excessive slope, limiting soil characteristics, and natural hazards.

Zoning

Chapter 17.53.101 Streets

- **Sprinklers required in residential and commercial structures when road grade > 12%**

City of McMinnville

McMinnville's Current Hazard Policies

Comprehensive Plan

9.00 The City of McMinnville shall continue to designate appropriate lands within its corporate limits as "floodplain" to prevent flood induced property damages and to retain and protect natural drainage ways from encroachment by inappropriate uses.

Zoning Ordinance

Chapter 17.48 F-P Flood Area Zone:

City of McMinnville

TODAY'S STUDY

McMinnville Natural Hazards Study
Draft completed June 2021

Purpose of study:

- **Inventory mappable natural hazards**
- **Consider management options for hazard areas**
- **Recommend policy amendments to Comp Plan**
- **Recommend text amendments to Zoning Ordinance**
- **Recommend map amendments**

City of McMinnville

Mappable Hazards

- Geological Hazards
  - Landslide
  - Steep Slope
  - Earthquake Liquefaction
  - Earthquake Shaking
- Flood Hazards
- Wildfire Hazards
- Composite Hazards (areas with one or more overlapping hazard)

City of McMinnville

History of Hazard Planning

Comprehensive Plan, Volume I (1981)

1) **Steep slopes over 15% identified as a hazard due to land slide potentials.**

0 = slight restrictions

+ = Moderate

X = severe

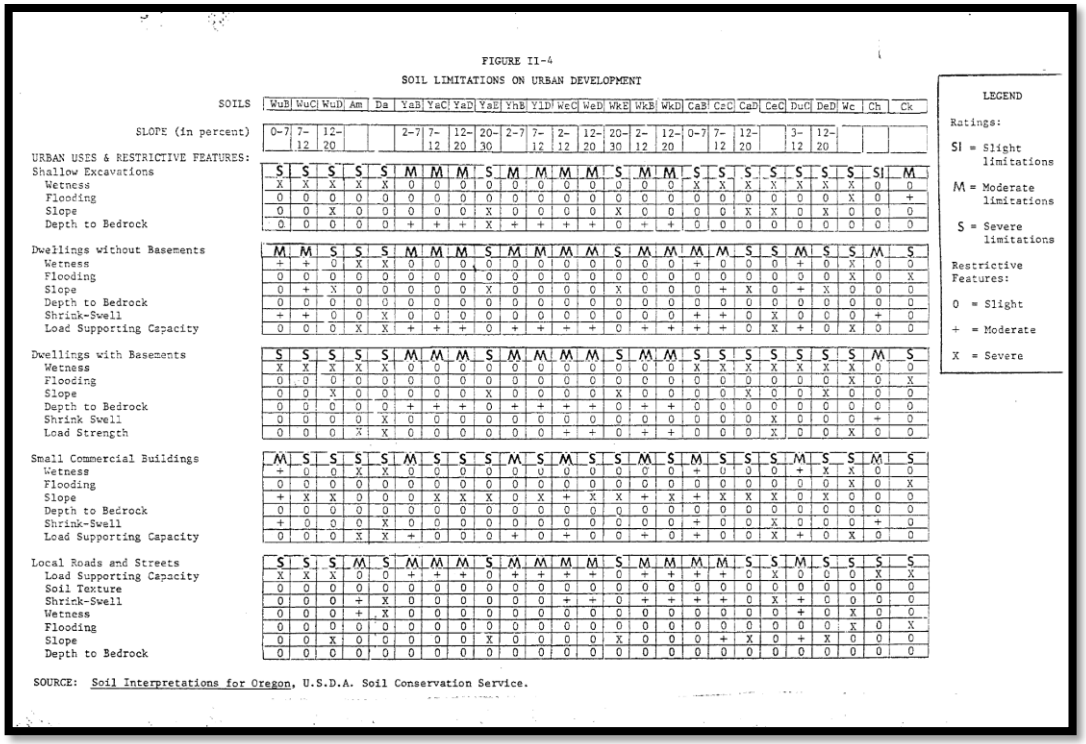


FIGURE II-4

SOIL LIMITATIONS ON URBAN DEVELOPMENT

SOILS	WuB	WuC	WuD	Am	Da	YaB	YaC	YaD	YaE	YhB	YlD	WeC	WeD	WkE	WkB	WkD	CaB	CeC	CaD	CeC	DuC	DeD	Wc	Ch	Ck
SLOPE (in percent)	0-7	7-12	12-20			2-7	7-12	12-20	20-30	2-7	7-12	2-12	12-20	20-30	2-12	12-20	0-7	7-12	12-20		3-12	12-20			
URBAN USES & RESTRICTIVE FEATURES:																									
Shallow Excavations	S	S	S	S	S	M	M	M	S	M	M	M	M	S	M	M	S	S	S	S	S	S	S	SI	M
Wetness	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	X	X	X	X	X	X	X	0	0
Flooding	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	X	0	+
Slope	0	0	X	0	0	0	0	0	X	0	0	0	0	X	0	0	0	X	X	0	X	0	X	0	0
Depth to Bedrock	0	0	0	0	0	+	+	+	X	+	+	+	+	0	+	+	0	0	0	0	0	0	0	0	0
Dwellings without Basements	M	M	S	S	S	M	M	M	S	M	M	M	M	S	M	M	M	M	S	S	M	S	S	M	S
Wetness	+	+	0	X	X	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	+	0	X	0	0
Flooding	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	X	0	X
Slope	0	+	X	0	0	0	0	0	X	0	0	0	0	X	0	0	0	+	X	0	+	X	0	0	0
Depth to Bedrock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shrink-Swell	+	+	0	0	X	0	0	0	0	0	0	0	0	0	0	+	+	0	X	0	0	0	+	0	
Load Supporting Capacity	0	0	0	X	X	+	+	+	0	+	+	+	+	0	+	+	+	0	X	+	0	X	0	0	
Dwellings with Basements	S	S	S	S	S	M	M	M	S	M	M	M	M	S	M	M	S	S	S	S	S	S	M	S	
Wetness	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	X	X	X	X	X	X	0	0	
Flooding	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	X	0	
Slope	0	0	X	0	0	0	0	0	X	0	0	0	0	X	0	0	0	0	X	0	X	0	0	0	
Depth to Bedrock	0	0	0	0	0	+	+	+	0	+	+	+	+	0	+	+	0	0	0	0	0	0	0	0	
Shrink Swell	0	0	0	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	X	0	0	0	+	0	
Load Strength	0	0	0	X	X	0	0	0	0	0	0	+	+	0	+	+	0	0	X	0	0	X	0	0	
Small Commercial Buildings	M	S	S	S	S	M	S	S	S	M	S	M	S	S	M	S	M	S	S	S	M	S	S	M	S
Wetness	+	0	0	X	X	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	+	0	X	0	0
Flooding	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	X	0	X
Slope	+	X	X	0	0	0	X	X	0	X	+	X	X	+	X	+	X	X	X	0	X	0	0	0	0
Depth to Bedrock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shrink-Swell	+	0	0	0	X	0	0	0	0	0	0	0	0	0	0	+	0	0	X	0	0	0	+	0	
Load Supporting Capacity	0	0	0	X	X	+	0	0	0	+	0	+	0	0	+	0	+	0	0	X	+	0	X	0	
Local Roads and Streets	S	S	S	M	S	M	M	M	S	M	M	M	M	S	M	M	M	M	S	S	M	S	S	S	S
Load Supporting Capacity	X	X	X	0	0	+	+	+	0	+	+	+	+	0	+	+	+	0	X	0	0	0	X	0	X
Soil Texture	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shrink-Swell	0	0	0	+	X	0	0	0	0	0	0	+	+	0	+	+	+	0	X	+	0	0	0	0	0
Wetness	0	0	0	+	X	0	0	0	0	0	0	0	0	0	0	0	0	0	X	0	0	X	0	0	
Flooding	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	X	0	X
Slope	0	0	X	0	0	0	0	0	X	0	0	0	0	X	0	0	0	+	X	0	+	X	0	0	0
Depth to Bedrock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LEGEND

Ratings:

SI = Slight limitations

M = Moderate limitations

S = Severe limitations

Restrictive Features:

0 = Slight

\+ = Moderate

X = Severe

SOURCE: Soil Interpretations for Oregon, U.S.D.A. Soil Conservation Service.

City of McMinnville

History of Hazard Planning

<u>Comprehensive Plan, Volume I (1981)</u>

1) **Only flood plains adjacent to the city's major waterways are hazardous enough to completely preclude urban development in a given area.**

    - **Development of a flood plain zone.**
    - **Boundaries will comply with FEMA**

City of McMinnville

History of Hazard Planning

Yamhill County Natural Hazard Mitigation Plan (2018/2019)

The following excerpts from **Table MA-1 McMinnville Action Items** identify the Planning Department as having a lead or major supporting role in implementing the following measures.

Multi-Hazard #2	Incorporate mitigation planning provisions into community planning processes such as comprehensive, capital improvement, land use, transportation plans, zoning ordinances, community development practices, etc.
Multi-Hazard #7	Develop and maintain GIS mapped hazard areas within the UGB.
Multi-Hazard #10	Establish a process to coordinate with state and Federal agencies to maintain up-to-date hazard data, maps and assessments.
Multi-Hazard #11	Limit (e.g. reduced density, etc.) or prohibit development in high hazard areas.
Multi-Hazard #12	Encourage mitigation practices in developments at risk to natural hazards.

City of McMinnville

NHMP

Table VI.1 McMinnville NHMP Recommended Natural Hazard Mitigation Measures

Policy Number	Policy Text	Evaluation
Multi-Hazard #2	Incorporate mitigation planning provisions into community planning processes such as comprehensive, capital improvement, land use, transportation plans, zoning ordinances, community development practices, etc.	**Section VII includes recommendations for amending the McMinnville Comprehensive Plan to include natural hazard inventory and management policies proposed to be implemented in the McMinnville Zoning Ordinance.**
Multi-Hazard #7	Develop and maintain GIS mapped hazard areas within the UGB.	**Sections II-V include a series of geological, flooding and wildfire hazards maps within the McMinnville UGB and within potential UGB expansion areas.**
Multi-Hazard #10	Establish a process to coordinate with state and Federal agencies to maintain up-to-date hazard data, maps and assessments.	**Section VII includes a policy to coordinate with state and federal agencies through periodic updates of the McMinnville NHMP and the Yamhill County CWPP.**

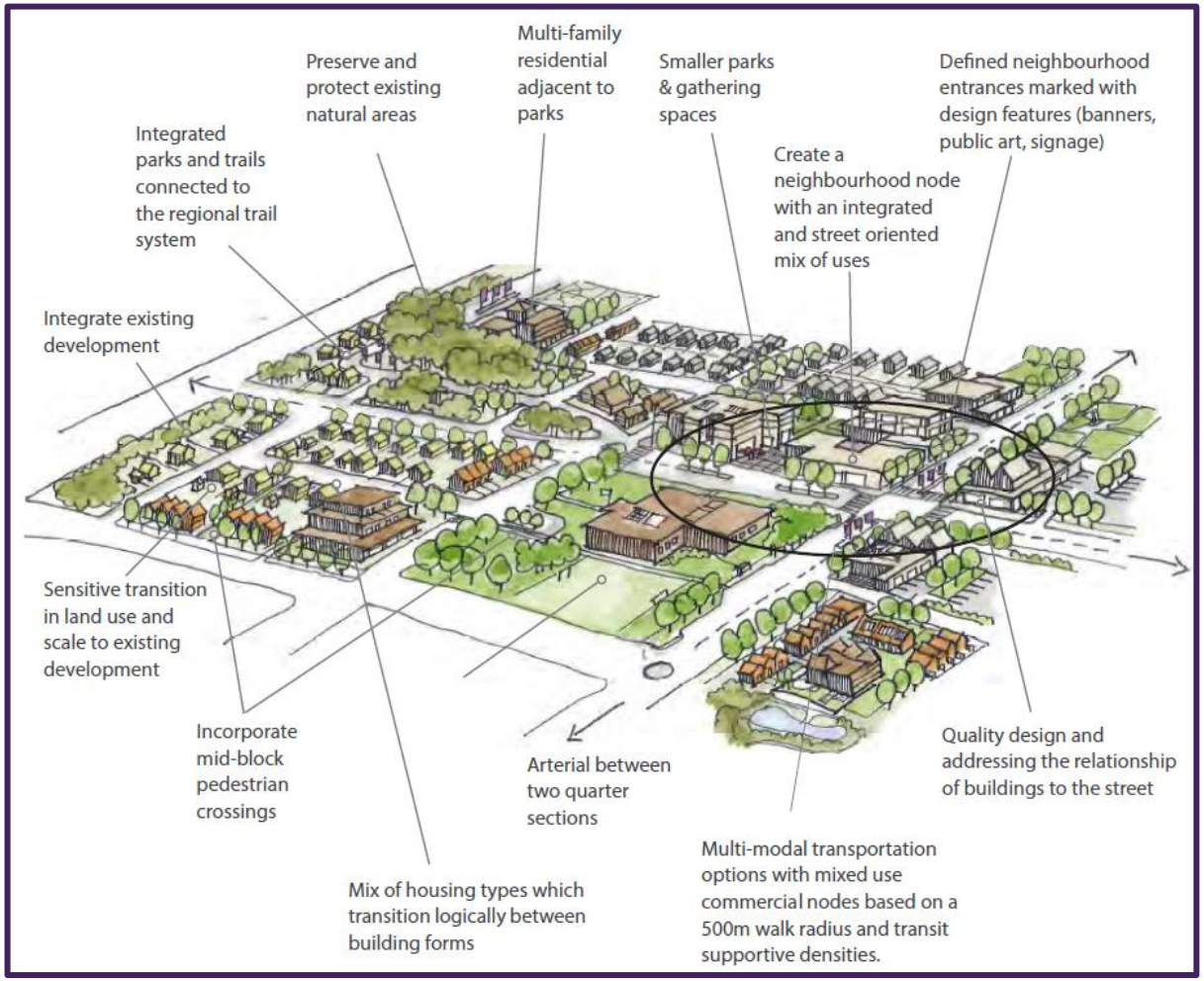
City of McMinnville

NHMP

Policy Number	Policy Text	Evaluation
Multi-Hazard #11	Limit (e.g., reduced density, etc.) or prohibit development in high hazard areas.	**Section VI considers options to limit development in medium and high hazard areas – and to prohibit development in some high hazard areas. Section VII includes recommendations for a consolidated Natural Hazards Overlay District that limits or prohibits development depending on the hazard level and cumulative hazard impacts. As proposed, the NHOD would be applied to land within the McMinnville Study Area to guide future urban growth. Application of the NHOD outside the McMinnville City Limits would require an amendment to the Urban Growth Management Agreement (UGMA) between the City and Yamhill County.**
Multi-Hazard #12	Encourage mitigation practices in developments at risk to natural hazards.	**Section VI considers mitigation options and Section VII recommends specific mitigation measures.**

City of McMinnville

APRIL 2019: Council adopted Great Neighborhood Principles



1. Natural Feature Preservation
2. Scenic View Preservation
3. Parks and Open Spaces
4. Pedestrian Friendly
5. Bike Friendly
6. Connected Streets
7. Accessibility
8. Human Scale Design
9. Mix of Activities
10. Urban Rural Interface
11. Housing for Diverse Incomes and Generations
12. Housing Variety
13. Unique and Integrated Design Elements

City of McMinnville

APRIL 2019: Council adopted Great Neighborhood Principles

Natural Feature Preservation. Great Neighborhoods are sensitive to the natural conditions and features of the land.

a. Neighborhoods shall be designed to preserve significant natural features including, but not limited to, watercourses, sensitive lands, steep slopes, wetlands, wooded areas, and landmark trees.

1. **Natural Feature Preservation**
2. **Scenic View Preservation**
3. **Parks and Open Spaces**
4. **Pedestrian Friendly**

