

# **Stormwater Banking Program Manual for Users**

**Greenville County, SC**

**November 15, 2012**

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## Section 1: An Overview of the Stormwater Banking Program

### 1.1 Program Overview

The Stormwater Banking Program is a **voluntary** program that offers a predictable process for developers to increase density in residential developments located within Single Family Zoning Districts.

Benefits to Developers:

1. Predictable process and program
2. Increased profits from additional units
3. Minimum lot size waived
4. Reduced setback requirements
5. Approval for single family attached

Basic Steps:

1. Developer determines eligibility for and **chooses** to participate in the program.
2. Developer participates in the program and receives a residential density bonus.
3. County uses funds generated to implement stormwater retrofits throughout the County.

Eligibility Requirements:

1. Develop within the Program Area (*See: Figure 2*)
2. Use the Decision Making Tool (*See: Decision Making Tool*) and attain minimum score of 70.
3. Pay a participation fee.
4. Provide at least two public access roads to the subdivision. (*Note: If specific site conditions, such as very little road frontage, do not permit two public access roads, a developer may request permission for eligibility without meeting this requirement.*)

***Infrastructure capacity issues will likely exist within portions of the Program Area. The developer will be responsible for coordination with the appropriate infrastructure provider(s) to determine current capacity and potential upgrades of the system. Funding for these upgrades is not provided by the Program and is typically the responsibility of the developer.***

#### Additional information:

- The Decision Making Tool (DMT) is an excel based tool that is best used electronically to automatically calculate the overall score and participation fee.
- A minimum score of 70 must be attained on the DMT in order to participate in the program; however, increases in the DMT score can reduce the participation fee.
- The Program will be administered by the Greenville County Land Development Division, with assistance from the Greenville County Planning Department.

### 1.2 Program Details

In order to participate in the SBP, a development must:

1. Be located within the Program Area,
2. Attain a minimum score of 70 on the Decision-Making Tool (DMT),
3. Pay a participation fee, which is in part based upon the score attained, and
4. Provide at least two public access roads to the subdivision (*Note: If specific site conditions, such as very little road frontage, do not permit two public access roads, a developer may request permission for eligibility without meeting this requirement*).

In exchange for their participation in the SBP, developers will receive a residential density bonus which will allow them to develop more lots on their site than would be allowed by the site's current zoning (*See Section 5.2: Density Levels*). Increased density will result in a number of benefits, including increased profits for the developer as well as more compact development which will provide fiscally conservative use of existing County infrastructure as well as benefits to water and air quality throughout the County.

For developments participating in the SBP the following provisions will apply:

1. There will be no required minimum lot area per dwelling unit unless otherwise required by SCDHEC.
2. There is no minimum lot width, except as required by SCDHEC and/or the International Building Code.
3. No structures shall be erected within five feet from any external lot line of any SBP development; otherwise, no front, side, or rear setbacks are required for internal lots, except as required by International Building Code, and the Greenville County Encroachment and Transportation Corridor Preservation Ordinances. (*Note: Utility easements and rights of way are still required specific to utility provider.*)
4. The permitted uses will include Single Family Attached and Detached. *See Section 5.2 for allowable density levels.*

The participation fee paid by developers will be directed to a restricted fund, also managed by the Greenville County LDD, that will be used to implement strategic stormwater retrofit projects that will benefit overall water quality in the County.

## Section 2: Program Administration

### 2.1 Overview

The SBP will be administered by the Greenville County LDD with assistance from the Greenville County Planning Department. *See Figure 1: County SBP Flow Chart.* It will likely be necessary to periodically update several elements of the SBP in the future. Elements that may need to be updated on a 5-year or shorter basis include, but are not limited to: participation fee levels, DMT elements, and the instruction manual. Density levels should be updated in conjunction with Future Land Use Map revisions.

### 2.2 Role of Land Development Division

Responsibilities of the LDD will include:

- To determine if a development is eligible to participate based on location of site and proper use of the DMT.
- To verify the following specific questions of the DMT (only those which the user is trying to earn points for):
  - Protect Waters of the U.S.
  - Protect Areas of Ecological Importance
  - Protect Floodplains
  - Minimize Erosion from Steep Slopes
  - Runoff Factor
  - Soil Factor
  - Detention Factor
  - Infiltration Factor
  - Sediment Factor
  - Nitrogen Factor
  - Phosphorus Factor
  - Bacteria Factor
  - Maintenance Factor
- To review and collect participation fee payments, ensuring funds are deposited and used appropriately.
- To track CEPSCI evaluation reports of participating developments during construction, to determine eligibility for and amount of participation fee rebate, and to pay applicable participation fee rebates.
- To track developments participating in the bank, funds generated by the bank, and retrofit projects completed with bank funds.
- To ensure that retrofit projects are completed, maintained, and protected in perpetuity.

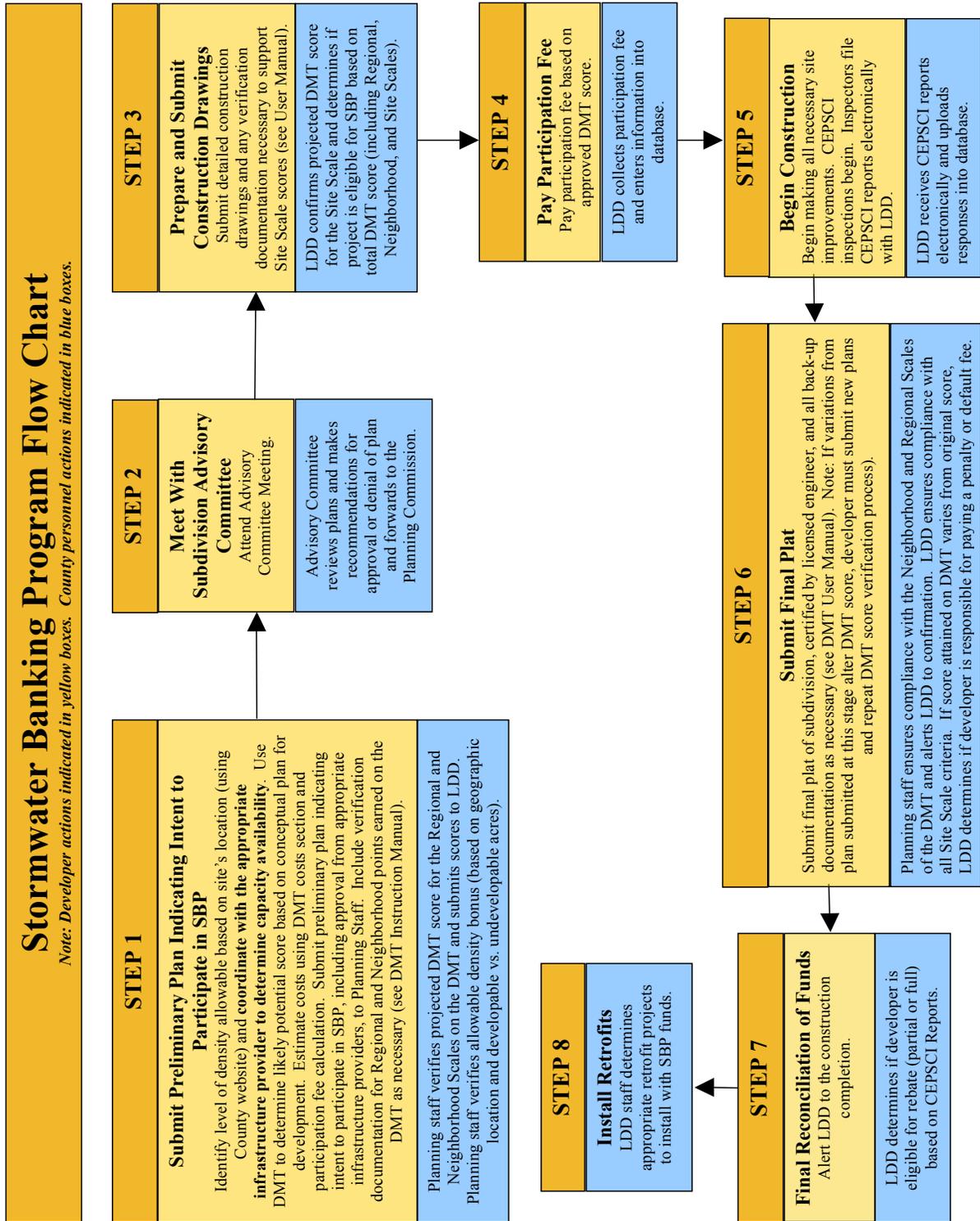
### 2.3 Role of Planning Department

Responsibilities of the Planning Department will include:

- Coordinate with the LDD to determine if developers are eligible to participate in the SBP.
- To verify the following specific questions on the DMT:
  - Promote Infill Development
  - Proximity to a Mix of Uses
  - Locate project within existing well-connected neighborhood
  - Provide street connectivity and multiple route choices within development
  - Project street design
  - Public transit
  - Bicycle-friendly design
  - Walkability
  - Reduce pressure on existing energy, water, and sewer infrastructure
  - Common area landscaping
  - Redevelopment site

*It is understood that the Planning Department may accept certified plans as sufficient verification to award points, or has the choice to conduct a field visit as they see fit.*

Figure 1. County SBP Flow Chart



## Section 3: Decision Making Tool, Instruction Manual, and Participation Fee

### 3.1 Decision Making Tool

The Decision Making Tool (DMT) is designed for residential properties that have been, or intend to be, subdivided. The DMT scores sites based on factors related to existing physical characteristics (e.g., soils on-site), on-site design interventions (e.g., site layout, installation of BMPs), the associated impacts of off-site disturbances resulting from site selection (e.g., transportation and commercial-related impervious surfaces), and the amount of anticipated vehicle-miles traveled that would result from the development. Through use of the DMT, users will be educated on how site design and selection choices play a critical role in how their development impacts water quality. Developers must score at least a 70 in total on the DMT to participate in the program, with at least 40 of the 70 points being earned through the Site Scale (which is the anticipated score of developments meeting the County's minimum stormwater requirements).

The scoring mechanism of the DMT is based in Excel. It consists of brief questions and answer choices that must be made by the user. Answers are either selected via a checkbox, or are inserted as numbers through use of arrow buttons. More detailed information and guidance on the questions is contained in the DMT Instruction Manual.

### 3.2 DMT Instruction Manual

A DMT Instruction Manual has been prepared that will walk users of the DMT through each question of the scoring tool. (*See: Instruction Manual*)

### 3.3 Participation Fee

The **Participation Fee** is calculated using three input factors:

1. the development's DMT score,
2. the number of *additional* lots allowable through the density bonus, and
3. the average anticipated price of lots in the development.

The user will input each of these criteria into an electronic version of the DMT to automatically calculate their Participation Fee. The developer will be asked to input a justification for the amount they designate as their average anticipated price of lots.

There are two types of participation fees: the **Base Participation Fee** (assuming a minimum DMT Score of 70) and the **Effective Participation Fee** (includes applicable reductions based on actual DMT Score).

As a developer increases the DMT score of their development, the Base Participation Fee may be reduced. The Base Participation Fee is reduced by varying increments and varying percentages at the following point targets: **100** (18% reduction), **130** (36% reduction), **160** (51% reduction), **190** (61% reduction), **220** (66% reduction), **250** (69% reduction), and **280** (70% reduction). Once the reduction is determined, it is subtracted from the Base Participation Fee. The remaining amount is the amount a developer will actually pay the County, or the **Effective Participation Fee**. The Effective Participation Fee formula is set up to strongly incentivize developers scoring lowest on the DMT to move to the next tiers (e.g., from a 70 to a 100, or from a 100 to a 130). Incentives still exist as point values increase; however, at higher point level increments incentives are reduced slightly.

*See the table below to determine how a developer’s fee would change if he was provided 30 additional lots at an average selling price of \$40,000/lot:*

<b>DMT Score (in points)</b>	<b>Base Participation Fee</b>	<b>Percentage Reduction</b>	<b>Amount Reduction</b>	<b>Effective Participation Fee</b>
70 to 99	\$90,000	No Reduction	No Reduction	\$90,000
100 to 129	\$90,000	18%	\$16,200	\$73,800
130 to 159	\$90,000	36%	\$32,400	\$57,600
160 to 189	\$90,000	51%	\$45,900	\$44,100
190 to 219	\$90,000	61%	\$54,900	\$35,100
220 to 249	\$90,000	66%	\$59,400	\$30,600
250 to 279	\$90,000	69%	\$62,100	\$27,900
280 & above	\$90,000	70%	\$63,000	\$27,000

When the Effective Participation Fee is collected, at least 75% will be directed to a restricted fund intended for the direct costs associated with retrofit installation, including design and construction, while 25% may be directed towards administrative costs associated with the SBP. All funds will be managed by the Greenville County Land Development Division.

*See: Decision Making Tool (Summary Page)*

## **Section 4: Disturbance Assessment and Post Construction Rebate**

### **4.1 Overview**

The program also takes into account a minimum compliance with required during-construction Best Management Practices (BMPs) to minimize construction impacts to receiving streams. This minimum compliance will be measured through CEPSCI evaluation reports, in conjunction with any site inspections conducted by County Staff. All CEPSCI evaluation reports of participating developments must be electronically sent to the Greenville County LDD, who will be responsible for tracking the CEPSCI report answers using their existing database.

After construction has ceased and final stabilization is confirmed by Greenville County, the LDD staff will evaluate the implementation of erosion prevention and sediment control techniques during construction. At this time Greenville County will determine if the project should receive a **rebate** for maintaining outstanding construction practices, using information from CEPSCI reports and County inspections. Below are the conditions that would need to be met in order to be eligible for the different rebate levels. The value of the rebate is a percentage of the Effective Participation Fee: 15% for a full rebate and 7.5% for a partial rebate.

## 4.2 Rebate Levels

Full Rebate Level: 15% of Effective Participation Fee (If all the following conditions are met.)

- No Stop Work Order.
- No Notice of Violation (NOV).
- No unpermitted impact to offsite or onsite Waters of the US or Waters of the State.
- No unpermitted impact to adjacent property owners or public right of way.
- No perimeter silt fence failures. No wash outs or sediment over tops.
- No perimeter sediment pond or sediment basin failures.
- All deficiencies and corrective measures were completed prior to the next inspection report. This includes perimeter control BMP's and internal BMP's.
- All silt fence and perimeter control BMP's were installed correctly and according to the plan before any land disturbing activities took place.
- Site stabilization measures were taken within 14 days of ceased construction activities as required by state law.

Partial Rebate Level: 7.5% of Effective Participation Fee. (If all the following conditions are met.)

- No Stop Work Order.
- No Notice of Violation (NOV).
- No unpermitted offsite or onsite impact to Waters of the US or Waters of the State.
- No unpermitted impact to adjacent property owners or public right of way.
- Perimeter Silt fence failure only if event exceeded 10 year 24hr event.
- Perimeter Control BMP failure only if event exceeded 10 year 24hr event.
- All perimeter control BMP deficiencies and corrective measures were completed before subsequent inspection report.
- All silt fence and perimeter control BMP's were installed correctly and according to the plan before any land disturbing activities took place.

NO Rebate if any of the following occurred:

- Active Phase received a Stop Work Order.

- Active Phase received a Notice of Violation.
- Construction activities led to an unpermitted impact to Waters of the US or Waters of the State.
- Construction activities led to an unpermitted impact to an adjacent property owner or public ROW.
- Perimeter Silt fence failure during event less than 10 year 24 hr event.
- Perimeter Control BMP failure during event less than 10 year 24 hr event.
- Perimeter control BMP deficiencies or corrective measures were not completed prior to subsequent inspection report.
- Land disturbing activities started before perimeter control BMPs were installed.

## Section 5: Program Area Area, Density Levels, and Pilot Phase

### 5.1 Program Area

The area of the County in which the SBP will operate is called the Program Area. The Program Area was determined by assessing Greenville County Priority Management Unit (PMU) subwatersheds and evaluating a number of factors including existing development, existing infrastructure, and transit availability.

### 5.2 Density Levels

The density levels used in the SBP are geographically based and are listed below. Density levels have been pre-determined for various locations in the County by consulting the Future Land Use (FLU) Map approved by County Council. It is expected that these density levels will be updated when any significant changes are made to the Greenville County FLU Map:

- Employment Center: 10 units/acre
- Residential Land Use 3: 10 units/acre
- Residential Land Use 2: 6 units/acre
- Residential Land Use 1: 3.6 units/acre
- Rural Land Use 1: 3 units/acre

*Note: See Figure 2: Program Area & Density Levels.*

Once Council adopts the SBP, allowable density bonuses for applicable parcels will be integrated into the Greenville County Real Property Search webpage and will be publicly accessible. Thus, to determine the density level allowed on a particular parcel, a developer will access that parcel information through the County's website. Once the density level is accessed, a developer will multiply the density level allowed (specified in units/acre) by the number of acres of that site. It is important to note that the density level of a parcel is not related to the parcel's current zoning.

If a parcel contains “undevelopable land” as defined by the Greenville County Zoning Ordinance, a developer may calculate the allowable density bonus based upon the “developable land” acreage as defined by the Greenville County Zoning Ordinance.

Note: as of 9/29/2010, the definitions for developable and undevelopable land in the Zoning Ordinance are as follows:

- Developable Land: Land which is suitable as a location for structures.
- Undevelopable Land: Land that has development constraints due to one of the following constraining factors: land with a slope greater than 30 percent, lakes, marshes, sloughs, wetlands, areas within the Area of Special Flood Hazard, defined as the land in the floodplain within a community subject to inundation by the base flood having a one percent or greater chance of being equaled or exceeded in any given year, and areas of recent or active landslides.

### 5.3 Administrative and Development Review

The initial phase of the SBP will commence upon approval of Council. The initial phase will be defined as follows:

County Staff will conduct an Administrative and Development review of the Program upon meeting any one of the following conditions:

- (1) Eighteen months following the date of Council approval of the Program;
- (2) After two development projects within the PIAs have successfully participated in the Program; or
- (3) After two development projects outside the PIAs but within the Program Area have successfully participated in the Program.

County Staff may initiate new projects as participating projects are successfully completed. Upon completion of two projects inside the PIA’s and two projects outside the PIA’s the County Staff will report its findings to the SBP Stakeholders who will have the opportunity to submit comments. After receipt of comments, the County Staff will decide whether to allow the program to function throughout the Program Area, or whether to recommend to Council the termination or required amendments to the SBP.

For purposes of this Section (5.3), “successfully participate in the Program” shall mean acceptance of the infrastructure for the project by the infrastructure providers and the submission of the Final Plat.

