



CITY OF KINGSLAND, GEORGIA

CITY COUNCIL

AGENDA • OCTOBER 13, 2014

Regular Meeting

City Council Chamber

6:00 PM

107 South Lee Street - City Hall, Kingsland, GA 31548

I. PUBLIC HEARING - STARTS AT 6:00PM

1. Public Hearing

The City Of Kingsland, Georgia has received an application for an alcohol beverage license for the sale of beer, on the premise consumption with food from Cumberland Pizza N Games location 1301 East King Avenue, Kingsland Georgia 31548. Notice is hereby given that a public hearing on this application is scheduled for Monday October 13, 2014 at 6:00 p.m. in the council chamber at city hall. Anyone desiring to address Mayor and Council regarding the issuance of a license to this establishment may do so at the public hearing. Formal consideration of this application will take place during the regular Council session on Monday October 13, 2014.

2. Proposal to Discontinue Life Saving EMS Services by the City of Kingsland

II. CALL TO ORDER AND WELCOME GUESTS

III. INVOCATION AND PLEDGE TO THE FLAG

IV. ROLL CALL

Kenneth E Smith Sr

Alex Blount

Jim McClain

Daniel Minckler

Charles Grayson Day Jr

Mayor

Mayor Pro Tem

City Councilman

City Councilman

City Councilman

V. CONSENT DOCKET

- A.** Approve the Council Minutes of the last regular Council Meeting
- B.** Approve the Agenda as Presented
- C.** Approve the Payments of Accounts Payable as Due and Funds Available

VI. PRESENTATION

1. Presentation - Rocky Joyner, the Segal Company
2. Presentation - Water Tank Maintenance, David Wright-Tank Pro

VII. GRANTING AUDIENCE TO THE PUBLIC

VIII. OLD BUSINESS

1. APPROVAL OF: RESOLUTION #2014-20: Adoption of FY 2014-2015 Operating Budget
2. Modification to the Police Review Board

IX. PLANNING AND ZONING

1. APPLICATION FOR HOME OFFICE – James Curtis Tucker

James Curtis Tucker, 144 Greenacre Circle North is requesting a Home Office Permit for “All Clear Window Cleaning”. Zoning is R-1. Planning Commission Recommends Approval.

2. APPLICATION FOR RESIDENTIAL BUSINESS – Jennifer Clayton-Gronde

Jennifer Clayton-Gronde, 203 Eagle Blvd is requesting a Residential Business Permit for “Jennifer A. Gronde Motherhood Photography”. Zoning is PD/R-1. Planning Commission Recommends Approval.

3. APPLICATION FOR RESIDENTIAL BUSINESS – Roylanda Brooks

Roylanda Brooks, 221 Brackenfern Way is requesting a Residential Business Permit for “Angel Delights”, a cottage food establishment. Zoning is R-1. Planning Commission Recommends Approval.

4. APPROVAL OF: Resolution #2014 Accepting Property
5. ACCEPTANCE OF: Warranty Deed

X. NEW BUSINESS

1. Discussion of Proposed Medic Lease Agreement - Mark Crews, Camden County Fire Chief
2. Discussion and Approval of MOU Fleet Services Management
3. APPROVAL OF: Application for an Alcohol Beverage License for the Sale of Beer, on the Premise Consumption with Food from Cumberland Pizza N Games Located At: 1301 East King Avenue, Georgia 31548

4. Easements - Harrietts Bluff Road
5. Approval of - Watershed Protection Plan
6. BID AWARD: Water Tank Maintenance
7. BID AWARD: Asphalt Resurfacing-Project #1
8. Reappointment to the Downtown Development Authority (DDA): Ms. Theresa Farrell - Mayor and Council Appointment

XI. MAYOR AND COUNCIL ANNOUNCEMENT

XII. ADJOURNED

City of Kingsland
State of Georgia

RESOLUTION NO. 2014-20

TO ADOPT THE FISCAL YEAR 2014-15 BUDGET FOR EACH FUND OF THE CITY OF KINGSLAND, GEORGIA, APPROPRIATING THE AMOUNTS SHOWN IN EACH BUDGET AS EXPENDITURES/EXPENSES, ADOPTING THE SEVERAL ITEMS OF REVENUE ANTICIPATIONS, AND PROHIBITING EXPENDITURES OR EXPENSES FROM EXCEEDING THE ACTUAL FUNDING AVAILABLE

WHEREAS, sound governmental operations require a budget in order to plan the financing of services for the residents of the City of Kingsland; and

WHEREAS, Title 36, Chapter 81, Article 1 of the Official Code of Georgia Annotated (OCGA) requires a balanced budget for the City’s fiscal year, which runs from October 1st to September 30th of each year; and

WHEREAS, the Mayor and City Council of the City of Kingsland have reviewed the proposed FY 2014-15 budget as presented; and

WHEREAS, each of these funds is a balanced budget, so that anticipated revenues and other financial resources for each fund equal the proposed expenditures or expenses; and

WHEREAS, the Mayor and City Council wish to adopt this proposal as the Fiscal Year 2014-15 Annual Budget, effective from October 1, 2014 through September 30, 2015.

NOW THEREFORE BE IT RESOLVED by the Mayor and City Council of the City of Kingsland, Georgia, as follows:

Section 1. That the proposed Fiscal Year 2014-15 Budget, attached hereto and incorporated herein as a part of this Resolution is hereby adopted as the Budget for the City of Kingsland, Georgia for Fiscal Year 2014-15, which begins October 1, 2014 and ends on September 30, 2015.

Section 2. That the several items of revenues, other financial resources, and sources of cash shown in the budget for each fund in the amounts shown anticipated are hereby adopted, and that the several amounts shown in the budget for each fund as proposed expenditures or expenses, and uses of cash are hereby appropriated to the departments named in each fund.

Section 3. That the “legal level of control” as defined in OCGA §36-81 is set at the departmental level, meaning that the designated personnel in his/her capacity as Budget Officer is authorized to move appropriations from one line item to another within a department, but under no circumstances may expenditures or expenses exceed the amount appropriated for a department without a further Budget amendment approved by the Mayor and City Council.

Section 4. That all appropriations shall lapse at the end of the fiscal year.