ets

esign

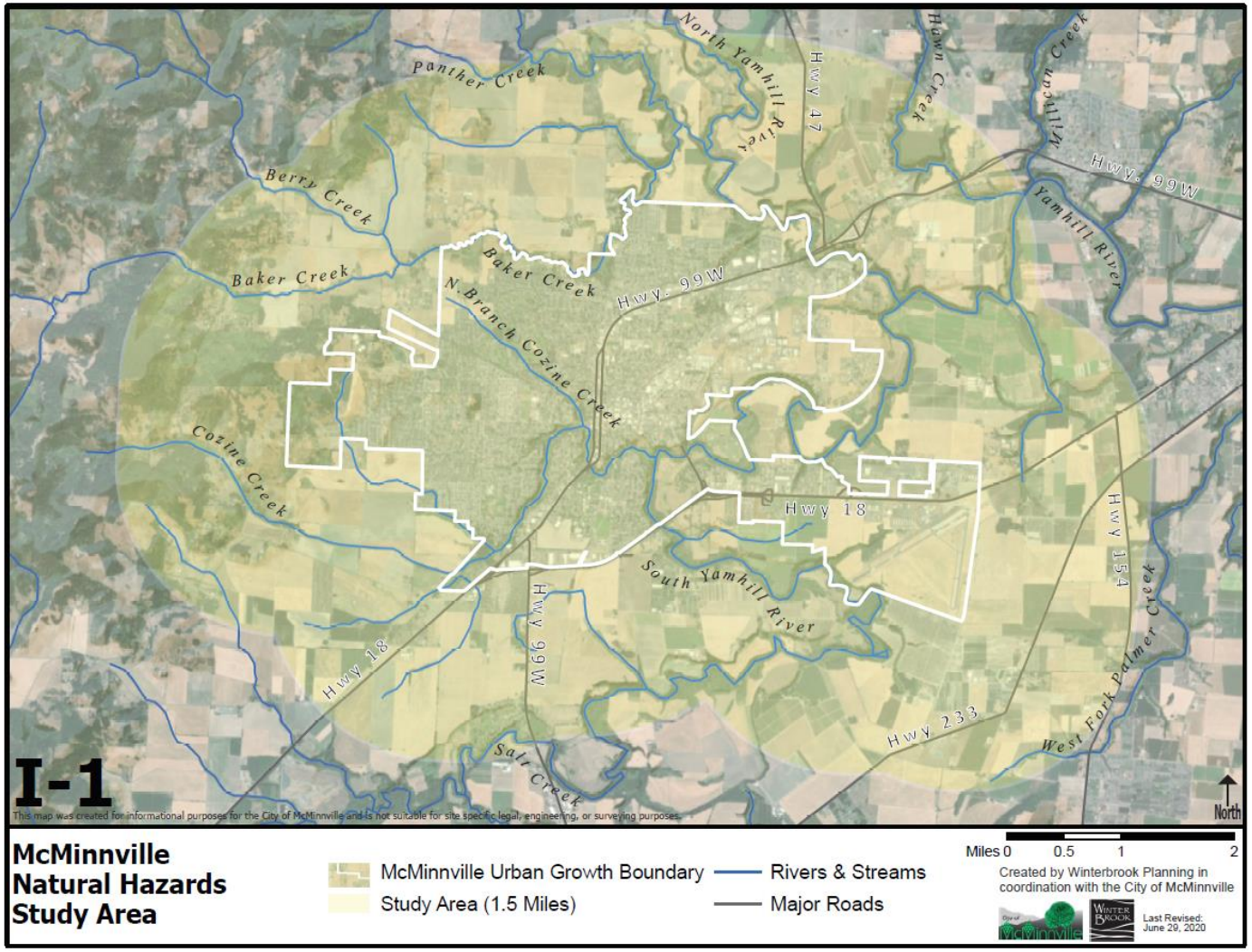
erface

erse

13. **Unique and Integrated Design Elements**

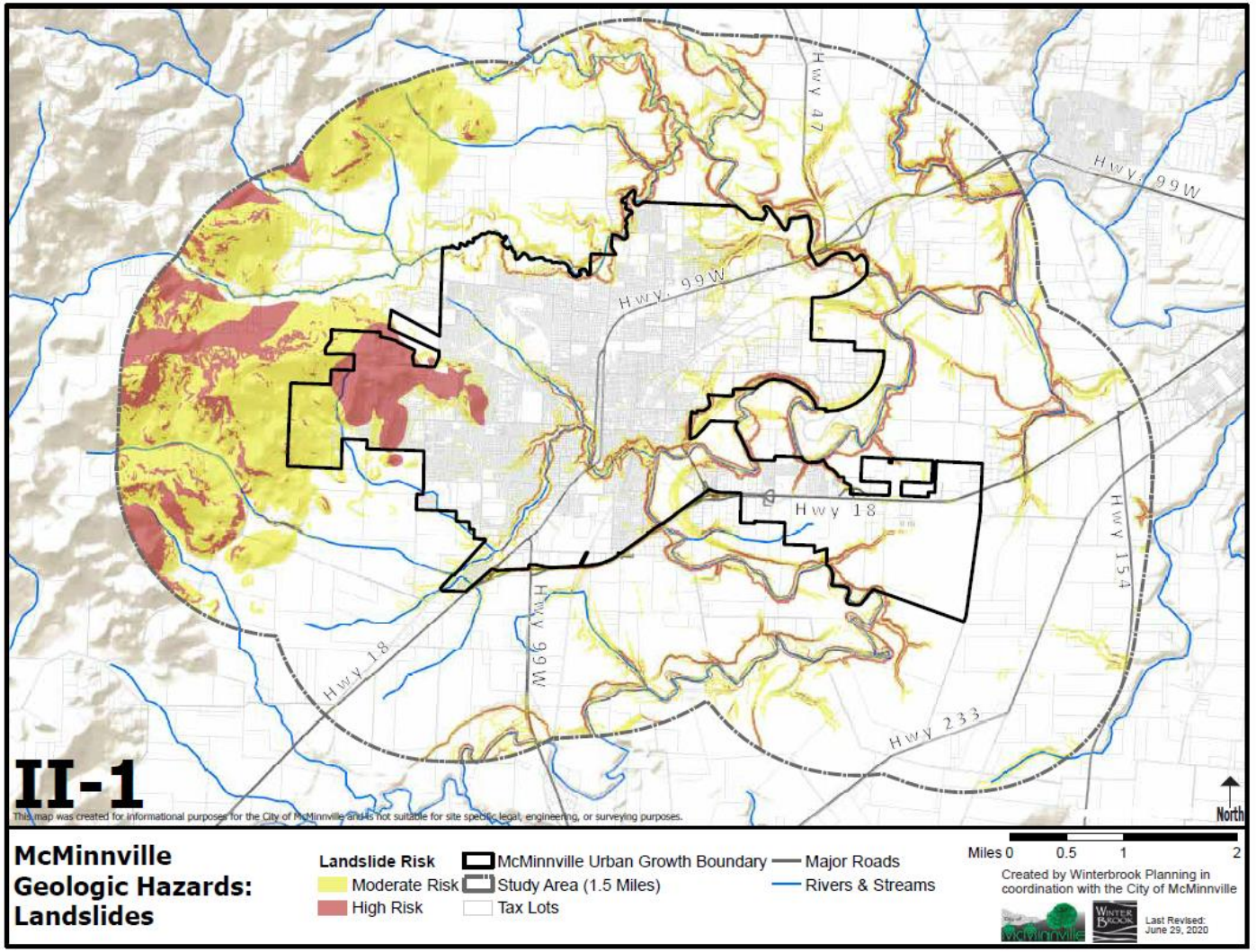
City of McMinnville

June, 2020: UGB Work – Hazard Mapping



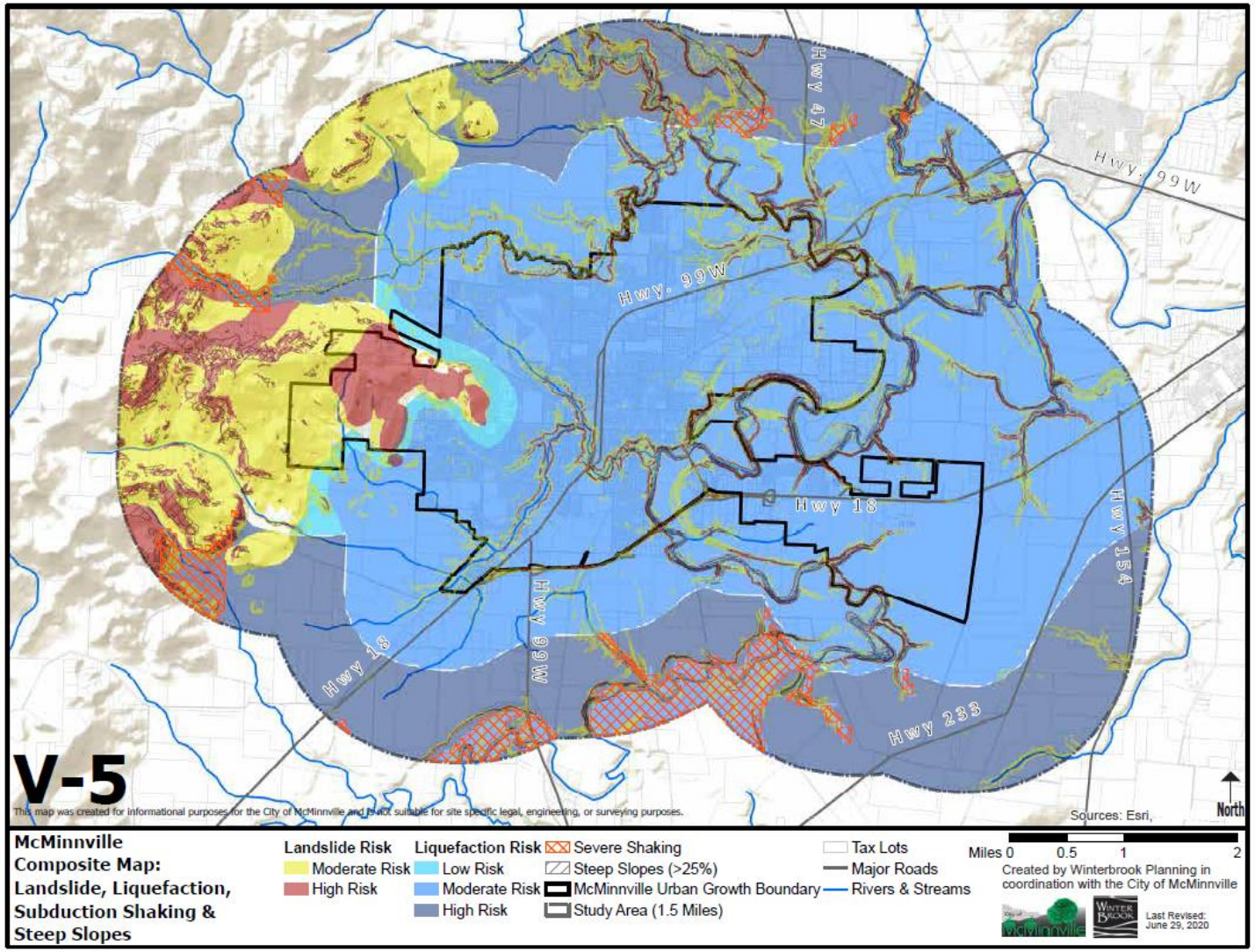
City of McMinnville

June, 2020: UGB Work – Hazard Mapping

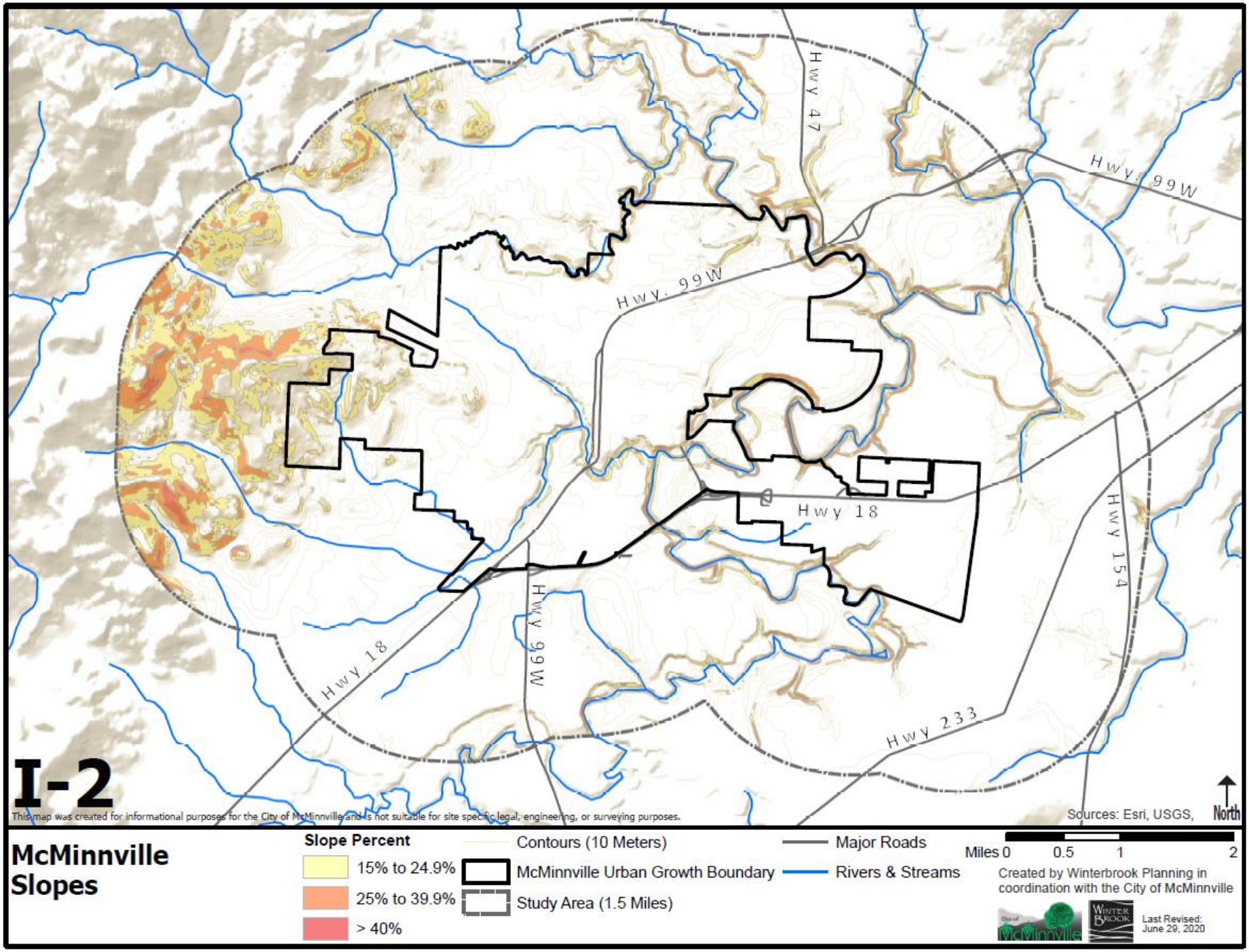


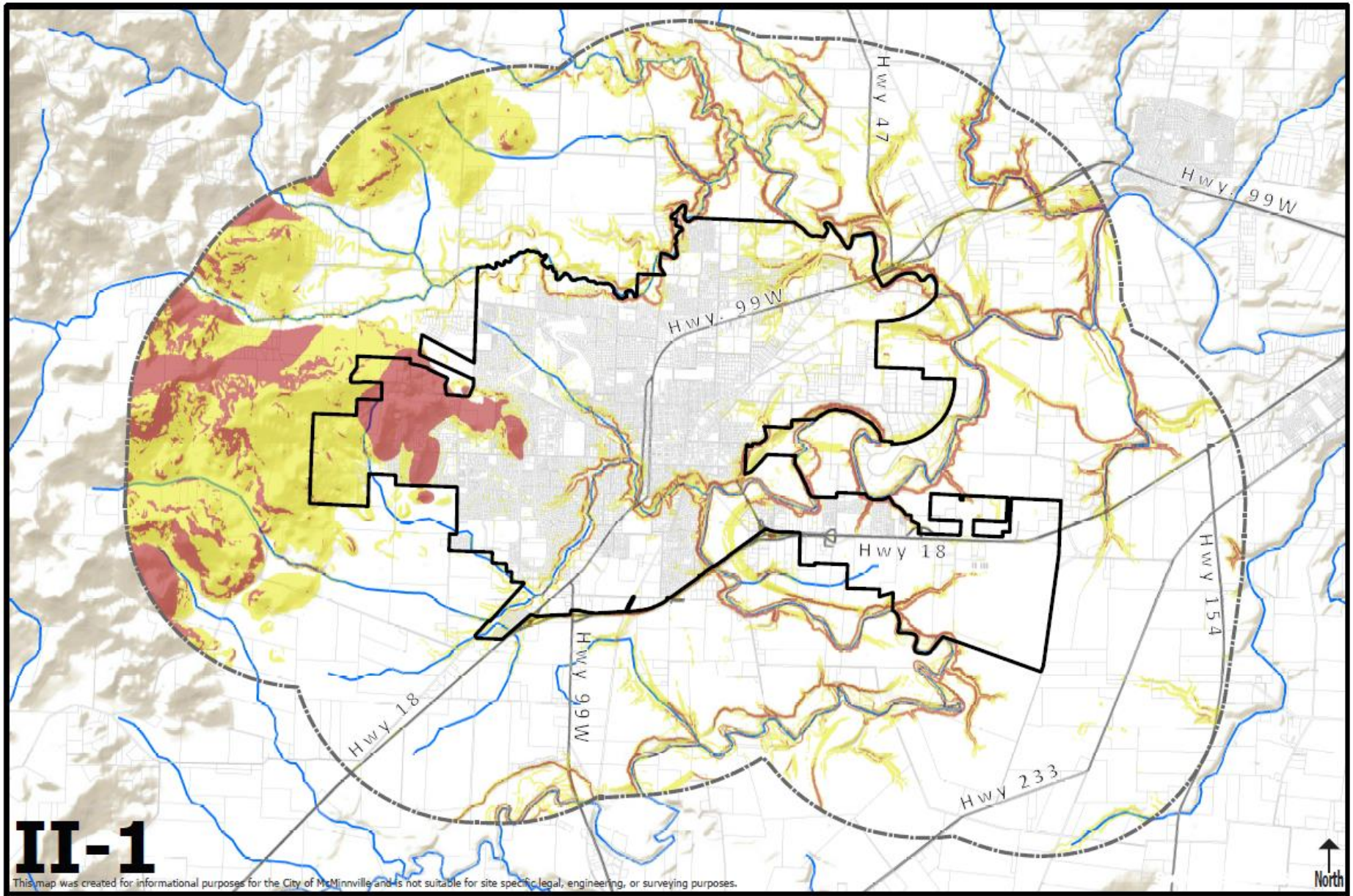
City of McMinnville

June, 2020: UGB Work – Hazard Mapping



City of McMinnville


Hwy 47
Hwy. 99W
Hwy. 99W
Hwy 18
Hwy 99W
Hwy 18
Hwy 154
Hwy 233
I-2
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
Sources: Esri, USGS,
North
McMinnville Slopes
Slope Percent
15% to 24.9%
25% to 39.9%
> 40%
Contours (10 Meters)
McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Major Roads
Rivers & Streams
Miles 0 0.5 1 2
Created by Winterbrook Planning in coordination with the City of McMinnville
Last Revised: June 29, 2020



II-1

This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.