## 5.4 Triggers for Successful Completion

### A. Development Evaluation:

The development will be considered a success based on meeting the following stormwater requirements:

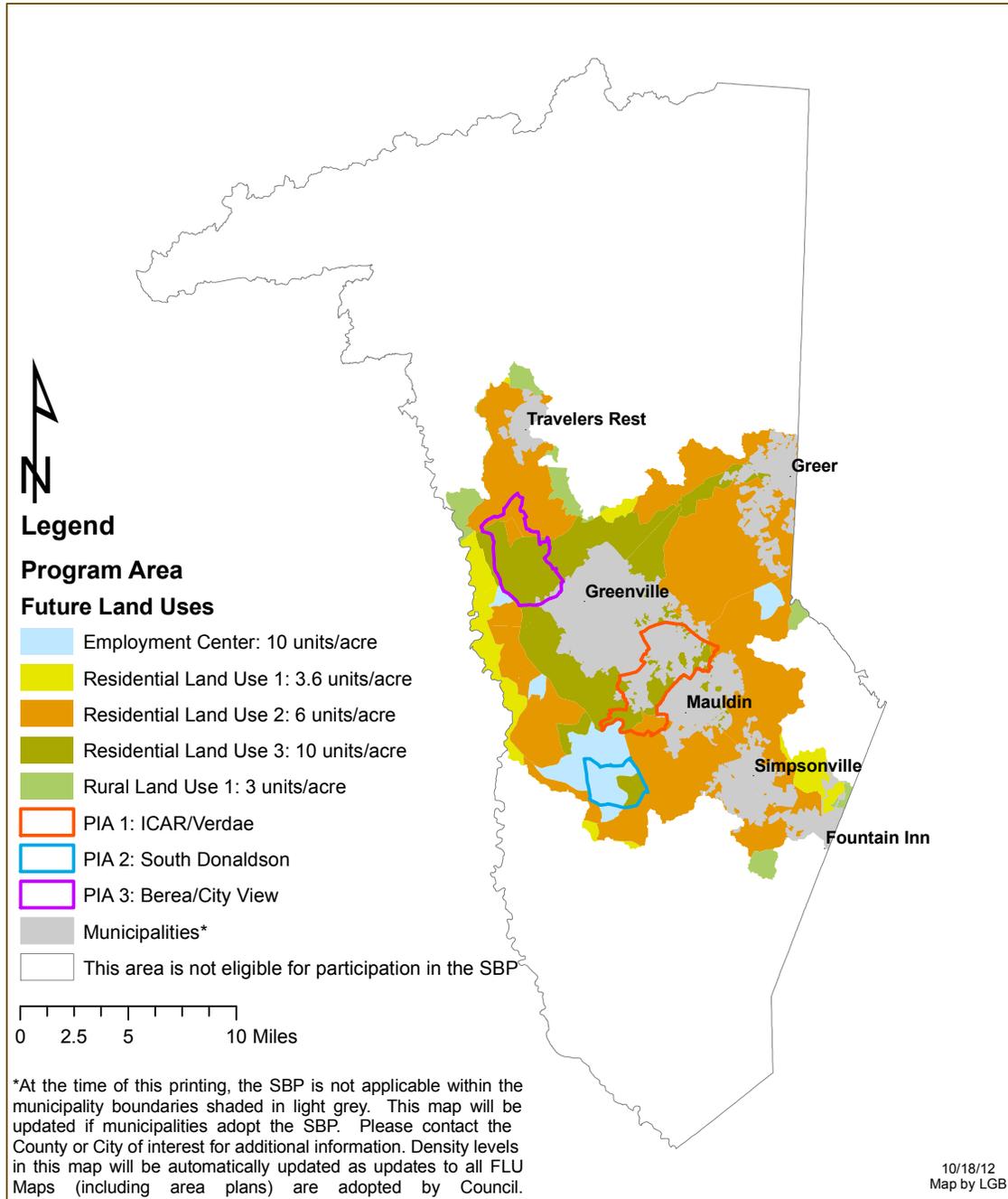
1. The current SCDHEC General construction permit for water quality standards;
2. The County's Best Management Practices;
3. Meeting the requirements of the DMT in the Stormwater Banking Program;
4. The successful completion of all inspections of stormwater structures;
5. Pre and post construction water quality and quantity will be modeled in IDEAL/appropriate software and applied to the development;
6. All water quality and quantity features installed as a part of the program will be included as part of our annual inspection program to ensure long term efficiency and effectiveness; and
7. If the project receives a rebate.

### B. Overall Program Evaluation:

Success of the program will be evaluated at the time of the County's NPDES Permit renewal. Performance measures include: an administrative review, a development review, funds generated by the SBP, and modeled water quality and quantity improvements from stormwater retrofits will be evaluated. The County Staff shall report its finding (success/shortcomings of the program) to the SBP Stakeholders. The SBP Stakeholders will have the opportunity to comment on the findings.

Figure 2. Program Area & Density Levels

## Stormwater Banking Program Program Area



## Section 6: Penalty and Default Fees

### 6.1 Penalty Fee

If a developer pays an Effective Participation Fee based upon an expected DMT score that is not actually attained upon completion of the development, he may be assessed a penalty fee. At least 75% of any penalty fee assessed will be directed to the retrofit fund, while 25% of the fee can be utilized for administration purposes. The fee will only take effect if a developer's inability to attain his originally anticipated DMT score drops him into a lower "tier" of the participation formula (*See Section 3.3: Participation Fee*). For example, if a development initially calculated and paid an Effective Participation Fee of \$57,600 based upon a score of 130-159 and then only "earned" between 100 - 129 of those points when the project was completed, the developer would be responsible for paying the difference as if the development had earned only a 100 - 129 originally (in which case his fee would have been \$73,800). The assessed penalty fee would be \$73,800 - \$57,600, or \$16,200.

<p><b>Penalty Fee =</b>  <b>(Corrected Effective Participation Fee) - (Initial Effective Participation Fee)</b></p>
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#### Penalty Fee Example:

This example assumes the developer received 30 additional lots at an average selling price of \$40,000 for each lot and expected a DMT score of 130, but actually achieved a DMT score between 100-129.

- **Base Participation Fee:** = \$90,000
- **Initial Effective Participation Fee:** (Fee paid based on expected DMT score of 130-159)  
 $\$90,000 - \$32,400 = \$57,600$
- **Corrected Effective Participation Fee:** (Fee according to actual DMT score of 100-129)  
 $\$90,000 - \$16,200 = \$73,800$
- **Penalty Fee:** (Owed to County)  
 $[(\$73,800) - (\$57,600)] = \$16,200$

*Note: To avoid penalty fees, any development whose score is close to the threshold between two "tiers", should pay special attention to ensuring that enough points are earned so as to avoid dropping into a lower "tier".*

### 6.2 Default Fee

If a developer pays an Effective Participation Fee based upon an expected DMT score that is not actually attained upon completion of the development, AND in so doing, *fails to meet the minimum participation score of 70 on the DMT*, he will be assessed a default fee. (*Note: This is a highly unlikely scenario since the average*

score of typical developments in Greenville County is above a 70.) At least 75% of any default fee assessed will be directed to the retrofit fund, while 25% of the fee can be utilized for administration purposes. The default fee will consist of **double** the Base Participation Fee (fee if the development had received the minimum participation score of 70), **minus** the amount that has already been paid as an Effective Participation Fee. The default fee is calculated using the following formula (where the **Base Participation Fee** equals the fee that would have been paid if the developer had earned a score of 70 originally):

**Default Fee =**  
**[2 x (Base Participation Fee)] - (Effective Participation Fee)**

For example, if a development initially calculated and paid an Effective Participation Fee of \$57,600 based upon a score of 130-159 and then only “earned” 69 of those points when the project was completed, it would drop below the minimum score required of 70 points. Therefore, the developer would be assessed a default fee of two times the Base Participation Fee had he originally earned a 70, minus the amount already paid; or  $2(\$90,000) - \$57,600 = \$122,400$ , where \$90,000 equals the Base Participation Fee he would have originally paid had he scored a 70 on the DMT.

**Default Fee Example:**

This example assumes the developer received 30 additional lots at an average selling price of \$40,000 for each lot and expected a DMT score of 135, but actually achieved a DMT score of 69 (which is lower than the minimum of 70 required for participation).

- **Base Participation Fee:** = \$90,000
- **Effective Participation Fee:** (Fee paid based on expected DMT score of 135)  
 $\$90,000 - \$32,400 = \$57,600$
- **Default Fee:** (Owed to County)  
 $[2 \times (\$90,000)] - (\$57,600) = \$122,400$

*Note: A default fee will **only** be assessed if a development falls below the minimum participation score of 70 points. Thus, if a development is close to the 70-point threshold, the developer should take special note to ensure that all points are attained in order to avoid paying a Default Fee.*

## APPENDIX A: Decision Making Tool (DMT)



# Decision-Making Tool (DMT)

## General Information

User should fill in all cells highlighted the color of this cell.

Subdivision Name		
Developer		
Engineer/Surveyor		
Current Zoning (units/acre)	Choose from drop-down menu	◆
Developable Acres on Site		
Total Allowable Residential Lots - Currently	0	
Allowable density with program bonus (units/acre)	Choose from drop-down menu	◆
Allowable residential lots with program bonus	0	

Confirm infrastructure capacity is available	(List providers)
--	------------------

DMT Score	0
Amount Paid (County Staff should complete upon receiving payment)	\$0

## Participation Fee Calculation

Directions: Input the average residential lot price. The Effective Participation Fee will be automatically adjusted depending on DMT Score.

\*The participation fee is a function of the DMT score and the average value of the maximum additional residential lots that can be developed with the density bonus.

Average Residential Lot Price (\$/lot)	
Average Lot Price Justification (Provide a brief narrative on the development and target market)	(Justification)
DMT Score	Score too low
Number Lots without Density Bonus	0
Number Lots with Density Bonus	0
Base Participation Fee	
Reduction based on DMT Score	
Reduction for Brownfield Site	\$0

**Effective Participation Fee**

**Score too low**

# Regional Scale Impacts to Water Quality

## 1. Project Location

Indicate if the project is on a site with available infrastructure capacity.

Project site has available infrastructure capacity (10 points).

0

Indicate if the project is within a Priority Investment Area.

Project is within a Priority Investment Area (10 points).

0

Indicate if the project is an infill site.

At least 75% of the project perimeters border **previously-developed** parcels (not including streets) (12 points).

At least 75% of the land area within a half-mile radius of the project have been **previously-developed** (12 points).

0

The area within a 1/2-mile radius of the project contains at least 75 street **intersections** (12 points)

## 2. Protect Waters of the U.S.

No **wetlands** or **waters of the U.S.** are located on the project site (5 points).

Project maintains a minimum 75' buffer for known or identified **wetlands** and/or **waters of the U.S.** (5 points)

0

Project disturbs area on or within 75' of **wetlands** or **waters of the U.S.** or fails to maintain a minimum buffer of 75' (0 points).

## 3. Protect Areas of Ecological Importance

No **trout waters** or **outstanding resource waters** are located on or within 100' of the project (5 points).

Project maintains a minimum, permanent 100' vegetated buffer for trout and/or **outstanding resource waters** (5 points).

0

Project is located on or within 100' of **trout waters** or **outstanding resource waters**, and fails to maintain a 100' minimum vegetated buffer for these waters (0 points).

## 4. Protect Floodplains

Project does not contain any **floodplain** areas (5 points).

Project maintains that no structures are built in the **floodplain** (5 points).

0

Project builds structures in the **floodplain** (0 points).

## 5. Minimize Erosion from Steep Slopes

Project avoids slopes greater than 30% (5 points).

Project revegetates 100% of existing slopes with at least 75% native and/or non-invasive vegetation (5 points).

0

Project does not avoid slopes greater than 30% or does not restore existing slopes properly (0 points).

## 6. Proximity to a Mix of Uses

Project is near various **commercial establishments** (other than residential), which can include grocery, retail, restaurants, schools, offices, recreation, etc. Enter the number of establishments within the distances provided, up to a maximum of 20 uses per category. Provide an area map indicating the different uses and distances for verification. (Total of 20 points possible)

establishments within 1/4 miles (1 point each)

establishments between 1/4 mile and 1/2 mile (0.75 points each)

0

establishments between 1/2 mile and 3/4 mile (0.25 points each)

establishments between 3/4 and 1 mile (0.1 points each)

**Continuous** sidewalks or pedestrian pathways lead from project to 4 or more diverse uses. Provide map for verification (6 points).

0

## Regional Scale Subtotal

0

# Neighborhood Scale Impacts to Water Quality

## 7. Locate project within existing well-connected neighborhoods

Indicate the number of **qualifying intersections** within a half-mile radius outside of the project site. Intersections serving as the only access to an area do not qualify, nor do any intersections within that area. Intersections leading to cul-de-sacs consequently do not qualify.

**32** **Intersections** within a half-mile radius (17-point maximum and are awarded starting at 50 intersections). 0

## 8. Provide street connectivity and multiple route choices within the development

Indicate the number of links and nodes **within** development. (Points based on the ratio of links to nodes. 8 points for 1.3 ratio, 10 points for 1.6 or greater.)

**1** **Links:** Street, walkway, alley and pathway segments between nodes 0

**1** **Nodes:** points where three or more roadway segments meet; cul-de-sacs; dead-ends, and sharp curves (>75°)

Project is built into existing street network and creates no new streets (10 points).

**Ratio = 1.00**

## 9. Project Street Design

Indicate average street width (curb to curb) for streets without on-street parking (in feet).

*\*Subject to change with LDR updates.*

Not applicable (0 points).

Average street width 20-22 feet (5 points).

Average street width 22.1-24 feet (4 points).

0

Indicate average block Length (in feet) within development.

**605 feet** (5 points if ≤ 600') 0

Cul-de-sacs

Cul-de-sacs are not used, or are used **only** in areas where obstructions exist (4 points).

0

Front Building Setbacks (in feet)

**21** From residential access and subcollector (≤12 feet = 4 points; 13 to 20 feet = 3 points; > 20 feet = 0 points).

N/A - Project does not contain residential access or subcollector roads (0 points).

0

**31** From collector roads (if ≤30 feet, then 2 points).

N/A - Project does not contain collector roads (0 points).

0

## 10. Public Transit

Project is located within a half-mile (walking or route distance) from **planned transit route**. See *instruction manual for details* (4 points).

0

Project has continuous sidewalks or pedestrian pathway leading to a transit stop (5 points).

0

Indicate walking or route distance from project to nearest existing **transit route**.

Less than 1/4 mile (12 points).

Between 1/4 mile and 1/2 mile (8 points).

Between 1/2 mile and 3/4 mile (4 points).

More than 3/4 mile (0 points).

0

Indicate average number of dwelling units per developable acre (round **down** to the nearest whole number).

**0** Units per acre (18 point maximum. Points are awarded starting at 6 units/acre). 0

## 11. Bicycle-Friendly Design

<input type="checkbox"/> Project contains common-area bicycle racks or lockers (1 point).	0
<input type="checkbox"/> Project is located within a half-mile (walking or route distance) from planned greenway route. See instruction manual for details (4 points).	0
<input type="checkbox"/> Project is located along a planned greenway route, and dedicates an easement for a future public access greenway (3 points).	0
<b>Indicate travel distance from project to continuous (1/2-mile or longer) bicycle-friendly route (street with post speed less than 25mph, bicycle lanes, or designated greenway).</b>	
<input type="checkbox"/> Less than 1/4 mile (6 points).	
<input type="checkbox"/> Between 1/4 mile and 1/2 mile (4 points).	
<input type="checkbox"/> Between 1/2 mile and 3/4 mile (2 points).	0
<input type="checkbox"/> More than 3/4 mile (0 points).	
<b>12. Walkability</b>	
<input type="checkbox"/> All roads within project are open to the public, and the project does not have a perimeter fence (4 points).	0
<input type="checkbox"/> All interior roads (not including alleys) in the project contain sidewalks on at least one side of the street (1 point).	0
<input type="checkbox"/> Project provides one street tree per residential lot (4 points).	0
<input type="checkbox"/> Project sidewalks are separated from the street by a planting strip at least 4 feet wide (1 point).	0
<input type="checkbox"/> Project hires professional landscape architect to confirm appropriate planting details and use of native plants (3 points).	0
<input type="checkbox"/> Project creates community spaces such as a public plaza, community garden, recreation area, etc. (3 points).	0
<input type="checkbox"/> Principle resident front entrances face public streets, plazas, or parks. Front entrances cannot face parking lots (1 point).	0
<b>Adjacent streets to the project contain (or will contain) at least three of the following characteristics (10 points):</b>	
<input type="checkbox"/> Sidewalks	
<input type="checkbox"/> Bicycle lanes	
<input type="checkbox"/> Raised crosswalks	
<input type="checkbox"/> Special bus lanes and bus shelters	0
<input type="checkbox"/> Curb extensions	
<input type="checkbox"/> Pedestrian refuge medians	
<b>The majority of project parking consists of the following:</b>	
<input type="checkbox"/> Structured, centralized parking (16 points)	
<input type="checkbox"/> Parking in rear (1 point)	
<input type="checkbox"/> Shared driveways (1 point)	0
<input type="checkbox"/> Private, individual driveways (0 points)	
<b>13. Reduce Pressure on Existing Infrastructure and Utility Providers</b>	
<input type="checkbox"/> Project requires all homes to be certified by LEED, Earthcraft or Energy Star (2 points).	0
<input type="checkbox"/> Project requires all homes to be certified by EPA WaterSense (3 points).	0
<input type="checkbox"/> Project requires homes to have a greywater recycling system (2 points).	0
<input type="checkbox"/> Project reuses and/or rehabilitates existing structures on the property (2 points).	0
<input type="checkbox"/> Project provides for homes to be built to higher fire safety standards than the code requires (5 points).	0
<b>14. Common Area Landscaping</b>	
<input type="checkbox"/> Project contains efficient/smart irrigation system or water reuse for outdoor landscaping (2 points)	0
<input type="checkbox"/> Project has no long-term irrigation requirements (4 points).	
<b>Neighborhood Scale subtotal</b>	
	<b>0</b>

# Site Scale

## 15. Redevelopment Sites (40 points)

- At least 50% of the project has been previously developed 0

## 16. Runoff Factor (15 possible points)

Indicate the percent area of the site that is maintained as **natural cover**. Natural cover will be maintained in good hydrological condition, and will generally be covered with trees, shrubs, undergrowth and ground story so that it will be in good hydrologic condition.

- 0 %** of the site is maintained in **natural cover** 0

## 17. Soil Factor (10 possible points)

Indicate the percent area of the site that is impervious.

- 100 %** of the project is impervious 0

If conducting a soils investigation, indicate the dominant soil type

- No soils investigation performed  
 Heavy/clay soil  
 Silt loam soil  
 Sandy clay/sandy clay loam soil  
 Sandy loam soil  
 Deep sandy soil

## 18. Detention Factor (15 possible points)

Select the percentage of total site impervious area (rooftops, pavement, etc.) that drains as overland flow through at least 30 feet of established grass, sod, or mulched landscaping; or through infiltration practices. Mulch must represent at least 90% surface cover.

- 0 %** of impervious area drains through landscaping or **infiltration practices** 0

## 19. Infiltration Factor (10 possible points)

Indicate the percentage of the total site area draining through established **infiltration practices**, which can include: infiltration trenches, enhanced bioswales, bioswales, buffer strips, bioretention cells, rain gardens, green roofs, sand filters, pervious or porous pavements, rainwater catchment system, or natural cover.

- 0 %** of total area drains through **infiltration practices** 0

## 20. Sediment Factor (9 possible points)

Indicate IDEAL Sediment TE

- 0 %** (May use anticipated IDEAL results for initial preliminary approval. Official IDEAL results will be used for final score confirmation.)