Section 5. That this Resolution shall be and remain in full force and effect from and after its date of adoption.

Adopted this 13th. Day of October 2014.

CITY OF KINGSLAND, GEORGIA

BY: _____
Kenneth E. Smith, Sr., Mayor

ATTEST: _____
Linda O’Shaughnessy, City Clerk

Attachment: Resolution Budget Adoption 09-22-14 (1170 : APPROVAL OF: RESOLUTION #2014-20: Adoption of FY 2014-2015 Operating Budget)

RESOLUTION ACCEPTING PROPERTY

#2014-21

WHEREAS, the City of Kingsland has previously approved the subdivision plat of Lake Forest South, Phase IV Subdivision, and

WHEREAS, all streets and other improvements required under ordinances of the City of Kingsland have been completed and accepted by the City of Kingsland; and

WHEREAS, the developer of said subdivisions has tendered to the City of Kingsland a deed and easement conveying streets, infrastructure, and easement rights within the subdivisions, which instruments are acceptable to the City of Kingsland;

NOW THEREFORE BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF KINGSLAND, GEORGIA, that the deed from Soncel Construction, Inc., to the City, conveying streets, infrastructure, and easement rights, dated _____ 2014, is hereby accepted by the City of Kingsland. THIS _____ DAY OF _____, 2014.

Kenneth E. Smith, Sr., Mayor

CLERKS'S CERTIFICATE

I, Linda O'Shaughnessy, the duly appointed, qualified and acting Clerk of the City of Kingsland, Georgia, do hereby certify that the attached resolution was duly adopted by the Mayor and Council of the City of Kingsland, Georgia, at its regular meeting held on _____, 20____, and I do further certify that the copy of the resolution is a true and correct copy of said resolution adopted at said meeting and on file and of record.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of said City this _____ day of _____, 20____.

Linda M. O'Shaughnessy, City Clerk

Attachment: Resolution #21 (1179 : APPROVAL OF: Resolution #2014 Accepting Property)

Please return to:
 Gilbert, Harrell, Sumerford & Martin, P.C.
 Attorneys at Law
 P. O. Drawer 7050
 St. Marys, GA 31558
 File 32566

STATE OF GEORGIA
 COUNTY OF CAMDEN

WARRANTY DEED

THIS INDENTURE, made this ____ day of _____, 2014, between SONCEL CONSTRUCTION, INC., a Georgia corporation, of the first part, and the CITY OF KINGSLAND, a municipal corporation of the State of Georgia, of the second part.

WHEREAS, Soncel Construction, Inc., has developed a subdivision within the city limits of the City of Kingsland, Camden County, Georgia, as set forth below; and

WHEREAS, there exists a recorded plat of said subdivision showing public rights-of-way and easements; and

WHEREAS, Grantor herein desires to convey title to certain properties within said subdivisions; and

WHEREAS, the City of Kingsland has inspected and is ready to accept title and ownership to the property set forth and described below;

NOW, THEREFORE, the said party of the first part, for and in consideration of the sum of \$10.00 and other valuable considerations, in hand paid at and before the sealing and delivery of these presents, the receipt whereof is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell and convey unto the said party of the second part, its successors and assigns, all those lots, tracts, or parcels of land lying and being in the City of Kingsland, 1606th G. M. District, Camden County, Georgia, more particularly described as follows:

All of Cypress Bend, in Lake Forest South, Phase IV Subdivision, as more fully and accurately shown and described on that certain plat of survey by Ernest R. Bennett, Jr., Georgia Registered Land Surveyor No. 22893, dated March 7, 2006, recorded in Plat Drawer 20, Map No. 24, Camden County, Georgia, records, together with all water, sanitary sewer, storm lines, and associated structures, and all easement rights dedicated by the plat referenced herein.

SUBJECT, NEVERTHELESS, to covenants and easements of record.

Attachment: Warranty Deed (1180 : ACCEPTANCE OF: Warranty Deed)

TO HAVE AND TO HOLD the said bargained premises, together with all and singular the rights, members and appurtenances thereof, to the same being, belonging or in anywise appertaining, to the only proper use, benefit and behoof of the said party of the second part, its successors and assigns, forever IN FEE SIMPLE.

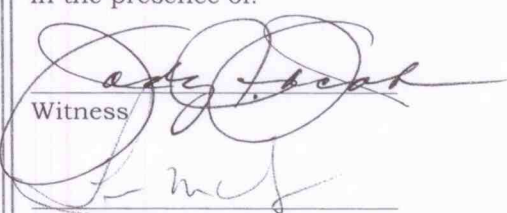
And the said party of the first part, for itself, its successors and assigns, will warrant and forever defend the right and title to the above described property unto the said party of the second part, its successors and assigns, against the lawful claims of all persons whomsoever.

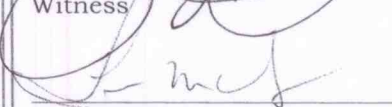
IN WITNESS WHEREOF, the said party of the first part has hereunto set the hands and affixed their seals of its duly authorized officers, the day and year first above written.

SONCEL CONSTRUCTION, INC., a Georgia corporation

By:  (SEAL)
Its Assistant Secretary

Signed, sealed, and delivered
in the presence of:


Witness


Notary Public

Notary Public, Camden County, Georgia
My commission expires May 21, 2017

Attachment: Warranty Deed (1180 : ACCEPTANCE OF: Warranty Deed)

**AGREEMENT BETWEEN THE
CAMDEN COUNTY BOARD OF COMMISSIONERS
AND THE CITY OF KINGSLAND, GEORGIA
FOR THE LEASE OF TWO (2) ADVANCE LIFE
SUPPORT AMBULANCES**

This AGREEMENT is made and entered into this _____ day of _____, 2014, by and between the Camden County Board of Commissioners, a political subdivision of the State of Georgia, as party of the first part, and the City of Kingsland, Georgia, as party of the second part.

INTRODUCTION:

The Camden County, Georgia Emergency Medical Services Agreement is an agreement between the City of Kingsland, Georgia; City of Kingsland Fire Rescue and Camden County, Georgia Board of Commissioners; Camden County Fire Rescue for the lease of two (2) advance life support ambulances. If agreed upon the lease agreement will commence on the date first above written and terminate on December 31, 2014 with renewal through December 31, 2015 unless changed, modified or cancelled as per the agreement.