McMinnville Geologic Hazards: Landslides

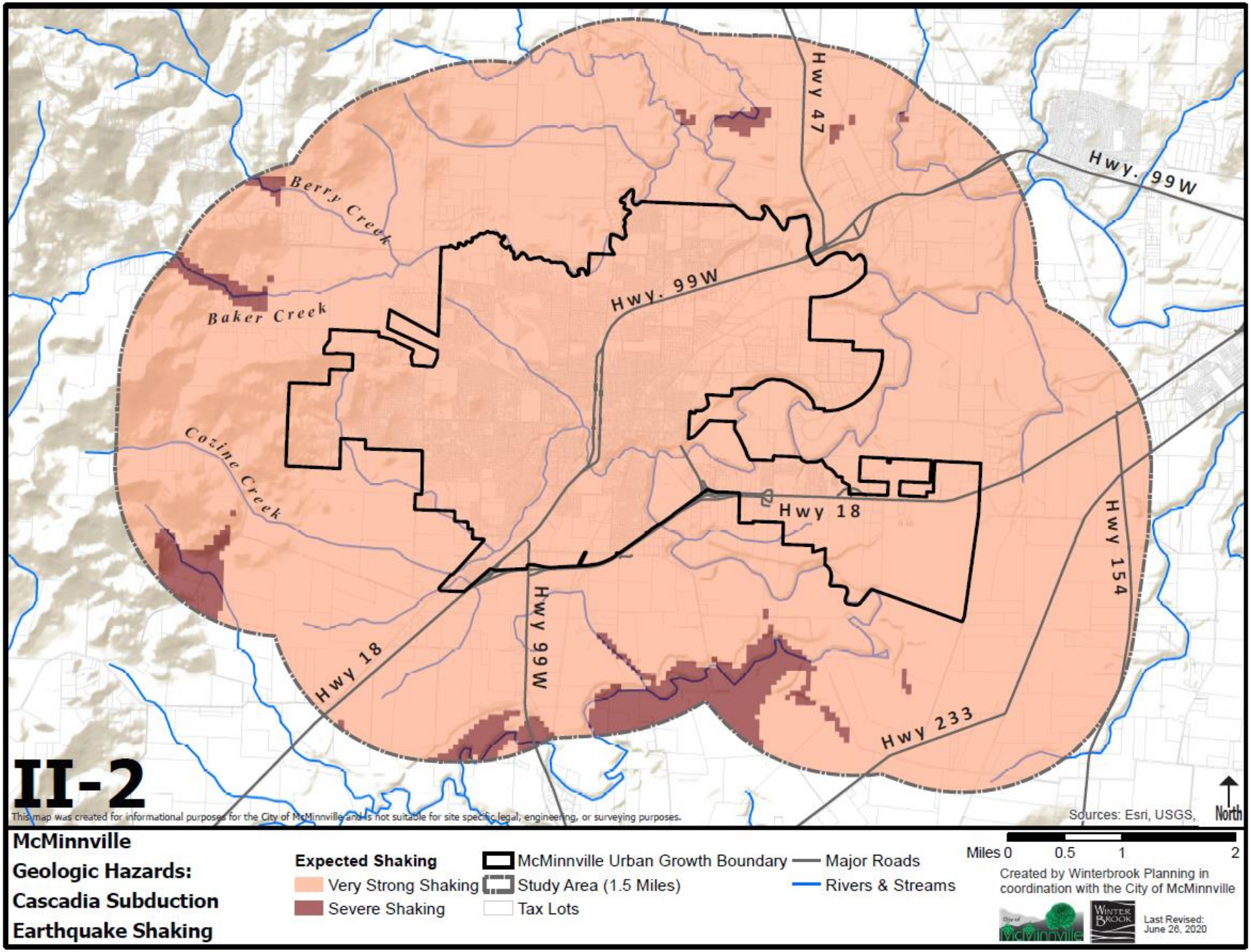
Landslide Risk
- Moderate Risk
- High Risk

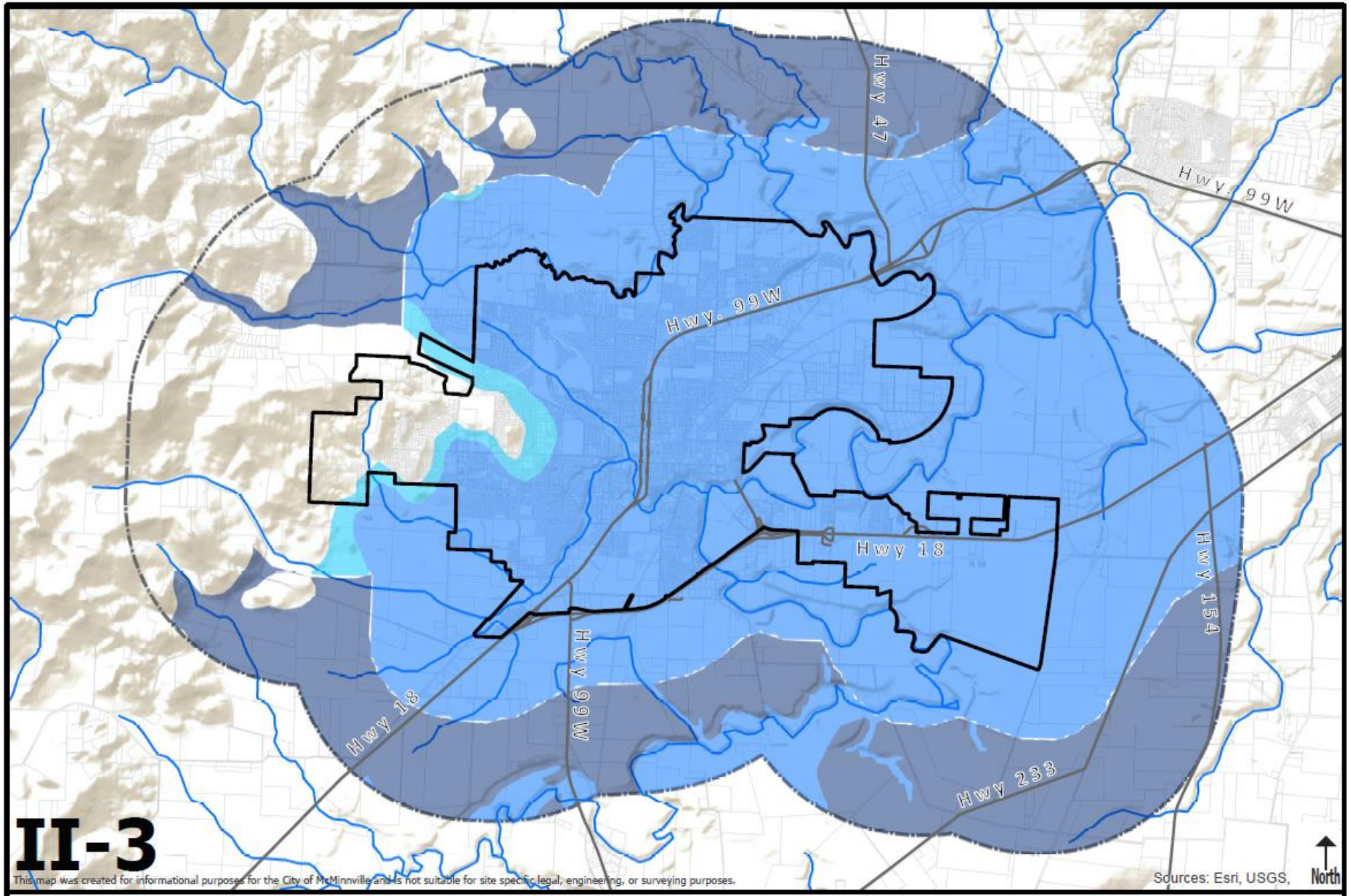
- McMinnville Urban Growth Boundary
- Study Area (1.5 Miles)
- Tax Lots
- Major Roads
- Rivers & Streams

Miles 0 0.5 1 2

Created by Winterbrook Planning in coordination with the City of McMinnville

Last Revised: June 29, 2020


Berry Creek
Baker Creek
Cozine Creek
Hwy 47
Hwy. 99W
Hwy. 99W
Hwy 18
Hwy 154
Hwy 99W
Hwy 18
Hwy 233
II-2
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
Sources: Esri, USGS,
North
McMinnville
Geologic Hazards:
Cascadia Subduction
Earthquake Shaking
Expected Shaking
Very Strong Shaking
Severe Shaking
McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Tax Lots
Major Roads
Rivers & Streams
Miles 0 0.5 1 2
Created by Winterbrook Planning in coordination with the City of McMinnville
Last Revised:
June 26, 2020



II-3

This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.

Sources: Esri, USGS,

North

McMinnville Geologic Hazards: Earthquake Liquefaction Susceptibility

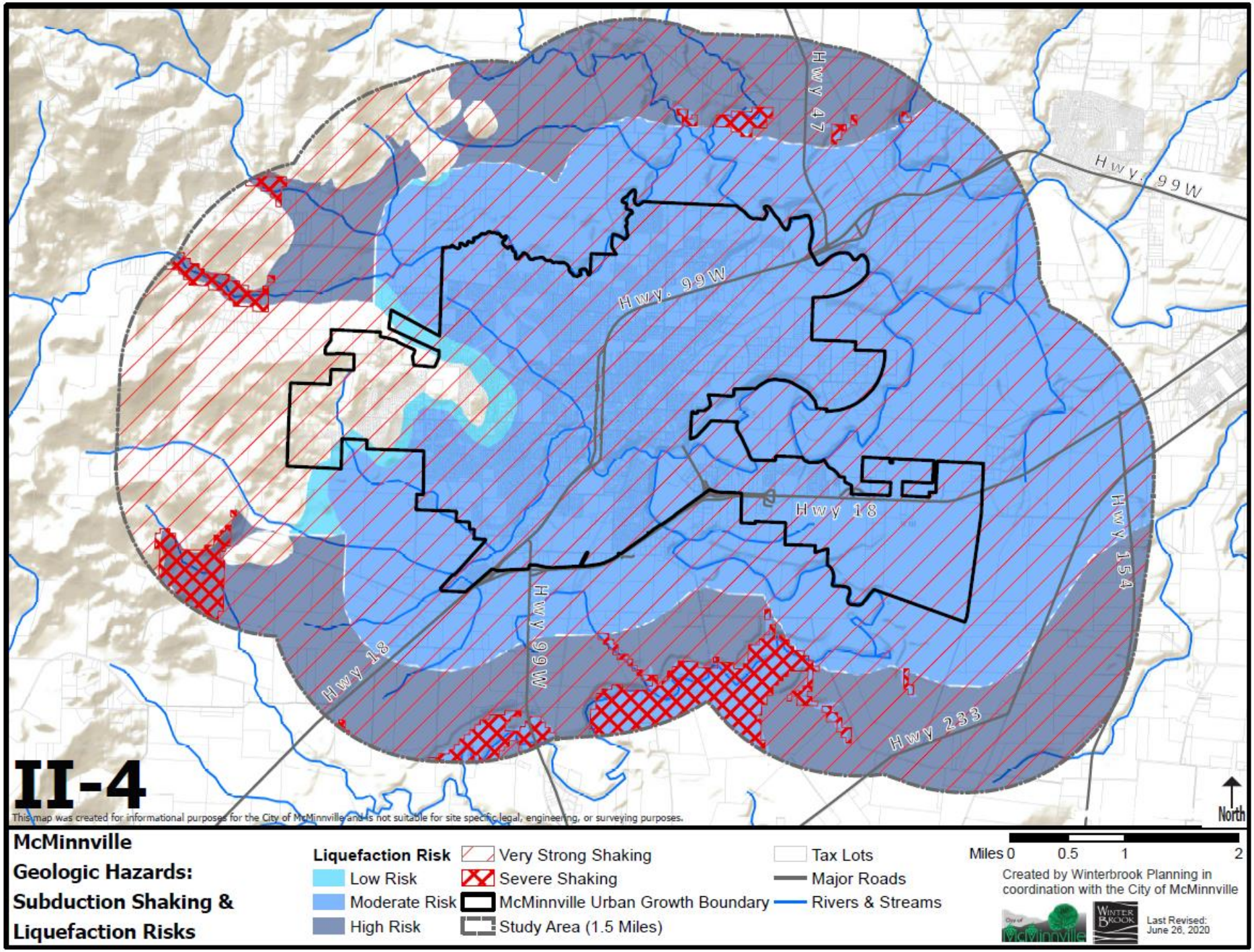
Liquefaction Risk
- Low Risk
- Moderate Risk
- High Risk

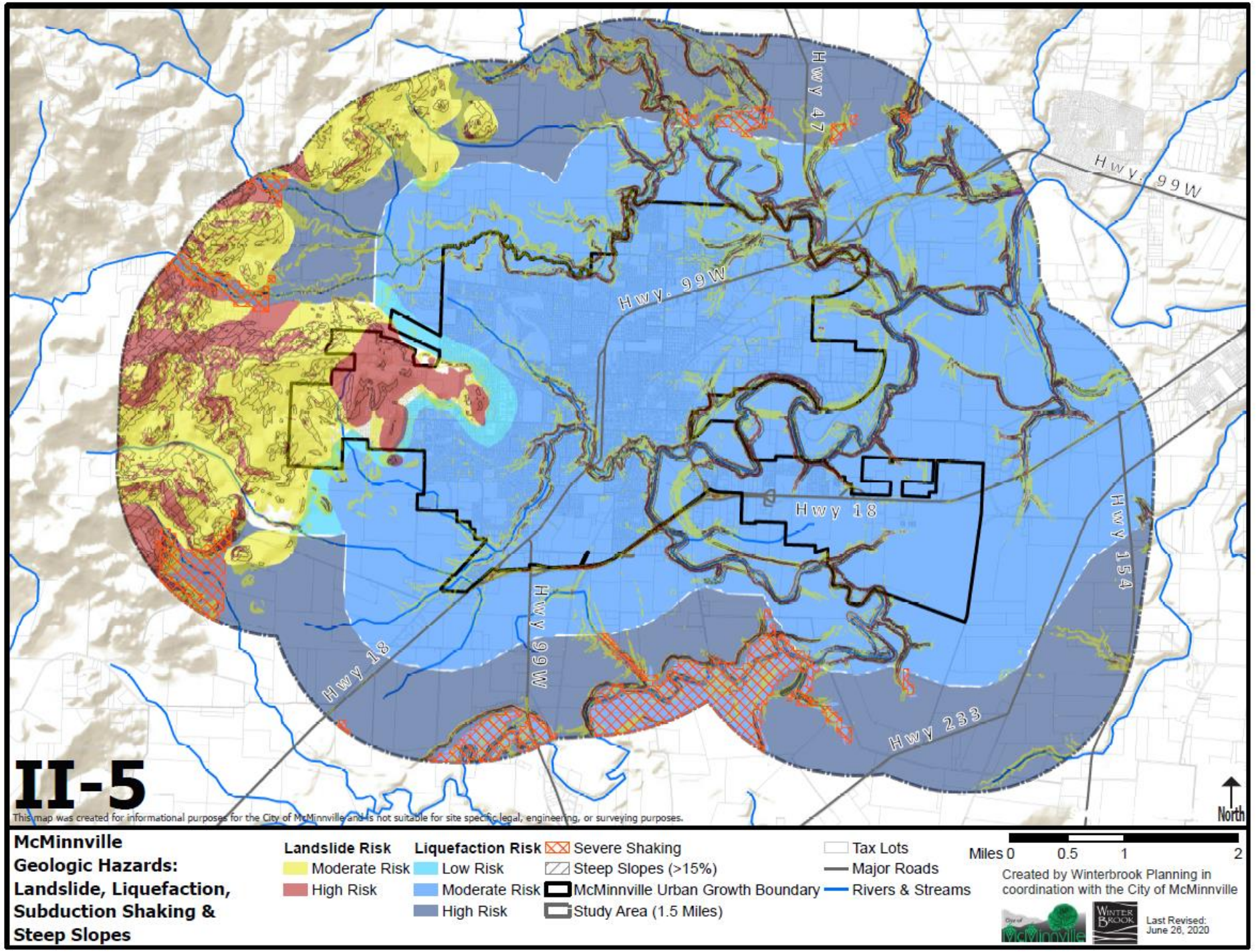
McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Tax Lots
Major Roads
Rivers & Streams

