



Zoning Board of Appeals

Agenda

Commission Meeting Room
Decatur City Hall
509 North McDonough Street

Monday, October 14, 2019
7:30 P.M.

I. Call to Order by Board Chair.

II. Approval of the Minutes.

- A. Approval of the Minutes of the Meeting of June 25, 2019.
- B. Approval of the Minutes of the Meeting of August 13, 2019.
- C. Approval of the Minutes of the Meeting of September 9, 2019

III. Applications.

- A. George and Courtenay Dusenbury, owners (George Dusenbury applicant), have applied for a variance from rear yard setback requirements for the property located at 229 Wilton Drive, Decatur, GA 30030
- B. Marianne and Dave Banhero, applicants and owners, have applied for a side yard setback for the property located at 121 Maxwell Street, Decatur, GA 30030.
- C. WSE applicants and owners, has applied for variances from stream buffer requirements for several properties as listed here with associated owners in Decatur, GA 30030:
 - 1) 304 Commerce Drive, East
Decatur Station LLC
 - 2) 255 Freeman Street, FRA
Management LLC
 - 3) 218 S. Columbia Drive,
Commerce and Columbia
LLC
 - 4) 222 S. Columbia Drive,
Commerce and Columbia
LLC
 - 5) 203 Weekes Street, Seven
Smiths Investments, LP
 - 6) 206 Weekes Street, Michele
Ritan

- 7) 207 Weekes Street,
Seaboard Properties, LP
- 8) 210 Weekes Street, Kuhl
Heddy
- 9) 211 Weekes Street,
Seaboard Properties, LP
- 10) 216 Weekes Street, FRA
Management, LLC
- 11) 220 Weekes Street,
Seaboard Weekes, LLC
- 12) 223 Weekes Street, FRA
Management, LLC
- 13) 224 Weekes Street,
Seaboard Weekes, LLC
- 14) 227 Weekes Street,
Commerce and Columbia,
LLC
- 15) 228 Weekes Street, FRA
Management, LLC
- 16) 231 Weekes Street,
Commerce and Columbia,
LLC

IV. Other Business.

Consistent with the requirements of O.C.G. A. 50-14-1. (e) (I)a an agenda was posted on Wednesday, September 18, 2019.



Zoning Board of Appeals

Summary

Commission Meeting Room
Decatur City Hall
509 North McDonough Street
Monday, September 9, 2019
7:30 P.M.

I. Call to Order by Board Chair.

The meeting was called to order at 7:30 PM by Chair Erik Pawloski. Mr. Pawloski introduced members and staff and reviewed the procedures.

Mr. Swanson was not in attendance.

II. Approval of the Minutes.

A. Approval of the Minutes of the Meeting of June 25, 2019.

On a motion by Mr. Wiedower, seconded by Mr. Rutledge, the Zoning Board of Appeals voted to table the approval of the June 25, 2019 minutes until the October 14, 2019 meeting. The vote was 4-0 in favor.

B. Approval of the Minutes of the Meeting of August 13, 2019.

Staff member John Maximuk reported that the draft minutes are still being prepared. On a motion by Mr. Rutledge, seconded by Mr. Wiedower, the Zoning Board of Appeals voted to table the approval of the August 13, 2019 minutes until the October 14, 2019 meeting. The vote was 4-0 in favor.

III. Applications.

[NOTE: The board agreed to take up item III. E. first.]

E. WSE Development, applicant, has applied for variances from stream buffer requirements for several properties as listed here with associated owners in Decatur, GA 30030:

- 1) 304 Commerce Drive, East Decatur Station LLC
- 2) 255 Freeman Street, FRA Management LLC
- 3) 218 S. Columbia Drive, Commerce and Columbia LLC
- 4) 222 S. Columbia Drive, Commerce and Columbia LLC
- 5) 203 Weekes Street, Seven Smiths Investments, LP
- 6) 206 Weekes Street, Michele Ritan

- 7) 207 Weekes Street, Seaboard Properties, LP
- 8) 210 Weekes Street, Kuhl Heddy
- 9) 211 Weekes Street, Seaboard Properties, LP
- 10) 216 Weekes Street, FRA Management, LLC
- 11) 220 Weekes Street, Seaboard Weekes, LLC
- 12) 223 Weekes Street, FRA Management, LLC
- 13) 224 Weekes Street, Seaboard Weekes, LLC
- 14) 227 Weekes Street, Commerce and Columbia, LLC
- 15) 228 Weekes Street, FRA Management, LLC
- 16) 231 Weekes Street, Commerce and Columbia, LLC

On a motion by Mr. Boyce, seconded by Mr. Wiedower, the Zoning Board of Appeals voted to table the application until such time when the applicant wishes to return. The vote was 4-0 in favor.

A. Ronaldo Pinto, applicant and owner, has applied for a variance from side yard setback requirements for the property located at 326 Winnona Drive, Decatur, GA 30030.

On a motion by Mr. Boyce, seconded by Mr. Wiedower, the Zoning Board of Appeals voted to approve the variance conditioned on work completed in compliance with plans detailed by the Shields Engineering Group dated 8.17.19 and on plans substantially similar to those submitted. The vote was 4-0 in favor.

B. George and Courtenay Dusenbury, owners (George Dusenbury applicant), have applied for a variance from rear yard setback requirements for the property located at 229 Wilton Drive, Decatur, GA 30030

On a motion by Mr. Wiedower, seconded by Mr. Boyce, the Zoning Board of Appeals voted to table the application until such time when the applicant wishes to return. The vote was 4-0 in favor.

C. Matthew Reid, applicant and owner, has applied for a variance from side yard setback requirements for accessory dwelling units for the property located at 328 Huron Street, Decatur, GA 30030.

On a motion by Mr. Wiedower, seconded by Mr. Rutledge, the Zoning Board of Appeals voted to table the application until such time when the applicant wishes to return. The vote was 4-0 in favor.

D. Sean and Laura Rowland, applicants and owners, have applied for a variance from rear yard setback requirements for the property located at 504 W. Pharr Road, Decatur, GA 30030.

On a motion by Mr. Wiedower, seconded by Mr. Rutledge, the Zoning Board of Appeals voted to approve the variance conditioned on plans substantially similar to plans submitted. The vote was 4-0 in favor.

IV. Other Business.

Staff member John Maximuk explained that the meeting packet included all materials for the WSE Development application which had been submitted since the August 2019 meeting packet had been assembled.

Members discussed options for how the board might administer materials provided by applicants and the public at meetings and or after the meeting packet has been assembled.

The meeting adjourned at 9:42PM.

Consistent with the requirements of O.C.G. A. 50-14-1. (e) (I)a a summary was posted on Wednesday, September 11, 2019.



Design, Environment and
Construction Division
2535 Talley Street
P.O. Box 220
Decatur, Georgia 30031
404-370-4104 • Fax: 404-373-3054
<http://www.decaturga.com>

Meeting Date: 10/14/19
Agenda Item: A

Zoning Board of Appeals Application Review Checklist

1. Address 229 Wilton Street
2. Application Received Date: _____ Receipt of Payment? Yes No
3. Is this a Re-Submittal or Revision from a Previous Meeting? Yes No Verify Previous Month Sept 2019
4. Application Form Completed? Yes No Items Missing —
5. Variance(S) Requested rear yard setback
6. Existing Site Plan Attached? Yes No DEC Exhibit # _____
7. Proposed Site Plan Attached? Yes No DEC Exhibit # _____
8. List Other Drawings/ Renderings/ Photos - Below
 - a. email from G. Dusenbury DEC Exhibit # 1.
 - b. plan view DEC Exhibit # 2.
 - c. site plan DEC Exhibit # 3.
 - d. original proposed site plan DEC Exhibit # 4.
 - e. _____ DEC Exhibit # _____
 - f. _____ DEC Exhibit # _____
 - g. _____ DEC Exhibit # _____
 - h. _____ DEC Exhibit # _____
 - i. _____ DEC Exhibit # _____

Total Number of Drawing Sheets 4

9. How Many Letters of Support? 0

10. Total Number of Sheets in Application (Excluding Staff Sheets) 4

11. Items Missing or Required to include in the Zoning Packet- (Call Applicant to get those items)



229 Wilton Dr.
Zoning Board of Appeals
October 14th, 2019



Design, Environment & Construction Division
2635 Talley Street
P.O. Box 220
Decatur, Georgia 30031
404-370-4104 • Fax: 404-378-5054
<http://www.decaturga.com>

Zoning Board of Appeals Staff Report October 14, 2019

The Zoning Board of Appeals will meet on October 14, 2019 at 7:30PM at the Decatur City Hall, 509 N. McDonough Street.

The following staff report has been prepared for an application which was received by the Design, Environment & Construction Division of Public Works.

Applicant: George and Courtenay Dusenbury
Address of Property: 229 Wilton Drive
Present Zoning: R-60

- 1) This application was originally heard by the Zoning Board of Appeals on September 9, 2019. The property is located at 229 Wilton Drive roughly half the distance between Oakland Street and Clairemont Avenue on the east side of the street.
- 2) The applicant has applied for a rear yard setback variance in order to reconfigure existing space (bath-laundry-tv room) into a master bedroom, master bath, new laundry/mudroom and a new screened porch.
- 3) Staff notes that the applicant's lot is irregular in shape with side lengths of 110 feet (south side) and 113.30 (north side).
- 4) Pursuant to the Unified Development Ordinance:

VariANCES Requested	Existing	Proposed	Ordinance
Rear setback requirements	42 feet	28' 6" feet	UDO Section, 3.2.4 (30 feet required)



Design, Environment & Construction Division
2635 Talley Street
P.O. Box 220
Decatur, Georgia 30031
404-370-4104 • Fax: 404-378-5054
<http://www.decaturga.com>

- 5) The applicant provided a revised plan for the October 14, 2019 meeting. The revised plan illustrates a reduction in the requested rear yard setback from the originally proposed 25 feet setback to 28' 6" setback.
- 6) The following documents have been submitted for review and consideration:
 - a) Email (page 1)
 - b) Revised plan view (page 2)
 - c) Revised site plan (page 3)
 - d) Original proposed site plan (included by staff for reference) (page 4)

John Maximuk

From: George Dusenbury IV <gdusenbury4@gmail.com>
Sent: Monday, September 16, 2019 12:55 PM
To: John Maximuk
Cc: Courtenay Dusenbury
Subject: Variance for 229
Attachments: 190912 site rev.pdf; 190912 plans.pdf

CAUTION: This email originated from outside the Decatur, GA network. Please note the sender and maintain caution when opening external links/attachments.

John,

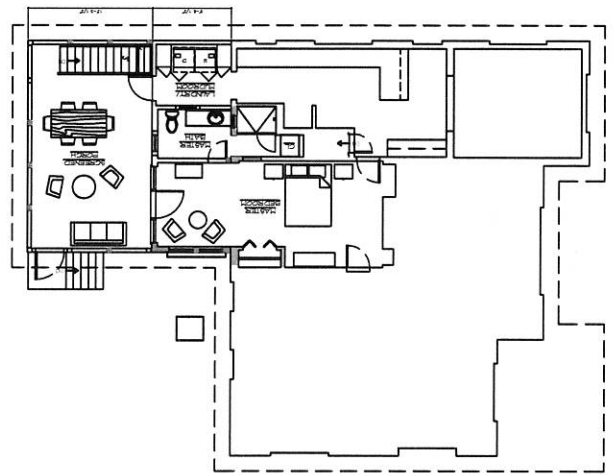
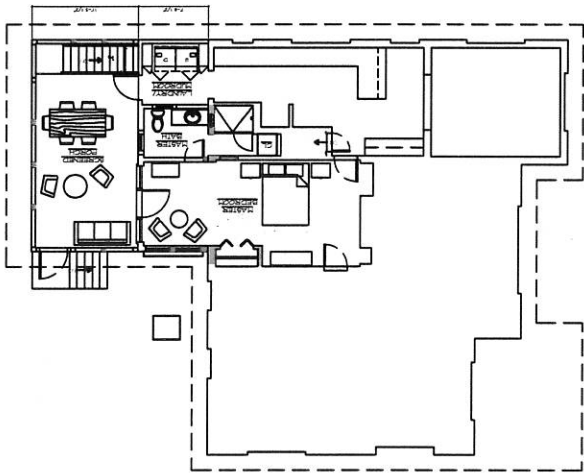
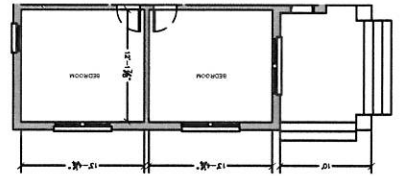
We would like to move forward with an amended variance request for 229 Wilton for consideration in October. I have attached some rough initial modifications to meet tomorrow's deadline. We discussed options with our developer/designer, and the utility constraints are such that we want to keep the porch location in the same place. We did reduce the depth of the proposed addition by 3', so the variance would be for a 1.5' encroachment into the rear setback at the one corner. Due to the shape of the non-confirming lot, the other corner would not encroach into the setback.

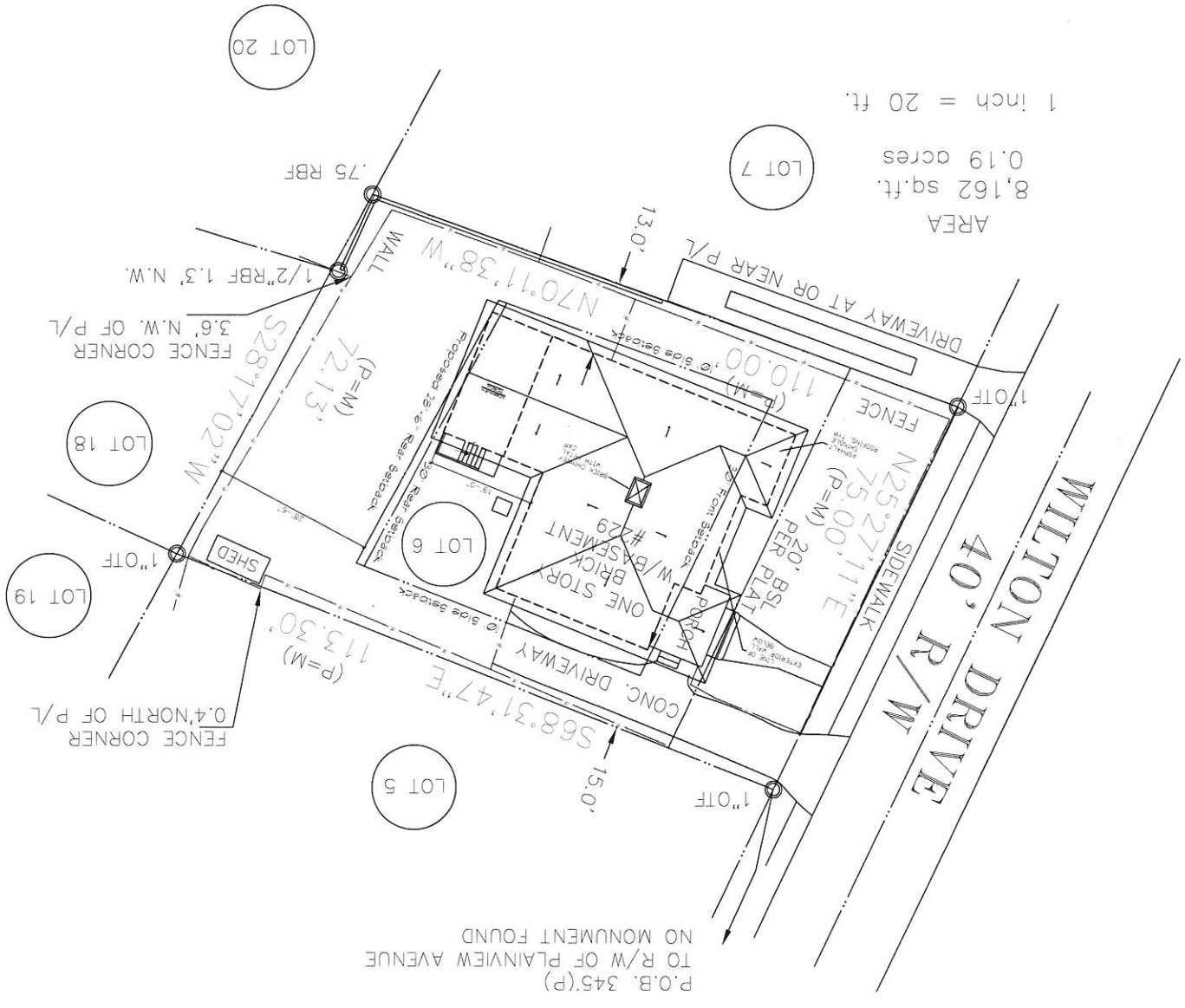
Please advise on additional steps that we may need to take.

Thanks.
George

--
George Dusenbury
www.DusenburyforDecatur.com
(404) 604-7803

The single biggest problem in communication is the illusion that it has taken place.
- George Bernard Shaw

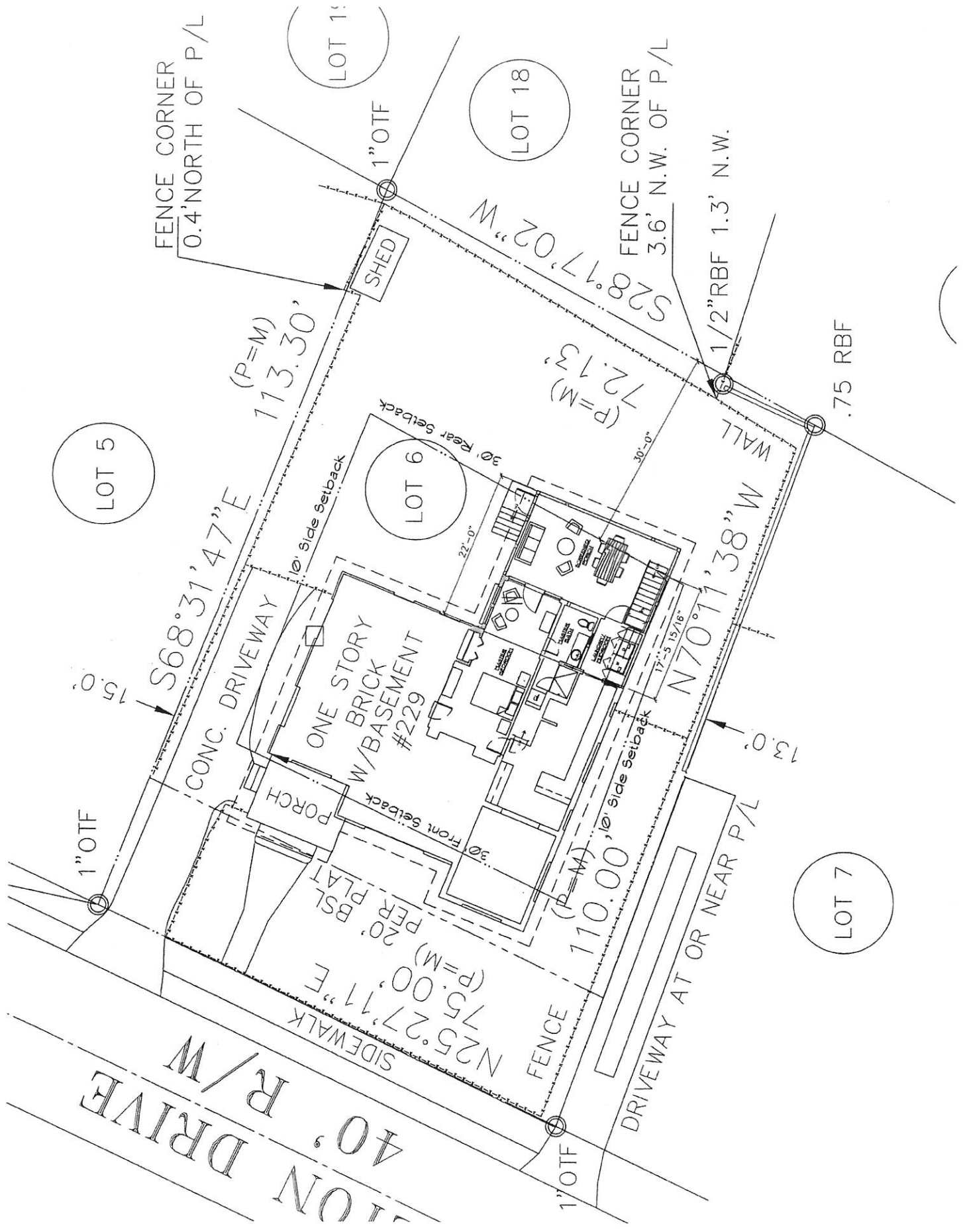




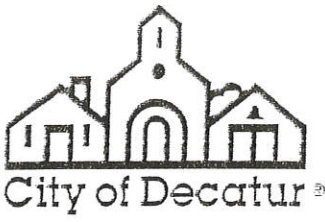
NO MONUMENT FOUND TO R/W OF PLAINVIEW AVENUE P.O.B. 345(P)

1 inch = 20 ft.

AREA
0.19 acres
8,162 sq. ft.



24



Design, Environment and
Construction Division
2535 Taley Street
P.O. Box 220
Decatur, Georgia 30031
404-370-4104 • Fax: 404-373-5054
<http://www.decaturga.com>

Meeting Date: B. 10/17/19

Agenda Item: B

Zoning Board of Appeals Application Review Checklist

1. Address 121 Maxwell Street
2. Application Received Date: 9/17/19 Receipt of Payment? Yes No
3. Is this a Re-Submittal or Revision from a Previous Meeting? Yes No Verify Previous Month _____
4. Application Form Completed? Yes No Items Missing _____
5. Variance(s) Requested Sidyard Setback
6. Existing Site Plan Attached? Yes No DEC Exhibit # 3
7. Proposed Site Plan Attached? Yes No DEC Exhibit # 4
8. List Other Drawings/ Renderings/ Photos- Below

- | | | |
|----|----------------------------|----------------------------|
| a. | <u>Existing Site Plan</u> | DEC Exhibit # <u>3</u> |
| b. | <u>Proposed Site Plan</u> | DEC Exhibit # <u>4</u> |
| c. | <u>Zoning Analysis</u> | DEC Exhibit # <u>5</u> |
| d. | <u>Floor Plans</u> | DEC Exhibit # <u>6-7</u> |
| e. | <u>Existing Elevations</u> | DEC Exhibit # <u>8-11</u> |
| f. | <u>Proposed Elevations</u> | DEC Exhibit # <u>12-15</u> |
| g. | _____ | DEC Exhibit # _____ |
| h. | _____ | DEC Exhibit # _____ |
| i. | _____ | DEC Exhibit # _____ |

Total Number of Drawing Sheets 15

9. How Many Letters of Support? 0

10. Total Number of Sheets in Application (Excluding Staff Sheets) 15

11. Items Missing or Required to include in the Zoning Packet- (Call Applicant to get those items)



121 Maxwell St.

Zoning Board of Appeals
October 14th, 2019



Design, Environment & Construction Division
2635 Talley Street
P.O. Box 220
Decatur, Georgia 30031
404-370-4104 • Fax: 404-378-5054
<http://www.decaturga.com>

Zoning Board of Appeals Staff Report

October 14, 2019

The Zoning Board of Appeals will meet on October 14, 2019. The following staff report has been prepared for an application, which was received by the Design, Environment & Construction Division of Public Works.

Applicant: Marianne and Dave Banchemo (Property Owners)

Address of Property: 121 Maxwell Street

Present Zoning: R-60

- 1) The property at 121 Maxwell Street is an existing single family dwelling approximately 50 feet wide by 200 feet deep.
- 2) The owner/ applicant is requesting to construct a 2-story addition to an existing non-conforming 1-story single family dwelling. The new addition would fall within the required 5'-0" right side yard setback as set forth in UDO Section 2.1.5(A)6.
- 3) The scope of additions to the existing structures within the setbacks would be entirely within an existing building footprint (Including part of an existing deck).
- 4) The project is considered a Substantial Improvement (zoning) as defined in Article 12 of the Unified Development Ordinance and therefore no administrative approvals may be applied to setback encroachments for new additions.



Design, Environment & Construction Division
 2635 Talley Street
 P.O. Box 220
 Decatur, Georgia 30031
 404-370-4104 • Fax: 404-378-5054
<http://www.decaturga.com>

Pursuant to the Unified Development Ordinance: UDO Section 3.2.4.

Variance Requested	Existing	Proposed	Ordinance
Side yard Setback (Left)	2'-10" feet along the west exterior wall of the existing dwelling	2'-10" feet with second story addition. Encroachment of 2'-2" foot into the required side yard setback	5.0 Feet for Lots of 50 feet in Width – Reduction per UDO Section 2.1.5(A)6

- 5) The following documents have been submitted for review and consideration:
- a) Application 1-2
 - b) Existing Site Plan 3
 - c) Proposed Site Plan 4
 - d) Zoning Analysis 5
 - e) Floor Plans 6-7
 - f) Existing Elevations 8-11
 - g) Proposed Elevations 12-15

VARIANCE APPLICATION

Planning & Zoning

2635 Talley Street
Decatur, GA 30030
Phone 404-377-6198
Fax 404-378-5054



Attach a survey of the property drawn to scale and showing the following information. Please provide one full-size copy of all plans, as well as one copy of all plans in an 8 1/2" x 11" format. It is helpful to show floor plans and elevations of proposed building improvements, as well as a letter of support from adjacent property owners. If the applicant is not the current property owner, provide a notarized authorization for this application from the current property owner. See the stream variance submittal checklist for additional requirements for stream variances.

1. all property lines with dimensions
2. location of buildings and other structures, creeks and easements referenced to property lines
3. north arrow, scale, lot and block numbers and land lot
4. topographic and drainage information if pertinent

Address of property 121 Maxwell Street Decatur, GA 30030
Name of applicant Marianne + Dave Banchemo Phone (404) 610-4407
Address 121 Maxwell St City/state/ZIP Decatur, GA 30030
Email mariannebanchemo@gmail.com
Name of property owner Marianne + Dave Banchemo Phone (404) 610-4407
Address SAME City/state/ZIP SAME
Current zoning of property R3

Please answer all of the following questions on a separate sheet.

1. What is the variance requested? What code requirement do you wish to vary from?
2. What are the special conditions relating to the specific piece of property in question (narrowness, shallowness, shape, topography, or other extraordinary and exceptional situation)?
3. Explain how the application of the zoning ordinance to this specific piece of property results in peculiar, extraordinary and practical difficulties?
4. Are the circumstances or conditions applying to the building or land in question peculiar to the premises? Do they apply generally to other land or buildings in the vicinity?
5. Explain why the granting of this variance is necessary for the preservation and enjoyment of a property right and does not merely serve as a convenience to the applicant.
6. Did the condition for which the variance is sought result from an action by the applicant?
7. Explain how the variance will affect the supply of light and air to adjacent property, the traffic on public streets, the danger of fire, the public safety and established property values.
8. Explain how the granting of the variance will be in harmony with the general purpose and intent of the Decatur land use plan.
9. Will the granting of the variance allow a structure or use in a district restricted against such structure or use?

I hereby certify that the above and attached statements and documents are true to the best of my knowledge and belief.

Applicant signature [Signature] Date 9/17/19

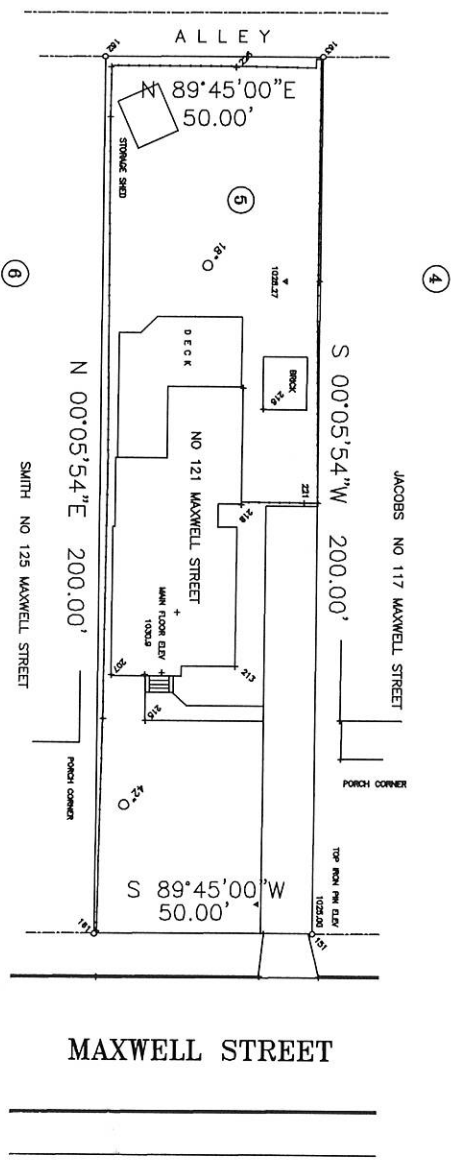
received
9-17-19
\$150 paid

1. The following variances are requested:
 - 1.1. The side setback for a 50ft wide lot in R-60 is allowed to be 5ft-0in on one side, but the west rear corner of the existing house is 2ft-10in from the property line. A second story will be added at this location, so a variance is requested for the second story only, so the second story would align with the existing lower floor.
2. This lot is 10' narrower than the standard R-60 lot. The existing house is built in a way as to require a variance for adding the second story, even though the second story stays within the setbacks of the current footprint of our home.
3. Requiring us to abide strictly by the zoning requirements would do little to meet the intent of the setbacks, would result in an awkward transition at the west side of the second floor. Without these variances, the result would be a clumsy massing that is ill-fitting to the neighborhood, especially since the existing house will remain intact.
4. The variances required are strictly related to the location of this existing house on this specific lot.
5. Keeping the second story addition matching the existing footprint below is the most efficient manner of constructing a second story addition. This is a small addition to a small house; restricting these small variances requested for the property will result in awkward massing, inefficiencies in the plan and the exterior envelope.
6. No, all of the aforementioned elements have been in existence since the house was built in the 1920s.
7. The house to the west is very close to the property line as well. The addition to this house is fairly low in scale for a second floor and built to be fairly compact - it does not extend over the entire length of the house. Nothing will exceed the fire code as stipulated in the IBC, or affect traffic.
8. Granting the variance will allow the new addition to fit within the fabric of the street and neighborhood, and maintain historically accurate building massing and style.
9. No, it will not.



NOTES:
 1. This plat is based on field measurements obtained by Roeser Consultants, Inc. on August 01 2019.
 2. This lot is NOT located in a FEMA Flood Hazard Zone according to FIRI panel on file with DeKalb County / City of Decatur, Georgia:
 3. Abandoned foundations, buried structures, buried utility pipes, conduits, downspout drain lines and service line connections were not field located and are not shown on this survey.
 4. Area = 10000 sf = 0.23 acre

John Roeser, Georgia Registered Land Surveyor No. 2073



PROPERTY CORNERS
 151 I/P REBAR
 161 POINT AT SHORT BRICK WALL CORNER
 162 TALL IRON PIPE FOUND
 163 POINT AT WOOD FENCE CORNER
 * SURVEY CONTROL POINT

2351MAX AUG 01 2019 FIELD BOOK 172
 GRAPHIC SCALE - FEET
 0 20 40 60



JOHN ROESER LS 2073
 AUGUST 01 2019

SURVEY OF LOT 5, BLOCK B
 CARRIE B SASSER SUBDIVISION
 RECORDED IN PLAT BOOK 6, PAGE 116
 DEKALB COUNTY RECORDS (1921)
 TAX PARCEL 15 213 03 110
 GROSS/BANCHERO

121 MAXWELL STREET
 LOCATED IN LAND LOT 213, 15TH DISTRICT
 5TH SECTION
 CITY OF DECATUR
 DEKALB COUNTY, GEORGIA

August 01 2019
 revised 09 03 19

2351
 08 03 19

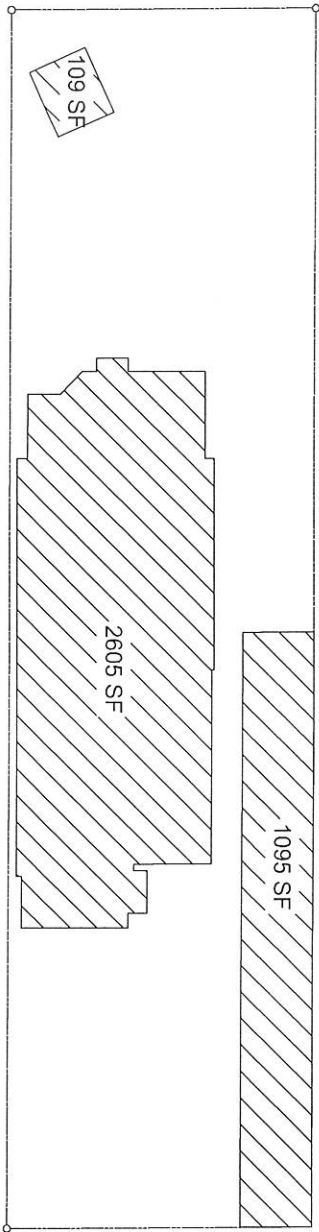
PROJECT NO. C2226
 CAD FILE: 2100/2225
 JUNE 2014
 Drafted by: JOR JUN 04 2014
 FINAL DWG 6-4-12

121 MAXWELL STREET

LOCATED IN
 THE CITY OF DECATUR
 DEKALB COUNTY, GEORGIA

REV.	DATE	DESCRIPTION

ROESER CONSULTANTS, INC.
 2107 N DECATUR ROAD NO 306
 DECATUR GEORGIA 30035
 404-210-0640 johndroeser@gmail.com

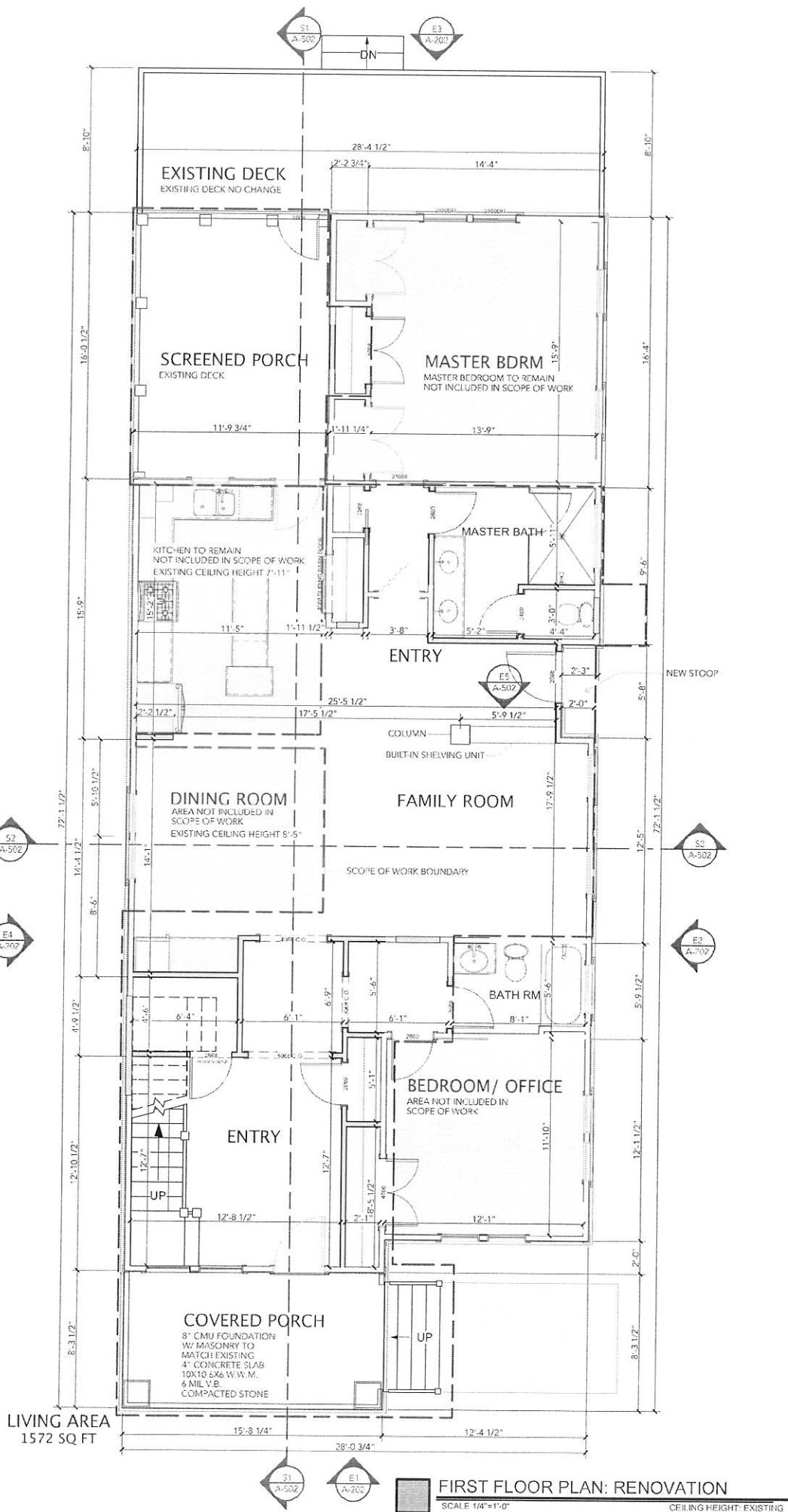


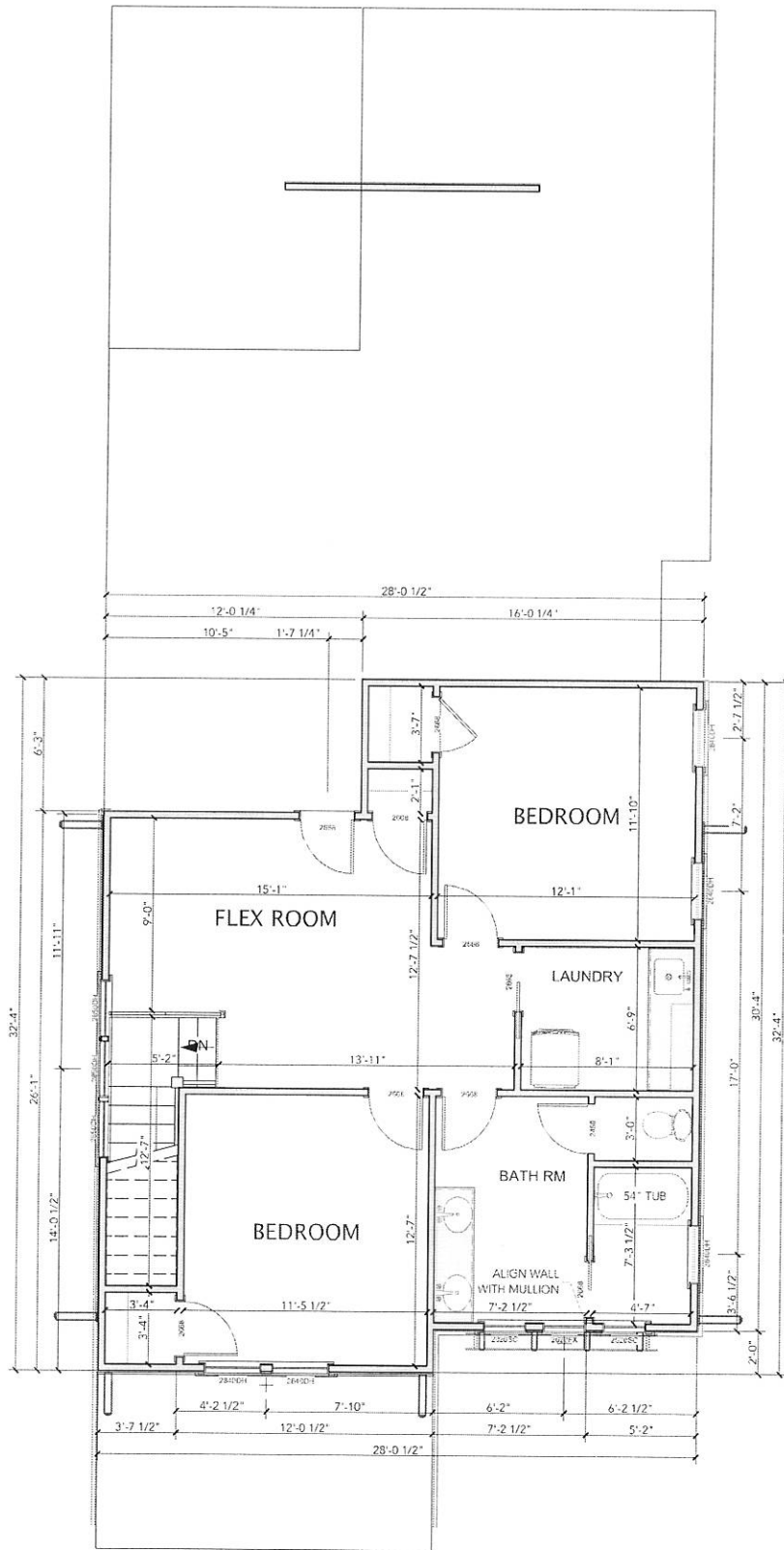
2
A06.11 1/16" = 1'-0" **DIAGRAM OF IMPERVIOUSNESS**

PROJECT CHARACTERISTICS & ZONING ANALYSIS

ZONING CLASSIFICATION:	R-60
MINIMUM LOT AREA:	9,000 SF
EXISTING:	9,560 SF
MINIMUM LOT WIDTH:	60'-0"
EXISTING:	50'-0"
MAXIMUM FLOOR AREA RATIO:	40%
EXISTING:	16.5% (1,576 SF / 9,560 SF)
PROPOSED:	30.0% (2,870 SF / 9,560 SF)
	<small>*INCLUDES UNFINISHED ATTIC SPACE MORE THAN 7'-0" TALL AND SCREEN PORCH</small>
MAXIMUM LOT COVERAGE:	40%
EXISTING:	40.4% (3,870 SF / 9,560 SF)
PROPOSED:	39.8% (3,809 SF / 9,560 SF)
MINIMUM DEPTH FRONT YARD:	46'-0" (AVERAGE OF NEIGHBORS)
EXISTING:	57'-8"
PROPOSED:	49'-5"
MINIMUM WIDTH SIDE YARD:	10'-0" / 5'-0"
EXISTING:	17'-7" / 2'-10"
PROPOSED:	NO CHANGE. VARIANCE REQD. 2ND FLOOR.
MINIMUM DEPTH REAR YARD:	30'-0"
EXISTING:	61'-8" TO DECK
PROPOSED:	NO CHANGE
MAXIMUM BUILDING HEIGHT:	35'-0"
EXISTING:	19'-10" FEET
PROPOSED:	28'-6" FEET

NOTE: NO TREES WILL BE REMOVED AS PART OF THIS PROJECT.





