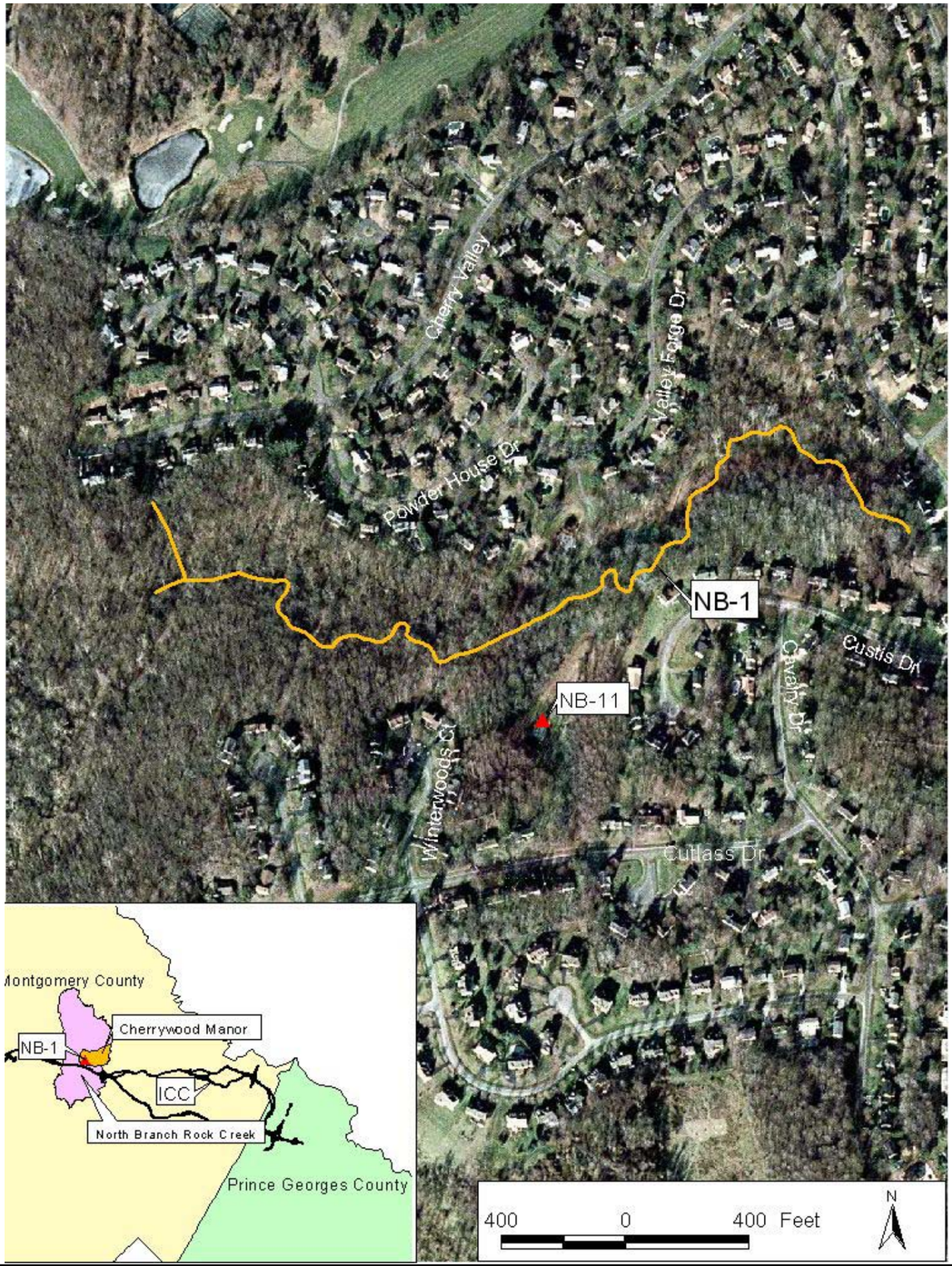


NB-1: Environmental Stewardship Stream Restoration Site
Corridor 1 and Corridor 2

Existing Conditions Summary

Location Information

Length (ft):	2,800	**Stream Order:**	third order
County:	Montgomery	**Drainage Area (mi^2):**	1.00
Watershed:	North Branch Rock Creek	**USGS Quad:**	Sandy Spring, MD
Subwatershed:	Cherrywood Manor	**Physiographic Province:**	Piedmont
CSPS Category:	PROT	**CSPS Priority:**	True
Subwatershed Crossed By:	None	**Adjacent Subwatershed:**	True

ADC Map: 21 A-11:B-11 **Easting (m):** 392033 **Northing (m):** 162537

Location: Reach is entirely within North Branch Stream Valley Park. Reach flows east to west from approximately 300 feet downstream (west) of George Washington Drive to approximately 1000 feet upstream of the confluence with North Branch Rock Creek, adjacent to Summertree Court.

Land Cover and Slope

% Urban Land Cover:	68.20	**% A Soils:**	0.00	**% C Soils**	5.60
% Impervious Land Cover:	28.00	**% B Soils:**	79.70	**% D Soils:**	14.70
% Forest Land Cover:	25.50	**Channel Slope (ft/mi):**	82.40	**Land Slope (ft/ft):**	0.0490

Site Conditions

Floodplain Condition:	Connected	**Fish Blockage Removal:**	Yes
Potential to Create Floodplain:	Good	**Water Quality Sampling Site:**	NO DATA
Riparian Vegetation:	Forested	**Water Quality Sampling Source:**	NO DATA
Riparian Buffer Enhancement:	Yes	**Water Quality Sampling Year:**	NO DATA
Bank Stability:	Fair	**Habitat Rating:**	NO DATA
Utility Conflict:	No	**Benthic Rating:**	NO DATA
Construction Access:	Good	**Fish Rating:**	NO DATA

Site NB-1 is located entirely in Norbeck Meadows Park/North Branch Stream Valley Park in the Norbeck Estates community in Montgomery County. The reach is known as the Cherrywood Manor Tributary and flows east to west from approximately 300 feet downstream (west) of George Washington Drive to approximately 1,000 feet upstream of the confluence with North Branch Rock Creek, adjacent to Summertree Court. Site NB-1 is bordered by four private and one public property. The 1.00-mi^2 drainage area upstream of the reach is approximately 28% impervious. NB-1 has fair bank stability and areas of localized bank erosion caused by tree falls, but is connected to the floodplain and has a forested riparian area. No data on the habitat conditions or benthic and fish communities are currently available.

Restoration Objectives

The restoration objectives for NB-1 include:

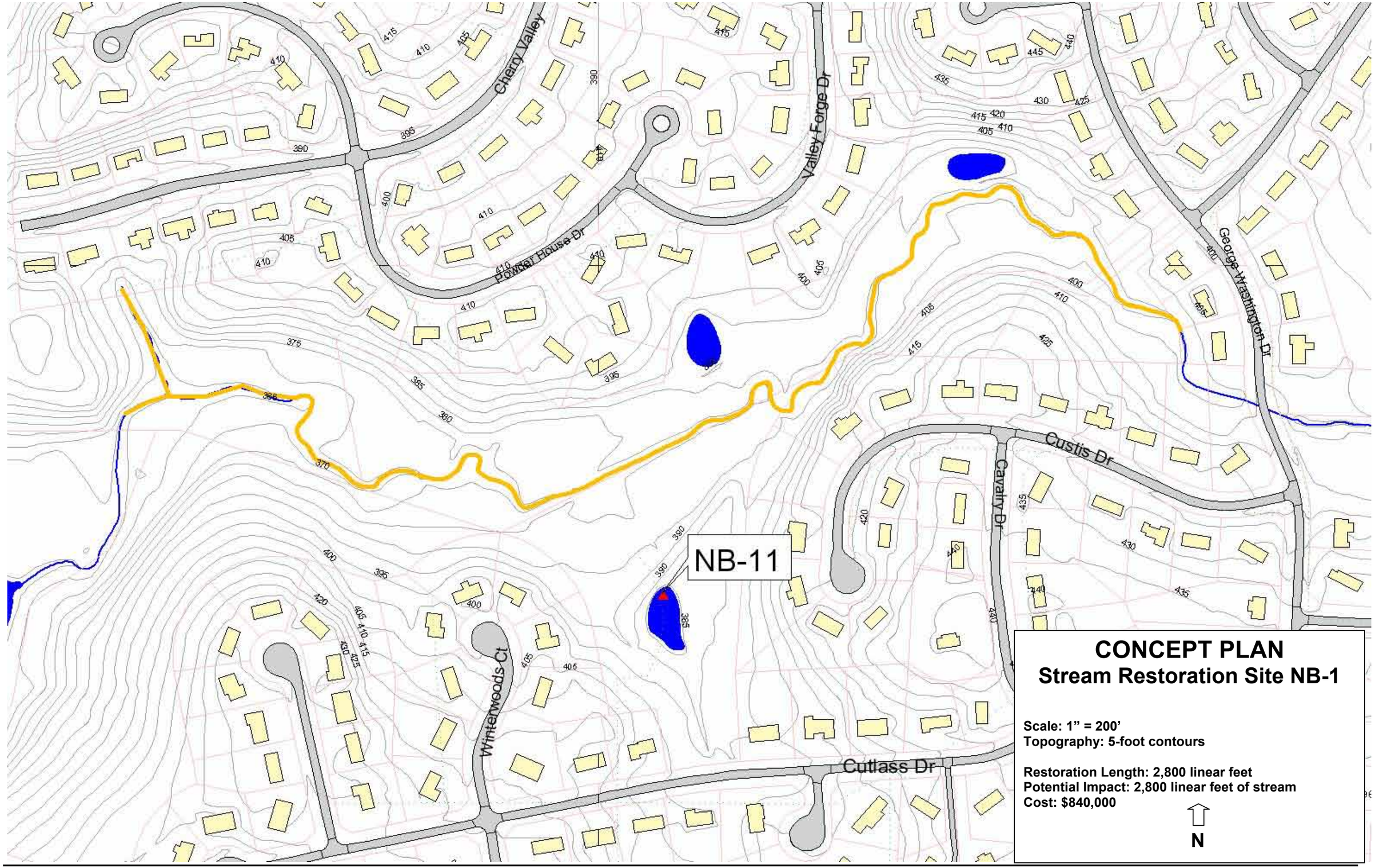
- Reconnecting the stream to a floodplain, where necessary.
- Reducing bank erosion and instream sedimentation.
- Enhancing the riparian buffer.
- Opening passage to fish.
- Enhancing the habitat conditions and the benthic and fish communities.