Indicate ground coverage on pervious areas

- No measures for erosion prevention or sediment control are applicable  
 Good ground cover (>70% vegetative or mulch coverage)  
 Very good ground cover (>80% vegetative or mulch coverage)  
 Excellent ground cover (>90% vegetative or mulch coverage)

Indicate use of buffers to protect drainage inlets

- No measures for erosion prevention or sediment control are applicable  
 Vegetative buffers protect drainage inlets  
 A minimum 30-foot flow-direction vegetative buffer protects drainage inlets

## 21. Nitrogen Factor (10 possible points)

Indicate IDEAL TEN		
<input type="text" value="0"/>	% (May use anticipated IDEAL results for initial preliminary approval. Official IDEAL results will be used for final score confirmation.)	
Indicate post-construction landscaping maintenance measures for nitrogen control.		
<input type="checkbox"/>	No measures for nitrogen control are applicable	0
<input type="text" value="0.0"/>	lbs of Nitrogen applied per 1,000 ft <sup>2</sup> of landscaping, no more than once per year (If selected plant species do not require Nitrogen fertilizer, select 0 lbs.)	
Design functional landscaping to filter out stormwater pollutants.		
<input type="checkbox"/>	Runoff flows through at least 30 ft of established grass, sod, or landscaping with mulch prior to reaching pipes or storm sewers	
<b>22. Phosphorus Factor (10 possible points)</b>		
Indicate IDEAL TEP		
<input type="text" value="0"/>	% (May use anticipated IDEAL results for initial preliminary approval. Official IDEAL results will be used for final score confirmation.)	
Indicate post-construction landscaping maintenance measures for phosphorus control (choose one of the following).		
<input type="checkbox"/>	No measures for phosphorus control are applicable	0
<input type="text" value="0"/>	lbs of Phosphorus applied per 1,000 ft <sup>2</sup> of landscaping, no more than once per year (If selected plant species do not require Phosphorus fertilizer, select 0 lbs.)	
Design functional landscaping to filter out stormwater pollutants.		
<input type="checkbox"/>	Runoff flows through at least 30 ft of established grass, sod, or landscaping with mulch prior to reaching pipes or storm sewers	
<b>23. Bacteria Factor (5 possible points)</b>		
Indicate IDEAL TEB		
<input type="text" value="0"/>	% (May use anticipated IDEAL results for initial preliminary approval. Official IDEAL results will be used for final score confirmation.)	
Site does not contain features that would attract water fowl:		
<input type="checkbox"/>	Site does not contain wet ponds	
If applicable, wet pond designs incorporate the following measures for water fowl control (more than one option can be checked):		0
<input type="checkbox"/>	Wet ponds contain a perimeter fence	
<input type="checkbox"/>	Wet ponds contain a native plants buffer	
Sanitary sewer systems		
<input type="checkbox"/>	All houses are on sanitary sewer system	
<b>24. Maintenance Factor</b>		
Indicate the entity that is responsible for maintenance of stormwater infrastructure.		
<input type="checkbox"/>	Not applicable/ no maintenance plan exists for stormwater BMPs (0 points)	
<input type="checkbox"/>	Individual homeowners (2 points)	
<input type="checkbox"/>	Homeowners Association, with maintenance occurring on a yearly basis (4 points)	
<input type="checkbox"/>	Contracted party, with a minimum five-year agreement (6 points)	0
<input type="checkbox"/>	County or municipality on an as-needed basis (8 points)	
<input type="checkbox"/>	County or municipality as part of day-to-day operations (10 points)	
<b>25. Brownfield</b>		
<input type="checkbox"/>	Indicate that the project is designated as a brownfield site (70 points).	0
<b>Site-Scale Subtotal =</b>		<b>0</b>

Term	Definition	Source
<b>adjacent/ adjoining street</b>	Street that fronts the development site, or shares a border with the site, but is not built by the project developer himself.	
<b>brownfield</b>	A 'brownfield site' is "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant." Documented as contaminated or potentially contaminated (by means of an ASTM E1903-97 Phase II Environmental Site Assessment or a local Voluntary Cleanup Program), or a site defined as a brownfield by a local, state or federal governmental agency.	Public Law 107-118 (H.R. 2869) - "Small Business Liability Relief and Brownfields Revitalization Act"
<b>buffer</b>	Buffer should be minimum of 10 ft width in same direction as runoff flows. Buffer should consist of well established grass (more than 2 months of active growing time since planting), woods with ground litter, or landscaped plants with mulch. In any case, the surface should be adequately covered with at least 75% density. Density can be estimated by either the transect or grid methods.	USDA-NRCS National Engineering Handbook, Chapter 9 - Hydrologic Soil-Cover Complexes
<b>commercial establishments</b>	Commercial facilities that may include: grocery stores, retail, banks, service-related facilities (salon, laundry, gym, etc.), restaurants, civic or community facilities (post office, schools, recreation centers, etc.). For the purposes of the DMT, each individual commercial establishment may be considered, accounting for a maximum of 20 per distance category.	
<b>connectivity Index of a subdivision</b>	A measure of the connectivity within a subdivision itself. Connectivity Index is calculated by dividing the number of roadway links by the number of roadway nodes. Links are street segments between nodes and/or stub-outs, and nodes include the following: points where three or more links meet, cul-de sacs, and dead ends. Nodes do not include stub-outs that are built in anticipation of connection to future development or roads. A higher index means that travelers have increased route choice, allowing more direct connections for access between any two locations. According to this index, a simple box is scored a 1.0. A four-square grid scores a 1.33 while a nine-square scores a 1.5. Dead end and cul-de-sac streets reduce the index value. This sort of connectivity is particularly important for nonmotorized accessibility. A score of 1.4 is the minimum needed for a walkable community.	Ewing,1996.
<b>connectivity of a neighborhood</b>	The number of <b>publicly accessible</b> street intersections per area, including intersections of streets with dedicated alleys and transit ROWs, and of intersections of streets with non-motorized ROWs. If one must both enter and exit an area through the same intersection, such an intersection and any intersections beyond that point are not counted; intersections leading only to cul-de-sacs are not counted. The square mileage shall exclude water bodies, parks over a 1/2-acre, public facility campuses, airports, rail yards, slopes over 15%, and areas non-buildable under codified law or the rating system.	Adapted from LEED ND.
<b>developable acre</b>	Land which is suitable as a location for structures.	Greenville County Zoning Ordinance
<b>disturbed area or developed area</b>	(1) the construction, installation, or alteration of a structure, impervious surface or drainage facility; or (2) the clearing, scraping, grubbing or otherwise significantly disturbing the soil, vegetation, mud, sand or rock of a site; or (3) adding, removing, exposing, excavating, leveling, grading, digging, burrowing, dumping, piling, dredging, or otherwise disturbing the soil, vegetation, mud, sand or rock of a site.	Greenville County Stormwater Management Ordinance
<b>established grass, sod, or landscaping</b>	Established grass, sod, or landscaping is based on combinations of factors that affect infiltration and runoff, including density and canopy of vegetative areas, amount of vegetation, percent of residue cover on the land surface, and degree of surface toughness. Well established grass (more than 2 months of active growing time since planting), woods with ground litter, or landscaped plants with mulch are alternatives. In any case, the surface should be adequately covered with at least 75% density. Density can be estimated by either the transect or grid methods.	Adapted from USDA-NRCS National Engineering Handbook, Chapter 9 - Hydrologic Soil-Cover Complexes
<b>established infiltration trenches</b>	Infiltration trenches are excavations typically filled with stone to create an underground reservoir for stormwater runoff. The runoff volume gradually exfiltrates through the bottom and sides of the trench into the subsoil over a maximum period of 72 hours (three days), and eventually reaches the water table. By diverting stormwater runoff into the soil, an infiltration trench not only treats the water quality volume, but it also preserves the natural water balance by recharging groundwater and preserving channel baseflow. Using natural filtering properties, infiltration trenches remove a wide variety of pollutants from the runoff through adsorption, precipitation, filtering, and bacterial and chemical degradation. An established infiltration trench has been installed according to design and is fully operational.	SC DHEC Stormwater Management BMP Handbook. August 2005.
<b>floodplain</b>	Areas that have been designated as Flood Hazard Areas as mapped by the Department of Homeland Security - FEMA, National Flood Insurance Program; or an area as identified by the Greenville County Flood Damage Prevention Ordinance.	Greenville County Flood Damage Prevention Ordinance
<b>good cover</b>	Good cover should consist of well established grass (more than 2 months of active growing time since planting), woods with ground litter, or landscaped plants with mulch. In any case, the surface should be adequately covered with at least 75% density. Density can be estimated by either the transect or grid methods.	Adapted from USDA-NRCS National Engineering Handbook, Chapter 9 - Hydrologic Soil-Cover Complexes
<b>good hydrologic condition</b>	Good hydrologic condition is based on combinations of factors that affect infiltration and runoff, including density and canopy of vegetative areas, amount of grass, percent of residue cover on the land surface, and degree of surface toughness. To achieve good hydrologic condition, well established grass (more than 2 months of active growing time since planting), woods with ground litter, or landscaped plants with mulch are alternatives. In any case, the surface should be adequately covered with at least 75% density. Density can be estimated by either the transect or grid methods.	Adapted from USDA-NRCS National Engineering Handbook, Chapter 9 - Hydrologic Soil-Cover Complexes
<b>impervious</b>	Area that restricts water flow or significantly limits infiltration. Common examples in a development are paved streets and driveways, rooftops, patios and sidewalks. In addition, some grassed areas may act like impervious areas if the soils were compacted during construction and then sodded over.	Adapted from USDA-NRCS National Engineering Handbook, Chapter 9 - Hydrologic Soil-Cover Complexes

Term	Definition	Source
infill	Those sites that meet any <b>1</b> of the following 3 conditions: <b>(1)</b> at least 75% of its perimeter borders previously-developed parcels; <b>(2)</b> at least 75% of the land area, exclusive of rights-of-way, within a 1/2-mile distance from the project perimeter is previously-developed. Lots smaller than 5 acres in size that are part of larger existing subdivisions qualify as being previously-developed land for the purposes of this criteria; <b>(3)</b> the area within a 1/2-mile radius of the project has an existing connectivity of at least 75 intersections. For the purposes of this definition, streets and agricultural properties do not count as developed land. For the purpose of this program, areas that have been developed by the same entity (developer) or affiliates of the same entity within the past ten years cannot count as previously-developed land.	Adapted from LEED ND.
infiltration practices	Practices that enhance or encourage infiltration by either adding surface cover (i.e., vegetation or mulch), increasing the number or size of soil pores such as by adding coarser soil material, or changing the structure through deep tillage. Common infiltration BMPs would be bioretention cells, infiltration trenches, vegetative filters, enhance bioswales, natural cover, green roofs, or rain gardens. Any infiltration practice must be protected from sediment buildup, particularly during and immediately after construction, since sediment will clog the pores and prevent infiltration.	
intermittent streams	Intermittent streams means streams that generally have defined natural watercourses which do not flow year round, but flow beyond periods of rainfall or snowmelt.	R.61-68, WATER CLASSIFICATIONS & STANDARDS
intersection	A node where three or more continuous links, or streets, meet. Nodes that serve as the only entrance or exit to an area or neighborhood do not count towards street connectivity as they do not contribute towards overall connectivity. Consequently, intersections that lead to cul-de-sacs also do not count.	
link	A link is defined as a segment of road between two nodes. This includes road segments leading from the adjoining highway network or adjacent development. Links can include walking or bicycle paths.	Kentucky Connectivity Zoning and Subdivision Model Ordinance
measures for nitrogen control	Measures for nitrogen control can either be vegetative-based practices such as bioretention cells, vegetative filters, or structural BMPs that are shown to provide nitrogen removal based on IDEAL modeling.	
natural cover	Natural cover is defined as area that is designated to remain in undeveloped condition in perpetuity and is not paved, built upon or otherwise disturbed in any way during the construction process. It will generally be covered with trees, shrubs, undergrowth and ground story so that it will be in good hydrologic condition. Areas designated as natural cover should remain as natural cover in perpetuity and should NOT be mowed. It may have previously been pasture but is no longer grazed, mowed or and is not managed for cultivation, timber, or landscaping.	
node	Nodes are defined as intersections, cul-de-sacs, and sharp curves greater than 75 degrees. They do not include the end of a stub-out at the property line or intersections with the adjoining highway network.	
non-potable uses for water	May include use for outdoor irrigation, however currently recycled greywater is not permissible for outdoor use per South Carolina codes.	
outstanding resource waters	As defined by DHEC R61-68, WATER CLASSIFICATIONS & STANDARDS, freshwaters or saltwaters which constitute an outstanding recreational or ecological resource or those freshwaters suitable as a source for drinking water supply purposes with treatment levels specified by the Department.	R.61-68, WATER CLASSIFICATIONS & STANDARDS
perennial streams	A stream that has continuous flow all year round during years of normal rainfall as compared to "intermittent" streams which normally cease flowing for weeks or months each year, or with "ephemeral" channels that flow for a short time following rainfall. During unusually dry years, a normally perennial stream may cease flowing.	Adapted from USDA-NRCS National Engineering Handbook.
planned transit	A route that has been designated by a public transit service provider, Greenville County, or a Greenville County municipality as having transit in the future.	
previously-developed	Land that has been altered by paving, construction, and/or land use that would typically have required regulatory permitting. Lots less than 5 acres in size that have been built as part of a larger subdivision all count as previously-developed land. It does NOT include altered landscapes resulting from current or historical clearing or filling, agricultural or forestry use, or preserved natural area use. <b>It does NOT include 5-acre or larger parcels of which less than half of the parcel has been previously-developed.</b> It does NOT include streets and areas that have been developed by the same entity (developer) or affiliates of the same entity within the past ten years.	
shared driveways	Shared driveways are those that include a single curb cut and driveway for two or more houses. Such parking thereby reduces the amount of interruptions with pedestrian activity and reduces overall impervious surfaces.	
steep slopes	Land areas where the slope exceeds 30%.	Greenville County Stormwater Management Ordinance
structured, centralized parking	A structure designed specifically to be for automobile parking and where there are a number of floors or levels on which parking takes place. It is essentially a stacked car park.	
transit route	Route that is served by public transit such as bus, light rail, train, etc.	

Term	Definition	Source
<b>trout waters</b>	Waters that meet one of the following three classifications: a. Natural (TN) are freshwaters suitable for supporting reproducing trout populations and a cold water balanced indigenous aquatic community of fauna and flora. Also suitable for primary and secondary contact recreation and as a source for drinking water supply after conventional treatment in accordance with the requirements of the Department. Suitable for fishing and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. Suitable also for industrial and agricultural uses. b. Put, Grow, and Take (TPGT) are freshwaters suitable for supporting growth of stocked trout populations and a balanced indigenous aquatic community of fauna and flora. Also suitable for primary and secondary contact recreation and as a source for drinking water supply after conventional treatment in accordance with the requirements of the Department. Suitable for fishing and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. Suitable also for industrial and agricultural uses. c. Put and Take (TPT) are freshwaters suitable for primary and secondary contact recreation and as a source for drinking water supply after conventional treatment in accordance with the requirements of the Department. Suitable for fishing and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. Suitable also for industrial and agricultural uses. The standards of Freshwaters classification protect these uses.	R.61-68, WATER CLASSIFICATIONS & STANDARDS; <a href="http://www.epa.gov/water-science/standards/wqslibrary/sc/sc_r6169fnl01.pdf">http://www.epa.gov/water-science/standards/wqslibrary/sc/sc_r6169fnl01.pdf</a>
<b>unbroken forest</b>	Areas of existing forest cover that make up 10 acres in size.	
<b>waters of the U.S.</b>	All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; All interstate waters including interstate wetlands; All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairiepotholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purposes by industries in interstate commerce; All impoundments of waters otherwise defined as waters of the United States under this definition; Tributaries of waters identified in paragraphs (s)(1) through (4) of this section; The territorial sea; Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.	40 CFR 230.3(s)
<b>wet ponds</b>	Wet ponds have a permanent (dead storage) pool of water equal to the water quality volume. Temporary storage (live storage) may be added above the permanent pool elevation for larger flows.	SC DHEC Stormwater Management BMP Handbook. August 2005.
<b>wetlands</b>	A wetland is an area that is regularly saturated by surface water or groundwater and is characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions (EPA, 1994). For the purpose of this tool, the following features are not considered wetlands that must be protected per this program: previously-developed land, or man-made stormwater detention or retention facilities.	U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. 1996. Brownfields Initiative. Quick Reference Fact Sheet.
<b>wildlife habitat/ wildlife areas</b>	An area where one of the following has been found or has a high likelihood of occurring on the site due to the presence of suitable habitat and nearby occurrences: (1) a threatened or endangered species under the federal or state Endangered Species Act; or (2) species or ecological communities that have been classified by NatureServe as global rank GH (possibly extinct), G1 (critically imperiled) or G2 (imperiled).	NatureServe list: <a href="https://www.dnr.sc.gov:4443/pls/heritage/county_species.list?pcounty=all">https://www.dnr.sc.gov:4443/pls/heritage/county_species.list?pcounty=all</a>

**Directions: Post Construction Best Management Practice (BMP) Costs can be estimated using one of two alternative approaches:**

- 1: The first approach requires the user to input the volume of each BMP practice that will be used to achieve the total Site Score. The appropriate volume is input in cells E16 to E27 for each selected BMP (the yellow area). The unit measure for each BMP is listed in the adjacent column (column F). Cells G16 through G27 report the estimated total cost for each selected BMP consistent with the volume or area values specified in cells E16 to E27. The cost values per unit of BMP volume are average values for Greenville County.
- 2: The second approach allows the user to directly specify his/her estimate for each BMP cost. The estimate must be consistent with the scale of the BMP input into cells E16 - E27. The user defined total cost value for each BMP overrides (replaces) the internally calculated default cost estimate for each BMP that the user provides a total cost value.

**Best Management Practices in Post Construction Plan**

Practice	Volume or Surface Area of LID Practice	BMP Area Unit	Default Total Cost for each BMP	User- Defined Total Cost for each BMP (optional)	Estimated Total Cost for each BMP
Bioretention Area:	6,000	ft <sup>3</sup>	\$5,775		\$5,775
Natural Infiltration Area:	0	ac	\$0		\$0
Infiltration Trench:	567	ft <sup>3</sup>	\$555		\$555
Buffer Strip:	100	ft <sup>2</sup>	\$6		\$6
Bioswale:	150	ft <sup>3</sup>	\$280		\$280
Dry Pond:	43,560	ft <sup>3</sup>	\$12,629		\$12,629
Wet Pond:	54,450	ft <sup>3</sup>	\$16,270		\$16,270
Constructed Wetland:	1,140	ft <sup>3</sup>	\$8,015		\$8,015
Porous Pavement:	50	ft <sup>3</sup>	\$810		\$810
Sand Filter Area:	290	ft <sup>3</sup>	\$3,490		\$3,490
Green Roof:	33	ft <sup>3</sup>	\$1,732		\$1,732
Rain Barrel:	55	gal	\$193		\$193
				Total =	\$49,756

Input Data

Input Data

The difference in BMP costs is calculated as the estimated LID BMP cost less the conventional BMP cost. Thus, the user must calculate BMP cost for conventional control practices and then the BMP cost for LID control practices.

## **APPENDIX B: Decision Making Tool (DMT) Instruction Manual**



# Decision Making Tool Instruction Manual

Greenville County, SC

November 15, 2012

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## Executive Summary

The Decision-Making Tool (DMT) is a scoring mechanism that evaluates a residential development site based on its anticipated impact to water quality. The DMT score is based on the development characteristics that can impact water quality at the site, neighborhood, and regional scales.

**This DMT Instruction Manual outlines each question on the DMT and follows with a brief summary of resources that may be used to help answer each question, along with guidance on providing Greenville County Planning Department and Land Development Division reviewers with the necessary information needed to verify that the answer to each question is correct. It is important to note that not all DMT questions have to be answered, and verification only needs to be provided if a development is earning points on a question and where noted in this manual.**

## Summary Page

The Summary tab (the first tab in the DMT electronic Excel file) asks for basic information about the development. Some information has to be manually typed in, while others must be chosen from a drop-down menu. After answering questions on the Regional, Neighborhood, and Site tabs of the DMT, the user should then refer to the Summary tab in order to view the total DMT score and anticipated Effective Participation Fee.

Under *General Information*, the DMT user must manually input the following information into the blue-shaded boxes: *Subdivision Name*, *Developer*, *Engineer/Surveyor*, and *Developable Acres on Site*. The *Current Zoning* and the *Allowable density with program bonus* for the development site must be chosen from the drop down menus provided. Both of these values can be found by locating the development site on the Greenville County GIS mapping website (<http://www.gcgis.org/mapapp.html>). The DMT will automatically calculate the number of allowable lots after all of the information has been correctly entered.

The DMT score will appear upon completion of the scoring.

The Effective Participation Fee is calculated using three input factors: the development's DMT score, the number of additional lots allowable through the density bonus, and the average anticipated price of lots in the development. Under *Participation Fee Calculation*, the user must manually input the *Average Residential Lot Price (\$/lot)* and provide a brief justification for the amount in the box below. In the justification, information such as a description of the development and target market, etc. should be noted. The remaining information is automatically calculated in the DMT, and the *Effective Participation Fee* is the amount due to Greenville County upon participation in the Stormwater Banking Program.