LIVING AREA
756 SQ FT

SECOND FLOOR PLAN: RENOVATION

SCALE 1/4"=1'-0"

Ceiling Height 8'-0"



REV

RI

REMOVE EXISTING ROOF

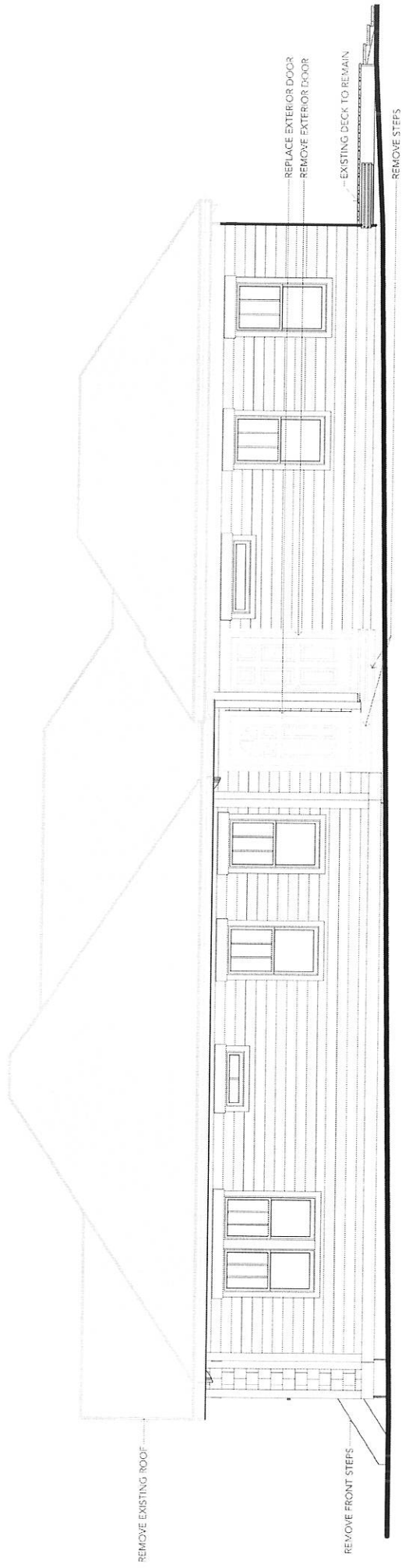
REMOVE EXISTING SIDING

REMOVE FRONT STEPS



FRONT ELEVATION: E1 DEMOLITION

SCALE 1/4"=1'-0"



RIGHT ELEVATION: E2 DEMOLITION
SCALE 1/2" = 1'-0"

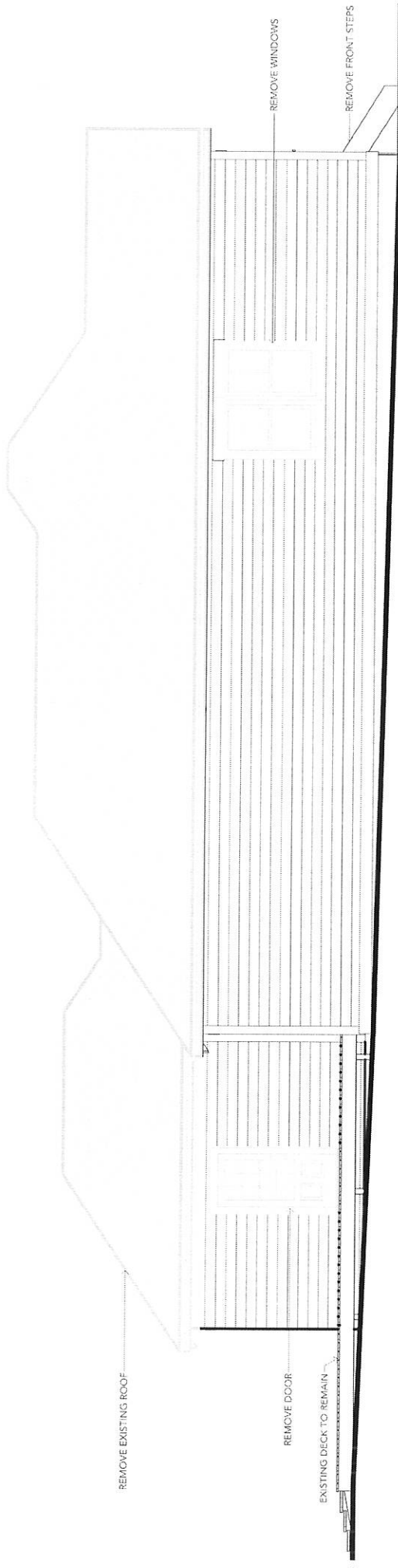


REMOVE EXISTING ROOF



REAR ELEVATION: E3 DEMOLITION

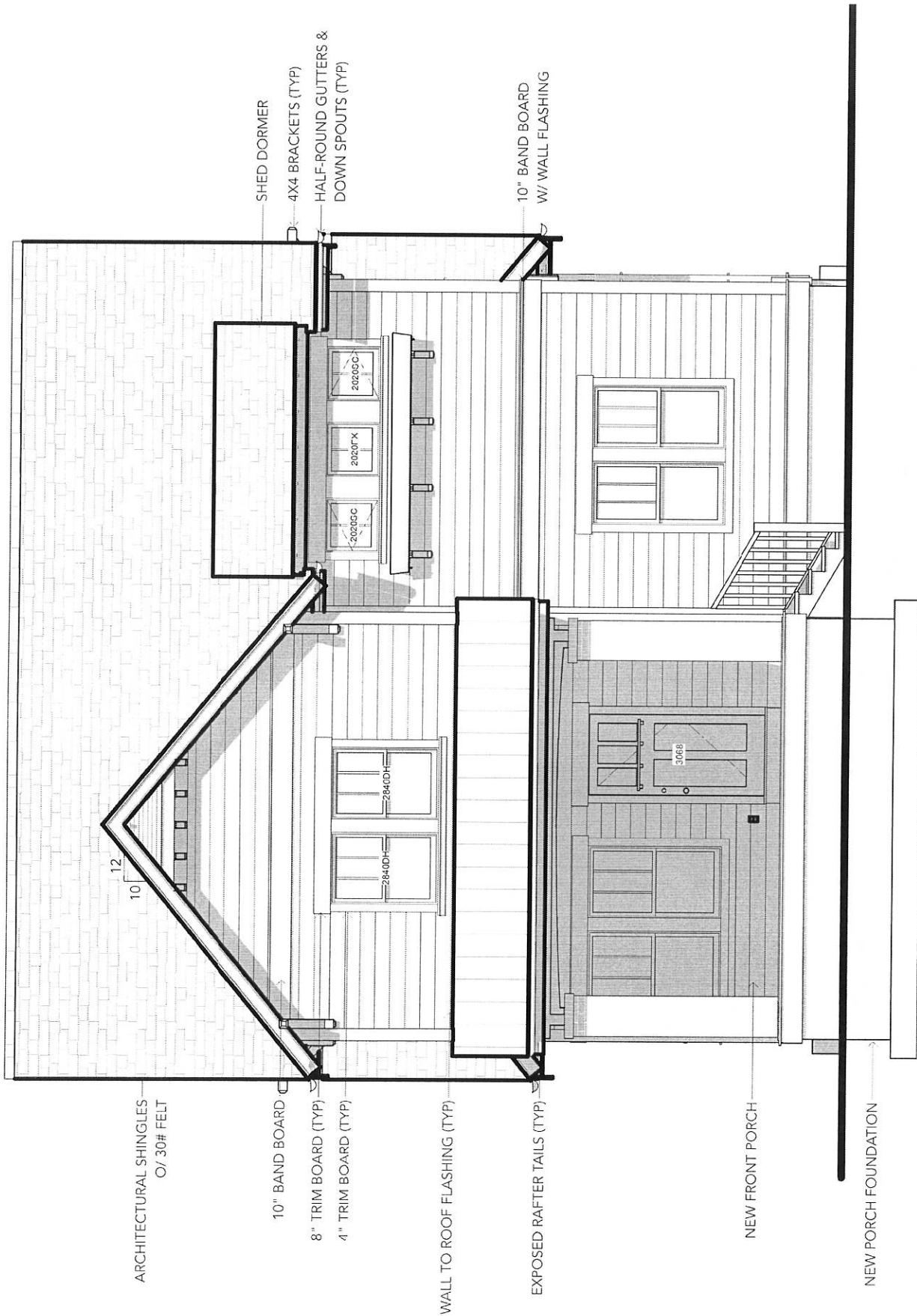
SCALE 1/4"=1'-0"



LEFT ELEVATION: E4 DEMOLITION

SCALE 1/4"=1'-0"

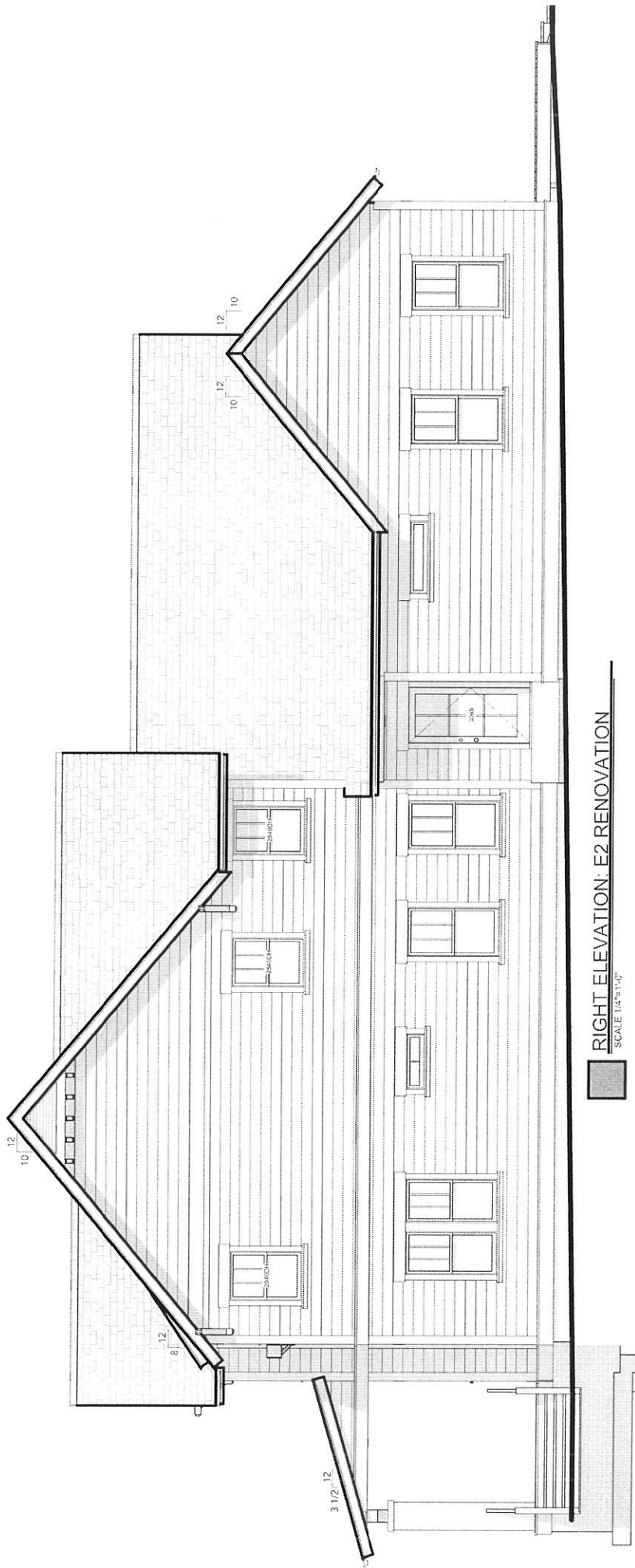


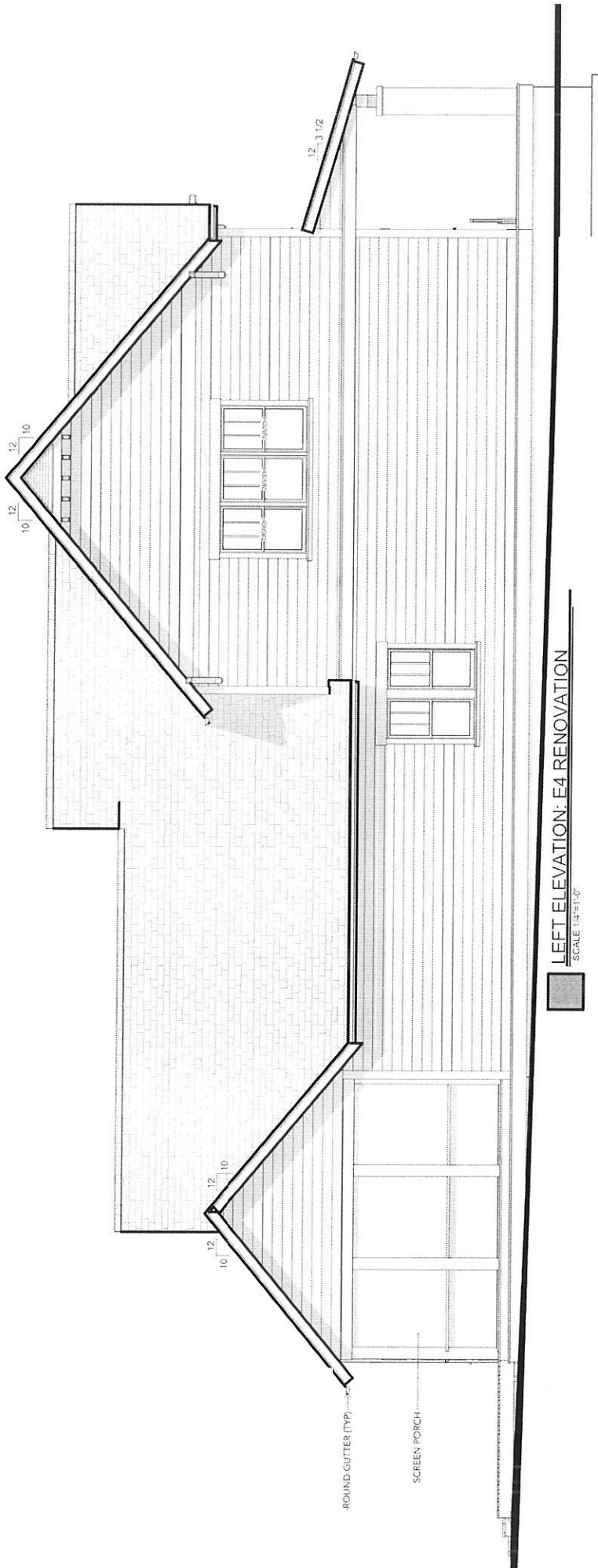


FRONT ELEVATION: E1 RENOVATION

SCALE 1/4"=1'-0"







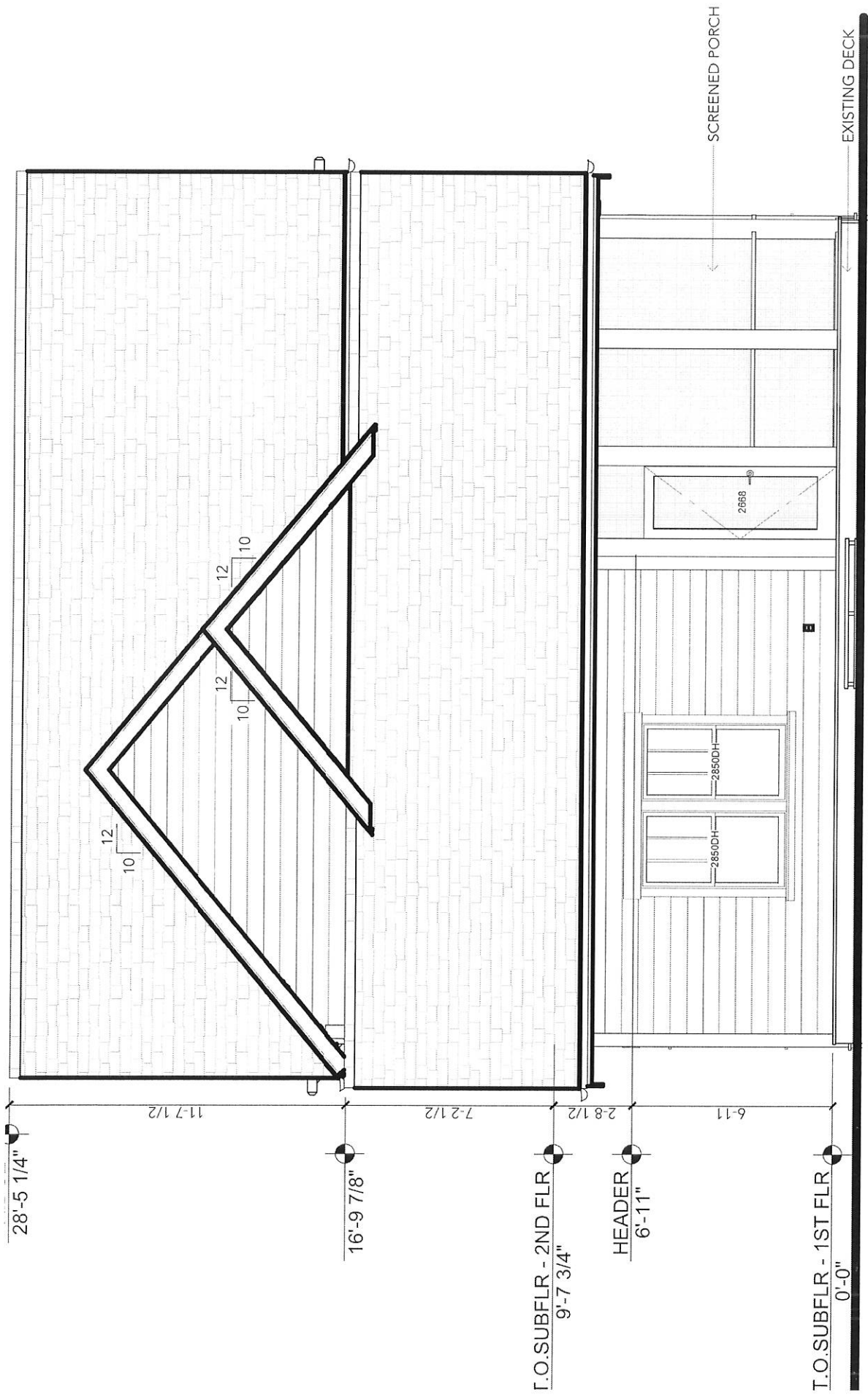
LEFT ELEVATION: E4 RENOVATION

SCALE 1/4"=1'-0"



ROUND GUTTER (TYP)

SCREEN PORCH



REAR ELEVATION: E3 RENOVATION

SCALE 1/4"=1'-0"





Design, Environment and
Construction Division
2535 Talley Street
P.O. Box 220
Decatur, Georgia 30031
404-370-4104 • Fax: 404-373-5054
http://www.decaturga.com

Meeting Date: 10/14/19

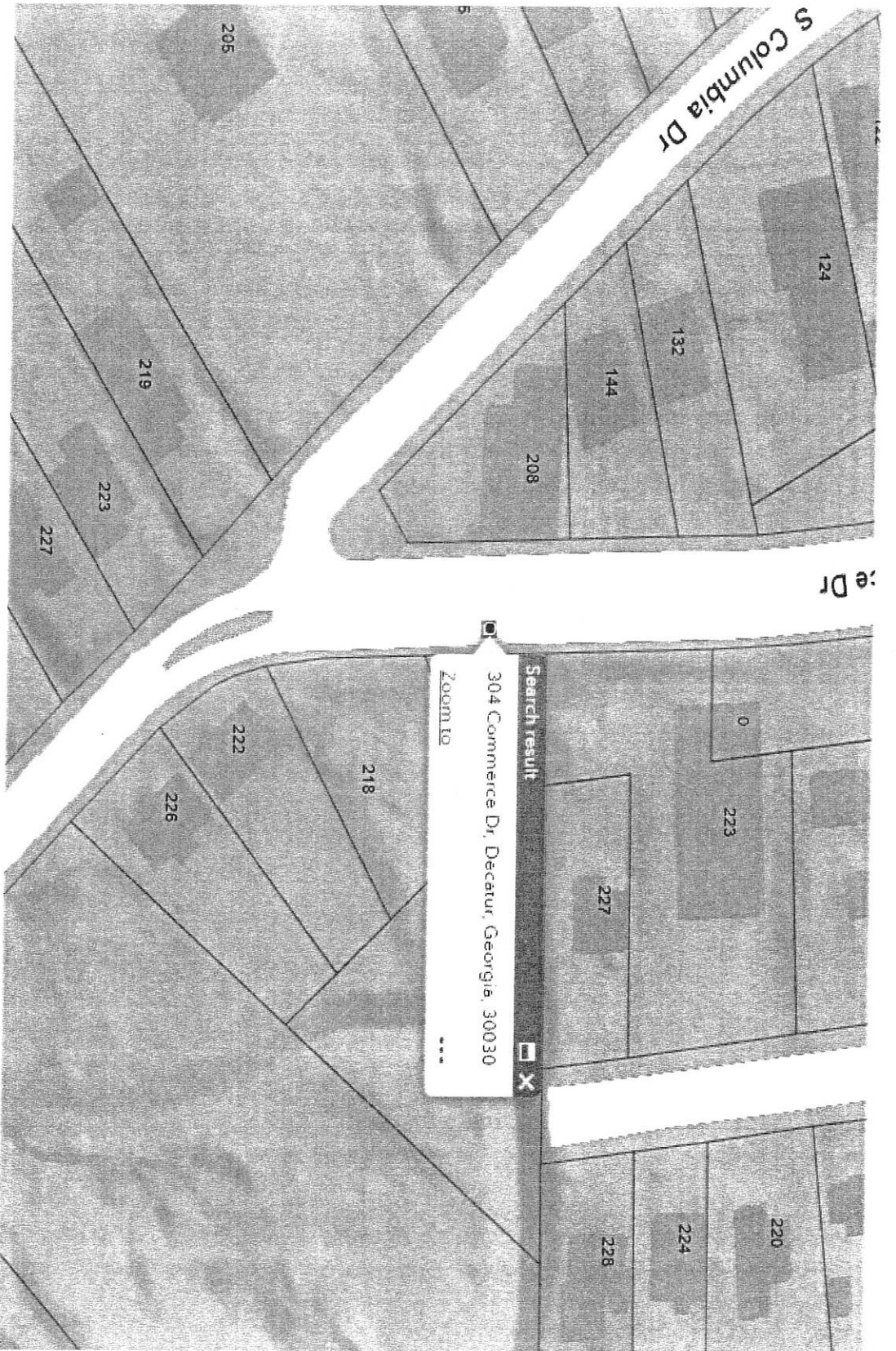
Agenda Item: C.

Zoning Board of Appeals Application Review Checklist

1. Address Commerce - Columbia - Weekes
2. Application Received Date: May 2019 Receipt of Payment? Yes No
3. Is this a Re-Submittal or Revision from a Previous Meeting? Yes No Verify Previous Month 5/2019
4. Application Form Completed? Yes No Items Missing _____
5. Variance(S) Requested Stream buffer variances
6. Existing Site Plan Attached? Yes No DEC Exhibit # —
7. Proposed Site Plan Attached? Yes No DEC Exhibit # —
8. List Other Drawings/ Renderings/ Photos- Below
 - a. email - Bonner DEC Exhibit # 1
 - b. letter from Ash Miller DEC Exhibit # 2-5
 - c. legal case DEC Exhibit # 6-18
 - d. book excerpt DEC Exhibit # 19-95
 - e. book excerpt DEC Exhibit # 96-102
 - f. map DEC Exhibit # 103-104
 - g. email - Rine DEC Exhibit # 105
 - h. Staff report - Bell DEC Exhibit # 107-109
 - i. memo of understanding DEC Exhibit # 110-116

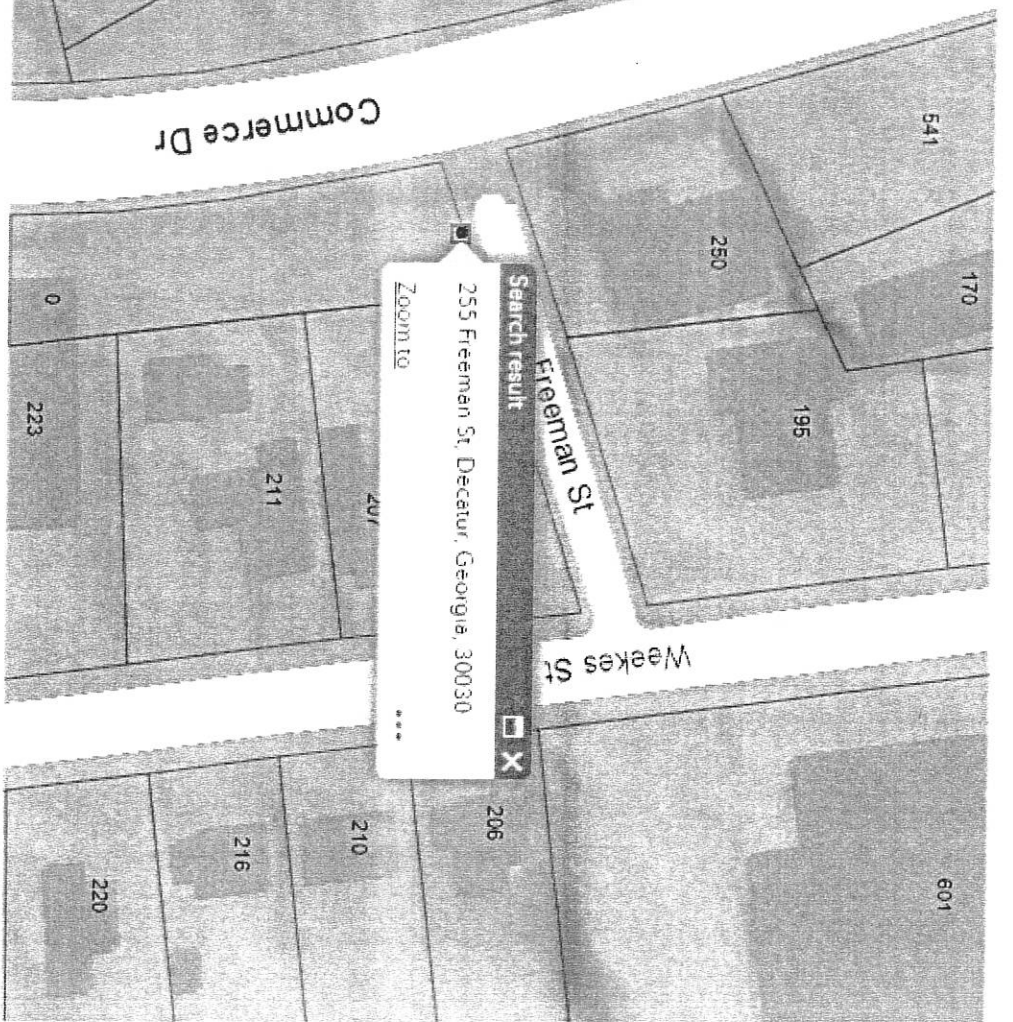
Total Number of Drawing Sheets _____

9. How Many Letters of Support? 0
10. Total Number of Sheets in Application (Excluding Staff Sheets) _____
11. Items Missing or Required to include in the Zoning Packet- (Call Applicant to get those items)



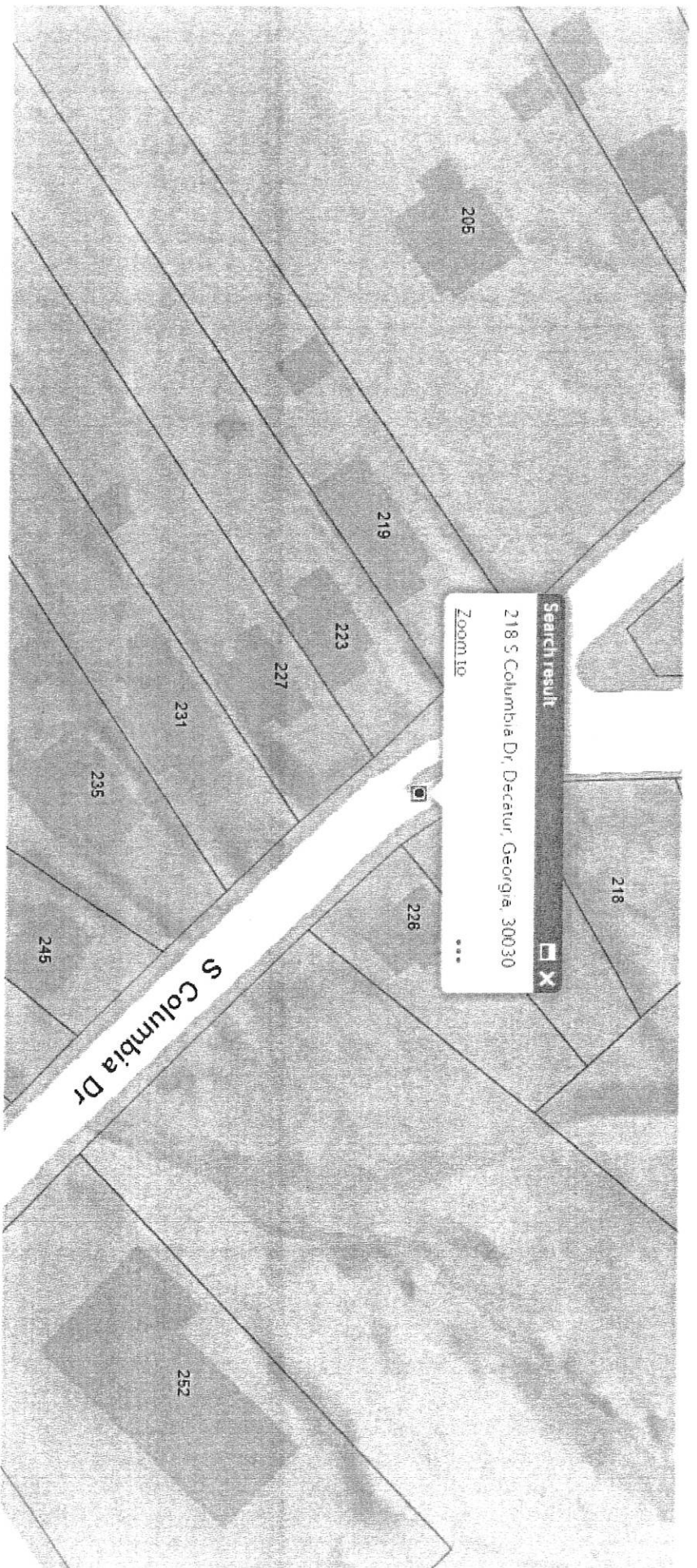
Subject Address: 304 Commerce Dr.

Zoning Board of Appeals



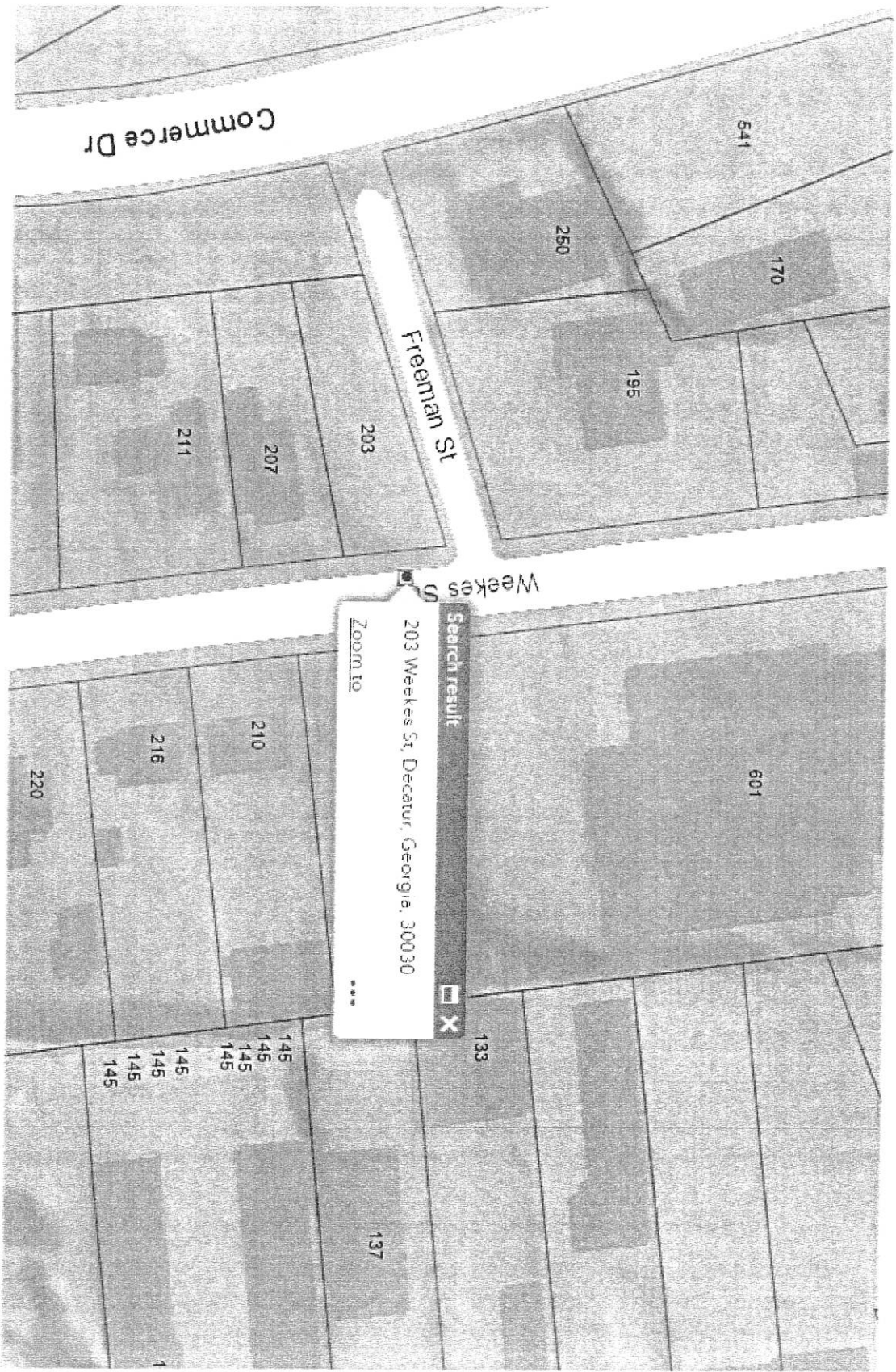
Subject Address: 255 Freeman St.

Zoning Board of Appeals



Subject Address: 218 S. Columbia Dr.

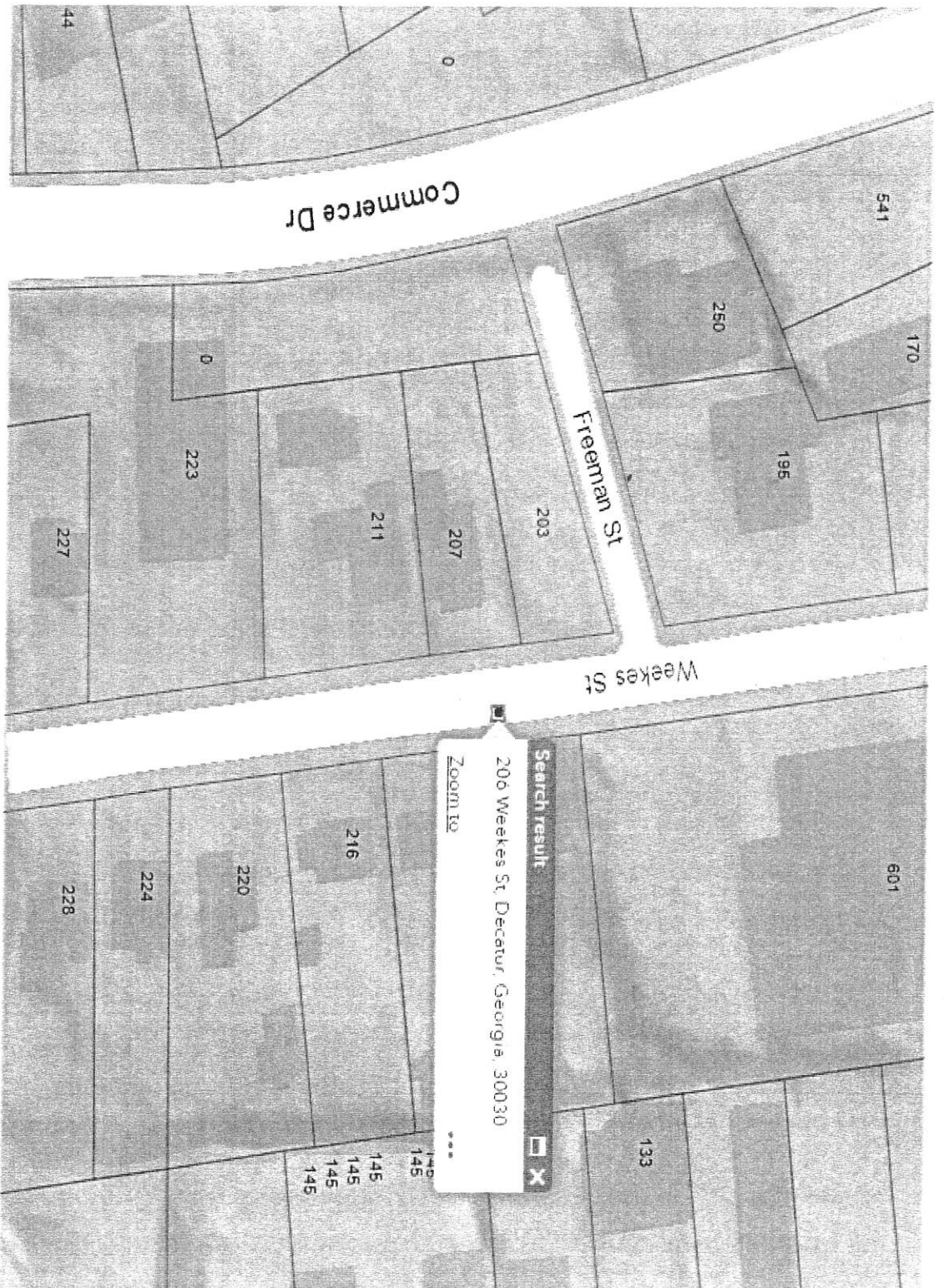
Zoning Board of Appeals



Search result
203 Weekes St, Decatur, Georgia, 30030
Zoom to

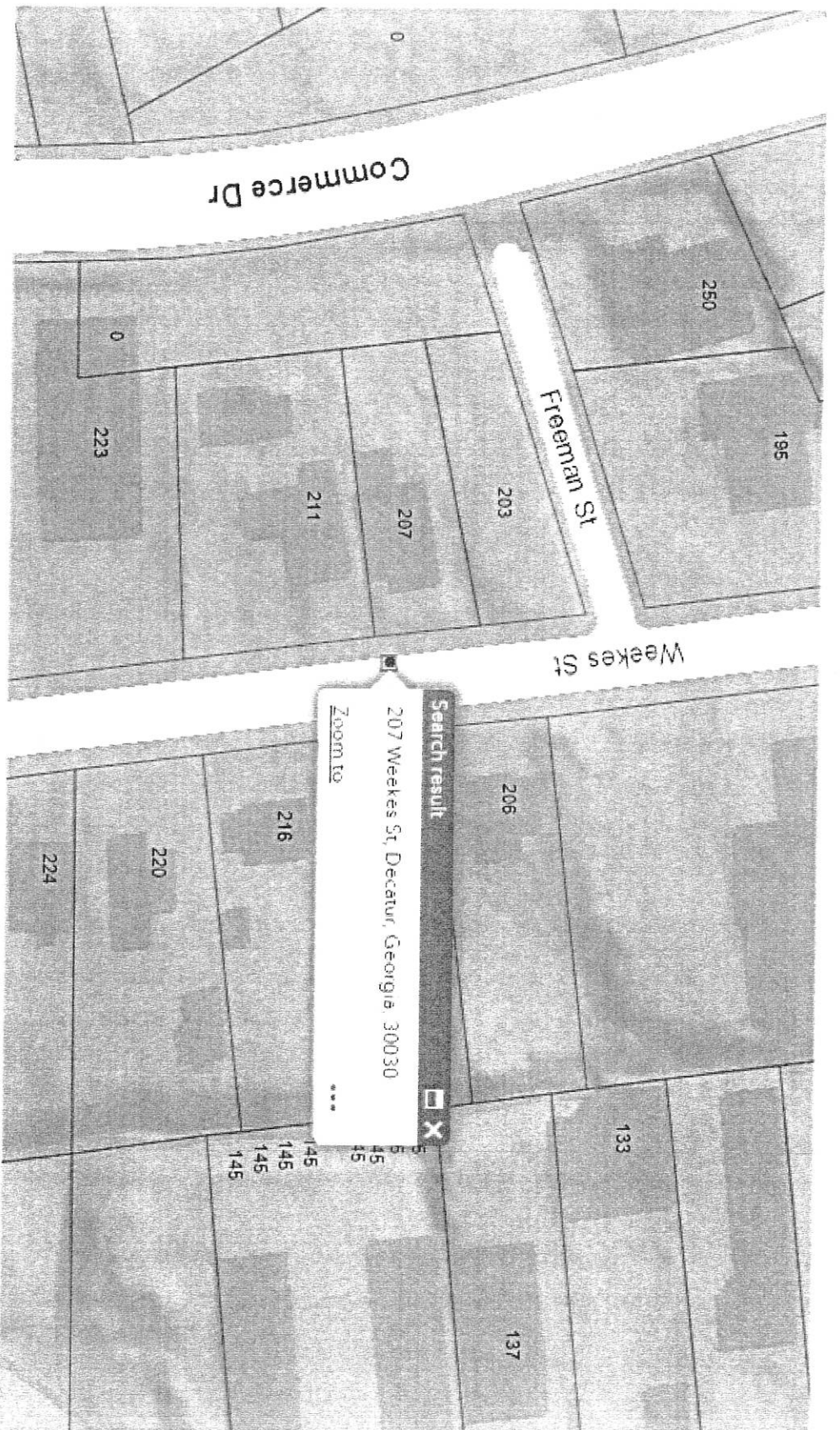
Subject Address: 203 Weekes St.