Restoration Concept

The restoration concept for NB-1 includes the following stream restoration efforts:

- Floodplain creation, where necessary, to provide energy dissipation of erosive flood flows, reduce erosive shear stresses, reduce channel incision, and increase infiltration and groundwater recharge.
- Bank stabilization to provide energy dissipation of erosive flood flows and reduce erosive shear stresses.
- Enhancing the riparian buffer.
- Removal of the woody debris fish blockages.
- Installation of woody debris and other types of instream cover and gravel channel material to enhance the benthic and fish habitats and communities.

It is anticipated that the construction of NB-1 would impact 2,800 linear feet of stream. Restoration of NB-1 would be linked to stormwater management retrofits NB-11, located west of Custis Drive and north of Pennforest Way and NB-16 at Cherrywood Park. Restoration would cost approximately $840,000.

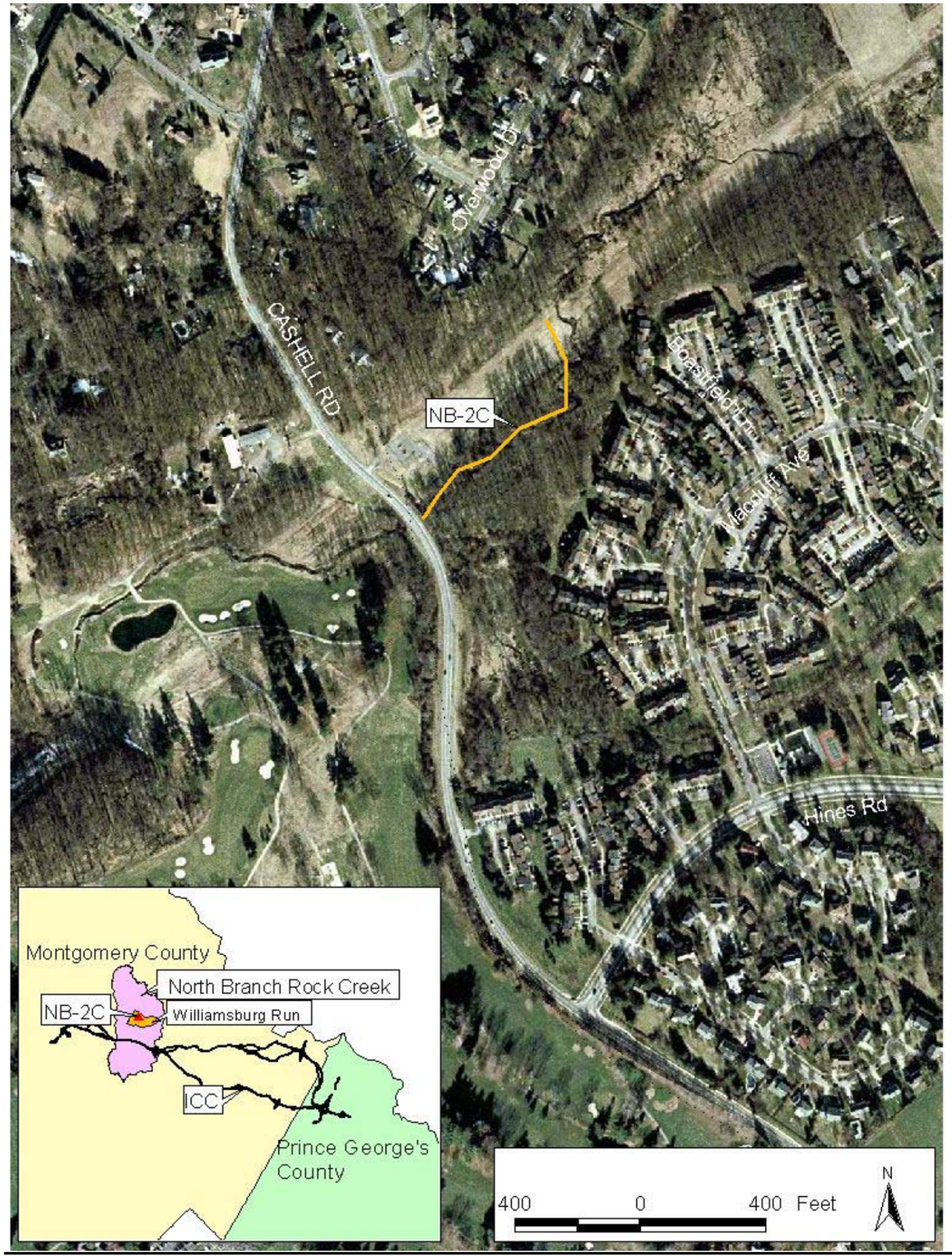


CONCEPT PLAN
Stream Restoration Site NB-1

Scale: 1” = 200’
Topography: 5-foot contours

Restoration Length: 2,800 linear feet
Potential Impact: 2,800 linear feet of stream
Cost: $840,000

N



NB-2C: Environmental Stewardship Stream Restoration Site
Corridor 1 and Corridor 2

Existing Conditions Summary

Location Information

Length (ft):	4900	**Stream Order:**	third order
County:	Montgomery	**Drainage Area (mi^2):**	1.60
Watershed:	North Branch Rock Creek	**USGS Quad:**	Sandy Spring, MD
Subwatershed:	Williamsburg Run and Lower Williamsburg Run	**Physiographic Province:**	Piedmont
CSPS Category:	REST	**CSPS Priority:**	False
Subwatershed Crossed By:	None	**Adjacent Subwatershed:**	False

ADC Map: 21 A-8:B-8 **Easting (m):** 392121 **Northing (m):** 164066

Location: Reach flows from north of Gallagher Way, west to Cashell Road.

Land Cover and Slope

% Urban Land Cover:	84.10	**% A Soils:**	0.00	**% C Soils**	4.00
% Impervious Land Cover:	36.10	**% B Soils:**	77.20	**% D Soils:**	18.90
% Forest Land Cover:	6.90	**Channel Slope (ft/mi):**	55.40	**Land Slope (ft/ft):**	0.0420

Site Conditions

Floodplain Condition:	Disconnected	**Fish Blockage Removal:**	No
Potential to Create Floodplain:	Good	**Water Quality Sampling Site:**	NO DATA
Riparian Vegetation:	Forested	**Water Quality Sampling Source:**	NO DATA
Riparian Buffer Enhancement:	Yes	**Water Quality Sampling Year:**	NO DATA
Bank Stability:	Fair	**Habitat Rating:**	NO DATA
Utility Conflict:	No	**Benthic Rating:**	NO DATA
Construction Access:	Good	**Fish Rating:**	NO DATA

NB-2C is part of Williamsburg Run and is located approximately north of Gallagher Way, flowing west to Cashell Road in the Cashell Manor community. NB-2C is bordered by two private and 2 public properties. The 1.60-mi^2 drainage area upstream of the reach is paproximately 36% impervious. Site NB-2C has fair bank stability, is disconnected from the floodplain and has a forested riparian area. No data on the habitat conditions or benthic and fish communities are currently available.

