

**3.0 Nichol Run Watershed**

The Nichol Run Watershed consists of four watershed management areas (WMAs) as listed below:

1. Jefferson
2. Lower Nichol
3. Potomac
4. Upper Nichol

WMAs in the Nichol Run Watershed are shown in Figure 3.1. As shown in the figure, all of the WMAs are located in Fairfax County, with the exception of the Potomac WMA which has a small portion located in Loudoun County. Only areas within Fairfax County were evaluated as part of this study; however, information on stormwater structures and stream crossings near the county border was gathered and evaluated to determine how it would affect stormwater flows in Fairfax County. The following information is provided for each WMA in the subsequent sections of this chapter:

1. WMA Characteristics
2. Existing and Future Land Use Information
3. Field Reconnaissance and Stream Physical Assessment Information
4. WMA Characterization
5. STEPL Modeling
6. HEC-RAS Modeling
7. Subwatershed Ranking

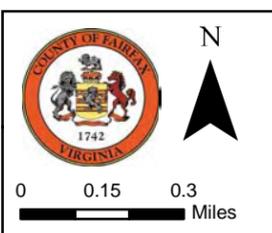
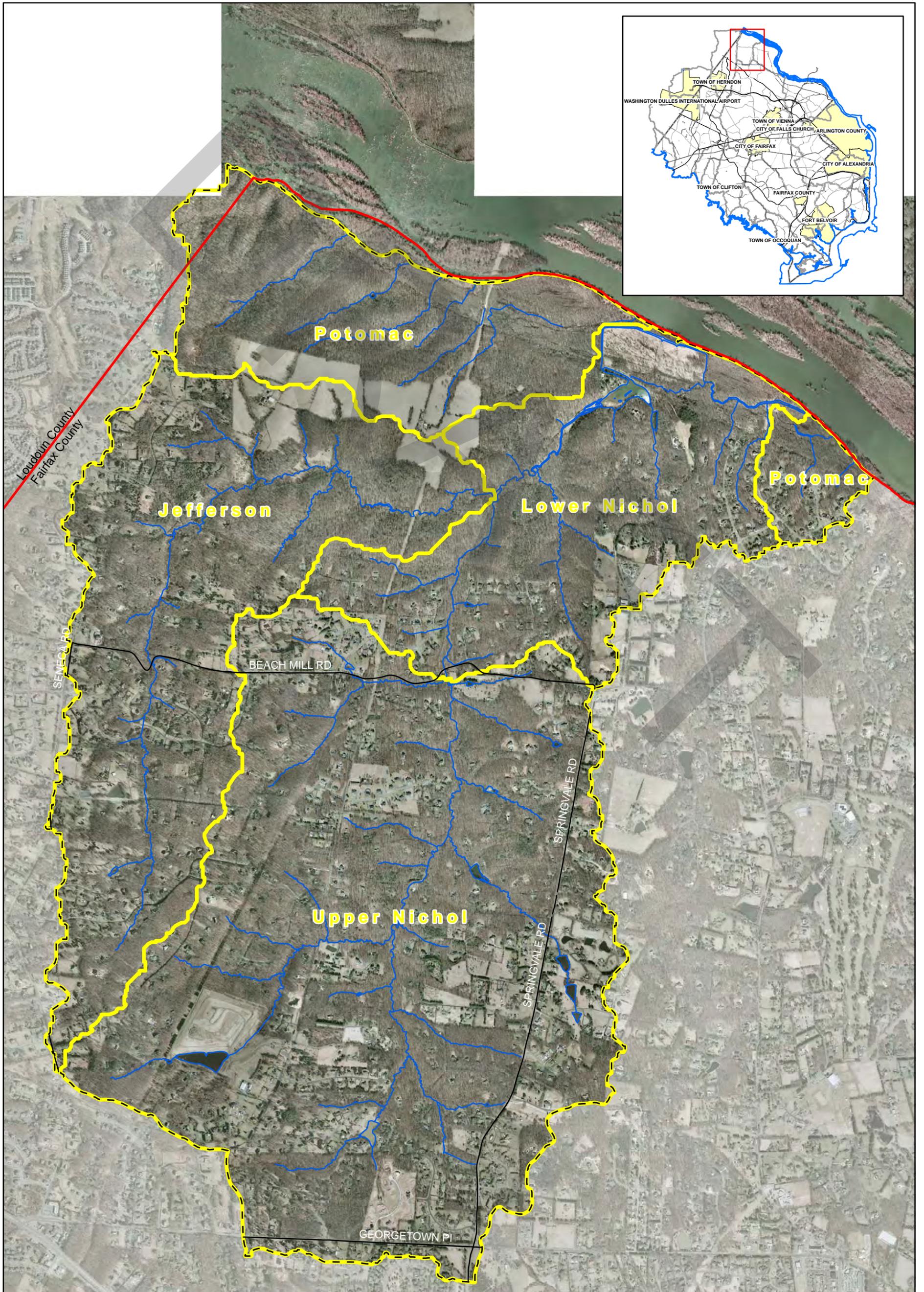
Table 3.1 illustrates the total area of each WMA, the current impervious conditions and the extent and type of stormwater treatment within each WMA.