Zoning Board of Appeals



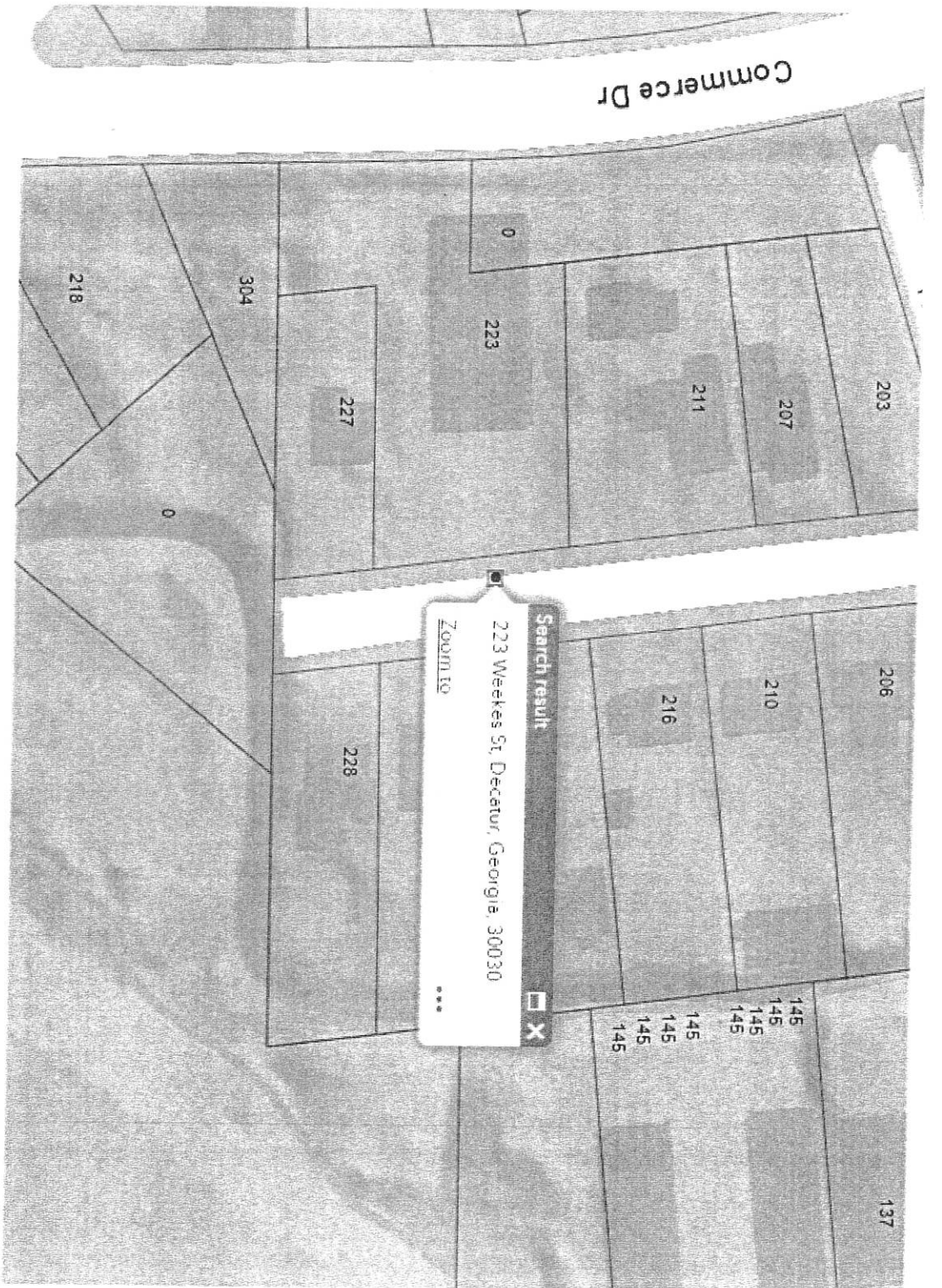
Subject Address: 206 Weekes St.

Zoning Board of Appeals



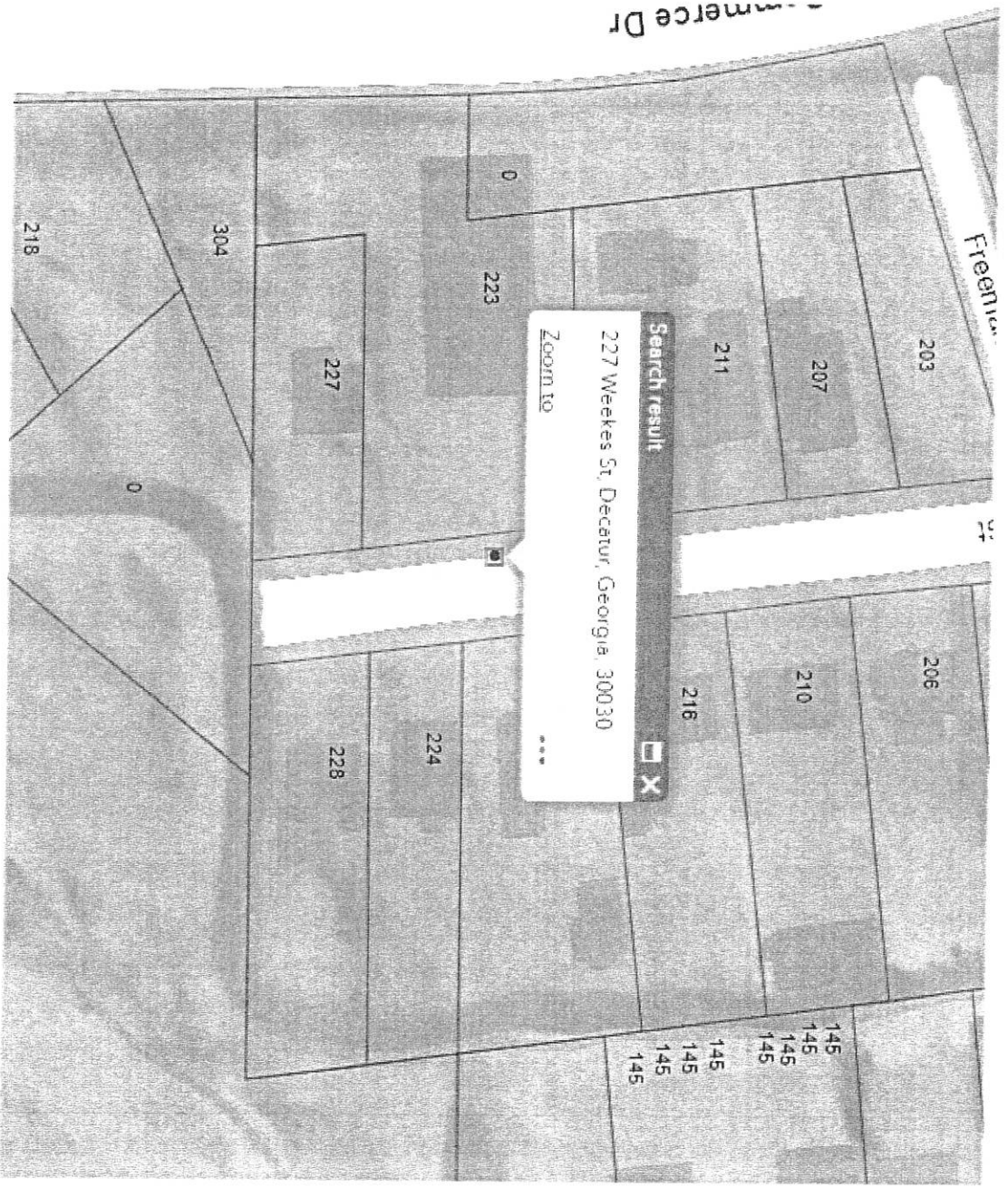
Subject Address: 207 Weekes St.

Zoning Board of Appeals



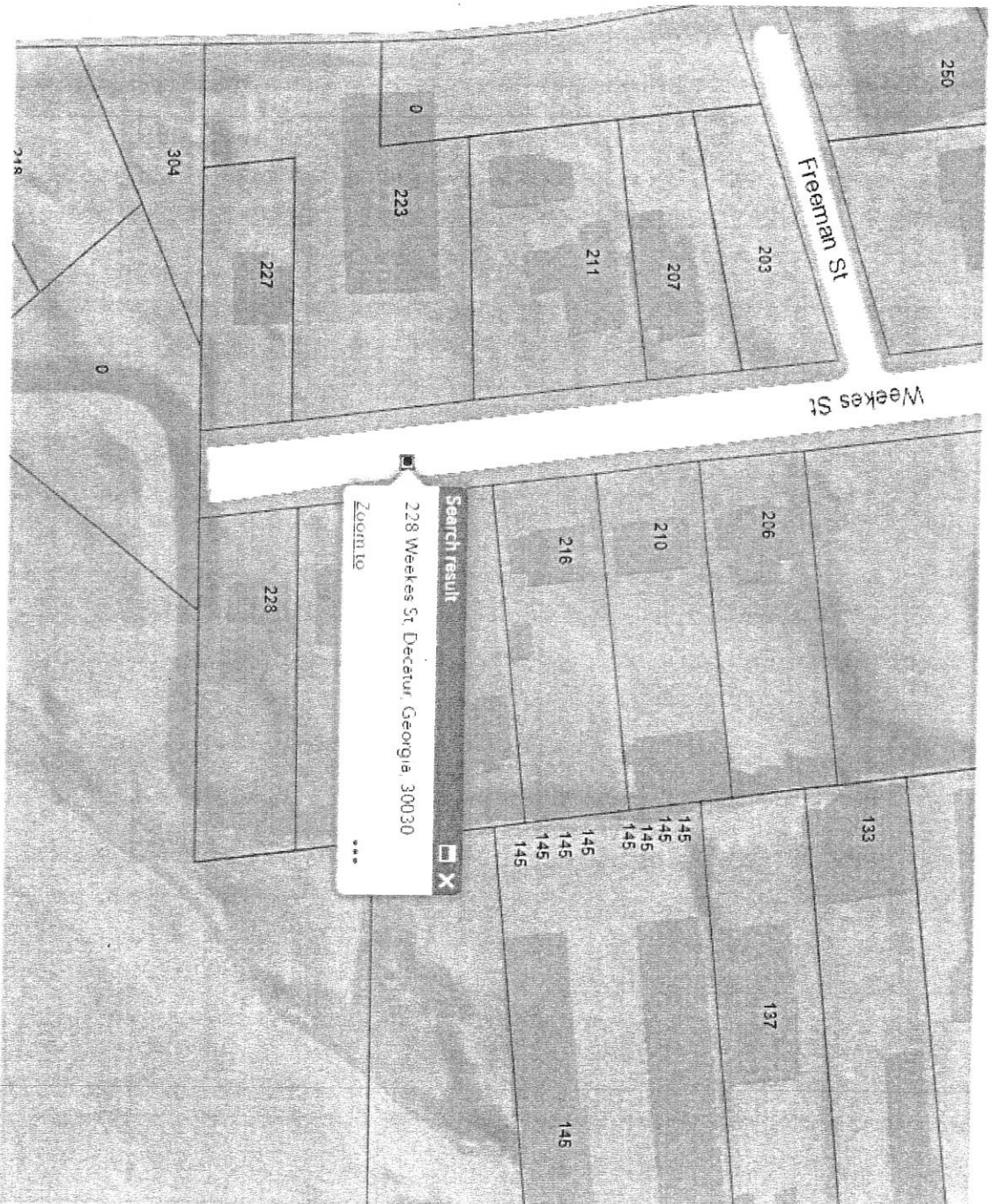
Subject Address: 223 Weekes St.

Zoning Board of Appeals



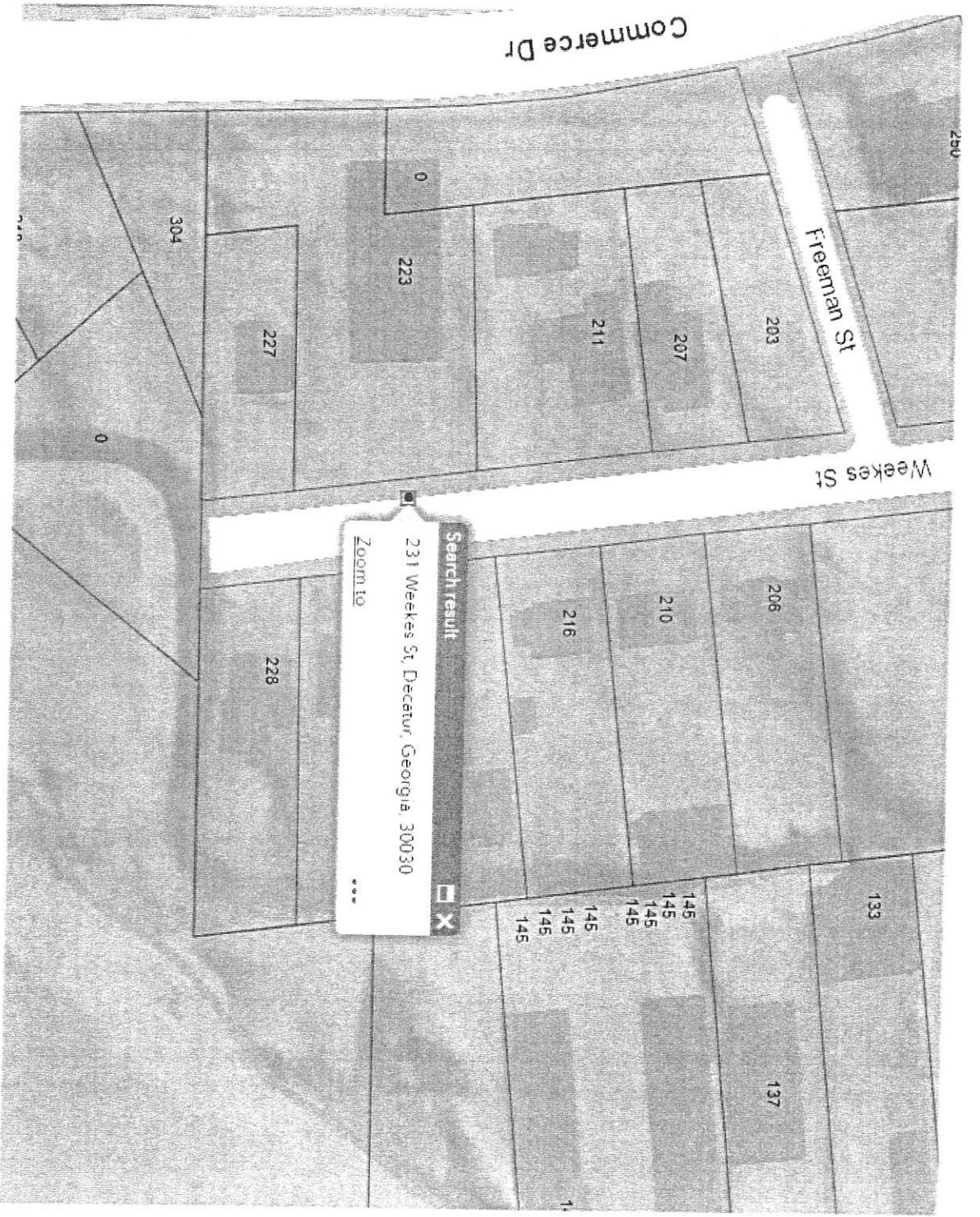
Subject Address: 227 Weekes St.

Zoning Board of Appeals



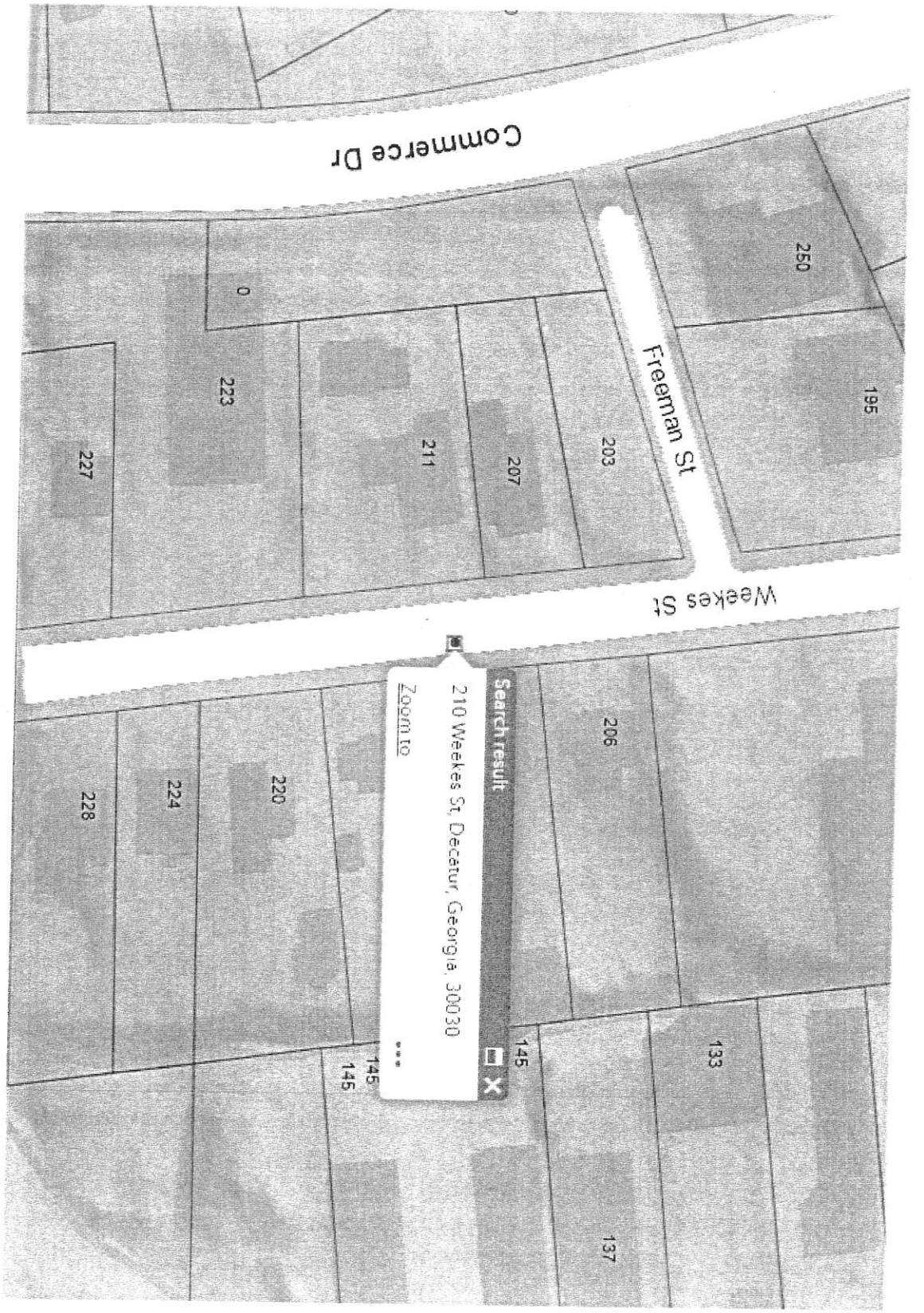
Subject Address: 228 Weekes St.

Zoning Board of Appeals



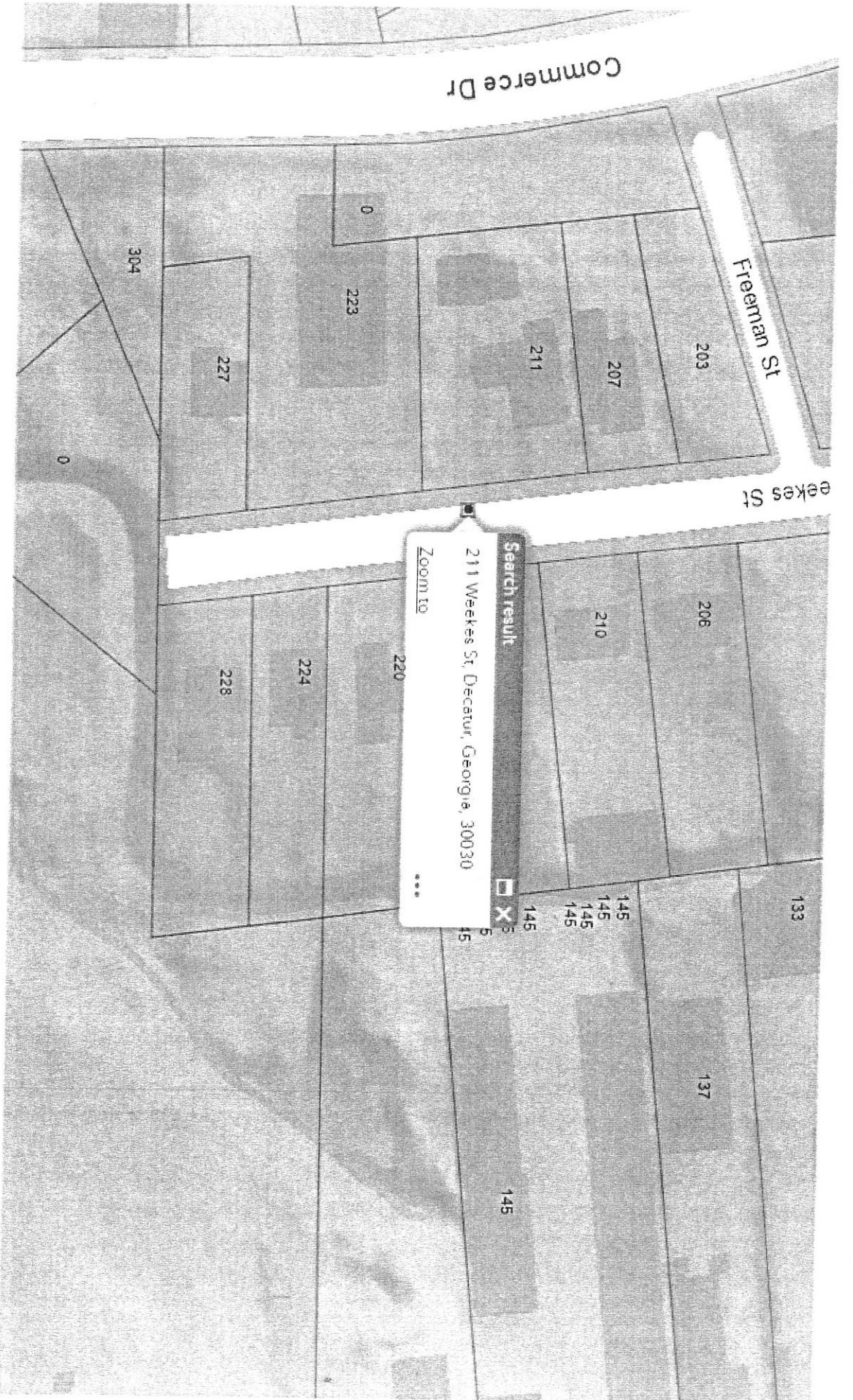
Subject Address: 231 Weekes St.

Zoning Board of Appeals



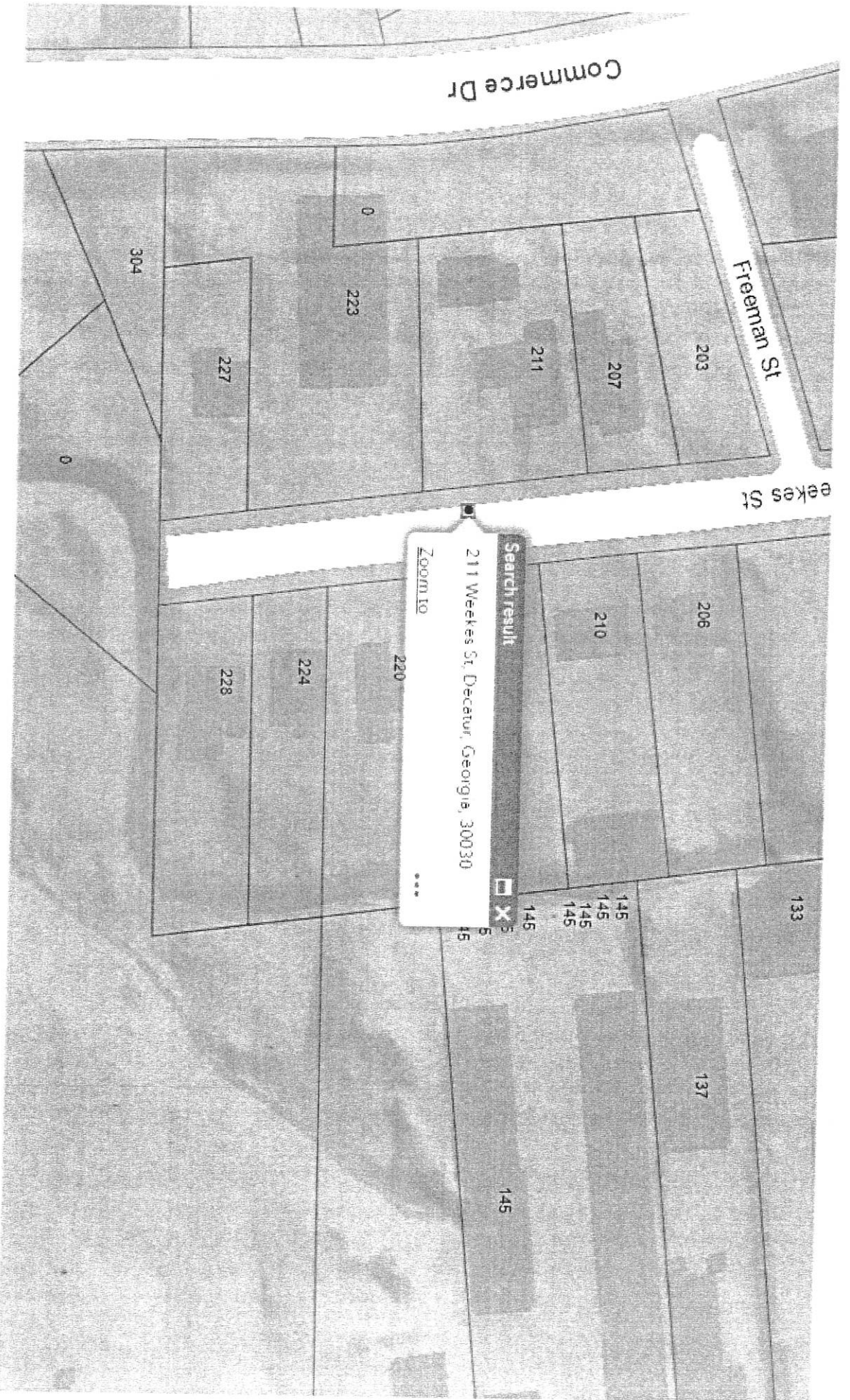
Subject Address: 210 Weekes St.

Zoning Board of Appeals



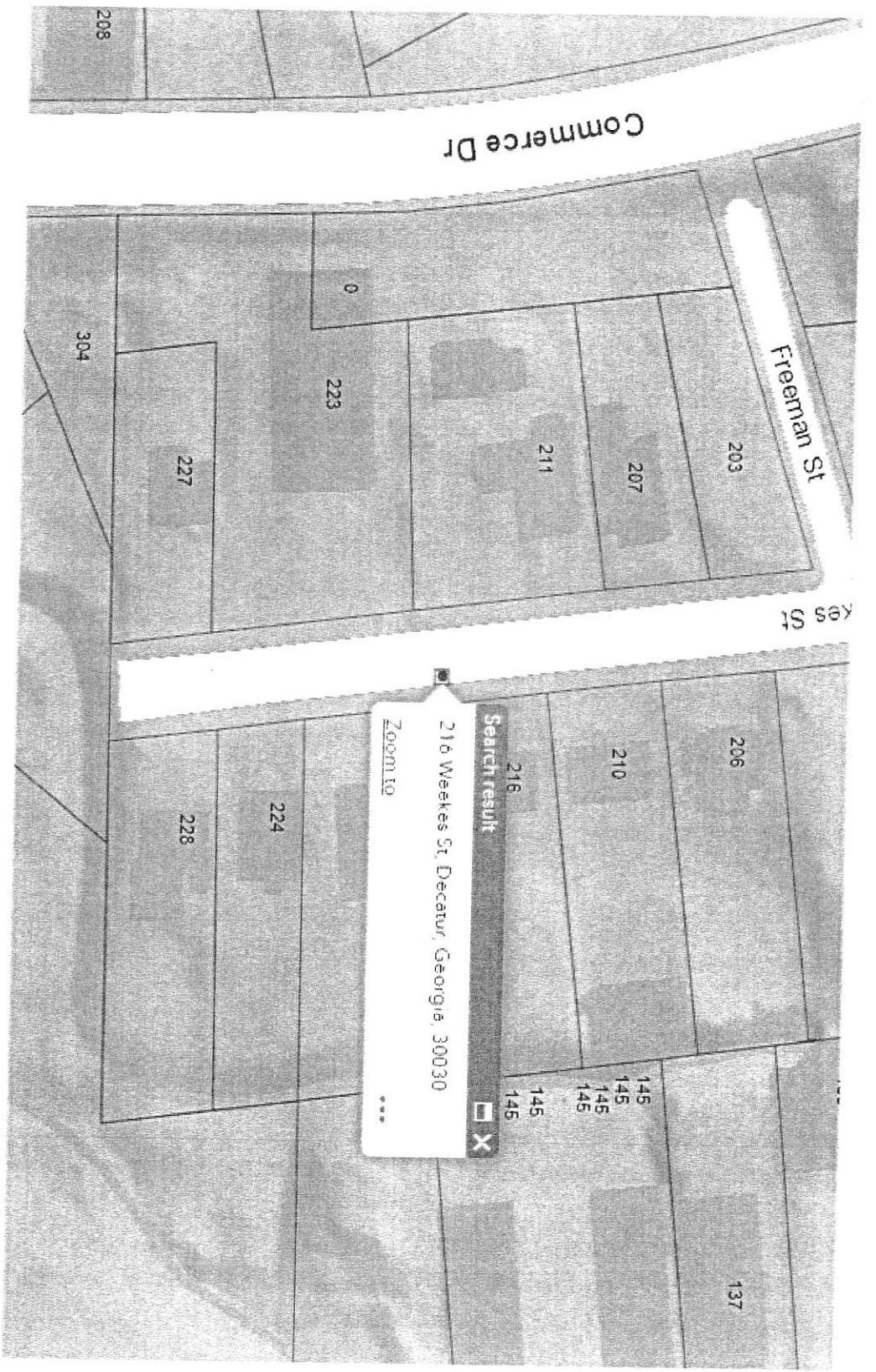
Subject Address: 211 Weekes St.

Zoning Board of Appeals



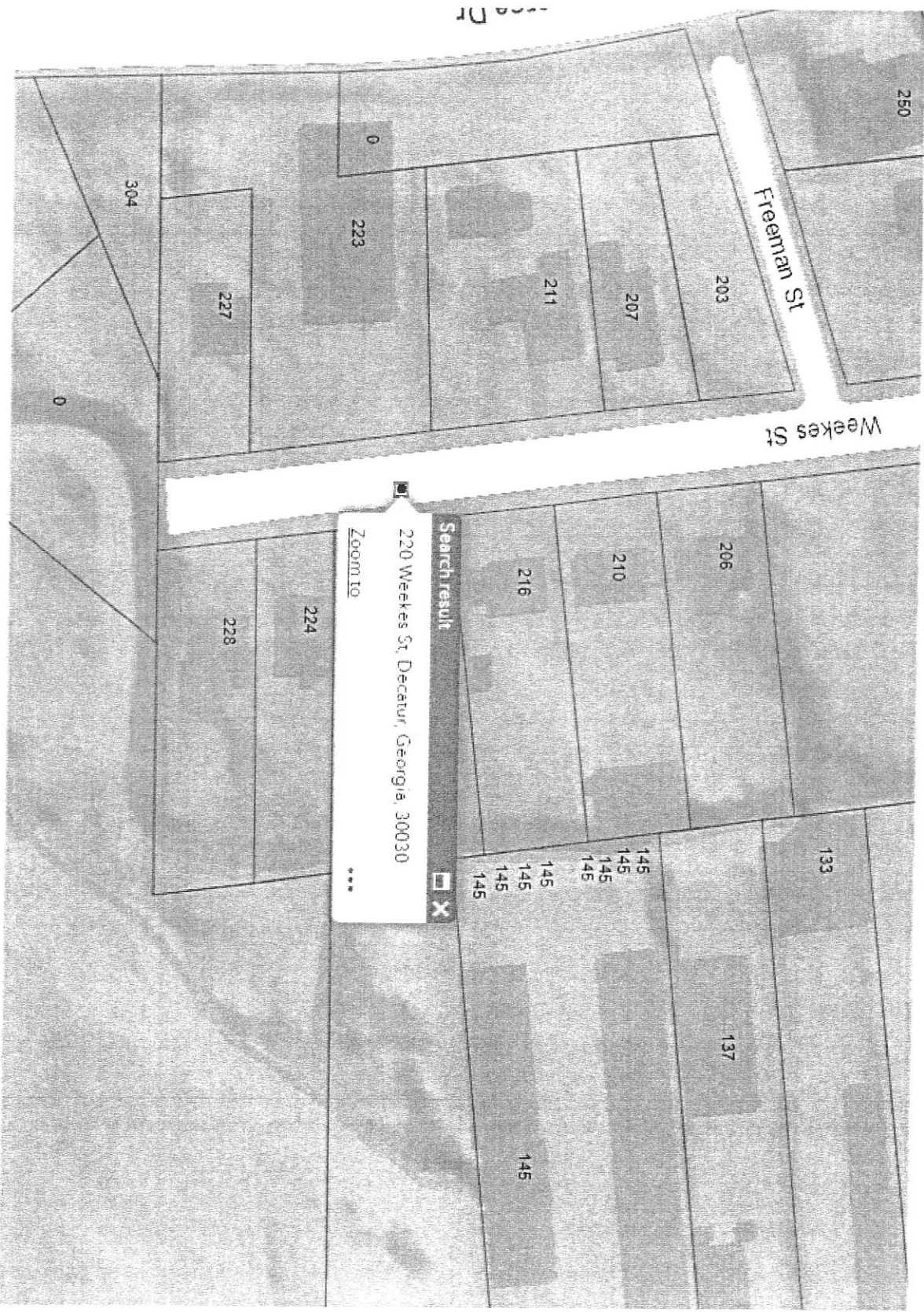
Subject Address: 211 Weekes St.

Zoning Board of Appeals



Subject Address: 216 Weekes St.

Zoning Board of Appeals



Subject Address: 220 Weekes St.

Zoning Board of Appeals



Design, Environment & Construction Division
2635 Talley Street
P.O. Box 220
Decatur, Georgia 30031
404-370-4104 • Fax: 404-378-5054
<http://www.decaturga.com>

Zoning Board of Appeals Staff Report October 14, 2019

The Zoning Board of Appeals will meet on October 14, 2019 at 7:30PM at the Decatur City Hall, 509 N. McDonough Street.

The following staff report has been prepared for an application which was received by the Design, Environment & Construction Division of Public Works.

Applicant: WSE Development

Addresses:

- 304 Commerce Drive, East Decatur Station LLC
- 255 Freeman Street, FRA Management LLC
- 218 S. Columbia Drive, Commerce and Columbia LLC
- 222 S. Columbia Drive, Commerce and Columbia LLC
- 203 Weekes Street, Seven Smiths Investments, LP
- 206 Weekes Street, Michele Ritan
- 207 Weekes Street, Seaboard Properties, LP
- 210 Weekes Street, Kuhl Heddy
- 211 Weekes Street, Seaboard Properties, LP
- 216 Weekes Street, FRA Management, LLC
- 220 Weekes Street, Seaboard Weekes, LLC
- 223 Weekes Street, FRA Management, LLC
- 224 Weekes Street, Seaboard Weekes, LLC
- 227 Weekes Street, Commerce and Columbia, LLC
- 228 Weekes Street, FRA Management, LLC
- 231 Weekes Street, Commerce and Columbia, LLC

Review of Application

- 1) Please note that in the 8.26.19 email from the applicant's representative, WSE indicated that it would request tabling the public hearing until October 14, 2019 meeting. The applicant stated that the postponement of the public hearing would be requested due to both a scheduling conflict and also due to the time required for the City's Project Civil Engineer to review proposed additional buffer restoration from WSE's team.



Design, Environment & Construction Division
2635 Talley Street
P.O. Box 220
Decatur, Georgia 30031
404-370-4104 • Fax: 404-378-5054
<http://www.decaturga.com>

- 2) The properties involved with this variance are located on four different streets: S. Columbia, Commerce, Freeman Street, and Weekes Street. There have been no changes to these locations since the May 2019 application (see maps in this packet).
- 3) The applicant has applied for a variance from stream buffer requirements for several properties in order to construct a multi-family development on combined lots. At this time, there are no changes to the original site plans for this variance application.

Summary from May 13, 2019 meeting, June 25, 2019 meeting, and August 12, 2019 meeting.

- 4) This application was initially submitted for the May 2019 meeting. After discussion and public comment, the applicant's representative Linda Dunlavy requested that the Board table the application until a further date so that the applicant could meet with Winnona Park residents, address options, and address zoning. Staff notes that a neighborhood meeting was held on June 4, 2019 regarding this variance application at Legacy Park.
- 5) The public hearing resumed on June 25, 2019. At the end of the discussion, the Zoning Board of Appeals voted to table the public hearing until such time that the applicant wishes to return.
- 6) The public hearing resumed on August 12, 2019. At the end of the discussion, the Zoning Board of Appeals voted to table the public hearing until such time that the applicant wishes to return.
- 7) The public hearing resumed on September 9, 2019. On request of the applicant, the Zoning Board of Appeals voted to table the public hearing until such time that the applicant wishes to return.
- 8) The specific variances which are being requested have not changed:
 - a. reductions in the buffers for stream #2 (running north to south on the eastern edge of the property); and
 - b. elimination of the stream buffer requirements for stream #1 (running under Commerce Drive to the site west to east).



Design, Environment & Construction Division
 2635 Talley Street
 P.O. Box 220
 Decatur, Georgia 30031
 404-370-4104 • Fax: 404-378-5054
<http://www.decaturga.com>

Pursuant to the Unified Development Ordinance:

Variances Requested	Existing	Proposed	Ordinance
Stream buffer requirements	Variable – Stream #1, non-compliant buffers for 25', 50', and 75' Stream #2 non-compliant buffers for 25', 50' and 75'	Elimination of buffer for stream #1; and 50' buffer for stream #2	25', 50' and 75' setbacks, UDO Section 9.2.5

- 9) The following documents have been submitted for review and consideration since the September 2019 Zoning Board of Appeals meeting packet:
- a) Email from Charles Bonner, 9.7.19 (page 1)
 - b) Letter from Ash Miller, 9.14.19 with attachments (pages 2-5)
 - a. Matheson et al. v. DeKalb County et al. (pages 6-18)
 - b. Protecting Stream and River Corridors, Creating Effective Local Riparian Buffer Ordinances, Carl Vincent Institute of Government (pages 19-95)
 - c. Zoning and Land Use Law in Georgia excerpt (pages 96-102)
 - d. Map of Addresses, Signatories of Friends of Shoal Creek Petition Opposing WSW/Weekes Street Proposal (pages 103-104)
 - e. Parcels for Potential Mitigation WSE/Weekes Street (page 105)
 - c) Email from Tony Rives, 9.15.19 (page 106)
 - d) Staff report from Jennings Bell, 10.9.19 (pages 107-109)
 - e) Email and document (Memorandum of Understanding) from Linda Dunlavy, 10.7.19 (pages 110-116).

John Maximuk

From: Charles Bonner <charles.bonner@gmail.com>
Sent: Saturday, September 07, 2019 11:35 AM
To: John Maximuk
Subject: Weekes Street Project

Categories: Red Category

CAUTION: This email originated from outside the Decatur, GA network. Please note the sender and maintain caution when opening external links/attachments.

Thank you for the opportunity to comment on the Weekes Street project currently planned. I live in Winnona Park and our child goes to Talley Street school. I believe the City should prioritize development that does not require variances from current environmental and site-based rules. I recognize the hurdles to development at the site, as well as the developer's proposed participation in the Brownfields program due to historical contamination. I am under no illusion that this site is a natural specimen. Even so, if I could choose between the current status quo and the new development's impact to the site and the surrounding area, I would prefer the current status quo.

Please vote no variance.

Thanks,
Charles Bonner
Winnona Drive

/

Ash Miller
128 West Benson St.
Decatur, GA 30030

September 14, 2019

Via Email (John.Maximuk@decaturga.com)

Zoning Board of Appeals
City of Decatur
509 N. McDonough St.
Decatur GA 30030

Re: WSE Development Request for Weekes Street Stream Buffer Variance

Dear Members of the City of Decatur Zoning Board of Appeals:

I appreciate the considerable time and effort this Board has put in to review the application for the WSE Development / Weekes Street variance request, as well as conducting public hearings and reviewing the extensive public comments that have been submitted. As you know, WSE Development seeks to build 322 units and 550 parking spaces on top of an existing stream and forested area, on an assemblage of sixteen individual parcels at 304 Commerce Drive, *et al.* (the “variance”).

Unfortunately, despite the best efforts of this Board, the most significant issues raised in the application remain unresolved. WSE’s variance request still contains several fatal legal flaws, at the most basic levels. The following remaining issues require the Board to deny the application:

- 1. Allowing construction on streams and forests would set a dangerous precedent, and is unacceptable as a matter of law and policy in the City of Decatur**
 - Allowing new development on top of an existing stream and forest is unlawful, inconsistent with City code and plans, bad policy, and bad practice. Approving this variance would undermine the City’s fundamental values and its reputation for

environmental protection. It's simply the wrong thing to do, and inconsistent with our community's vision.

- The City's Environmental Sustainability Board has called this application "highly problematic" and warned that it would set a "dangerous precedent" for future development in the City.
- The Georgia Supreme Court has found that concerns about the adverse precedent of granting a variance request is a valid and sufficient legal basis to deny the variance. *Matheson v. DeKalb County et al.*, 257 Ga. 48, 50 (1987). The Board should deny this variance on this basis.

2. WSE has not met the extremely high burden of showing "extreme hardship," which means property has "little or no" economic value without a variance

- To be eligible for a variance WSE must show "extreme hardship," which means that the property would have "little or no reasonable economic use" without a variance, according to the Carl Vinson Institute of Government at the University of Georgia.
- WSE's chosen site includes over 2 acres of entirely unencumbered land outside of buffer area, which has a very high value in the marketplace. WSE cannot show extreme hardship. This land alone is likely worth hundreds of thousands, potentially millions of dollars, even before improvements.
- The extreme hardship standard is intended to protect the City from "total takings" claims -- where property is regulated after purchase, and leaves the owner with zero or near-zero economic value. This is plainly not the case here -- WSE would acquire the site after the stream buffer regulations were already in effect, and even if the variance were denied, the property at issue would remain extremely valuable.
- According to the Carl Vinson Institute, no variance should be granted into a 25-foot stream buffer setback, even if extreme hardship is shown.

3. Any hardship WSE experiences is of its own making, because it has assembled a development site bisected by two streams, with significant forested area

- Where a landowner has created the boundaries of its own lot, it is not legally entitled to claim hardship to support a variance, because that hardship is self-created.
- WSE seeks to create an entirely new development parcel, a site bisected by two streams and over an acre of mature hardwood forest. It would be unfair and unlawful

to allow a variance for hardship that WSE has itself created by seeking to develop an environmentally sensitive area.

- Approving a variance would create a significant loophole in the City's environmental regulations -- allowing future landowners to strategically assemble environmentally sensitive parcels and then claim hardship.
- In addition, WSE consented to multiple requests from the City for various improvements, which WSE now claims form part of its hardship. As a matter of law, this claim of hardship is not valid. WSE has candidly admitted it created this hardship when it agreed to the City's requests.