Restoration Objectives

The restoration objectives for NB-2C include:

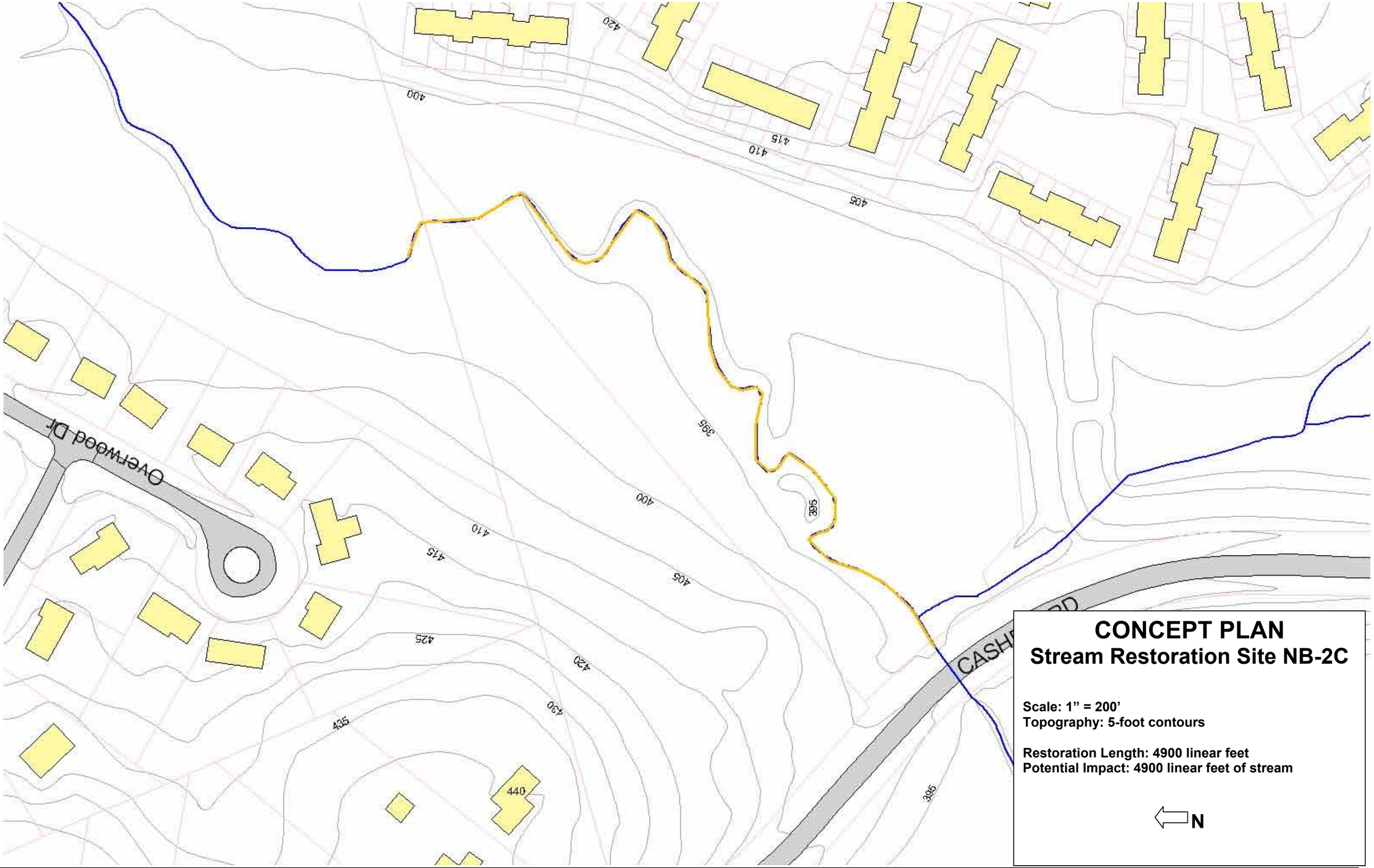
- Reconnecting the stream to a floodplain.
- Reducing bank erosion and instream sedimentation.
- Enhancing the riparian buffer.
- Enhancing the habitat conditions and the benthic and fish communities.

Restoration Concept

The restoration concept for NB-2C includes the following stream restoration efforts:

- Floodplain creation to provide energy dissipation of erosive flood flows, reduce erosive shear stresses, reduce channel incision, and increase infiltration and groundwater recharge.
- Bank stabilization to provide energy dissipation of erosive flood flows, reduce erosive shear stresses, and reduce bank erosion and instream sedimentation.
- Enhancing the riparian buffer.
- Installation of woody debris and other types of instream cover and gravel channel material to enhance the benthic and fish habitats and communities.

It is anticipated that the construction of NB-1 would impact 4,900 linear feet of stream. Restoration would cost approximately $270,000.

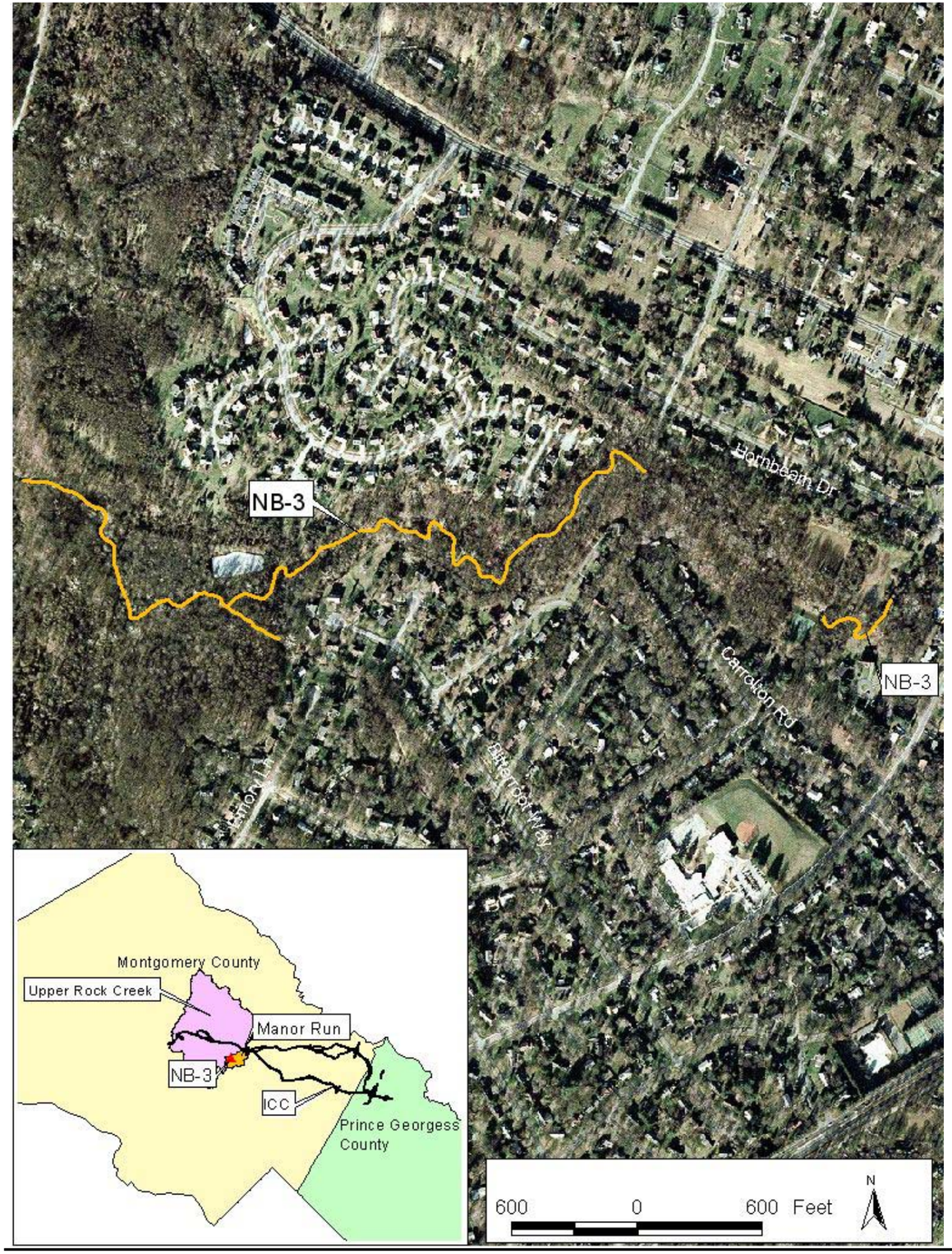


CONCEPT PLAN
Stream Restoration Site NB-2C

Scale: 1” = 200’
Topography: 5-foot contours

Restoration Length: 4900 linear feet
Potential Impact: 4900 linear feet of stream