PURPOSE:

The purpose of this lease agreement is to enable Camden County Fire Rescue to provide an additional 911 zone for Emergency Medical Services. Camden County will purchase a new ambulance for the continuation of the zone. This lease agreement will remain in place until the delivery of the new vehicle.

A. EQUIPMENT:

The City of Kingsland, Georgia and the City of Kingsland Fire Rescue agree to lease to Camden County, Georgia Board of Commissioners; Camden County Fire Rescue, two Advance Life Support ambulances equipped with the minimum equipment and supplies as specified in the Rules of the Georgia Department of Public Health, Georgia Office of EMS/Trauma for the annual sum of one dollar. Camden County will be responsible for the maintenance and insurance associated with the use of any leased vehicles and the same will be returned to the City of Kingsland upon termination of this contract in a state of good repair less normal wear and tear associated with anticipated fire rescue use.

B. MODIFICATION:

This Agreement may be modified or amended or cancelled at any time with thirty (30) day notice by mutual consent. Such amendment shall be in writing with said writing signed by both parties.

C. TERM:

The term of this agreement shall be for one (1) calendar year after first renewal at which time the agreement will be reviewed by both parties for continuation of the agreement.

BOARD OF COUNTY COMMISSIONERS:

This _____ day of _____, 2014

James H. Starline, Chairman
Camden County Board of Commissioners

ATTEST: _____
Kathryn A. Bishop, County Clerk

CITY OF KINGSLAND, GEORGIA:

This _____ day of _____, 2014

Kenneth E. Smith, Mayor
City of Kingsland

ATTEST: _____
Linda M. O'Shaughnessy, City Clerk

STATE OF GEORGIA
COUNTY OF CAMDEN

**INTERGOVERNMENTAL SERVICES AGREEMENT FOR
FLEET MANAGEMENT SERVICES**

This Intergovernmental Services Agreement for Fleet Management Services is entered into this ____ day of _____, 2014, by and between the CITY OF KINGSLAND, hereinafter called "Kingsland" and the CAMDEN COUNTY BOARD OF COMMISSIONERS, hereinafter called "County".

WITNESSETH

WHEREAS, Kingsland operates and maintains a Fleet Services Department for the purpose of maintenance and repair of city vehicles and equipment, including, but not limited to, preventive maintenance, mechanical repairs, welding and fabrication, guidance on vehicle and equipment replacement, and the operation of a fuel depot, and

WHEREAS, the County is currently operating its own Fleet Services Department, providing similar services and operating in a comparable manner, and

WHEREAS, the County is currently without the services of an Fleet Management Director, and

WHEREAS, the County desires to contract with Kingsland to provide fleet management assistance through its Fleet Services Manager to aid with County's related fleet services department, and

WHEREAS, Kingsland, as a government, is authorized by §O.C.G.A. 36-34-2(5) to enter into intergovernmental services agreements; and

WHEREAS, the Camden County Board of Commissioners is authorized to make and execute contracts with municipalities in the same county where the city of Kingsland is located;

NOW THEREFORE, in consideration of the mutual conditions, covenants, and performances called for herein, the parties hereto agree:

- A. Kingsland will provide to the County, and the County will receive from Kingsland, fleet services management assistance to include, but not necessarily be limited to, the following, as directed by the County Administrator:
 - 1. Carry out supervisory responsibility in accordance with policies, procedures, and applicable laws.
 - 2. Participate in interviews, recommends, and trains staff; appraise performance; reward and discipline employees; and address complaints and resolve problems.

3. Develop and implement preventive maintenance programs for vehicles and equipment.
 4. Review repair and maintenance requests and assigns work to staff. Assure repairs are properly performed and equipment is operable.
 5. Coordinate vehicle, parts, and supply purchases.
 6. Research prices, contact vendors to determine availability, place orders, and maintain inventory and related records.
 7. Maintain daily logs and files on equipment and services rendered.
 8. Perform related duties as assigned.
- B. The County agrees to pay to Kingsland, as compensation for providing the fleet management services described in Section A above, and Kingsland agrees to accept the payment as total compensation for providing to the County the services described in Section A. Billing for services described in Section A above shall be on an hour by hour basis in accordance with the staff hourly rates as shown on Exhibit A, which is attached and incorporated by reference in this agreement. Kingsland will provide the County with a monthly statement for services rendered, to include any accrued mileage. The County will submit payment to Kingsland in a timely manner. It is understood that compensation and IRS Travel Reimbursement Rates as called for in this paragraph may change on annual basis, to be agreed upon by both parties.
- C. It is further understood that there will be times when the City of Kingsland Fleet Services Manager will be unable to provide the said assistance services due to vacation and sick days, current or pressing projects of the City of Kingsland, or an unforeseen circumstance. If such an event occurs, Kingsland will make every effort to provide appropriate staffing assistance.
- D. This agreement may be terminated by either party upon the following terms and conditions:
1. Notice must be provided in writing, and
 2. Notice must include a termination date of no less than thirty- (30) days from the date of notification.
- E. Time is of the essence in the performance of the obligations imposed in this agreement. This instrument contains the entire agreement between the parties and no modifications, release, discharge or waiver of any provisions hereof shall be of any force, effect, or value unless in writing and duly approved and executed by the parties hereto.

APPROVED by the Mayor and Council of the City of Kingsland on the ____ day of _____,
2014.

CITY OF KINGSLAND

ATTEST: _____
City Clerk

BY: _____
Mayor

APPROVED by the Camden County Board of Commissioners on the ____ day of _____,
2014.

CAMDEN COUNTY

BOARD OF COMMISSIONERS

ATTEST: _____
County Clerk

BY: _____
Chairman

EXHIBIT A**Staff Hourly Rates (Effective 10/01/2014)****Name/Position**

Ronnie Wise, Fleet Services Manager

Salary/Benefits Hourly Rate

\$42.49

Travel (Effective 10/01/2014)

IRS Travel Reimbursement Rate

\$0.56 per mile



City of Kingsland Georgia

P.O. BOX 250, Kingsland, Georgia 31548
PHONE 912 729-5613 FAX 912 729-4590

NOTICE OF PUBLIC HEARING ALCOHOL BEVERAGE LICENSE

The City Of Kingsland, Georgia has received an application for an alcohol beverage license for the sale of beer, on the premise consumption with food, from "Cumberland Pizza N Games" Location 1301 East King Avenue, Kingsland, Georgia 31548.

