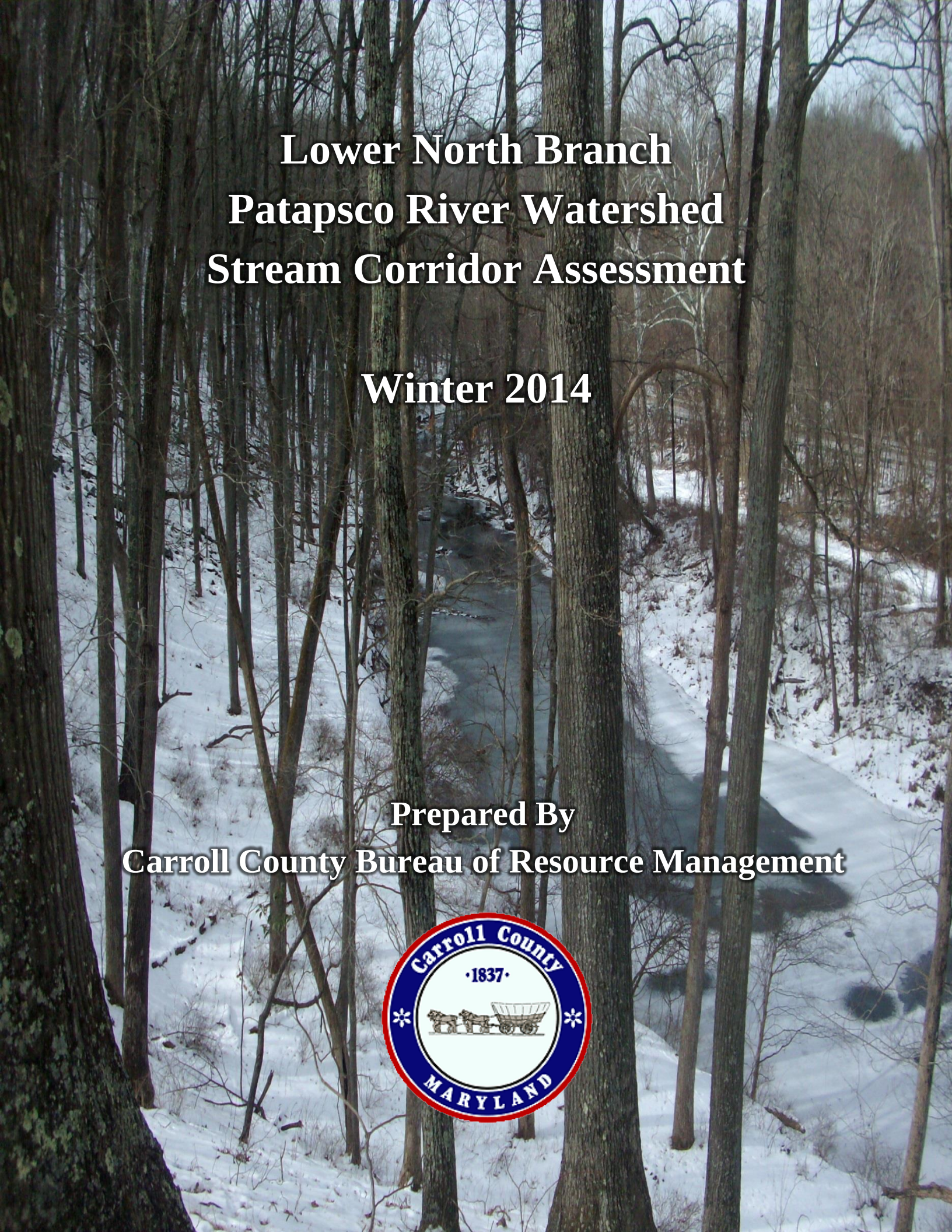

Lower North Branch Patapsco River Watershed Stream Corridor Assessment

Winter 2014

Prepared By

Carroll County Bureau of Resource Management

Table of Contents

List of Figures

List of Tables

List of Appendices

I. Introduction

A Stream Corridor Assessment of the Lower North Branch of the Patapsco River (LNB Patapsco) watershed was conducted during the winter of 2014 by Carroll County Bureau of Resource Management staff. The goal of this assessment was to identify current impairments within the watershed, as well as identify locations to implement restoration practices.