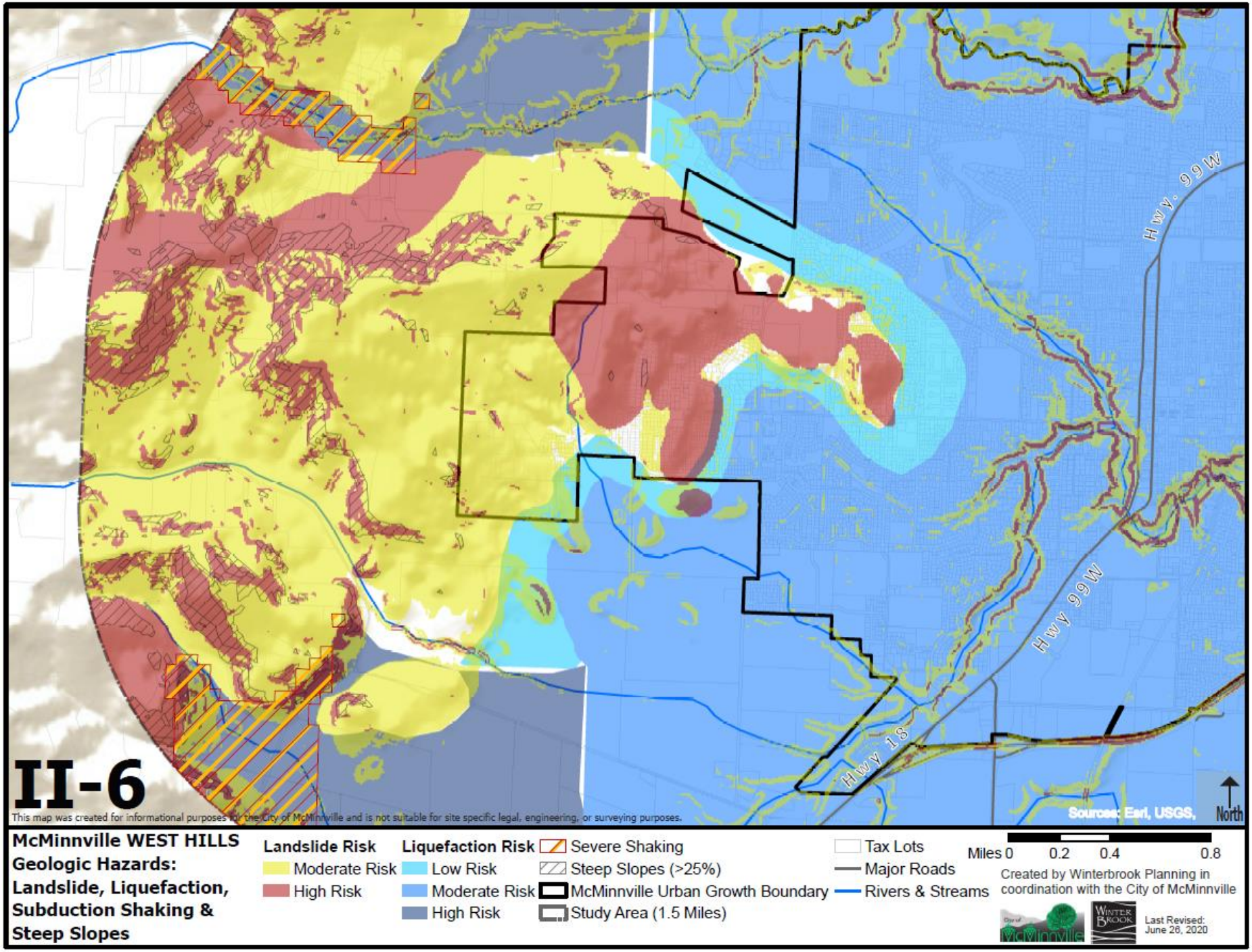
Miles 0 0.5 1 2

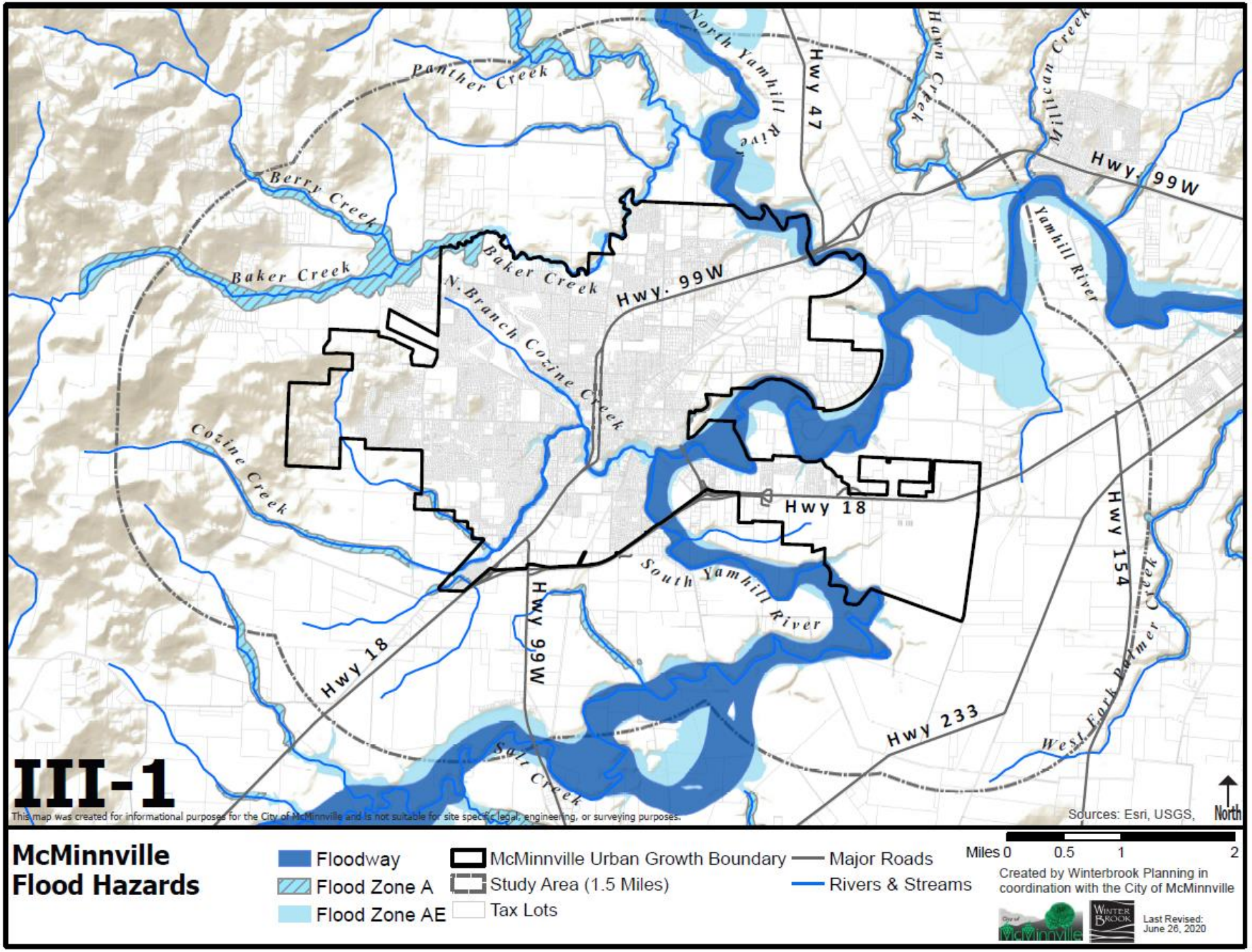
Created by Winterbrook Planning in coordination with the City of McMinnville

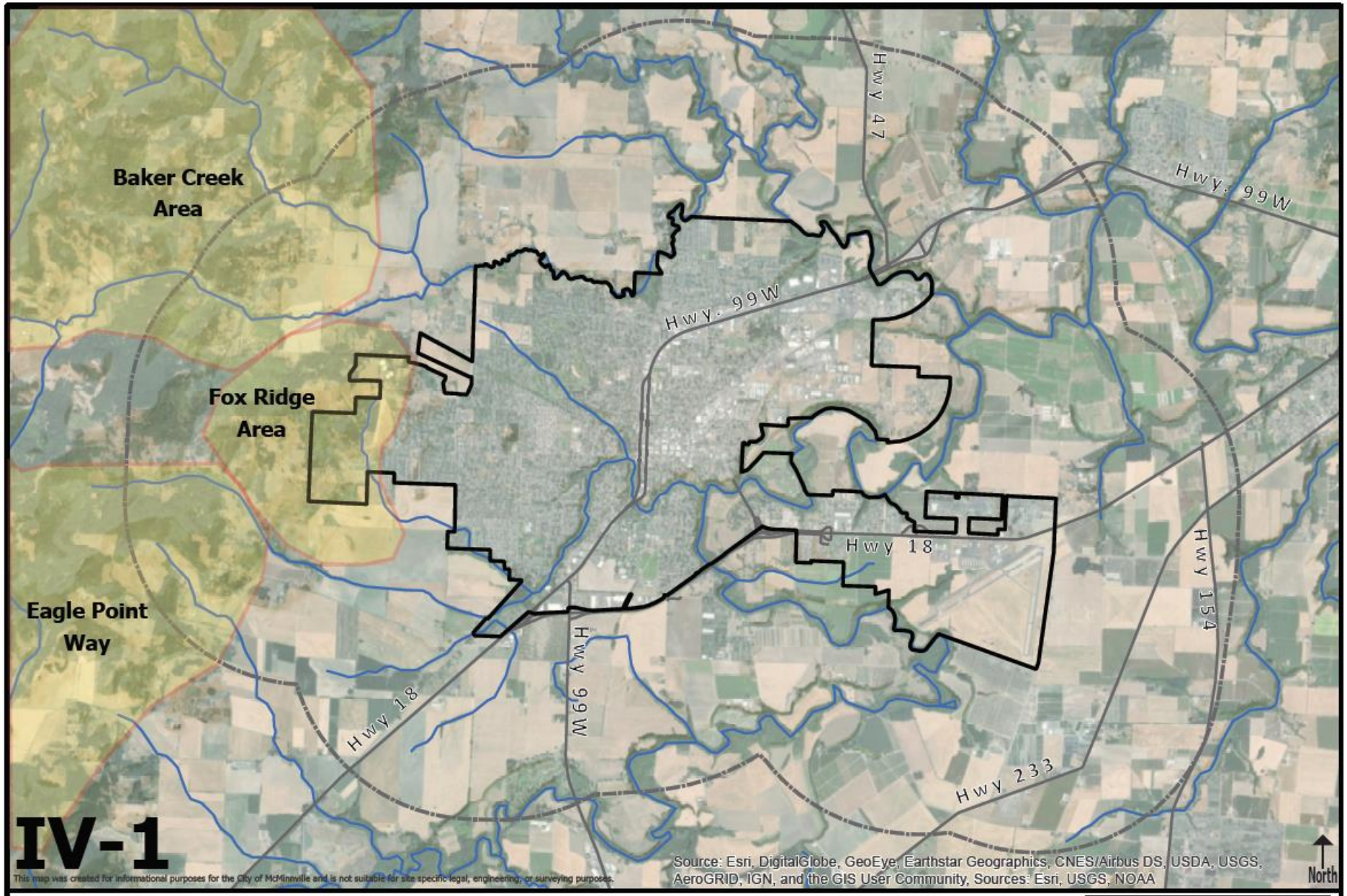
Last Revised: June 26, 2020


Hwy 47
Hwy 99W
Hwy 99W
Hwy 18
Hwy 154
Hwy 18
Hwy 99W
Hwy 233
II-4
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
North
McMinnville
Geologic Hazards:
Subduction Shaking &
Liquefaction Risks
Liquefaction Risk
Low Risk
Moderate Risk
High Risk
Very Strong Shaking
Severe Shaking
McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Tax Lots
Major Roads
Rivers & Streams
Miles 0 0.5 1 2
Created by Winterbrook Planning in coordination with the City of McMinnville
Last Revised:
June 26, 2020


Hwy 47
Hwy 99W
Hwy 99W
Hwy 18
Hwy 154
Hwy 18
Hwy 99W
Hwy 233
II-5
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
North
McMinnville Geologic Hazards: Landslide, Liquefaction, Subduction Shaking & Steep Slopes
Landslide Risk
Moderate Risk
High Risk
Liquefaction Risk
Low Risk
Moderate Risk
High Risk
Severe Shaking
Steep Slopes (>15%)
McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Tax Lots
Major Roads
Rivers & Streams
Miles 0 0.5 1 2
Created by Winterbrook Planning in coordination with the City of McMinnville
Last Revised: June 26, 2020


II-6
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
Hwy. 99W
Hwy 99W
Hwy 18
Sources: Esri, USGS,
North
McMinnville WEST HILLS
Geologic Hazards:
Landslide, Liquefaction,
Subduction Shaking &
Steep Slopes
Landslide Risk
Moderate Risk
High Risk
Liquefaction Risk
Low Risk
Moderate Risk
High Risk
Severe Shaking
Steep Slopes (>25%)
McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Tax Lots
Major Roads
Rivers & Streams
Miles 0 0.2 0.4 0.8
Created by Winterbrook Planning in
coordination with the City of McMinnville
Last Revised:
June 26, 2020


III-1
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
Sources: Esri, USGS,
North
McMinnville Flood Hazards
Floodway
Flood Zone A
Flood Zone AE
McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Tax Lots
Major Roads
Rivers & Streams
Miles 0 0.5 1 2
Created by Winterbrook Planning in coordination with the City of McMinnville
Last Revised: June 26, 2020
Panther Creek
Berry Creek
Baker Creek
Baker Creek
N. Branch Cozine Creek
Cozine Creek
North Yamhill River
Hwy 47
Hawn Creek
McMillan Creek
Hwy. 99W
Yamhill River
Hwy. 99W
Hwy 18
South Yamhill River
Hwy 99W
Hwy 18
Hwy 154
Hwy 233
Salt Creek
West Fork Palmer Creek



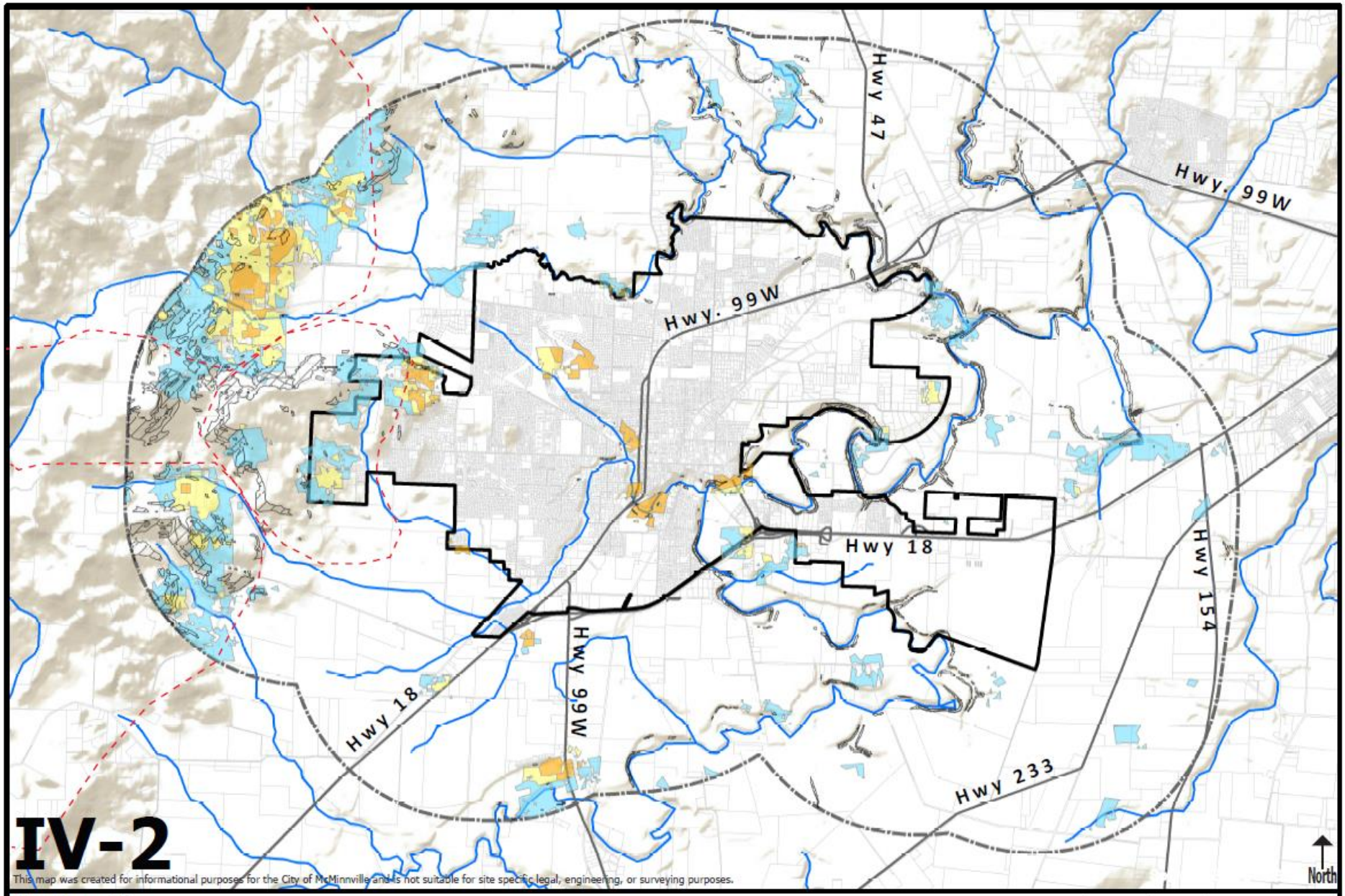
McMinnville Wildfire Risk Reduction Areas

McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Tax Lots
Major Roads
Rivers & Streams

Miles 0 0.5 1 2

Created by Winterbrook Planning in coordination with the City of McMinnville

Last Revised: June 28, 2020



IV-2

This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.

McMinnville Potential Wildfire Impact to People and Property

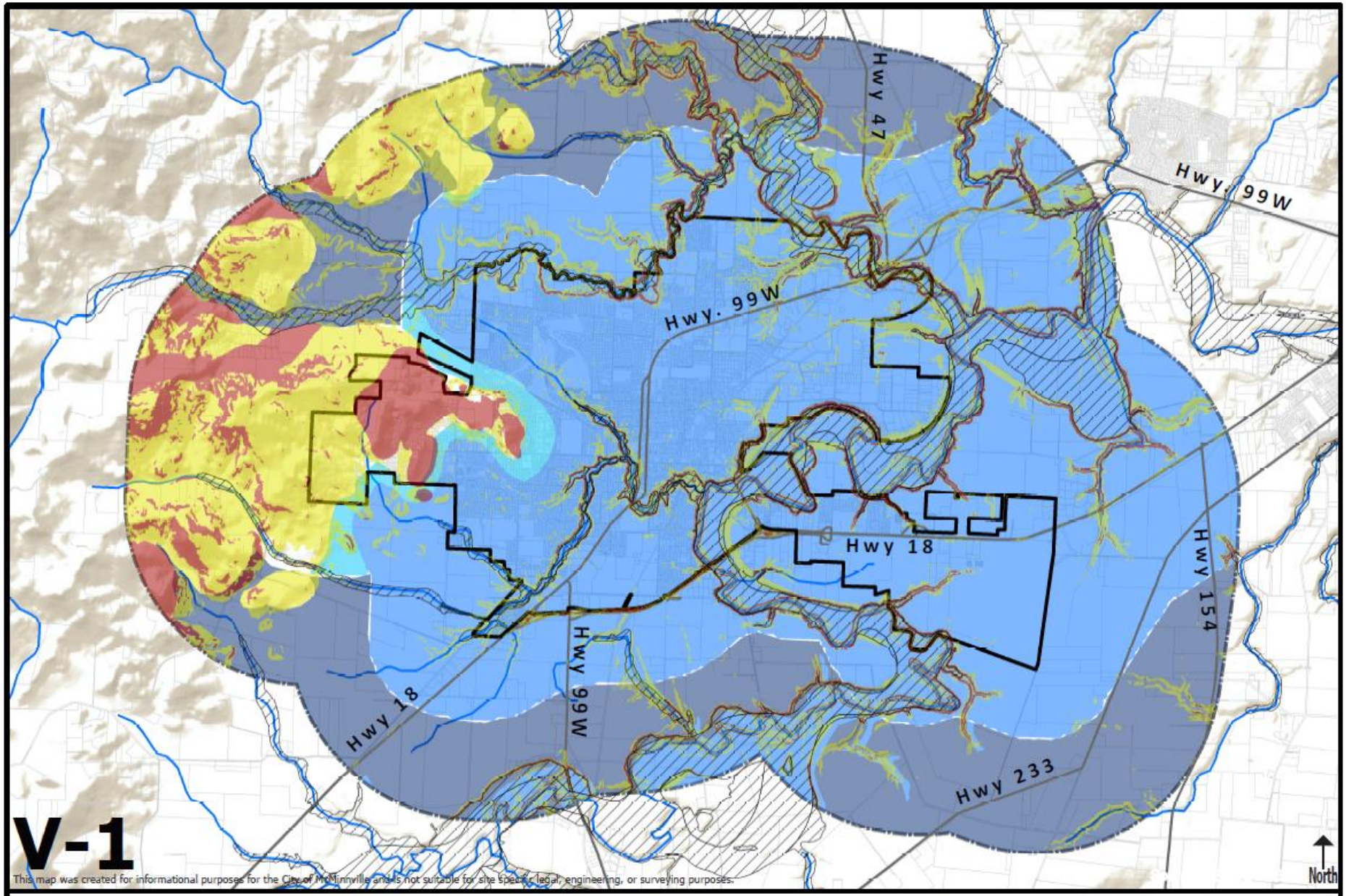
Wildfire Risk
- Low
- Moderate
- High

- Steep Slopes (>25%)
- McMinnville Urban Growth Boundary
- Study Area (1.5 Miles)
- Tax Lots
- Major Roads
- Rivers & Streams
- Wildfire Risk Reduction Areas

Miles 0 0.5 1 2

Created by Winterbrook Planning in coordination with the City of McMinnville

Last Revised: June 26, 2020



V-1

This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.