N



NB-3: Environmental Stewardship Stream Restoration Site
Corridor 1 and Corridor 2

Existing Conditions Summary

Location Information

Length (ft):	4,000	**Stream Order:**	second order
County:	Montgomery	**Drainage Area (mi^2):**	1.10
Watershed:	North Branch Rock Creek	**USGS Quad:**	Kensington, MD
Subwatershed:	Manor Run	**Physiographic Province:**	Piedmont
CSPS Category:	REST	**CSPS Priority:**	False
Subwatershed Crossed By:	Corridor 1 and 2	**Adjacent Subwatershed:**	False
ADC Map:	29 J-1:30 A-2, 30 A-2	**Easting (m):** 391221	**Northing (m):** 160166

Location: Mainstem Manor Run is entirely within Flower Valley Park. The downstream portion of the tributary off of the left bank is the only portion within Flower Valley Park - the upstream end of the reach is not in parkland. Access upstream end of mainstem Manor Run from park entrance on Hornbeam Drive - stream is south of Hornbeam Drive. Mainstem Manor Run flows east to west to confluence with North Branch Rock Creek. Tributary flows southeast to northwest from Jasmine Drive to mainstem Manor Run.

Land Cover and Slope

% Urban Land Cover:	74.50	**% A Soils:**	0.00	**% C Soils**	6.00
% Impervious Land Cover:	28.80	**% B Soils:**	87.50	**% D Soils:**	6.50
% Forest Land Cover:	10.70	**Channel Slope (ft/mi):**	89.10	**Land Slope (ft/ft):**	0.0570

Site Conditions

Floodplain Condition:	Disconnected	**Fish Blockage Removal:**	No
Potential to Create Floodplain:	Good	**Water Quality Sampling Site:**	URFV101
Riparian Vegetation:	Forested	**Water Quality Sampling Source:**	MDEP
Riparian Buffer Enhancement:	Yes	**Water Quality Sampling Year:**	1997
Bank Stability:	Poor	**Habitat Rating:**	Good
Utility Conflict:	No	**Benthic Rating:**	Poor
Construction Access:	Good	**Fish Rating:**	Poor

NB-3 is made up of two reaches, one on the mainstem of Manor Run entirely within Flower Valley Park, and a tributary on private property in the Flower Valley community. The mainstem Manor Run portion of NB-3 flows east to west from south of Hornbeam Drive to the confluence with North Branch Rock Creek. The tributary flows southeast to northwest from Jasmine Drive to the mainstem of Manor Run. NB-3 is bordered by 12 private properties and one public property. The 1.10-mi^2 drainage area upstream of the reaches is approximately 29% impervious. NB-3 is disconnected from its floodplain and has poor bank stability, conditions that are causing bank erosion and instream sedimentation.

Restoration Objectives

The restoration objectives for NB-3 include:

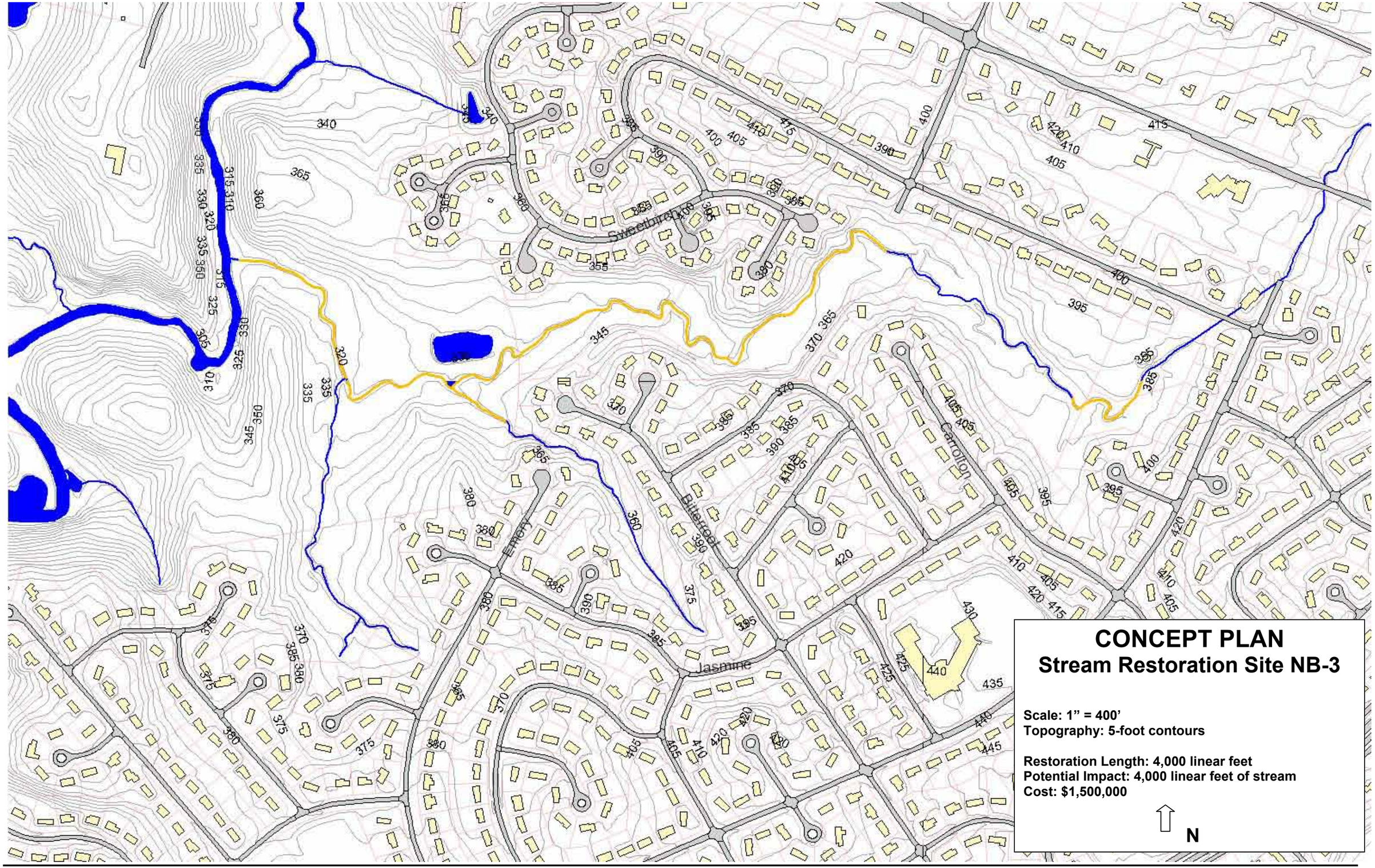
- Reconnecting the stream to a floodplain.
- Reducing bank erosion and instream sedimentation.
- Enhancing the riparian buffer.
- Enhancing the habitat conditions and the benthic and fish communities.

Restoration Concept

The restoration concept for NB-3 includes the following stream restoration efforts:

- Floodplain creation to provide energy dissipation of erosive flood flows, reduce erosive shear stresses, reduce channel incision, and increase infiltration and groundwater recharge.
- Bank stabilization to provide energy dissipation of erosive flood flows, reduce erosive shear stresses, and reduce bank erosion and instream sedimentation.
- Enhancing the riparian buffer.
- Installation of woody debris and other types of instream cover and gravel channel material to enhance the benthic and fish habitats and communities.

It is anticipated that the construction of NB-3 would impact 4,000 linear feet of stream. Stormwater management retrofit opportunities may be possible onsite; uncontrolled runoff from Hornbeam Drive flows through Flower Valley Park. A gazebo could be relocated to create room to construct an extended detention/flow attenuation area on one or both sides of the stream, thereby reducing erosive forces downstream. Restoration of NB-3 would cost approximately $1,500,000.