The LNB Patapsco watershed is located in the southeastern corner of Carroll County. The watershed is within the Patapsco River Basin in the Piedmont physiographic province of Maryland. The LNB Patapsco watershed within Carroll County consists of only a few miles of stream below the spillway of the Liberty reservoir.

The LNB Patapsco watershed is managed on the 12-Digit scale and includes one subwatershed. Table 1-1 lists the only subwatershed within the Carroll County portion of LNB Patapsco watershed as well as its associated drainage and stream lengths. Figure 1-1 shows the location of the study area within Carroll County.

Table 1-1 Lower North Branch Patapsco River Subwatershed

DNR 12-Digit	Subwatershed	Area (Acres)	Stream Miles
021309061019	North Branch Patapsco River	565	2.99
	Totals:	**565**	**2.99**

II. Landowner Participation

This assessment reached out to 12 landowners within the LNB Patapsco Watershed whose property is intersected by a stream corridor. Landowner permission was obtained through a mailing detailing the assessment (a copy of this letter can be found in Appendix A), a response card was also included for the landowner to send back with their permission response. This assessment also evaluated stream segments on public, Carroll County, and City owned properties, therefore no mailing was required to request permission for access. Only properties where owners granted permission were assessed. Access was granted for approximately 2.72 of the nearly 3 stream miles, or 90%, within the LNB Patapsco Watershed. Figure 1-2 shows where landowner permission was granted to perform the assessment.