## **Regional Scale**

The Regional Scale questions of the DMT focus heavily on how site selection can impact water quality. A site's location has many implications that not only relate to water quality impacts directly adjacent to the site, but on a broader scale it can significantly affect water quality at the County scale due to the many associated off-site impervious surfaces. Therefore, many points on the DMT can be earned from location alone.

Additionally, a significant amount of points can be earned for qualifying as an infill site or for being located close to numerous commercial businesses. Infill sites are those that lie in established, largely previously-developed urban areas, but are sites that have not yet been developed. In the DMT, development sites must meet one of the three infill criteria and will generally already have established infrastructure and services within relatively close proximity. An infill site will therefore result in a decreased number of new off-site associated impervious surfaces and soil disturbances associated with the creation of roads, utilities, and new services and businesses that would arise to support future residents of the development. The DMT also awards additional points to a development site if it is close to varying commercial uses. This not only reduces the need for developing new impervious surfaces for new businesses, but also reduces the amount of vehicle miles traveled (VMT) by residents. Research by EPA and others has suggested that infill development could contribute to a reduction in vehicle-miles traveled by up to 52%. In addition, there is much research on the water quality impacts relating to automobile use, so the characteristics that further reduce VMTs are considered important for water quality throughout the County.

Other site choice variables that directly impact water quality have to do with avoiding or protecting the following: wetlands/waters of the US, floodplains, steep slopes, Outstanding Resource Waters, and Trout Waters. Developing within or near any of these types of features is associated with an increased potential for water quality degradation.

## 1. Project Location

The Project Site has available infrastructure capacity.

- a. **Indicate that the project site has available infrastructure capacity.**

The Project Site is located within a Priority Investment Area.

- b. **Indicate that the project is within a Priority Investment Area.**

The Priority Investment Areas are shown in Figures 1A-D. They include:

- PIA 1: ICAR/Verdae (Laurens Road)
- PIA 2: South Donaldson (Highway 25 and Southern Connector)
- PIA 3: Berea/City View (White Horse Road)

The Project Site is an infill site.

A site is considered **infill** if it meets any **one** of the following conditions:

- **At least 75% of its perimeter borders parcels that individually are at least 50% previously-developed: (Figure 1-A);**  
**OR**
- **At least 75% of the land area, exclusive of rights-of-way, within a 1/2-mile distance from the project perimeter is previously-developed (Figure 1-B);**  
**OR**
- **The lands within a 1/2-mile distance from the project perimeter have a pre-project connectivity of at least 75 intersections per square mile (Figure 1-C).**

**Previously-developed** land parcels are those that have been altered by paving, construction, and/or a land use that would typically have required regulatory permitting. Among others, it includes the following:

- All lots less than 5 acres in size that are part of a larger subdivision.
- Industrial, commercial or office sites in which more than half of the land area has been used for building footprints, stockpiling, stormwater management, or any mechanical systems.
- Land used for stormwater management facilities.

To meet the intent of this category, previously-developed land does not include the following:

- It does NOT include altered landscapes resulting from current or historical clearing or filling, agricultural or forestry use, or preserved natural area use.

- It does NOT include 5-acre or larger parcels of which less than half of the parcel has been previously-developed.
- It does NOT include streets and areas that have been developed by the same entity (developer) or affiliates of the same entity within the past ten years.

An **intersection** is a node or point where three or more continuous links (pathways or streets) meet. For the purpose of this definition, links, or streets that serve as the only access to a neighborhood do not qualify as intersections. Consequently, any nodes located within a gated neighborhood or an area with only one access will not qualify as an intersection. For verification, provide an area map with counted intersections highlighted.

In order to earn points in this category, plans indicating which condition is met and how must be submitted to the Greenville County Planning Department. See Figure 1-A, 1-B and 1-C for example submittals.

FIGURE 1-A

## Stormwater Banking Program Program Area

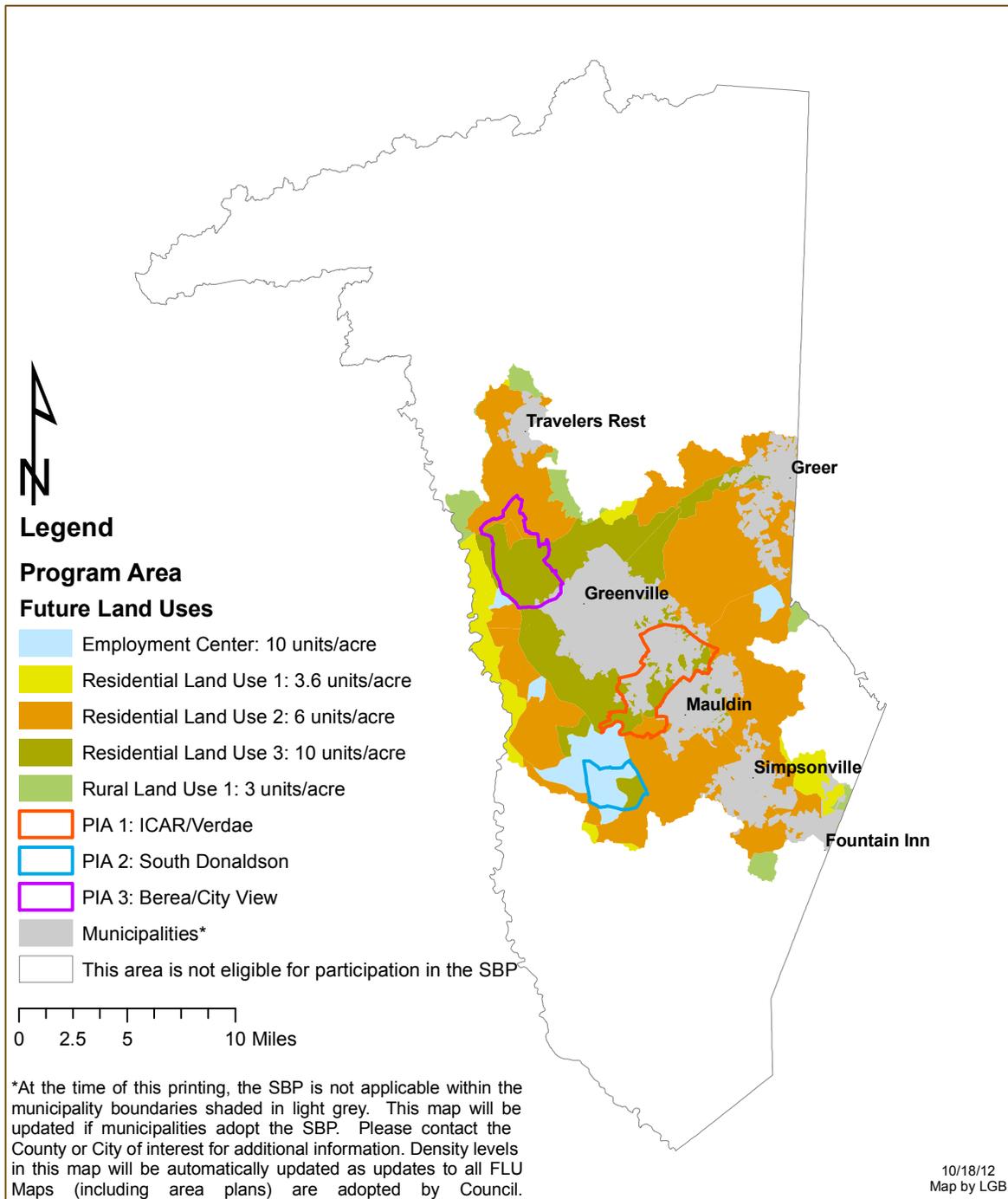
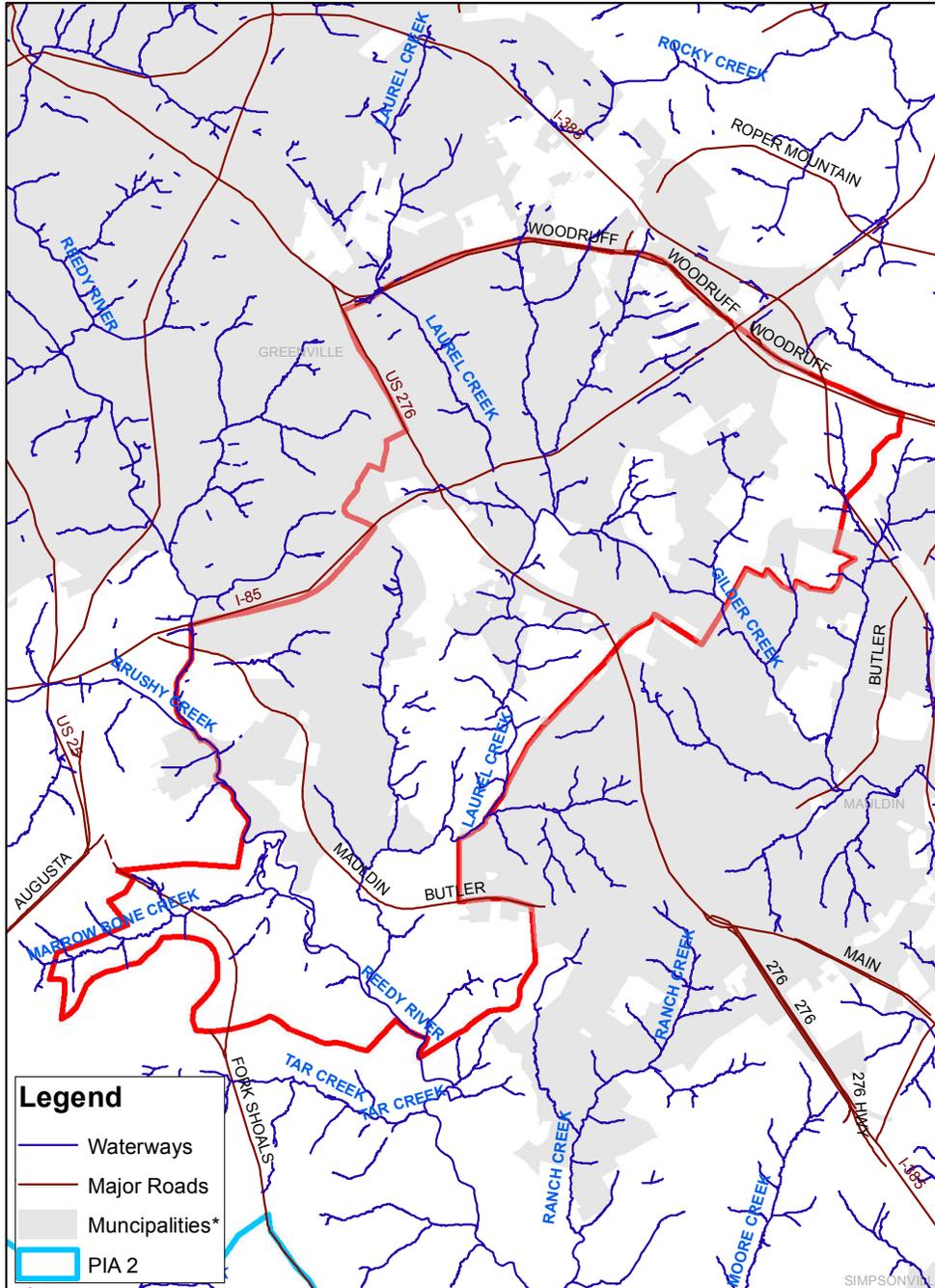


FIGURE 1-B

### PIA 1: ICAR/Verdae



\* At the time of this printing the SBP is not applicable with the municipality boundaries shaded in light grey. This map will be updated if municipalities adopt the SBP. Please contact the County or City of interest for additional information.

FIGURE 1-C

### PIA 2: South Donaldson

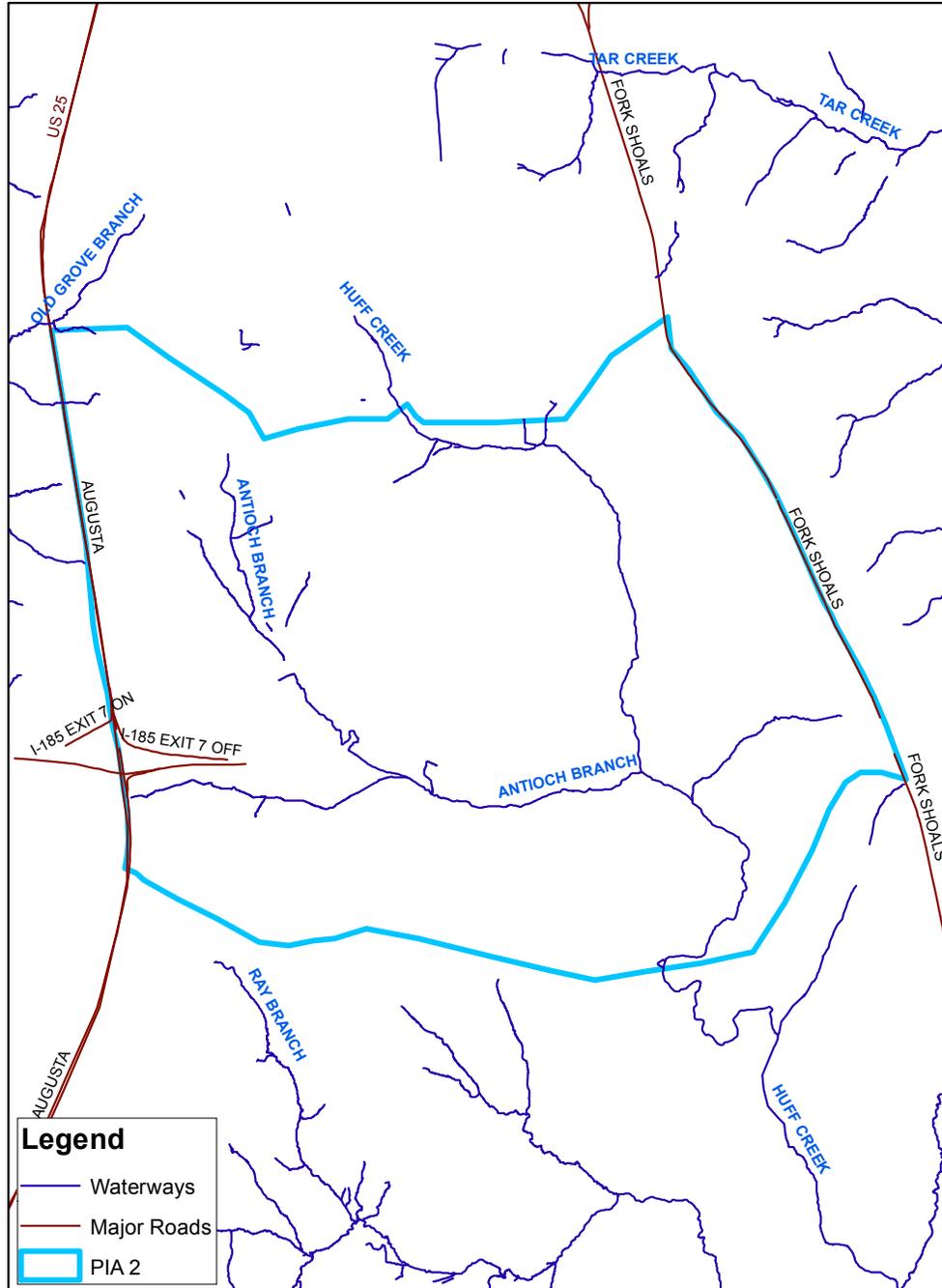
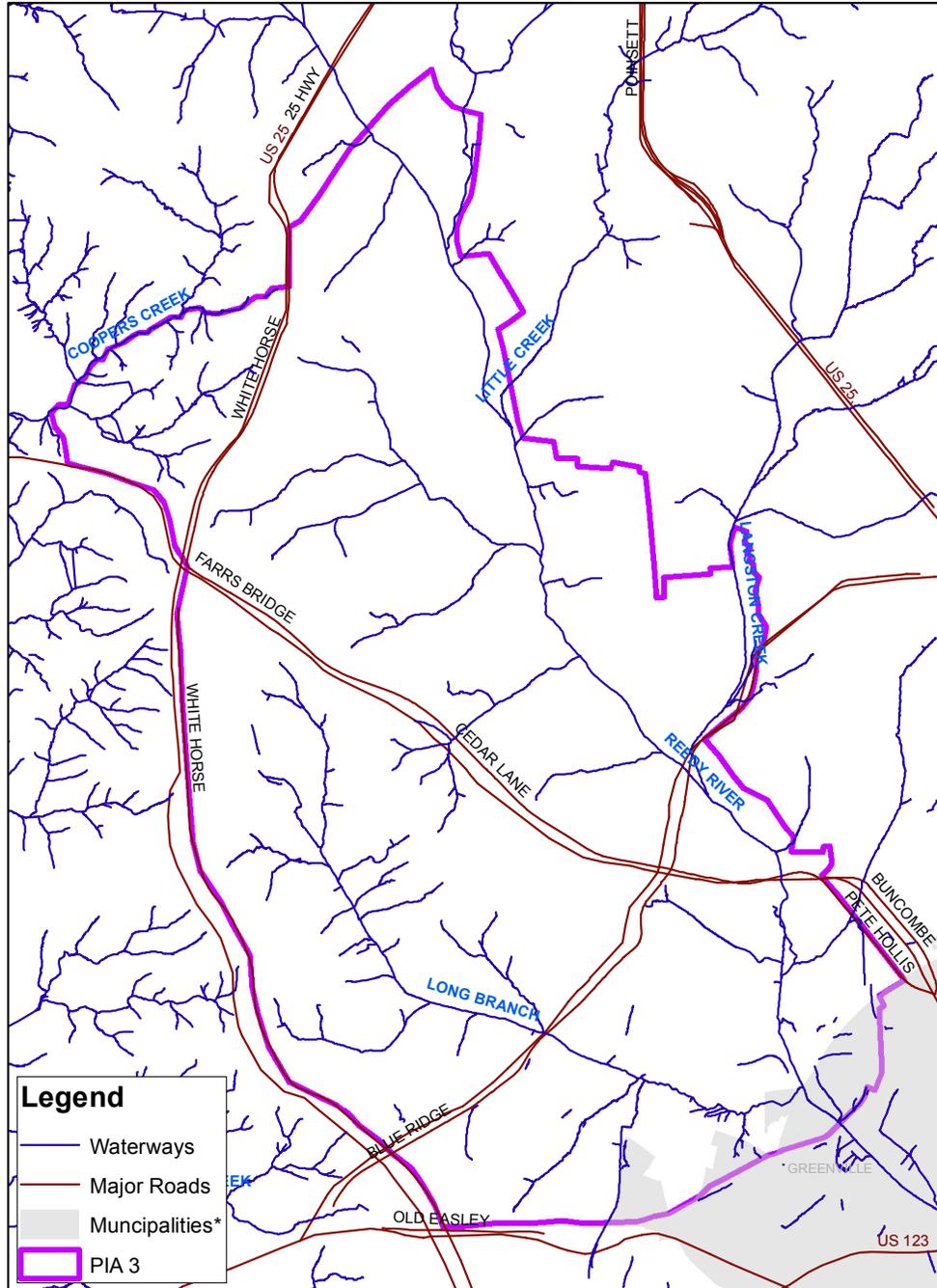


FIGURE 1-D

### PIA 3: Berea/City View



\* At the time of this printing the SBP is not applicable with the municipality boundaries shaded in light grey. This map will be updated if municipalities adopt the SBP. Please contact the County or City of interest for additional information.