McMinnville Landslide, Liquefaction & Flood Hazards

Landslide Risk
- Moderate Risk
- High Risk

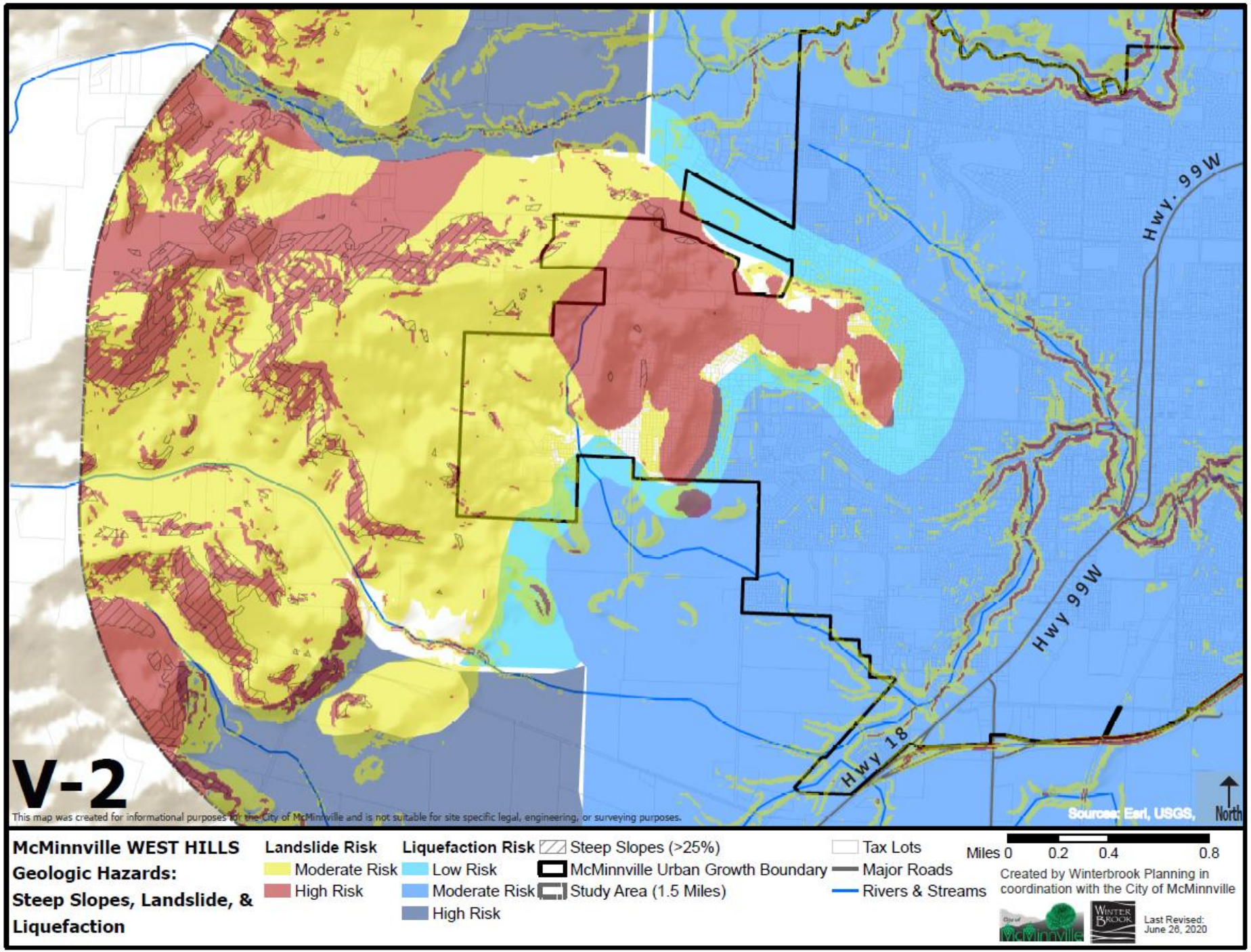
Liquefaction Risk
- Low Risk
- Moderate Risk
- High Risk

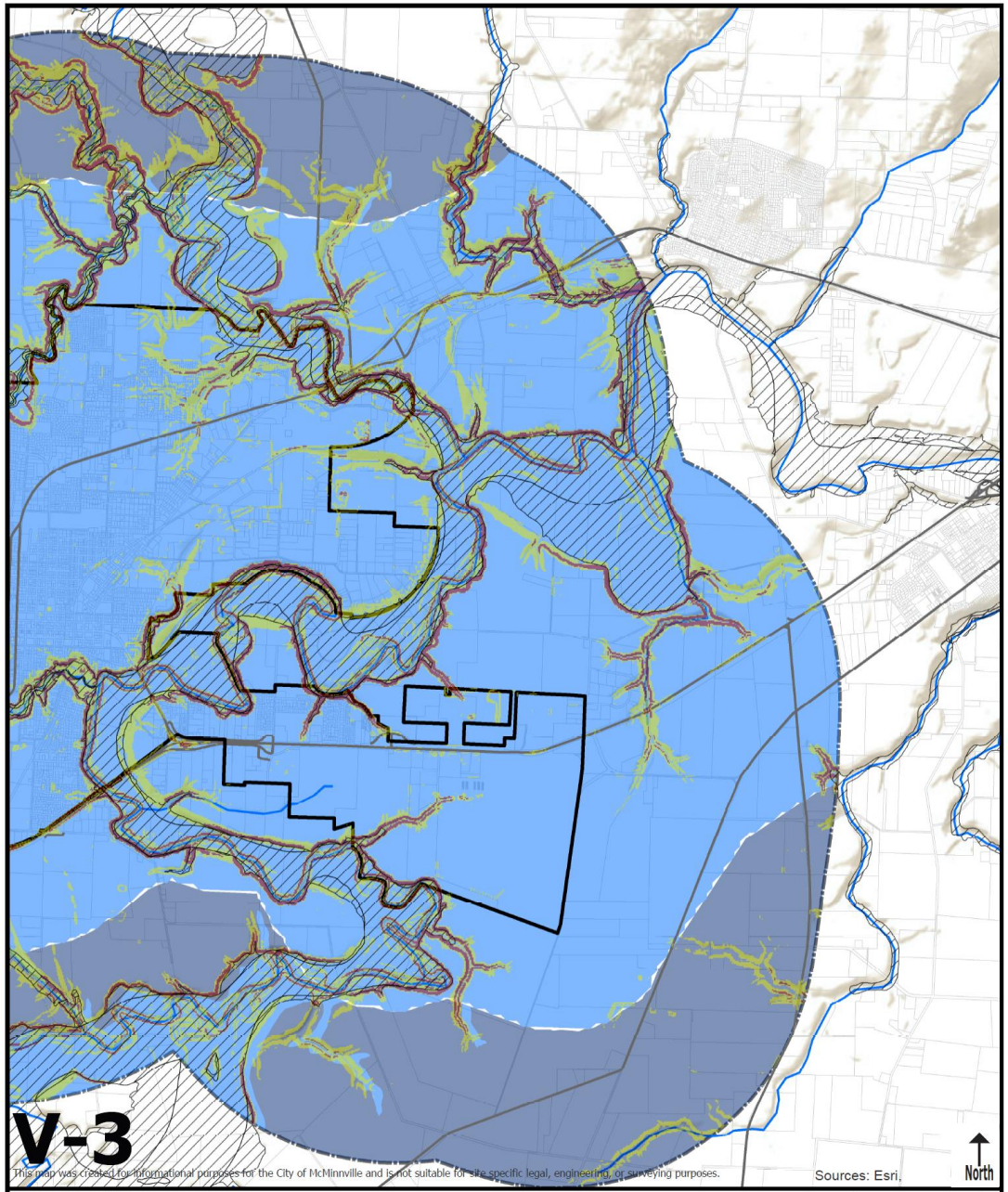
- Flood Hazards
- McMinnville Urban Growth Boundary
- Study Area (1.5 Miles)
- Tax Lots
- Major Roads
- Rivers & Streams

Miles 0 0.5 1 2

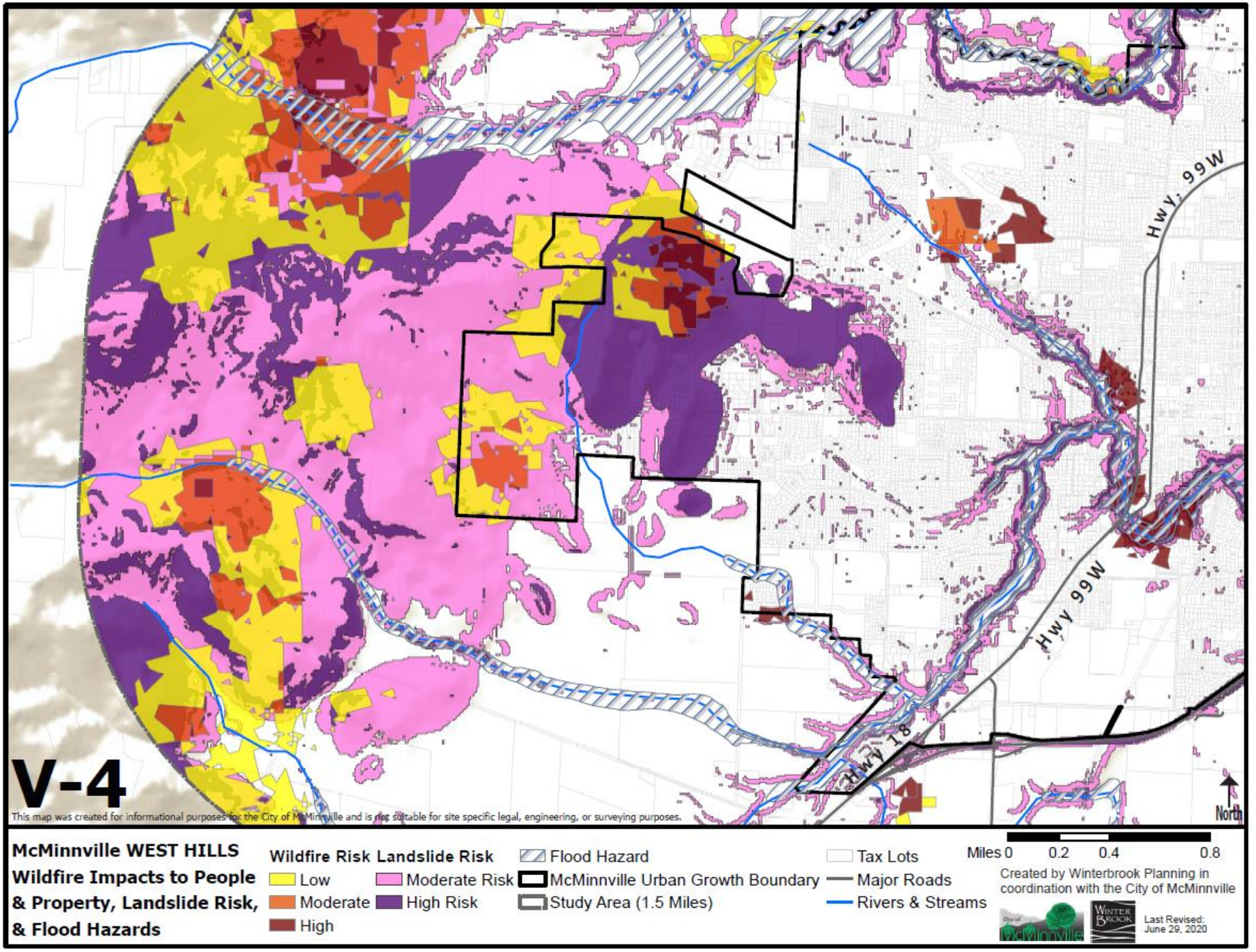
Created by Winterbrook Planning in coordination with the City of McMinnville

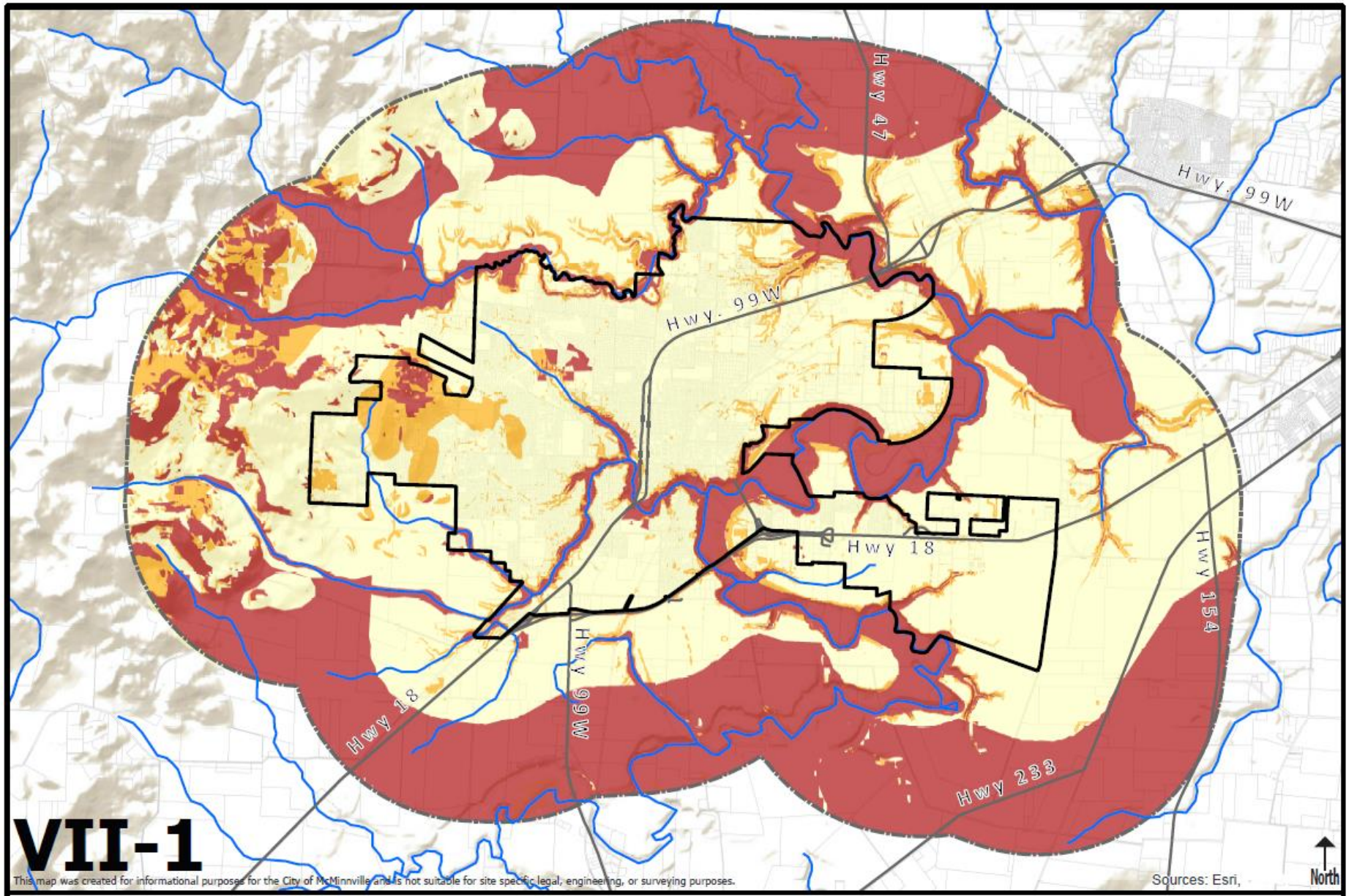
Last Revised: June 26, 2020


V-2
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
Hwy. 99W
Hwy 99W
Hwy 18
Sources: Esri, USGS,
North
McMinnville WEST HILLS
Geologic Hazards:
Steep Slopes, Landslide, &
Liquefaction
Landslide Risk
Moderate Risk
High Risk
Liquefaction Risk
Low Risk
Moderate Risk
High Risk
Steep Slopes (>25%)
McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Tax Lots
Major Roads
Rivers & Streams
Miles 0 0.2 0.4 0.8
Created by Winterbrook Planning in coordination with the City of McMinnville
Last Revised:
June 26, 2020



City of McMinnville


V-4
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
Hwy 99W
Hwy 99W
Hwy 18
North
McMinnville WEST HILLS
Wildfire Impacts to People
& Property, Landslide Risk,
& Flood Hazards
Wildfire Risk
Low
Moderate
High
Landslide Risk
Moderate Risk
High Risk
Flood Hazard
McMinnville Urban Growth Boundary
Study Area (1.5 Miles)
Tax Lots
Major Roads
Rivers & Streams
Miles 0 0.2 0.4 0.8
Created by Winterbrook Planning in coordination with the City of McMinnville
Last Revised:
June 29, 2020



VII-1

This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.