4. WSE remains out of compliance with basic UDO requirements, including required alternatives analysis, baseline studies, mitigation, and environmental protection

- This Board requested and the UDO requires that the applicant submit alternative site designs, but WSE has not submitted a single alternative for evaluation by the public or the Board. More than twenty alternatives have been considered privately by WSE, but none have been disclosed for public review. Every alternative considered in private would pipe Shoal Creek. WSE cannot assert that saving the creek is infeasible, when it has never evaluated that scenario.
- After months of opportunity to supplement the record, WSE has failed to conduct basic surveys of natural features on the property as required by the UDO, including trees, aquatic and upland habitat evaluation, and threatened species habitat.
- WSE has not proposed meaningful mitigation to "offset" the "effects" of its proposal and render it "at least as protective" of natural resources and the environment, as required by the UDO.
 - The proposal would remove an acre or more of mature forest and underground 281 feet of stream -- to offset these impacts, the applicant must daylight an equal length of stream and plant buffer area with the same number of mature trees that are removed by construction.
 - Serious mitigation measures are not under consideration, despite the availability of appropriate mitigation sites adjacent to the property.
 - The applicant has not meaningfully studied traffic and its associated impacts (noise, pollution, safety, community character, impact on greenspace).

In light of all the above, this Board should deny the requested variance. Granting the variance would cause tangible harm to nearby property owners and the residents of Decatur, including loss of significant green space, loss of a natural open-air stream, increased noise, pollution, and traffic-induced impacts.

An approval of this variance request would be unlawful, arbitrary and capricious, an abuse of discretion, *ultra vires*, and in violation of affected residents' Constitutional rights to due process and equal protection under the law. But perhaps most troubling, granting this variance request would seriously undermine our City's values of environmental stewardship, and set the wrong precedent for the future of Decatur.

Many thanks, again, for the extensive time and attention you have given to this important matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ash Miller', with a long horizontal flourish extending to the right.

Ash Miller

Encls.

To: Zoning Board of Appeals, City of Decatur
From: Ash Miller
Date: September 14, 2019
Re: Summary of Requirements to Deny Stream Buffer Variance Request, WSE /
Weekes Street Proposal

Summary of Legal Requirements to Deny WSE / Weekes Street Stream Buffer Variance Request

The application for a stream buffer variance submitted by WSE Development for its Weekes Street proposal has several fatal flaws, and should be denied.

1. Building on Streams and Forests Would Set a Dangerous Precedent and is Unacceptable As a Matter of Law and Policy in the City of Decatur

Building a new commercial development on top of an existing stream and forested area is unacceptable as a matter of law and policy in the City of Decatur. This proposal violates relevant provisions of City code, ignores the binding comprehensive plans, and goes against all of the City's efforts to protect our natural environment. Approval of this variance would interfere with effective implementation of the City's environmental protections, and would undermine the City's status as a leader in the field of sustainable development.¹

As the City's own Environmental Sustainability Board (ESB) has warned, "a decision to approve this request would undermine the City's stated policy of protecting environmentally sensitive areas, including stream buffers, and set a dangerous precedent for future development within the City of Decatur."²

¹ See, e.g., Unified Development Ordinance (UDO) 9.2.5.B.6.f, 9.2.5.B.1, 9.2.2; *Avondale – Decatur Livable Centers Initiative Report (LCI)*, at 1 (2002) (defining Decatur LCI goal: to utilize and capture green space taking advantage of the natural drainage systems to create open space and passive recreational opportunities). The City's 2010 Strategic Plan states, "again and again, citizens said they wanted more green spaces, but there is also a sentiment that Decatur should also be a leader in reducing its impact on the environment."

² A copy of the letter sent by the Environmental Sustainability Board to the City Manager dated August 12, 2019, is attached hereto and *available at* <https://decaturish.com/wp-content/uploads/2019/09/Final-ESB-Letter-to-City-Manager-08-12-19.pdf>. I understand the ESB's letter has been provided already to at least one Board member. While the letter has also been published in local media, I attach it here to be certain that all Board members, in fairness, receive a copy, and for one additional reason. By email I had requested confirmation from the City Attorney that City staff would be permitted to review the

Many members of our community have echoed this point, expressing deep concerns that an approval to build on a stream and adjacent forested area would send a clear message to developers that the City's waterways and natural resources are now free to be paved over for commercial development. This concern is well-founded; an approval in this case would allow future development proposals to short-circuit the stringent environmental protections required by City code.

This Board must deny the variance request because it is inconsistent with the City's stated policies of environmental protection, and because of the serious adverse precedent it would set. It is well within the Board's legal discretion to deny the variance on these grounds. The Supreme Court of Georgia has found that a zoning board may deny a variance because of concerns about the precedent the variance would set. The Court has upheld the denial of a variance on that very basis, finding that a denial of a variance was proper where a zoning board received significant public comment opposing the variance, and the variance would have set an adverse precedent. *Matheson v. DeKalb County et al.*, 257 Ga. 48, 50 (1987).³

This Board must deny WSE's variance request, in order to avoid a significant adverse precedent that would cause wide-ranging harm to the future enforcement and effectiveness of our City's environmental laws.

2. Applicant Has Not Met the Extremely Difficult Burden of Showing "Extreme Hardship"

In order to be eligible for a variance, the applicant must show it suffers "extreme hardship" as a result of the stream buffer. UDO 9.2.5.B.3.b. Applicant has not met -- and cannot meet -- this very stringent standard, which requires that to be eligible for a potential variance there must be little or no reasonable economic use of the land without issuance of the variance.⁴

The Carl Vinson Institute of Government at the University of Georgia has published a policy analysis that defines "extreme hardship" for stream buffer variances. The Institute

contents of the ESB letter and allow it to inform their testimony before the Board. However, I received no response to this request, and am accordingly attaching it here because I believe its contents can only improve the quality of decision making in this important process.

³ Attached hereto, and *available at*

https://scholar.google.com/scholar_case?case=5373983197090869303.

⁴ Even once this standard is met, other provisions of law must also be met. But "extreme hardship" is the bare minimum prerequisite to ask for a variance.

defines extreme hardship as property that has “little or no reasonable economic use.”⁵ Variances are intended only in the most extreme cases, to function as a sort of regulatory safety valve to protect the City from a potential “total takings” claim.⁶

Even in cases where property has almost no value, the report makes clear that no variance should be granted to encroach into the 25-foot buffer area. The Vinson Institute report quite plainly states:

A variance should be considered in two cases:

1. When the buffer encroaches on a parcel to the degree that the remaining land is too small for the property owner to make reasonable economic use of it. In other words, there are grounds for a takings lawsuit. In this case, the buffer should be reduced only as much as necessary to allow for reasonable activity, and never less than 25 feet.
2. When the property is too small for the landowner to construct a single family dwelling without encroaching on the buffer. Again, the buffer should be reduced

⁵ Keneth J. Wenger and Laurie Fowler, *Protecting Stream and River Corridors Creating Effective Local Riparian Buffer Ordinances*, at 64 (Carl Vinson Institute of Government The University of Georgia, Public Policy Research Series, 2000) (“Carl Vinson Institute - *Protecting Stream and River Corridors*”), attached hereto and available at <http://www.esalq.usp.br/lcb/lerf/divulgacao/recomendados/outros/wenger2000.pdf>.

⁶ “Total takings” are claims made where the entirety (or near entirety) of a lot is regulated and rendered undevelopable, and the regulation goes into effect after the property is purchased. This category of takings claims is defined by the U.S. Supreme Court’s holding in *Lucas v. South Carolina Coastal Commission*, 505 U.S. 1003 (1992), available at https://scholar.google.com/scholar_case?case=659168721517750079.

In *Lucas*, a beachfront landowner purchased lots that were later made subject to a waterfront regulation which affected the entirety of his lot and rendered the lots of zero value. In that case the parties actually stipulated and agreed that nothing at all could be built on the lot, and the lots had zero economic value. That is plainly not the case for WSE -- who would own at least two acres of completely unregulated land. Moreover, WSE would acquire its property after the stream buffer ordinance was already in effect. Accordingly, WSE would acquire no rights to develop this regulated area. *Lucas*, by contrast, acquired his property before it was regulated, and therefore his rights were “taken” by regulation. WSE couldn’t claim any rights are taken because it could legally never acquire development rights in stream buffer area to begin with. Accordingly, WSE cannot meet the test for a total takings claim, and is therefore not entitled to claim “extreme hardship.”

only as much as necessary to allow for the construction of an average-sized home for a single family.⁷

Neither of these criteria are met in this case. At least two acres of the site that WSE seeks to assemble are entirely unregulated and unimpeded by stream buffer. There is clearly a great deal of economic value to that much land in such a prime location -- it is likely worth hundreds of thousands or millions of dollars, even before development -- and it could be put to beneficial use in myriad ways. WSE's application fails to prove otherwise -- it has submitted no evidence, such as property appraisal or other financial documentation, that its development site would be effectively worthless absent a variance. Nor has it released a single alternative site design to show other configurations of the site are infeasible.

Clearly, two or more acres of property in Decatur can be put to some "reasonable economic use." It is impossible in these circumstances to credibly claim that the land WSE seeks to develop has "little or no reasonable economic use" -- the definition of extreme hardship. WSE has not shown it meets the bare minimum requirement of "extreme hardship" and the Board must therefore deny the variance request.

3. Any Hardship Applicant is Experiencing Has Been Created and Exacerbated by Its Own Actions

WSE's proposal also violates another fundamental principle of variance law: self-created hardship is not eligible for a variance. The UDO codifies this principle, "Variances will not be considered when, following adoption of this Section, actions of any property owner of a given property have created conditions of a hardship on that property." UDO 9.2.5.B.4.

WSE seeks to create an entirely new development parcel, a site that would be bisected by two streams and over an acre of mature hardwood forest. By assembling this parcel and choosing this location, WSE has created the difficulty it now faces, and all of the hardship it now claims to be experiencing. Even assuming that WSE meets the definition of "extreme hardship" (which it does not), it cannot not seek a variance from hardship it created itself.

The textbook definition of self-created hardship is where the applicant themselves created the boundaries of the parcel of land which they then claim is undevelopable. For example, as described in the text "Zoning and Land Use Law in Georgia," (excerpts attached), a

⁷ Carl Vinson Institute - *Protecting Stream and River Corridors*, at 30, 64 (variance only allowed where "little or no reasonable economic use of the land is available without reducing the width of" a buffer).

landowner who created an undevelopable lot is not entitled to a variance from hardship that the landowner itself created.⁸

WSE has plainly done the same here. It seeks to create a new property boundary from whole cloth by assembling 16 parcels that have two streams running across them and over an acre of mature forest. It cannot fairly now claim that this "parcel" -- which WSE itself created -- is undevelopable. To allow this type of variance creates an end-run around environmental protections and any protected resources would be at risk.

Allowing a variance here would be analogous to buying up all the lots surrounding a protected wetland or pond, combining them into one site, and then claiming that because nearly the whole site is wetland or pond, it is eligible for a variance. The self-created hardship rule prevents this type of situation. The Board should not allow claims of hardship on assemblages like this one -- these types of claims of hardship are just thinly-disguised attempts to circumvent legitimate environmental regulations.

WSE has further exacerbated its alleged hardship by agreeing to multiple requests for improvements from the City. It has candidly admitted in its application that it agreed to these requests. The UDO is clear -- applicant cannot have taken actions that "created conditions of a hardship." UDO 9.2.5.B.4. WSE has quite plainly admitted that they have done so, stating in its initial application materials that it arguably contributed to its own hardship by "agreeing to City requests for infrastructure improvement."⁹ While standing alone this admission may not be sufficient to deny WSE relief, in the context of the entirety of these circumstances, it is clear that the applicant has engaged in an ongoing pattern of conduct -- from selecting the sensitive site, creating a new development boundary, and agreeing to further site restrictions -- that has created the hardship it now claims. The Board is therefore constrained by its own code to deny the variance. The Board cannot grant a variance in a manner that violates City code.

To grant the variance where the applicant has in fact admitted that it is in violation of this provision would be manifestly an abuse of discretion, arbitrary and capricious, and subject the City to unnecessary and avoidable legal issues. It is unfortunate that the applicant has placed the Board in this situation, but the applicable law requires that the Board deny the variance on this ground.

⁸ Weissman, Dillard, and Skinner, *Zoning and Land Use Law in Georgia*, at 572, Section 14.3.3 (Council for Quality Growth, 2013), excerpts attached hereto.

⁹ WSE Development, Letter/Statement of Intent at 6.

4. Applicant Has Failed to Comply with Basic UDO Requirements of Alternatives, Baseline Studies, and Environmental Protection

Applicant has had the benefit of several months to correct the deficiencies in its application. Unfortunately, these shortcomings remain, with respect to lack of an alternatives analysis, baseline studies, mitigation, or compliance with the City code provisions requiring a high level of environmental protection.

a. No Alternatives Have Been Submitted

Even after multiple hearings on this application -- and after being specifically requested to provide an alternative design by the Board, WSE has failed to provide a single alternative design for its proposed project, as required by the UDO 9.2.5.B.5.e.

The ESB has recommended "consideration of alternatives where the East-West branch of the creek is kept daylight and the trees south of it are preserved."¹⁰ Applicant has not done so. More than twenty alternatives have been considered in private by WSE, but every one of these sought to pipe the creek. And none of these have been subject to public comment or review by this Board. Applicant's assertion that not a single alternative site design is feasible rings hollow.¹¹

Because WSE has failed to comply with the UDO requirements on alternatives, the application must be denied.

b. Baseline Studies Have Not Been Completed

The UDO requires the applicant to submit baseline surveys of natural features on the proposed site. WSE has failed to do so. Basic studies such as a tree survey, habitat study,¹²

¹⁰ ESB letter at 9.

¹¹ No financial projections or other information has been submitted to substantiate the applicant's claim that its current proposal is the only one feasible. Nor have any financial analysis of alternative designs been submitted -- the applicant could attempt to show through financial analysis that alternative designs are not economically feasible -- but it has not done so. There is no evidence to substantiate the applicant's assertion that no alternatives are possible. Applicant has specifically chosen not to submit the very evidence that could back up such an assertion -- namely, an alternatives analysis.

¹² There has been no meaningful analysis of the aquatic or upland habitat that would be destroyed by this proposal. Applicant has submitted a short worksheet for purposes of calculating mitigation credits for the Army Corps of engineers, but not comprehensive baseline study of habitat conditions that establishes the ecological functions of the stream and forested

greenspace impact study, or on-site protected species analysis,¹³ have still not been done. Without this information, it is not possible for this board to evaluate what type of mitigation measures that would offset the effects of the proposal as required by UDO 9.2.5.B.1.

The City Environmental Sustainability Board has advised that baseline studies are necessary to evaluate the 11 enumerated benefits of stream buffers:

buffer area. We have no site-specific information on what species are present on site - we know primarily that whatever species are present, their habitat will be entirely destroyed.

¹³ Applicant submitted additional materials regarding the Migratory Bird Treaty Act (MBTA), but has made no showing that unlawful disturbance of habitat would not occur from tree removal. If nests of these protected species are present on site, disturbance of these nests would be unlawful under the MBTA. Applicant simply does not know whether nests are present. As a result, we still do not know if Federal law will be violated when the on-site trees are chopped down, and the applicant has apparently done nothing to examine actual, on-site conditions to evaluate this risk.

The MBTA materials that applicant has submitted include a printout from a database of endangered and threatened species, and a screenshot of sightings of protected species nearby. The printout specifically states it is not a project-level evaluation of impacts. And the printout does not evaluate the species at issue here, the pileated woodpecker or chimney swift. The listing does not include the pileated woodpecker or chimney swallow as species of concern, despite verified sightings of both of these species in the vicinity of the site. In addition, applicant submitted screenshots of a database of sightings of these two species which substantiate that these species are present in the neighborhood. These screenshots appear to have been printed out by counsel for applicant (inferring from the other browser tabs open on the screen, which include a legal filing system known as Odyssey E-file). But these screenshots contain no information about on-site conditions, and printouts from counsel could not qualify as expert site evaluation. We know now that these protected species are close by, but we have no information on whether they live on-site. It would be both unlawful and irresponsible for the City to approve removal of an acre of tree cover in these circumstances.

Finally, the applicant includes a paragraph of text from its Army Corps species evaluation. However, this paragraph is based on the printout list of species referenced above -- which did not consider pileated woodpeckers or chimney swifts. Accordingly, this analysis is of no utility, and again is not based on any on-site data. (These materials are available in the September Board Packet, part 6, at PDF pages 5-12, available at https://www.decalurga.com/sites/default/files/fileattachments/zoning_board_of_appeals/meeting/packets/8189/zba.sep_2019_packet_6_of_8.pdf; the database printout list of species is available at p. 50 of part 5 of that packet, available at https://www.decalurga.com/sites/default/files/fileattachments/zoning_board_of_appeals/meeting/packets/8189/zba.sep_2019_packet_4_of_8.pdf).

... [B]aseline studies should provide sufficient information to evaluate each of the following substantive environmental areas where effects are anticipated, as identified in City Code at UDO 9.2.2.A -- i.e., the benefits of stream buffers.¹⁴

In the instant case, the volume of traffic impacts is sufficient to raise questions about the contribution of increased traffic volumes to sediment loading, toxins in runoff, noise, community safety issues, and related traffic impacts.¹⁵ However, the Board has not examined these issues to date.

c. The Proposal is Unable to Meet Decatur's Environmental Protection Standards

WSE's proposal would remove up to an acre of mature forest and underground 281 feet of stream, but does not propose to replant or replace this amount of tree cover on the same site or adjacent property. Despite undergrounding 280 feet of stream, WSE does not propose any daylighting of any length of stream. These mitigation measures may be feasible, but have not been considered.¹⁶ The proposal does not meet the requirements of UDO 9.2.5.B.1 to offset the effects of the proposal.

The only meaningful way to offset impacts of this magnitude is substantial compensatory mitigation -- unfortunately, efforts toward mitigation have focused almost entirely on stormwater. To attempt compliance with the UDO, WSE would need to be at least as serious about impacts to the stream and trees as it is about stormwater. WSE would have to pursue

¹⁴ ESB Letter to City Manager at 5.

¹⁵ The negative impacts from traffic to stream buffer benefits have been outlined in a separate memo to the Board, which is incorporated herein by reference. These impacts would need to be evaluated thoroughly, and offset, if the Board were to seek to move toward an approval.

¹⁶ For example, there is a parcel of City-owned property across the street from Commerce that is 291 feet in length, and underneath that site along its length runs a piped segment of Shoal Creek in a north-south direction. (The site is listed under the address of 0 Commerce Dr., Parcel ID: 15 247 07 086, highlighted in the attached map.) If the applicant seeks to mitigate the actual effects of its proposal, it should consider daylighting 281 feet of creek on that parcel. Similarly, there is a substantial paved area of property to the southeast of the site (240 S. Columbia, Parcel ID: 15 234 04 027, also attached) -- an acre of trees could be planted in that area to offset the impact of tree removal. Of course, even these mitigation measures would not fully offset the effect of removing a half-acre of trees that are currently within stream buffer area, because the City-owned site is only 0.32 acres, so is not large enough to allow for that magnitude of mitigation. But for our purposes, it is apparent that the applicant is not serious about offsetting the real-world impacts of its proposal, or this scale of mitigation measures would have been under consideration from the outset.

extensive on-site or immediately off-site mitigation to offset the undergrounding of 281 feet of Shoal Creek and the destruction of an acre of tree cover. To offset the loss of this extent of stream, WSE would need to daylight an equivalent length of stream, and plant an equivalent area of stream buffer with mature trees. WSE has indicated no willingness to do so. Bank stabilization of downstream areas is a helpful concept -- but it does not come close to offsetting the actual effects of undergrounding a stream and removing substantial tree cover.

Serious mitigation is not under genuine consideration. This circumstance highlights that WSE's proposed development footprint is oversized for the environmentally sensitive site it seeks to develop. It is all but impossible to comply with City code for impacts of this magnitude -- the effects of the proposal are simply too great to be offset. Because the proposal cannot comply with Decatur's environmental protection standards, it must be denied.

Negative Impacts of Granting a Variance on Nearby Residents

Should the Board fail to follow the UDO and the above requirements, and choose to grant the requested variance, tangible and concrete harm would be inflicted on residents who live, travel, or engage in recreation near the proposed site. These harms would include immediate loss to nearby neighbors of a significant green space, including forested area, and an open air stream. Additional impacts include destruction of habitat, as well as increased noise, pollution, and traffic-induced impacts. These harms and damages are not general to all citizens of the City or State -- but would accrue as special, individualized harm to property owners who live in close proximity to the site, can see the site from their property, appreciate the presence of protected species of birds, routinely walk or drive by the site, and whose property would be specifically and adversely impacted by the granting of this variance.

More than a hundred residents of Decatur have signed a petition circulated by the Friends of Shoal Creek group, urging the City to deny the variance. A map of the locations of the addresses of these signatories is attached hereto. Many signatories who oppose this development live where the impacts would be directly felt -- in close proximity to the site, directly downstream, and in and around the Winnona Park neighborhood. These citizens would be specifically and adversely impacted by the negative effects if this variance is granted.

A decision to approve this variance request would be in violation of the City's UDO and would be arbitrary, capricious, *ultra vires*, an abuse of discretion, and unenforceable. An approval of the variance would violate the constitutional due process rights of aggrieved residents -- these rights are protected by Art. 1, Sec. 1, Para. I and Art. I, Sec. III, para. I of the Georgia State Constitution. In addition, these due process rights are protected under the U.S.

Constitution, specifically the due process clause of the 14th Amendment and the equal protection clause of the U.S. Constitution.

These violations of law would of course present a substantial case for Superior Court review of this Board's decision, should the Board choose to grant the variance request.

But of course, local residents do not have the financial or legal resources of a professional real estate development company, and should not need to contemplate legal action in order for their government to follow the letter and spirit of its own code and community plans. I therefore urge you to do the right thing, follow City code in your decision, and deny the variance request.

Conclusion

Denying this variance request is not just the right thing to do -- it is also the only lawful path forward. Approving this variance would violate the UDO, fundamental principles of variance law, and Decatur's community vision for itself. The applicant has, unfortunately, created this situation, where its proposal is unable to comply with the UDO and relevant principles of zoning law. While this is unfortunate, it is not the role of the Board to correct deficiencies in the process that the applicant has followed to date, nor is it within the Board's power to do so. This Board is constrained by the above-cited provisions of law to deny the variance request.

Thank you again for your considered and thoughtful work on behalf of the City.

Attachments

1. August 12, 2019 Letter from ESB to City Manager
2. *Matheson v. DeKalb County*, 354 S.E.2d 121 (Ga. 1987)
3. Carl Vinson Institute of the University of Georgia, *Protecting Stream Buffer Areas*
4. Excerpts, Zoning and Land Use Law in Georgia (Council for Quality Growth)
5. Map of Addresses, Signatories of Friends of Shoal Creek Petition against WSE/Weekes Variance Request
6. Maps of potential adjacent mitigation areas, not considered by applicant:
 - a. 0 Commerce Dr., a City-owned parcel of land across Commerce (Parcel ID: 15 247 07 086);
 - b. 240 S. Columbia Dr., in particular the southeast portion of site showing significant impervious surface (Parcel ID: 15 234 04 027)

257 Ga. 48 (1987)
354 S.E.2d 121

MATHESON et al.
v.
DEKALB COUNTY et al.

44235.

Supreme Court of Georgia.

Decided April 8, 1987.
Reconsideration Denied April 22, 1987.

Dillard, Greer, Westmoreland & Wilson, George P. Dillard, for appellants.

Albert Sidney Johnson, for appellees.

MARSHALL, Chief Justice.

In 1982, the appellants-plaintiffs purchased property on Clifton Road which was improved with a duplex. Acting upon the alleged advice of DeKalb County Development Department officials — given prior to the purchase — that the property could be subdivided into two lots to permit the construction of a residence on the rear lot, the plaintiffs had the property so subdivided, and obtained a building permit for such construction. The permit became void after six months because no construction was begun, and a second permit was issued on the basis of the plaintiffs' having obtained the first permit. However, the permit was revoked and a stop-work order was issued when it was discovered that, at the time each permit was issued, the two lots violated lot-width and side-yard requirements of the county zoning ordinance. At the time the stop-work order was issued, the plaintiffs had incurred engineering, architectural, and other costs for the residence. Without appealing from the issuance of the stop-work order, the plaintiffs filed an application for a variance. After exhausting administrative appeals of the denial of the variance, the plaintiffs brought this action against the county, seeking: (1) a preliminary injunction to prevent the defendants from stopping the construction; (2) a writ of mandamus requiring the issuance of a building permit and other incidental permits; (3) a declaratory judgment that the zoning ordinance as applied to the plaintiffs' property violated the taking, due-process, and equal-protection clauses of the federal and state Constitutions; and (4) damages, attorney fees, and expenses of litigation. The plaintiffs appeal from judgment for the defendants. We affirm.

1. Premitting the issue of the effect of the plaintiffs' not having administratively appealed from the issuance of the stop-work order, and assuming that the issues raised in this judicial action were ripe for adjudication, we hold that the trial court did not err in denying all of the relief here sought.

49 2. There was no necessity for a preliminary injunction, as the *49 construction of the residence had not progressed to the point that delay would cause damage to the property or the structure, and the status quo pending final determination was effectively maintained by the stop-work order.

3. "The right to extraordinary aid of mandamus exists only when the person seeking it has a clear legal right to have the particular act performed." *Hernandez v. Camden County Commrs.*, 242 Ga. 76, 77 (247 SE2d

870) (1978) and cits. The issuance of a building permit results in a vested right only when the "permit has been legally obtained and is valid in every respect." Keenan v. Acker, 226 Ga. 896 (178 SE2d 196) (1970), and has been "validly issued." Barker v. County of Forsyth, 248 Ga. 73, 75 (281 SE2d 549) (1981). Where a permit is issued by a governing body in violation of an ordinance, even under a mistake of fact, it is void, and its holder does not acquire any rights; even a substantial expenditure in reliance on a void permit does not raise an estoppel. Corey Outdoor Advertising v. Bd. of Zoning, &c. of Atlanta, 254 Ga. 221 (3, 4) (327 SE2d 178) (1985) and cits. Neither of the exceptions recognized in Corey, supra, p. 227 (4) — i.e., where the governmental officials had either changed their minds after assuring the applicant that the development was proper or actually tried to amend the ordinances which had previously permitted the use in question — is applicable here.

The appellants argue that the subject property had already been developed for residential use prior to the adoption of the county zoning ordinance and subdivision regulations; that the Druid Hills area, in which the property is situated, had been arbitrarily placed by the county in an R-75 zone, which would allow to be built on this property over four houses per acre, each with a 1,000-square-foot minimum floor area, which would be out of character with the development of the area and the purposes of the zoning ordinance; and that the R-75 restrictions therefore do not apply to the present situation, which is governed rather by the provisions of § 11-2343 (1) (c) of the county code, which allegedly authorizes the construction here sought. However, the subject property was zoned R-75 at the time of the enactment of the zoning ordinance in 1956, and has retained, and complied with the use and development standards for, that classification ever since. Therefore, no reason appears to exclude the property from the standards and requirements of the existing zone. Thus, even assuming that the development department had the authority to sanction the type of subdivision and construction undertaken by the plaintiffs (which the appellees-defendants dispute), the issuance of the building permits which otherwise violated the zoning ordinance created no rights in the plaintiffs.

50 4. In Gradous v. Bd. of Comms., 256 Ga. 469, 471 (349 SE2d 707) (1986), we held: "The burden is on the plaintiff to come forward with *50 clear and convincing evidence that the zoning presents a significant detriment to the landowner and is insubstantially related to the public health, safety, morality, and welfare." We also said, "the proper focus ... in all zoning cases, is whether the appellant has suffered a significant deprivation insubstantially related to the public health, safety, morality or welfare. The validity of a zoning ordinance can be called into question only if the appellant has suffered an unconstitutional deprivation." *Id.* p. 470. Although the zoning ordinance here does operate to prevent the construction of a residence on the rear lot in the absence of a variance, the plaintiffs are not being denied the use of the property, as the property (the front lot after its subdivision) contains a residence.

5. With respect to variances, both the 1976 and 1985 zoning ordinances provide very specific criteria for the grant of a variance: "The board [of appeals] shall hear and decide applications for variances, other than those decided by the development director under the provisions of article G, from the development requirements of this chapter, but only where by reason of *exceptional narrowness, shallowness, or shape* of a specific piece of property, which *at the time of adoption of this chapter, was a lot or plat of record*; or where, by reason of *exceptional topographic conditions or other extraordinary or exceptional conditions* of a piece of property, the strict application of the development requirements of this chapter would result in *practical difficulties* to, or *undue hardship* upon, the owner of this property, *provided that this relief may be granted without substantially impairing the intent and purpose of this chapter.*" (Emphases supplied.) DeKalb County Code § 11-2323 (3) (1985).

Even assuming that the plaintiffs' property met one or more of the criteria of the ordinance, however, the grant of a variance was within the discretion of the zoning authority. "On review, the trial court is authorized to review the variance decision to determine whether the board or county exceeded its authority, abused its discretion, or acted arbitrarily or capriciously with regard to the plaintiffs' constitutional rights. [Cit.]" *Intl. Funeral Services, Inc. v. DeKalb County*, 244 Ga. 707, 710 (2) (261 SE2d 625) (1979). Here, there was evidence that the Board of Appeals considered the effect of establishing a precedent for subdividing lots, and neighborhood opposition. The "practical difficulties" and "hardship" complained of here were not inherent in the property, but result from its subdivision by the plaintiffs. "Local zoning authorities are not required to grant variances to allow expansion or correct planning errors of the property owner." *Intl. Funeral Services, supra*, p. 710 (2). The plaintiffs failed to carry their burden of showing exceeding of authority, abuse of discretion, arbitrariness, or capriciousness in the decision to deny the application. Id. p. 710 (2). The zoning ordinance is not unconstitutional *51 as applied to the plaintiffs and acted upon by the defendants.

Judgment affirmed. All the Justices concur, except Smith and Bell, JJ., who dissent.

Save trees - read court opinions online on Google Scholar.



Protecting Stream and River Corridors

Creating Effective Local Riparian Buffer Ordinances

by Seth J. Wenger and Laurie Fowler

Model Ordinance Included

Carl Vinson Institute of Government
The University of Georgia

Protecting Stream and River Corridors

*Creating Effective Local
Riparian Buffer Ordinances*

By Seth J. Wenger and Laurie Fowler

Model Ordinance Included

Carl Vinson Institute of Government
The University of Georgia

PUBLIC POLICY RESEARCH SERIES

Richard W. Campbell, *Series Editor*

Development and production of the Public Policy Research Series evolved from a belief that the Vinson Institute, located at the state's land grant university, is uniquely situated to anticipate critical public problems and issues and conduct long-term, objective, and systematic research on them. The series was initiated in 1987 and serves as a forum for the publication of policy research, with the intent of contributing to more informed policy choices by decision makers in the state. New to the series in 2000 are "Policy Notes," two-page statements designed to define and summarize issues and to direct recipients to the series papers as well as other policy-related publications and resources.

Previously Published Policy Papers

Whose Water Is It? Major Water Allocation Issues Facing Georgia (1998)
The Health Care Challenge in Georgia: A Review of the Problems and Policy Options (1994)
Georgia's Environmental Policy: New Directions (1994)
Public Employees in Georgia: How Many Is Too Many? (1993)
The Partisan, Racial, and Gender Makeup of Georgia County Offices (1993)
Distributing Georgia's General-Purpose Local-Option Sales Tax Revenues: An Examination of the Present Policy and Some Options (1992)
Georgia's Air Quality: Status and Implications of the Federal Clean Air Act of 1990 (1991)
School Dropouts: A Two-Generation Problem (1990)
Traffic Safety in Georgia: An Analysis of Alternative Policies (1989)
Municipal Solid Waste Management in Georgia: Policy Alternatives (1989)
Hazardous Waste Management Facility Siting in Georgia (1987)

Previously Published Policy Notes

"Increasing the Speed Limit in Georgia:
Have Rural Highways Become More Dangerous?" (April 2000)
"Does City-County Consolidation Save Money?
The Unification of Athens-Clarke County Suggests That It Might" (March 2000)
"Protecting Stream and River Corridors:
Creating Effective Local Riparian Buffer Ordinances" (February 2000)

Public Policy Research Series web site: www.cviog.uga.edu/pprs/papers.htm

**Protecting Stream and River Corridors:
Creating Effective Local Riparian Buffer Ordinances**

Editing: Inge Whittle

Design and production: Reid McCallister

Cover design: Jessica Mendelson

Cover photo: Ed Jackson

Digital composition: Lisa Carson

Proofreading: Norma Pettigrew

Copyright © 2000 by the Carl Vinson Institute of Government, University of Georgia. Printed in the United States of America. All rights reserved.

ISBN 0-89854-198-0

Library in Congress Cataloging-in-Publication Data Pending

Opinions expressed in the Public Policy Research Series papers are those of the authors and are not necessarily endorsed by the Vinson Institute of Government or the University of Georgia.

Foreword

Sooner or later, every Georgia county or municipality that has experienced a significant amount of growth must turn its attention to the issue of water quality. Local officials now have a number of tools at their disposal for offsetting the impacts of development and protecting aquatic resources. Among the most cost-effective of these methods is the riparian buffer ordinance. Buffers are mandated by state law and in recent years have been the subject of much debate. The purpose of this paper, part of the Public Policy Research Series of the Carl Vinson Institute of Government, is to inform that debate and to provide local officials with the information they need to craft buffer ordinances that are appropriate for their jurisdictions.

The foundation of *Protecting Stream and River Corridors: Creating Effective Local Riparian Buffer Ordinances* is a set of buffer-width guidelines that are based upon one of the most comprehensive scientific reviews conducted to date. This scientific basis is designed to ensure that buffer ordinances established in accordance with the recommendations will meet water quality goals and be defensible. Guidelines are also provided for minimizing the possibility of infringing on the rights of property owners, which is often a concern in the introduction of new land-use ordinances. A model ordinance specifically designed for Georgia counties and municipalities is included.

The authors of this paper are Seth J. Wenger, a conservation ecologist and policy analyst at the University of Georgia Institute of Ecology; and Laurie Fowler, director of Public Service and Outreach at the Institute of Ecology. Ms. Fowler also holds an appointment at the University of Georgia School of Law and has 17 years of experience in environmental law and the development of local policies for natural resource protection. Dr. Wenger is the author of *A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation*.

To ensure that the guidelines presented here are reasonable, the authors asked several leading riparian buffer researchers, as well as other scientists, to review them. Their comments and changes were incorporated into the final recommendations.

The intent of the Public Policy Research Series is to present objective and systematic research on complex policy problems and issues confronting the state of Georgia and its local governments. As part of this effort, *Protecting Stream and River Corridors* is targeted at elected officials who are considering establishing or improving their riparian

buffer ordinances, along with planning and zoning officials who will implement and enforce such ordinances. Property owners, developers, and other citizens may also find the contents informative. We hope that these individuals benefit from the publication.

Henry M. Huckaby
Director
Carl Vinson Institute of Government

April 2000

Acknowledgments

Many people contributed to the successful completion of this publication. First, we would like to acknowledge the scientists who reviewed the riparian buffer literature review: Ronald Bjorkland, Judy Meyer, Michael Paul, and Cathy Pringle, University of Georgia; David Correll, Smithsonian Environmental Research Center; and Richard Lowrance (USDA Agricultural Research Service). Various other scientists and faculty members answered questions: Miguel Cabrera, Bruce Ferguson, Byron J. "Bud" Freeman, Mary Freeman, Jim Kundell, University of Georgia; Robin Goodloe, U.S. Fish and Wildlife Service; and Parke Rublee, University of North Carolina-Greensboro.

Numerous local, federal, and state officials were very helpful: Ken Patton, Cherokee County Planning and Zoning Office; Gail Cowie, Institute for Community and Area Development; Dee West, City of Alpharetta; Michael Gleaton, Jim Frederick, and Lucy Herring, Georgia Department of Community Affairs; Lee Carmon and Joseph Tichy, Northeast Georgia Regional Development Center (RDC); Lisa Hollingsworth, Chattahoochee-Flint RDC; Tom O'Bryant and Larry Sparks, Georgia Mountains RDC; Nap Caldwell and Chris Skelton, Georgia Department of Natural Resources; and Jimmy Bramblett and Steve Lawrence, Natural Resources Conservation Service.

Most of the GIS work was conducted by Thom Litts and Andrew Homsey. Additional assistance was provided by Liz Kramer, Karen Paine, J. P. Schmidt, and Brian Toth of the NARSAL lab. Assistance in drafting the ordinance was provided by Karen Tyler, University of Georgia. Dell MacGregor, DeKalb County Soil and Water Conservation District, provided comments and suggestions. Scott Crabtree and Thelma Richardson, University of Georgia, provided computer support. Finally, we thank the students of the Fowler and Pringle labs, as well as all the other students, faculty, and staff at the University of Georgia Institute of Ecology for their suggestions and support.

Contents

Executive Summary 1

Introduction 5

Exceeding Minimum Standards 6

Functions and Characteristics of Riparian Buffers 7

Results of Riparian Buffer Research 8

Reducing Erosion and Sedimentation 8

Trapping/Removing Phosphorus, Nitrogen, and Other
Contaminants 8

Protecting Wildlife Habitat 9

Achieving Effective Buffer Extent, Vegetation, and Width 9

Extent 9

Vegetation 11

Width 11

Prohibited Activities 13

Providing Additional Wildlife Habitat 13

Effective Buffer Ordinances 14

A Selective Review 14

Alpharetta 14

Douglas County 14

Fulton County 15

Madison County 16

Winston-Salem/Forsyth County, North Carolina 16

Greensboro, North Carolina 17

Chester County, South Carolina 17

Brown County, Wisconsin 18

Charles County, Maryland 18

1993 Survey of Buffer Programs 19

Tools to Protect Riparian Buffers	21
Forms of Riparian Buffer Ordinances	21
Overlay Zoning Ordinances	21
Freestanding Ordinances	21
Floodplain Protection Ordinances	21
Auxiliary Ordinances	22
Erosion and Sedimentation Control Ordinances	22
Impervious Surface Limits	24
Nonregulatory Riparian Buffer Preservation Tools	25
Transferable Development Rights	25
Density Transfers	26
Conservation Easements	27
Acquisition	27
An Effective Buffer Ordinance: The Components	29
Meeting Minimum Standards	29
Flexibility and Variance Procedures	30
Exceptions and Prohibitions	30
Good Communications	32
Determining Clear Variables	32
Ordinance Enforcement	33
Minimizing the Effects of Riparian Buffer Crossings/ Bypasses	34
Supporting Restoration	35
Buffers and Private Property Rights	36
The Issue of Takings	36
How Much Land Is Affected by Riparian Buffers	38
Tax Parcel Map Analysis	38
Countywide Analysis	42
Conclusions	43

Economic Considerations Regarding Buffers 44

The Costs 45

The Benefits 46

Direct Economic Uses 46

The Value of Recreation and Tourism 46

Property Value Increases 47

The Value of Clean Water 48

The Value of Endangered Species 50

Regional Quality of Life Benefits 51

Conclusions 51

Summary of Recommendations 53

References 55

Figures

1. Topographic Maps vs. Soil Survey Maps 10
2. Applying a Flexible-Width Buffer 13
3. Area of Tax Parcels Covered by Riparian Buffers of Different Widths 39

Tables

1. Proportion of Parcels Covered by Riparian Buffers of Different Widths 41
2. Frequency of Land Cover Types in Riparian Zones in Cherokee County 43
3. Economic Costs and Benefits of a Riparian Buffer Ordinance 45

Appendixes

- A. Model Riparian Buffer Ordinance (fixed width) 59
- B. Additional Related Buffer Resources 67

Executive Summary

The purpose of this paper is to support the efforts of local governments in Georgia that have made policy decisions to develop riparian buffer programs. A riparian buffer is a strip of naturally vegetated land along a stream or river which is protected to maintain healthy aquatic ecosystems and to provide a range of other environmental, economic, and social benefits. These benefits are numerous:

- Trapping and removing sediment from runoff
- Stabilizing stream banks and reducing channel erosion
- Trapping and removing nutrients and contaminants
- Storing flood waters, thereby reducing property damage
- Maintaining habitat for fish and other aquatic organisms
- Providing terrestrial habitat
- Maintaining good water quality
- Improving aesthetics, thereby increasing property values
- Offering recreational and educational opportunities

Despite their importance, several barriers stand in the way of effective buffer ordinances. For one, the riparian buffer requirements imposed by state laws do not provide a uniform and effective system of protection. For another, concerns over property rights have led many local officials to shy away from ordinances, however beneficial, due to fears of “takings” lawsuits. This paper is intended to help local governments develop effective, comprehensive riparian buffer ordinances that, properly administered, will not generate takings claims. A model ordinance is included.

In a monograph published by the Institute of Ecology of the University of Georgia (Wenger 1999), the author provides a thorough analysis of scientific buffer research that is applicable to Georgia. That review determined that the most effective buffers are at least 30 meters or 100 feet wide, composed of native forest, and are applied to all streams, including very small ones. Ideally, the width of the buffer will vary based on local conditions such as slope, width of the floodplain, presence of wetlands, and other factors. Two variable-width formulas that incorporate such factors are presented. The first specifies a minimum width of 100 feet, while the second provides for a minimum width of 50 feet. For local governments that find a variable-width formula too cumbersome to administer, recommendations are also provided for a fixed width buffer of 100 feet. Other widths are possible and reasonable, but narrower buffers provide significantly less benefits, and no buffer under 50 feet can be considered very effective.

The following activities and structures are not appropriate within a riparian buffer:

- Land-disturbing activities, including construction
- Impervious surfaces
- Logging roads
- Mining
- Septic tank drain fields
- Application of pesticides and fertilizer
- Waste disposal sites
- Livestock

The 1999 study included a review of existing riparian buffer ordinances from Georgia and neighboring states. Among the local governments in Georgia that have passed effective buffer ordinances are Alpharetta, Douglas County, and Fulton County. These ordinances, together with selected buffer programs from a more thorough national review by other researchers in 1993, can provide guidance for other local governments in Georgia and are discussed in this paper. The study showed that a local buffer ordinance can take a number of different forms. For those local governments with zoning laws, an ordinance that creates a buffer overlay district is the best approach. The next best alternative is a stand-alone ordinance. Buffer protection could also be incorporated into a floodplain ordinance or an erosion and sedimentation control ordinance.

An effective riparian buffer ordinance will have the following characteristics:

1. It will meet the minimum standards for protection under the Georgia Planning Act and the Mountain and River Corridor Protection Act. A good buffer ordinance will not only adhere to state requirements, but will incorporate those requirements into a single set of local regulations, making it easy to administer.
2. It will provide for flexibility and variance procedures. In many cases, it is possible to slightly reduce the width of a portion of the buffer to accommodate the needs of a landowner while not significantly affecting buffer performance. This can be incorporated into an ordinance through rules for "minor exceptions" or "buffer averaging." In extreme cases, a variance that significantly reduces the buffer width will need to be issued to provide regulatory relief to property owners. The buffer ordinance should include variance criteria and procedures that are stringent but fair.
3. It will provide an exception for existing land uses. In other words, properties are only affected by the buffer ordinance when they

change use—for example, when agricultural land is developed for residences.

4. It will provide exceptions for certain activities. Agriculture is traditionally outside the regulatory domain of local governments and may be exempted (although certain restrictions on pesticide and fertilizer application are appropriate). Forestry is acceptable within limits, although cutting within 50 feet of the stream should not be allowed. Structures such as boat ramps, which by their nature need to be on or near a stream, are also excepted.
5. It will include guidelines for buffer crossings, which should be minimized, and buffer restoration, which is sometimes necessary.