FIGURE 1-E



FIGURE 1-F

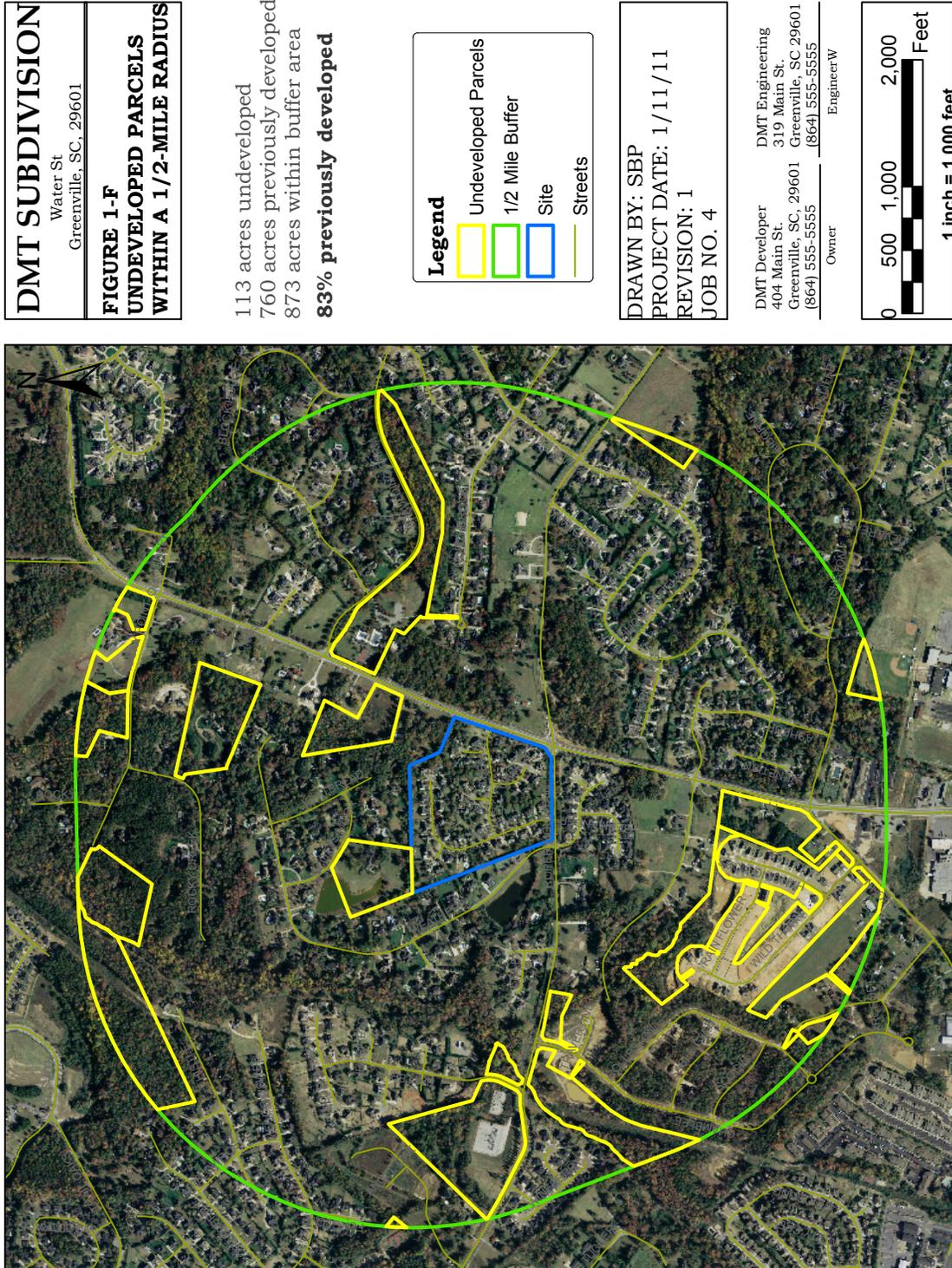
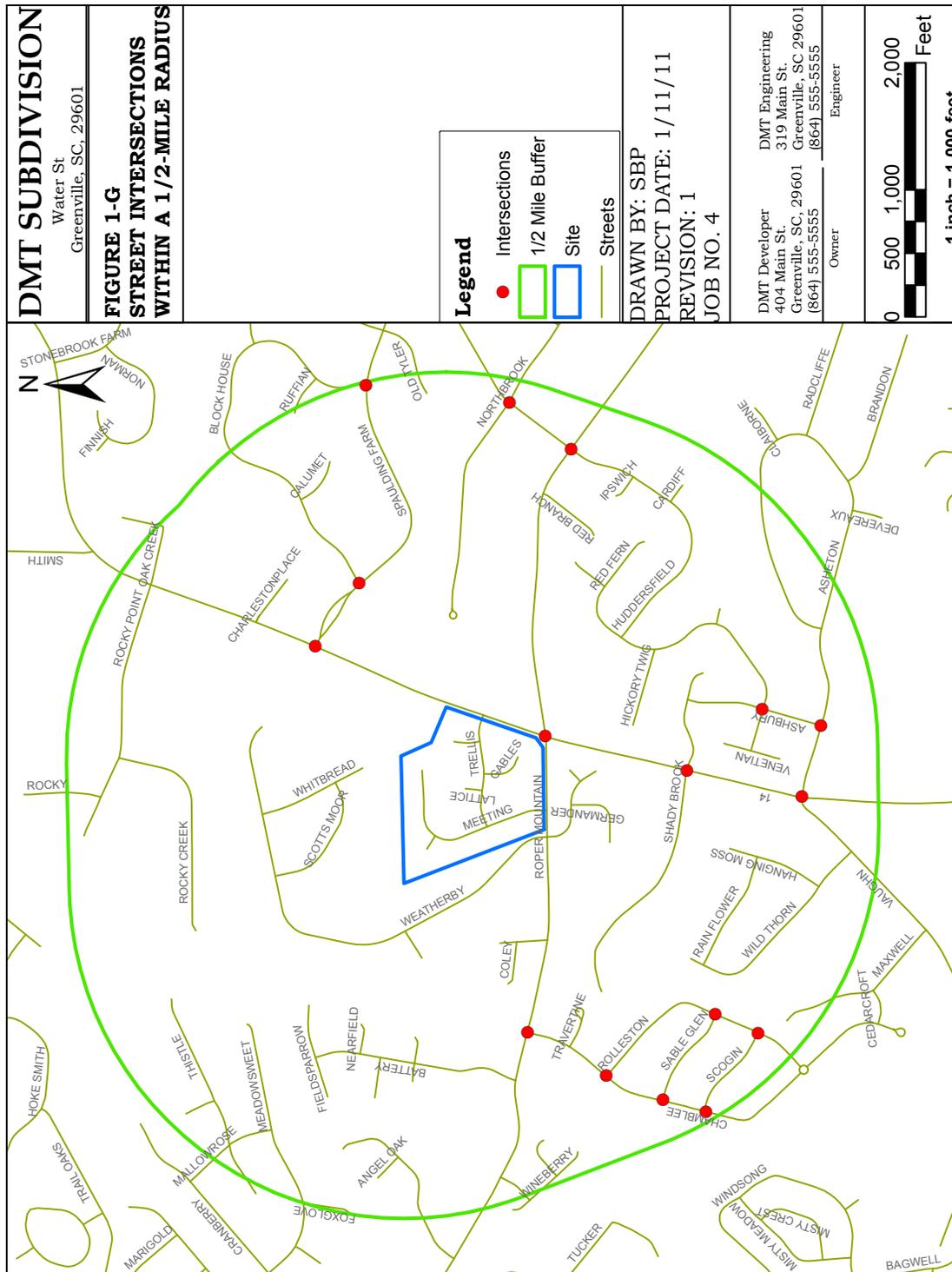


FIGURE 1-G



## 2. Protect Waters of the U.S.

- a. Indicate that no wetlands or waters of the U.S. exist on the project site.  
OR
- b. If either identified or known wetlands or waters of the U.S. exist on or within 75 feet of the project, indicate whether a permanent, minimum 75' vegetative buffer on the property side(s) will be maintained.

A wetlands delineation will be needed to confirm whether waters of the U.S. exist on-site, however, many resources are available to preliminarily identify on-site or nearby water bodies. One such resource is the U.S. Fish and Wildlife Wetlands Inventory Map (<http://www.fws.gov/wetlands/Data/Mapper.html>).

All property designated as permanent buffer areas shall be delineated on the **preliminary plat**.

**If earning points in DMT Question #2 by protecting buffer areas, Final Plats** should contain all of the following:

- (1) Notations indicating the delineated protected buffer areas.
- (2) **Subdivision covenants** – The covenants for the subdivision shall include provisions for the protection of trees and other natural amenities within the property designated for natural buffers. The removal of trees and natural vegetation is permitted for the purpose of utility easements, passive recreational uses such as greenways, and drainageways with the proper notations on the final plat. With the exception of utility providers, neither the developer, property owners, or other subsequent contractors or builders shall be granted permission to remove or destroy any trees or natural vegetation from the buffer area for passive recreational or any other purposes without the express written permission of the community board, or homeowners association, or property owners, or trustees having jurisdiction over the implementation and enforcement of the subdivision covenants. Normal maintenance and the removal of dead, diseased or fallen trees and invasive species are permitted and encouraged.

### 3. Protect Areas of Ecological Importance

- a. **Indicate that no Trout Waters or Outstanding Resource Waters exist on or within 100 feet of the project boundary.**  
**OR**
- b. **If either trout waters or outstanding resource waters exist on the project, indicate whether 100-foot vegetative buffer will be maintained.**

Trout Waters (all classes) and Outstanding Resource Waters are as defined by DHEC document R.61-69, WATER CLASSIFICATIONS & STANDARDS. Refer to DHEC document R.61-69 for list of trout and outstanding resource waters.

All property designated as buffer areas shall be delineated on the **preliminary plat**.

**If earning points on DMT Question #3 by protecting buffer areas, Final Plats** should contain all of the following:

- (1) Notations indicating the delineated protected buffer areas.
- (2) **Subdivision covenants** – The covenants for the subdivision shall include provisions for the protection of trees and other natural amenities within the property designated for natural buffers. The removal of trees and natural vegetation is permitted for the purpose of utility easements, passive recreational uses such as greenways, and drainageways with the proper notations on the final plat. With the exception of utility providers, neither the developer, property owners, or other subsequent contractors or builders shall be granted permission to remove or destroy any trees or natural vegetation from the buffer area for passive recreational or any other purposes without the express written permission of the community board, or homeowners association, or property owners, or trustees having jurisdiction over the implementation and enforcement of the subdivision covenants. Normal maintenance and the removal of dead, diseased or fallen trees and invasive exotic species are permitted and encouraged.

#### 4. Protect Floodplains

- a. Indicate that the project contains no floodplain areas.  
OR
- b. If floodplains exist on the project, indicate whether the project will maintain that no permanent structures are built in the floodplain. (Note: Utility infrastructure is allowed.)

Floodplain areas are required to be identified as part of the Land Development Division's permit application. Guidelines for what constitutes a floodplain are provided in the Greenville County Flood Damage Prevention Ordinance. FEMA-identified floodplains, searchable by address, can be accessed through the FEMA website (<http://msc.fema.gov>). Greenville County has also conducted flood studies, from which additional floodplains have been identified.

**If earning points on DMT Question #4 by protecting floodplain areas, Final Plats** should contain all of the following:

- (1) Notations indicating the delineated protected floodplain areas.
- (2) **Subdivision covenants** – The covenants for the subdivision shall include provisions for the protection of trees and other natural amenities within the property designated for protected natural floodplain areas. The removal of trees and natural vegetation for the purpose of utility easements, recreational uses such as greenways, and drainageways with the proper notations on the final plat. With the exception of utility providers, neither the developer, property owners, or other subsequent contractors or builders shall be granted permission to remove or destroy any trees or natural vegetation from the floodplain area for recreational or any other purposes without the express written permission of the community board, or homeowners association, or property owners, or trustees having jurisdiction over the implementation and enforcement of the subdivision covenants. Normal maintenance and the removal of dead, diseased or fallen trees and invasive exotic species are permitted and encouraged.

## 5. Minimize Erosion from Steep Slopes

- a. Indicate that the project avoids developing steep slopes.  
OR
- b. If steep slopes are impacted, indicate whether they are re-vegetated with at least 75% native +/- non-invasive plants.

Steep slopes are areas where the slopes exceed 30%. All steep slope areas designated as permanently protected natural areas shall be delineated on the **preliminary plat**.

**If earning points on DMT Question #5 by avoiding or re-vegetating steep slopes, Final Plats** should contain all of the following:

- (1) Notations indicating the delineated steep slopes and protected areas.
- (2) **Subdivision covenants** – The covenants for the subdivision shall include provisions for the protection of trees and other natural amenities within the property designated for undeveloped protected areas. The removal of trees and natural vegetation is permitted for the purpose of utility easements, passive recreational uses and drainageways with the proper notations on the final plat. With the exception of utility providers, neither the developer, property owners, or other subsequent contractors or builders shall be granted permission to remove or destroy any trees or natural vegetation from the protected area for passive recreational or any other purposes without the express written permission of the community board, or homeowners association, or property owners, or trustees having jurisdiction over the implementation and enforcement of the subdivision covenants. Normal maintenance and the removal of dead, diseased or fallen trees and invasive exotic species are permitted and encouraged.

## 6. Proximity to Mix of Uses

- a. **Use the arrow buttons to indicate the number of uses, or different commercial establishments, within each specified radius around the project site.**

There are four distance categories from the project borders: ¼-mile, ½-mile, ¾-mile and 1-mile. Indicate the number of different commercial establishments within each category. The DMT allows entries of up to a maximum of 20 uses per distance category. A maximum of 20 points may be earned for this question. See Table 1 for a list of acceptable uses.

The following is a list of some of the tools that may be used to identify different commercial uses or establishments within proximity to a site:

- Google maps (<http://maps.google.com/>)
- ArcGIS
- A market analysis of the site and surrounding area
- Walkscore (<http://www.walkscore.com/>)
- Yahoo maps (<http://maps.yahoo.com/>)

It must be noted that the information on websites provides good guidance, but may not always be up to date. It is up to the user to ensure that the information given is accurate and current.

In order to earn points in this category, a list showing the breakdown of different uses within each category and an area map indicating the same must be submitted to the Planning Department along with the preliminary and final plat submittals. See Figure 6-A for an example.

- b. **Indicate whether sidewalks lead to at least four diverse uses.**

In order to earn points in this category, an area map with sidewalks and different uses clearly indicated must be submitted to the Planning Department along with the preliminary and final plat submittals. See Figure 6-B for an example.

## Table 1: List of Uses\*

### Food Retail

Supermarket  
Other food store with produce

### Community-Serving Retail

Clothing store or department store selling clothing  
Convenience store  
Farmer's market  
Hardware store  
Pharmacy  
Other retail

### Services

Bank  
Gym/Health club/Exercise studio  
Hair care  
Laundry/dry cleaner  
Restaurant/café/diner

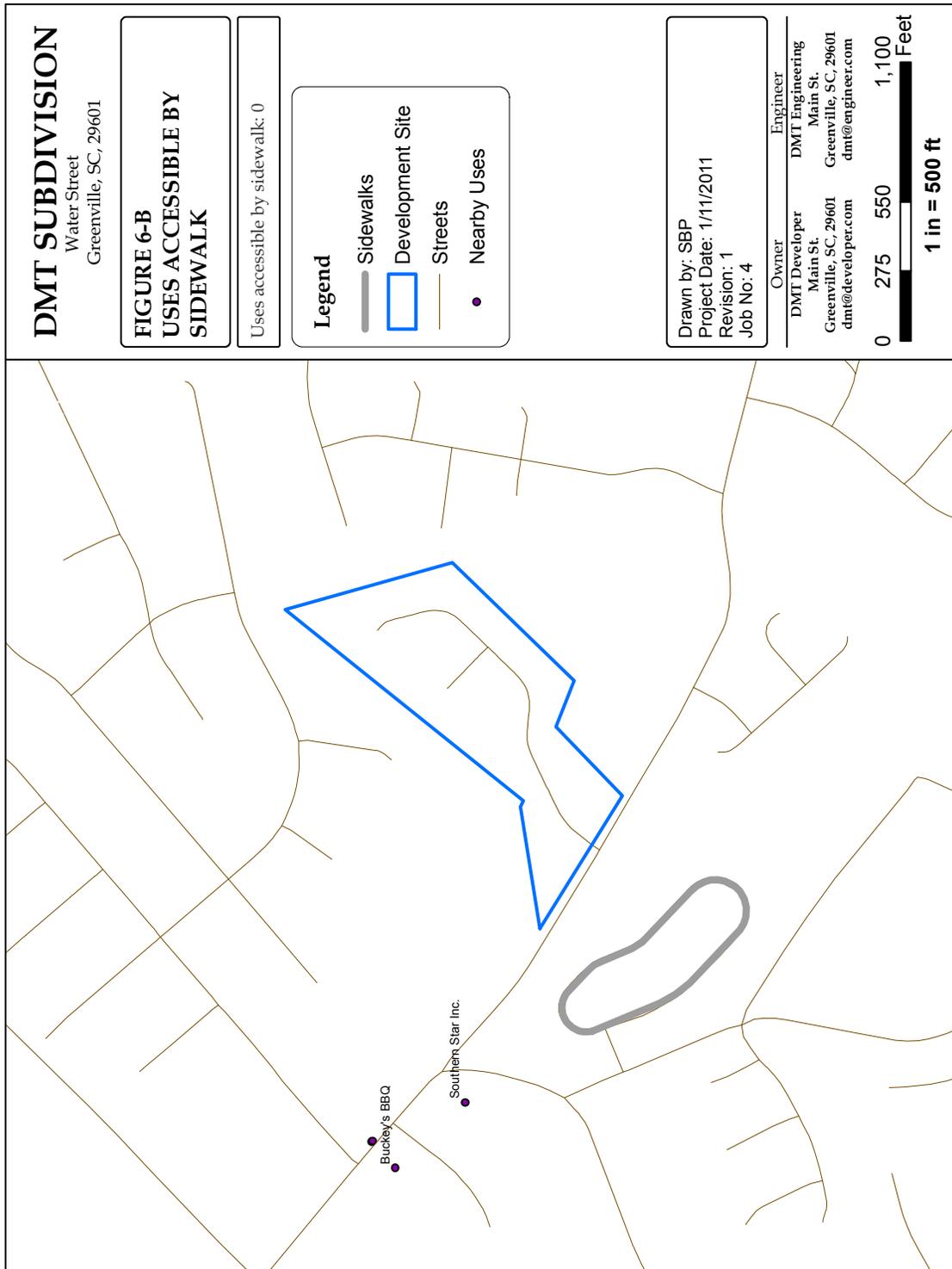
### Civic/Community Facilities

Adult/senior care (licensed)  
Child care (licensed)  
Community/recreation center  
Cultural arts facility (museum, performing arts)  
Educational facility (including K-12 school, university, adult education center, vocational school, community college)  
Family entertainment venue (theater, sports)  
Government office where the public is served on-site  
Place of worship  
Medical clinic or office where patients are treated  
Police or fire station  
Post office  
Public library  
Public park  
Social services center

*\*Adapted from LEED ND and Criterion Planners, INDEX neighborhood completeness indicator, 2005.*



FIGURE 6-B



## **Neighborhood Scale**

The Neighborhood Scale questions of the DMT deal primarily with the significant transportation impacts to water quality that can likely be associated with the development. Studies have shown that transportation-related infrastructure can account for as much as 70% of the impervious surfaces in a watershed. In addition, automobiles deposit harmful pollutants on roads that eventually wash off into streams and rivers. As such, vehicle-miles traveled (VMT) is another factor that also significantly impacts water quality throughout the County.

The Neighborhood Scale questions therefore look closely at the characteristics of a development that would lead to decreased VMT. Abundant research shows that neighborhood design can have a huge impact on the travel distance, walkability, and VMT of residents. Factors such as street design and connectivity, pedestrian safety and comfort, and alternative travel options are ways to earn points on the Neighborhood Scale of the DMT.