Notice is hereby given that a public hearing on this application is scheduled for Monday October 13, 2014 at 6:00 p.m. in the council chamber at city hall. Anyone desiring to address Mayor and Council regarding the issuance of a license to this establishment may do so at the public hearing. Formal consideration of this application will take place during the regular Council Session on Monday October 13, 2014.

Yvonne Waye, Community Planning & Development Administrator

Please Advertise:

September 18, 2014

September 25, 2014

October 9, 2014

Attachment: Alcohol license (1173 : Approval Of: Application for an Alcohol Beverage License)

MAP TO SHOW SKETCH OF PROPOSED UTILITY EASEMENT
A PORTION OF LAND LYING IN THE HARRIETTS BLUFF AREA,
31st G.M. DISTRICT, CAMDEN COUNTY, GEORGIA

(BEING A PORTION OF LANDS DESCRIBED IN DEED RECORDED IN RECORD BOOK. 1328, PAGE No. 425,
PUBLIC RECORDS OF SAID COUNTY)

FOR: THE CITY OF KINGSLAND

LEGAL DESCRIPTION OF 20' WIDE
PERMANENT UTILITY EASEMENT:

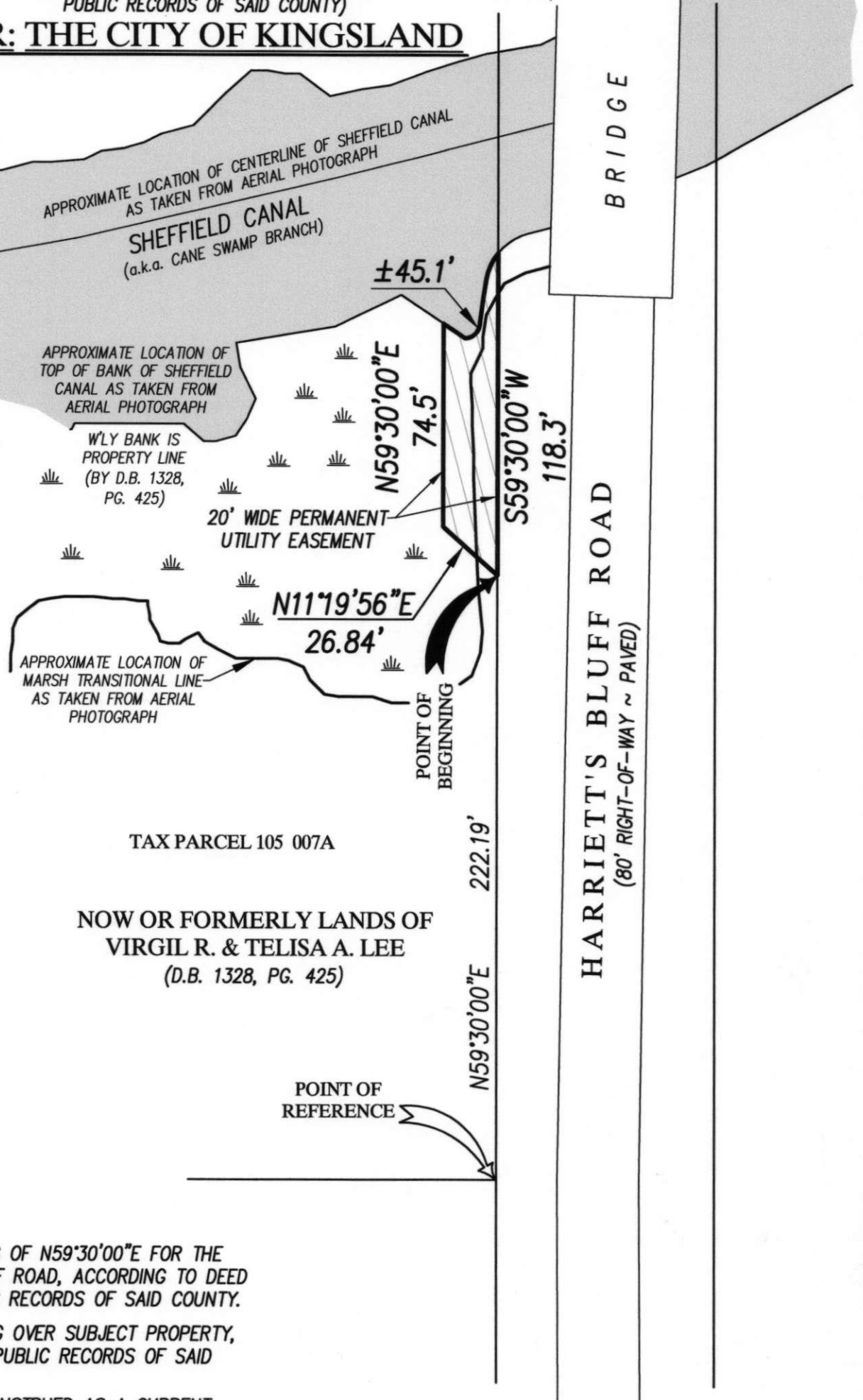
ALL THAT CERTAIN TRACT OR PARCEL OF LAND
LYING IN THE HARRIETTS BLUFF AREA, 31st G.M.
DISTRICT, CAMDEN COUNTY, GEORGIA, AND BEING
MORE PARTICULARLY DESCRIBED AS FOLLOWS: FOR A
POINT OF REFERENCE COMMENCE AT A POINT LYING
ON THE NORTHERLY RIGHT-OF-WAY LINE OF
HARRIETTS BLUFF ROAD, SAID POINT BEING THE
SOUTHWESTERLY CORNER OF LANDS NOW OR
FORMERLY OF VIRGIL R. LEE AND TELISA A. LEE
(ACCORDING TO DEED RECORDED IN RECORD BOOK
1328, PAGE 425 PUBLIC RECORDS OF SAID COUNTY)
AND RUN NORTH 59°30'00" EAST ALONG THE
AFOREMENTIONED NORTHERLY RIGHT-OF-WAY LINE
OF HARRIETTS BLUFF ROAD, DISTANCE OF 222.19
FEET TO THE POINT OF BEGINNING.