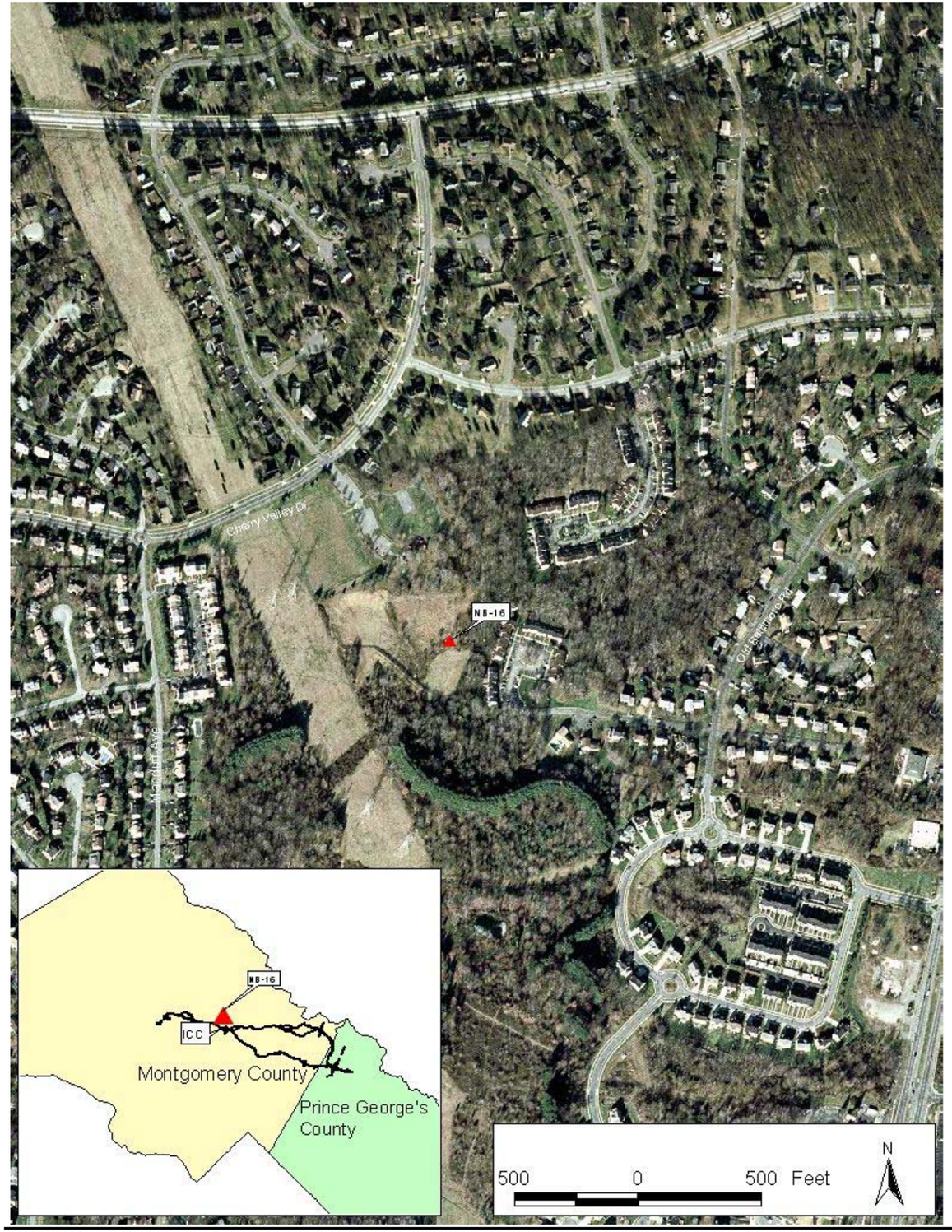


CONCEPT PLAN
Stream Restoration Site NB-3

Scale: 1” = 400’
Topography: 5-foot contours

Restoration Length: 4,000 linear feet
Potential Impact: 4,000 linear feet of stream
Cost: $1,500,000

N



NB-16: Environmental Stewardship
Stormwater Management Retrofit Site
Corridor 1 and Corridor 2

Existing Conditions Summary

Location Information

County:	Montgomery
Watershed:	North Branch Rock Creek
ADC Map:	21 C10
Location:	Cherrywood Tributary

Site Conditions

Drainage Area Proposed to be Treated (acres): 192

NB-16 is an existing dry pond on the Cherrywood tributary to North Branch Rock Creek. The pond also has several wetlands areas currently existing.

Restoration Objectives

The restoration objectives for NB-16 include:

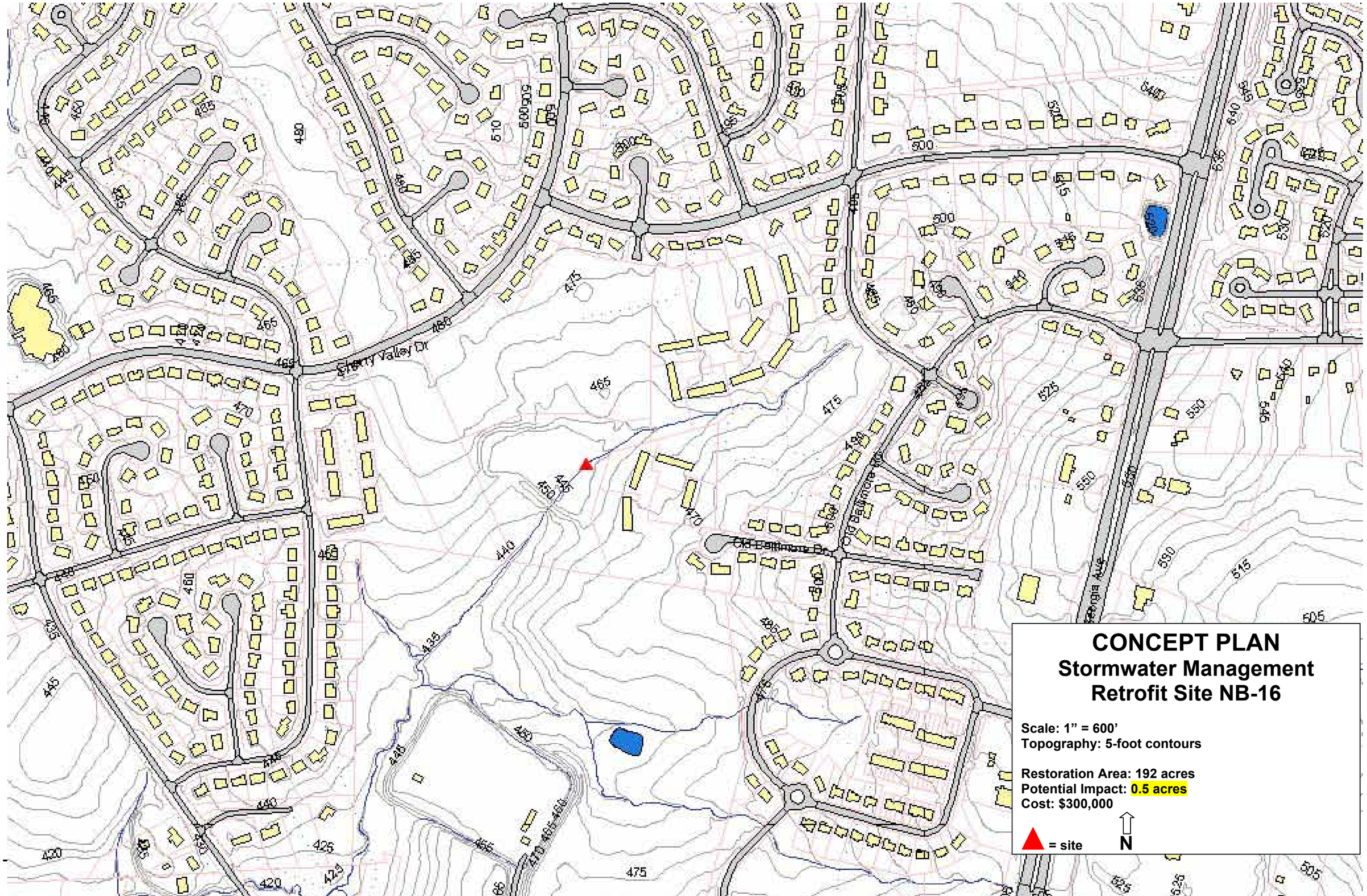
- Addressing stormwater management on a micro scale.
- Water quality benefits

Restoration Concept

The restoration concept for NB-16 includes the following efforts:

- Retrofitted to provide 1 year extended detention
- Expansion of exsiting wetlands

Restoration of NB-16 would cost approximately $300,000.