## 7. Street Connectivity around the Development

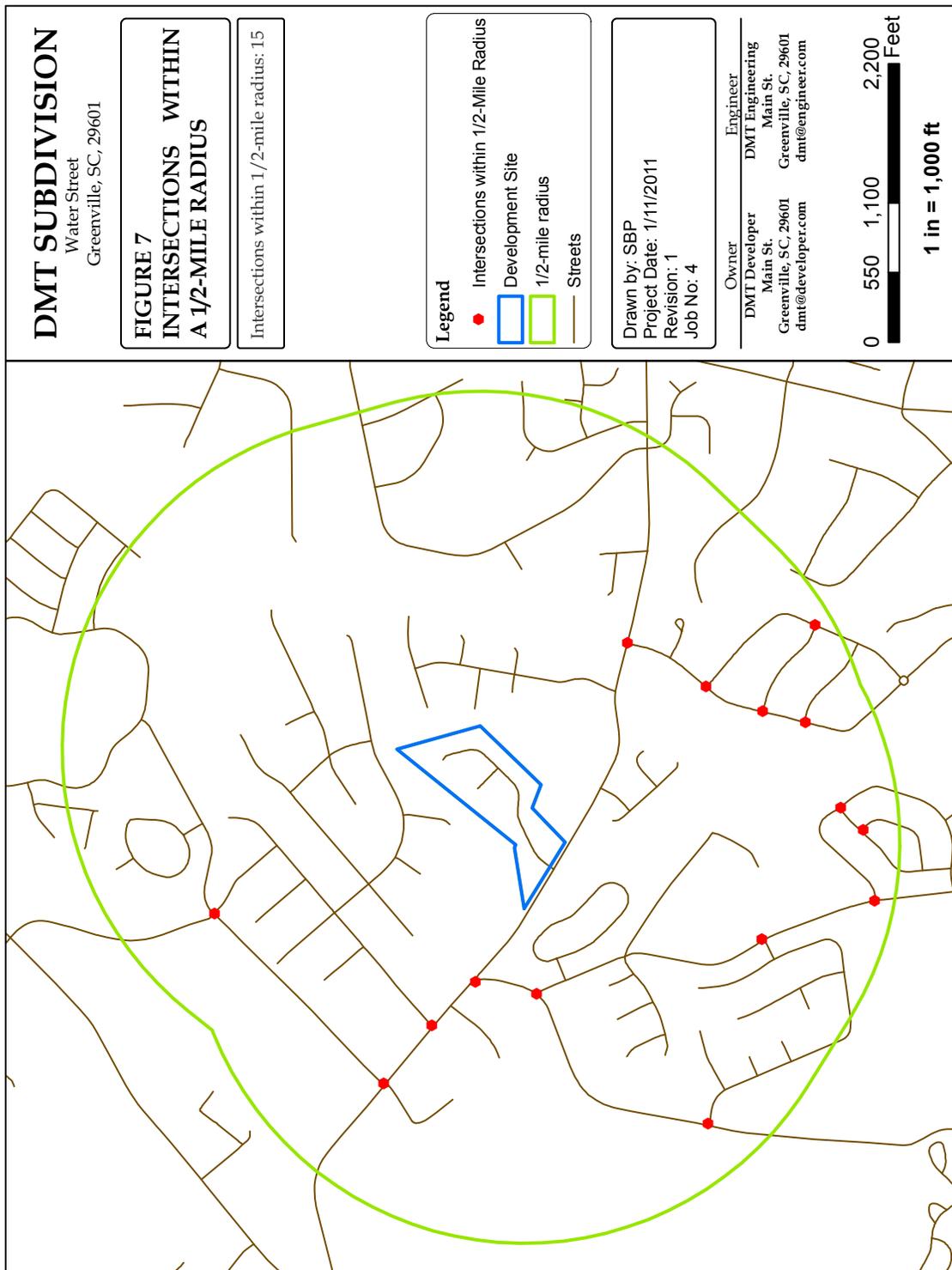
- a. Use the arrow buttons to indicate the number of qualifying intersections within a half-mile radius of the project site, with intersections being defined as the nodes where three or more *continuous* streets meet.

An **intersection** is a node or point where three or more continuous links (pathways or streets) meet. For the purpose of this definition, intersections that serve as the only access to a neighborhood do not qualify. Consequently, any intersection located within a gated neighborhood or an area with only one access will not qualify. For verification, provide an area map with qualifying intersections highlighted.

As shown in Figure 7, qualifying intersections are highlighted in red. Those intersections that are not highlighted do not qualify.

In order to earn points in this category, an area map with a 1/2-mile buffer and intersections clearly indicated must be submitted to the Planning Department along with the preliminary and final plat submittals. The map should also indicate the number of qualifying intersections. See Figure 7 for an example.

FIGURE 7



## 8. Street Connectivity within the Development

- a. **Indicate the Connectivity Index, including the number of links and nodes within the development.**  
**OR**
- b. **If the project is built into an existing street network and builds no new streets, check the appropriate box.**

Points are earned on this question by calculating the Connectivity Index of the development, which is an indication of the amount of route choices and vehicle-miles traveled that would result from the development. The Connectivity Index is calculated by the following equation:

$$\text{Connectivity Index} = \text{Links} \div \text{Nodes}$$

After determining and entering the number of links and nodes within the development, the DMT automatically calculates the Connectivity Index and the associated number of points earned.

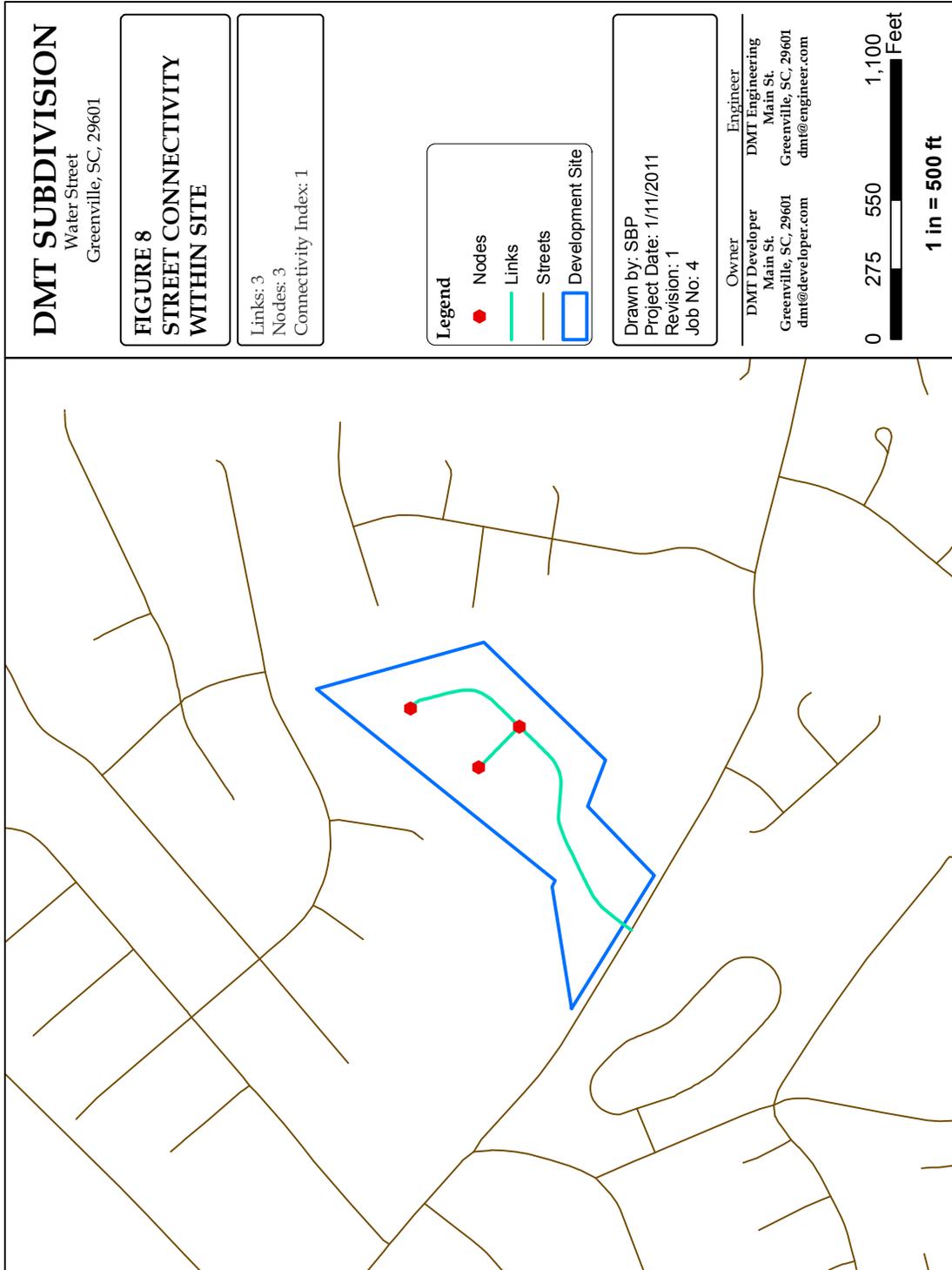
Connectivity Index	Points
≥1.6	10
≥1.3	8
≤1.2	0

**Nodes** include intersections and cul-de-sacs within the development, but *do not* include the end of a stub-out at the property line, an intersection with an adjoining highway network. Nodes leading to the development do not count towards the total.

**Links** include segments of road between two nodes, or between a node and an exit street from the development. Links leading out of the development count towards the total, but those that lie outside of the proposed development do not.

In order to earn points on this question, a site drawing with the planned street layouts clearly indicated must be submitted to the Planning Department along with the preliminary and final plat submittals. Relevant drawings should also indicate which subdivision elements are being considered as links and nodes, as well as indicate the totals. See Figure 8 for an example.

FIGURE 8



## 9. Street Design

- a. **Indicate the average street width for streets *without* on-street parking. If the development does not contain streets without on-street parking, select the appropriate box.**

This question pertains to new streets being constructed or rehabilitated by the developer. If there are no streets without on-street parking in the development, select the “Not applicable” checkbox. If there are varying street widths for the same type of street, enter the predominant street width for that type throughout the development.

Street widths must be indicated on preliminary and final plats, both on drawings and in the drawing notes. In the notes, also indicate whether the streets are designed to accommodate parking or not, and the average width of each type.

- b. **Use the arrow buttons to indicate the average block length within the development.**

Block lengths should be indicated on preliminary and final plats.

- c. **Indicate whether the development has cul-de-sacs.**

If the development has no cul-de-sacs, points are earned for this question. However, if the development uses cul-de-sacs, their use must be justified by physical obstacles created by one of the following in order to earn points:

- prior platting of property and construction of improvements (such as existing buildings) that constitute barriers;
- slopes over 15%; water bodies and wetlands;
- railroad and utility right-of-ways;
- existing limited-access motor vehicle right-of-ways;
- parks and dedicated open space.

- d. **Front building setbacks**

Indicate the planned building setbacks from face of curb. Setback distances will depend on the type of road fronted by each lot. If residential lots do not front a specified road type, a Not Applicable option is available.

If earning points for minimizing front setbacks, **Final Plats** should include the following:

- (1) Notations indicating the planned front setback measurement.
- (2) **Subdivision covenants** – The covenants for the subdivision shall include provisions limiting the front setback distance to those indicated by this answer.

## 10. Public Transit

### a. Indicate whether the project is located within a half-mile of planned transit service.

The Greenville Pickens Anderson Transportation Study (GPATS) Long-Range Transportation Plan (LRTP) indicates future transit routes.

([http://www.greenvillecounty.org/gcpc/transportation\\_planning.asp](http://www.greenvillecounty.org/gcpc/transportation_planning.asp))

Transit providers such as Greenlink may also designate future transit routes (<http://www.ridegreenlink.com/>). Research any local public transit providers in order to determine whether the project lies within a half-mile from a planned transit route.

In order to earn points in this category, an area map depicting the site, planned transit route, travel route and distance must be provided to the Planning Department as part of preliminary plat submittal. Proof of the planned route from the transit provider may also be necessary. See Figure 10-A for an example.

### b. Indicate whether the project has continuous sidewalks or pedestrian pathways leading to an existing transit stop or station.

Sidewalks must be continuous and not disconnected. A GIS layer for sidewalks is available at the Greenville County GIS website (<http://www.gcgis.org/>). Sidewalks can also sometimes be identified through aerial photographs, but the most reliable method is a field survey.

In order to earn points in this category an area map depicting the site, nearest active transit service, possible travel route(s) from site to transit service, and sidewalks must be provided to the Planning Department as part of preliminary plat submittal. See Figure 10-B for an example.

### c. Indicate walking or travel distance from project to nearest existing transit stop or station.

Determine the shortest travel route from project site to nearest active transit stop or station.

In order to earn points in this category an area map depicting the site, nearest active transit service, the travel route from site to transit service, and the distance of that route must be provided to the Planning Department as part of preliminary plat submittal. See Figure 10-C for an example.

**d. Use the arrow buttons to indicate the average number of dwelling units per acre.**

Residential density should be calculated based on the number of lots per *developable* acre. The primary intent is to encourage residential densities that support transit, but also to support mix of uses, walkability, etc.

The site acreage, number of lots and residential density should be indicated as part of preliminary plat submittal to the Planning Department.