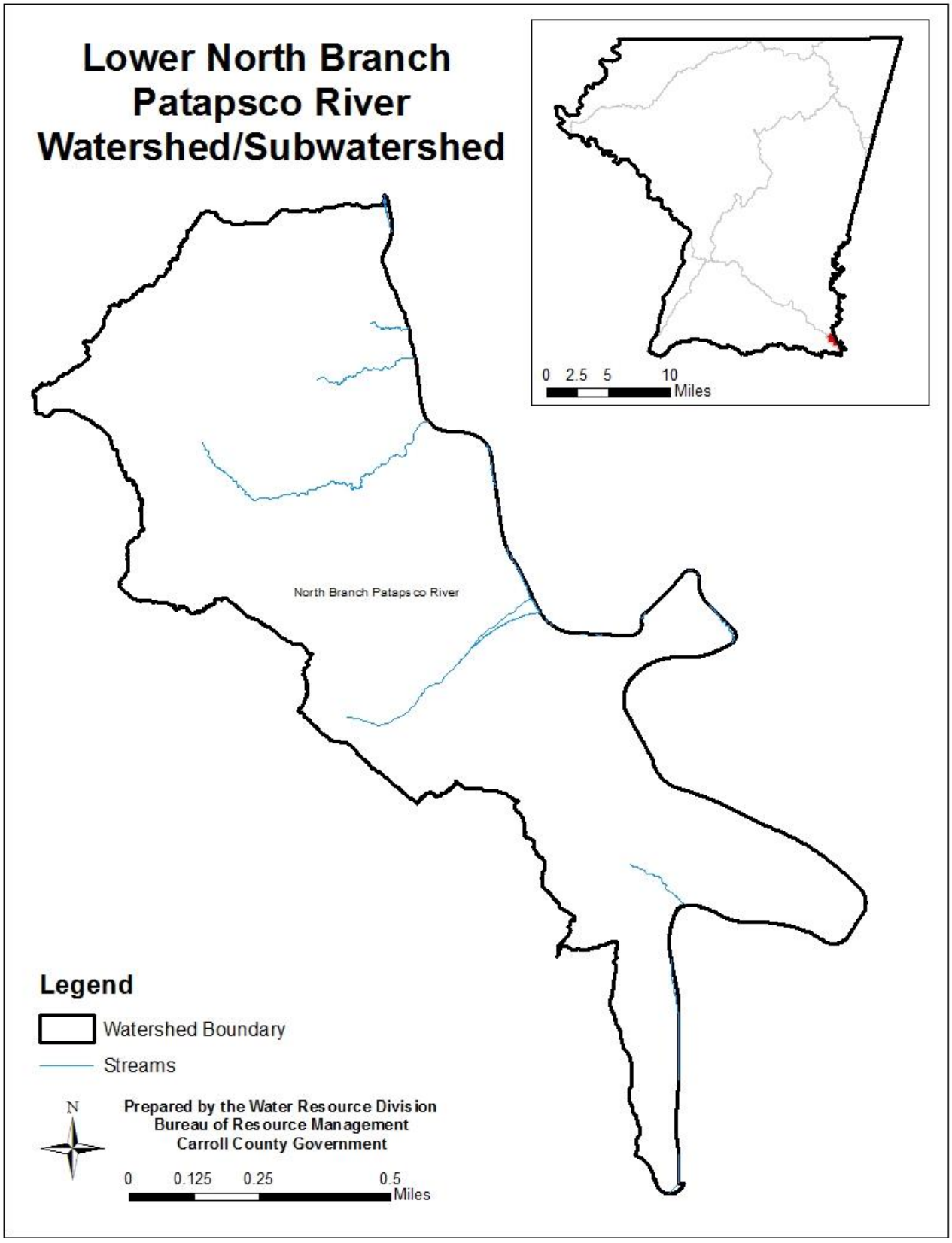

Figure 1-1: Lower North Branch Patapsco River Watershed Location Map

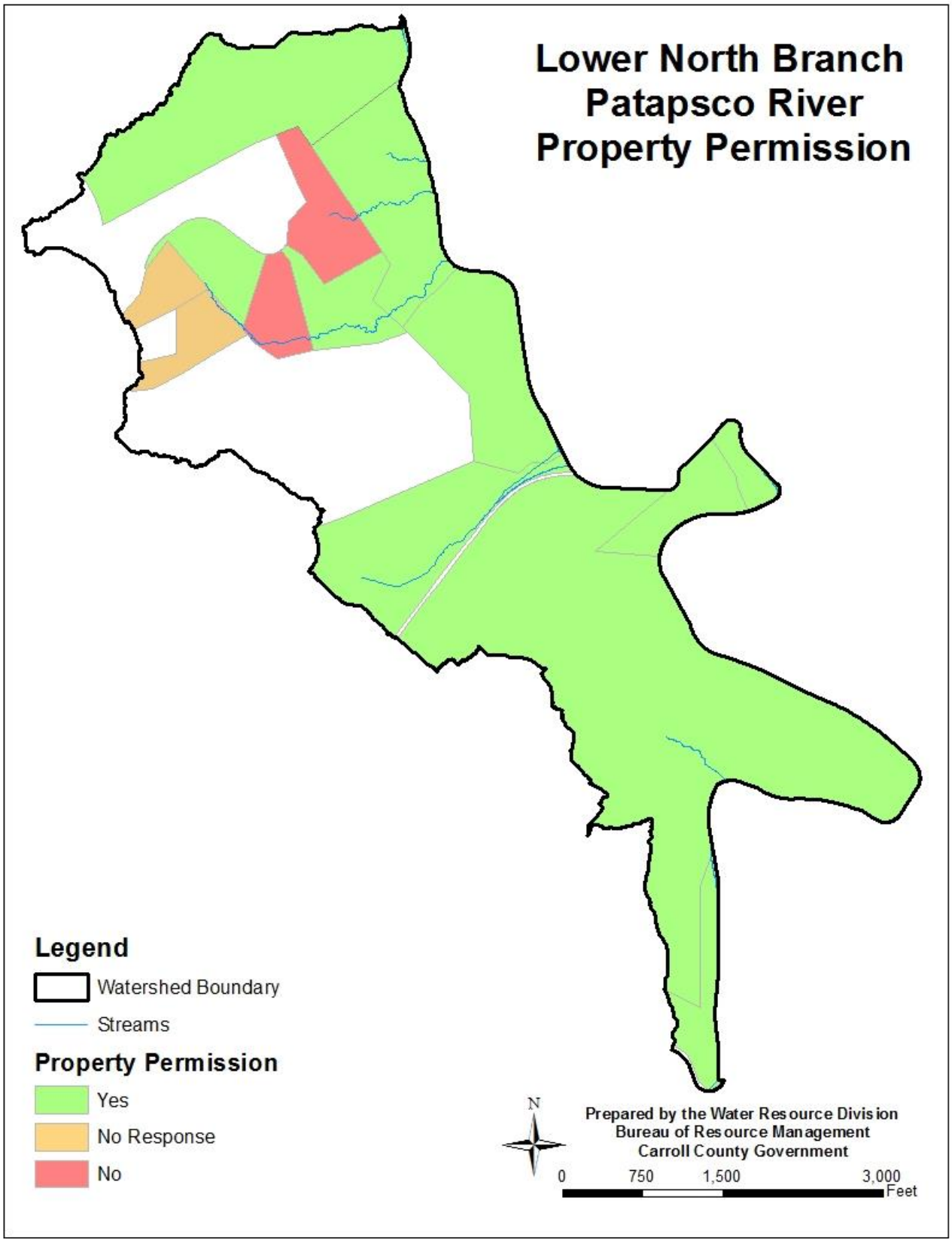

Figure 1-2: Landowner Participation

III. Methods

The field investigation consisted of two-person teams walking within the stream channel in order to visually assess potential environmental impacts to the stream corridor. Field teams carry Global Position System (GPS) enabled Toughbooks® that allow identified impacts to be recorded on site into an ArcGIS® database where it is assigned a unique ID number.

All stream corridors are assessed based on the survey protocols outlined by the Maryland Department of Natural Resources (DNR) watershed restoration division using standard stream corridor assessment protocols as outlined in the "Stream Corridor Assessment Survey: SCA Protocols" (MDNR, 2001). Field teams collect information relating to eroded stream banks, channel alterations, exposed utility pipes, drainage pipe outfalls, fish barriers (debris jams), inadequate streamside buffers, trash dumps, and construction activity that are either in or near the stream. Any unusual conditions are also noted. Each impairment is then ranked on a scale of 1 to 5 in relation to the impairment's severity, accessibility, and correctability. These numeric rankings are used to prioritize areas for restoration.

IV. Results

One data point was collected across the watershed. The only data point collected was for a small section of inadequate stream side buffer that was identified to be of moderate severity. Table 1-2 lists the data points by severity across the entire watershed. Criteria for ranking each impairments severity can be found in Appendix B.

Table 1-2: Data Points by Severity

Identified Impacts	Total	Very Severe	Severe	Moderate	Low	Minor
Erosion	**0**	0	0	0	0	0
Inadequate Buffer	**1**	0	0	1	0	0
Pipe Outfall	**0**	0	0	0	0	0
Fish Barrier	**0**	0	0	0	0	0
Trash Dump	**0**	0	0	0	0	0
Channel Alteration	**0**	0	0	0	0	0
Construction	**0**	0	0	0	0	0
Exposed Pipe	**0**	0	0	0	0	0
Unusual Condition	**0**	0	0	0	0	0
Total	**1**	**0**	**0**	**1**	**0**	**0**

A. Inadequate Buffer

Streamside buffer areas were identified as inadequate for 600 linear feet or 0.11 mile (3.7%) of the streams assessed, with none of the watershed classified as severely un-buffered. The site identified neither sides of the stream as completely unshaded. The site had not been recently planted. Figure 1-3 shows the location of identified inadequate buffers.