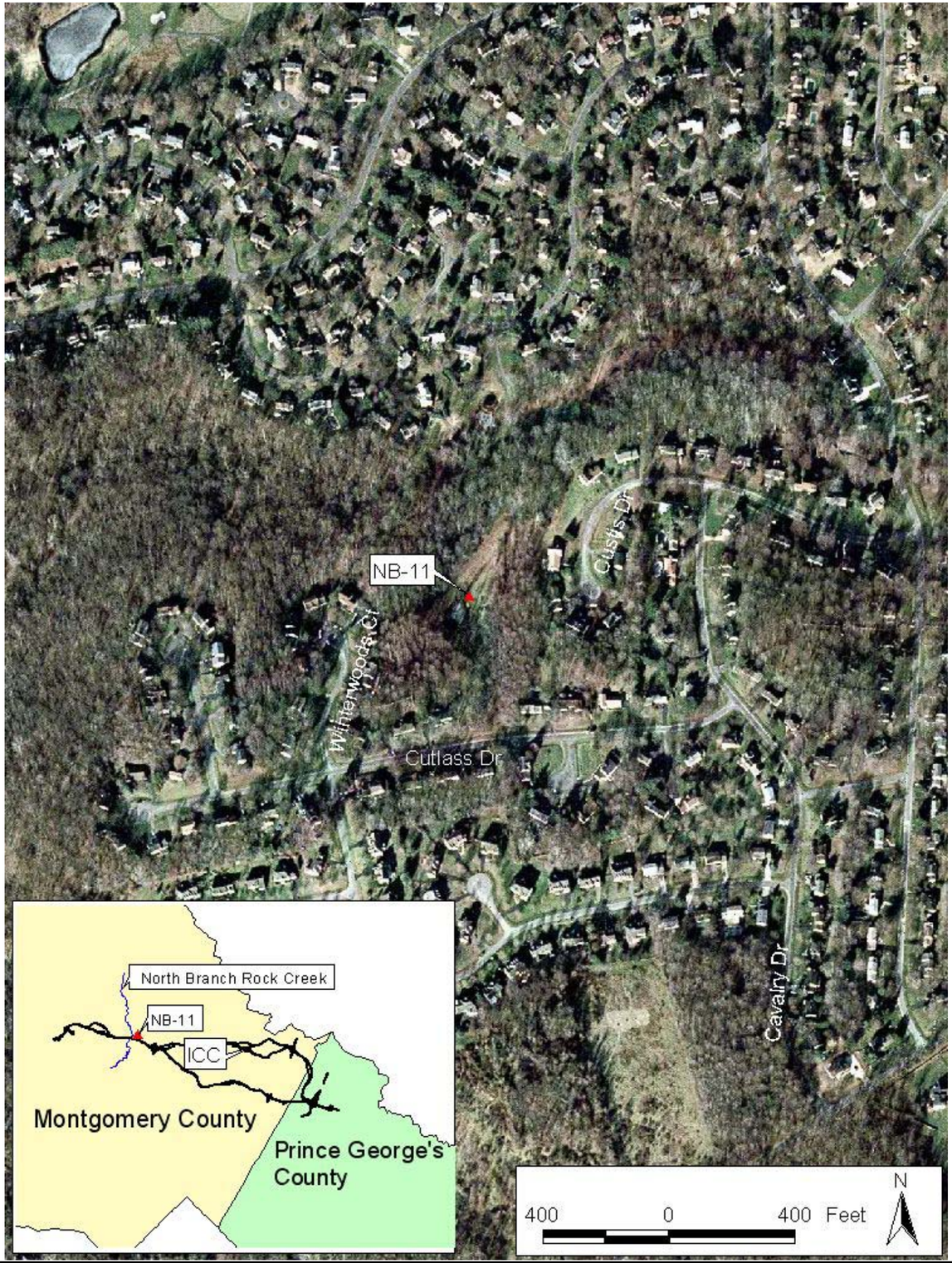
CONCEPT PLAN
Stormwater Management
Retrofit Site NB-16

Scale: 1” = 600’
Topography: 5-foot contours

Restoration Area: 192 acres
Potential Impact: 0.5 acres
Cost: $300,000

= site

N



NB-11: Environmental Stewardship Stormwater Management Retrofit Site Corridor 1 and Corridor 2

Existing Conditions Summary

Location Information

County: Montgomery
Watershed: North Branch Rock Creek
ADC Map: 21 A11
Location: West of Curtis Drive and north of Pennforest Way

Site Conditions

Drainage Area Proposed to be Treated (acres): 56

NB-11 is a wet pond on M-NCPPC property.

Restoration Objectives

The restoration objectives for NB-11 include:

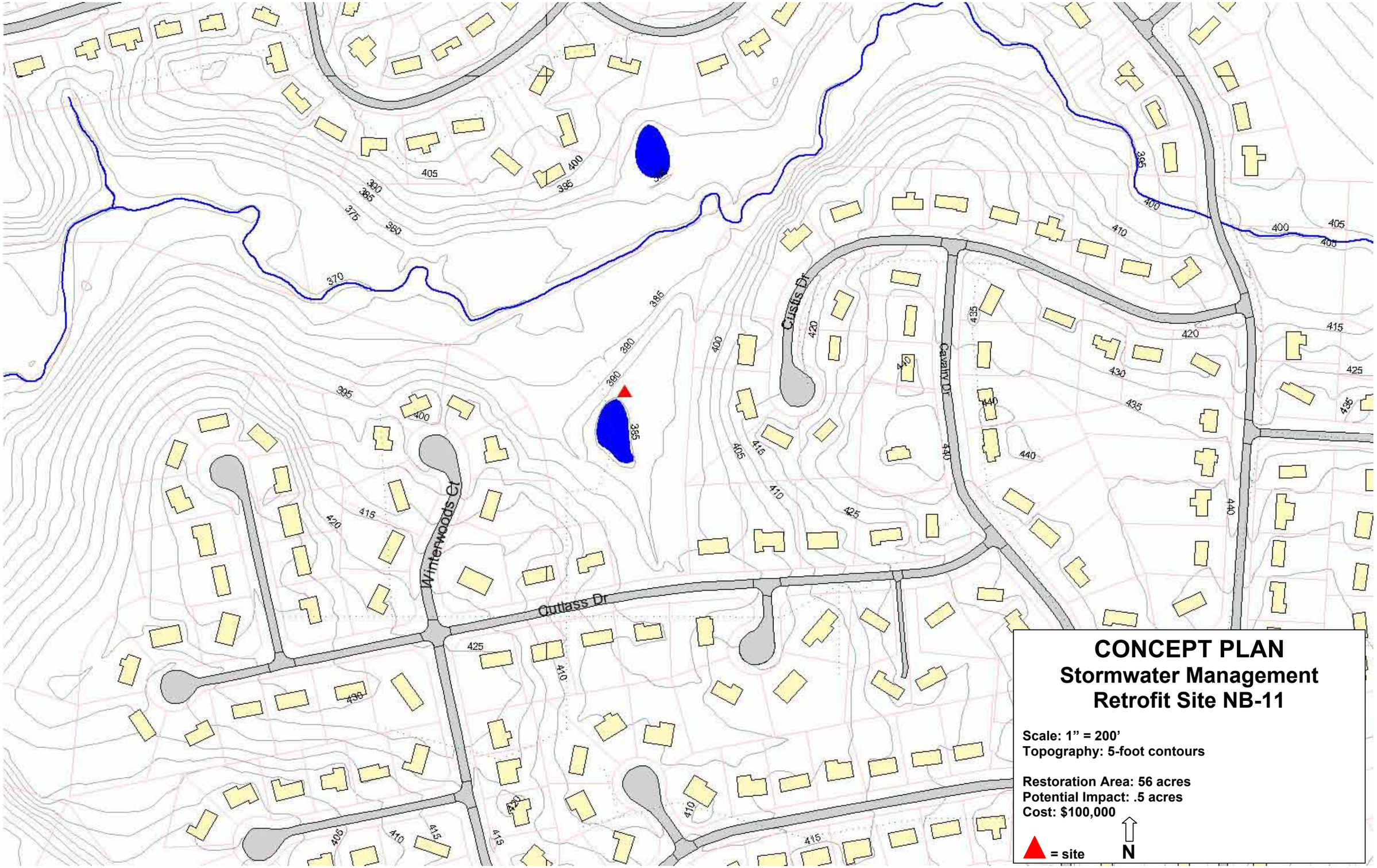
- Addressing stormwater management on a micro scale.

Restoration Concept

The restoration concept for NB-11 includes the following efforts:

- Landscape existing wet pond
- Repair riprap apron.

Restoration of NB-11 would cost approximately $100,000.