In administering a buffer ordinance, good communication with property owners is essential. This reduces the likelihood of opposition based on irrational fears and misunderstandings regarding the law. Proper enforcement is also a necessity, although previous experiences suggest that the enforcement burden need not be great. A simple and reliable system for determining buffer width—for those local governments with a variable-width ordinance—is also important. A model ordinance, an appendix to this paper, incorporates all of the provisions discussed here.

A buffer ordinance based on the recommendations contained in this paper and properly enforced should withstand any legal challenges based on property rights. One concern to local governments and land owners is the takings issue. Legally, a takings can occur when government regulates property to such a degree that little economic use is left to the landowner. However, a buffer ordinance will not usually preclude use of a property and will not necessarily reduce property values. In those cases where properties are severely impacted, the owner should receive a variance.

To analyze the impact of buffers on property rights, we examined the proportion of land parcels covered by buffers of various widths (50, 75, and 100 feet). The study showed that parcels of less than 1-2 acres can be significantly impacted by relatively narrow buffers. However, since parcels of this size or smaller have generally been dedicated to residential use and are unlikely to be converted to other uses, they are exempted from an ordinance. If they are not exempted, their owners would qualify for a variance. Large parcels of 70 acres or more usually lose less than 10 percent of their land area to buffers, a portion that should not significantly reduce their value (especially when the economic benefits of buffers are considered). Often,

Recommendations
Pass a riparian buffer ordinance based on the included model.
Develop a public information campaign explaining benefits and features of buffer ordinances.
Identify critical riparian areas in which existing land uses threaten water quality.
Identify wildlife areas, historic/prehistoric sites, and other areas meriting preservation.
Establish impervious surfaces limits.
Properly enforce erosion and sedimentation control statutes.
Amend existing floodplain ordinance to emphasize importance of limiting floodplain development and to prohibit certain activities harmful to water quality.
Set a 25 NTU turbidity standard.

the riparian zone is the least suitable area for development and is left wooded anyway. For example, a land cover analysis showed that in Cherokee County, a typical urbanizing county, over 89 percent of the area along streams is still forested.

Although riparian buffers can reduce the useful area of properties, they can also increase property values and provide other economic benefits. Properties near healthy, protected streams are worth more than properties located farther away or near unhealthy, aesthetically unpleasant waterways. Buffers protect water quality, which has immense economic value. By keeping sediment out of rivers, for example, buffers reduce the expenses of drinking water treatment plants. Clean streams and rivers are also valuable for recreation and tourism, and are vital factors in attracting new businesses and residents. Finally, protecting streams with buffers is a low-cost way to enhance the survival of endangered aquatic species. In short, riparian buffers are not only essential tools for environmental protection, they are also important factors in the long-term economic health of a community.

Introduction

The health of streams and rivers depends to a great extent on the lands that surround them. Over the last two decades, researchers have shown that preserving naturally vegetated corridors along streams can “buffer” them from the degrading effects of nonpoint pollution while reducing the impact of floods, providing habitat for wildlife, and offering recreational benefits to people. Protected stream corridors or “riparian buffers” are now widely advocated by a range of federal and Georgia state agencies for protecting water quality on agricultural, forestry, and other lands (GSWCC 1994, GFC 1999, USEPA 1998). In Georgia, local governments are required to protect buffers along certain streams and rivers by the Georgia Planning Act and the Mountain and River Corridor Protection Act.

However, the minimum standards for riparian buffers issued by the Department of Natural Resources’ Environmental Protection Division (EPD) are not based on current scientific research and do not provide a strong level of resource protection. Only certain streams and rivers are protected, and many activities that are harmful to water quality—such as mining—are exempted from regulation. Counties and municipalities intending to develop effective, comprehensive riparian buffer ordinances that provide sound protection for water quality and wildlife will find the minimum standards insufficient. Local governments have the authority to develop alternative, more effective ordinances, but thus far scientifically based guidelines for buffer ordinances have not been available to them. Many officials worry that without solid scientific support, a comprehensive buffer ordinance could face legal challenges from developers and other property owners.

The purpose of this paper is to serve as a resource for local governments that plan to develop comprehensive riparian buffer ordinances, by presenting scientifically based guidelines which evolved from an analysis of scientific literature published as *A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation* (Wenger 1999). Even with these guidelines, however, many local governments will face an uphill struggle in establishing stream buffer ordinances as they encounter property owners concerned that a buffer ordinance will infringe upon their rights. Local governments must decide which form an ordinance will take and how it will be administered. This paper is intended to help local governments make those decisions by reviewing existing buffer programs, discussing the different legal tools available and how to avoid a “takings” claim, and by including a model buffer ordinance that integrates its recommendations.

Key Terms

In its most basic definition, *riparian* refers to the land adjoining a body of water.

A *riparian buffer* is an undisturbed naturally vegetated strip of land that lies along a stream, river, or lake and provides such functions as protecting water quality, providing wildlife habitat, and storing flood waters.

Exceeding Minimum Standards

In Georgia, stream corridor protection is mandated by several laws: the Erosion and Sedimentation Act, the Georgia Planning Act, the Mountain and River Corridor Protection Act, and the Metropolitan River Protection Act. All require that affected local governments develop plans and ordinances consistent with the laws and with any minimum standards issued by the EPD. Because of this abundance of requirements, some local governments find themselves with a patchwork of protected stream corridors of varying width and extent, a situation that can be confusing and aggravating to property owners and officials alike. Such a system has little scientific basis and is unlikely to afford effective protection to aquatic resources. Complicating matters further, various federal and state agencies encourage the protection of stream buffers as best management practices (BMPs) on agricultural and forestry land. These buffers may be of greater or lesser width than those required by state laws.

Key Terms

As used in this paper, *stream buffer* and *protected stream corridor* are synonymous with riparian buffer.

A comprehensive riparian buffer ordinance can simplify these requirements by integrating them into one uniform set of rules. Such an ordinance—with a scientific foundation—will provide water quality and wildlife habitat insurance for the future. A buffer ordinance is essentially a land-use planning tool that directs new development away from streams and rivers. Generally, this is more cost-effective in controlling pollution than trying to retrofit engineering solutions once an area has developed. Federal environmental protection laws such as the Clean Water Act, the Safe Drinking Water Act, and the Endangered Species Act can impose significant costs on local governments that have not taken adequate steps to protect aquatic resources. For example, the recent listing of nine species of salmon as threatened or endangered is expected to impose major restrictions on certain activities in the Pacific Northwest—restrictions that could have been avoided had the fishes' habitat been better protected previously (Verhovek 1999).

The Functions and Characteristics of Riparian Buffers

Riparian buffers perform a range of functions with economic, social, and ecological value. These include the following:

- Trapping/removing sediment in runoff
- Reducing stream bank erosion
- Trapping/removing phosphorus, nitrogen, and other nutrients that can lead to eutrophication of aquatic ecosystems
- Trapping and removing other contaminants, such as pesticides
- Contributing leaves and other energy sources to the stream
- Storing flood waters, thereby decreasing damage to property
- Maintaining habitat for fish and other aquatic organisms by moderating water temperatures and providing woody debris
- Providing habitat for amphibious and terrestrial organisms
- Maintaining base flow in stream channels
- Maintaining good water quality
- Improving the aesthetic appearance of stream corridors (which can increase property values)
- Offering recreational and educational opportunities to residents and tourists

Because they provide all of these services, riparian buffers can be thought of as a “conservation bargain”: a small investment that yields large returns. Preserving a relatively narrow strip of land along streams and rivers—land that is frequently less suitable for other uses—can help to maintain good water quality, provide habitat for wildlife, protect people and buildings against flood waters, and extend the life of reservoirs. “Vegetative buffer programs, however, are rarely developed to fully consider the multiple benefits and uses that they offer to resource managers and to the general public” (Desbonnet et al. 1994). Often, buffer programs are developed for a single goal, such as trapping sediment. However important this goal may be, programs with such a narrow focus inevitably undervalue buffers (and riparian zones in general) and may lose popular support if they don’t meet this goal. On the other hand, programs that promote the multiple functions of buffers are likely to enjoy a wider and stronger base of support, especially when people recognize the economic benefits they can provide. We strongly recommend the establishment of multifunctional riparian buffer protection programs.

Results of Riparian Buffer Research

A riparian buffer ordinance should be based on scientific research. To establish this scientific foundation, the authors reviewed the research that has been conducted on riparian buffers, carefully analyzing some 140 scientific articles and publications. From this review and the input of riparian buffer researchers and other scientists, we developed recommendations for buffer width, extent (i.e., what streams should be protected), and vegetation type (e.g., forest or grass). This section is organized by riparian buffer function. In a subsequent section, the guidelines for riparian buffer ordinances developed from this review are presented.

Reducing Erosion and Sedimentation

Sediment is the most significant pollutant in many streams and rivers. Research has shown that vegetative buffers are effective at trapping sediment from runoff and at reducing channel erosion. Studies have yielded a range of recommendations for buffer widths; buffers as narrow as 4.6 meters (15 feet) have proven fairly effective in the short term (less than one year). Studies suggest that long-term trapping of sediment requires much wider buffers. It appears that a 30-meter (100-foot) buffer is sufficiently wide to

trap sediment under most circumstances, although buffers should be extended for steeper slopes. To be most effective, buffers must extend along all streams, including intermittent and ephemeral channels. Buffers must be augmented by limits on impervious surfaces and strictly enforced on-site sediment controls. Both grassed and forested buffers are effective at trapping sediment, although forested buffers provide other benefits as well.

Trapping/Removing Phosphorus, Nitrogen, and Other Contaminants

Phosphorus and nitrogen can be serious aquatic pollutants because they lead to eutrophication, or over-fertilization, of water bodies. Buffers are effective at trapping limited amounts of phosphorus. In many cases, phosphorus is attached to sediment or organic matter, so buffers sufficiently wide to control sediment should also provide adequate short-term phosphorus control. There are limits, however, to how much phosphorus a buffer can hold, and over the long term the soil can become saturated with the nutrient. For this reason, buffers should not be considered the primary method for controlling phosphorus runoff.

Buffers can provide very good control of nitrogen in runoff. Nitrogen that enters the buffer in the form of nitrate, ammonia, or organic ni-

Key Terms

A *perennial* stream is a stream or river that flows throughout the year, except during extreme droughts.

An *intermittent* stream flows at least six months out of the year—but does not flow during part or all of the summer.

An *ephemeral* stream flows less than six months out of the year, and may only carry water during or after a rain-storm.

trogen can be transformed into harmless nitrogen gas by microorganisms, allowing permanent removal of high concentrations of the nutrient. The widths necessary for removing nitrogen vary based on patterns of water flow, soil factors, slope, and other variables. In most cases, 30-meter (100-foot) buffers should provide good control, and 15-meter (50-foot) buffers should be sufficient under many conditions. It is especially important to preserve wetlands, which are sites of high nitrogen removal activity.

Other contaminants, including metals, pesticides, and biological pathogens, can also be trapped by buffers and in some cases transformed into less harmful forms. Although studies are limited, it appears that buffers should be at least 15 meters (50 feet) wide to remove these contaminants, and possibly much wider in some cases.

Protecting Wildlife Habitat

Riparian buffers are an essential component of aquatic habitat. They provide food for aquatic organisms in the form of leaves, debris, and invertebrates; they shade the stream, maintaining moderate water temperatures; and they contribute large woody debris, which adds to habitat diversity. The literature indicates that buffers from 10 to 30 meters (35 to 100 feet) wide are necessary for protecting aquatic habitat, depending on different factors. To be most effective, buffers must be preserved along as many streams as possible and composed of native forest.

Riparian buffers themselves constitute important terrestrial habitat, and the quality is directly correlated with width. While narrow buffers offer considerable habitat benefits to many species, protecting diverse terrestrial riparian wildlife communities requires some buffers of at least 100 meters (300 feet). To provide optimal habitat, buffers should consist of native forest.

Achieving Effective Buffer Extent, Vegetation, and Width

These are the recommendations for riparian buffer extent, vegetation, and width based on the literature review; they have been incorporated into the model ordinance, page 59.

Extent

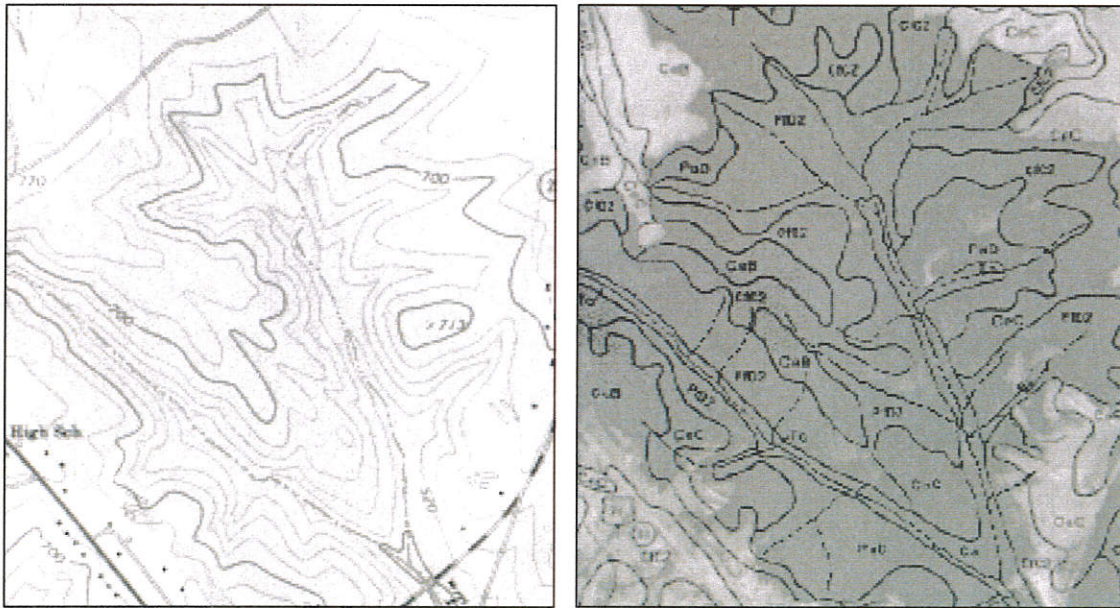
It is very clear that riparian buffers must be preserved on as many stream miles as possible. We recommend that, at a minimum, all perennial and intermittent streams be protected by buffers. To define these streams, local governments should use whatever map type corresponds most closely

to field observations. For many parts of Georgia, the best option is the U.S. Department of Agriculture (USDA) Soil Survey maps, although recent versions are not available for all counties. U.S. Geological Survey (USGS) 1:24,000 scale topographic maps are a less acceptable alternative because they tend to omit many small-order tributaries (see Figure 1). Whichever map type is used, the administering authority for the ordinance should also be allowed to designate additional streams that are deemed worthy of protection, even if they do not appear on Soil Survey maps.

Ephemeral streams should also be protected when possible. However, because there is no lower boundary for the definition of an ephemeral stream—i.e., it is difficult to define what is an ephemeral stream channel and what is just a ditch—we recommend only that the banks of ephemeral channels be vegetated. [Note: Ephemeral streams may be considered streams under the Erosion and Sedimentation Act; therefore, land-disturbing activities may be subject to the restrictions of that law.]

Figure 1. Topographic Maps vs. Soil Survey Maps

These two maps show the same location in the Georgia Piedmont. The map on the left, a USGS topographic map, does not show many of the small intermittent streams that appear on the USDA soil survey map at right.



Vegetation

A riparian buffer covered by grass can adequately perform several functions, including trapping sediment and contaminants. However, effective performance of all functions, including protection of aquatic habitat, requires forested buffers. Therefore, we recommend that riparian buffers be preserved in a naturally vegetated state consisting of native forest. Restoration should be conducted when necessary.

Width

The literature review showed that most scientific recommendations for minimum buffer widths range from 15 meters (about 50 feet) to 30 meters (about 100 feet). It might be possible to determine the correct width from within this range by conducting additional research in the region of interest. Such research would be expensive and time consuming, however, and most local governments do not have funds for research or the time to wait for the results. In most cases, then, the choice of minimum width becomes a choice between margin of safety and acceptable risk. The greater the minimum buffer width, the greater the margin of safety in terms of water quality and habitat preservation. Accordingly, three options are proposed. The first is a variable-width buffer with a 100-foot base width, the second is a variable-width buffer with a 50-foot base width, and the third is a fixed-width buffer of 100 feet. The first can be considered the “conservative” option: it meets or exceeds many scientific buffer width recommendations; and, therefore, should ensure high water quality and support good habitat for native aquatic organisms. The second and third options are “riskier”: they should, under most conditions, provide good protection to the stream and good habitat preservation, although heavy rain, floods, or poor management of contaminant sources could more easily overwhelm the buffer. All of these options are defensible given the literature reviewed. In choosing an option, government officials and other stakeholders must decide how much risk they can tolerate in the preservation of their aquatic resources.

Option One (variable width)

- Base width is 100 feet (30.5 meters) plus 2 feet (0.61 meters) per 1 percent of slope* of the stream valley.
- It is extended to edge of floodplain.

*Percent slope is the increase in elevation per unit of width. For example, if the stream valley rises by 20 feet over a width of 100 feet, slope is 20 percent.

- It is extended by the width of wetlands that lie within or partly within the buffer (as determined by slope and floodplain width).
- Existing impervious surfaces in the riparian zone do not count toward buffer width (i.e., the width is extended by the width of the impervious surface, just as for wetlands).
- Slopes over 25 percent do not count toward the width.
- The buffer applies to all perennial and intermittent streams.
- Ephemeral streams are not protected by buffers, but their banks must be vegetated.

Option Two (variable width)

- Base width is 50 feet (15.2 meters) plus 2 feet (0.61 meters) per 1 percent of slope of the stream valley.
- Entire floodplain is not necessarily included in the buffer, although potential sources of severe contamination should be excluded from the floodplain.
- Existing impervious surfaces in the riparian zone do not count toward buffer width (i.e., the width is extended by the width of the impervious surface, just as for wetlands).
- Slopes over 25 percent do not count toward the width.
- The buffer applies to all perennial and intermittent streams.
- Ephemeral streams are not protected by buffers, but their banks must be vegetated.

Figure 2 illustrates how Option Two is applied.

Variable-Width vs. Fixed-Width Buffers

Any of the three buffer options presented here would be a reasonable, scientifically defensible alternative for a local government in Georgia. Variable-width options, however, offer some significant benefits over fixed-width buffers. First, they are more scientifically defensible and more likely to provide adequate but not excessive protection. The variables that were used in the width formulas (slope, presence of wetlands, width of floodplain, and presence of impervious surfaces) were selected because they are highly correlated with buffer effectiveness and are easily measured in the field. Fixed-width buffers may not provide sufficient protection to ecologically sensitive areas or, conversely, may deprive landowners of areas more suited to development in ecological terms (Herson-Jones et al. 1995). Second, areas with different characteristics require different degrees of protection. Third, variable-width buffers can incorporate protection for other sensitive natural features such as floodplains, steep slopes, and wetlands. They do, however, have some potential drawbacks: they require slightly more staff time to administer, are less easily understood by the public, and may strike some landowners as unfair.

Option Three (fixed width)

- Fixed buffer width is 100 feet.
- The buffer applies to all perennial and intermittent streams.
- Ephemeral streams are not protected by buffers, but their banks must be vegetated.

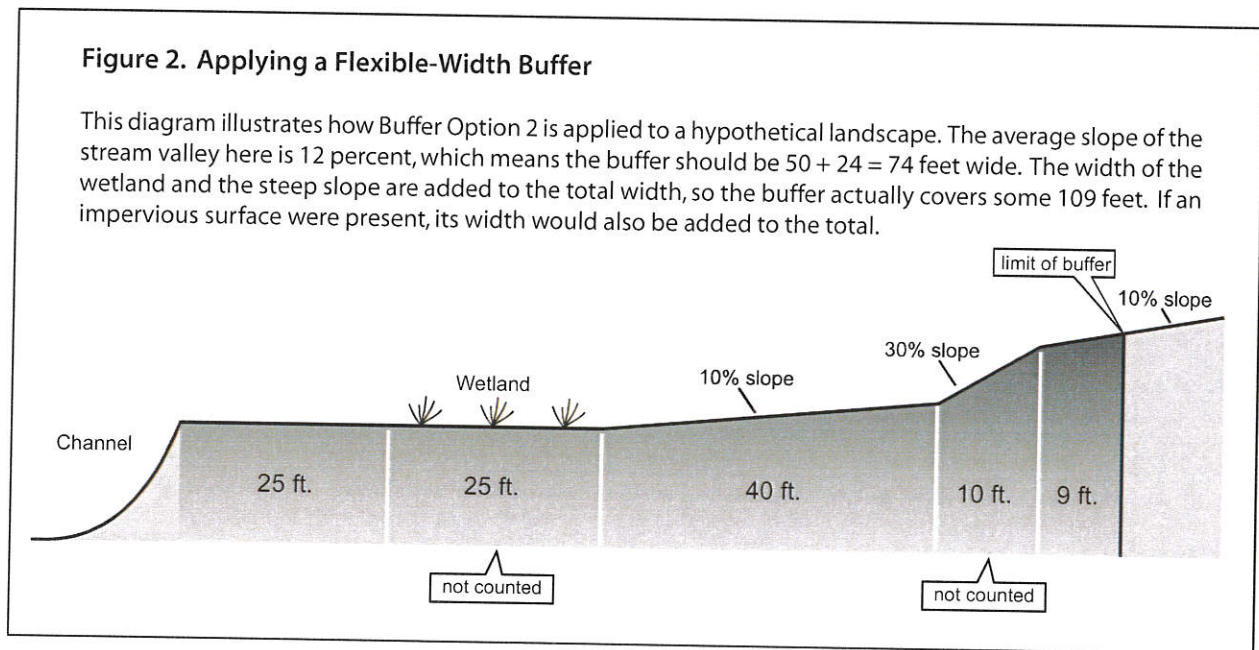
For all three options, buffer vegetation should consist of native forest. Restoration should be conducted when necessary and possible.

Prohibited Activities

All significant sources of aquatic contamination and degradation should be excluded from buffers. These include construction resulting in land disturbance, impervious surfaces, logging roads, mining, septic tank drain fields, agricultural fields, waste disposal sites, stormwater detention ponds (except those designed as wetlands), access of livestock, and clear cutting of forests. Application of pesticides and fertilizers should also be prohibited.

Providing Additional Wildlife Habitat

All of the buffer options described above will provide habitat for many terrestrial wildlife species. To provide habitat for forest interior species, at least some riparian tracts 300 feet or wider should also be preserved. Identification of these areas should be part of an overall, countywide wildlife protection plan.



Effective Buffer Ordinances

A Selective Review

A number of Georgia counties and municipalities have established stream buffer ordinances. Most of these are modeled directly on EPD minimum standards, while others are more restrictive and a few even innovative. This section briefly presents several of the ordinances that exceed or differ from the minimum standards. It also describes a small sampling of local buffer protection programs from other states, primarily in the Southeast. Concluding the section are some results from a far more thorough survey of 36 local and state riparian buffer programs conducted by Heraty in 1993 (Schueler 1995).

Alpharetta

The city of Alpharetta maintains 100-foot buffers on all perennial streams as a requirement of its Erosion and Sedimentation Ordinance. According to Dee West, Director of Environmental Services, there was virtually no opposition to the buffer requirement because developers and the general public were invited to participate from the beginning of the ordinance development process (1998). The Alpharetta ordinance allows flexibility in buffer width, as long as a minimum of 50 feet and an average of 100 feet in width is maintained. In addition, there is an impervious surface setback that must average 150 feet in width and cannot be less than 75 feet in width. Septic tanks and septic tank drain fields are prohibited in this zone.

According to West, the only major enforcement difficulty the city experiences is that the EPD retains sole authority to issue variances for the riparian buffer requirements of erosion and sedimentation ordinances. Although Alpharetta rarely issues variances for the buffer requirements, the EPD routinely issues such exceptions. This is a potential drawback to buffer ordinances that only specify erosion and sedimentation control as the purpose of riparian protection.

Douglas County

Douglas County, Georgia, developed stream corridor zones in 1976 to protect the Dog River and Bear Creek basins, which serve as the county's public water supply (Dean 1997). With some revisions, these regulations are still part of the county's zoning code. There are actually three distinct classifications of stream corridors, two of which are independent zones and one of which is an overlay zone.

The Reservoir Open Space (ROS) zone protects the Bear Creek and Dog River Basins. Both rivers and all of their tributaries are protected by

a 100-foot buffer of undisturbed natural vegetation, in addition to a 200-foot to 300-foot setback for construction (except wells), septic systems, and for maintaining animals. Moreover, there is a wider zone of 250 feet (small tributaries), 500 feet (large tributaries), or 1,000 feet (Bear Creek and Dog River mainstem) from the stream in which there can only be one house per five acres. Commercial, industrial, and high-density residential uses are prohibited.

The Open Space (OS) district is a subzone that can be established along other streams and rivers upon the recommendation of the county engineering department. The zone, which may be from 100 feet to 1,000 feet wide, also limits development to one house per five acres. The Reservoir Drainage Basin-Open Space (RDBOS) district is an overlay zone; i.e., each parcel within the RDBOS district is subject to the restrictions of both the RDBOS and the other zone it lies within. It does not follow stream corridors but rather serves to limit development on sensitive upland areas within the Bear Creek and Dog River basins. It is less protective than the ROS and OS zones: within the district, housing density is restricted to one unit per acre (for unsewered areas) or one dwelling unit per 30,000 square feet for areas served by sewers. Commercial development is likewise restricted to parcels of one acre or larger except in areas served by sewers (Douglas County Board of Commissioners 1998).

...Each parcel within the Reservoir Drainage Basin-Open Space district, an overlay zone, is subject to its restrictions as well as the zone it lies within.

Fulton County

In September 1998, Fulton County passed an ordinance to establish protected stream corridors for the unincorporated southern portion of the county. The impetus for the ordinance was twofold. First, Fulton County sought to expand the Camp Creek Wastewater Treatment Plant to compensate for the increased pollution, and the Georgia EPD required the county to reduce nonpoint pollution. Second, the Metropolitan River Protection Act (MRPA) was amended so that as of July 1, 1998, the protected zone along the Chattahoochee River was extended from Peachtree Creek (where it previously terminated) to the southwest border of Fulton County (Fulton County Board of Commissioners 1998). The MRPA requires buffers of 50 feet on the mainstem of the Chattahoochee River, 35-foot buffers on tributaries within 2,000 feet of the Chattahoochee, and 25-foot buffers on all other tributaries of the river (Cowie and Hardy 1997). Fulton County decided to exceed these minimum requirements by establishing a 75-foot-wide natural vegetated buffer on all perennial streams, with an additional 15-foot impervious surface setback and a further 10-foot-wide "improvement setback."

The ordinance effectively establishes an overlay zone on properties in the stream corridor, imposing additional restrictions in addition to those required by the primary zone. Within the protected corridor, which totals 100 feet in width, the following are prohibited:

- Septic tanks and septic tank drain fields
- Receiving areas for toxic or hazardous waste or other contaminants
- Hazardous or sanitary waste landfills
- Stormwater retention or detention facilities
- Accessory structures and buildings, parking lots, driveways, and other impervious surfaces

Utilities and transportation uses may be located within the corridor if a feasibility study is conducted to examine alternatives and if the project follows appropriate best management practices (BMPs) and will not diminish water quality. Timber harvesting is permitted except within 35 feet of the stream. Existing land uses are exempted, but no additions may be made to buildings and structures that sustain greater than 60 percent damage may not be rebuilt (Fulton County 1998).

The Fulton County ordinance has several interesting and significant aspects. First, it greatly exceeds state-mandated minimum requirements in a way that reflects scientific understanding of stream corridors. Second, in addition to the streams that appear as blue lines on United States Geological Survey (USGS) 7.5 minute topographic maps, protection may be applied to other perennial streams identified by Fulton County. The ordinance does not, however, protect intermittent or ephemeral streams; and this may reduce its effectiveness. Third, the ordinance does not exempt mining and other activities that may harm water quality, but which are sometimes exempted for political reasons. Finally, the ordinance provides clear and detailed rules for granting variances.

Madison County

Madison County passed a stream corridor protection ordinance in 1995 to protect the Broad and Hudson Rivers through creation of an overlay zone. Requirements are consistent with the minimum standards set forth by the Georgia Mountain and River Corridor Protection Act in nearly all respects, except that surface mining is specifically prohibited.

Winston–Salem/Forsyth County, North Carolina

Through ordinances established in the 1980s and 1990s, the city of Winston–Salem and Forsyth County, North Carolina, established a comprehensive watershed plan for Salem Lake, which provides 42 percent of the water

supply for the region. As part of the plan, 100-foot-wide protected stream corridors were established along all perennial streams in the watershed. The only types of development permitted in the stream corridor are water-dependent structures, transportation infrastructure, utilities, and passive recreation structures. Land-disturbing activities are prohibited within 25 feet of the stream (Tyler et al. 1998).

Greensboro, North Carolina

On March 17, 1999, the Greensboro City Council approved a stormwater management ordinance that included riparian buffer provisions for all streams and natural channels draining at least 50 acres. The buffer consists of two zones: (1) a 15-foot-wide zone that is free of any development or soil disturbance and (2) a 35-foot-wide (or wider) zone that is free of occupied structures and has an impervious surface coverage of less than 50 percent. According to a University of North Carolina biologist (Ruble 1999), the buffer specifications were established through compromise among “developers” and “environmentalists.” The primary purpose of the ordinance is to prevent flooding, rather than to provide water quality or habitat benefits.

Chester County, South Carolina

In 1994, South Carolina passed the Comprehensive Planning Act. It required counties that currently have zoning ordinances and comprehensive planning (a little more than half of the state’s 46 counties) to update their plans and address natural resource protection by May, 1999. As a result, a number of local governments in the state are expected to develop stream corridor protection ordinances or zoning districts (Beasley, South Carolina Department of Natural Resources, 1998).

South Carolina’s 1994 Comprehensive Planning Act required that counties with zoning ordinances and comprehensive planning update them and address natural resource protection by May 1999.

At this time, only two local governments have successfully introduced stream corridor zoning: Chester County and the city of Rock Hill. In 1998, Chester County adopted a zoning ordinance and shortly thereafter added a river preservation district, not as an overlay but as an independent zone. The district extends 100 feet on either side of the Catawba and Broad Rivers and 50 feet on either side of designated tributary streams. The only uses permitted in the river preservation zone are

- passive recreation;
- public boat landings, public water or wastewater treatment facilities, intakes, discharges, or other public uses; and
- agriculture and silviculture to include watering of livestock, tilling, and tree harvesting among other activities, provided any disturbed soil is maintained on-site until the buffer is revegetated.

No private structures may be built in the zone, and housing within the buffer cannot be rebuilt if it is more than 50 percent damaged. Some members of the agricultural community expressed concerns about the establishment of the zone, but once they were assured that agricultural practices would still be permitted, opposition evaporated. The commissioners voted unanimously to pass the measure (Vead, Catawba Regional Planning Council, 1998).

Rock Hill, a city in York County, South Carolina, has established a 150-foot naturally vegetated buffer along the Catawba River. York County also attempted to establish a 100-foot riparian buffer through a free-standing river corridor ordinance, but the proposal failed at its second reading (three readings are required). Problems may have arisen because the proposed ordinance imposed some additional, although minor, restrictions in a 200-foot zone beyond the buffer, which apparently led to confusion and opposition among landowners who interpreted it as a 300-foot naturally vegetated buffer (Vead 1998).

Brown County, Wisconsin

Many local governments are understandably reluctant to impose regulations on the agricultural community, but a few counties have found it necessary and feasible to do so. One of these is Brown County, Wisconsin. In January 1998, the Brown County Board of Supervisors passed an ordinance establishing a 300-foot “agricultural shoreland management area” on all perennial and intermittent streams and rivers. Within this corridor, agricultural practices must be consistent with NRCS guidelines and erosion must be limited. Additionally, a 20-foot-wide vegetated buffer must be established along the banks of streams. Row cropping and tillage are prohibited in the 20-foot-wide buffer, although the land may serve as pasture if it meets technical guidelines (Brown County Board of Supervisors 1998).

Many local governments are reluctant to impose regulations on the agricultural community.

Charles County, Maryland

Charles County protects riparian buffers through a variable-width zoning district. The minimum width is based on the 100-year floodplain and is extended by the width of nontidal wetlands, plus 50 feet for 1st and 2d order streams and 100 feet for 3d order or larger streams.

When a 100-year floodplain and wetlands are not present, width is either 50 feet or 100 feet depending on stream order. In addition, if the slope of the stream valley is greater than 15 percent, the width of the buffer is doubled or extended to the top of the slope (whichever is less). Furthermore, the Charles County Planning Commission has the authority to ex-

tend the buffer to include important features. The complexity of the program makes it more difficult to administer than a fixed-width buffer. Because the buffer is a dedicated zoning district, changes to buffer width are considered changes to the zoning map and may only occur twice a year (Maryland Office of Planning 1993).

1993 Survey of Buffer Programs

In 1993, Heraty surveyed some 36 state and local urban riparian buffer programs nationwide. Responses indicated that protected buffers ranged in width from 20 feet to 200 feet, with an average of 92 feet. Sixty-five percent of the programs had variable-width buffers that extended width for slope (34 percent), certain classifications of streams/water bodies (15 percent), floodplain (8 percent), wetlands (12 percent), size of stream or water body (3 percent), type of development (6 percent), or some other condition (21 percent).

Eighty-six percent of the buffers required vegetation and limited disturbance of the buffer area. Sixty-six percent required vegetation to remain unaltered from predevelopment condition. Only 6 percent of programs permitted logging, although tree trimming, mowing, and tree removal were permitted by many programs. The restrictions on tree cutting no doubt reflect the urban focus of the survey.

Heraty reported that most buffer programs had strong citizen support. Over 80 percent of local governments agreed with the statement, "a majority of our citizens think that the community is better off having stream buffers." Ninety-four percent believed that buffers had a neutral or positive effect on adjacent land values.

Based on this survey, Schueler (1995) identified eight key points about riparian buffers:

1. *Buffer boundaries are largely invisible to local governments, contractors, and residents. To be protected, buffers must be indicated on construction plans and marked at construction sites. Property owners must be informed of the presence and boundaries of buffers.*
2. *Buffers are subject to extensive encroachment in urban areas.*
3. *Few jurisdictions have effective buffer education programs.*
4. *Allowable and unallowable uses are seldom defined.*

Points two, three, and four emphasize the need to communicate clearly with landowners about the boundaries of buffers, the benefits of buffers, and the permissible uses of buffers.

5. *Few jurisdictions specified mature forest as a vegetative forest.* Schueler notes that “given the importance of riparian forests to the ecology of headwater streams, the adoption of a specific vegetative target for the stream buffer would be wise.”
6. *Accuracy of buffer delineation is seldom confirmed in the field.* Heraty’s study found that 50 percent of the buffer programs reported problems in buffer measurement by consultants. Twenty percent lacked a mechanism to inform the contractor about buffer boundaries during construction.
7. *Most buffers remain in private ownership.* Ninety percent of the buffers remained privately owned after development. Only 10 percent were acquired by the municipality or other government entity.
8. *The stream buffer program needs to be responsive to the interests of the development community.* This does not mean that buffer ordinances were necessarily too strict. Most developer concerns were directed at administration of the program rather than the restrictions in the buffer ordinance itself. This again suggests the need for open communication between the administrative agency and the developers and landowners who are impacted by the ordinance.

Tools to Protect Riparian Buffers

This section outlines the regulatory and nonregulatory tools that are available to local governments for protecting riparian buffers. In the first part, different types of riparian buffer ordinances are described. The second part outlines some related regulatory tools that can be used to support the riparian buffer ordinance. The final part describes nonregulatory approaches to riparian buffer protection, which are useful means of preserving land that is excepted from a riparian buffer ordinance.

Forms of Riparian Buffer Ordinances

Overlay Zoning Ordinances

For a county that already has a zoning ordinance in place, the most effective and expedient way to protect riparian buffers is through an amendment that adds a riparian buffer overlay zone. An overlay zone imposes restrictions on the affected portion of a property in addition to the restrictions placed on the property as a whole by the underlying zoning classification. It does not require changes to the current zoning map. Some local governments (e.g., Douglas County, Georgia; Chester County, South Carolina; and Charles County, Maryland) have used dedicated stream corridor zones rather than overlay zones. With this approach, a single property is split into two zoning districts—a riparian buffer zone district and the conventional zoning district. The model riparian buffer ordinance included at the end of this paper specifies overlay zones.

The model ordinance included at the end of this paper specifies overlay zones.

Freestanding Ordinances

For counties that do not have a zoning ordinance, a separate stream corridor protection ordinance is necessary. Several such ordinances were described in the preceding review of ordinances currently in place. However, because local governments are delegated specific zoning powers by the Georgia Constitution, they may have more flexibility in developing zoning-based riparian buffer ordinances than free-standing ordinances. For more information, see the section on “Meeting Minimum Standards,” page 29.

Floodplain Protection Ordinances

A floodplain protection ordinance can be a reasonable mechanism for riparian buffer protection. Historically, however, most floodplain ordinances are intended to minimize property damage, not to protect the ecological functioning of the floodplain or the river. There is now growing recogni-

tion among government agencies that floodplains should be managed in a way that preserves their natural ecological functions:

“Rivers and their floodplains are dynamic and complex natural systems that can provide important societal benefits, both economic and environmental. By adapting to the natural phenomenon of flooding, rather than trying to control floodwaters, we can reduce the loss of life and property, protect critical natural and cultural resources, and contribute to the sustainable development of our communities.” (Federal Interagency Floodplain Management Task Force 1996)

The EPD Floodplain Management Office encourages local governments to include natural resource protection in drafting their floodplain ordinances (Brock, Environmental Specialist, 1998). Ideally, riparian buffers should be extended to the width of the floodplain, as proposed in riparian buffer width Option One, on page 11. At a minimum, local governments should incorporate language into their Flood Damage Prevention Ordinances to acknowledge the importance of preserving natural floodplain processes and to prohibit certain activities and structures that could cause serious environmental harm. These include animal waste lagoons, hazardous and municipal waste receiving and disposal sites, application of pesticides, and land application of animal waste or fertilizers. Because enforcement of such an ordinance would be difficult, compliance should be encouraged through a public information campaign.

Auxiliary Ordinances

Erosion and Sedimentation Control Ordinances

Local governments that have their own erosion and sedimentation control ordinances can be delegated the authority to administer the Erosion and Sedimentation Act of 1975 within their jurisdiction. This ordinance acts, in effect, as a buffer ordinance protecting a 25-foot (minimum) stream corridor on all streams and a 100-foot corridor on primary and secondary trout streams. Local officials are also authorized to pass ordinances that are more restrictive than the specifications of the state law. In the past, some local authorities have found difficulties in enforcing this ordinance because the EPD retains sole authority for issuing variances to the buffer provisions. The experiences of the city of Alpharetta were described in the previous section. While it can be argued that the local authority can overrule an EPD variance if it wishes, this legal issue can be avoided if the ordinance is properly worded to specify that buffers are protected for multiple purposes, not just erosion and sedimentation control.

Regardless of how buffers are protected, a properly enforced erosion and sedimentation control ordinance is essential in reducing the sediment in runoff and enhancing the performance of buffers. Riparian buffers alone are not enough to mitigate the effects of otherwise uncontrolled upland activities (Binford and Buchenau 1993). A broader approach of using various best management practices is more effective. As Barling (1994) notes, "Buffer strips should only be considered as a secondary conservation practice after controlling the generation of pollutants at their source." In many cases it may be easier, cheaper, and preferable to prevent sediments from mobilizing and moving off-site in the first place. For agriculture and forestry, soil is a valuable asset that is extremely difficult to replace. Erosion reduction efforts should focus on keeping soil in fields, where it is usable, rather than trapping it after it has left a field, where it is much more difficult to salvage. Numerous agricultural best management practices (BMPs) have been developed for this purpose. Producers should be strongly encouraged to implement the most effective BMPs, in addition to preserving riparian buffers. Additional information on BMPs and financial incentives for their use is available from the Natural Resources Conservation Service and the Georgia Soil and Water Conservation Commission.

For agriculture and forestry, soil is a valuable asset that is extremely difficult to replace.

Likewise, BMPs must be faithfully implemented and enforced in construction projects. A review by Brown and Caraco (1997) found that in many cases, half of all practices specified in erosion and sedimentation control plans were not implemented correctly and were not working. Contractors habitually saved money by cutting ESC installation and maintenance. Surveys also found that ESC practices rated as "most effective" by experts were seldom applied while those rated "ineffective" are still widely used. Further, a field assessment of silt fences found that 42 percent were improperly installed and 66 percent were inadequately maintained. While a substantial amount of money is now spent on ESC practices, Brown and Caraco (1997) concluded that "much of this money is not being well spent—practices are poorly or inappropriately installed, and very little is spent on maintaining them."

Effective enforcement of erosion and sediment control laws requires water quality monitoring and evaluation against a scientific standard. In 1996, a panel of scientists convened to make recommendations to the Georgia Department of Natural Resources (DNR) proposed establishing a turbidity standard of 25 NTU (nephelometric turbidity units), measured at the end of designated stream segments (Kundell and Rasmussen 1995). We recommend that local governments establish 25 NTU as a performance standard to monitor whether erosion and sedimentation control BMPs and riparian buffers are effective in controlling sedimentation in different stream segments. To pay for monitoring, a fee could be added to the erosion and sedimentation control permit application.

Impervious Surface Limits

Riparian buffers cannot protect a stream from channel erosion if it is constantly scoured by high storm flows caused by runoff from impervious surfaces. In addition to protecting stream corridors, we strongly recommend that local governments pass an ordinance to minimize impervious surfaces and we encourage use of alternatives. There is solid scientific justification for such limits. In a natural forested watershed, surface runoff is quite rare, occurring only during the most severe rainstorms. Impervious surfaces, on the other hand, transfer most precipitation into runoff, leading to increased surface erosion, higher and faster storm flows in streams, and increased channel erosion. As a consequence, urban streams characteristically have greatly elevated sediment levels (Wahl et al. 1997). Flow from impervious surfaces also carries pollutants directly to streams, bypassing the natural filtration that would occur by passage through soil. Impervious surfaces are so closely correlated with urban water pollution that they are commonly used as an indicator of overall stream quality (Arnold and Gibbons 1996). May et al. (1997) note that impervious surfaces are the "major contributor to changes in watershed hydrology that drive many of the physical changes affecting urban streams." Trimble (1997) ascribed the cause of large-scale channel erosion in San Diego Creek to increased impervious surfaces in the watershed.

By transferring most precipitation into runoff, impervious surfaces lead to increased surface erosion...and increased channel erosion.