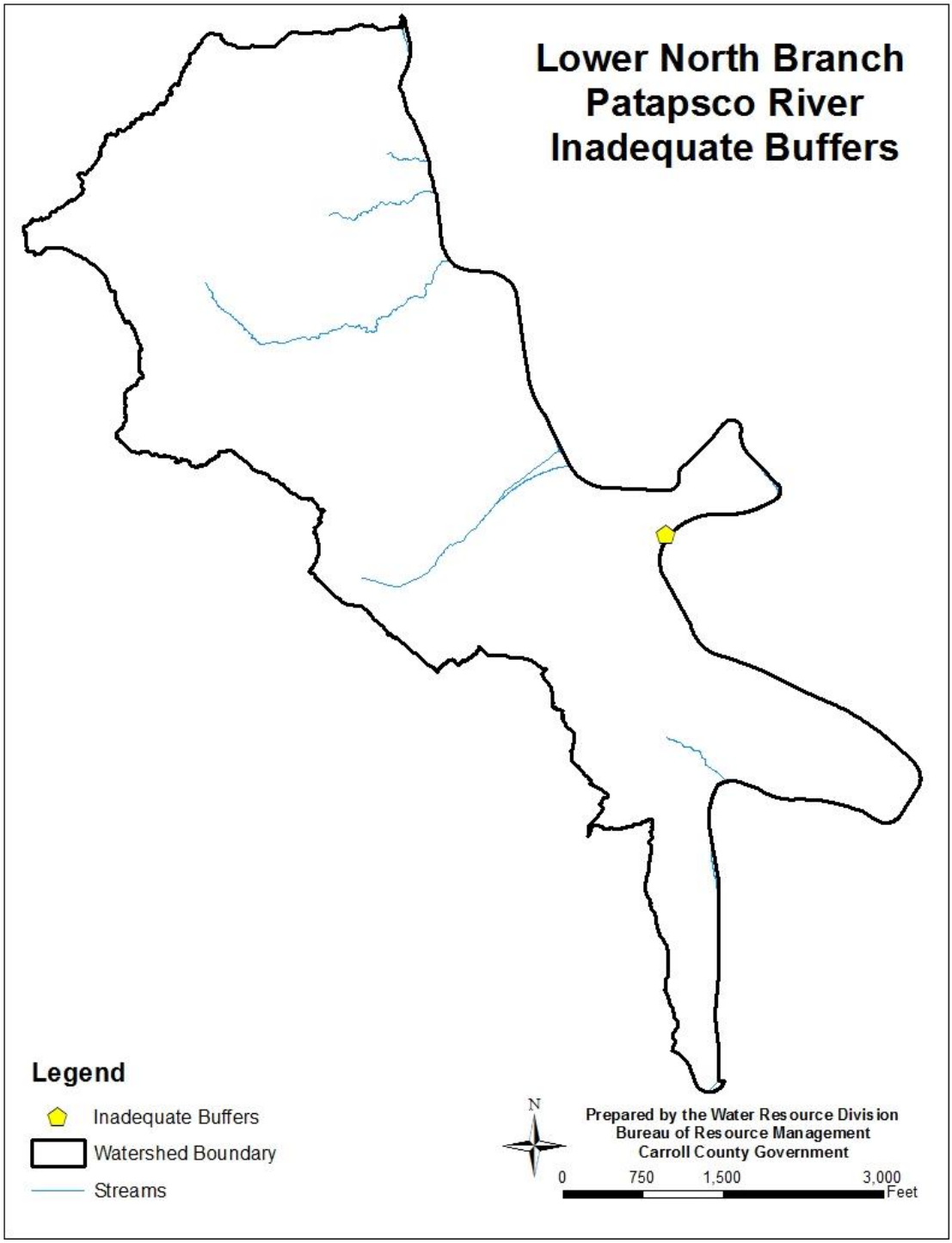

Figure 1-3: Inadequate Buffers

B. Erosion

No erosion was identified during the assessment.

C. Pipe Outfalls

No pipe outfalls were identified during the assessment.

D. Exposed Pipes

No exposed pipes were identified during the assessment.

E. Channel Alteration

No channel alteration was identified during the assessment.

F. Fish Barriers

No fish barriers were identified during the assessment.

G. Trash Dumps

No trash dumps were identified during the assessment.

H. In or Near Stream Construction

No in or near stream construction sites were identified during the assessment.

I. Unusual Conditions/Comments

No unusual conditions were identified during the assessment.

V. Subwatershed Summary

North Branch Patapsco River (021309061019): The only identified impact noted during the stream corridor assessment was a moderate streamside buffer. The point was noted to be about 600 feet long with buffer extending 20 feet wide. Both sides of the stream were noted to be shaded and surrounded by forest.

VI. Summary

The Bureau is currently developing two plans for the LNB Patapsco watershed. The first is a Characterization Plan that references the natural and human characteristics of the watershed and discusses any water quality data that has been collected within the watershed. The second is a Restoration Plan that will define the Bureau's goals for addressing environmental concerns within the watershed. The focus will be to address erosion problems through stormwater management and tree planting.

Appendix A:

SCA Permission Letter

Gale J. Engles, Bureau Chief
Bureau of Resource Management
410-386-2321, Fax: 410-386-2924
Environmental Inspection Services
410-386-2210

Department of Land Use, Planning and Development
Carroll County Government
225 North Center Street
Westminster, MD 21157
1-888-302-8978; TT 410-848-9747

October 22, 2013

Dear Watershed Resident:

The Carroll County Bureau of Resource Management will be conducting a stream corridor assessment of the streams located in the Lower North Branch Patapsco watershed. The goal of this assessment is to identify locations that would benefit from potential water quality improvement efforts. The County is contacting all landowners within the watershed who own land adjacent to a stream corridor, and requesting permission from the landowner to survey the stream on their property during the winter of 2013/2014.