FROM THE POINT OF BEGINNING THUS DESCRIBED
RUN NORTH 11°19'56" EAST, FOR A DISTANCE OF
26.84 FEET TO A POINT; RUN THENCE NORTH 59°30'
00" EAST, FOR A DISTANCE OF 75.5 FEET TO A
POINT; RUN THENCE IN A EASTERLY DIRECTION
ALONG THE WESTERLY TOP OF BANK OF SHEFFIELD
CANAL A DISTANCE OF 45.1 FEET, MORE OR LESS,
TO A POINT LYING ON THE NORTHERLY
RIGHT-OF-WAY LINE OF THE AFOREMENTIONED
HARRIETTS BLUFF ROAD; RUN THENCE SOUTH
59°30'00" WEST, ALONG THE NORTHERLY
RIGHT-OF-WAY LINE OF SAID HARRIETTS BLUFF
ROAD A DISTANCE OF 118.3 FEET TO THE POINT OF
BEGINNING.

THE LAND THUS DESCRIBED CONTAINS 1,740 SQUARE
FEET, MORE OR LESS, AND IS SUBJECT TO ANY
EASEMENTS OF RECORD WHICH MAY LIE WITHIN.

NOTES:

- 1.) BEARINGS SHOWN HEREON REFER TO THE BEARING OF N59°30'00"E FOR THE
NORTHERLY RIGHT-OF-WAY LINE OF HARRIETTS BLUFF ROAD, ACCORDING TO DEED
RECORDED IN RECORD BOOK 1328, PAGE 425, PUBLIC RECORDS OF SAID COUNTY.
- 2.) THERE MAY EXIST ADDITIONAL RESTRICTIONS LYING OVER SUBJECT PROPERTY,
NOT SHOWN HEREON, WHICH MAY BE FOUND IN THE PUBLIC RECORDS OF SAID
COUNTY.
- 3.) THIS IS ONLY A SKETCH AND SHOULD NOT BE CONSTRUED AS A CURRENT
BOUNDARY SURVEY.



CADD FILE: C:/CAD/HARRIETTS BLUFF WATERLINE ESMTS- SHEFFIELD CANAL.DWG

FLOOD CERTIFICATE:

SUBJECT PROPERTY IS SHOWN TO BE IN FLOOD HAZARD ZONE "AE" (EL.10) AS
PER F.I.R. MAPS, FOR CAMDEN COUNTY, GEORGIA, DATED DECEMBER 16, 2008, MAP
No. 13039C0385F, COMMUNITY No. 130262, PANEL No. 0385, SUFFIX F.

CERTIFICATION: THIS IS TO CERTIFY TO THE CLERK OF SUPERIOR COURT OF CAMDEN
COUNTY, GEORGIA, THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE
PROVISIONS, RELATIVE TO THE ACT CREATED BY GEORGIA CODE SECTION 15-6-67(d)
AMENDED (No. 1366-SENATE BILL No. 735), HAVE BEEN MET AND APPROVAL OF THIS
PLAT BY THE APPROPRIATE LOCAL GOVERNING AUTHORITY IS NOT NECESSARY FOR
RECORDING PURPOSES.

PREPARED BY:

A K M
SURVEYING, INC.
SURVEYORS & LAND PLANNERS

P.O. BOX 5730 (912) 729-1507 PHONE
ST. MARYS, GEORGIA 31558 (912) 729-1509 FAX
GEORGIA LAND SURVEY FIRM No. 1067

0' 25' 50' SCALE: 1" = 50'

DWN. BY: R.D.T. CKD. BY: J.S.F.
SKETCH DATE: AUGUST 8, 2014

APPROVED BY:

BY: Jeffrey S. Foster DATE: 8/13/14
JEFFREY S. FOSTER
GA. REGISTERED SURVEYOR No. 3143

**STATE OF GEORGIA
COUNTY OF CAMDEN**

E A S E M E N T

THIS EASEMENT is by and between **VIRGIL R. AND TELISA A. LEE**, duly authorized to do business within the State of Georgia, whose address is 3695 Harrietts Bluff Road, Woodbine, GA 31569 (“GRANTOR”), and the **CITY OF KINGSLAND, GEORGIA**, a political subdivision of the State of Georgia, whose mailing address is P.O. Box 250, Kingsland, Georgia 31548 (“CITY”).

WITNESSETH:

THAT GRANTOR, for and in consideration of Ten and No/100 Dollars (\$10.00) and other good and valuable consideration, the adequacy and receipt of which are hereby acknowledged, and in lieu of the exercise of the power of eminent domain by the CITY, GRANTOR hereby grants, sells, and conveys to the CITY, its successors and assigns forever, the following:

1. **PERMANENT UTILITY EASEMENT:** a perpetual, non-exclusive easement TWENTY (20) FEET in width, as more particularly described in EXHIBIT A, attached hereto and incorporated herein by reference, and herein referred to as the Easement Premises, within which Easement Premises the CITY shall have the right to erect, construct, install, lay, and thereafter use, operate, inspect, repair, maintain, replace and remove, as and when necessary or appropriate, one sub-surface pipeline(s) or piped systems for the transportation of domestic potable water , including the necessary and appurtenant surface level facilities in conjunction with such systems, all of which inure to the non-exclusive use and benefit of the adjoining lands of GRANTOR, its successors and assigns, burdened by this Easement, and as appurtenance to such lands.
2. **RESERVATION:** GRANTOR reserved to itself, its successors and assigns, and as an appurtenance to lands adjoining the Easement and not as a personal covenant, all surface use and other subsurface use or uses of the Easement Premises as are not, or might not be in conflict with this grant, warranting only that the Easement Premises shall not be granted to any other entity, public or

private, for a use and/or purpose duplicative of the sewer utility services hereby granted to the CITY.