A stream may be considered to be impacted when more than 10-12 percent of its watershed is covered by impervious surfaces; when impervious surface levels reach 30 percent, the stream can be considered degraded (Klein 1979). While maintaining protected riparian buffers helps to stabilize banks and otherwise mitigate the effects of impervious surfaces, in many urban areas "as much as 90 percent of the surface runoff generated in an urban watershed concentrates before it reaches the buffer, and ultimately crosses it in an open channel or an enclosed storm drain pipe" (Schueler 1995). In these cases, buffers have little opportunity to intercept sediments and other pollutants carried to the stream (Note, however, that many studies have shown a good correlation between urban riparian buffers and water quality; e.g., May et al. 1997). Therefore, to protect streams in urban areas and to allow riparian buffers to properly perform their functions, it is necessary to minimize impervious surfaces across the whole watershed.

There are numerous ways in which local governments can reduce impervious surfaces and encourage the use of alternative, porous materials. These include the following:

- Relaxation of design standards that mandate excessive impervious surfaces. Minimum road widths are reduced, minimum parking re-

quirements are lowered, and grassed swales are allowed as an alternative to concrete gutters.

- Smart Growth provisions that encourage clustered development. Development that is concentrated in a few areas creates less impervious surface area than sprawl.
- Use of pervious materials in government projects.
- Incentives for the use of pervious materials. Developers who use pervious alternatives or otherwise reduce impervious surface area are offered financial incentives.
- A stormwater utility fee. Developers are charged a fee based on the impervious surface area of new development to cover the impacts of increased stormwater generation. This acts as a disincentive for impervious surfaces.
- Impervious surface limits. The most comprehensive approach is to place actual limits on the amount of impervious surfaces that may be used on a site, in a watershed, or in a region.

According to Dr. Bruce Ferguson of the University of Georgia School of Environmental Design, it is possible to virtually eliminate impervious surfaces using existing technologies (1998). In addition to the water quality benefits, reducing impervious surfaces also can save a great deal of money—directly in construction costs and indirectly in flood mitigation (Arnold and Gibbons 1996). Appendix B lists various publications that discuss this topic further.

Nonregulatory Riparian Buffer Preservation Tools

A riparian buffer ordinance can be supplemented with a number of non-regulatory programs to increase its effectiveness and acceptance by landowners. Transferable development rights and density transfers provide a mechanism for compensating landowners who are affected by a buffer ordinance. Conservation easements and acquisition are ways to protect properties that are not affected by the ordinance. Conditional-use rezoning and developer exactions can increase the scope of the ordinance through additional requirements for developers. All of these are described in more detail here.

Transferable Development Rights

A local government that is serious about protecting water quality needs to look at the overall pattern of development in its jurisdiction. Not only does unplanned development adversely affect water quality, the cost of providing government services to sprawling development is very high. An essential tool for managing growth is a transferable development rights (TDR) program. In a TDR program, some areas are designated for preser-

vation and low-density development, and others are marked for high-density development. The low-density areas—called “sending zones”—can be the more environmentally sensitive regions (or they may be the locations of agricultural production), while the high-density areas—“receiving zones”—are areas where it is most most cost-effective to provide services and provide infrastructure. Property owners in the receiving zones are allowed to buy development rights from property owners in the sending zones. Once the development right is sold from a sending property, that parcel may never be developed (in fact, it is usually protected from development by a permanent conservation easement). The owner of the receiving parcel can use those development rights to develop more densely and, presumably, more profitably.

Although TDRs appear complicated at first, they represent an invaluable mechanism, for equitably distributing the costs and benefits of development. Transferable development rights are a means of compensating landowners who are in low-density zones. Without TDRs, local officials will constantly face pressure to upzone properties to allow greater development, whether or not such development is in an appropriate location.

TDRs are invaluable in distributing the costs and benefits of development.

TDRs should be used in concert with overlay zoning or a freestanding stream corridor ordinance. It is possible to designate all protected stream corridors as “sending areas,” which would provide potential compensation for all impacted landowners. However, because this would create a market with hundreds or thousands of landowners holding a relatively small number of TDR credits apiece, this would only be practical if an effective TDR banking system were established. Floodplain areas that are not protected within riparian buffers should be classified as sending areas. Additionally, local governments should identify some wide (300 feet or greater) stream corridors that merit preservation as terrestrial wildlife habitat and designate these sites as sending areas.

Density Transfers

Density transfers are similar to TDRs in that they allow more dense development in one area in exchange for preservation of another area, but they are used to transfer development *within* a property rather than between properties. This can be used to compensate developers for the loss of land protected in the stream buffer by allowing them to develop more densely in the remainder of the property. A TDR ordinance can be written in such a way as to allow density transfers as a special type of TDR. Density transfers are also a common component of conservation subdivision regulations.

Conservation Easements

Regardless of the other stream corridor tools employed, conservation easements can be a useful mechanism for preserving tracts of riparian lands. Conservation easements are agreements in which landowners voluntarily agree to give up some of their development rights in exchange for tax benefits. Conservation easements require little oversight and virtually no expense on the part of the local government. On the other hand, initial participation of landowners is voluntary and therefore somewhat unpredictable. Many local land trusts are capable of accepting and enforcing conservation easements, sparing local governments the burden of handling paperwork and monitoring protected tracts.

Local governments can encourage the donation of conservation easements in several ways. First, they can establish a timely schedule for reassessing properties once easements have been donated, to provide landowners with property tax relief. Second, they can work with local land trusts to identify priority areas in which easements are most desirable. Third, they can promote the donation of easements through public information campaigns. Fourth, they can include a statement in their comprehensive plan or zoning ordinance that preserving riparian lands is in the public interest. This makes it easier for landowners to claim federal income tax deductions for placing conservation easements on their properties. (See Appendix B for further information sources on conservation easements.)

Acquisition

Acquisition is sometimes the best mechanism for protecting key parcels of land in the stream corridor. Generally, acquisition is reserved for special cases and cannot be the sole method for protecting riparian buffers. There are numerous sources of funds that can be applied toward riparian land acquisition. They are as follows:

- *Clean Water Act Section 319*. Funds for nonpoint source pollution control. Priority goes to watersheds ranked highly in Georgia's Unified Water Assessment Process (GA DNR EPD 1998).
- *The Heritage Fund*. Although this constitutional amendment failed in November, 1998, it will likely reappear at some point in the next few years. In its 1998 version, this amendment would have added \$1.00 (on every \$1,000 of home value) to the real estate transfer tax to create a fund dedicated to preservation of natural and historic sites. It is estimated that the fund would provide \$30 to \$32 million annually.
- *Georgia Environmental Facilities Authority*. This program, administered by the Department of Community Affairs, offers low-inter-

est loans and grants for various purposes, including nonpoint source pollution control.

- *Impact Fees.* Local governments are authorized to charge fees to developers to pay for the infrastructure necessary to support the development (O.C.G.A. § 36-71-1 et seq). These fees can be applied to protect and produce water supplies, acquire and protect parks and open space, protect and improve shores (stream banks), and provide for flood control, among other purposes (Billingsley and Mizerak 1997).

An Effective Buffer Ordinance: The Components

An effective riparian buffer ordinance is the product of careful forethought. This section discusses some of the components that should be included in a riparian buffer ordinance. The model ordinance, Appendix A, provides an example for incorporating these guidelines into practice. Practical issues related to the administration and enforcement of a riparian buffer ordinance are also discussed here.

Meeting Minimum Standards

Local governments with water supply watersheds and large rivers within their jurisdictions must comply with the appropriate minimum standards issued by the EPD. If local governments choose to develop buffer ordinances that differ from the minimum standards, they must petition for EPD approval of alternate criteria. The model ordinance (Appendix A) is designed to meet the relevant minimum standards, except for one aspect. The minimum standards for river corridor protection, under the Mountain and River Corridor Protection Act, *prohibit* local governments from restricting construction of single family homes within the riparian buffer. While the proposed buffer ordinance provides an exemption for single family homes, it requires that they be located outside the buffer area if possible. This technically violates the minimum standards. For local governments with zoning, however, this may not be a problem. The local zoning powers established under the Georgia Constitution should allow local governments to supersede the restriction of the minimum standards in this respect. Nevertheless, this has never been legally tested, and local governments should still petition the EPD to allow this variation. Local governments without zoning ordinances may have less ground for using alternate criteria. In that situation, a stand-alone ordinance may have to comply precisely with the minimum standards and fully exempt single family homes from all buffer restrictions.

The model ordinance, Appendix A, includes the components discussed in this section.

In addition to buffer requirements, the minimum standards for water supply watersheds compel local governments to impose other restrictions, such as impervious surface limits. Local governments affected by these minimum standards must either add a new provision or enact a separate ordinance to meet these requirements. (See model ordinance, Appendix A, for more details.)

Flexibility and Variance Procedures

Ensuring a degree of flexibility in delineating riparian buffers is an important strategy when creating an ordinance. It is very likely that cases will arise in which it is necessary and ecologically defensible to reduce the buffer width at certain points. This can be addressed by building a system of buffer averaging into the ordinance. This allows the buffer width to be reduced at certain points as long as the average buffer width remains the same along a parcel. Buffer averaging is incorporated into the attached ordinance as "Minor Exceptions." Buffer averaging would be inappropriate for a fixed buffer of less than 75 feet minimum width, because a reduction would bring the buffer to an unacceptably low level.

Although buffer averaging will address many concerns, in some cases landowners will need to request a formal variance from the provisions of the buffer ordinance. It is essential to clearly establish the conditions under which a variance may be issued. A variance should be considered in two cases:

1. When the buffer encroaches on a parcel to the degree that the remaining land is too small for the property owner to make reasonable economic use of it. In other words, there are grounds for a takings lawsuit. In this case, the buffer should be reduced only as much as necessary to allow for reasonable activity, and never less than 25 feet.
2. When the property is too small for the landowner to construct a single family dwelling without encroaching on the buffer. Again, the buffer should be reduced only as much as necessary to allow for the construction of an average-sized home for a single family.

An appeals process should be established to provide recourse to landowners in the event that a variance request is denied.

Exceptions and Prohibitions

Local governments can, as shown in the model ordinance, make an exception for existing land uses. These are defined as uses that, prior to the effective date of the ordinance, are either completed, ongoing (as in the case of agricultural activity), under construction, fully approved by the governing authority, or the subject of a fully completed application for any construction-related permit that has been submitted for approval. However, an existing use that occurs in the parcel but not currently in the buffer should not be exempted. For example, an agricultural operation that does not currently use the riparian area could not plant the area, spread manure, allow grazing, or otherwise use the corridor in nondesignated ways after the law takes effect.

Normal repairs, restoration, and renovation may be performed upon structures in the stream corridor, but expansion of buildings or impervious areas should be prohibited. Any work that involves disturbance of soils should be subjected to rigorous enforcement of the Erosion and Sedimentation Ordinance. Local governments may also wish to consider prohibiting the reconstruction of buildings that have suffered severe damage. This is not included in the proposed ordinance but is a part of some riparian buffer regulations.

Forestry activities can be permissible on a limited basis. No logging should occur within 50 feet of the stream. No logging roads may be built within the buffer, and buffer crossings should follow the latest best management practices (BMPs) issued by the Georgia Forestry Commission. There are substantial differences between the new and the 1995 BMPs (Georgia Forestry Commission 1995, 1999).

Agricultural operations constitute a special concern because they are often sources of water contamination and have been traditionally exempted from many land-use regulations. Because such operations are generally existing uses, they are also exempted from the proposed ordinance. However, protecting water quality requires addressing issues such as cattle watering in streams and the land application of waste from concentrated animal feeding operations (CAFOs). It is therefore recommended that certain agricultural activities be banned from the floodplain because they pose a direct threat to water quality, even though they may have preexisted. These include application of fertilizers and pesticides, the spreading of animal wastes, and the construction of waste lagoons. Other activities, such as allowing cattle direct access to the stream, should be discouraged and restricted but not necessarily banned.

There are numerous programs to help farmers preserve riparian buffers.

On the positive side, the Natural Resources Conservation Service (NRCS) administers several programs to assist farmers in preserving riparian buffers. The Conservation Reserve Program (CRP), which provides incentives for farmers to retire erodible or sensitive lands, now targets 4 million acres for the establishment of riparian buffers (USEPA 1998). This program has been underused in Georgia, with less than 1,000 acres of buffer land enrolled, compared to more than 15,000 acres in South Carolina (Johnson 1999). The Wetlands Reserve Program (WRP) pays farmers the appraised value of wetland acreage, as well as all costs of restoration, if they place permanent conservation easements on the land. It also provides cost-share funds if 30-year easements are placed on wetlands (Johnson 1999). The Conservation Reserve Enhancement Program (CREP) is a new initiative that awards additional funds for conservation projects that address critical water quality, soil erosion, and wildlife habitat needs (USEPA 1998). Each state can submit a proposal for CREP funds to enroll up to 100,000

acres. States that have been funded have received an average of \$200 million to acquire or obtain easements on riparian buffers and wetlands (Johnson 1999). The Environmental Quality Incentives Program (EQIP) provides technical assistance, incentive payments, and up to 75 percent cost-sharing for establishing conservation practices, including buffer strips. Although 50 percent of funds are reserved for livestock producers, CAFOs are specifically excluded (USDA NRCS 1997). Finally, the Wildlife Habitat Incentives Program offers funds to help improve wildlife habitat. Taken together, these programs offer hundreds of millions of dollars in assistance to preserve and restore riparian buffers on agricultural lands.

Local governments can take an active role in setting priorities and coordinating water protection efforts with farmers and representatives of the NRCS, the local Soil and Water Conservation District, and the local Resource Conservation and Development Agency. A cooperative approach will allow local governments to work toward their water quality goals while minimizing the regulatory burden on the agricultural community.

Good Communications

Riparian buffer width, extent, and vegetation should be based on science, not political expediency.

Local governments should involve landowners and developers in the process of developing riparian buffer ordinances. This will greatly reduce the possibility of legal challenges and make enforcement substantially easier. To reach landowners, clear and concise informational materials should be prepared to inform them of the requirements of the proposed ordinance, the benefits of buffers, and the fact that the ordinance respects their rights as landowners. Once the ordinance has been approved, these materials can be updated for permanent use.

The purpose of involving developers and landowners is to ensure that the ordinance respects property rights and is responsive to the needs of affected parties concerning variance procedures and administrative methods. It should not be viewed as a process for making watered-down compromises on stream buffer protection. Stream buffer width, extent, and vegetation should be based on science, not political expediency.

Determining Clear Variables

If a variable-width buffer option is used, it is necessary to develop expedient procedures for determining buffer width. The variables incorporated into the variable-width options presented here were chosen partly because they are readily measured in the field. Most commonly, buffer delineation will occur when a site is initially surveyed for development. On small parcels of land with fairly uniform topography, it may be possible to estab-

lish a uniform buffer width for the entire property. To accurately reflect the environmental conditions on larger properties, the width of the buffer should be determined at regular intervals along the stream. Slope can be determined by measuring the difference in elevation between the stream bank and a point approximately 100 feet inland, perpendicular to the stream bank. Wetlands should be identified and delineated using the criteria of the U.S. Army Corps of Engineers (1991).

How impervious surfaces are handled depends on their nature. If a road parallels the stream and lies within the buffer area, then the buffer should be increased by its average width. A decision must be made, however, on whether small areas of impervious surface will require an increase in buffer width. For example, if a small paved parking area exists within the buffer, is the buffer width to be increased just at that point? We recommend that local governments exempt impervious surfaces smaller than a predetermined area.

Additionally, there is a technical problem of how to handle impervious surfaces, wetlands, and steep slopes that lie partly within and partly outside the buffer. The normal procedure is to first determine the buffer width based on slope (and, for Option One, the width of the floodplain). Then, a check is made to determine whether any wetlands, very steep slopes, or impervious surfaces lie within this buffer. If they do, the width is increased by the width of the feature that is within the buffer. If the feature extends beyond the buffer, then the width is extended by the total width of the feature. For example, using Option Two, a stream running through a valley with a 10 percent slope would have a 70-foot buffer. A wetland lies within the outer 20 feet of the buffer and extends an additional 30 feet beyond. The buffer width is increased by all 50 feet of the wetland.

Ordinance Enforcement

A buffer ordinance is only as good as its enforcement. Enforcement costs time and money, but for many local governments the increased demands are relatively low (Herson-Jones 1995). In many cases, enforcement will be handled by an existing staff member, such as a building inspector. No matter who enforces the ordinance, he or she cannot do so without clear guidelines.

As indicated by the Heraty (1993) survey, discussed previously, it is essential to indicate accurately the boundaries of stream corridors on all site evaluation/design base maps. Such maps will generally be required as part of the development review policy.

Thorough mapping is the only way to ensure that contractors responsible for various stages of the development project are unlikely

to disturb or damage the buffer area during construction. In addition, site inspectors are able to verify that buffer regulations have been followed (Herson-Jones 1995).

Boundaries should be clearly indicated at construction sites, and temporary fencing should be used to ensure that there is no accidental intrusion in the buffer area. Site inspections should be made prior to construction to verify that buffer boundaries are accurately delineated and clearly marked. At least one subsequent inspection should be made during construction to ensure that the buffer is respected.

Minimizing the Effects of Riparian Buffer Crossings/Bypasses

Road crossings and other breaks in the riparian buffer reduce buffer width to zero and allow sediment and other contaminants to pass directly into the stream (Swift 1986). Buffer crossings may, in fact, be where the majority of sediment is transported to the stream. All buffer crossings should be avoided if possible, but when they are necessary Schueler (1995) suggests that

- crossing width should be minimized;
- direct (90 degree) crossing angles are preferable to oblique crossing angles;
- construction should be capable of surviving 100-year floods;
- free-span bridges are preferable to encasing the stream; and
- banks must be properly stabilized.

As in the attached model ordinance, local governments should exempt necessary road and utility crossings from buffer restrictions. These exemptions, however, require justification for such crossings and the use of all appropriate best management practices (BMPs). Crossings should be regularly monitored, especially after severe storms and floods, to determine if excessive sedimentation is occurring. Sewer lines that cross streams should also be inspected to ensure that they are not leaking or damaged in any way.

It is also essential to minimize practices that cause water flow to bypass the riparian zone. Drain tiles used to improve drainage from agricultural fields discharge flow directly into the stream (Fennessy and Cronk 1997, Osborne and Kovacic 1993, Vought et al. 1994). Jacobs and Gilliam (1985) compared fields drained by a riparian buffer with fields drained by ditches and drain tile. They observed high nitrate reduction in the riparian buffer, but much lower nitrate loss in drainage ditches and very little nitrate loss for fields drained by tile. Osborne and Kovacic (1993) recom-

mend constructing riparian wetlands at the outflow of the drain tile to intercept nutrients and allow them to be processed and slowly infiltrate into the stream.

Similarly, in urban areas, storm drains carry contaminant-laden water from impervious surfaces directly into streams. This practice should be avoided, if not banned. Ideally, runoff should be allowed to infiltrate into the soil as close as possible to the source. If some drainage is required, outflow should either be directed in the form of sheet flow across a suitably wide riparian buffer or into stormwater detention ponds or constructed wetlands. When necessary, constructed wetlands may be incorporated into the riparian buffer if they are properly located and do not harm existing wetlands or other critical riparian features (Schueler 1995).

Supporting Restoration

To properly perform their functions, stream corridors should be maintained in a naturally vegetated state consisting of native trees and understory plants. If the buffer does not currently support this type of forest community, restoration is necessary. Sometimes restoration can be achieved simply by leaving the site alone and allowing it to naturally revert to forest; in other cases, streambanks must be stabilized, native trees need to be planted, or other forms of management may be necessary.

In their ordinances, local governments may require developers to perform any necessary riparian restoration work as a condition for issuing site development permits. At the least, restoration should be encouraged on all sites. Many restoration projects do not require a great deal of technical expertise and can be conducted by volunteer organizations such as scout troops and Adopt-a-Stream organizations. There are numerous technical publications available that provide guidance for stream corridor restoration. (See Appendix B.)

Buffers and Private Property Rights

Perhaps the biggest impediment to establishing riparian buffer ordinances is concern for private property rights. Yet, a well-written ordinance that is administered fairly will balance protection of water quality and wildlife habitat with the rights of property owners. It is entirely possible to provide strong protection for riparian buffers while respecting the rights of property owners.

Buffers protected by a riparian buffer ordinance remain in the ownership of the property owner. This is in contrast to greenways, which are generally publicly owned. A buffer ordinance should never mandate public access to private property, nor should it restrict activities on a property to such an extent that the owner cannot make use of it. These conditions would be grounds for a takings lawsuit (discussed here). If a local government cannot provide adequate buffer protection along a stream segment without infringing on property rights, then the government must either acquire the parcels in question or try to offset the lack of protection with controls (whether regulatory or voluntary) somewhere else in the stream basin.

The Issue of Takings

Today, any discussion of land-use management must include the takings issue. Originally, the word "taking" referred to cases when the government physically appropriated private property for public works projects and was required to offer "just compensation" under the Fifth Amendment. Later, the courts determined that it is possible for laws to regulate properties to such an extent that the effect is virtually the same as a physical taking. Relatively few laws have been found to have this effect, however (Witten 1997, Zoekler 1997).

Under the U.S. Constitution, a taking will occur

- a. if the law fails to advance legitimate state interests *or*
- b. deprives a property of all or nearly all viable economic use *or*
- c. constitutes an invasion or mandates open access to the property.

Courts have clearly demonstrated that laws designed to protect water quality or even the environment in general are justified in the interest of public health, safety, and welfare (Witten 1997, Zoekler 1997). In the case of *Lucas v. South Carolina Coastal Council* (1992), the U.S. Supreme Court noted that uses of property may be denied if they constitute a public nuisance, in accordance with long-established common law (Patterson 1993). Since nonpoint source pollution of water may constitute a public nuisance

and riparian buffers are effective at preventing such pollution, the buffers may be protected from takings claims on these grounds as well.

In most cases, loss of some—but not all—economic value does not constitute a taking. In other words, the courts have determined that landowners do not have an absolute right to the most economically valuable use of their land. They do, however, have the right to exclude others from their land. Any law that requires landowners to allow public access to their property runs the risk of being declared a taking. Witten (1997) notes that the courts have determined that such access exactions must be justified by the activity being permitted by the ordinance; i.e., they must be “roughly proportional” (*Dolan v. City of Tigard* [1994]).

It is possible for an ordinance to be a taking under Georgia, but not federal, law.

An ordinance can also be declared a taking under the Georgia Constitution. Georgia courts consider similar criteria as federal courts in making such a determination, but there are some significant differences. In Georgia, government regulations are presumed to be valid unless it is proven that

- a. the regulation causes “significant detriment” and
- b. there is an “insubstantial relationship” between the regulation and the public interest.

Although both these tests must be met, it is possible for an ordinance to be a taking under Georgia law but not federal law. However, Georgia courts have upheld the validity of riparian buffer protection programs. In a unanimous decision in *Threatt v. Fulton County* (1996), the Georgia Supreme Court ruled that the county’s riparian buffer ordinance, based on the Metropolitan River Protection Act, did not constitute a taking: “[T]here has been no showing that the buffer area or any other applicable regulation has deprived the condemnees of any or all economically viable or beneficial use of their property . . . nor is this a situation in which it can be argued that fairness and justice dictate that the burden imposed by the regulation be borne by the public as a whole” (Zoeckler 1997).

It is not clear what, if any, negative effects riparian buffers have on property values as a whole. On the one hand, buffers reduce the permissible uses on portions of properties, which would tend to reduce their value. On the other hand, studies have shown that home buyers will pay a premium for land that includes or is adjacent to protected stream corridors (National Park Service 1995). This issue will be discussed further.

An ordinance established in accordance with the recommendations that we have presented should run very little risk of being declared a taking of property. However, it is wise to anticipate potential problems and

establish systems that reassure landowners that their rights will not be violated. This requires three components, discussed earlier:

1. A degree of flexibility in administering the buffer program
2. Fair, understandable, but strict procedures for variances
3. Open communication with landowners

How Much Land Is Affected by Riparian Buffers

Those concerned with property rights frequently suggest that riparian buffers will deprive small landowners of the use of most or all of their land. Buffer proponents counter that these concerns are greatly exaggerated. However, both parties frequently lack information to resolve this dispute. Several questions arise:

- How much of a land parcel of a given size is taken up by a buffer of a given width?
- Is there a property size threshold, beneath which buffers take up an inordinate percentage of the property area?
- What proportion of properties are affected by buffers in a typical developing county or municipality?
- What is the total area taken up by buffers in a typical county or municipality?

We can find simple answers to some of these questions with a few basic mathematical calculations. For example, a square one-acre lot is about 200 feet on each side. If the lot borders a stream, a 100-foot buffer will take up 50 percent of the lot. A square quarter-acre lot that borders a stream would lie entirely within the buffer. Of course, a lot that has been subdivided to a quarter-acre probably has a house on it (or will have one soon), which would earn it an exemption as a preexisting activity under the buffer ordinance proposed here. But what is the effect of buffers on larger lots that have not yet been subdivided, or on lots of unusual shape?

We conducted a study to determine the area of actual properties covered by a riparian buffer of various widths. We used a Geographic Information System (GIS) to draw buffers onto a tax parcel map. A tax map from Cherokee County was used as an example because the county lies within an environmentally sensitive region, is rapidly growing, and includes parcels of varying size. In addition, the study examined some countywide effects of riparian buffer protection.

Tax Parcel Map Analysis

The first part of the study used a tax parcel map from Cherokee County to examine the effects of a riparian buffer ordinance on individual prop-

erties. The map that was selected depicted parcels ranging in size from 1 acre to 120+ acres, including some that have been recently developed and some that are expected to be developed soon. Those about to be developed are of most interest because they are the ones most likely to be affected by the riparian buffer ordinance. Figure 3 shows the tax parcel map with buffers of 50 feet, 75 feet, and 100 feet, respectively. Although riparian buffers are indicated around all ponds, only those water bodies that cross property boundaries will be affected by the ordinance. Therefore, only the two ponds in the left center of the maps are included in calculations.

Thirty-eight percent of the parcels on the map could theoretically be affected by riparian buffers because they include or are adjacent to a stream or protected pond (again, however, recall that existing uses are “grandfathered,” so most parcels would not be affected by a buffer ordinance in the near future, or possibly ever). Among affected parcels, a 50-foot buffer covers an average of 10.86 percent of the property area. A 75-foot buffer covers an average of 16.32 percent of affected properties, and a 100-foot buffer covers an average of 21.59 percent of affected properties.

Figure 3. Area of Tax Parcels Covered by Riparian Buffers of Different Widths

This figure shows 50-foot buffers. Numerals 1-7 indicate parcels that are described in the text and in Table 2.

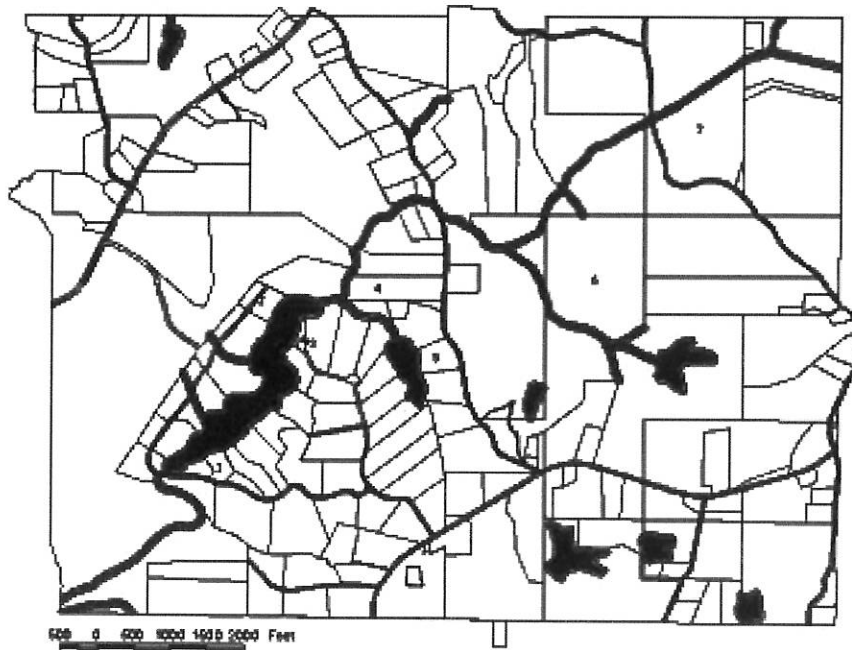
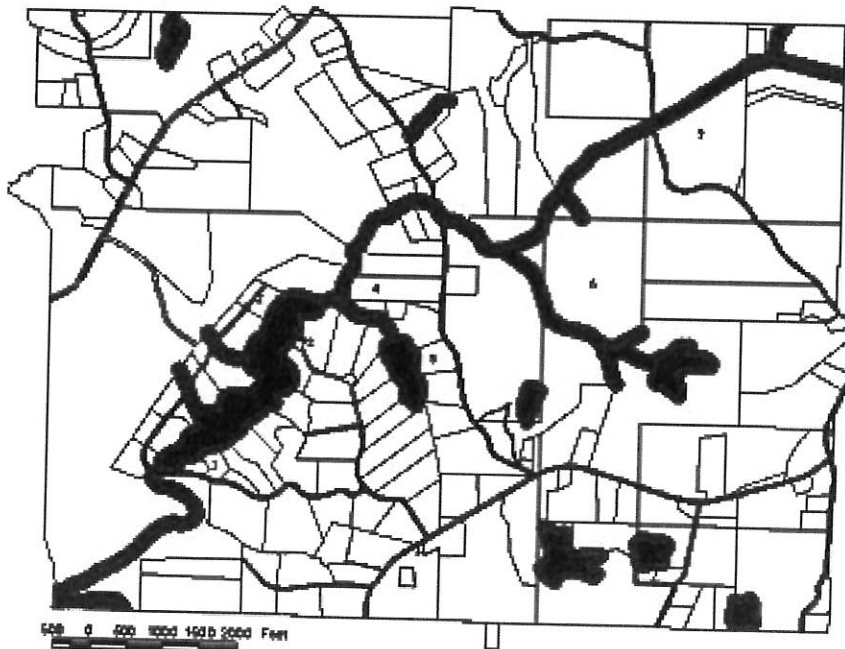
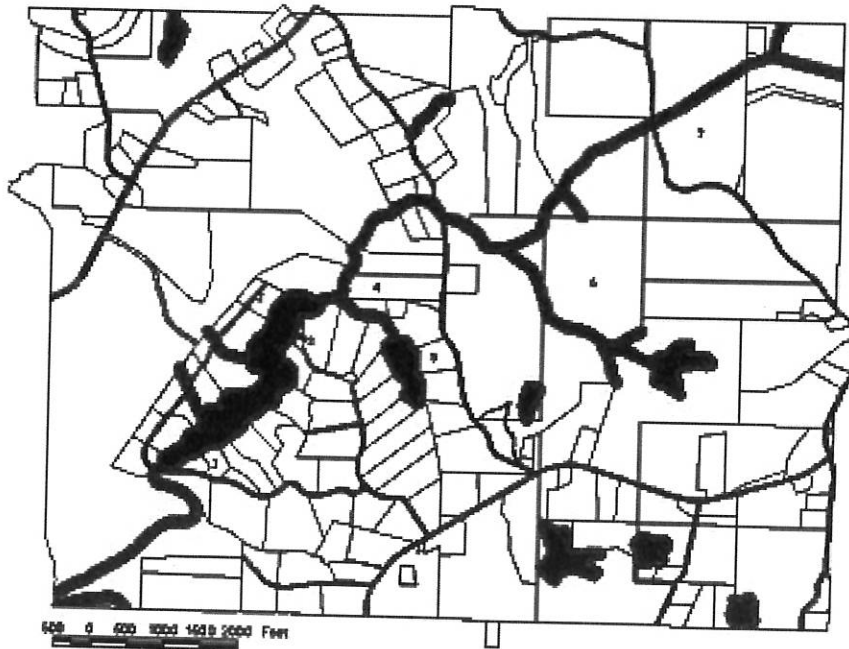


Figure 3 (continued). Area of Tax Parcels Covered by Riparian Buffers of Different Widths

The top figure shows 75-foot buffers, while the bottom figure shows 100-foot buffers. Numerals 1-7 indicate parcels that are described in the text and in Table 2.



Seven parcels, indicated on the maps by numerals, have been selected as examples. The characteristics of these parcels are shown in Table 1. Property 1 is slightly less than 3 acres. A 50-foot buffer covers 11.7 percent of the property, while a 100-foot buffer covers 23.16 percent. While this area is significant, there is clearly sufficient area left on the parcel (2.2 acres) for constructing a house or other structure. Property 2 is larger but loses a similar proportion of its area to the buffer because it has a longer section of shoreline (note that the areas on both sides of the road are included in this parcel). Property 3 is a smaller lot (1.2 acres) with a relatively long section of shoreline. Even a 50-foot buffer takes up almost half of the property, and a 100-foot buffer covers 85 percent of its area. If this parcel were not exempted, the owner would clearly have grounds for a variance to a 75- or 100-foot buffer. Due to the property's shape, the owner might even qualify for a variance from a 50-foot buffer.

Properties 4 and 5 are further examples of medium-sized properties that lose appreciable land area to the buffer but are clearly still quite usable. Property 6 is a 76-acre lot that is crossed by a stream and two small tributary creeks. Even with 100-foot buffers, however, the property only loses 10.70 percent of its area. Property 7 is a 120-acre lot that loses 6.12 percent of its land area when covered by 100-foot buffers.

Although it is not possible to generalize too much from these few examples, some observations can reasonably be made. For large properties of 70 acres or more, the effect of even wide buffers is likely to be minimal to developers. To a farmer, the losses could be significant, but agricultural operations are almost always existing activities and would therefore be

Table 1. Proportion of Parcels Covered by Riparian Buffers of Different Widths

ID numbers in this table indicate parcels shown on the tax maps (Figure 3).

Parcel		Percent of Property Covered by Buffer		
ID Number	Size (acres)	50 feet	75 feet	100 feet
1	2.8	11.7	17.4	23.1
2	5.0	10.5	15.6	20.8
3	1.2	47.3	68.0	85.3
4	10.4	4.2	6.4	8.5
5	4.9	8.2	12.8	16.6
6	76.4	5.2	7.9	10.7
7	120.1	3.1	4.6	6.1

exempted. Medium-sized parcels of 3 to 70 acres will be affected but not generally to the point where they are not able to be developed. Many properties in this size class have been created as large-lot subdivisions and will likely be exempted as existing activities. But if they are not, the land lost to even a 100-foot buffer will almost always be less than 25 percent, which is not sufficient to preclude reasonable use.

On the other hand, small parcels of less than 3 acres are likely to be significantly impacted by wide (100-foot) buffers, and parcels of 1 acre or less will be significantly impacted by 50-foot buffers. Lots of a quarter acre or less may be swallowed up by riparian buffers. Again, it must be noted that such lots will generally be exempted because they have already been subdivided for residential or commercial purposes.

As discussed previously, the major effect of a riparian buffer is to alter patterns of future development away from streams and rivers. This means that mostly large properties are affected, and as was shown here, the effect on large properties is not excessive. Incorporating a buffer ordinance into the subdivision site plan should not have a negative economic effect on the developer; indeed, as will be discussed, the effect can even be positive.

Countywide Analyses

To examine the effect of a buffer ordinance on the county scale, digital maps of streams, rivers, and lakes derived from USGS topographic maps were used along with a map that showed land cover for Cherokee County derived from satellite images. Results showed that if 50-foot riparian buffers were applied to every stream, river, and lake that appeared on the map, a total of 5.9 percent of the county would be covered by buffers. For 75-foot buffers, 8.6 percent would be covered and for 100-foot buffers 11.3 percent would be included within buffer boundaries. On one hand, this is an underestimate because topographic maps do not include all streams and are not recommended for defining protected streams (they were used in this study solely because they were readily available in digital form). On the other hand, however, this is a gross overestimate of the impact that buffers would have in the short term, because it does not account for any exceptions or variances.

Land cover within 100-foot (30 meters) buffers is summarized in Table 2. Deciduous forest is the most common land cover within riparian buffers in Cherokee County (56.45 percent), followed by mixed forest (25.07 percent) and evergreen forest (8.07 percent). If all forest classes and wetland classes are combined, 91.39 percent of county riparian corridors are covered in some type of natural vegetation. The remainder of the riparian zones are in pasture/hay (4.57 percent), low-intensity residential (1.45 percent), or other uses (2.59 percent).

Table 2. Frequency of Land Cover Types in Riparian Zones in Cherokee County

Land Cover Type	Percent of Riparian Zone in Land Cover Type	
	100 foot (30 meter) zone	50 meter zone
Low-Intensity Residential	1.45	1.45
Hi-Intensity Residential	0.08	0.08
Hi-Intensity Commercial/Industrial	0.63	0.59
Bare Rock/Sand	0.01	0.01
Quarries/Mines/Pits	0.04	0.04
Transitional Barren	0.81	0.91
Deciduous Forest	56.45	53.89
Evergreen Forest	8.07	9.56
Mixed Forest	25.07	25.16
Pasture/Hay	4.57	5.58
Row Crops	0.81	0.91
Other Grasses	0.21	0.26
Woody Wetlands	0.98	0.92
Herbaceous Wetlands	0.82	0.64
Total	100.00	100.00

These results indicate that the vast majority of riparian corridors have the potential to serve as effective buffers. At present, these areas are not heavily utilized for agriculture or development, and in most areas protecting 100-foot buffers would not have an effect on existing land uses. Nevertheless, we still expect that local governments will exempt existing uses to ensure that the ordinance is politically acceptable.

Conclusions

Riparian buffers can cover a very significant portion of small properties. Those that are not exempted from a buffer ordinance will require variances. However, in most cases these properties will be exempted because they constitute existing uses. The effect of riparian buffers on medium to large properties is not sufficient to cause a major negative economic effect on landowners in any but exceptional cases, and even a 75-foot to 100-foot riparian buffer ordinance should not impose an unreasonable burden on property owners. In the case of Cherokee County, more than 90 percent of the riparian zones are covered by forest or wetlands, indicating a high potential for effective riparian buffer protection.

Economic Considerations Regarding Buffers

Streams and riparian zones have economic value. This value can be broken down into a number of components, some of which are obvious and some of which are not. For example, an obvious value is that of the timber in a riparian zone that can be cut and sold. A less obvious value is that of an endangered species living in a river, which could become extinct if the riparian zone is not protected. The obvious values are what economists call “market values” because we can measure them in actual prices, while the less obvious ones are “nonmarket.” They are real, but are harder to measure because they don’t correspond to things that are commonly bought and sold. A riparian buffer ordinance offers economic benefits by preserving both market and nonmarket values. However, it also carries some economic costs, most of which are related to the costs of administration and the loss of unrestricted use of properties. Table 3 summarizes many of these costs and benefits.

It is important to note that most of the actual costs of having buffer ordinances relate to market values, while many of the benefits are nonmarket. If these nonmarket values are ignored, people will tend to undervalue riparian buffers, which can lead to poor protection and negative impacts on both the environment and the economy (Bollman 1984). The purpose of this section is to call attention to the economic benefits of riparian buffers so that they can be included in peoples’ decisions. No attempt is made to quantify the actual economic benefits or costs of buffers, because such an assessment is beyond the scope of this project. The purpose here is to show that riparian buffers *do* have economic benefits, and these can be equal to or greater than the economic costs of a buffer ordinance.

As discussed previously, it is helpful to think of the riparian buffer as a land-use planning tool. In deciding to protect the riparian buffer, we are determining how best to use land in a riparian zone. Bollman (1984) summed up the situation:

In making a decision as to how much, if any, of a riparian system is to be given up for the development of homesites, the administrator should take into account the relative scarcity of this resource or the relative scarcity of the wildlife and fish it supports and the amenities and recreation it makes available, and compare this with the relative scarcity of homesites in this vicinity or close by. Are there substitute opportunities for such homesites?

Table 3. Economic Costs and Benefits of a Riparian Buffer Ordinance

Costs	Benefits
Local Government	
Staff time	Increased property values
Staff training	Bank stabilization and erosion control
Technical assistance to developers and landowners	Low-maintenance stormwater management
Public education efforts	Reduction in flood damage
	Groundwater recharge
	Preservation of wildlife habitat
	Increased recreational opportunities and revenues
	Preservation of drinking water quality
Developers and Property Owners	
Technical surveys and reports	Increased property values
Buffer delineation	Low maintenance stormwater management
Loss of developable land	Bank stabilization and erosion control
Buffer restoration	Increased diversity of wildlife
Buffer protection during construction	Increased recreational opportunities
	Direct economic uses of buffer (e.g., logging)

Most of Georgia has no shortage of substitute sites for homes. Providing substitutes for the functions of the riparian buffer, however, is not easy and could require considerable expense. This expense represents the economic value of the buffer. When this value is fully considered, it becomes clear that in most cases the best land use for a riparian zone is as a functional riparian buffer.

The Costs

As shown in Table 3, a buffer ordinance imposes costs on a local government in the form of staff time, staff training, public education efforts, and technical assistance to landowners and developers. For most local govern-

ments, the greatest expense is staff time (Herson-Jones 1995). Although these costs should be relatively easy to quantify, telephone calls to local government officials revealed that most governments do not track the expenses of their buffer programs. Therefore the actual staff time dedicated to buffer program administration is not known.

For landowners, the most significant cost of the ordinance is likely to be the loss of full use of the land covered by the riparian buffer. Any negative impact that this has on property values is offset to some degree by the positive effects of improved aesthetics, discussed in the next section. Other costs include time spent delineating the riparian buffer and completing necessary documentation to submit to the local government authority. Protecting the riparian buffer during construction might also add slightly to construction costs. If the stream channel is degraded, the local government could require the landowner to take measures to stabilize the banks and restore vegetation.

The Benefits

Direct Economic Uses

A protected riparian buffer is not without economic value. For example, selective logging is acceptable within the riparian zone, provided it is not conducted immediately adjacent to the stream and appropriate best management practices (BMPs) are observed. Rob Miller, the owner of a diversified agriculture business in Oregon, installed riparian buffers for bank stabilization and water quality purposes, but found that the system could also be profitable. He was quoted as saying, "We've found that if we use trees in the riparian buffer that produce profitable wood, we can help the environment *and* make a profit. . . we can make this system pay for itself" (USDA Forest Service 1997). Other nondestructive uses of buffer land include hunting, hiking, and water-based recreational activities.

The Value of Recreation and Tourism

Rivers and streams are natural magnets for recreational activities. A protected riparian buffer acquired by the local government can serve as a public park or greenway, a function with significant economic value. Of course, most buffers protected by an ordinance will remain in the ownership of individuals, and it is usually not legal or desirable for a government to mandate access to these lands. Still, these buffers can contribute positively to recreation and tourism by improving water quality and by improving the aesthetics of stream corridors, both of which are important for water-based recreational activities. Determining the economic value of stream recreation gives us an indication of the value of riparian buffers.

There are several ways to calculate this. Crandall et al. (1992) used three techniques to quantify the economic value of The Nature Conservancy's Hassayampa River Preserve in Arizona: the Contingent Valuation Method (CVM), the Travel Cost Method (TCM), and local economic impact analysis. CVM is a survey-based method used to quantify the nonmarket value of resources. It has become an accepted standard among federal agencies, and even though it has its share of detractors, the method has been shown to produce reliable results (Carson and Mitchell 1993, Loomis and White 1996). Using CVM, researchers asked visitors how much they would be willing to pay to ensure that there were adequate instream flows to maintain a healthy river system. Respondents were willing to pay an average of \$65, or a total of \$520,000. For the TCM, the river preserve was valued based on the amount of money and time visitors spent to visit it. The TCM estimated the value of the preserve at \$613,360. Local economic impact analysis determined that visitors who came to the area specifically to visit the preserve contributed \$88,240 to the local economy (Crandall et al. 1992).