**Table 3.1 Nichol Run Watershed WMA Summaries**

WMA Name	Total Area (acres)	Impervious Current Condition (acres)	Percent Impervious	Current Treatment Types			
				Quantity (acres)	Quality (acres)	Quantity/Quality (acres)	None (acres)
Jefferson	1,184.9	51.7	4.4	12.1	-	0.4	1,172.4
Lower Nichol	820.5	25.9	3.2	4.4	-	-	816.1
Potomac	696.5	8.7	1.2	-	-	-	696.5
Upper Nichol	2,547.7	144	5.6	36.7	-	2.6	2,508.4
<b>Watershed Totals</b>	<b>5,249.6</b>	<b>230.3</b>	<b>4.4</b>	<b>53.2</b>	<b>-</b>	<b>3</b>	<b>5,193.4</b>

## ***Nichol Run and Pond Branch Watersheds Workbook***

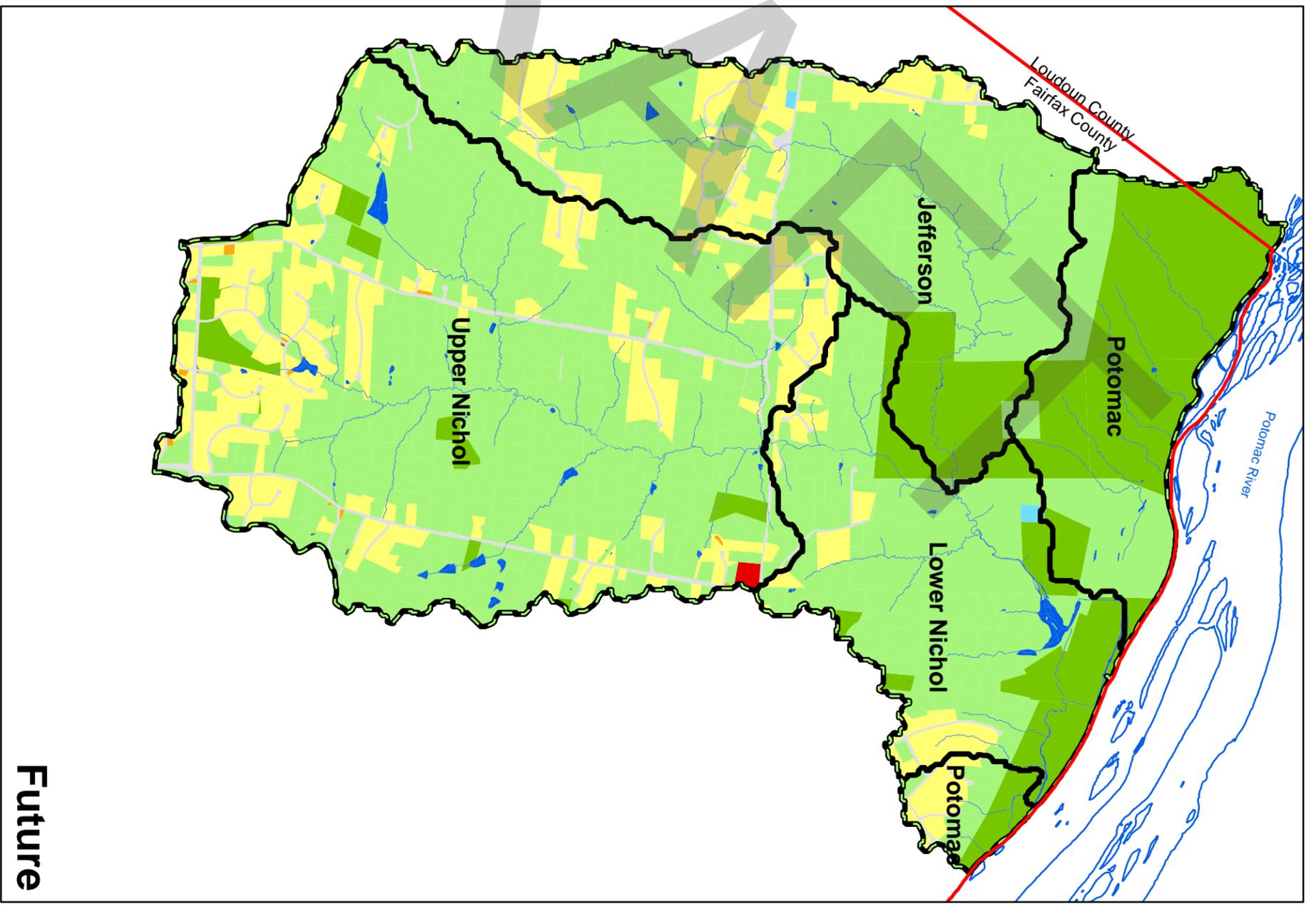
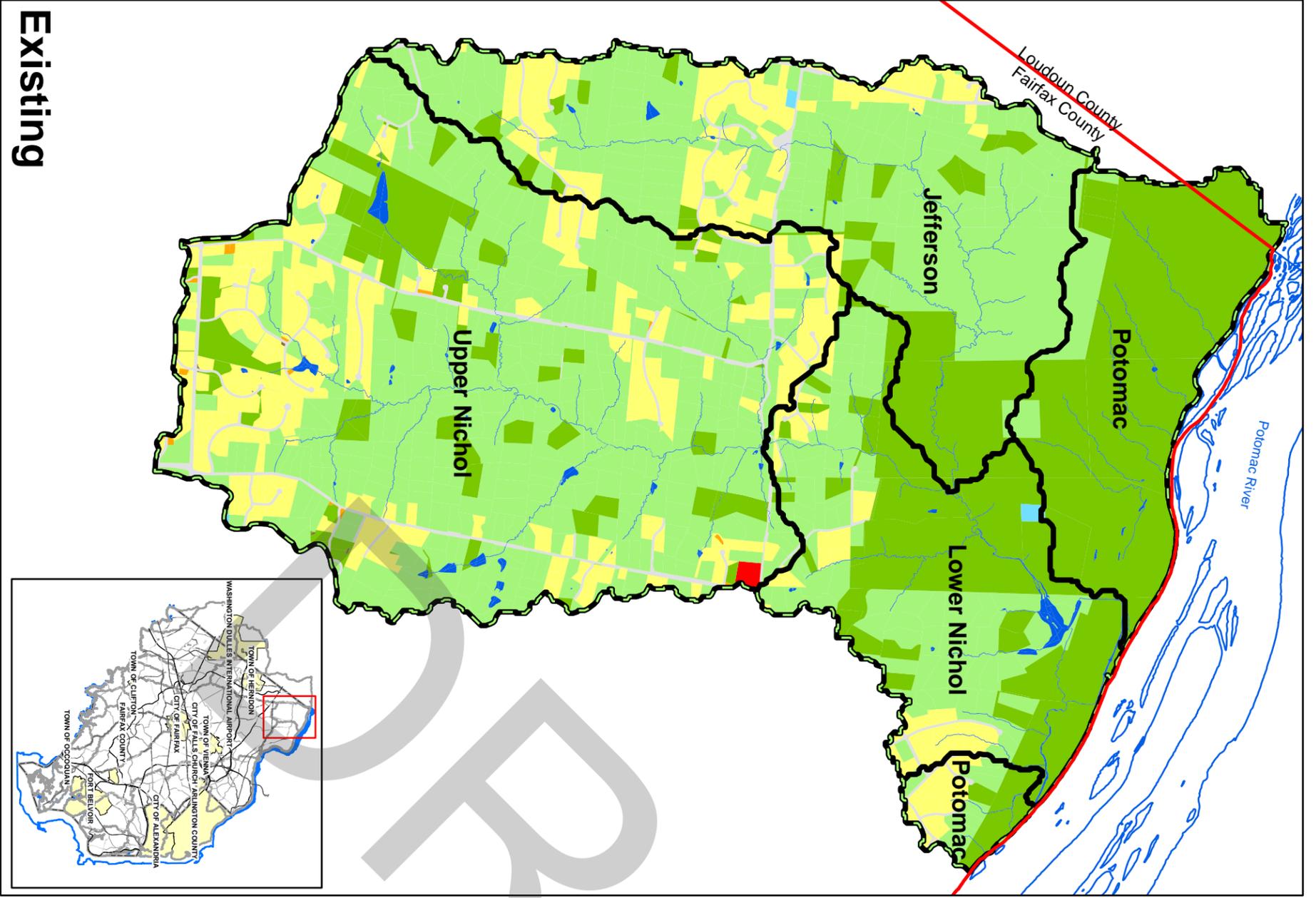
Figures for Chapter 3 are provided in the beginning of the chapter and are followed by a detailed discussion of each WMA in Sections 3.1 through Section 3.4. Section 3.5 includes a discussion of SWMM modeling results, including a SWMM Peak Flow Map for the 2-year storm event.