3. **ACCESS:** As an appurtenance to the Easement Premises, GRANTOR further grants to the CITY the right to access the Easement Premises from the nearest public or private roadway to the extent such access may be required across intervening lands of GRANTOR.

THIS EASEMENT IS FURTHER SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS:

- A. The consideration hereinabove recited shall constitute payment in full for any damages to the land of GRANTOR, its successors and assigns, occurring or claimed by reason of the existence of the facilities and for the lawful use of the land for the purposes herein specified. The CITY covenants to maintain the Easement and the facilities located on, under, and within the Easement, in good repair so that no unreasonable damage will result from its use to the adjoining lands of GRANTOR, its successors and assigns.
- B. If the adjoining lands of GRANTOR are hereinafter divided into parts by sale or lease, the parts shall each, and severally, enjoy the benefits and suffer the burdens of this Easement.
- C. This Easement is further subject to:
 - (1) Any state of facts as would be disclosed by a survey of the premises;
 - (2) Easements, rights of way, covenants, and restrictions of record;
 - (3) The existing zoning classification of the premises, if any;
 - (4) Any outstanding oil, gas, mineral, or other subsurface estate, or timber estate, as may appear of record.
- D. This Easement is by and in the nature of a quitclaim, with GRANTOR warranting to CITY only the corporate authority of its execution hereof, and granting to CITY only so much rights by and under this Easement as is consistent with its record title in and to the lands encumbered by this Easement.

[Signature Page Follow]

IN WITNESS WHEREOF, GRANTOR has caused this instrument to be executed in its name by its proper and duly authorized officers this ____ day of _____, 2014.

Witnesses:

 (sign)
 (print)

By: _____
 Virgil R. Lee

 (sign)
 (print)

Attest: _____
 Telisa A. Lee

STATE OF GEORGIA
 COUNTY OF CAMDEN

THE FOREGOING INSTRUMENT was acknowledged before me this ____ day of _____, 2014, by Virgil R. and Telisa A. Lee, whom have personally come before me today.

 (sign)
 (print)

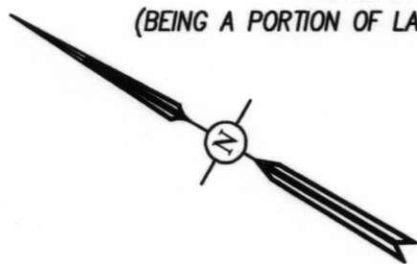
Notary Public, State of Georgia
 My Commission Expires:

Attachment: South Easement - LeeGA (1171 : APPROVAL OF: Easements Harrietts Bluff)

**MAP TO SHOW SKETCH OF PROPOSED UTILITY EASEMENT
A PORTION OF LAND LYING IN THE HARRIETTS BLUFF AREA,
31st G.M. DISTRICT, CAMDEN COUNTY, GEORGIA**

(BEING A PORTION OF LANDS DESCRIBED IN DEED RECORDED IN RECORD BOOK. 912, PAGE No. 251, PUBLIC RECORDS OF SAID COUNTY)

FOR: THE CITY OF KINGSLAND



**LEGAL DESCRIPTION OF 20' WIDE
PERMANENT UTILITY EASEMENT:**

ALL THAT CERTAIN TRACT OR PARCEL OF LAND LYING IN THE HARRIETTS BLUFF AREA, 31st G.M. DISTRICT, CAMDEN COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: FOR A POINT OF REFERENCE COMMENCE AT A POINT LYING ON THE NORTHERLY RIGHT-OF-WAY LINE OF HARRIETTS BLUFF ROAD, SAID POINT BEING THE SOUTHEASTERLY CORNER OF LANDS NOW OR FORMERLY OF WAYNE O. & DEBORAH WILLIAMS (ACCORDING TO DEED RECORDED IN DEED BOOK 912, PAGE 251-252 PUBLIC RECORDS OF SAID COUNTY) AND RUN SOUTH 60°45'36" WEST ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF THE AFOREMENTIONED HARRIETTS BLUFF ROAD, A DISTANCE OF 266.42 FEET TO THE POINT OF BEGINNING.

FROM THE POINT OF BEGINNING THUS DESCRIBED RUN SOUTH 60°45'36" WEST ALONG THE NORTHERLY RIGHT-OF-WAY OF HARRIETTS BLUFF ROAD, FOR A DISTANCE OF 151.5' FEET TO A POINT; RUN THENCE IN A NORTHWESTERLY DIRECTION ALONG THE CENTERLINE OF SHEFFIELD CANAL, A DISTANCE OF 20.9 FEET, MORE OR LESS, TO A POINT; RUN THENCE IN A NORTH 60°45'36" EAST A DISTANCE OF 136.0 FEET TO A POINT; RUN THENCE SOUTH 75°43'49" EAST, A DISTANCE OF 29.05 FEET TO THE POINT OF BEGINNING.

THE LAND THUS DESCRIBED CONTAINS 2,875 SQUARE FEET, MORE OR LESS, AND IS SUBJECT TO ANY EASEMENTS OF RECORD WHICH MAY LIE WITHIN.

NOW OR FORMERLY LANDS OF
WAYNE & DEBORAH WILLIAMS
(D.B. 912, PG. 4251-252)

TAX PARCEL 105 012A

POINT OF
REFERENCE

POINT OF
BEGINNING

S75°43'49"E
29.05'

"LOW AREA"

20' WIDE PERMANENT
UTILITY EASEMENT

APPROXIMATE LOCATION TOP OF
BANK OF SHEFFIELD CANAL AS
TAKEN FROM AERIAL PHOTOGRAPH

APPROXIMATE LOCATION OF CENTERLINE OF SHEFFIELD CANAL
AS TAKEN FROM AERIAL PHOTOGRAPH
SHEFFIELD CANAL
(a.k.a. CANE SWAMP BRANCH)

±20.9'

APPROXIMATE
TOE OF SLOPE

266.42'

S60°45'36"W

N60°45'36"E

151.5'

S60°45'36"W

HARRIETTS BLUFF ROAD
(80' RIGHT-OF-WAY ~ PAVED)

BRIDGE

NOTES:

- 1.) BEARINGS SHOWN HEREON REFER TO THE BEARING OF N60°45'36"E FOR THE NORTHERLY RIGHT-OF-WAY LINE OF HARRIETTS BLUFF ROAD, ACCORDING TO DEED RECORDED IN RECORD BOOK 912, PAGE 251-252, PUBLIC RECORDS OF SAID COUNTY.
- 2.) THERE MAY EXIST ADDITIONAL RESTRICTIONS LYING OVER SUBJECT PROPERTY, NOT SHOWN HEREON, WHICH MAY BE FOUND IN THE PUBLIC RECORDS OF SAID COUNTY.
- 3.) THIS IS ONLY A SKETCH AND SHOULD NOT BE CONSTRUED AS A CURRENT BOUNDARY SURVEY.