FIGURE 10-A

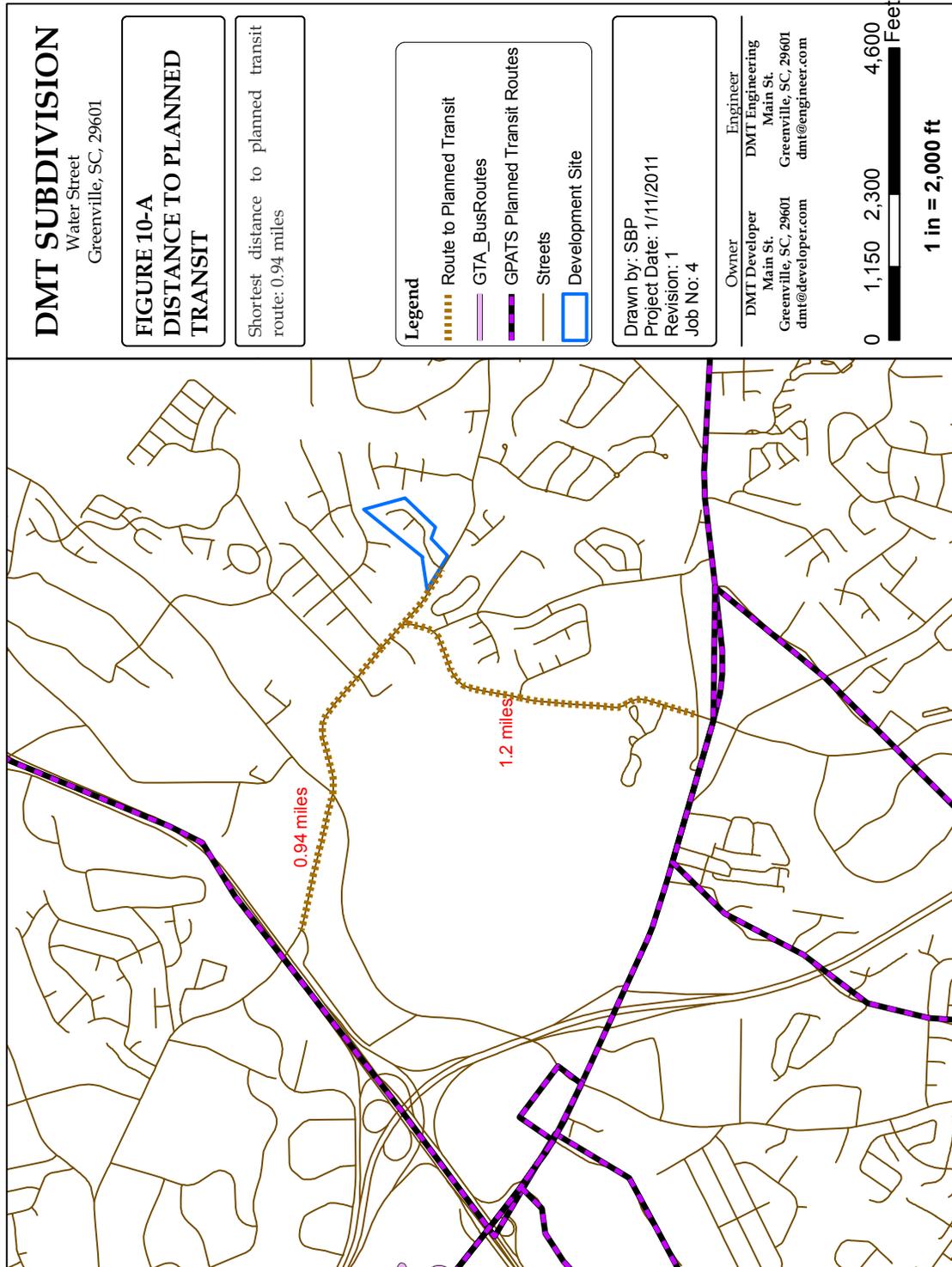


FIGURE 10-B

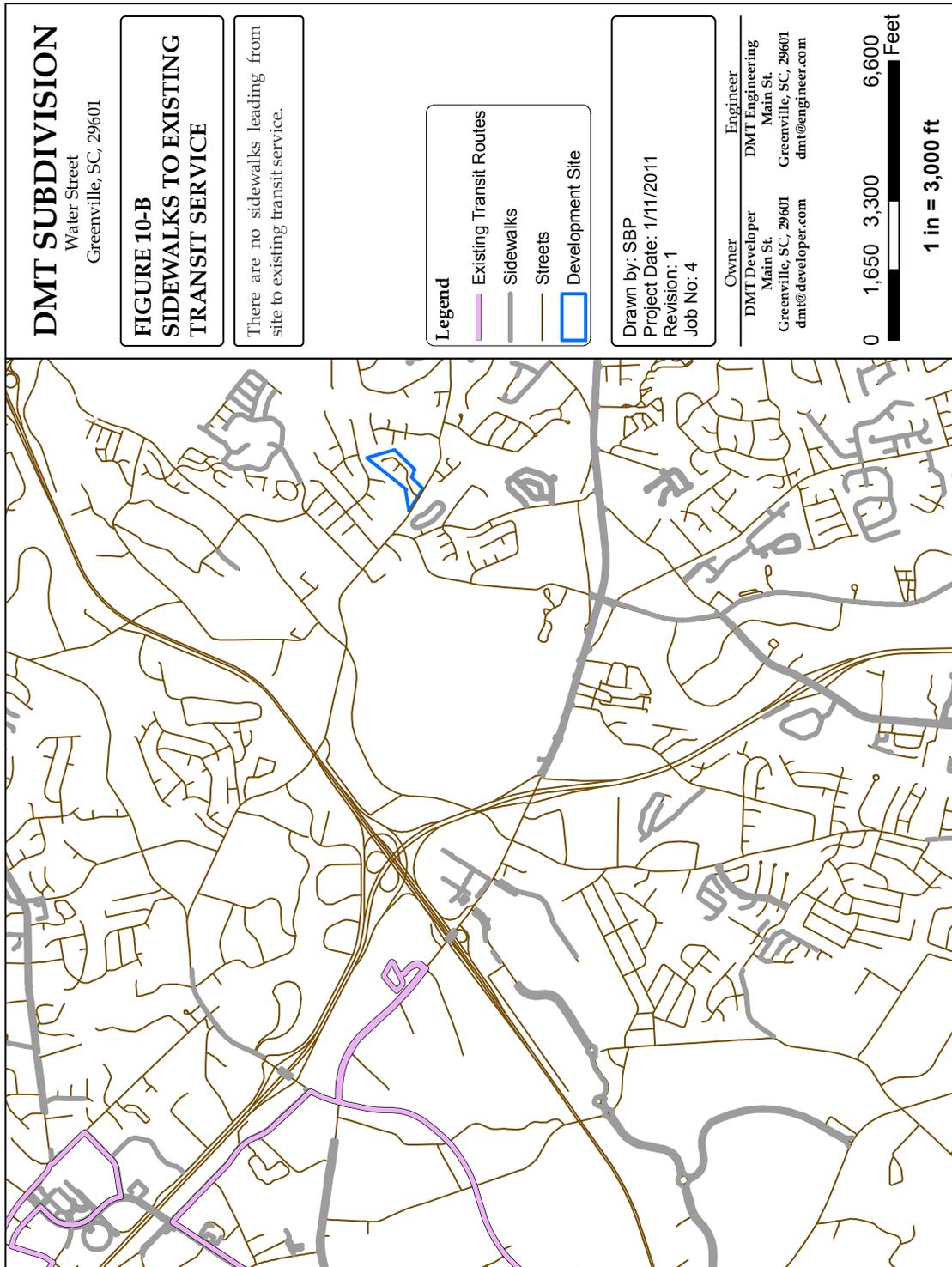
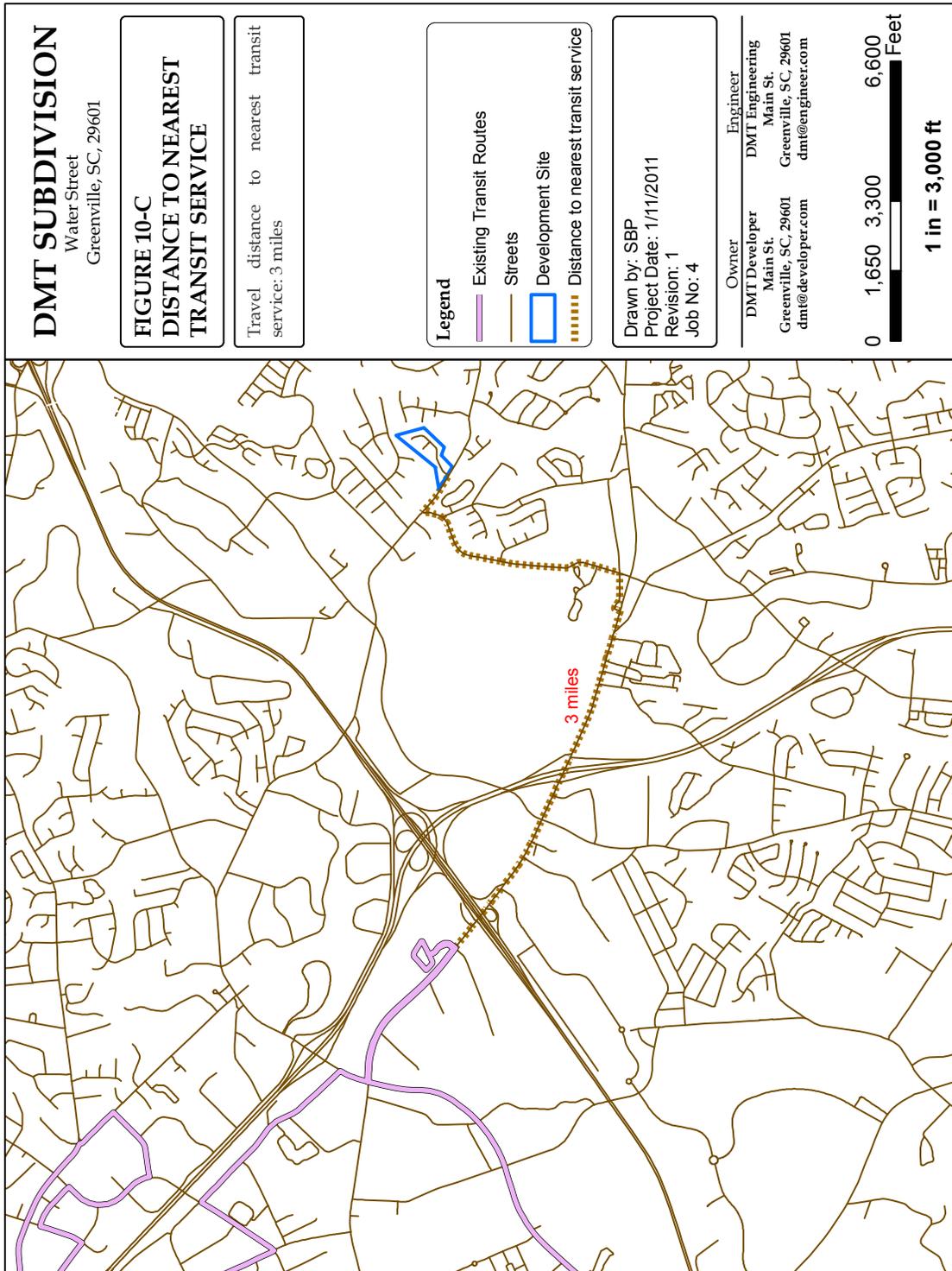


FIGURE 10-C



## 11. Bicycle-Friendly Design

- a. **Indicate whether the project will contain bicycle storage facilities for residents, such as bicycle racks and/or lockers within common areas.**

If earning points for this category, preliminary and final plats submitted to the Planning Department should indicate the location of bicycle-related amenities and should delegate the maintenance of such to a homeowners association or other applicable entity.

- b. **Indicate whether the project is located within a ½-mile travel distance from a planned bicycle friendly route.**

Greenville Recreation District has developed a master plan that includes future greenway routes (<http://greenvillerec.com/>). Other entities may also be developing greenway trails. Documentation of the planned greenway must be obtained and reviewed to ensure its likelihood of being constructed.

In order to earn points in this category, an area map depicting the site, nearest planned greenway route, and travel distance to that route must be provided to the Planning Department as part of preliminary plat submittal. See Figure 11-B for an example. In addition, provide a copy of the planned greenway map from designated entity in charge (e.g., Greenville County Recreation District) if applicable.

- c. **Indicate travel distance from project to existing continuous (1/2-mile long or greater) bicycle-friendly route (street with post speed equal to or less than 25 mph, bicycle lanes, or designated greenway).**

The following qualify as bicycle-friendly routes:

- Street with posted speed limit of  $\leq$  25 mph
- Street with bicycle lane
- Designated greenway or bicycle path

In order to earn points in this category, an area map depicting the site, nearest continuous bicycle-friendly travel route from the site to the bicycle-friendly route, and travel distance must be provided to the Planning Department as part of preliminary plat submittal. See Figure 11-C for an example.

FIGURE 11-B

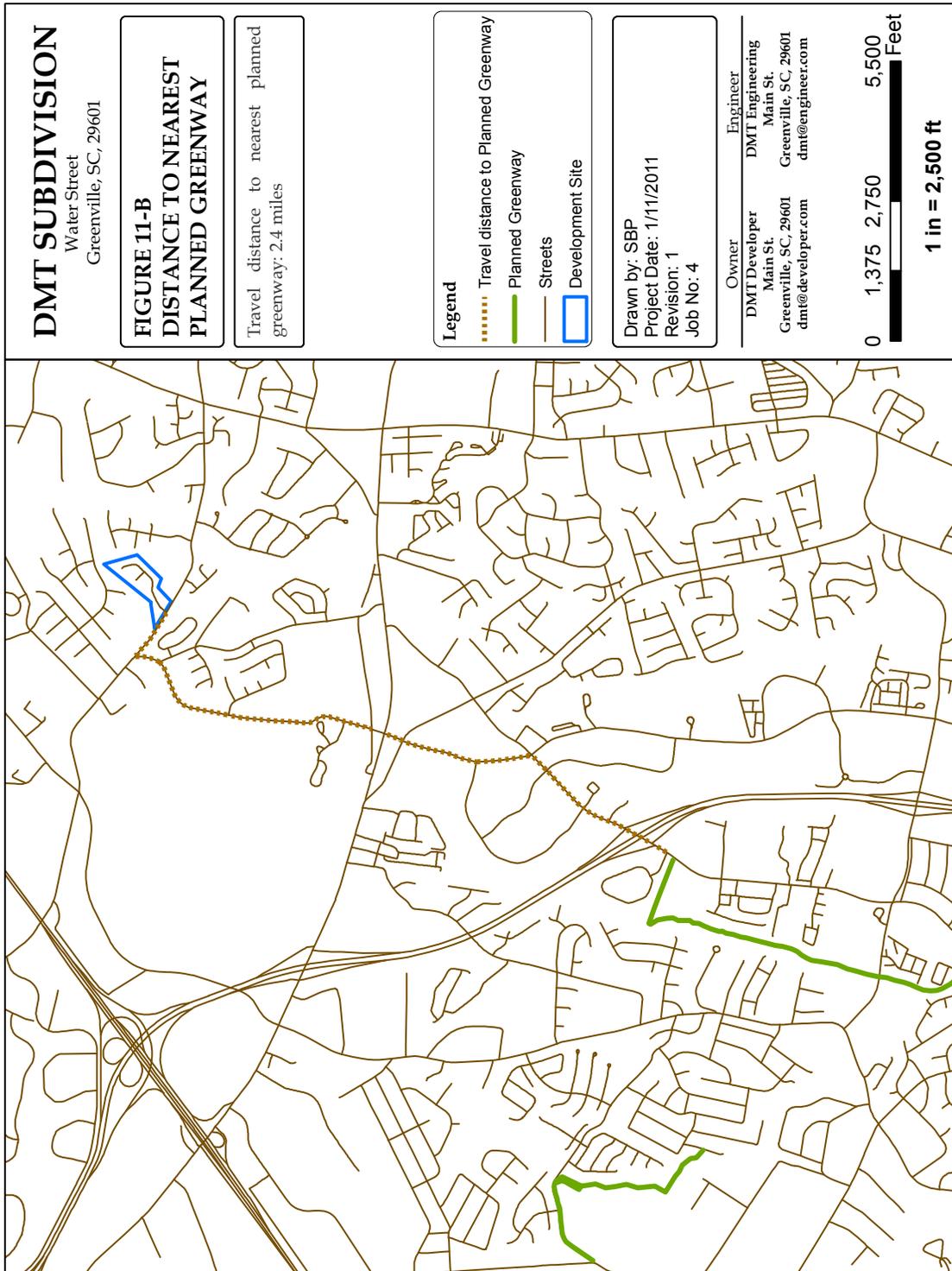
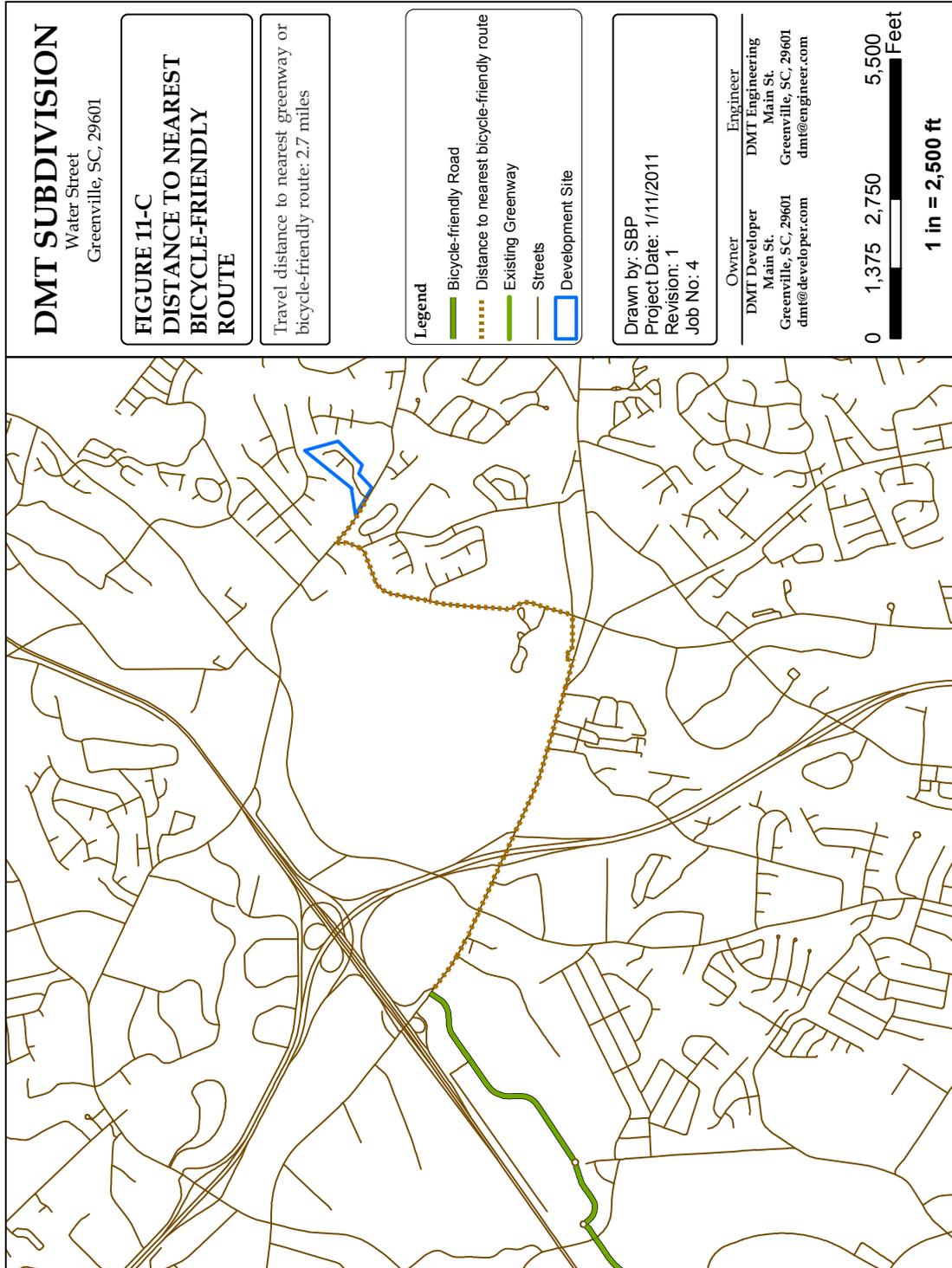


FIGURE 11-C



## 12. Walkability

### a. **Indicate whether the project roads will be publicly-accessible.**

Residential developments that are intended to be gated cannot earn points for this category, nor can sites with non-publicly-accessible streets.

Preliminary and final plat submittals should indicate whether a project will contain private roads or public.

### b. **Indicate whether all roads that have front lot access will contain sidewalks on at least one side of the street.**

Every street within and outside of the project that will have lot frontage must have sidewalks on at least one side of the street in order to earn points for this category. A street is considered as having lot frontage if the future residential unit will have its main entrance facing the street.

Preliminary and final plat submittals should indicate the existence of sidewalks as well as which streets will contain lot frontage.

### c. **Indicate whether project will provide at least one street tree per residential lot.**

Preliminary and final plat submittals should indicate street tree details.

### d. **Indicate whether sidewalks are separated from the street by a planting strip that is at least four feet wide.**

Preliminary and final plat submittals should indicate planting strip details.

### e. **Indicate whether a professional landscape architect is hired to confirm appropriate planting details and the use of native plants.**

Preliminary and final plat submittals should include the stamp of the professional landscape architect, or as an alternative landscape plans with professional landscape architect stamp can be submitted along with plats.

### f. **Indicate whether the project creates a community space for residents and/or the public.**

Community spaces may include the following:

- Public plaza
- Community garden

- Park/Recreation area

In order to qualify as a community space, the space must be at least 500 square feet.

Preliminary and final plats must delineate community spaces and respective square footage. Final plats must also delegate maintenance of the space to the homeowners association or other appropriate entity.

- g. Indicate whether the front entrances to residences will face public streets, plazas, or community spaces. Points cannot be earned if any front entrances face parking lots.**

Preliminary and final plats submitted to the Planning Department must indicate lot and/or house orientation.

- h. Indicate whether adjacent streets to the project contain at least three of the following elements: sidewalks, bicycle lanes, raised crosswalks, special bus lanes and bus shelters, curb extensions, or pedestrian refuge medians.**

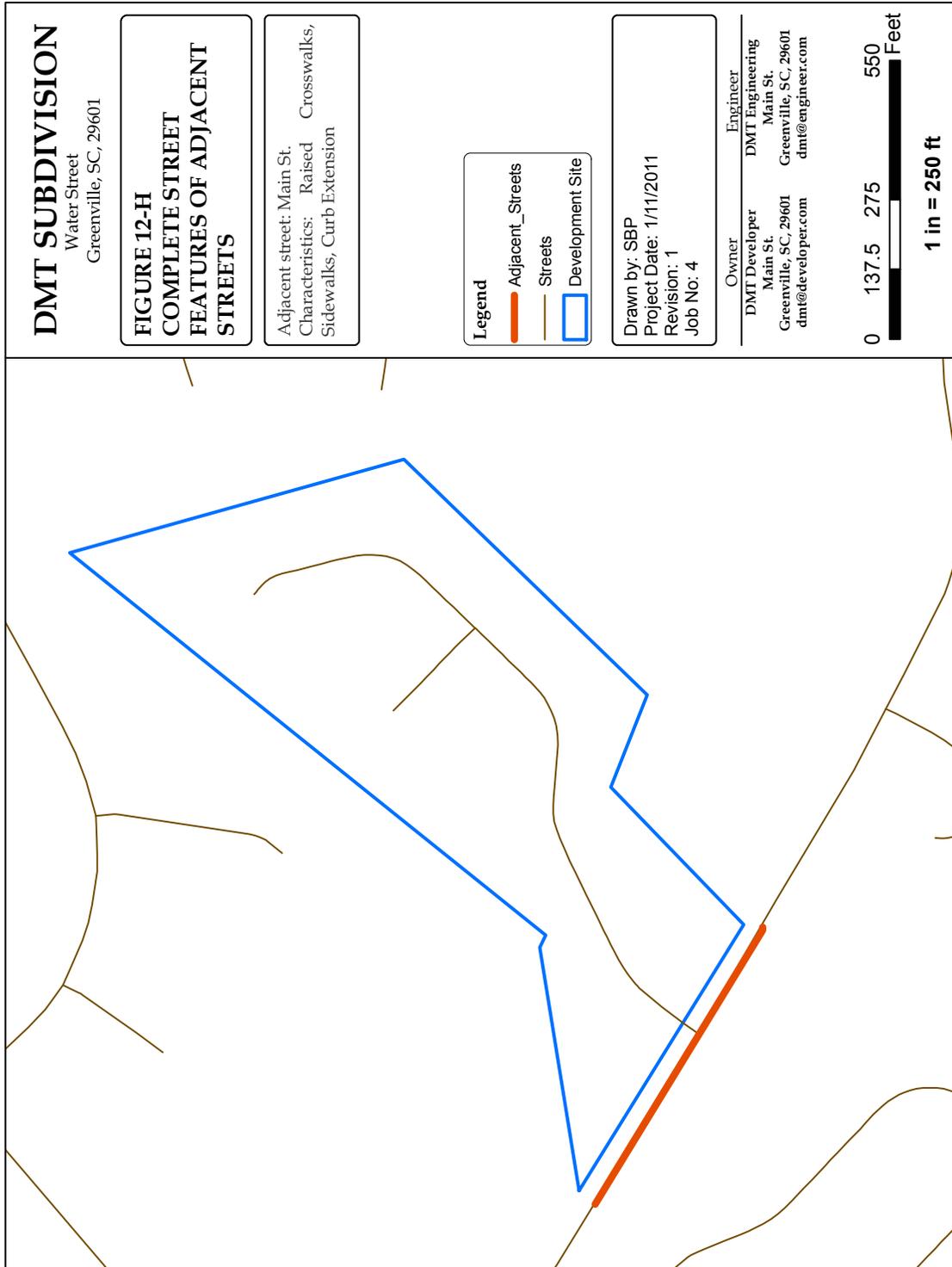
Adjacent streets are those that front the development site, or share a border with the site, but are outside the project boundary. Provide an area plan indicating which streets meet which of the listed criteria.