-  Perennial Streams
-  Roads
-  WMA Boundary
-  Nichol Run Watershed
-  County Boundary

**Figure 3.1  
Nichol Run  
Watershed Management Area  
Map**





**Figure 3.2**  
**Existing and Future Land Use**  
**Map for Nichol Run**  
**Watershed**

- WMAs
  - Watershed
  - County
- Land Use**
- ESR
  - GC
  - HDR
  - HIC
  - IND
  - INT
  - LDR
  - LIC
  - MDR
  - OS
  - TRANS
  - WATER

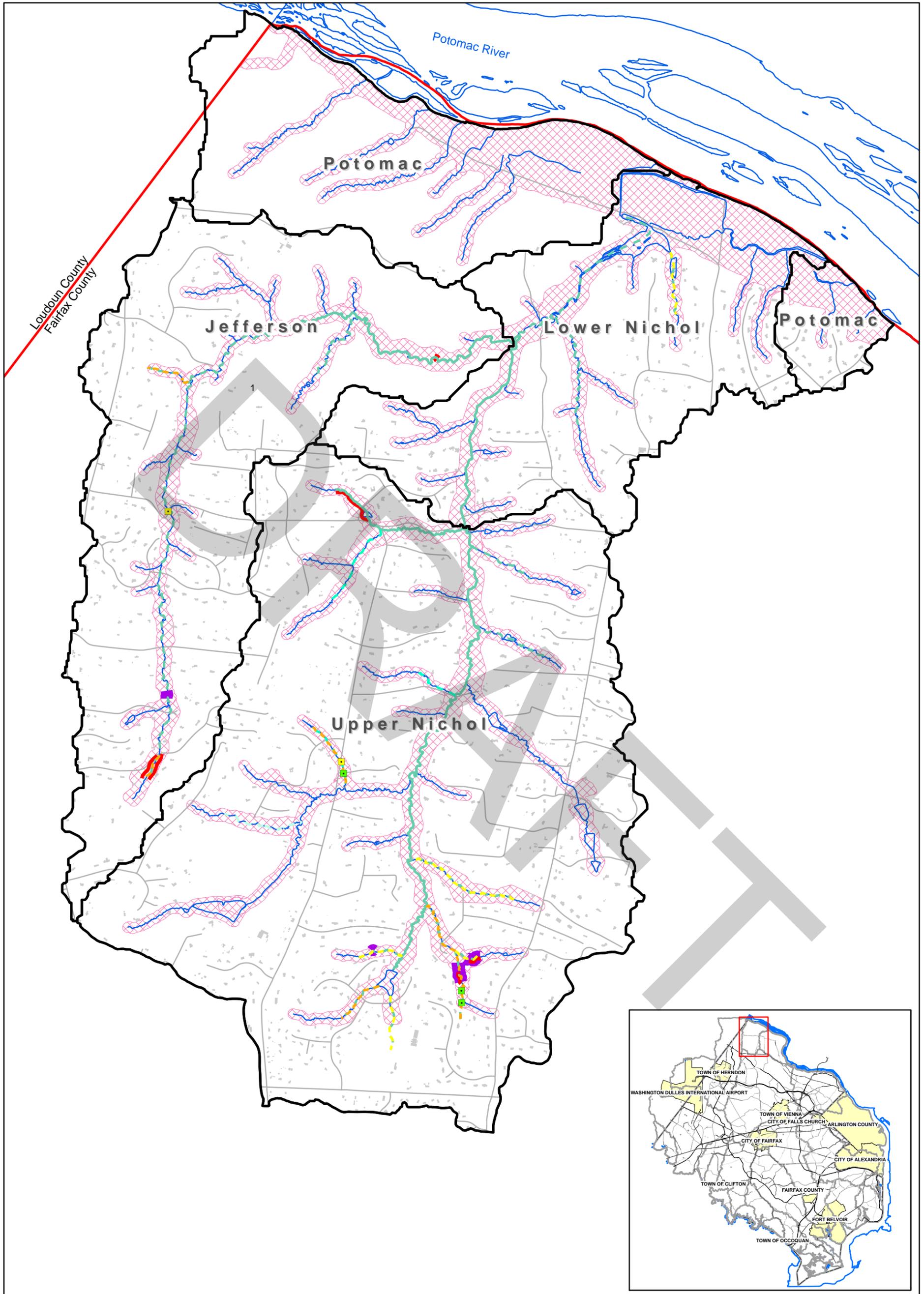
0 0.2 0.4 Miles

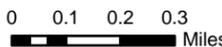
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**Existing**