CADD FILE: C:/CAD/HARRIETTS BLUFF WATERLINE ESMTS- SHEFFIELD CANAL.DWG

FLOOD CERTIFICATE:

SUBJECT PROPERTY IS SHOWN TO BE IN FLOOD HAZARD ZONE "AE" (EL.10) AS PER F.I.R. MAPS, FOR CAMDEN COUNTY, GEORGIA, DATED DECEMBER 16, 2008, MAP No. 13039C0385F, COMMUNITY No. 130262, PANEL No. 0385, SUFFIX F.

CERTIFICATION: THIS IS TO CERTIFY TO THE CLERK OF SUPERIOR COURT OF CAMDEN COUNTY, GEORGIA, THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE PROVISIONS, RELATIVE TO THE ACT CREATED BY GEORGIA CODE SECTION 15-6-67(d) AMENDED (No. 1366-SENATE BILL No. 735), HAVE BEEN MET AND APPROVAL OF THIS PLAT BY THE APPROPRIATE LOCAL GOVERNING AUTHORITY IS NOT NECESSARY FOR RECORDING PURPOSES.

PREPARED BY:

A K M

& SURVEYING, INC.

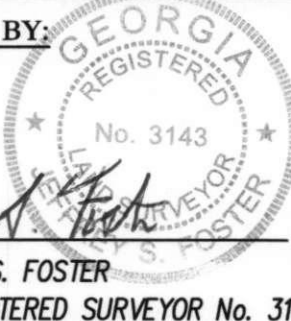
SURVEYORS & LAND PLANNERS

P.O. BOX 5730 (912) 729-1507 PHONE
ST. MARYS, GEORGIA 31558 (912) 729-1509 FAX
GEORGIA LAND SURVEY FIRM No. 1067

0' 25' 50'
SCALE: 1" = 50'

DWN. BY: R.D.T. CKD. BY: J.S.F.
SKETCH DATE: AUGUST 8, 2014

APPROVED BY:



BY: Jeffrey S. Foster DATE: 8/13/14
JEFFREY S. FOSTER
GA. REGISTERED SURVEYOR No. 3143

STATE OF GEORGIA
COUNTY OF CAMDEN

EASEMENT

THIS EASEMENT is by and between **WAYNE O. AND DEBORAH WILLIAMS**, duly authorized to do business within the State of Georgia, whose address is 3166 Secret Woods Trail West, Jacksonville, FL 32216 (“GRANTOR”), and the **CITY OF KINGSLAND, GEORGIA**, a political subdivision of the State of Georgia, whose mailing address is P.O. Box 250, Kingsland, Georgia 31548 (“CITY”).

WITNESSETH:

THAT GRANTOR, for and in consideration of Ten and No/100 Dollars (\$10.00) and other good and valuable consideration, the adequacy and receipt of which are hereby acknowledged, and in lieu of the exercise of the power of eminent domain by the CITY, GRANTOR hereby grants, sells, and conveys to the CITY, its successors and assigns forever, the following:

1. **PERMANENT UTILITY EASEMENT:** a perpetual, non-exclusive easement TWENTY (20) FEET in width, as more particularly described in EXHIBIT A, attached hereto and incorporated herein by reference, and herein referred to as the Easement Premises, within which Easement Premises the CITY shall have the right to erect, construct, install, lay, and thereafter use, operate, inspect, repair, maintain, replace and remove, as and when necessary or appropriate, one pipeline(s) or piped systems for the transportation of domestic water, including the necessary and appurtenant surface level facilities in conjunction with such systems, all of which inure to the non-exclusive use and benefit of the adjoining lands of GRANTOR, its successors and assigns, burdened by this Easement, and as appurtenance to such lands.
2. **RESERVATION:** GRANTOR reserved to itself, its successors and assigns, and as an appurtenance to lands adjoining the Easement and not as a personal covenant, all surface use and other subsurface use or uses of the Easement Premises as are not, or might not be in conflict with this grant, warranting only that the Easement Premises shall not be granted to any other entity, public or

private, for a use and/or purpose duplicative of the sewer utility services hereby granted to the CITY.

3. **ACCESS:** As an appurtenance to the Easement Premises, GRANTOR further grants to the CITY the right to access the Easement Premises from the nearest public or private roadway to the extent such access may be required across intervening lands of GRANTOR.

THIS EASEMENT IS FURTHER SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS:

- A. The consideration hereinabove recited shall constitute payment in full for any damages to the land of GRANTOR, its successors and assigns, occurring or claimed by reason of the existence of the facilities and for the lawful use of the land for the purposes herein specified. The CITY covenants to maintain the Easement and the facilities located on, under, and within the Easement, in good repair so that no unreasonable damage will result from its use to the adjoining lands of GRANTOR, its successors and assigns.
- B. If the adjoining lands of GRANTOR are hereinafter divided into parts by sale or lease, the parts shall each, and severally, enjoy the benefits and suffer the burdens of this Easement.
- C. This Easement is further subject to:
 - (1) Any state of facts as would be disclosed by a survey of the premises;
 - (2) Easements, rights of way, covenants, and restrictions of record;
 - (3) The existing zoning classification of the premises, if any;
 - (4) Any outstanding oil, gas, mineral, or other subsurface estate, or timber estate, as may appear of record.
- D. This Easement is by and in the nature of a quitclaim, with GRANTOR warranting to CITY only the corporate authority of its execution hereof, and granting to CITY only so much rights by and under this Easement as is consistent with its record title in and to the lands encumbered by this Easement.