Sources: Esri,

North

McMinnville Proposed Natural Hazard Overlay

Subdistrict

- No Subdistrict
- Mitigation (NH-M)
- Protection (NH-P)

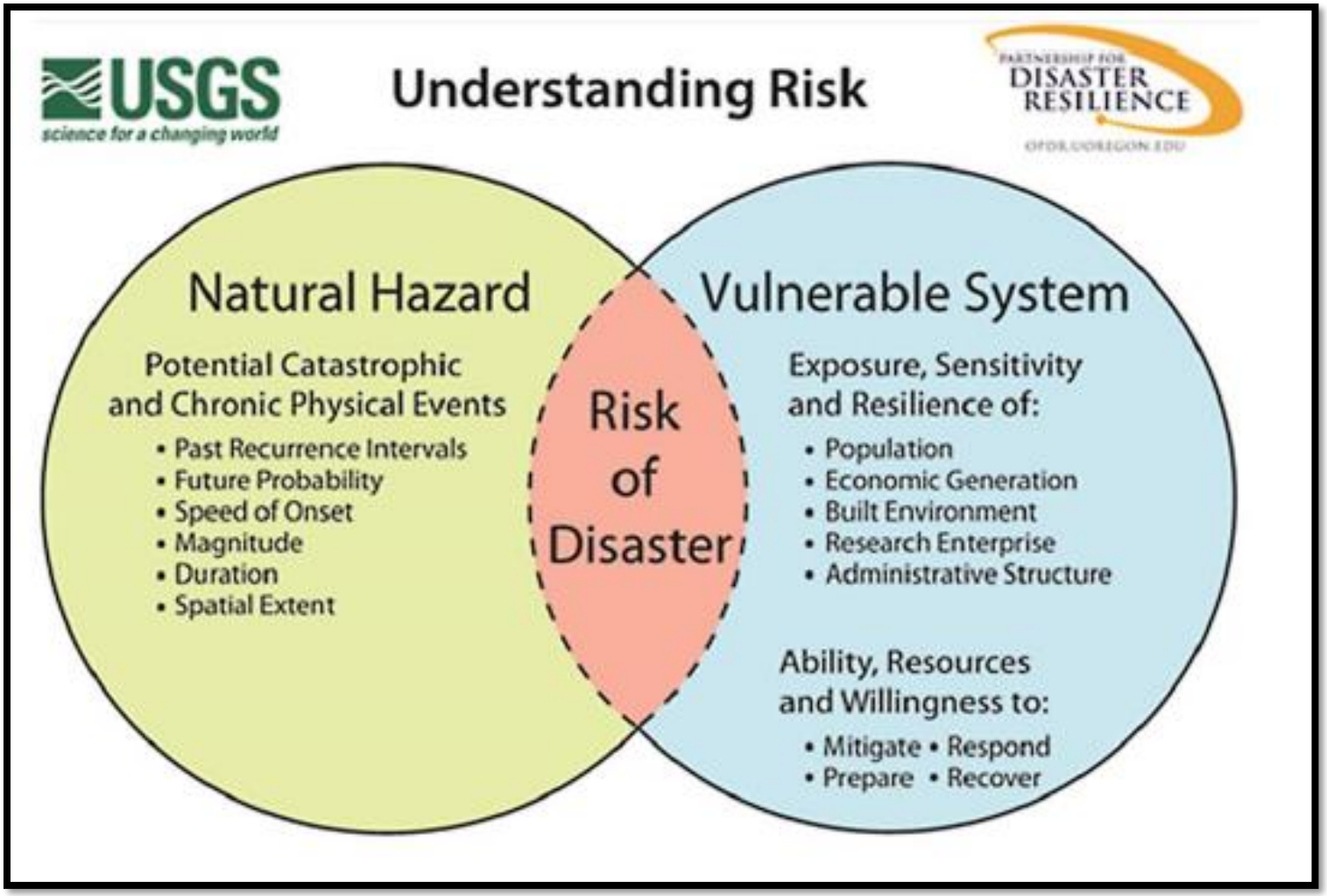
- McMinnville Urban Growth Boundary
- Study Area (1.5 Miles)
- Tax Lots
- Major Roads
- Rivers & Streams

Miles 0 0.5 1 2

Created by Winterbrook Planning in coordination with the City of McMinnville

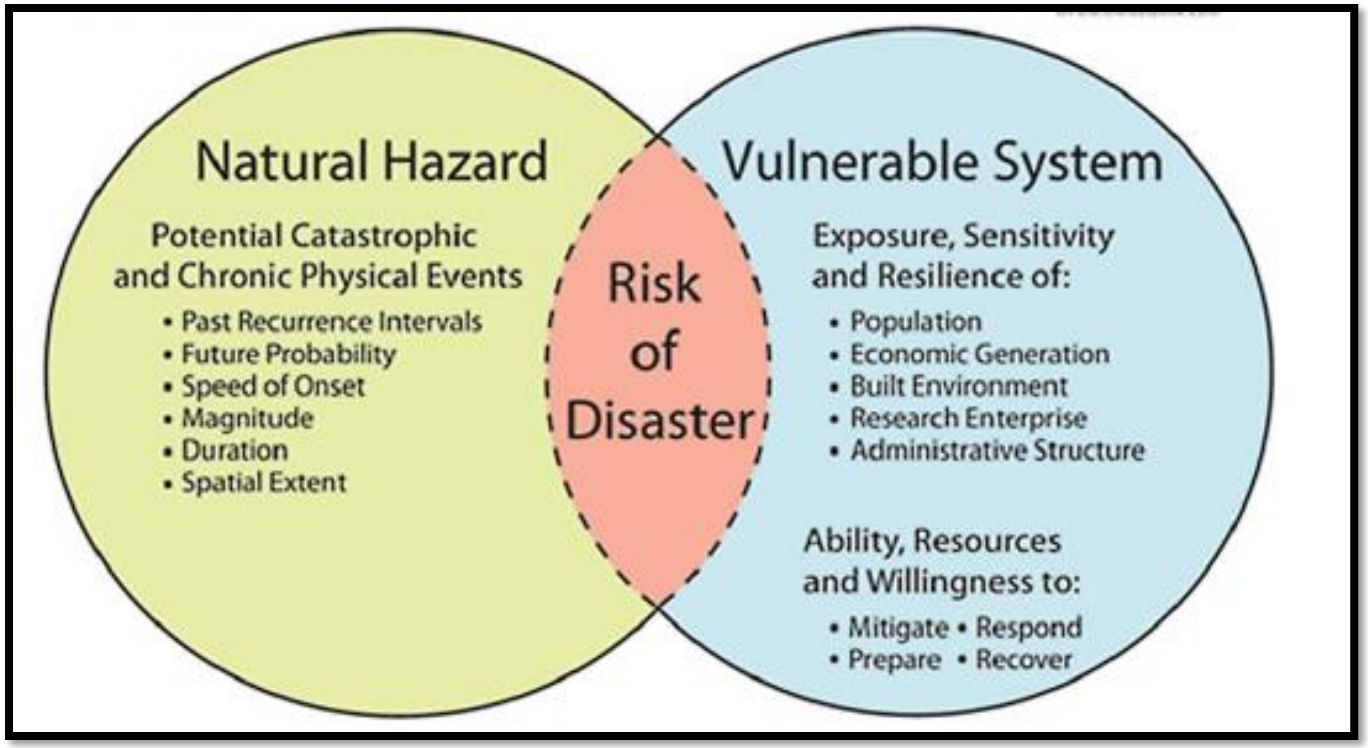
Last Revised: June 28, 2020

September 2020: Oregon NHMP



City of McMinnville

ADDING SOCIAL VULNERABILITY ASSESSMENT



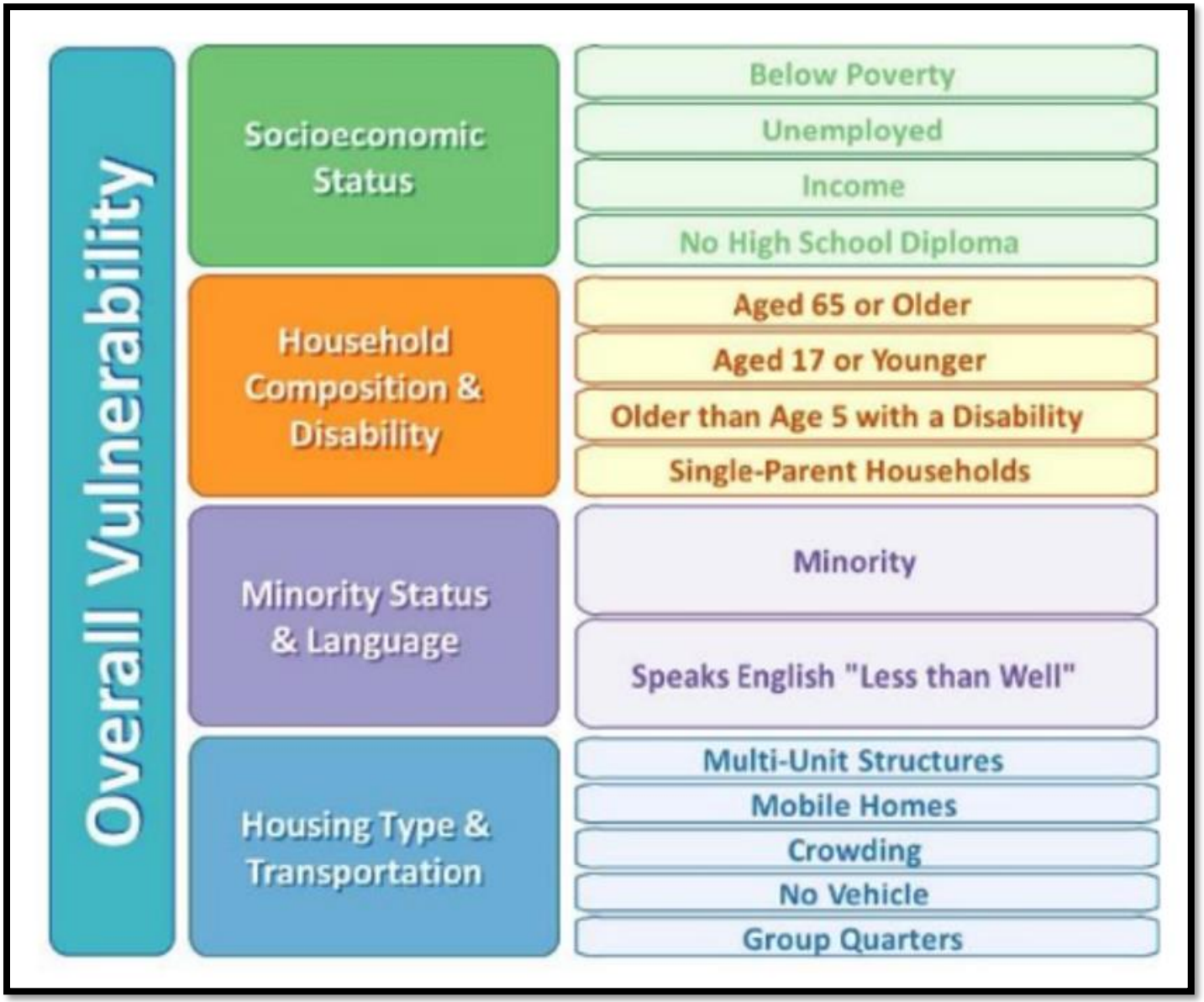
1. **Identify Hazards**
2. **Identify "Who" and "What " Is Vulnerable**
3. **Assess Risk**

City of McMinnville

September 2020: Oregon NHMP

<u>Social Vulnerability</u>:

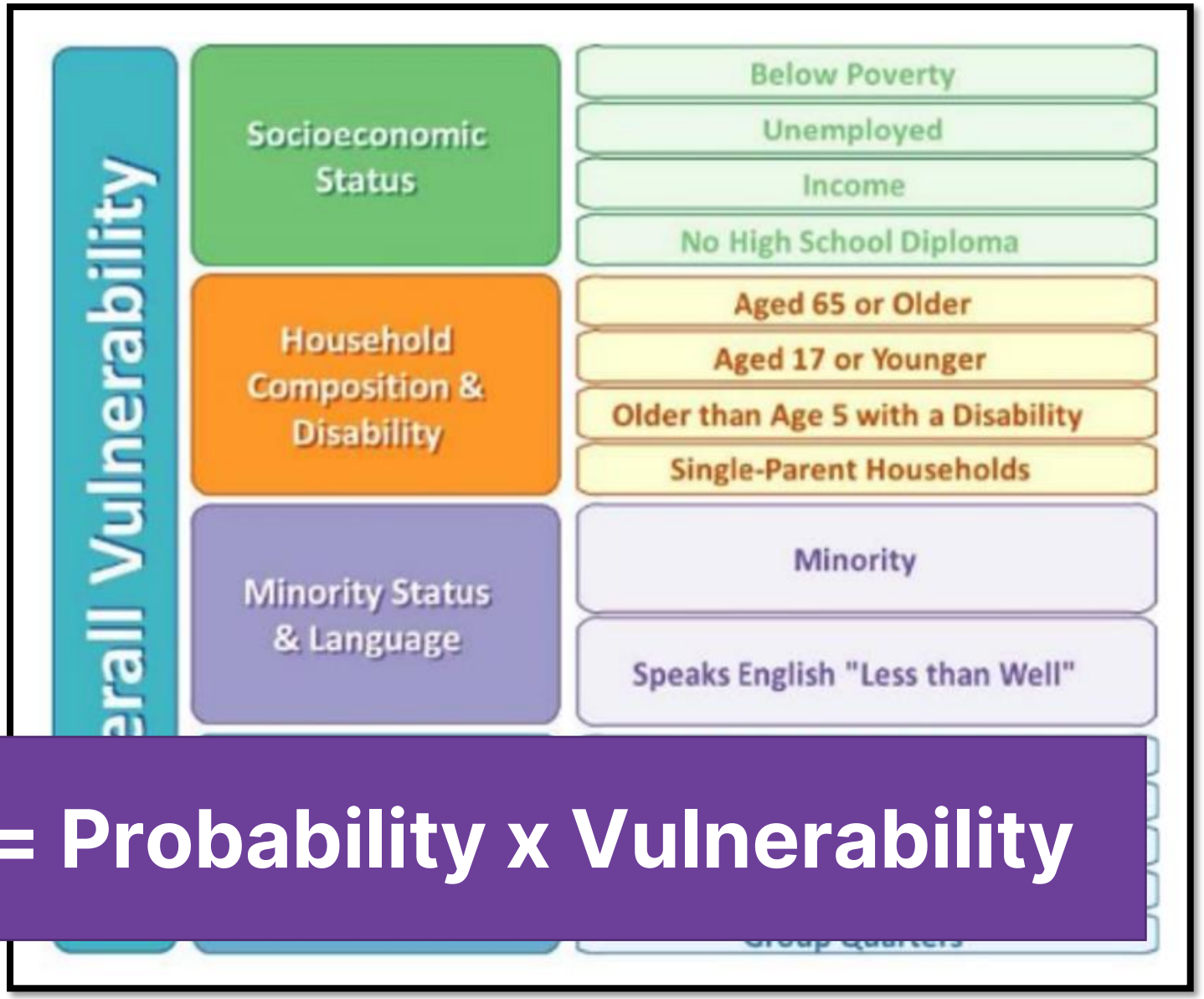
Underserved populations are more susceptible to life-changing event associated with natural hazards.



September 2020: Oregon NHMP

Social Vulnerability:

Underserved populations are more susceptible to life-changing event associated with natural hazards.



Risk = Probability x Vulnerability

2021: Update Natural Hazards Inventory and Risk Assessment

- ❑ Include new UGB boundary to inform future planning
- ❑ Update composite hazard scoring/ranking to be consistent with ORNHMP
  - Inclusion of vulnerability in hazard risk assessment
- ❑ Update maps and prepare Natural Hazards Overlay zone text
  - Natural Hazards Mitigation
  - Natural Hazards Protection

City of McMinnville

NATURAL HAZARDS ASSESSMENT

- Scored on a scale from 0 to 5
- Probability is based on inventories developed by state agencies
- Vulnerability is based on State Natural Hazard Management Plan

Natural Hazard Type	Probability of the Hazard in McMinnville		Social + Physical Vulnerability
Landslide	Moderate	2	2.67
	High	5	
Cascadia Subduction Zone Earthquake			(Earthquake) 3.33
Liquefaction	Moderate	2	
	High	5	
Shaking	Very Strong	2	
	Severe	5	
Slope	➢25%	5	-
Wildfire	Moderate	2	2.50
	High/Severe	5	
Flood	Floodplain	5	2.67
	Floodway	5	

City of McMinnville

NATURAL HAZARDS ASSESSMENT

FID *	Landslide	Liquefacti	SubShaking	Slope	WildFire	Flood	Total_Prob	Vul_Lands	Vul_Earth	Vul_WF	Vul_Flood	Total_V	New_Risk
39	5	2	2	0	0	5	16	2.67	3.33	0	2.67	8.67	**2.467**
40	5	2	2	5	0	5	21	2.67	3.33	0	2.67	8.67	**2.967**
43	5	2	2	0	5	5	21	2.67	3.33	2.5	2.67	11.17	**3.217**
44	5	2	2	5	5	5	26	2.67	3.33	2.5	2.67	11.17	**3.717**
45	5	2	2	0	2	5	18	2.67	3.33	2.5	2.67	11.17	**2.917**
46	5	2	2	5	2	5	23	2.67	3.33	2.5	2.67	11.17	**3.417**
49	5	2	2	0	0	5	16	2.67	3.33	0	2.67	8.67	**2.467**
50	5	2	2	5	0	5	21	2.67	3.33	0	2.67	8.67	**2.967**
58	0	2	2	0	0	5	11	0	3.33	0	2.67	6	**1.7**
59	0	2	2	5	0	5	16	0	3.33	0	2.67	6	**2.2**
62	0	2	2	0	5	5	16	0	3.33	2.5	2.67	8.5	**2.45**

Applied scoring to GIS shapefiles

City of McMinnville

NATURAL HAZARDS MITIGATON PROGRAM

1) New Natural Hazards Overlay Zones (New Chapter, 17.49):

NH-M = Mitigation Subdistrict

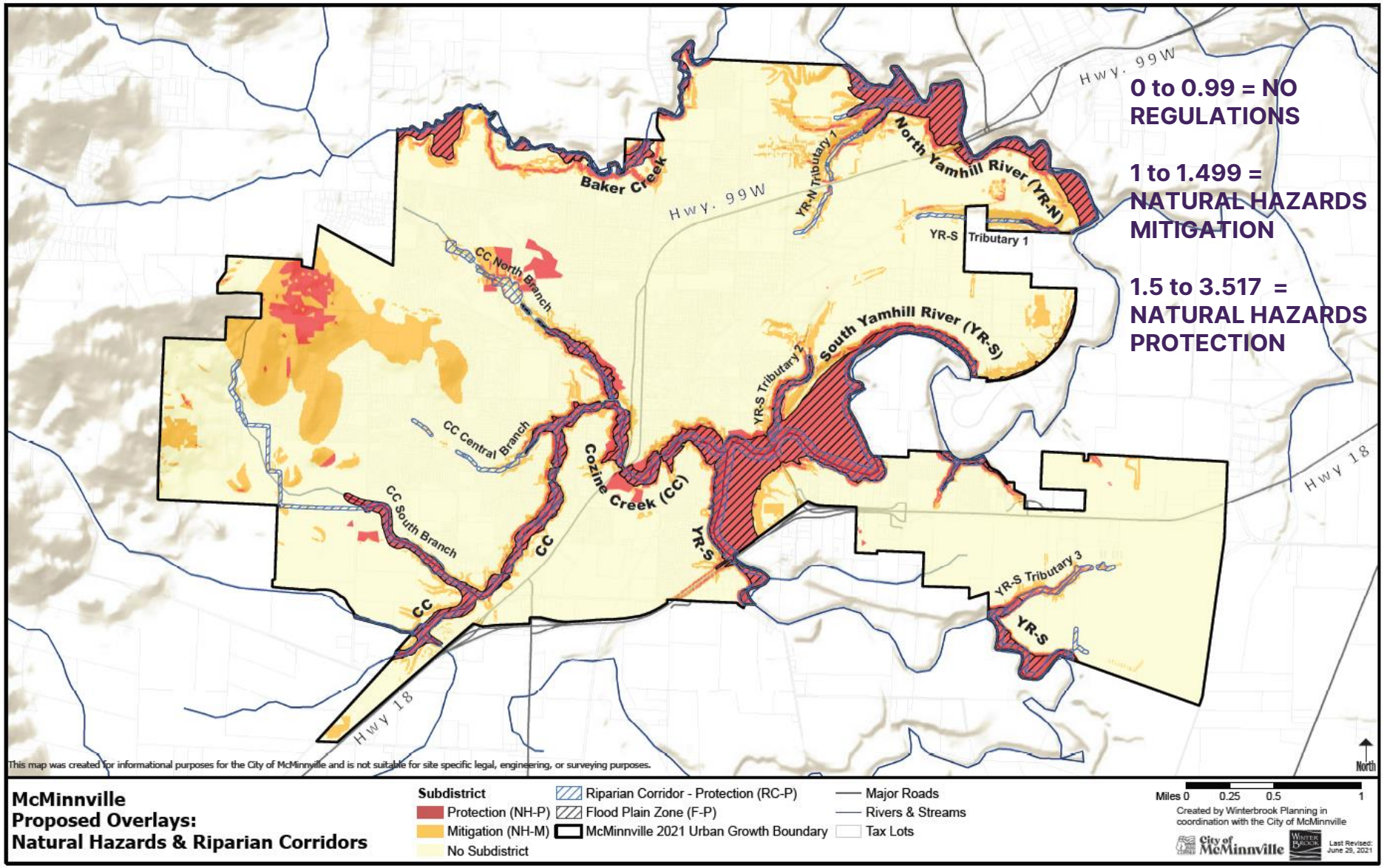
- ❑ Based on a medium cumulative hazard ranking
- ❑ Development allowed consistent wisite-specificfic hazard mitigation studies and building and fire codes.