**Future**

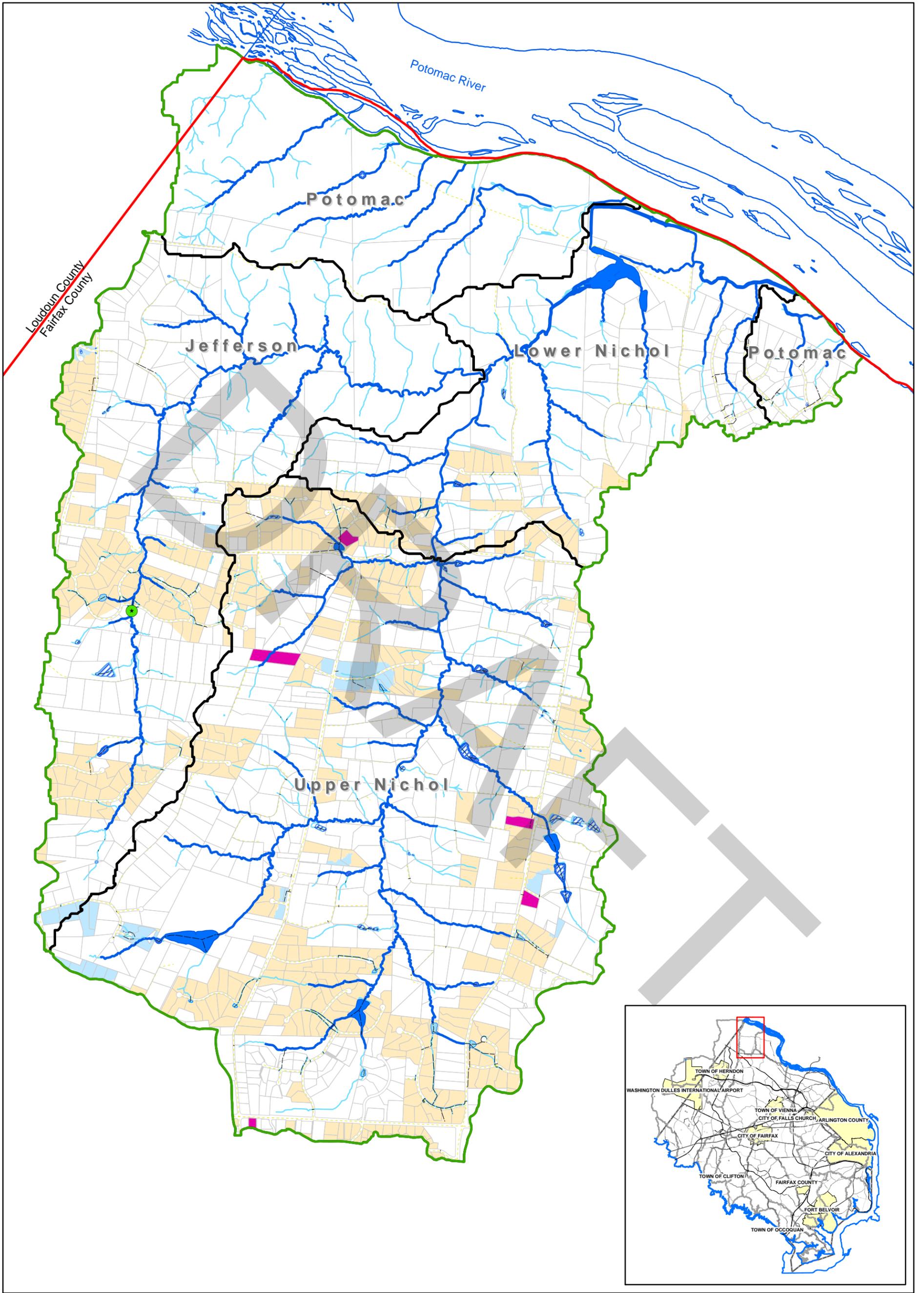




  	<b>Head Cut Height</b> ● 0.5 - 1ft ● 1 - 2ft ● > 3ft	<b>Dump Site Impact</b> ● Minor to Moderate ● Moderate to Severe ● Severe to Extreme	<b>Crossing Impact</b> ■ Minor to Moderate ■ Moderate to Severe ■ Severe to Extreme	<b>Pipe Impact</b> ● Minor to Moderate ● Moderate to Severe ● Severe to Extreme	- - - Poor to Very Poor Habitat - - - Fair Habitat - - - Deficient Buffer - - - Severe to Extreme Erosion - - - Resource Protection Areas
	<b>Utility Impact</b> ◆ Minor to Moderate ◆ Moderate to Severe ◆ Severe to Extreme	<b>Obstruction Impact</b> + Minor to Moderate + Moderate to Severe + Severe to Extreme	<b>Ditch Impact</b> ◆ Minor to Moderate ◆ Moderate to Severe ◆ Severe to Extreme	<b>Reach_CEM</b> - - - CEM Type 2 - Incision - - - CEM Type 3 - Widening - - - CEM Type 4 - Stabilizing	