Buffers can contribute positively to recreation and tourism by improving water quality and the aesthetics of stream corridors.

These methods have been used to value parks in Georgia as well. Visitors to state parks spend as much as \$13.26 per visit (Bergstrom et al. 1990). Recreationalists on one segment of the Broad River near Athens, Georgia, contribute \$88,200 in total output to the local economy each year. Visitors further responded that if the Broad River were officially protected, their number of annual visits would nearly double, yielding another \$79,772 in economic output (Bradford 1991). Whitewater rafting on the Chattooga River in North Georgia contributes some \$2.29 million in total economic output to the state (English and Bowker 1996).

Property Value Increases

A protected stream or river corridor is an aesthetic amenity that can increase property values in the nearby community. Quantifying the effect of a single factor on property values requires an economic method known as the hedonic price technique. Kulshreshtha and Gillies (1993) used this method to analyze the value of the South Saskatchewan River to the residents of the city of Saskatoon, Canada. They found that houses closer to the river were worth \$1,044 to \$33,363 more than otherwise similar homes in the same neighborhood. Rental properties close to the river were valued at \$34 per month more. Based on this research, the authors calculated the total aesthetic value of the river at \$1.2 million.

For a developer, a riparian buffer ordinance has the effect of requiring subdivision projects to take the form of conservation subdivisions. That is, the property is subdivided in such a way that individual lots are clustered together and a significant area of land is preserved in a natural

state. Studies have shown that home buyers will pay more to live in a well-designed conservation subdivision (National Park Service 1995). In addition, clustering homes allows the developer to save money on infrastructure costs, which itself can offset the costs of development. Georgia developer Steve MacCaulay, who specializes in conservation subdivisions, says that he can make the same profits off of conservation subdivisions as he can from conventional designs (1999). In "The Economics of Watershed Protection," Schueler (1997) concludes that buffers and certain other watershed protection tools "all maintain the equity value of a parcel since they increase the value of developed properties."

Whether or not the increase in property value is large enough to cancel out the negative effect buffers can have on regulated properties depends on factors such as the size of the parcel and the nature of the land use. Cases will vary widely, but the following patterns appear likely:

- Small- to medium-sized parcels directly affected by the buffer may experience a slight decrease in property value. Landowners who would suffer significant economic hardship would qualify for a variance under the proposed buffer ordinance.
- For large properties that are subdivided for housing development, the effect is likely to be neutral.
- Properties near a protected riparian buffer but not directly affected by the buffer may experience a slight increase in property value.

The net effect across a county is likely to be neutral, yielding no net increase or decrease in property tax revenue for a local government (Schueler 1997).

The Value of Clean Water

Perhaps the most important purpose of riparian buffers, as far as local governments are concerned, is to maintain good water quality. Of course, it is very difficult to determine the precise contribution of buffers to clean water without extensive (and expensive) monitoring. Nevertheless there are methods available to determine the value of the water quality services of a buffer as well as to determine the value of clean water itself.

The most straightforward way to measure a buffer's water quality services is to determine how much it would cost to provide similar services using technological approaches. The Congaree Bottomland Hardwood Swamp in South Carolina is estimated to provide ecosystem services equivalent to a \$5 million water treatment plant (Floodplain Management Association 1994). A study in Maryland determined that using riparian buffers and nonstructural controls was more cost-effective than engineered solutions in reducing nutrient pollution by 40 percent. The nonstructural approach

was estimated to cost some \$2.2 million, while equivalent structural techniques would cost \$3.7 million to \$4.3 million per year (Palone and Todd 1998). The city of Boulder, Colorado, decided that the services provided by Boulder Creek and its riparian zone were more valuable than those provided by a new nitrification tower, and chose to restore the stream system rather than to construct the technological solution (National Park Service 1995). Riparian buffers can also eliminate the need for engineered storm-water management systems, which can cost from \$500 to \$10,000 per acre (Palone and Todd 1998).

The value of buffers can also be determined by the costs saved in the treatment of drinking water. For many contaminants, including sediment, there is a direct relationship between quantity of pollutant and cost of treatment. The city of Roswell, Georgia, has seen its water treatment costs increase by 50 percent over the course of three years, due mainly to increased turbidity in the water (Moring 1999). Preventing sedimentation (and other forms of contamination) by establishing buffers upstream of water intakes and reservoirs may be more cost-effective than paying to remove the pollutants once they have entered the water. This was the approach that New York City used in acquiring lands in its watershed rather than constructing a new treatment facility. Water treatment is not only the business of municipalities, but of industry as well. To fully value clean water, one should also consider the amount spent by water-dependent manufacturers (such as breweries) to treat water for their production processes.

One way to value buffer functions is to determine how much people are willing to pay for clean water.

A riparian buffer ordinance is a planning tool: it prevents stream degradation before it happens. Therefore, a buffer's value can further be estimated from the amount of money people are willing to pay for stream restoration once damage has occurred. Montgomery County, Maryland, is spending \$20,000 to \$50,000 *per housing lot* in some areas to restore degraded streams and riparian zones. In an equally extreme case, Fairfax County, Virginia, is spending \$1.5 million to restore two miles of degraded stream and riparian area (Palone and Todd 1998).

Another approach to valuing buffer functions is to determine how much people are willing to pay for clean water, using the Contingent Valuation Method. Carson and Mitchell (1993) determined that people are willing to pay an average of \$275 per household per year (in 1990 dollars) to achieve the goals of the Clean Water Act. Based on this, total benefits provided by clean water in the United States (not counting the benefits of drinking water) were approximately \$46.7 billion in 1990. This exceeds the Department of Commerce's estimates of the costs of the Clean Water Act for 1988 (\$37.3 billion) but is lower than the projected costs of the Clean Water Act in 2000 and beyond.

A 1986 CVM study found that Chicago residents would pay \$30–\$50 to improve the quality of the city's streams and rivers (Croke et al. 1986). The authors suggested that this relatively low value was due to the fact that residents relied mostly on Lake Michigan for recreational purposes, so there was less demand for stream services. Lant and Tobin (1989) used CVM to determine the value of services provided by riparian wetlands in Iowa river basins. In the Edwards basin, the value of wetland services was found to be roughly equivalent to the value of the land as cropland. In the Skunk River Basin, the riparian zones were found to be worth 10 times as much as functioning wetlands than as farmland. The Skunk River riparian zones were highly valued because wetlands were relatively scarce and their services were valued by the population of the nearby metropolitan area of Ames, Iowa. Because such services have not been measured by market value, however, riparian zones are often misallocated to farming purposes. This represents a net economic loss to all citizens.

Fox et al. (1995) calculated the economic benefit of improved water quality from agricultural soil conservation practices, based on water treatment costs and the value of sport fishing. The researchers determined that narrow buffer strips on agricultural land in a 8,155 acre watershed will produce a water quality benefit of more than \$36,000. The cost of sacrificing agricultural income from the land used for these narrow buffer strips was \$481. Of course, such buffer strips are not the same as wide riparian buffers, but even if the land lost from production were 20 times as great as the authors suggested, the cost would still be under \$10,000—less than a third of the benefits.

The Value of Endangered Species

Studies have shown that people will pay to preserve habitats for various endangered species.

Threatened and endangered species have value to people even when they provide no direct economic benefits. Economists have used CVM to determine how much people are willing to pay to ensure that these organisms survive. This represents the existence value of species (how much people value the continued existence of these organisms), as well as the bequest value (the value of leaving some of these organisms for future generations) and option value (the value of having an option to do something with species in the future, even if we have no direct economic uses for them at present). Studies have shown that people will pay \$3–\$9 per year to preserve habitat for relatively obscure nongame species such as the Colorado Squawfish (*Ptychocheilus lucius*) and the Striped Shiner (*Notropis chrysocephalus*). They will pay considerably more (\$30–\$60 per year) for higher profile species such as the Chinook Salmon (*Oncorhynchus tshawytscha*) (Loomis and White 1996). One study found that Washington households would pay \$73 per year to re-

move dams and restore the Elwha River to improve salmon populations (Loomis 1998). Studies such as this can serve as a guide in determining the economic benefits of habitat protection tools such as riparian buffers. For example, if each of the almost 100,000 residents of Cherokee County were willing to pay just \$5 per year to protect threatened and endangered fish species, the estimated value of the county's aquatic habitat would be \$500,000. At least a few studies of this sort should be conducted in Georgia to determine the economic value of nongame wildlife, currently valued very little.

Regional Quality of Life Benefits

Protecting riparian buffers can have other long-term positive impacts on the economy of a region. Clean water, like clean air, can be a significant economic asset. A community that protects its natural resources through the use of buffer ordinances and other laws may find that it is easier to attract both businesses and employees. Respondents to a 1995 survey by *Money* magazine ranked clean air and water as the two most important factors in choosing a place to live—even above low crime rates and low taxes (US EPA 1996). On the state level, it has been shown that the states with the highest levels of environmental protection also have the best economies (Fodor 1999). An aesthetically pleasing environment can improve the efficiency level of the workforce and reduce turnover (Kulshreshtha and Gillies 1993). Therefore, a local government that protects its natural environment also protects its economic future.

Conclusions

This section has shown that there are concrete economic benefits of riparian buffers and that economic tools exist to quantify these benefits. However, there is still the need for a detailed study on the economic costs and benefits of a specific riparian buffer ordinance. Such a study should include such elements as

- a determination of the costs of actual administration and enforcement of a buffer ordinance,
- a study of the hedonic effects of a buffer ordinance on property values, and
- a contingent valuation study of people's willingness to pay for protected and improved water quality.

A thorough economic analysis of this sort would provide information to resolve some of the debate that surrounds buffers and to help local governments create buffer programs that provide the greatest economic and environmental benefits.

Even without such a study, it is apparent that the economic benefits of buffers are at least of a magnitude comparable to their costs. In the future, we can expect the economic balance to tilt even more in favor of protecting riparian zones and other natural resources. Technological advances are steadily reducing the costs of agricultural and industrial goods, but the same cannot be said of natural features such as riparian zones. Therefore, in terms of goods and services produced from the agricultural and industrial sectors, the natural environment is becoming increasingly valuable (Bollman 1984). It makes economic sense to preserve these areas and locate extractive or destructive uses elsewhere when possible (Bollman 1984).

Summary of Recommendations

Over the course of this paper, we have endeavored to supply the reader with sufficient information to create an effective, legally and politically defensible program for protecting riparian buffers. However, we recognize that by including this amount of information—and a number of relevant digressions—we run the risk that the major points might be lost. To ensure that does not happen, we summarize here the key steps to developing an effective riparian buffer ordinance.

- Pass a riparian buffer ordinance that protects all perennial and intermittent streams based on the model included in this publication. The buffer ordinance should emphasize the multiple formations of riparian buffers and should specify that buffers be maintained in a naturally forested state.
- Develop a public information campaign to explain the benefits of a riparian buffer ordinance, the restrictions of the buffer ordinance, and procedures for seeking variances.
- Identify critical riparian areas in which existing land uses may pose a threat to water quality. Such areas include cattle watering spots, areas where chicken waste is applied to fields, older homes with septic drain fields, etc. Develop a program to work with landowners and other government entities (e.g., Natural Resources Conservation Services) to minimize stream impacts in these areas.
- Identify high-priority wildlife habitat areas, historic or prehistoric sites, and other exceptional areas in the county that merit preservation. All floodplain lands that are not included in a protected stream corridor should automatically be included in this list. Some riparian corridors of 300-foot width or greater should also be included. These high-priority areas should be designated “sending areas” under a transferable development rights (TDR) program, if present. Funding should be pursued to acquire high-priority areas that otherwise cannot be preserved.
 - Establish limits on impervious surfaces to control runoff.
 - Properly enforce erosion and sedimentation control statutes.
 - Amend the jurisdiction’s existing flood damage prevention ordinance to include language that emphasizes the importance of limiting floodplain development for purposes of flood storage, water quality protection, and wildlife habitat preservation. Prohibit activities in the floodplain that could directly threaten water quality, including application of fertilizers and pesticides, siting of animal waste lagoons, and disposal of hazardous materials, including motor oil.

- Establish a 25 NTU turbidity standard to monitor erosion and sedimentation control and riparian buffer effectiveness in different stream segments.

References

- Arnold, C. L., Jr., and C. J. Gibbons. 1996. Impervious surface coverage: The emergence of a key environmental indicator. *APA Journal* 62 (2): 243-58.
- Barling, R. D., and I. D. Moore. 1994. Role of buffer strips in management of waterway pollution: A review. *Environmental Management* 18 (4): 543-58.
- Beasley, B. 1998. Personal communication with author, 14 September.
- Bergstrom, J. C., H. K. Cordell, A. E. Watson, and G. A. Ashley. 1990. Economic impacts of state parks on the economies of the South. *Southern Journal of Agricultural Economics* (December): 6977.
- Billingsley, T., and B. Mizerak. 1997. *Sustaining Georgia's aquatic resources: A partnership on the Etowah*. Athens: Georgia Environmental Policy Institute, University of Georgia.
- Binford, M. W., and M. J. Buchenau. 1993. Riparian greenways and water resources. In Smith, D. S., and P. Cawood, eds. *Ecology of Greenways*. Minneapolis, Minn.: University of Minnesota Press.
- Bledsoe, M., J. Covert, W. Jones, A. Rivers, and K. Tyler. 1998. *An introduction to transferable development rights*. Athens: University of Georgia.
- Bollman, F. H. 1984. Economic analysis and the management of riparian resources. Pages 221-25 in R. E. Warner and K. M. Hendrix, eds., *California riparian systems: Ecology, conservation and management*. Berkeley: University of California.
- Bradford, B. D. 1991. An economic analysis of river corridor protection. Master's thesis, University of Georgia.
- Brock J. 1998. Personal communication with author, 18 November.
- Brown County Board of Supervisors. 1998. *An ordinance to create chapter 10 of the Brown County code relating to agricultural shoreland management*. Brown County, Wis.
- Brown, W. E., and D. S. Caraco. 1997. Muddy water in—muddy water out? *Watershed Protection Techniques* 2 (3): 393-403.
- Carson, R. T., and R. C. Mitchell. 1993. The value of clean water: The public's willingness to pay for boatable, fishable, and swimmable quality water. *Water Resources Research* 29 (7): 2445-54.
- Cowie, G., and P. Hardy. 1997. *Environmental management requirements for stream and river corridors in Georgia*. Athens: University of Georgia.
- Crandall, K. B., B. G. Colby, and K. A. Rait. 1992. Valuing riparian areas: A southwestern case study. *Rivers* 3 (2): 88-98.
- Croke, K., R. Fabian, and G. Brenniman. 1986. Estimating the value of improved water quality in an urban river system. *Journal of Environmental Systems* 16 (1): 13-24.
- Dean, C. 1997. A case study of the establishment and revision of watershed regulations for Douglas County, Georgia. Pages 220-21 in K. J. Hatcher, ed., *Proceedings of the 1997 Georgia Water Resources Council*. Athens: University of Georgia.
- Desbonnet, A., P. Pogue, V. Lee, and N. Wolf. 1994. *Vegetated buffers in the coastal zone: A summary review and bibliography*. Providence: University of Rhode Island.

- English, D. B. K., and J. M. Bowker. 1996. Economic impacts of guided whitewater rafting: A study of five rivers. *Water Resources Bulletin* 32 (6): 1319-28.
- Federal Interagency Floodplain Management Task Force (FIFMTF). 1996. *Protecting floodplain resources: A guidebook for communities*. Federal Emergency Management Agency (Washington, D.C.: FEMA 268, June).
- Fennessy, M. S., and J. K. Cronk. 1997. The effectiveness and restoration potential of riparian ecotones for the management of nonpoint source pollution, particularly nitrate. *Critical Reviews in Environmental Science and Technology* 27 (4): 285-317.
- Ferguson, B. 1998. Personal communication with author, 20 November.
- Floodplain Management Association. 1994. Economic benefits of wetlands. *FMA News: The Newsletter of the Floodplain Management Association* (July).
- Fodor, E. 1999. Better not bigger: How to take control of urban growth and improve your community. Gabriola Island, Canada: New Society Publishers.
- Fowler, L., and H. Neuhauser. 1998. *A Landowner's Guide: Conservation Easements for Natural Resource Protection* (2d ed.). Athens, Ga.: Georgia Environmental Policy Institute/Georgia Department of Natural Resources.
- Fox, G., G. Umali, and T. Dickinson. 1995. An economic analysis of targeting soil conservation measures with respect to off-site water quality. *Canadian Journal of Agricultural Economics* 43: 105-18.
- Fulton County Board of Commissioners. 1998. *South Fulton County tributary protection ordinance*. Fulton County, Ga.
- Georgia Department of Natural Resources, Environmental Protection Division (GA DNR EPD). 1998. *Public notice 98-17 (Georgia's unified watershed assessment process)*. Atlanta: GA DNR EPD.
- Georgia Forestry Commission. 1995. *Georgia's best management practices for forestry*. Macon, Ga.: Georgia Forestry Commission.
- Georgia Forestry Commission. 1999. *Georgia's best management practices for forestry*. Macon, Ga.: Georgia Forestry Commission.
- Georgia Soil and Water Conservation Commission (GSWCC). 1994. *Guidelines for stream bank restoration*. Atlanta: GSWCC.
- Herson-Jones, L. M. 1995. *Riparian buffer strategies for urban watersheds*. Washington, D.C.: Metropolitan Washington Council of Governments.
- Jacobs, T. C., and J. W. Gilliam. 1985. Riparian losses of nitrate from agricultural drainage waters. *Journal of Environmental Quality* 14 (4): 472-78.
- Johnson, A. P. 1999. Buffering Georgia with creativity and federal programs. Pages 223-26 in K. J. Hatcher, ed., *Proceedings of the 1999 Georgia Water Resources Conference*. Athens: University of Georgia.
- Klein, R. D. 1979. Urbanization and stream quality impairment. *Water Resources Bulletin* 15 (4): 948-63.
- Kulshreshtha, S. N., and J. A. Gillies. 1993. Economic evaluation of aesthetic amenities. *Water Resources Bulletin* 29 (2): 257-66.
- Kundell, J. E., and T. C. Rasmussen. 1995. *Erosion and sedimentation: Scientific and regulatory issues*. Athens: University of Georgia.
- Lant, C. L., and G. A. Tobin. 1989. The economic value of riparian corridors in corn-belt floodplains: A research framework. *Professional Geographer* 41 (3): 337-49.

- Loomis, J. B. 1998. Estimating the public's values for instream flow: Economic techniques and dollar values. *Journal of the American Water Resources Association* 34 (5): 1007-14.
- Loomis, J. B., and D. S. White. 1996. Economic values of increasingly rare and endangered fish. *Fisheries* 21 (11): 6-10.
- MacCaulay, S. 1999. Personal communication with author, 31 March.
- Malanson, G. P. 1993. *Riparian landscapes*. Cambridge, U.K.: Cambridge University Press.
- Maryland Office of Planning. 1993. *Preparing a sensitive areas element for the comprehensive plan*. Baltimore, Md.: Maryland Office of Planning.
- May, C. W., R. R. Horner, J. R. Karr, B. W. May, and E. B. Welch. 1997. Effects of urbanization on small streams in the Puget Sound Lowland Ecoregion. *Watershed Protection Techniques* 2 (4): 483-94.
- Miller, A. E., and A. Sutherland. 1999. *Reducing the impacts of storm water runoff through alternative development practices*. Athens: University of Georgia.
- Moring, S. 1999. Personal communication with author, 30 March.
- National Park Service. 1995. *The economic impacts of protecting rivers, trails and greenway corridors: A resource book*. San Francisco: National Park Service Western Regional Office.
- Osborne, L. L., and D. A. Kovacic. 1993. Riparian vegetated buffer strips in water-quality restoration and stream management. *Freshwater Biology* 29: 243-58.
- Palone, R. S., and A. H. Todd (eds.). 1998. *Chesapeake Bay riparian handbook: A guide for establishing and maintaining riparian forest buffers*. Radnor, Pa.: USDA Forest Service. NA-TP-0297.
- Patterson, J. J. 1993. California land use regulation post Lucas: The history and evolution of nuisance and public property laws portend little impact in California. *UCLA Journal of Environmental Law & Policy* 11: 175-201.
- Peterson, S. C., and K. D. Kimball. 1995. *A citizen's guide to conserving riparian forests*. Portland, Ore.: River Network.
- Rublee, P. 1999. Personal communication with author, 26 January.
- Schueler, T. 1995. *Site planning for urban stream protection*. Silver Spring, Md.: Center for Watershed Protection.
- . 1997. The Economics of Watershed Protection. *Watershed Protection Techniques* 2 (4): 469-81.
- Swift, L. W., Jr. 1986. Filter strip width for forest roads in the Southern Appalachians. *Southern Journal of Applied Forestry* 10: 27-34.
- Trimble, S. W. 1997. Contribution of stream channel erosion to sediment yield from an urbanizing watershed. *Science* 278: 1442-44.
- Tyler, K., S. Hitch, and H. Sample. 1998. *Case studies: River protection on a regional (watershed) basis*. Athens: University of Georgia.
- U.S. Army Corps of Engineers (USACE). 1991. *Buffer strips for riparian zone management*. Waltham, Mass.: USACE.
- United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1997. *EQIP Q&As*. Washington, D.C.: USDA.
- United States Department of Agriculture (USDA). 1998. *Stream corridor restoration: Principles, practices and processes*. Draft internet release. [http://www.hqnet.usda.gov/stream_restoration/]. Accessed October 1, 1998.

- United States Department of Agriculture Forest Service. 1997. Essential buffers provide economic benefits. *Inside Forestry* (Fall), USDA Forest Service, Rocky Mountain Research Station.
- United States Environmental Protection Agency (USEPA) 1996. *Liquid assets*. Washington, D.C.: US EPA.
- University of Georgia School of Environmental Design (UGASED). 1997. *Land development provisions to protect Georgia water quality*. Atlanta: Georgia Department of Natural Resources.
- . 1998. *Clean water action plan: Restoring and protecting America's waters*. Washington, D.C.: USEPA. EPA-840-R-98-001.
- Vead, M. 1998. Personal communication with author, 24 September.
- Verhovek, S. H. 1999. Salmon put on U.S. list as at risk. *New York Times on the Web*. [<http://www.nytimes.com>]. Accessed March 25, 1999.
- Vought, L. B.-M., J. Dahl, C. L. Pedersen, and J. O. Lacoursière. 1994. Nutrient retention in riparian ecotones. *Ambio* 23 (6): 343-48.
- Wahl, M. H., H. M. McKellar, and T. M. Williams. 1997. Patterns of nutrient loading in forested and urbanized coastal streams. *Journal of Experimental Marine Biology and Ecology* 213: 111-31.
- Wenger, S. J. 1999. *A review of the scientific literature on riparian buffer width, extent and vegetation*. Athens: Institute of Ecology Office for Public Service and Outreach, University of Georgia.
- West, D. 1998. Personal communication with author, 3 December.
- Witten, J. 1997. *Counties and the takings issue: How far can government go in regulating private property?* Washington, D.C.: National Association of Counties.
- Zoeckler, R. L. 1997. *A summary of takings law*. Athens: Georgia Environmental Policy Institute.

Appendix A: Model Riparian Buffer Ordinance

This is a sample riparian buffer ordinance, using a fixed width, written as an amendment to an existing zoning ordinance. It creates a new buffer overlay zone along all perennial and intermittent streams. Local governments that have not adopted a zoning ordinance may use a stand-alone version, available from the University of Georgia Institute of Ecology Office of Public Service and Outreach. A variable-width buffer ordinance is also available. Call 706-542-3948 or email lfowler@arches.uga.edu for further information.

This ordinance complies with the state minimum standards for river corridor protection as well as the minimum standards for water supply watershed protection that relate to riparian buffers. Some local governments may be subject to additional requirements for water supply watershed protection. These requirements are summarized at the end of this document.

Language that is optional or variable is indicated by brackets and/or parentheses. The name of the local government should be inserted for [county/municipality].

ARTICLE [X] RIPARIAN BUFFER ZONE

1. INTENT AND PURPOSE.

The streams and rivers of [county/municipality] supply much of the water required by [county/municipality] citizens for drinking and other municipal and industrial uses [alternatively, for regions that rely on groundwater]. The quality of the groundwater that is used for drinking, agricultural and industrial purposes in [county/municipality] is connected with the quality of the surface water in the streams and rivers of [county/municipality]. Furthermore, the people of [county/municipality] use the surface waters for fishing, canoeing, and other recreational and economic purposes. The [county/municipality] Board of Commissioners finds that the protection of the streams and rivers of [county/municipality] is vital to the health, safety and economic welfare of its citizens.

It is therefore the intent of this ordinance to amend the Zoning Ordinances of [county/municipality] to establish a new riparian buffer zone of restricted development and limited land use adjacent to all perennial streams and rivers in [county/municipality]. The purposes of the riparian buffer zone are: to protect public and private water supplies, to trap sediment and other pollutants in surface runoff, to promote bank stabilization, to protect riparian

This section establishes the justification for the ordinance. It should be tailored to emphasize the important aquatic resources of the local area.

For example, if endangered species of fish are present, insert a sentence that says "In addition, the [local river] and its tributaries provide habitat for a number of threatened and endangered species of fish." If these terms are defined previously in the zoning ordinance then they may not have to be re-defined here.

wetlands, to minimize the impact of floods, to prevent decreases in base flow, to protect wildlife habitat, and to generally maintain water quality.

The standards and regulations set forth in this ordinance are created under the authority of the [county/municipality]'s Home Rule and zoning powers defined in the Georgia Constitution (Article IX, Section 2). In the event of a conflict between or among any provisions of this ordinance, or any other ordinances of [county/municipality], the requirement that is most restrictive and protective of water quality shall apply.

2. TITLE.

This Ordinance shall be known as "The Riparian Buffer Zone Requirements of [county/municipality]" and may be referred to generally as "Riparian Buffer Requirements."

3. DEFINITIONS.

"Existing land use" means a land use which, prior to the effective date of this ordinance, is either:

- (1) completed; or
- (2) ongoing, as in the case of agricultural activity; or
- (3) under construction; or
- (4) fully approved by the governing authority; or
- (5) the subject of a fully completed application, with all necessary supporting documentation, which has been submitted for approval to the governing authority or the appropriate government official, for any construction-related permit.

"Impervious surface" means any paved, hardened or structural surface which does not allow for complete on-site infiltration of precipitation. Such surfaces include but are not limited to buildings, driveways, streets, parking lots, swimming pools, dams, tennis courts, and any other structures that meet the above definitions.

"Land-disturbing activity" means any grading, scraping, excavating or filling of land, clearing of vegetation and any construction, rebuilding, or significant alteration of a structure.

"Protected area" means any land and vegetation that lies within the riparian buffer zone, as defined herein.

"Riparian Buffer Zone" or "RBZ" is an overlay zone that encompasses all land within 100 feet [or other fixed width, but never less than 50 feet] on either side of all streams in [county/municipality], measured as a line extending perpendicularly from the stream bank.

The width of the riparian buffer zone is first defined here. Naturally, this width must be consistent throughout the ordinance. We recommend a width of 100 feet, which is consistent with state minimum standards. If

“Second order stream or higher” means any stream that is formed by the confluence of two or more other streams, as indicated by solid or dashed blue lines on the United States Geological Survey 7.5 minute quadrangle maps, of the most recent edition.

“Stream” or “River” means all of the following:

(a) any perennial stream or river (or portion thereof) that is portrayed as a solid line on a United States Department of Agriculture Soil Survey Map of the most recent edition; and

(b) any intermittent stream or river (or portion thereof) that is portrayed as a dashed line on a United States Department of Agriculture Soil Survey Map of the most recent edition; and

(c) any lake or impoundment that does not lie entirely within a single parcel of land; and

(d) any other stream as may be identified by [county/municipality].

4. DISTRICT USE AND REGULATIONS.

4.1. The Riparian Buffer Zone District (RBZ) is an overlay zone that encompasses all land within 100 feet [or width defined above] on either side of all streams in [name of county/municipality], measured as a line extending from the stream bank. The RBZ must be maintained in a naturally vegetated state. Any property or portion thereof that lies within the RBZ is subject to the restrictions of the RBZ as well as any and all zoning restrictions that apply to the tax parcel as a whole.

4.2. The following land uses are prohibited within the protected area:

(a) any land-disturbing activity;

(b) septic tanks and septic tank drain fields;

(c) buildings, accessory structures, and all types of impervious surfaces;

(d) hazardous or sanitary waste landfills;

(e) receiving areas for toxic or hazardous waste or other contaminants;

(f) mining;

(g) storm water retention and detention facilities, except those built as constructed wetlands that meet the approval of the Office of Planning and Zoning of [county/municipality].

5. EXCEPTIONS.

5.1. The following land uses are excepted from the provisions of Section 4:

(a) Existing land uses, except as follows:

1. when the existing land use, or any building or structure involved in that use, is enlarged, increased, or extended to occupy a greater area of land; or

a width narrower than 100 feet is specified, a separate ordinance or section of this ordinance must be added to cover those stream segments governed by minimum standards (water supply watersheds and large rivers).

“Stream bank” means the uppermost limit of the active stream channel, usually marked by a break in slope.

This ordinance specifies the use of soil survey maps, which may be the most accurate maps for determining affected streams. In some areas other map types may be preferable. This section should be changed to refer to the most accurate map available for the jurisdiction, with accuracy determined by field evaluations.

Local governments with port facilities may wish to except these facilities provided they meet certain requirements.

2. when the existing land use, or any building or structure involved in that use, is moved (in whole or in part) to any other portion of the property; or

3. when the existing land use ceases for a period of more than one year.

(b) Agricultural production, provided that it is consistent with all state and federal laws, regulations promulgated by the Georgia Department of Agriculture, and best management practices established by the Georgia Soil and Water Conservation Commission.

(c) Selective logging, except within 50 feet [*or other distance, but never less than 25 feet*] of a stream and provided that logging practices comply with the best management practices set forth by the Georgia Forestry Commission.

(d) Crossings by transportation facilities and utility lines. However, issuance of permits for such uses or activities is contingent upon the completion of a feasibility study that identifies alternative routing strategies that do not violate the RBZ, as well as a mitigation plan to minimize impacts on the RBZ.

(e) Temporary stream, stream bank, and vegetation restoration projects, the goal of which is to restore the stream or riparian zone to an ecologically healthy state.

(f) Structures which, by their nature, cannot be located anywhere except within the riparian buffer zone. These include docks, boat launches, public water supply intake structures, facilities for natural water quality treatment and purification, and public wastewater treatment plant sewer lines and outfalls.

(g) Wildlife and fisheries management activities consistent with the purposes of Section 12-2-8 (as amended) of the Official Code of Georgia Annotated.

(h) Construction of a single family residence, including the usual appurtenances, provided that:

1. based on the size, shape or topography of the property, as of the effective date of this ordinance, it is not reasonably possible to construct a single-family dwelling without encroaching upon the Riparian Buffer Zone; and

2. the dwelling conforms with all other zoning regulations; and

3. the dwelling is located on a tract of land containing at least two acres. For purposes of these standards, the size of the tract of land shall not include any area that lies within the protected river or stream; and

Important Note:

Section 5.1(h)-1 exceeds the state minimum standards by requiring the residence to be located outside of the riparian buffer if possible. As of this writing, such a provision may require EPD approval. Contact the University of Georgia, Institute of Ecology Office of Public Service and Outreach, for more information on this issue.

4. there shall be only one such dwelling on each two-acre or larger tract of land; and

5. septic tank drain fields shall not be located within the buffer area, although a septic tank or tanks serving such a dwelling may be located within the RBZ.

(i) Other uses permitted by the Georgia DNR or under Section 404 of the Clean Water Act.

5.2. Notwithstanding the above, all excepted uses, structures or activities shall comply with the requirements of the Erosion and Sedimentation Act of 1975 and all applicable best management practices and shall not diminish water quality as defined by the Clean Water Act. All excepted uses shall be located as far from the stream bank as reasonably possible.

6. MINOR VARIANCES.

6.1. A minor variance is a reduction in buffer width over a portion of a property in exchange for an increase in buffer width elsewhere on the same property such that the average buffer width remains 100 feet [or width specified above]. No minor variance can decrease buffer width to less than 75 feet [or 25 feet less than the buffer width]. A property owner may request a minor variance from the requirements of the RBZ by preparing the appropriate application with the [county/municipality] Office of Planning and Zoning.

Minor variances allow for "buffer averaging," which gives the landowner a fast and easy method for reducing the width of the RBZ by small amounts, if necessary.

6.2. Each applicant for a minor variance must submit documentation that issuance of the variance will not result in a reduction in water quality. All minor variances shall adhere to the following criteria:

(a) the width of the RBZ shall be reduced by the minimum amount possible, and never to less than 75 feet [or 25 feet less than the buffer width] at any point; and

(b) reductions in the width of the RBZ shall be balanced by corresponding increases in the RBZ elsewhere on the same property, such that the total area included in the RBZ is the same as if it were 100 feet [or width specified above] wide; and

(c) land-disturbing activities must comply with the requirements of the Erosion and Sedimentation Act of 1975 and all applicable best management practices.

7. MAJOR VARIANCES.

7.1. A major variance is a reduction in RBZ width that is not balanced by a corresponding increase in buffer width elsewhere on the same property, or else a reduction in buffer width to less than 75 feet [or as specified

above]. A property owner may request a major variance from the requirements of the RBZ by preparing the appropriate application with the [county/municipality] Office of Planning and Zoning. Such requests shall be granted or denied by application of the criteria set forth below in section 24.7.3 and will be subject to the conditions set forth below in section 24.7.4. Under no circumstances may an exception be granted which would reduce the buffer to a width less than the minimum standards established by state or federal law.

7.2. Each applicant for a major variance must provide documentation that describes:

- (a) existing site conditions, including the status of the protected area; and
- (b) the needs and purpose for the proposed project; and
- (c) justification for seeking the variance, including how buffer encroachment will be minimized to the greatest extent possible; and
- (d) a proposed mitigation plan that offsets the effects of the proposed encroachment during site preparation, construction, and post-construction phases.

7.3. No major variance shall be issued unless the [county/municipality] Zoning Board of Appeals determines that:

- (a) the requirements of the RBZ represent an extreme hardship for the landowner such that little or no reasonable economic use of the land is available without reducing the width of the RBZ; or
- (b) the size, shape, or topography of the property, as of the effective date of this ordinance, is such that it is not possible to construct a single-family dwelling without encroaching upon the Riparian Buffer Zone.

7.4. Any major variance issued by the [county/municipality] Zoning Board of Appeals will meet the following conditions:

- (a) the width of the RBZ is reduced only by the minimum extent necessary to provide relief; and
- (b) land-disturbing activities must comply with the requirements of the Erosion and Sedimentation Act of 1975 and all applicable best management practices. Such activities shall not impair water quality, as defined by the federal Clean Water Act and the rules of the Georgia Department of Natural Resources, Environmental Protection Division; and
- (c) as an additional condition of issuing the variance, the [county/municipality] Zoning Board of Appeals may require water quality monitoring downstream from the site of land-disturbing activities to ensure that water quality is not impaired.

Section 7.3a is designed to ensure that any landowner who might have grounds for a claim of "takings" can qualify for a variance. Section 7.3b is designed to ensure that even those landowners with lots smaller than two acres, as of the effective date of the ordinance, can construct a single-family dwelling within the buffer if necessary to prevent extreme hardship. Landowners with lots of two acres or larger who must encroach on the buffer in order to construct a home are excepted in section 5.1(h)-1.

8. REPEAL CLAUSE.

The provisions of any ordinances or resolutions or parts thereof in conflict herewith are repealed, save and except such ordinances or resolutions or parts thereof which provide stricter standards than those provided herein.

9. SEVERABILITY.

Should any section, subsection, clause, or provision of this Article be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of this Article in whole or any part thereof other than the part so declared to be invalid.

10. AMENDMENT.

This Article may be amended from time to time by resolution of the Board of Commissioners of [county/municipality]. Such amendments shall be effective as specified in the adopting resolution.

11. EFFECTIVE DATE.

This article shall become effective upon its adoption.

ADDITIONAL WATER SUPPLY WATERSHED REQUIREMENTS.

The above ordinance meets the riparian buffer provisions of the state minimum standards for water supply watershed protection. However, the minimum standards place other restrictions on small and large water supply watersheds in addition to riparian buffer requirements. A water supply watershed is the drainage basin upstream of governmentally owned drinking water supply intake; a small water supply watershed is less than 100 square miles, while a large water supply watershed is 100 square miles or larger. A water supply reservoir is a governmentally owned impoundment of water for the primary purpose of providing water to one or more governmentally owned public drinking water systems.

Within a seven-mile radius upstream of a water supply reservoir, no impervious surfaces, septic tanks or septic tank drain fields may be installed within 150 feet of a stream bank. *Note: The EPD can approve alternate criteria for protecting drinking water standards. Because the ordinance above is generally stricter than the state minimum standards, the EPD may allow local governments to waive certain criteria, such as the 150-foot impervious surface/septic setbacks. We do not recommend waiving the other requirements described here.*

In both large and small water supply watersheds, new facilities which handle hazardous materials of the types and amounts determined by the Department of Natural Resources must perform their operations on impermeable surfaces having spill and leak collection systems as prescribed by the Department of Natural Resources.

In small water supply watersheds only, new hazardous waste treatment or disposal facilities are prohibited, and new sanitary landfills are allowed only if they have synthetic liners and leachate collection systems. The impervious surface area (including all public and private structures, utilities or facilities) of the entire water supply watershed shall be limited to twenty-five percent (25%) of the area of the watershed or existing use, whichever is greater.

Appendix B: Additional Riparian Buffer Resources

For more information, see the following resources, categorized by topic. Publications data for this additional material can be found in the References.

Riparian Buffers

Chesapeake Bay Riparian Handbook:

A Guide for Establishing and Maintaining Riparian Forest Buffers.

R. S. Palone and A. H. Todd, eds., 1998.

Available on the Internet at <http://www.chesapeakebay.net/facts/forests/handbook.htm>.

Site Planning for Urban Stream Protection.

T. Schueler, 1995.

Available from the Center for Watershed Protection at 410-461-8323.

State and Federal Laws Affecting Streams and Rivers

Environmental Management Requirements for Stream and River Corridors in Georgia.

G. Cowie and P. Hardy, 1997.

Available from the EPD at 1-888-EPD-5947 (Atlanta: 404-657-5947).

Floodplain Protection

Protecting Floodplain Resources: A Guidebook for Communities.

Federal Interagency Floodplain Management Task Force, 1996.

Available from the EPD floodplain management office at 404-656-6382.

Conservation Easements

A Landowner's Guide: Conservation Easements for Natural Resource Protection (second edition).

L. Fowler and H. Neuhauser, 1998.

Available from the Georgia Environmental Policy Institute at 706-546-7507.

Reducing Impervious Surfaces and Other Local Environmental Provisions

Land Development Provisions to Protect Georgia Water Quality.

University of Georgia School of Environmental Design, 1997.

Available from the EPD at 1-888-EPD-5947 (Atlanta: 404-657-5947).

Reducing the Impacts of Storm Water Runoff through Alternative Development Practices

A. E. Miller and A. Sutherland, 1999

Available from the Institute of Ecology, University of Georgia, Athens, GA 30602-2202; call 706-542-2968; or email lfowler@arches.uga.edu.

Stream Restoration

Stream Corridor Restoration: Principles, Practices and Processes

USDA interagency document, 1998.

Available on the Internet at http://www/hqnet.usda.gov/streams_restoration.htm.

Guidelines for Stream Bank Restoration

Georgia Soil and Water Conservation Commission, 1994.

Available from GSWCC at 706-542-4242.

Takings

Counties and the Takings Issue: How Far Can Government Go in Regulating Private Property?

J. Witten, 1997.

Available from the Association County Commissioners of Georgia at 404-522-5022.

A Summary of Takings Law

R. L. Zoeckler, 1997.

Available from the Georgia Environmental Policy Institute at 706-546-7507.

Transferable Development Rights (TDRs)

An Introduction to Transferable Development Rights

M. Bledsoe et al.

Available from the Institute of Ecology at 706-542-2968.

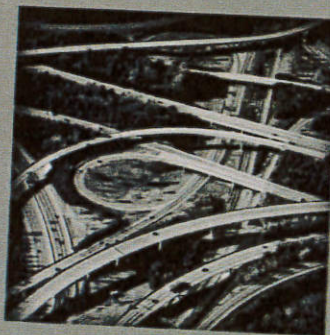
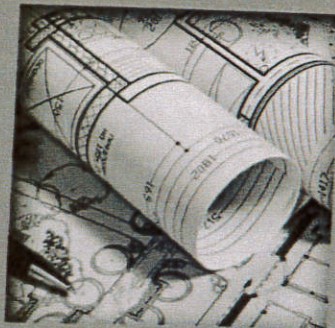
For Other Model Ordinances for Natural Resources Protection, Contact:

Office of Public Service and Outreach

Write to Institute of Ecology, University of Georgia, Athens, GA 30602-2202; call 706-542-2968; or email lfowler@arches.uga.edu.

9

Zoning and **LAND USE** LAW in **GEORGIA**



By Seth G. Weissman, G. Douglas Dillard and Jill Skinner

PUBLISHED BY COUNCIL FOR QUALITY GROWTH

Zoning and **LAND USE** LAW in **GEORGIA**

By Seth G. Weissman, G. Douglas Dillard and Jill Skinner

PUBLISHED BY COUNCIL FOR QUALITY GROWTH

ABOUT THE AUTHORS

Seth G. Weissman

Seth G. Weissman is a founding partner of the real estate, land use and litigation law firm of Weissman, Nowack, Curry & Wilco, P.C. He received his undergraduate degree from the University of Pennsylvania, a master's degree in city and regional planning from the University of North Carolina-Chapel Hill and his law degree from Duke University. In addition to practicing law, Seth is a Professor of the Practice of City Planning at Georgia Institute of Technology where he teaches classes on Growth Management and Mixed Use Developments. He is also a member of the American College of Real Estate Attorneys and a past Chair of the Real Property Law Section of the State Bar of Georgia. Seth's practice involves all aspects of real estate development and land use with special emphasis on mixed use and other forms of complex real estate.

G. Douglas Dillard

Doug Dillard is one of Georgia's most accomplished zoning and land use attorneys. His practice focuses on zoning, planning and land use, local government law, land use litigation and eminent domain. Doug is AV-rated and has litigated and won many of the landmark zoning cases decided by the Georgia Supreme Court and Court of Appeals. He is also a champion of smart growth and religious freedom and has fought to protect the rights of mosques and other houses of worship seeking to locate in areas where they can best serve the needs of their members. Doug has published articles for the *Georgia State University Law Review*, *The Atlanta Lawyer* and the Institute of Continuing Legal Education and serves on the Editorial Advisory Board for the *Journal of Applied Real Estate Analysis*. He was named a 2012 "Georgia Top Rated Lawyer" for Zoning, Planning and Land Use by Martindale-Hubbell*.