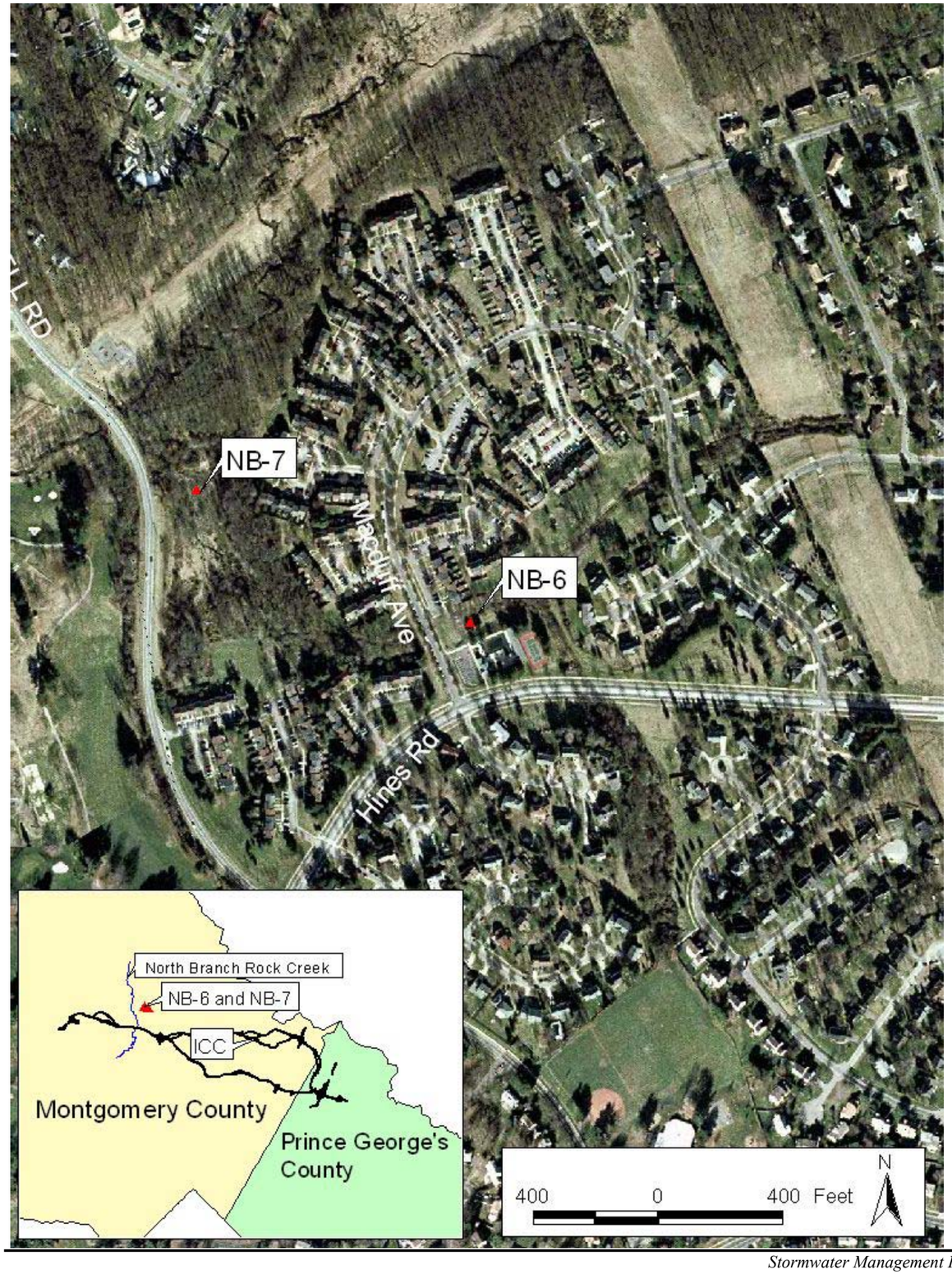
CONCEPT PLAN
Stormwater Management
Retrofit Site NB-11

Scale: 1” = 200’
Topography: 5-foot contours

Restoration Area: 56 acres
Potential Impact: .5 acres
Cost: $100,000

= site

N



NB-7: Environmental Stewardship Stormwater Management Retrofit Site Corridor 1 and Corridor 2

Existing Conditions Summary

Location Information

County: Montgomery
Watershed: North Branch Rock Creek
ADC Map: 24 J-3
Location: East of Cashell Road

Site Conditions

Drainage Area Proposed to be Treated (acres): 274

NB-7 is a dry pond.

Restoration Objectives

The restoration objectives for NB-7 include:

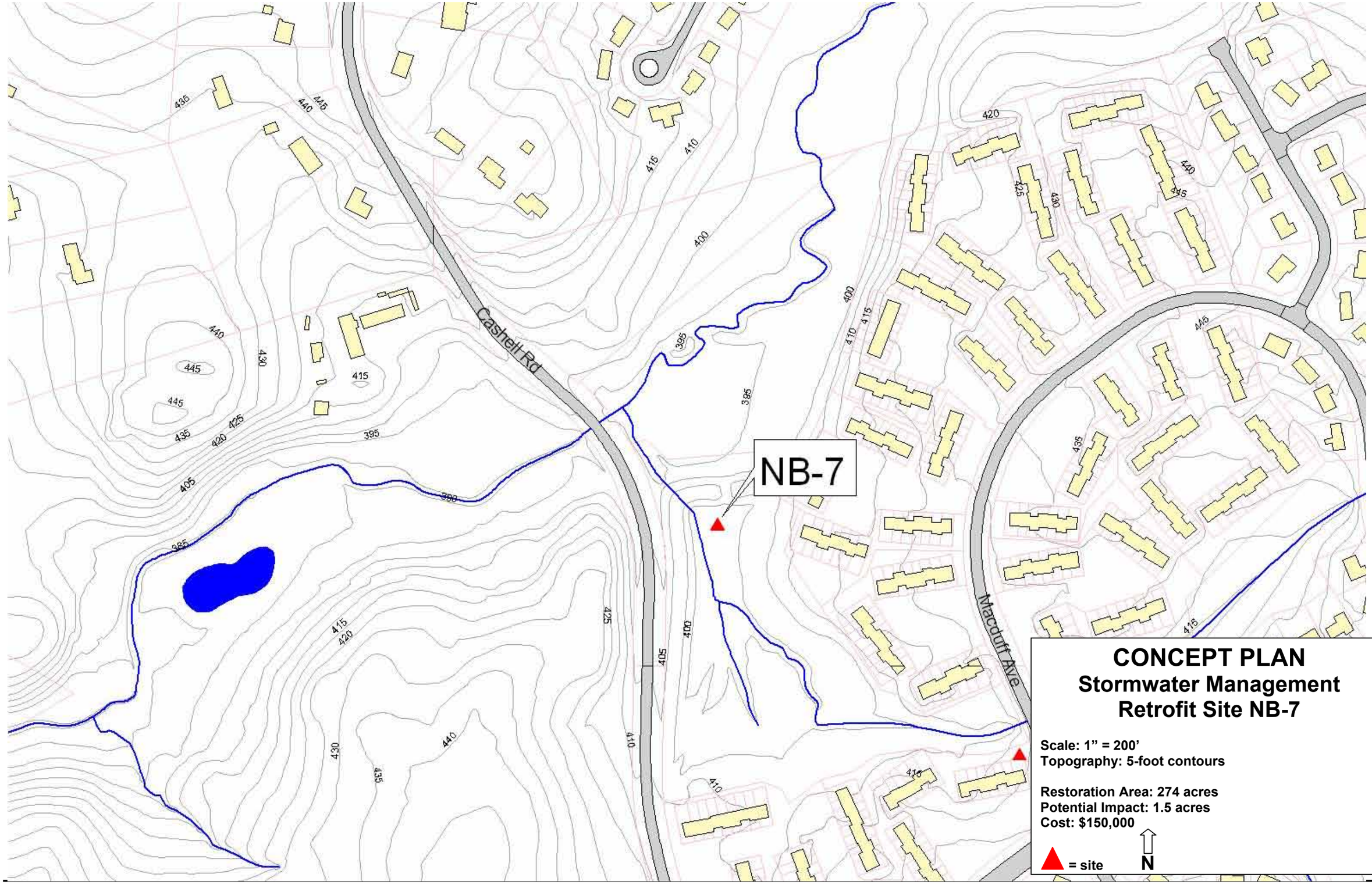
- Addressing stormwater management on a micro scale.