**Figure 3.3**  
**Stream Condition Map for**  
**Nichol Run Watershed**



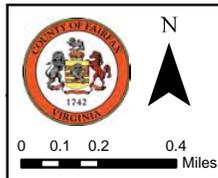
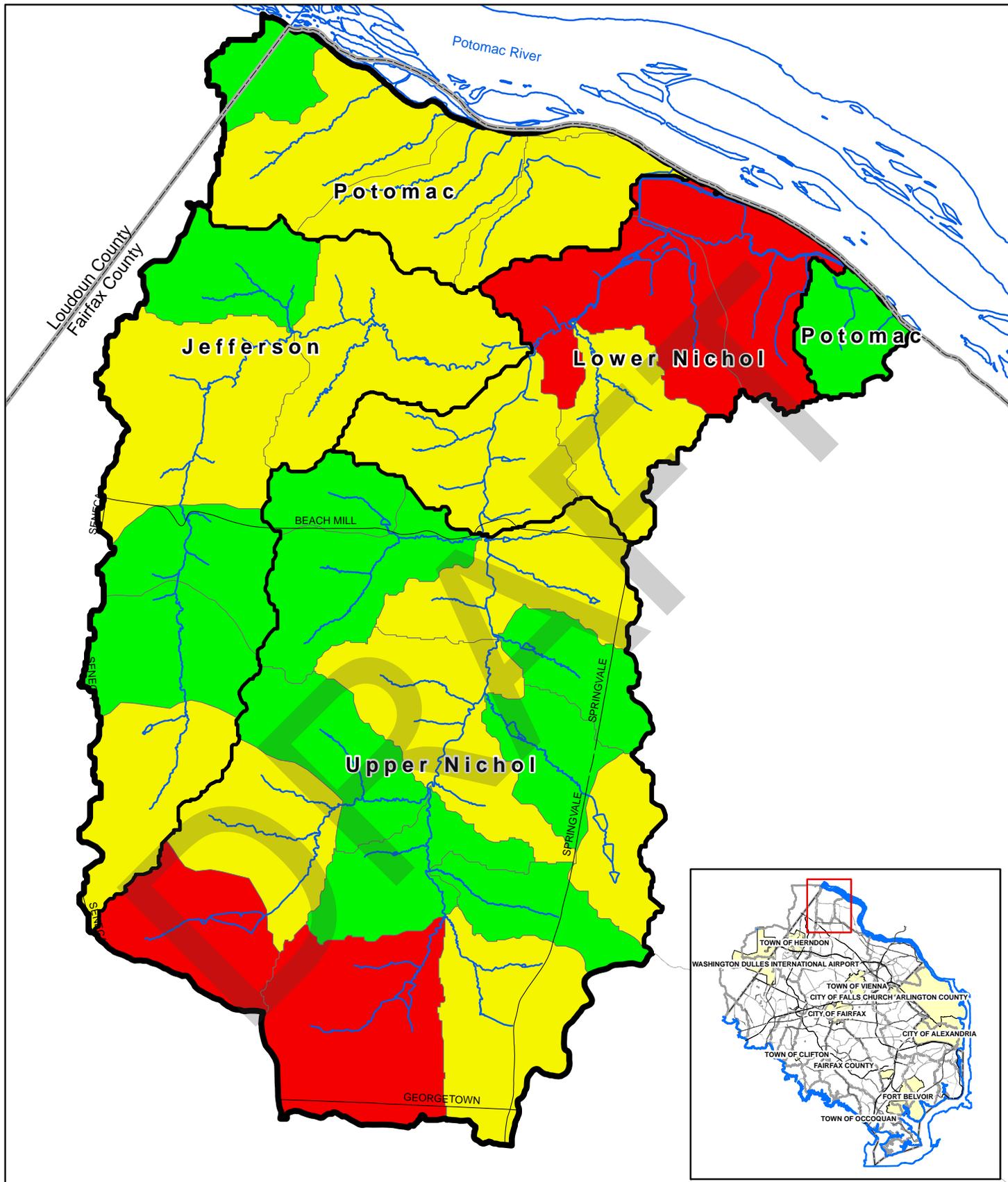


0 0.15 0.3 Miles

<ul style="list-style-type: none"> <li><span style="color: magenta;">■</span> 303d Impaired Waters</li> <li><span style="color: blue;">—</span> Perennial Streams</li> <li><span style="color: lightblue;">—</span> Non-Perennial Drainage</li> <li><span style="color: gray;">- - -</span> Stormwater Infrastructure</li> <li><span style="color: magenta;">■</span> Drainage Complaints</li> </ul>	<p><b>Regional Ponds</b></p> <ul style="list-style-type: none"> <li><span style="color: green;">●</span> Completed</li> <li><span style="color: yellow;">●</span> Active</li> <li><span style="color: orange;">●</span> Incomplete</li> </ul>	<p><b>Stormwater Facilities</b></p> <ul style="list-style-type: none"> <li><span style="color: blue;">●</span> Wet Pond</li> <li><span style="color: lightblue;">●</span> Dry Pond</li> <li><span style="color: blue; border: 1px solid black;">▨</span> All Other Facilities</li> </ul>	<p><b>Stormwater Controls</b></p> <ul style="list-style-type: none"> <li><span style="color: orange;">■</span> Detention Only</li> <li><span style="color: lightblue;">■</span> Quality &amp; Quantity</li> <li><span style="color: green;">■</span> Quality Only</li> </ul>
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**Figure 3.4**  
**Stormwater Infrastructure Map**  
**for Nichol Run Watershed**





	Perennial Streams	<b>Total Suspended Solids</b> 1.4 - 13.94 ton/yr 13.94 - 22.94 ton/yr 22.94 - 37.83 ton/yr
	Roads	
	WMA Boundary	
	County Boundary	

**Figure 3.5**  
**Total Suspended Solids Map**  
**for Nichol Run Watershed**

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