Jillian R. Skinner

Jillian R. Skinner received her undergraduate degree from the University of Georgia in International Business. She is currently pursuing a law degree at Georgia State University College of Law with a certificate in Land Use and Environmental Law, and a master's in city and regional planning from Georgia Institute of Technology. At Georgia State College of Law, Jillian is an Urban Fellow with the College's Center for the Comparative Study of Metropolitan Growth and is President of the Georgia State Moot Court program. She has been with the law firm of Weissman, Nowack, Curry & Wilco since January of 2012.



ABOUT THE COUNCIL

The Council for Quality Growth was launched in 1985 to advocate on behalf of the development industry to promote balanced and responsible growth in metro Atlanta and throughout Georgia.

The Council achieves our mission through *Advocacy, Education and Information*. We work with the development community and local elected officials, government administrators and staff plus state agencies and legislative and executive leadership. We collaborate to ensure that long-range community planning, zoning and other local, regional and state regulatory policies promote thriving communities, strong infrastructure and a prospering economy. We also encourage adequate government services, and we advocate for a sensible and efficient regulatory environment.

The Council actively advocates and lobbies in city council, county commission, regional commission and state legislative and regulatory forums. We advise and educate local and state elected officials and professional staff who actively seek the Council's policy advice and input. Members, in turn, receive exclusive access to the most comprehensive information about regulatory and policy issues in the region.

The Council is proud to be the publisher of *Zoning and Land Use Law in Georgia*. As a part of our Education platform, this historic compilation and detailed history of Georgia's evolving land use law and guide to present practice helps to fulfill the Council's mission.

Our thanks go to Authors Seth G. Weissman, G. Douglas Dillard and Jillian R. Skinner for their work.

For more information on the Council for Quality Growth please visit our website at www.councilforqualitygrowth.org

in Georgia further require that the variance applicant show to the board of zoning adjustment that the public will not suffer if the variance is granted.³⁸⁵⁹

§ 14.1 The Logic of Allowing for Variances

Variances may be allowed for a variety of reasons. Described as the “safety valve” of zoning, variances can be used to avoid potential constitutional suits by preventing regulations from going “too far” in taking valuable property rights from landowners. However, variances may also be counterproductive to a local government’s comprehensive zoning scheme because a variance essentially allows a property owner to disregard impermissible uses under the zoning classification.³⁸⁶⁰

A simple example will better illustrate the role of variances. Suppose City A enacted a new single-family residential zoning ordinance that requires ten-foot setbacks from all property lines. Property owner B lives in the newly created single-family residential zoning district. Owner B’s property is oddly-shaped, and with the new setback lines, he is unable to construct a house or any other permissible use or structure on his property. Owner B files an application for a variance from City A’s Board of Zoning Adjustment (BZA) asking for a reduction in his setback lines to five feet so that he can construct a house. City A’s BZA denies the variance request and Property Owner B sues City A alleging that its new single-family residential zoning district is unconstitutional as applied to him as it takes his property without just compensation. The variance in this case would have allowed the property owner to put his property to productive use and would have avoided the lawsuit.

§ 14.2 Use Variances versus Non-Use (Area) Variances

There are two types of variances: use variances and area variances. Use variances allow a property owner to engage in a use that would otherwise not be permitted under the zoning ordinance.³⁸⁶¹ So, for instance, if an owner applies for a variance to construct a gas station in a residentially-zoned area where commercial uses are not permitted, the owner is applying for a use variance because he is attempting to change the use of his property under the applicable zoning ordinance. Use variances may be explicitly prohibited in some jurisdictions,³⁸⁶² or may be permissible so long as certain conditions imposed by a Board of Zoning Adjustment are satisfied. Because the goal of most zoning ordinances is to separate potentially incompatible uses, the grant of a use variance in contravention of applicable zoning regulations diminishes

3859 The City of Atlanta Ordinance requires that an applicant meet all four conditions for variance approval. Atlanta, Ga. Code, § 16-26.003.

3860 3 Arden H. Rathkopf & Daren A. Rathkopf, *Rathkopf’s The Law of Zoning and Planning* § 58:1 (2005).

3861 3 Arden H. Rathkopf & Daren A. Rathkopf, *Rathkopf’s The Law of Zoning and Planning* § 58:1 (2005).

3862 See Roswell, Ga. Code, § 31.4.8.

the effectiveness of the zoning ordinance and may be counterproductive to a local government's comprehensive zoning scheme.

Area variances, also referred to as a nonuse or buildings variances,³⁸⁶³ allow an owner to build improvements or change dimensional requirements on his or her property that would otherwise violate the zoning ordinance so long as the owner complies with all other use restrictions on the property.³⁸⁶⁴ So, for instance, using the example from above, if property owner B applies for a variance to reduce setback lines on his property, he is applying for an area variance because he is only asking to change certain dimensional requirements on the property rather than his use of the property. Generally, area or nonuse variances are less controversial than use variances because they have an arguably less detrimental effect on a local government's comprehensive zoning ordinance than use variances.

In the case of *Municipal Electric Authority of Georgia v. 2100 Riveredge Associates, Ltd.*,³⁸⁶⁵ the Court noted the distinction between building or area restrictions and "use" restrictions. In that case, the Court stated that restrictions which involve "setback lines, frontage requirements, height limitations, lot-size restrictions, density regulations, and yard requirements" constitute area variances that are typically granted based on the practical difficulty of developing a property without such variance.³⁸⁶⁶ The Court determined that an area variance has no relationship to a change in use of the property. Use variances, on the other hand, typically permit a "use other than that prescribed by the zoning ordinance in a particular district," and are granted to mitigate undue hardship on the property owner if such variance is not granted.³⁸⁶⁷

§ 14.3 Legal Standard for the Issuance or Denial of a Variance

The local zoning ordinance sets forth the requirements an applicant must satisfy before the zoning board may issue a variance. These requirements must be clear and unambiguous to ensure an applicant and the local zoning body issuing the variances know the applicable criteria to be applied in a variance determination. Local zoning boards use legislatively-crafted standards set forth in the zoning ordinance to grant or deny a variance and use little, if any, discretion when making this determination. Since discretion is tightly-controlled, variance decisions are quasi-judicial actions

³⁸⁶³ In the case of *Municipal Electric Authority of Georgia v. 2100 Riveredge Associates, Ltd.*, the Georgia Court of Appeals distinguished the two types of variances as "use" restrictions and "building" restrictions. 180 Ga. App. 326, 348 S.E.2d 890 (1986).

³⁸⁶⁴ See gen. 3 Arden H. Rathkopf & Daren A. Rathkopf, *Rathkopf's The Law of Zoning and Planning* § 58:1 (2005).

³⁸⁶⁵ 180 Ga. App. 326, 348 S.E.2d 890 (1986).

³⁸⁶⁶ *Municipal Electric Authority of Georgia v. 2100 Riveredge Associates, Ltd.*, 180 Ga. App. 326, 348 S.E.2d 890 (1986).

³⁸⁶⁷ *Municipal Electric Authority of Georgia v. 2100 Riveredge Associates, Ltd.*, 180 Ga. App. 326, 348 S.E.2d 890 (1986).

maintain and improve the dense buffer zone.³⁸⁸⁴ A neighboring landowner sued in opposition to the issuance of the variance. The Georgia Court of Appeals affirmed the issuance of the variance and found that to “deprive a person of a legitimate business would certainly create an unnecessary hardship.”³⁸⁸⁵

§ 14.3.3 Self-Inflicted Hardship

If the landowner affirmatively acts to bring about the hardship, he or she may be estopped from receiving a variance.³⁸⁸⁶ For instance, let us say that a property owner divides his or her land into two parcels and sells one of the parcels. After the sale, the owner is left with an odd-shaped parcel of property and is unable to build a house on the property that complies with the current zoning ordinance, such as setback requirements, and thus applies for a variance. Under these circumstances, a local zoning board may choose not to issue the property owner a variance because the owner has brought the hardship of an odd-shaped piece of property upon himself or herself by selling part of the property. These facts are almost synonymous with the 1987 Georgia Supreme Court case of *Matheson v. DeKalb County*.³⁸⁸⁷ In *Matheson*, property owners subdivided their land into two lots and sought building permits to construct a residence on the rear subdivided lot.³⁸⁸⁸ A stop-work order was issued soon after the owner received building permits because it was alleged that his two lots violated lot-width and side-yard requirements of the county zoning ordinance.³⁸⁸⁹ The owners filed an application for a variance and when the application was denied the owners sued.³⁸⁹⁰ The Georgia Supreme Court found for the County and held that the Board of Zoning Appeals was authorized to deny the variance because the difficulties and hardships complained of by the property owners “were not inherent in the property, but result[ed] from its subdivision by plaintiffs.”³⁸⁹¹ Therefore, where a property owner creates hardship on his or her property, a variance may not be issued.

Generally, when an owner purchases property with knowledge that the previous owner had been denied permits or variances for a particular hardship related to the property, the new owner’s hardship may be considered self-inflicted and could thereafter be denied a variance.³⁸⁹²

³⁸⁸⁴ *McKnight v. Mitchell*, 144 Ga. App. 109, 110, 240 S.E.2d 313 (1977).

³⁸⁸⁵ *McKnight v. Mitchell*, 144 Ga. App. 109, 111, 240 S.E.2d 313 (1977).

³⁸⁸⁶ *Matheson v. DeKalb County*, 257 Ga. 48, 354 S.E.2d 121 (1987).

³⁸⁸⁷ 257 Ga. 48, 354 S.E.2d 121 (1987).

³⁸⁸⁸ *Matheson v. DeKalb County*, 257 Ga. 48, 48, 354 S.E.2d 121 (1987).

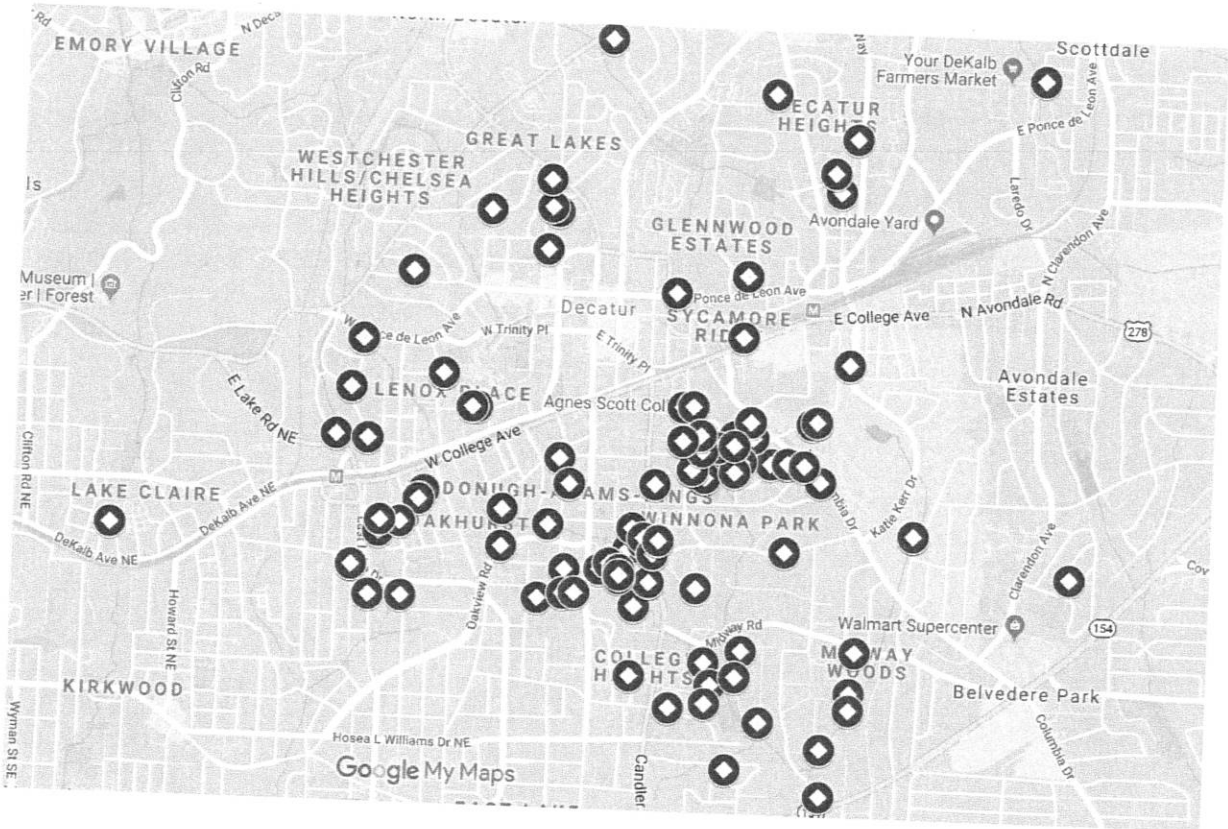
³⁸⁸⁹ *Matheson v. DeKalb County*, 257 Ga. 48, 48, 354 S.E.2d 121 (1987).

³⁸⁹⁰ *Matheson v. DeKalb County*, 257 Ga. 48, 48, 354 S.E.2d 121 (1987).

³⁸⁹¹ *Matheson*, 257 Ga. 48, 50, 354 S.E.2d 121 (1987).

³⁸⁹² 23 Am. Jur. 3d *Proof of Facts* 563 § 12 (2005).

Map of Addresses, Signatories of Friends of Shoal Creek Petition
Opposing WSE / Weekes Street Proposal



Text of Petition:

Dear City of Decatur Zoning Board of Appeals, City Manager, and Environmental Sustainability Board:

I understand that the proposed WSE Development Weekes Street variance to build 300+ apartments and 500+ parking places (known as "The Heights at East Decatur") would:

1. Place 280 feet of Shoal Creek underground permanently.
2. Remove a mature tree forest canopy in the stream buffer of Shoal Creek. Up to an acre of trees would be removed for the project.
3. Intrude into protected buffer of another branch of the stream.

4. Add 550 parking spaces and potentially result in traffic issues in the vicinity of S. Columbia Dr., College Ave., Talley Street, and Commerce Dr.

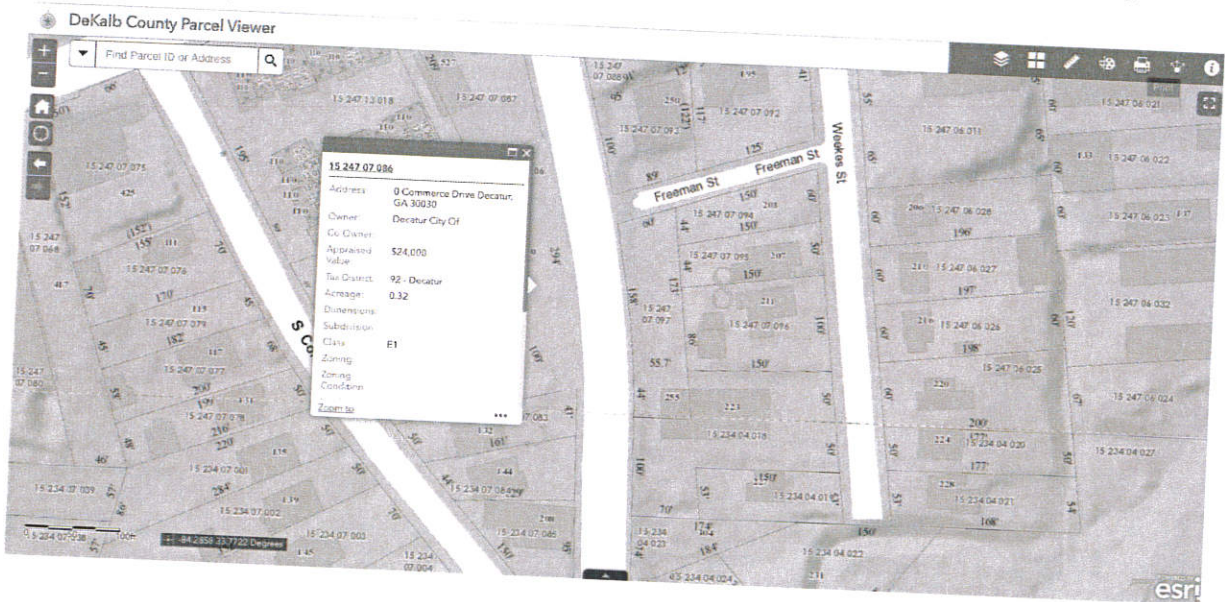
The necessary studies to evaluate and mitigate these impacts have not been done. The developer and City must study habitat issues, tree loss, and traffic, including pedestrian safety.

I oppose this variance. This level of environmental harm is unacceptable in the City of Decatur. This plan goes against our vision for ourselves and our community. High density development has a proper place in the City, but it should not be placed on top of an existing stream and forested area. Traffic and pedestrian safety must be considered and prioritized. The City should consider alternatives to the Weekes Street Project which do not pipe the creek or destroy the existing tree cover.

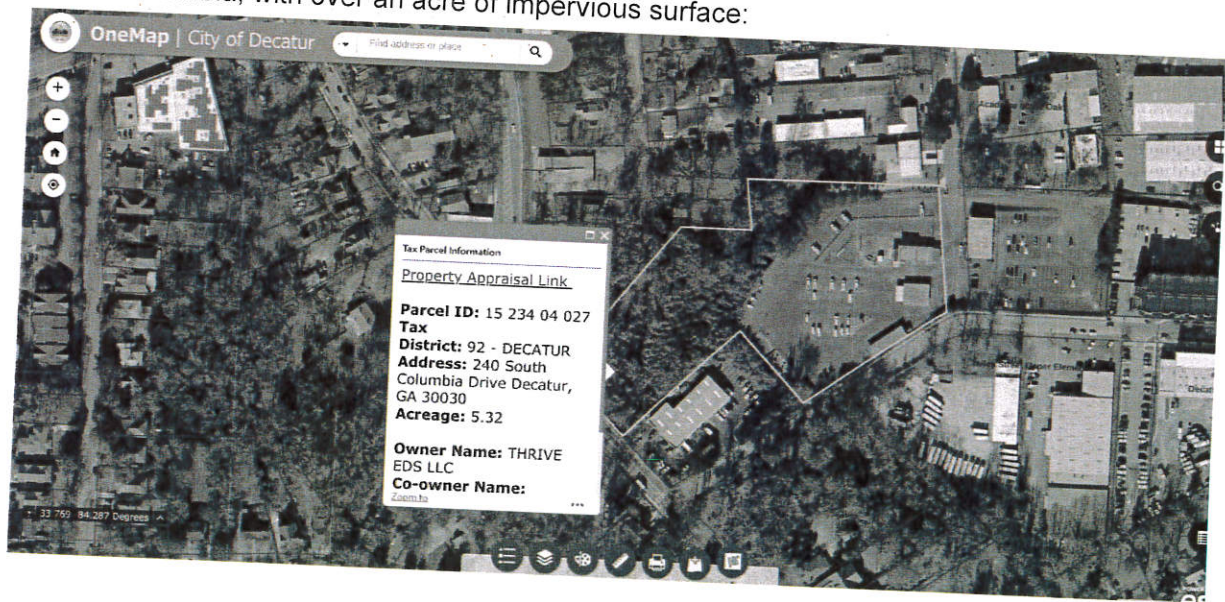
Thank you.

Parcels for Potential Mitigation WSE/Weekes St.

0 Commerce Drive, which is City-owned and has roughly 290 feet of Shoal Creek running underneath it, piped:



240 S. Columbia, with over an acre of impervious surface:



John Maximuk

From: Tony Rives <rarives@gmail.com>
Sent: Sunday, September 15, 2019 4:02 PM
To: John Maximuk
Subject: Weekes St project

CAUTION: This email originated from outside the Decatur, GA network. Please note the sender and maintain caution when opening external links/attachments.

This thing is preposterous. Please turn this down; tell 'em to go somewhere else to build their stuff. We've already got way to many cars driving around town. Give me back the Decatur I grew up in. R A Rives

--
Tony Rives



MEMORANDUM

TO: Zoning Board of Appeals

FROM: Jennings Bell, Project Civil Engineer *EJS*

DATE: October 9, 2019

RE: 203 Weekes Street, The Heights at East Decatur by WSE Development – Stream Buffer Variance Application

I have reviewed the proposed variance application dated April 10, 2019 including the Letter/Statement of Intent and supplemental documentation received August 26, 2019 regarding the above referenced matter and provide the following comments for the Board's consideration:

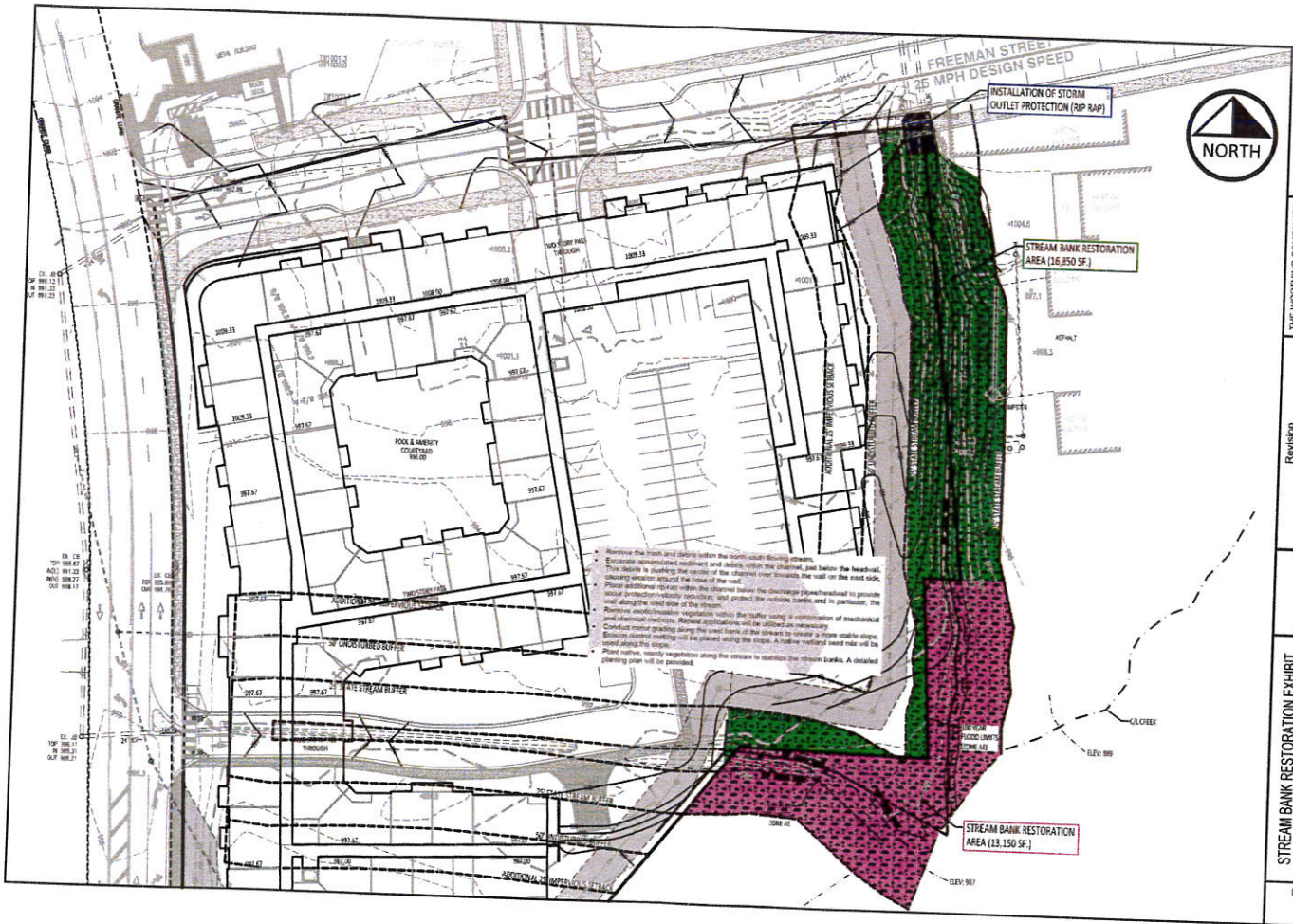
1. The proposed development requires a variance under Section 9.2 of the Stream Buffer Protection Ordinance due to elimination and encroachment into a 25 foot State Stream Buffer, 50 foot City Stream Buffer and 75 foot City Stream Buffer Setback of two un-named tributaries of Shoal Creek.
2. A Stream Buffer exists on the property, established by O.C.G.A. 12-7-6 in which no land disturbing activities shall be conducted, measured horizontally a distance of 25 feet from wrested vegetation.
3. A Stream Buffer exists on the property, established by City Ordinance Section 9.2.5 which shall be maintained as an undisturbed natural buffer, measured horizontally a distance of 50 feet from the top of bank.
4. A Buffer Setback exists on the property, established by City Ordinance Section 9.2.5 in which impervious surfaces are prohibited, measured horizontally a distance of 25 beyond the Stream Buffer, resulting in a total protected area extending 75 feet past the top of bank.
5. Enforcement of the requirements of Section 9.2 would prohibit the otherwise lawful use of this property by the owner.
6. Grandfather Provisions and Exemptions are not applicable in this case.
7. A stormwater management plan will be required for this development. The Stormwater Management Report by Summit Engineering Consultants includes a narrative consistent with the City stormwater requirements for developments that do not encroach into a Stream Buffer.
8. Due to encroachment into the floodplain, a flood study will be required for this development, with a No-Rise Analysis and Compensatory Storage to offset fill in the floodplain. The applicant must submit a Letter of Map Revision (LOMR) to FEMA.
9. The location of the proposed elimination and intrusion into the Stream Buffer area is approximately 65,000sf over developed properties with structures, drives, parking lots, and yards
10. Approvals from other agencies will be required prior to issuance of a land disturbance permit, including the Georgia Environmental Protection Division (EPD) and the US Army Corp of Engineers (USACOE). Application for the EPD approval to eliminate the 25ft state buffers for creek #1 has been submitted, but a response has not been received. A letter of authorization from the USACOE for piping creek #1

was received. Mitigation required by the USACOE will occur at the Rocky Creek Mitigation Bank in South Carolina.

11. Alternative designs for the proposed development do not appear possible to avoid the elimination and encroachment into the Stream Buffer. Section 9.2.5.B.1 requires mitigation measures to offset effects of the development. Non-local mitigation proposed to meet USACOE and EPD requirements may only be sufficient to offset impacts to areas regulated by those agencies. Properties within the City of Decatur may not benefit from this mitigation. Opportunities for local mitigation have been identified on the development and adjacent properties. This proposal may be as protective of the natural resources and the environment as the existing developed conditions if no further disturbance is permitted.

If the variance is granted by the Board, consideration should be given to incorporating the following conditions:

- A. The Applicant shall prepare a Mitigation Plan, submitted with the Land Disturbance Permit application and a \$100 application fee, to the Design, Environment & Construction Division that shall incorporate the following components:
 1. The Mitigation Plan shall provide for treatment of 1.1 acres, as identified in the application with a Water Quality Filter unit, and restoration of stream buffers for an area not less than 30,000sf. The restoration shall include areas on the WSE property, as well as properties on the east side of Creek #2, and the future City property in accordance with the MOU executed by the DDA on 09-13-2019, as illustrated on Exhibit 1 of 8 dated 08-15-2019. The work shall restore and enhance stream bank stability, vegetation, water quality or aquatic habitat, using native vegetation and bio-engineering techniques, designed by a registered professional engineer or other qualified professional familiar with stream bank restoration.
- B. All of the proposed mitigation measures indicated on the Mitigation Plan (including restoration on the WSE property, restorations on properties east of Creek #2, and restoration to be performed by the DDA in accordance with the MOU) shall be installed during the construction of the proposed structure and approved by the Design, Environment and Construction Division prior to the issuance of a Certificate of Occupancy.
- C. Each property Owner shall be responsible for the perpetual maintenance and upkeep of the mitigation measures installed on their property.



Summit
Engineering Consultants, Inc.
6550 Steeles Road, Suite 500
Atlanta, GA 30328
(404) 776-0300

THE WORTHING COMPANIES
5910 Peachtree Dunwoody Rd.
Atlanta, GA 30328
770-322-3775

Remove the trash and debris within the riparian buffer stream.
 Estimate recommended treatment and details within the channel, just below the headwall.
 The debris is cutting the inside of the channel over towards the wall on the east side,
 causing erosion around the base of the wall.
 Place additional riprap within the channel below the discharge downhead to provide
 local protection against debris and protect the outside bank and to protect the
 wall along the east side of the stream.
 Restore woody/deciduous vegetation within the buffer using a combination of mechanical
 and chemical methods. Plant applications will be utilized as necessary.
 Conduct erosion control along the west bank of the stream to create a more stable slope.
 Erosion control matting will be placed along the slope. A native mulched seed mix will be
 used along the slope.
 Plant native, woody vegetation along the stream to stabilize the stream banks. A detailed
 planting plan will be provided.

Revision	Date	By	Check

STREAM BANK RESTORATION EXHIBIT
THE HEIGHTS at EAST DECATUR
LAND LOTS 234 & 247 - 15th DISTRICT
CITY OF DECATUR, DEKALB COUNTY, GEORGIA

Drawing No.
1 of 8

John Maximuk

From: Linda Dunlavy <ldunlavy@dunlavylawgroup.com>
Sent: Monday, October 07, 2019 11:27 AM
To: John Maximuk
Cc: Michael McGwier
Subject: 2019 9 13 - Fully Executed MOU (Worthing Development - Stream Buffer Restoration).pdf
Attachments: 2019 9 13 - Fully Executed MOU (Worthing Development - Stream Buffer Restoration).pdf
Importance: High
Categories: Red Category

CAUTION: This email originated from outside the Decatur, GA network. Please note the sender and maintain caution when opening external links/attachments.

John:

In an effort to address Jennings' concern regarding the level of stream bank restoration and mitigation, WSE has entered into an MOU with the DDA to provide for additional offsite restoration on the site currently identified by the City as a future park site opposite the Talley Street elementary school. The MOU provides for a one time payment of \$35,000 by WSE to the DDA for the restoration of buffer areas within the park. However, if not used by the City or DDA for that specific purpose, the MOU requires that the funds otherwise be used for restoration elsewhere. Let me know of any questions. I ask that this MOU be provided in the packet that goes out to the ZBA for next week's meeting on 10/14.

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (this “MOU”) is entered into on September 13th, 2019, (the “Effective Date”), by and between the Development Authority of the City of Decatur, per O.C.G.A. Section 36-62-1 *et seq.*, a public corporation created pursuant to the Development Authorities Act (the “DDA”) and WSE Development, LLC, a subsidiary of the Worthing Companies and a Georgia limited liability company, its successors and assigns, (hereinafter “Developer”)(DDA and Developer are sometimes referred to individually, as a “Party” and collectively, as the “Parties.”)

Recitals

- A. The DDA is now existing and operating pursuant to the provisions of the Development Authorities Act (O.C.G.A. § 36-62-1 *et seq.*), as amended (the “Act”) and its members have been duly appointed and entered into their duties.
- B. The DDA is authorized under the Act to make and execute contracts, agreements, and other instruments necessary or convenient to exercise the powers of the DDA or to further the public purpose for which the DDA is created, including for the purpose of planning, organizing, and financing projects that will revitalize and redevelop the City’s commercial business districts.
- C. Developer, is the contract purchaser of certain real property in the City of Decatur (“Decatur”) with street addresses of :304 Commerce Drive; 255 Freeman Road; 218 and 222 South Columbia Drive; 203,206,207, 210, 211, 216, 216, 220, 223, 224, 227, 228, and 231 Weekes Street, Decatur, Georgia 30030 (hereinafter “Weekes Street Properties”), and has undertaken to develop a multi-family project at the Weekes Street Properties containing up to 322 rental apartments (the “Project”).
- D. The Project represents new economic development in the furtherance of trade, commerce, industry and employment opportunities in Decatur as required by and consistent with the purposes of the Act, will create needed high density walkable development in Decatur, and will serve to complete the denser urban fabric between East Decatur Station and the Avondale MARTA station.
- E. The DDA, in recognition of the economic benefit to the City and to the DDA from the Project, and to encourage high quality development, adopted a Resolution on March 8, 2019, supporting and approving the Project and the stream buffer variances reasonably necessary to make the Project a reality.
- F. On or about April 10, 2019, the Developer applied for stream buffer variances from the City of Decatur Zoning Board of Appeals (“ZBA”). The variance application is still pending before the ZBA, which has yet to decide whether to grant the application and the City Engineer has tasked the Developer with finding off site stream buffer restoration opportunities in order to partially

offset the impact on the stream buffers on the Weekes Street Properties.

- G. The DDA owns or controls property near the Weekes Street Properties at the intersection of Talley Street and South Columbia Drive comprising +/- 2.78 acres (portion of Tax Parcel ID 15-234-0027)("Subject Property") upon which DDA plans to create a passive park with useable greenspace to benefit the neighborhood and adjacent Talley Street elementary school, which will require stream buffer restoration.
- H. The streams for which the Developer seeks buffer variances flow onto the Subject Property and due to their impacted status would benefit from buffer restoration.

NOW, THEREFORE, for and in consideration of the respective covenants and agreements of the Parties herein set forth, the mutual benefit to the Parties of the covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by the Parties, the DDA and the Developer, intending to be legally bound, hereby agree as follows:

1. Payment By the Developer. The Developer agrees to pay the DDA, the sum of thirty five thousand dollars (\$35,000.00) by wire or certified check, within three (3) business days of the closing on the purchase of the Weekes Street Properties, said sum representing the estimated amount reasonably necessary to perform stream buffer restoration and stabilization on approximately 13,150 square feet of the Subject Property depicted in Exhibit A in pink and attached hereto and fully incorporated by this reference. For the avoidance of any doubt, upon payment of the amount described in this Section 1 of this MOU, Developer shall have no further payment obligations with respect to the DDA's development or stream buffer restoration of the Subject Property.
2. DDA obligations. The DDA, upon receipt of the payment by the Developer shall place the payment in a fund dedicated for the purpose of stream buffer restoration only. Should DDA move forward with development of the Subject Property for a park or other recreational amenity, it shall use the payment by the Developer solely for stream buffer restoration on the Subject Property. However, if the park on the Subject Property is not developed within five (5) years of the payment by the Developer, the DDA shall use the payment for stream buffer restoration elsewhere in the City of Decatur in location(s) identified in need of such restoration.
3. Contingency. The obligations owed by and between the Developer and DDA under this Agreement are contingent upon the Developer securing the needed stream buffer variances from the Decatur Zoning Board of Appeals, upon the closing on the purchase of the "Weekes Street Properties" and upon securing the needed development permits for the Project. The DDA will not spend any of the payment by the Developer until such time as the development permit for the Project has been issued. Should such permits be denied, the Developer shall have no obligation to make the \$35,000 payment specified in Section 1, above.
4. The DDA's Representations and Warranties. The DDA represents and warrants to the Developer that as of the Effective Date:
 - (a) **Organization.** The DDA is a public authority of the State of Georgia organized and existing under the Development Authorities Act with all necessary power and authority to enter into this Agreement and to consummate the transactions herein contemplated.
 - (b) **Authority.** The execution, delivery and performance of this Agreement by the DDA is within the

DDA's powers under the Act, and have been duly authorized by all necessary action of the DDA.

- (c) **No Conflicts.** Neither the execution and delivery of this Agreement nor the consummation of any of the transactions herein or therein contemplated nor compliance with the terms and provisions hereof or thereof will contravene any applicable laws to which the DDA is subject or any judgment, decree, license, or order applicable to the DDA.
- (d) **No Consent.** Upon the execution of this Agreement by the DDA, the DDA will have caused all governmental proceedings required to be taken by or on behalf of the DDA to authorize the DDA to make and deliver this Agreement and to perform the covenants, obligations and agreements of the DDA hereunder.
- (e) **Valid and Binding Obligation.** This Agreement is the legal, valid and binding obligation of the DDA, enforceable against the DDA in accordance with its terms.

5. Developer's Representations and Warranties. The Developer represents and warrants to the DDA that as of the Effective Date:

- (a) **Organization.** The Developer is a limited liability company duly organized, validly existing and in good standing under the laws of the State of Georgia. The business which the Developer carries on and which it proposes to carry on may be conducted by the Developer. The Developer is duly authorized to conduct business as a limited liability company in the State of Georgia.
- (b) **Authority.** The execution, delivery and performance of this Agreement by the Developer is within the Developer's powers and has been duly authorized by all necessary action of the Developer.
- (c) **No Conflicts.** Neither the execution and delivery of this Agreement nor the consummation of any of the transactions herein or therein contemplated nor compliance with the terms and provisions hereof or thereof will contravene the organizational documents of the Developer nor any applicable laws to which the Developer is subject or any judgment, decree, license, or order applicable to the Developer.
- (d) **No Consent.** No consent, authorization, approval, order or other action by, and no notice to or filing with, any court or governmental authority or regulatory body or third party is required for the execution, delivery and performance by the Developer of this Agreement.
- (e) **Valid and Binding Obligation.** This Agreement is the legal, valid and binding obligation of the Developer, enforceable against the Developer in accordance with its terms.
- (f) **Successors and Assigns.** This Agreement and the provisions of this Agreement shall be binding upon Developer and its successors and assigns.

6. Mutual Cooperation of the Parties. The DDA and the Developer hereby acknowledge and agree that each shall diligently perform its respective obligations and exercise its respective rights under this Agreement, and each further agrees to work together in good faith in a reasonable and mutually cooperative manner in performing such obligations and in exercising such rights.

7. Assignment under MOU. No Party shall assign, delegate, subcontract or otherwise transfer its rights or obligations under this MOU without the prior written consent of all other Parties; provided however, Developer shall be permitted to (i) assign its rights or obligations under this MOU to any affiliate or entity that owns the Weekes Street Properties and develop the Project and (ii) collaterally assign its rights and obligations under this MOU in connection with any financing for the Project.
8. Exclusion of Liability. Except in the event of a breach of this Agreement, no Party shall have any liability to the other Parties for any loss of profit, loss of business, loss of opportunity or any other loss howsoever incurred.
9. Term. The term of this MOU shall commence on the Effective Date and continue until the earliest to occur of the following: a) issuance of the development permit reasonably necessary for commencement of the Project by the Developer; b) a mutual decision of all Parties to terminate this MOU; c) a denial of the stream buffer variances sought by the Developer; d) the delivery of written notice by the Developer of its reasonable determination that, as a result of its due diligence, the Project is not economically viable or technically feasible and therefore it will not be moving forward with the Project and/or the closing on the purchase of the Weekes Street Properties; or e) the denial of the development permit(s) reasonably necessary for the commencement of the Project. Should the term of the MOU terminate prior to issuance of the development permit(s) reasonably necessary for commencement of the Project by the Developer and if payment by the Developer has already been made to the DDA, the payment will be returned to the Developer by the DDA within five (5) business days of the termination.
10. Notice. All notices required or permitted to be given hereunder shall be in writing and shall be deemed given when personally served, or when deposited, postage prepaid, in the United States Mail, registered or certified, return receipt requested, and addressed to the DDA or the Developer at their respective address set forth below or at such other address as either Party shall have theretofore given to the other by notice as herein provided. Personal delivery to an officer, owner, agent or employee of such party at said address shall constitute receipt.

The DDA:
Downtown Decatur Development Authority
Attn: Lyn Menne
Executive Director
P.O. Box 220
Decatur, Georgia 30030

The Developer:
WSE Development, LLC
Attn: Michael McGwier
Worthing Companies
5909 Peachtree Dunwoody Road
Suite 400
Atlanta, GA 30328

11. Miscellaneous. This Agreement shall be effective only upon execution hereof by the DDA and the Developer. Time is of the essence of this Agreement and each and every provision hereof. The Recitals set forth above are hereby incorporated into and made a part of this Agreement. This Agreement shall be governed by the law of the United States of America and the State of Georgia, both as to interpretation and performance. The state courts located in DeKalb County, Georgia shall have jurisdiction to hear any dispute under this Agreement, and the Parties agree to submit to the personal jurisdiction and venue of such courts in the event of any such dispute. This Agreement contains the entire understanding between


the Parties with regard to the subject matter hereof, supersedes any prior negotiations, understandings or agreements, written or oral, between them respecting the subject matter hereof, and the Parties shall not be bound by any representation, definition, condition, provision, or agreement other than those expressly enumerated in this Agreement. If a court finds any provision of this Agreement invalid, illegal or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and should in no way be affected or invalidated thereby. This Agreement may only be amended, modified or supplemented by an agreement in writing signed by each Party, and any of the terms thereof may be waived, only by a written document signed by each Party, or, in the case of waiver, by the Party waiving compliance. Waiver by either Party of a breach by the other of any provision of this Agreement shall not be construed as a waiver of any subsequent breach and no custom or practice of the Parties at variance with the terms hereof, shall constitute a waiver of either Party's right to demand full compliance with the terms hereof. The section headings of this Agreement are for convenience only, are not a part of this Agreement, and do not in any way define, limit, describe or amplify the terms and provisions of this Agreement or the scope or intent thereof. The Parties acknowledge that they and their respective counsel have reviewed and revised this Agreement and that the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement or any amendments hereto. Any provision of this Agreement which by its express terms or reasonable construction shall survive the termination of this Agreement shall be deemed to do so. All rights, powers, and privileges conferred hereunder upon the Parties shall be cumulative to, but not restrictive of, or in lieu of those conferred by law. This Agreement may be executed in one or more counterparts, each of which will constitute an original, but all of which together will constitute a single document. To facilitate execution, the Parties may execute and exchange counterparts by facsimile or electronic mail.

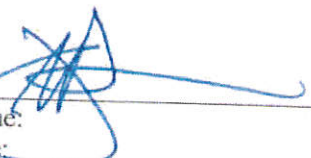
IN WITNESS WHEREOF, the undersigned have executed this Reimbursement Agreement on the date(s) set forth below, but effective as of the Effective Date.

Downtown Decatur Development Authority,
A body corporate and politic of Georgia

WSE Development, LLC
A Georgia Limited Liability Company

By: WSE Development LLC

By: 
Name: CHRIS SETTRONE
Title: CHAIR
Date of Execution: September, 13th 2019

By: 
Name:
Title:
Date of Execution: September 13th 2019



• Excavate and install outlet protection along the stream bank. The outlet protection shall be installed in a trench that is 18 inches deep and 18 inches wide. The outlet protection shall be installed in a trench that is 18 inches deep and 18 inches wide. The outlet protection shall be installed in a trench that is 18 inches deep and 18 inches wide. The outlet protection shall be installed in a trench that is 18 inches deep and 18 inches wide.

Drawing No 1 of 8	STREAM BANK RESTORATION EXHIBIT THE HEIGHTS at EAST DECATUR LAND LOTS 234 & 247 - 15th DISTRICT CITY OF DECATUR, DEKALB COUNTY, GEORGIA		Revision <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>																	THE WORTHING COMPANIES 5909 Peachtree Dunwoody Rd Suite 400 Atlanta, GA 30328 770-522-5775	 summit Engineering Consultants, Inc. 6150 Shiloh Road, Suite 100 Alpharetta, GA 30005 (770) 459-0594
Project No: S-16-007 Design by: OGI Drawn by: DS Checked by: CRH Date: 6/15/13 Scale: 1" = 50'																					