NH-P = Protection Subdistrict

- ❑ Based on a high cumulative hazard ranking
- ❑ Restricts development – remaining buildable area subject to next highest residential zone.

City of McMinnville

NATURAL HAZARDS OVERLAY



NATURAL HAZARDS MITIGATON PROGRAM

2) Comprehensive Plan, Volume II, Chapter XI: Natural Features

- **Multi-Hazard Policies**
- **Geological Hazard Policies**
- **Flood Hazard Policies**
- **Wildfire Hazard Policies**

City of McMinnville

NATURAL HAZARDS MITIGATON PROGRAM

3) Inventory and Assessment with Appendices for Comprehensive Plan, Volume I

Natural Hazards Inventory & Management Program Options and Recommendations

- **Appendix 1: Best Natural Hazards Management Practices in Comparator Cities**
- **Appendix 2: Natural Hazard Overlay Methodology**
- **Appendix 3: Revised Natural Hazard Inventory and Natural Hazard Overlay Maps**

City of McMinnville

2021: Update Natural Hazards Inventory and Risk Assessment

Began work on the Natural Resources Program

- Riparian Corridors
- Tree Groves
- Scenic Views
- Significant Trees

Natural Resources interconnected with Natural Hazards

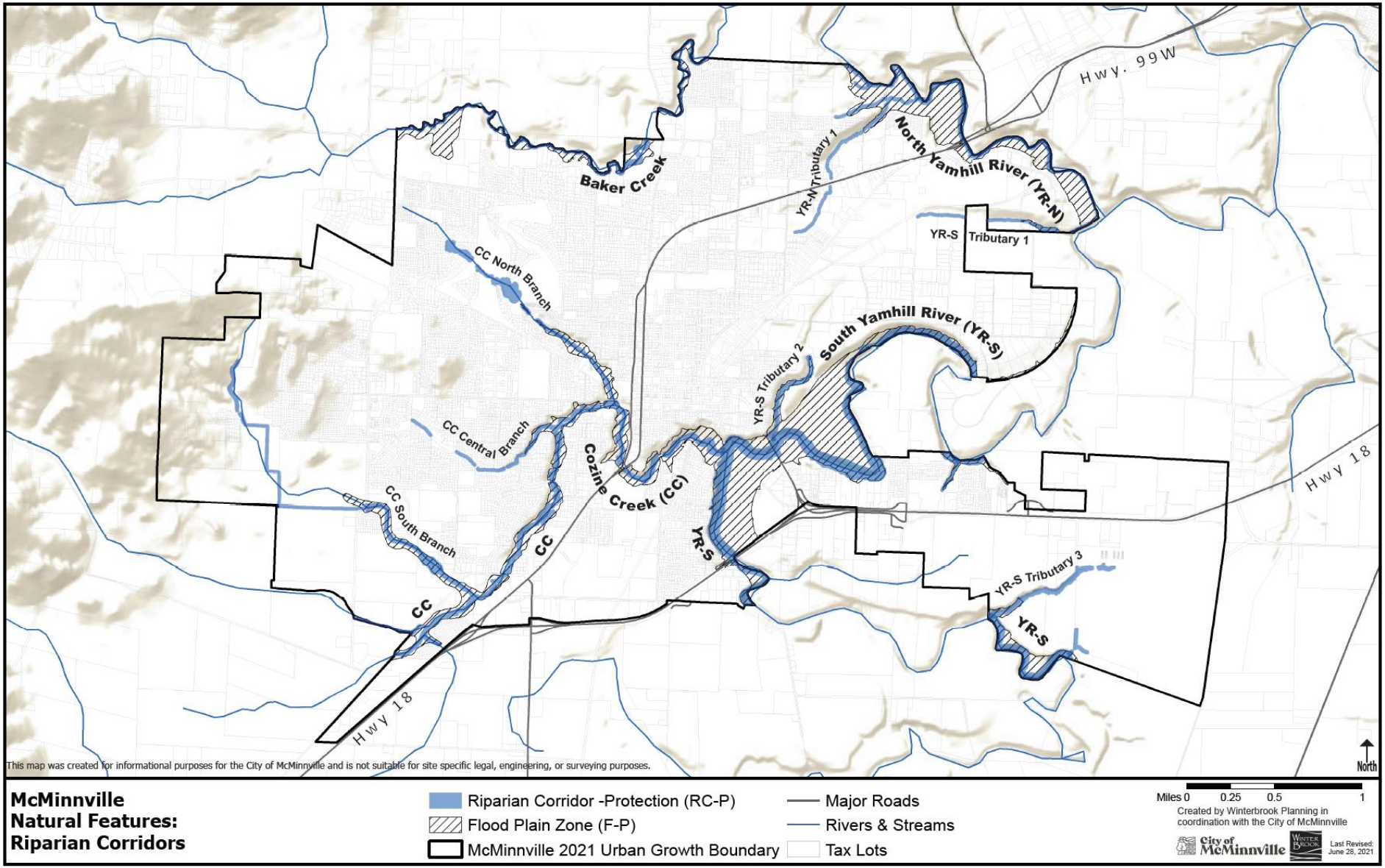
- Tree Grove protections may decrease landslide risk but increase wildfire risk

- Riparian corridor protections may help decrease flood risk

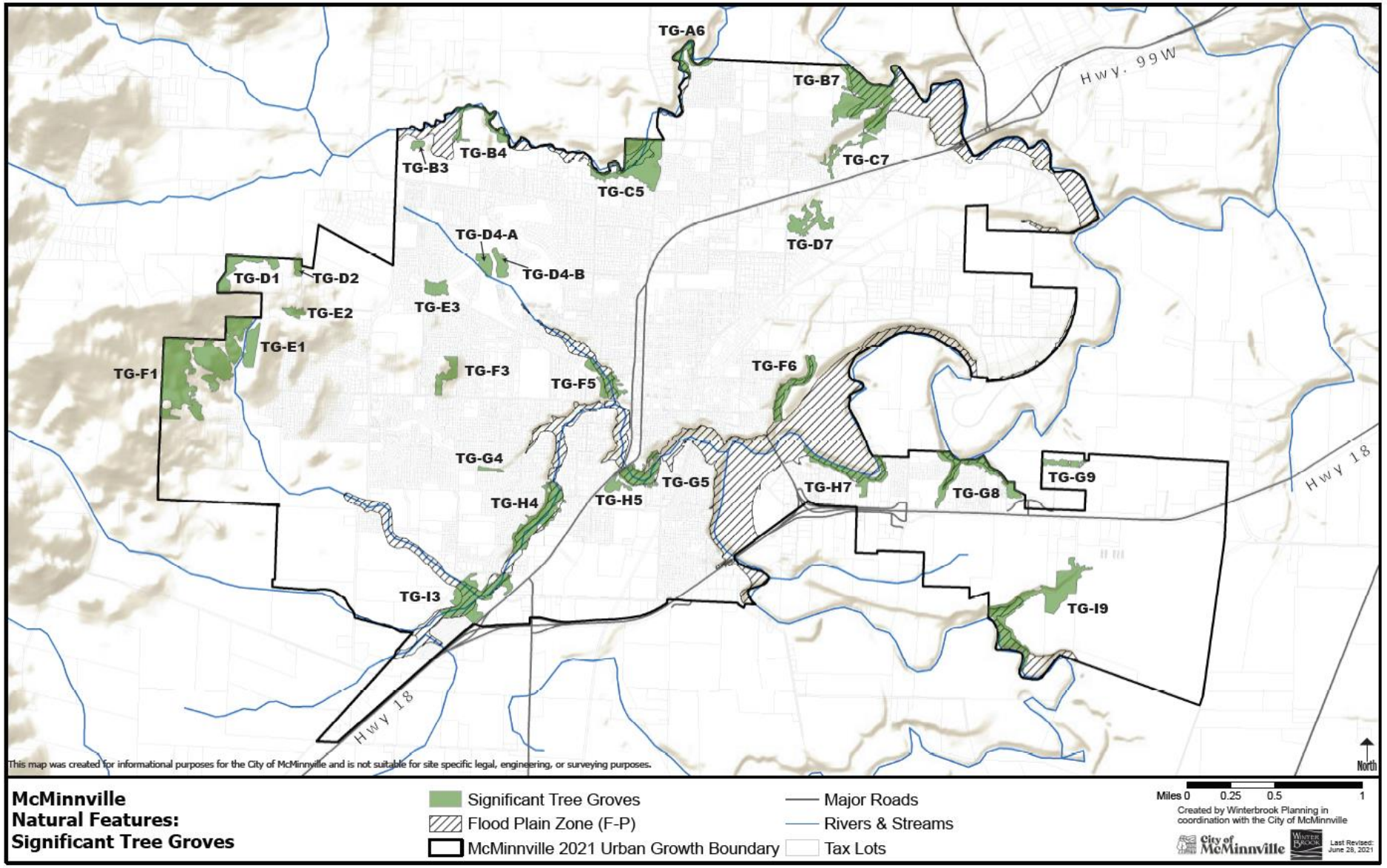
- Natural Hazard Protection areas may provide opportunities for scenic views/open space

City of McMinnville

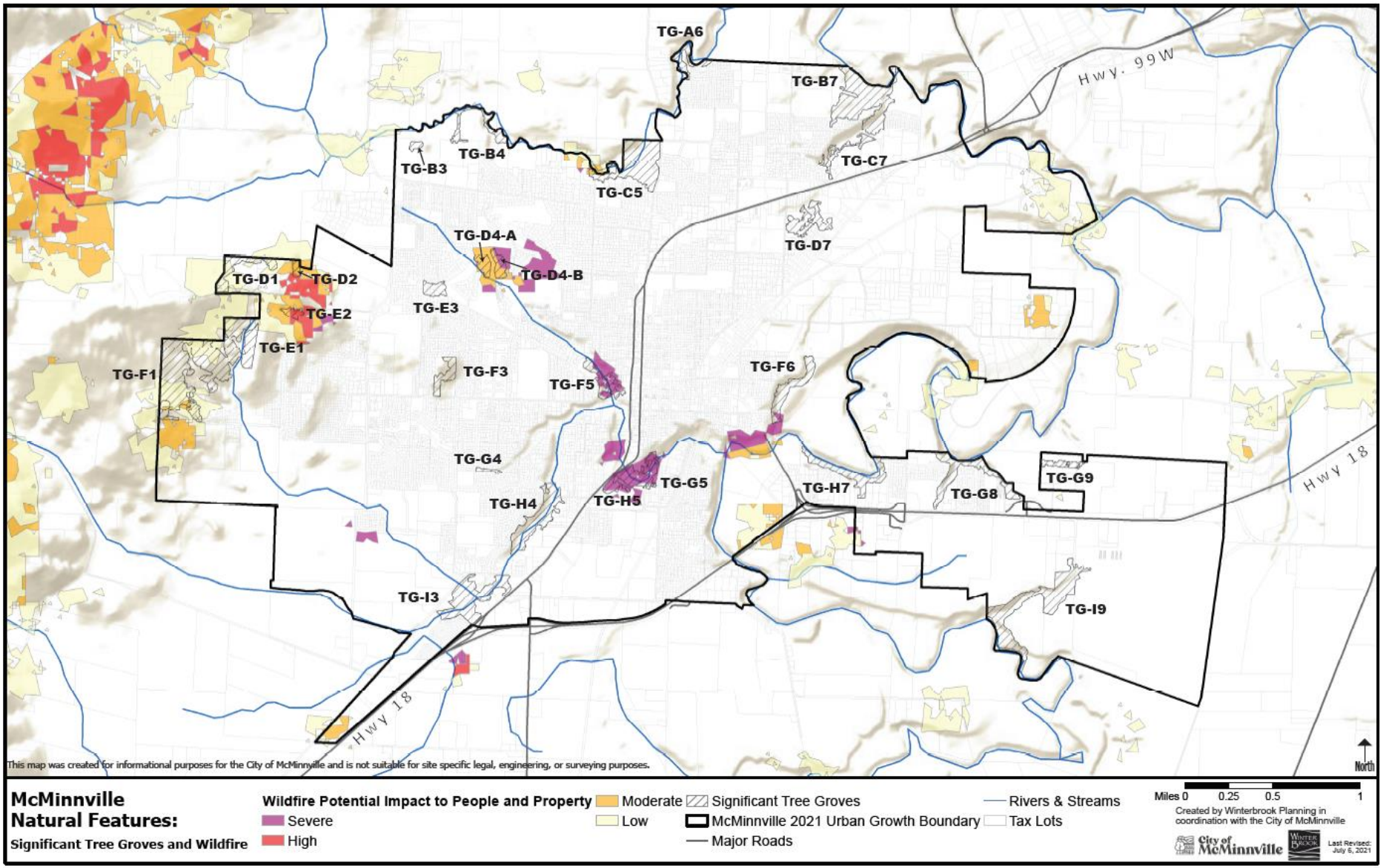
RIPARIAN CORRDORS



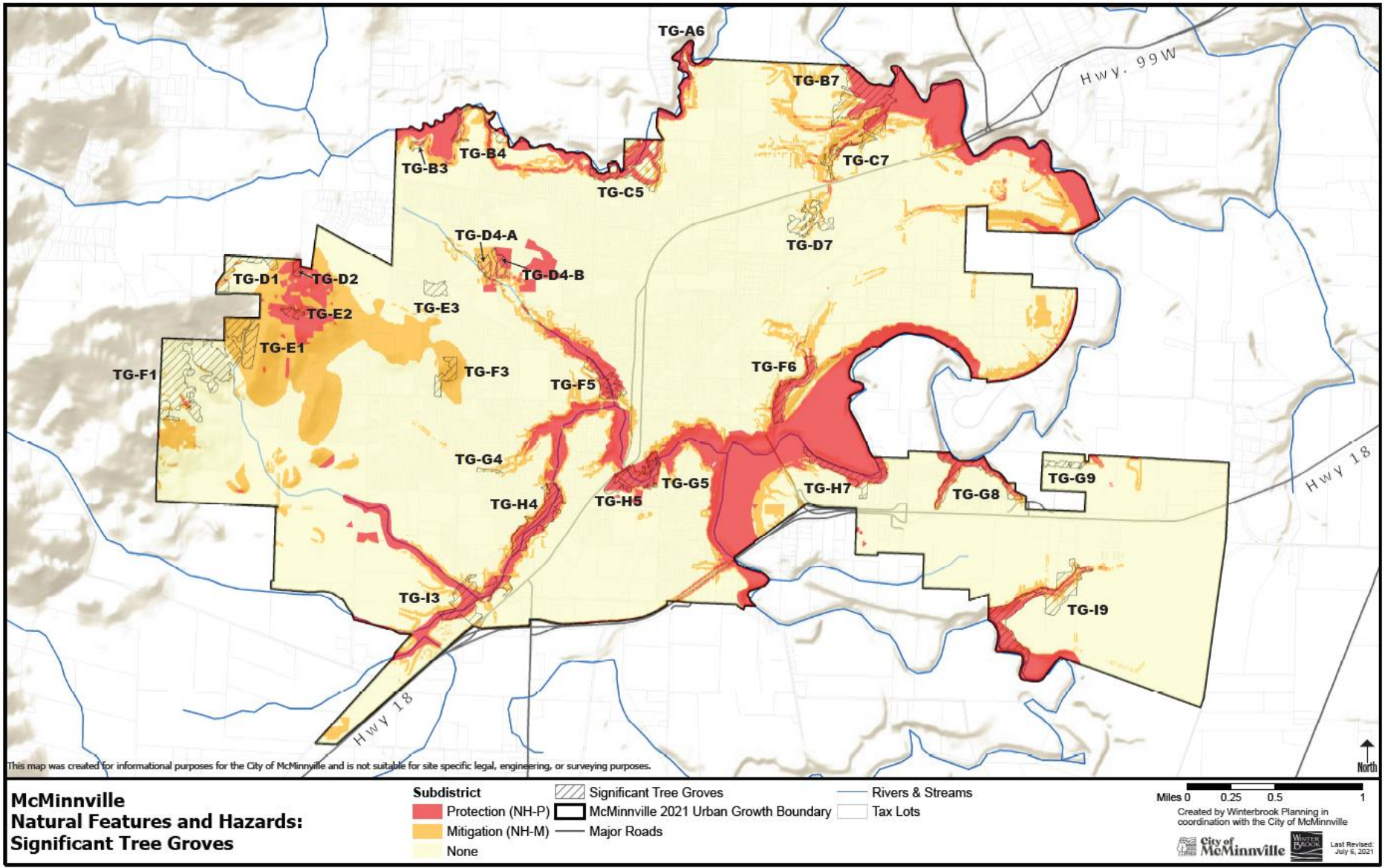
TREE GROVES


TG-A6
TG-B7
Hwy. 99W
TG-B3
TG-B4
TG-C5
TG-C7
TG-D7
TG-D4-A
TG-D4-B
TG-D1
TG-D2
TG-E3
TG-E2
TG-E1
TG-F1
TG-F3
TG-F5
TG-F6
TG-G4
TG-G5
TG-G8
TG-G9
TG-H4
TG-H5
TG-H7
Hwy 18
TG-I3
TG-I9
Hwy 18
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
North
McMinnville
Natural Features:
Significant Tree Groves
Significant Tree Groves
Flood Plain Zone (F-P)
McMinnville 2021 Urban Growth Boundary
Major Roads
Rivers & Streams
Tax Lots
Miles 0 0.25 0.5 1
Created by Winterbrook Planning in coordination with the City of McMinnville
City of McMinnville
Last Revised: June 28, 2021