County staff will be performing the fieldwork for this survey. Teams of two to three field crew members will be walking the stream corridors in the watershed, making field observations of various characteristics such as erosion, undermined pipes, un-shaded stream corridors, trash dumps and other related environmental concerns that may impact water quality. Each team will pass through your property for a short time and will not be altering the landscape in any way. Each member of the team will be appropriately identified and observe proper protocols.

The information collected from this survey will be used to help direct future stream restoration and protection efforts. Please use the enclosed card to indicate your choice for permission and return the card to our office by December 22, 2013. For more information about this study, please contact me at (410) 386-2167. Thank you in advance for your participation.

Sincerely,

Byron Madigan

Byron R. Madigan
Water Resources Supervisor
Department of Land Use, Planning and Development
Carroll County Government
bmadigan@ccg.carr.org

Appendix B: Impairment Severity Criteria

1) **BF-Inadequate Buffer**
   a) Severe
      i) Length of stream (>1000') w/ no trees on either side
   b) Moderate
      i) Moderate length of stream with trees on only one side
   c) Minor
      i) Stream section with trees on both sides, but with buffer <50'

2) **ER-Erosion Site**
   a) Severe Rating of 1
      i) Long section >1000' w/ unstable banks on both sides
      ii) Incised several feet and eroding very fast
      iii) Stream bank is eroded below the root zone
   b) Moderate Rating of 3
      i) Long section >1000' w/ moderate erosion problems
      ii) **OR** shorter reach 300-400' w/ high banks >4'
   c) Minor Rating of 5
      i) Short section of stream <300' w/ erosion at one or two meander bends

3) **EX-Exposed Pipe (Sewer Line, etc.)**
   a) Severe Rating of 1
      i) Any pipe that is leaking or being undermined
      ii) Or suspended above the stream bed
   b) Moderate Rating of 3
      i) Long section of pipe that is partially exposed but no immediate threat the pipe will be undermined
   c) Minor Rating of 5
      i) Small section of top of pipe exposed
      ii) Stream bank appears stable

4) **FB- Fish Barrier**
   a) Severe Rating of 1
      i) Dam or road culvert on large stream (3rd order or >) totally blocking upstream movement
   b) Moderate Rating of 3
      i) Total fish blockage on a tributary significantly isolating a reach of stream
   c) Minor Rating of 5
      i) Temporary barrier such as beaver dam

5) **OF- Pipe Outfall (storm discharge, field drain, etc.)**
   a) Severe Rating of 1
      i) Outfall with strong discharge and distinct color/smell
      ii) Discharge causing significant impact downstream
   b) Moderate Rating of 3
      i) Outfall with small discharge
   c) Minor Rating of 5
      i) Storm water pipes that have no dry weather discharge

6) **CH- Channel Alteration**
   a) Severe Rating of 1
      i) Concrete channel w/ shallow water
      ii) Significant section channelized >1000'
   b) Moderate Rating of 3
      i) Channel >500' previously channelized
      ii) Beginning to stabilize with vegetation
   c) Minor Rating of 5
      i) Earthen channel <100'
      ii) Size and shape of un-channelized reaches

7) **TR- Trash Dump (within 50 feet of stream)**
   a) Severe Rating of 1
      i) Large amount scattered over large area, difficult access
      ii) Chemical drums or hazmat regardless of amount
   b) Moderate Rating of 3
      i) Large amount in small area with easy access
      ii) Able to be cleaned up in a few days
   c) Minor Rating of 5
      i) Small amount less than two pickups with easy access

8) **UN- Unusual Condition**
   a) Severe Rating of 1
      i) Has direct and wide reaching impact on aquatic life
   b) Moderate Rating of 3
      i) Has some adverse impacts at site
      ii) Significant problem, but not the worst seen
   c) Minor Rating of 5
      i) Problem does not appear to be affecting stream

9) **CO- Stream Construction**
   a) Severe Rating of 1
      i) Large construction site w/ large amount of disturbance
      ii) Absence of sediment control measures
   b) Moderate Rating of 3
      i) Site near stream w/ little disturbance to banks
      ii) Within riparian w/ some sediment entering stream
   c) Minor Rating of 5
      i) Site away from stream and outside riparian
      ii) Sediment control adequate no evidence sediment in stream