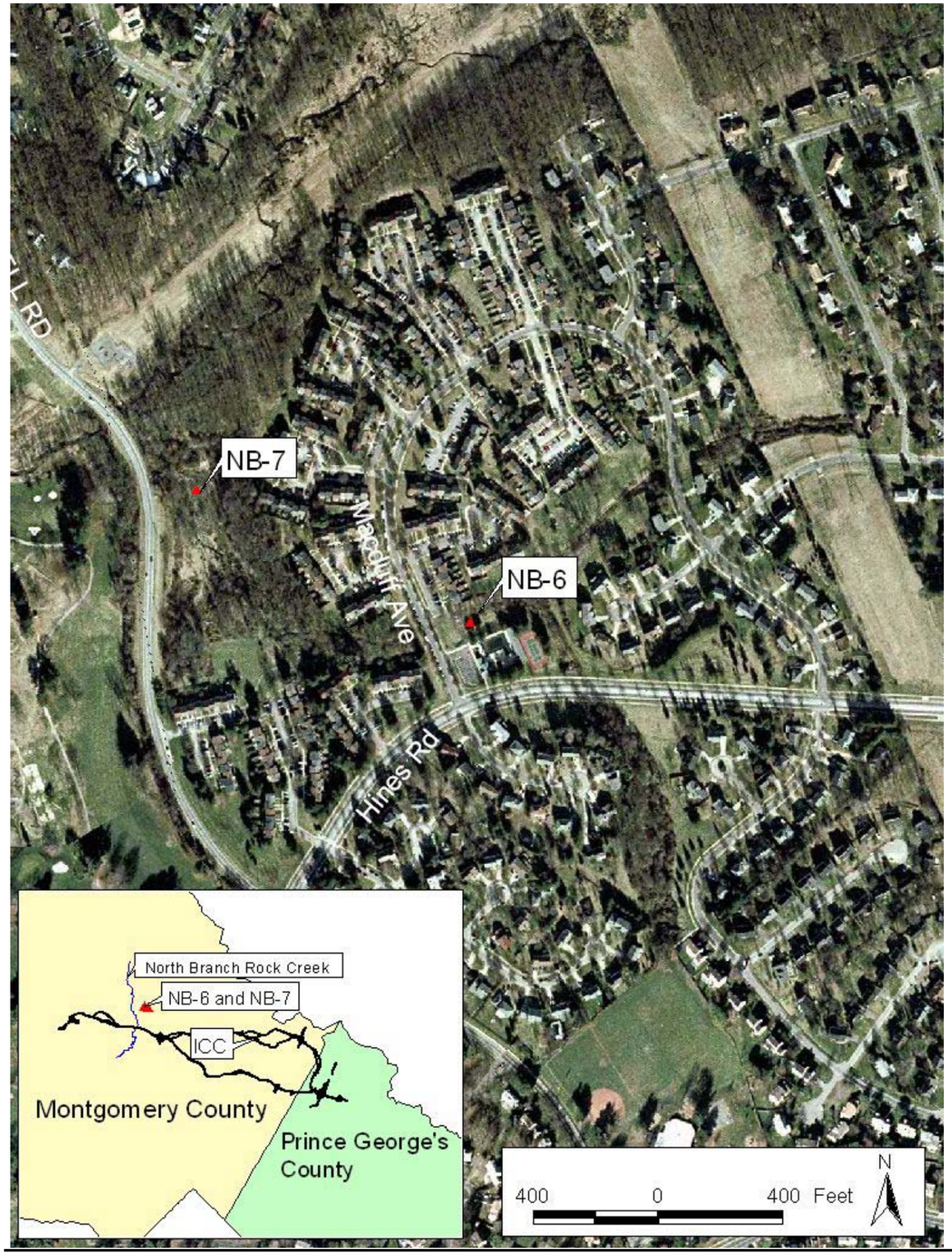
Restoration Concept

The restoration concept for NB-7 includes the following efforts:

- Convert the existing dry pond to provide extended detention with micropools.

Restoration of NB-7 would cost approximately $150,000


Cashell Rd
Macduff Ave
NB-7
CONCEPT PLAN
Stormwater Management
Retrofit Site NB-7
Scale: 1” = 200’
Topography: 5-foot contours
Restoration Area: 274 acres
Potential Impact: 1.5 acres
Cost: $150,000
= site
N



NB-6: Environmental Stewardship
Stormwater Management Retrofit Site
Corridor 1 and Corridor 2

Existing Conditions Summary

Location Information

County: Montgomery
Watershed: North Branch Rock Creek
ADC Map: 24 J-3
Location: North end of Hines Road and south of Mac Duff Avenue

Site Conditions

Drainage Area Proposed to be Treated (acres): 234

NB-6 is a dry pond.

Restoration Objectives

The restoration objectives for NB-6 include:

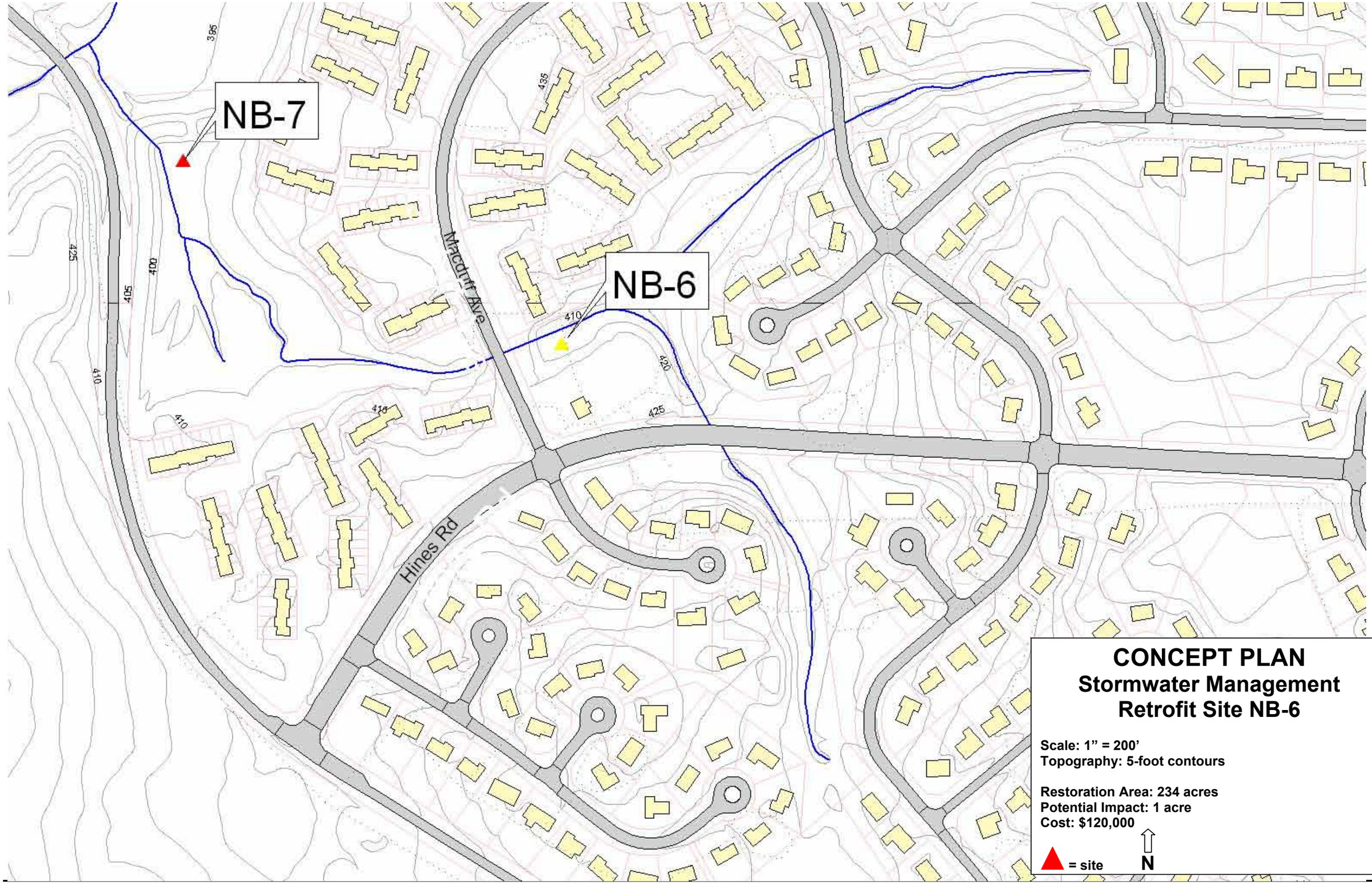
- Addressing stormwater management on a micro scale.

Restoration Concept

The restoration concept for NB-6 includes the following efforts:

- Convert the existing dry pond to provide extended detention with micropools.

Restoration of NB-6 would cost approximately $120,000



CONCEPT PLAN
Stormwater Management
Retrofit Site NB-6

Scale: 1” = 200’
Topography: 5-foot contours

Restoration Area: 234 acres
Potential Impact: 1 acre
Cost: $120,000

= site

N