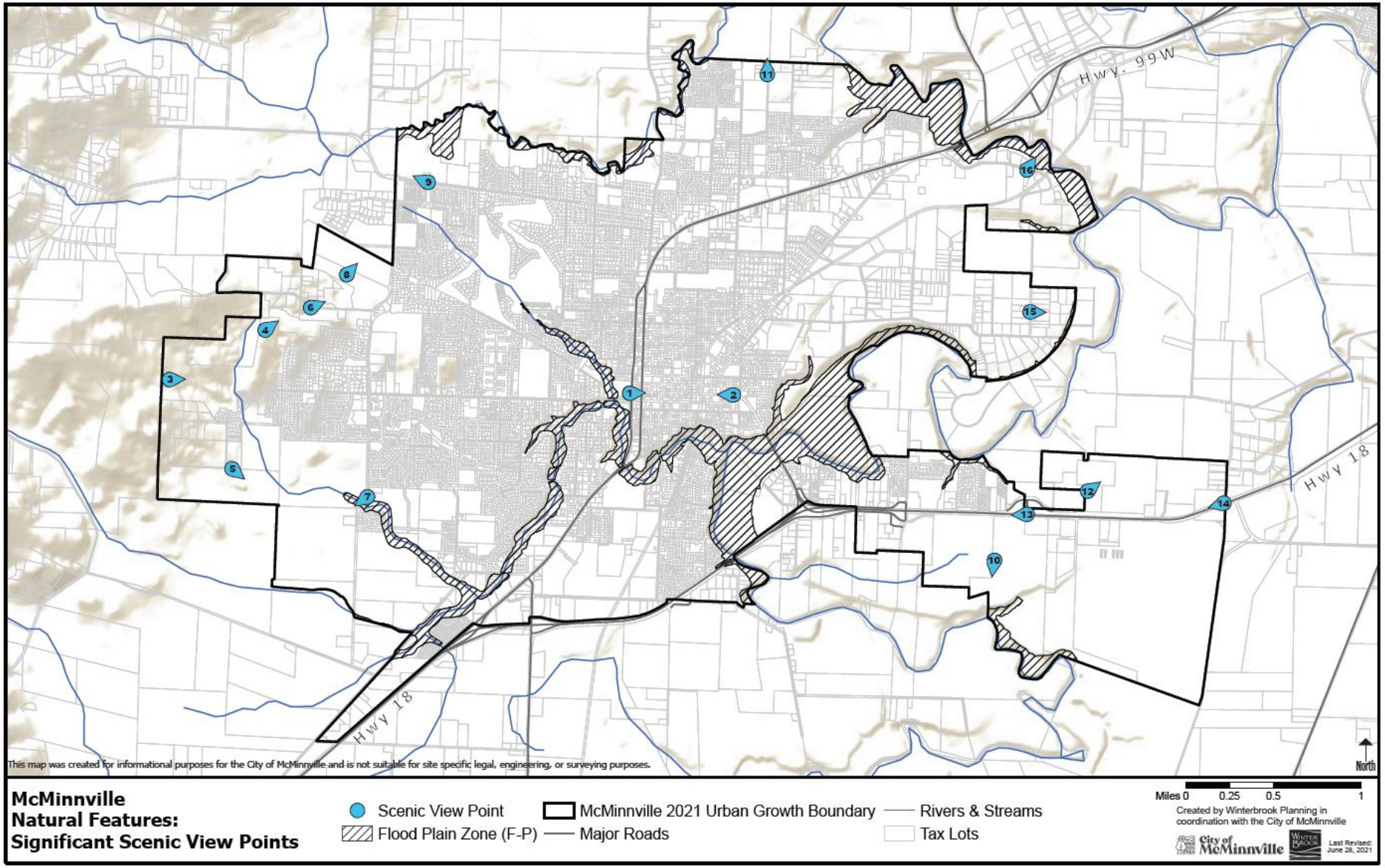
WILDFIRES


TG-A6
TG-B7
Hwy. 99W
TG-B3
TG-B4
TG-C5
TG-C7
TG-D4-A
TG-D7
TG-D1
TG-D2
TG-D4-B
TG-E3
TG-E2
TG-E1
TG-F1
TG-F3
TG-F5
TG-F6
TG-G4
TG-G5
TG-H4
TG-H5
TG-H7
TG-G8
TG-G9
Hwy 18
TG-I3
TG-I9
Hwy 18
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
North
McMinnville
Natural Features:
Significant Tree Groves and Wildfire
Wildfire Potential Impact to People and Property
Severe
High
Moderate
Low
Significant Tree Groves
McMinnville 2021 Urban Growth Boundary
Major Roads
Rivers & Streams
Tax Lots
Miles 0 0.25 0.5 1
Created by Winterbrook Planning in coordination with the City of McMinnville
City of McMinnville
Last Revised: July 6, 2021

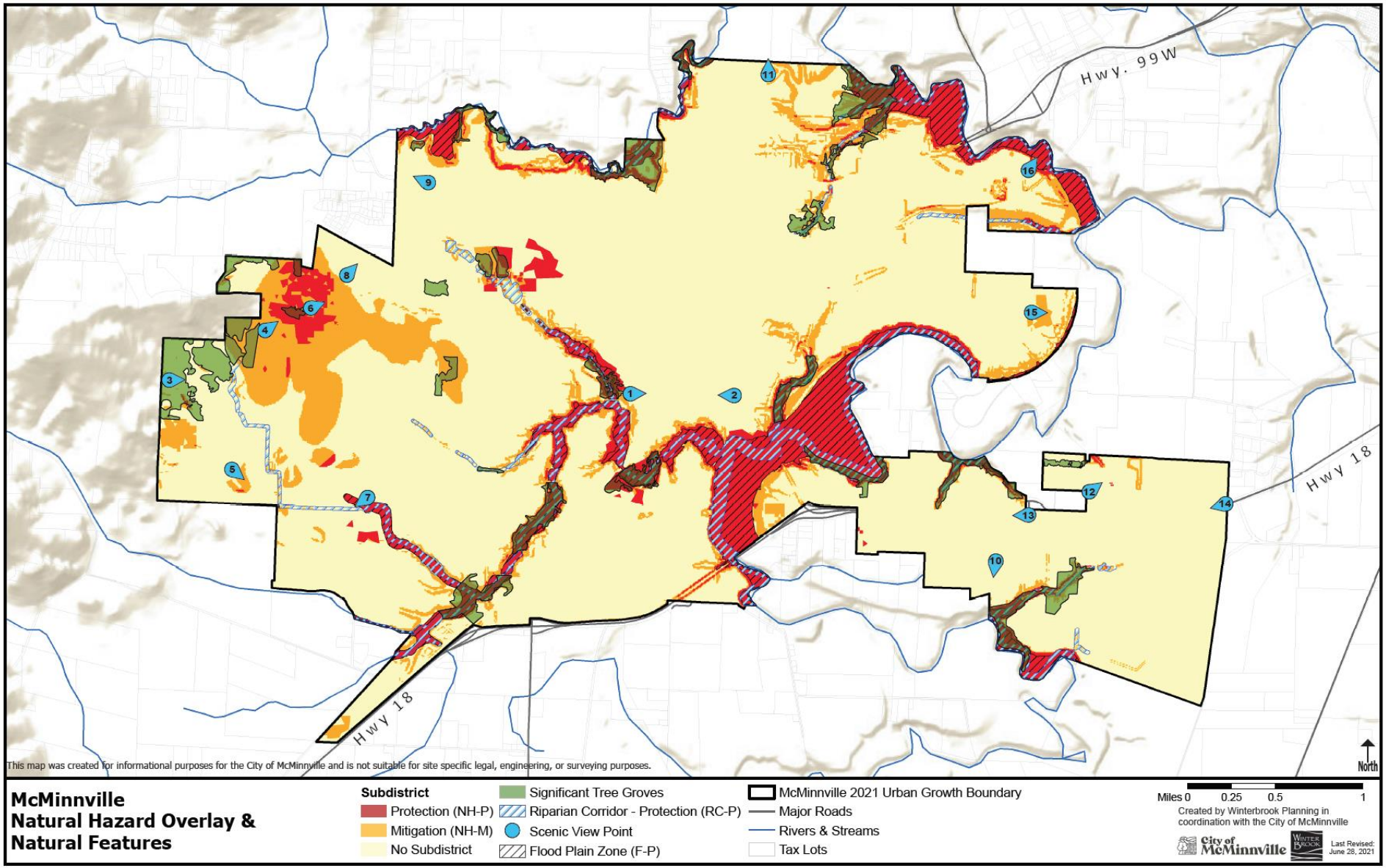
TREE GROVES AND NATURAL HAZARDS



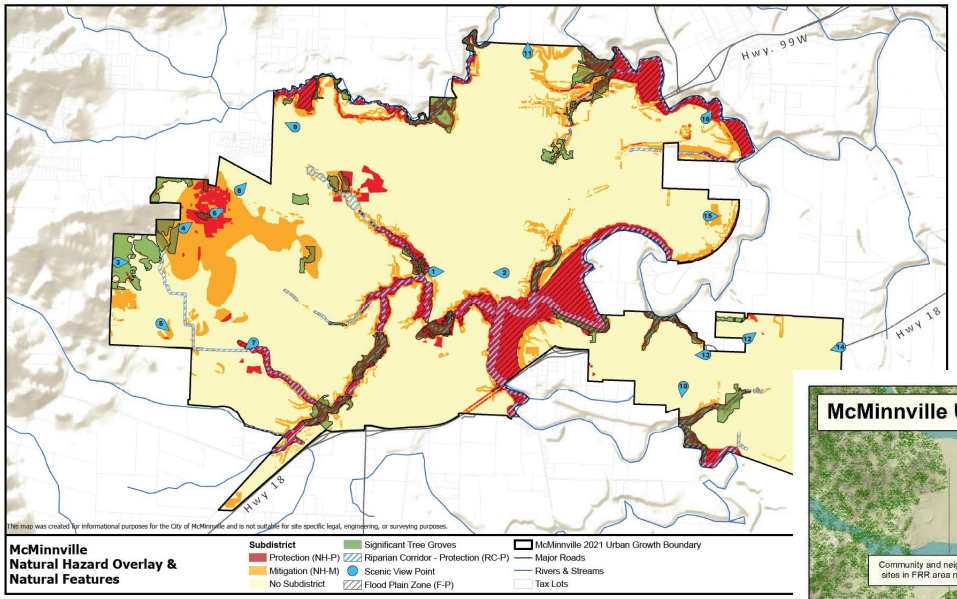
SCENIC VIEWS



COMBINED HAZARDS AND FEATURES

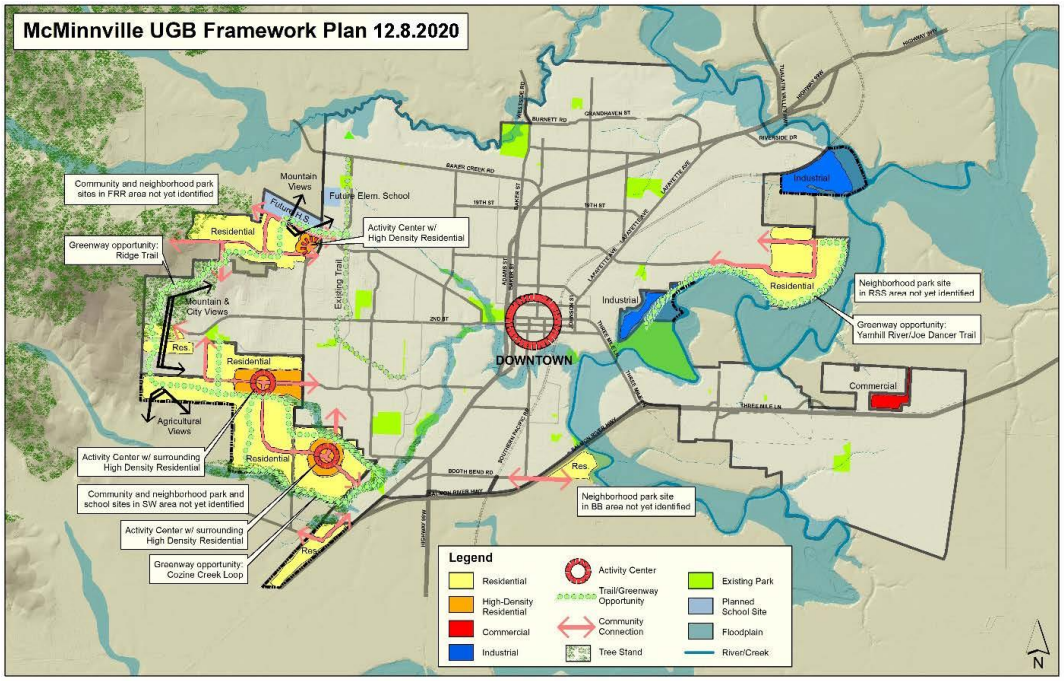


COMBINED HAZARDS AND FEATURES



Informing Future Development

Informing Area Plans



McMinnville

NEXT STEPS

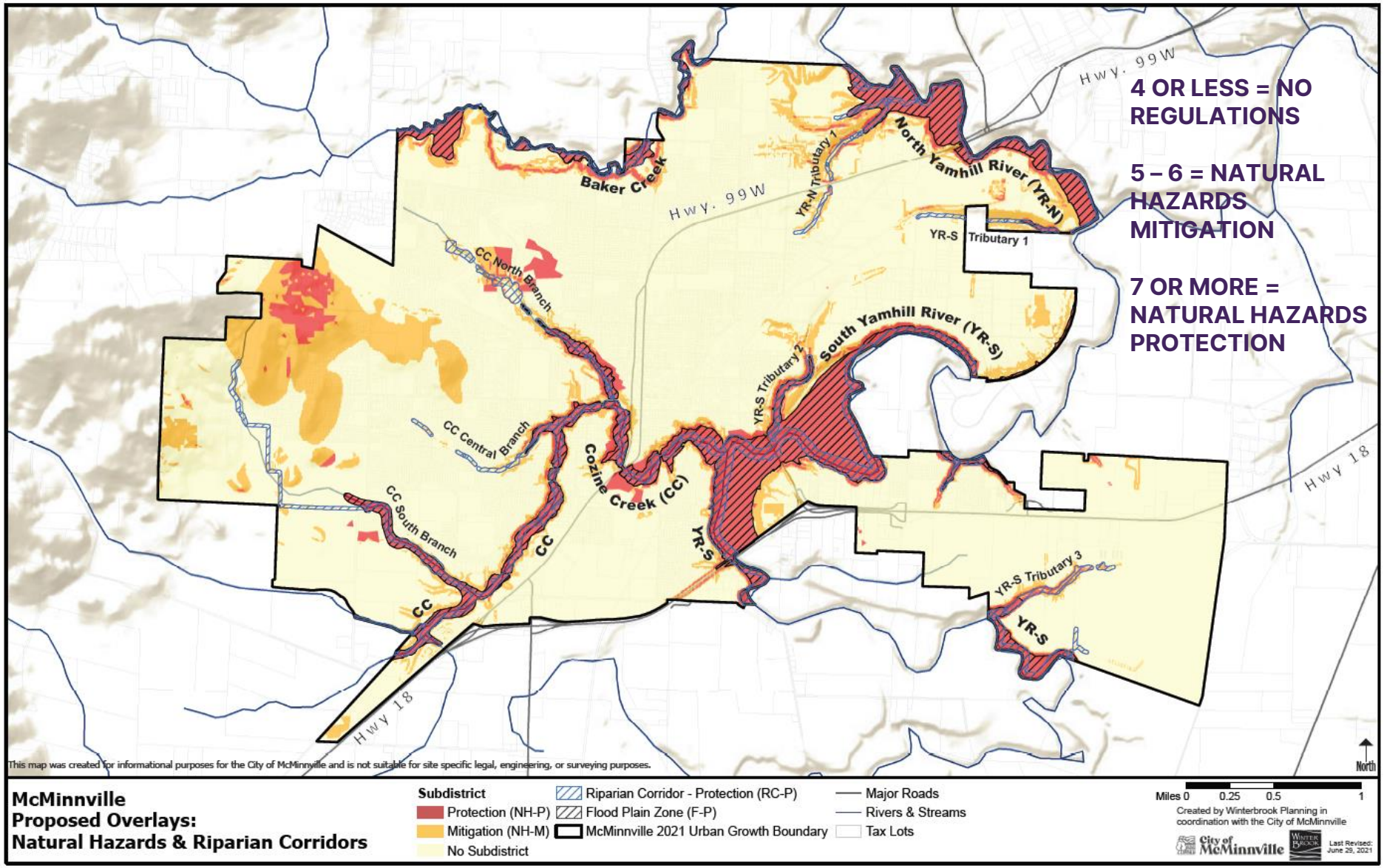
Measure 56 Notice to Impacted Property Owners

Public Information Sessions – March

April 6, Public Hearing, Planning Commission

City of McMinnville

QUESTIONS?


4 OR LESS = NO REGULATIONS
5 – 6 = NATURAL HAZARDS MITIGATION
7 OR MORE = NATURAL HAZARDS PROTECTION
Baker Creek
Hwy. 99W
YR-N Tributary 1
North Yamhill River (YR-N)
YR-S Tributary 1
CC North Branch
South Yamhill River (YR-S)
YR-S Tributary 2
CC Central Branch
Cozine Creek (CC)
CC South Branch
CC
YR-S
YR-S Tributary 3
Hwy 18
This map was created for informational purposes for the City of McMinnville and is not suitable for site specific legal, engineering, or surveying purposes.
North
McMinnville
Proposed Overlays:
Natural Hazards & Riparian Corridors
Subdistrict
Protection (NH-P)
Mitigation (NH-M)
No Subdistrict
Riparian Corridor - Protection (RC-P)
Flood Plain Zone (F-P)
McMinnville 2021 Urban Growth Boundary
Major Roads
Rivers & Streams
Tax Lots
Miles 0 0.25 0.5 1
Created by Winterbrook Planning in coordination with the City of McMinnville
City of McMinnville
Last Revised: June 29, 2021