In order to earn points for this category, provide an area map of the site indicating which streets meet which of the listed criteria. See Figure 12-H for an example.

- i. Choose from the following list to indicate which type of parking is contained on the property: structured, centralized parking, rear parking, shared driveways, or private individual driveways.**

Preliminary and final plats submitted to the Planning Department must indicate designated parking areas on the property.

FIGURE 12-H



### **13. Reduce Pressure on Existing Infrastructure and Utility Providers**

- a. **Indicate whether project will require all homes to be certified by LEED, Earthcraft or Energy Star.**

Subdivision covenant shall include provisions requiring all homes to achieve certification from LEED, Earthcraft or Energy Star.

Preliminary and final plats submitted to the Planning Department should contain notations indicating that all houses will be certified as claimed. Certification requirements should also be included in homeowners association covenants.

- b. **Indicate whether project requires all homes to be certified by EPA WaterSense.**

Subdivision covenant shall include provisions requiring all homes to achieve certification from EPA WaterSense.

Preliminary and final plats submitted to the Planning Department should contain notation indicating that all houses will be certified as claimed. Certification requirements should also be included in homeowners association covenants.

- c. **Indicate whether project requires all homes to have a greywater recycling system.**

Subdivision covenant shall include provisions requiring all homes to have a greywater recycling system installed for non-potable water use.

Preliminary and final plats submitted to the Planning Department should contain notation indicating greywater system installation. Certification requirements should also be included in homeowners association covenants.

At the time that this DMT Instruction Manual was completed, SCDHEC was not involved in the permitting and/or approval of greywater recycling systems. Currently, in order to get approval of such a system, the system must be reviewed by Greenville County Codes Enforcement. The system must be designed in accordance with the 2006 International Codes Council (ICC) International Building Code, which was adopted by Greenville County in 2009. Reference Appendix "O" of the One & Two Family Building Code for Residential; and Appendix "C" of the Plumbing Code for Multi-family and Commercial.

- d. Indicate whether project will reuse and/or rehabilitate existing structures on the property.**

Preliminary and final plats should indicate which existing structures are being maintained on the property, and should contain notations on their preservation. Preservation requirements should also be included in homeowners association covenants.

- e. Indicate whether the project will provide for homes to be built to higher fire safety standards than the code requires.**

Developers should indicate what additional fire safety measure will be included. Examples include, but are not limited to: fire resistance rated walls (when not required by code), sizing water lines throughout the development to allow for adequate volume of water if a home builder/owner should choose to voluntarily install additional fire protection measures as listed in the currently adopted International Codes and approved by the Fire Marshal.

If earning points on this question, the developer should provide the appropriate verification information to the County. The verification information will vary depending on the fire safety measure chosen by the developer. If a developer is earning points by a change during the site development (e.g., installing a larger water line) that information will be required on the final plat. If a developer is earning points by requiring each house to be built to a higher fire safety standard than the code requires, then the subdivision covenants shall include provision requiring all homes to have said fire safety measure included.

Additional fire safety measures may qualify for points, but will need to be verified by the appropriate Fire Marshal or qualified fire personnel.

## **14. Common Area Landscaping**

- a. **Indicate whether project will utilize efficient/smart irrigation system or water reuse for outdoor landscaping**  
**OR**
- b. **Indicate whether the project will have no long-term irrigation requirements.**

Use of efficient/smart irrigation system or water reuse for outdoor landscaping must be indicated on landscaping plans and/or final plats, as well as on subdivision covenants that these systems must be maintained under the responsibility of the homeowners association or other appropriate entity.

If the project has no long-term irrigation requirements, a professional-certified landscape plan must be submitted to the Planning Department stating such.

## Site Scale

The Site Scale questions of the DMT deal mainly with post-construction Best Management Practices (BMP's) for the site. Many of the questions are linked to site design features that affect water quality, such as the amount of impervious surfaces, use of BMP's and Low Impact Development (LID) techniques, and maintenance practices. As Greenville County requires all developments to use the IDEAL model to show their water quality outputs, the pollutant-related questions of the DMT are linked to the site's IDEAL model outputs.

While meeting the redevelopment criteria is not related to BMP's directly, the reason that it appears on the Site Scale category is because by nature of being previously-developed (according to the definition in the DMT), it follows that such sites may be unable to attain the minimum score required for the Site Scale – even though they may result in overall reduced imperviousness of the site. Therefore, it has been placed in this section DMT as a counterbalance to undeveloped sites that would have more flexibility with installing BMP's and preserving open space. Redevelopment sites are awarded significant points because of the tremendous advantage of utilizing a site that has already been disturbed and already contains impervious surfaces and infrastructure, rather than developing an undeveloped site that is likely providing a beneficial service to water quality.

## 15. Promote Redevelopment

### a. Indicate if at least half of the project site area has been previously-developed.

**Previously-developed** land has been altered by paving, construction, and/or a land use that typically requires regulatory permitting. For the intent of this question, previously-developed includes the following:

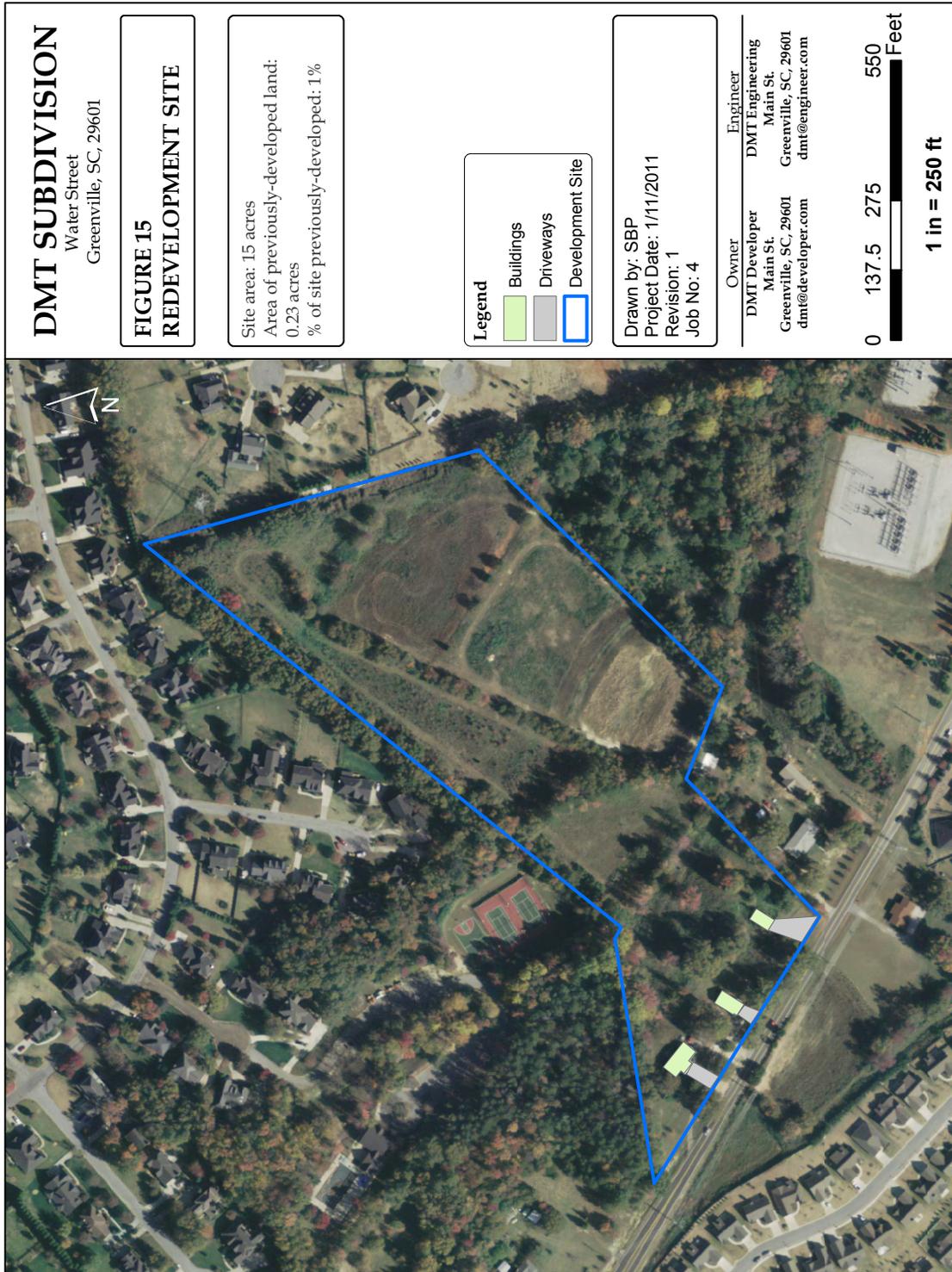
- Lots less than 5 acres in size that have been built as part of a larger subdivision.
- Industrial, commercial or office sites in which more than half of the land area has been used for building footprints, stockpiling, stormwater management, or any mechanical systems.
- Land used for stormwater management facilities.
- Managed vegetated areas such as lawns associated with residential or commercial buildings.

To meet the intent of this category, **previously-developed** land does not include the following:

- It does NOT include altered landscapes resulting from current or historical clearing or filling, agricultural or forestry use, or preserved natural area use.
- It does NOT include 5-acre or larger parcels of which less than half of the parcel has been previously-developed.
- It does NOT include streets and areas that have been developed by the same entity (developer) or affiliates of the same entity within the past ten years.

In order to earn points for this category, an aerial map of the project site must be submitted to the Planning Department as part of preliminary plat submittal. The map must delineate previously-developed areas on the site, and should include a calculation of the percent previously-developed. See Figure 15 for an example.

FIGURE 15



## 16. Runoff Factor

The Runoff Factor is primarily a function of surface cover. It reflects the relative amount of rainfall that becomes surface runoff and considers the degree to which the normal pervious surfaces maintain an undeveloped runoff condition as well as whether surfaces become impervious.

- a. **Indicate the percent area of the site that is maintained as natural cover. Natural cover will be maintained in good hydrological condition, and will generally be covered with trees, shrubs, undergrowth and ground story so that it will be in good hydrologic condition.**

Natural cover is defined as area that is designated to remain in undeveloped condition and is not paved, built upon or otherwise disturbed in any way during the construction process. It will generally be covered with trees, shrubs, undergrowth and ground story so that it will be in good hydrologic condition. Areas designated as natural cover should remain as natural cover and should NOT be mowed. It may have previously been pasture but is no longer mowed or otherwise managed.

In order to earn points in this category, certified engineering drawings submitted to the Land Development Division (LDD) as part of Land Disturbance Permit Application should delineate areas of natural cover. In addition, preliminary and final plats should delineate natural cover areas maintained.

**If earning points on DMT Question #16 by protecting areas in natural cover, Final Plats** should contain all of the following:

- (1) Notations indicating the delineated protected areas.
- (2) **Subdivision covenants** – The covenants for the subdivision shall include provisions for the protection of trees and other natural amenities within the property designated for areas in natural cover. The removal of trees and natural vegetation is permitted in the development phases for the purpose of utility easements, passive recreational uses such as greenways, and drainageways with the proper notations on the final plat. Neither the developer, property owners, or other subsequent contractors or builders shall be granted permission to remove or destroy any trees or natural vegetation from the buffer area for passive recreational or any other purposes without the express written permission of the community board, or homeowners association, or property owners, or trustees having jurisdiction over the implementation and enforcement of the subdivision covenants. Normal maintenance and the removal of dead, diseased or fallen trees or invasive species are permitted and recommended.

## 17. Soil Factor

The Soil Factor reflects soil texture, permeability, organic matter and the degree to which soil is maintained in undisturbed condition as well as whether surfaces become impervious.

**a. Indicate the percentage of the total site area that is impervious.**

Prior to conducting a full design and analysis, estimates based on preliminary drawings must be made. Any preliminary drawings submitted to LDD should also contain specifics on impervious coverage. Certified engineering drawings and IDEAL model summary reports submitted to LDD should indicate areas of impervious cover, along with specific area calculations.

**b. If conducting a soils investigation, indicate the dominant soil type.**

In order to earn points in this category, a site soils investigation must be performed in order to confirm the dominant soil type. The results of this investigation must be submitted to LDD along with the application for a Land Disturbance Permit.

If no soils investigation will be conducted, choose the appropriate checkbox.

## 18. Detention Factor

The Detention Factor reflects the influence of timing parameters in slowing runoff. It primarily varies in response to the extent to which impervious areas are directly connected to drainage system. In other words, whether rooftops and driveways drain directly to a storm sewer or whether runoff flows across well-established vegetated areas, such as lawns and landscaped areas.

- a. **Select the percentage of total site impervious area (rooftops, pavement, etc.) that drains as overland flow through at least 30 feet of established grass, sod, or mulched landscaping, or through infiltration practices. Mulch must represent at least 90% surface cover.**

Infiltration practices are those that enhance or encourage infiltration by either adding surface cover (e.g., vegetation or mulch) increasing the number or size of soil pores such as by adding coarser soil material, or changing the structure through deep tillage. Common infiltration BMPs would be bioretention cells, infiltration trenches, vegetative filters, enhance bioswales, natural cover, green roofs, or rain gardens. Any infiltration practice must be protected from sediment buildup, particularly during and immediately after construction, since sediment will clog the pores and prevent infiltration.

Certified engineering drawings and IDEAL model summary reports submitted to LDD as part of the Land Disturbance Permit Application should indicate the routing of stormwater from impervious areas.

## 19. Infiltration Factor

The Infiltration Factor is highly dependent on use of Low Impact Development (LID) practices and will consider the addition of practices that are installed specifically to aid infiltration, such as enhanced bioswales and bioretention cells. It will consider practices that go beyond getting infiltration back to the undeveloped level, and should actually increase local infiltration.

- a. **Indicate the percentage of the total site area draining through established infiltration practices, which can include: infiltration trenches, enhanced bioswales, bioswales, buffer strips, bioretention cells, rain gardens, green roofs, sand filters, pervious or porous pavements, rainwater catchment system, or natural cover.**

Practices that enhance or encourage infiltration by either adding surface cover (e.g., vegetation or mulch) increasing the number or size of soil pores such as by adding coarser soil material, or changing the structure through deep tillage. Common infiltration BMPs would be bioretention cells, infiltration trenches, vegetative filters, enhance bioswales, natural cover, green roofs, or rain gardens. Any infiltration practice must be protected from sediment buildup, particularly during and immediately after construction, since sediment will clog the pores and prevent infiltration.

Certified engineering drawings and IDEAL model summary report submitted to LDD as part of the Land Disturbance Permit Application should indicate the routing of stormwater to BMPs and infiltration practices.

## 20. Sediment Factor

The Sediment Factor evaluates whether the site is fully stabilized. This is critical because sediment potentially could clog LID devices and reduce their effectiveness. Sediment also carries nutrients, bacteria, and other pollutants.

### a. Indicate the IDEAL output for sediment (IDEAL TE).

Prior to conducting a full design and analysis, estimates based on preliminary drawings must be made. Any preliminary drawings submitted to LDD should also contain specifics on impervious coverage.

The IDEAL model summary report submitted to LDD as part of the Land Disturbance Permit Application will indicate the final IDEAL TE value and the final score for this factor.

### b. Indicate ground coverage on pervious areas.

Certified engineering drawings submitted to LDD as part of the Land Disturbance Permit Application should indicate ground coverage.

### c. Indicate use of buffers to protect drainage inlets.

Certified engineering drawings submitted to LDD as part of the Land Disturbance Permit Application should delineate any landscaped buffers protecting drainage inlets.

## 21. Nitrogen Factor

The Nitrogen Factor reflects whether measures have been included that reduce the likelihood of nitrogen entering runoff such as use of native vegetation that does not require large applications of fertilizer, as well as measures that provide infiltration and nutrient uptake by plants.

### a. Indicate the IDEAL output for nitrogen (IDEAL TEN).

Prior to conducting a full design and analysis, estimates based on preliminary drawings must be made. Any preliminary drawings submitted to LDD should also contain specifics on impervious coverage.

The IDEAL model summary report submitted to LDD as part of the Land Disturbance Permit Application will indicate the final IDEAL TEN value and the final score for this factor.

### b. Indicate post-construction landscaping maintenance measures for nitrogen control.

In order to earn points for this category, landscaping and maintenance plans submitted to LDD must indicate the planned use of nitrogen fertilizer for plants, or should indicate that no nitrogen fertilizer will be used. If no limits on use of nitrogen fertilizer can be placed on the site, then check the appropriate box.

### c. Indicate whether runoff flows through at least 30 ft of established grass, sod, or landscaping with mulch prior to reaching pipes or storm sewers.

Certified engineering drawings submitted to LDD as part of the Land Disturbance Permit Application should delineate any landscaped buffers protecting drainage inlets.

## 22. Phosphorus Factor

Reflects whether measures have been included that reduce the likelihood of phosphorus from entering runoff such as use of native vegetation that does not require large applications of fertilizer, as well as measures that provide settling of particulate phosphorus and nutrient uptake by plants.

### a. Indicate the IDEAL output for phosphorus (IDEAL TEP).

Prior to conducting a full design and analysis, estimates based on preliminary drawings must be made. Any preliminary drawings submitted to LDD should also contain specifics on impervious coverage.

The IDEAL model summary report submitted to LDD as part of the Land Disturbance Permit Application will indicate the IDEAL TEP value and the final score for this factor.

### b. Indicate post-construction landscaping maintenance measures for phosphorus control.

In order to earn points for this category, landscaping and maintenance plans submitted to LDD must indicate the planned use of phosphorus fertilizer for plants, or should indicate that no phosphorus fertilizer will be used. If no limits on use of phosphorus fertilizer can be placed on the site, then check the appropriate box.

### c. Indicate whether runoff flows through at least 30 ft of established grass, sod, or landscaping with mulch prior to reaching pipes or storm sewers.

Certified engineering drawings submitted to LDD as part of the Land Disturbance Permit Application should delineate any landscaped buffers protecting drainage inlets.

### 23. Bacteria Factor

The Bacteria Factor reflects whether measures have been included that reduce the likelihood of bacteria from entering runoff; such as reduction in attractions for nuisances, control of pets, and houses on sanitary sewers.

**a. Indicate the IDEAL output for bacteria (IDEAL TEB).**

The IDEAL model summary report submitted to LDD as part of the Land Disturbance Permit Application will indicate the IDEAL TEB value and the final score for this factor.

**b. Indicate whether the site contains wet ponds.**

Certified engineering drawings submitted to LDD as part of the Land Disturbance Permit Application should indicate the use of any BMPs, including the use of wet ponds.

**c. If a site contains wet ponds, indicate whether a perimeter fence or a native plants buffer will be employed for water fowl control.**

More than one item can be checked in this category.

In order to earn points in this category, certified engineering drawings submitted to LDD as part of the Land Disturbance Permit Application must indicate the installation of a perimeter fence or native plants buffer. In addition, wet pond maintenance plan or homeowner association covenants must include maintenance of native plant buffer.

**d. Indicate whether the site will be served by sanitary sewer.**

Certified engineering drawings and forms submitted to LDD as part of the Land Disturbance Permit Application should indicate the use of sanitary sewer or septic systems for waste disposal.

## **24. Maintenance Factor**

The Maintenance Factor considers whether installed practices require maintenance and whether they are expected to be maintained over the long term. It considers whether maintenance of practices is the responsibility of individual homeowners, a homeowner association or similar group, or local government.

### **a. Indicate the entity that is responsible for maintenance of stormwater infrastructure.**

The entity ultimately responsible for maintenance of installed BMP's must be indicated on BMP maintenance plan submitted to LDD.

## **25. Brownfield**

A brownfield site is defined as: “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.” These are typically designated by SC DHEC.

- a. **Indicate if the project is a designated brownfield site.**