[Signature Page Follow]

IN WITNESS WHEREOF, GRANTOR has caused this instrument to be executed in its name by its proper and duly authorized officers this ____ day of _____, 2014.

Witnesses:

 _____ (sign)
 _____ (print)

By: _____
 Wayne O. Williams

 _____ (sign)
 _____ (print)

Attest: _____
 Deborah Williams

STATE OF FLORIDA
 COUNTY OF DUVAL

THE FOREGOING INSTRUMENT was acknowledged before me this ____ day of _____, 2014, by Wayne O. and Deborah Williams, whom have personally come before me today.

 _____ (sign)
 _____ (print)
 Notary Public, State of Florida
 My Commission Expires:

Attachment: North Easement - WilliamsFL (1171 : APPROVAL OF: Easements Harriets Bluff)



360 Hawthorne Lane
Athens, GA 30606-2152
P (706) 354-7925
F (706) 354-7928
www.NutterInc.com

September 12, 2014

Lee Spell, City Manager
City of Kingsland
107 South Lee St.
Kingsland, GA 31548

Subject: Scope of Work, Year 1 Watershed Protection Plan Monitoring, City of Kingsland, Proposal No. 13-055.

Dear Mr. Spell:

Nutter & Associates (NAI) is pleased to submit this scope of work and budget to implement required biological and water quality monitoring pursuant to the draft February 2012 (revised July 2014) Watershed Protection Plan (WPP). Based upon previous meetings and presentations to the City of Kingsland (City), NAI has developed a cost proposal for the year 1 monitoring derived from a tiered sampling approach depending on the level of effort required to complete the WPP monitoring requirements. As a part of the Georgia Environmental Protection Division (GA EPD) WPP guidance, as presented in the February 2012 City of Kingsland WPP, water quality and bacteriological monitoring are required annually at six stations, while biological monitoring is required during years 1 and 3 at two stations. Biological monitoring only includes sampling of benthic macroinvertebrates communities; fish sampling will not be conducted as stated in the WPP. A breakdown of the WPP monitoring requirements are included below.

Watershed Protection Plan Monitoring Requirement	Monitoring Year		
	2014-15	2015-16	2016-17
Water Quality (6 Stations)			
3 dry weather & 1 wet weather event	✓	✓	✓
2 bacteriological geometric mean determinations (8 individual sample events)	✓	✓	✓
Biological Monitoring (2 Stations)			
Benthic macroinvertebrate communities	✓		✓
Annual Report (due June 30)	✓	✓	✓



Lee Spell, City Manager
 City of Kingsland
 September 12, 2014
 Page 2

Based upon the monitoring requirements and the available personnel and resources of the City to conduct portions of the monitoring, we have provided three different cost scenarios for the project: 1) NAI to conduct all portions of the monitoring and reporting, 2) NAI to conduct only biological and water quality monitoring and reporting; City to conduct bacteriological monitoring, and 3) NAI to conduct only biological monitoring and reporting; City to conduct water quality and bacteriological monitoring. The three scenarios described above are summarized in the table below.

Watershed Protection Plan Monitoring Requirement	NAI			Kingsland		
	Scenario					
	1	2	3	1	2	3
Water Quality (6 Stations)						
3 dry weather & 1 wet weather event	✓	✓				✓
2 bacteriological geometric mean determinations (8 individual sample events)	✓				✓	✓
Biological Monitoring (2 Stations)						
Benthic macroinvertebrate communities	✓	✓	✓			
Annual Report	✓	✓	✓			

Depending on the WPP services requested for NAI to implement, all applicable guidance and procedures provided in the GA EPD WPP guidance will be adhered to. If the proposal is authorized, annual reporting will be completed and submitted to GA EPD no later than June 30th of each year. NAI will assist the City with not only the implementation of the monitoring requirements, but also report on the implementation and assessment of the other aspects of the February 2012 City of Kingsland WPP.

BUDGET

As mentioned previously, NAI has developed three cost scenarios for year 1 monitoring in order for the City to most effectively complete WPP monitoring requirements. The costs detailed below include labor, travel, and laboratory expenses necessary to complete only the monitoring requirements specified for each scenario. If the City selects to proceed with cost scenarios 2 or 3, all external laboratory costs associated with bacteriological sample analysis for Scenario 2 or bacteriological and water quality sample analysis for Scenario 3 will be the responsibility of the City. The costs detailed below will include work to be completed for year 1 monitoring. Monitoring and reporting requirements for year 2 are not included in this Scope of Work and budget.



Lee Spell, City Manager
 City of Kingsland
 September 12, 2014
 Page 3

Scenario	Cost
1. NAI to conduct all required monitoring and reporting	\$49,983.00
2. NAI to conduct water quality and biological monitoring and reporting; City to conduct bacteriological monitoring	\$41,519.00
3. NAI to conduct only biological monitoring and reporting; City to conduct water quality and bacteriological monitoring	\$23,246.00

Nutter & Associates works on a time and expense basis consistent with the enclosed fee schedule. Invoices will be submitted monthly for work completed to date. If this scope of work is acceptable, please sign and return the Proposal Acceptance form attached hereto authorizing us to begin work on this project. A purchase order may be issued in lieu of the Proposal Acceptance. The quoted cost is a not-to-exceed cost. If the scope of work changes during the course of the study, we will request authorization before proceeding.

Time Line

Following approval of this scope of work and budget, we will begin the implementation of the WPP for the City of Kingsland. Water quality monitoring will continue through early spring 2015 and will culminate in the submittal of the 2015 annual monitoring report.

Nutter & Associates is pleased to provide the City of Kingsland with this scope of work and budget for development and implementation of the Watershed Protection Plan. If you have any questions, please do not hesitate to contact us.

Sincerely,

NUTTER & ASSOCIATES, INC.

Erin M. Harris

Erin M. Harris, CPESC, CSC
 Project Manager

Tony S. Greco

Tony S. Greco
 Principal, Project Scientist

Enclosures





360 Hawthorne Lane
 Athens, GA 30606-2152
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 F (706) 354-7928
 www.NutterInc.com

2014

FEE SCHEDULE

Staff Classification

Hourly Rate

Professional Services

Senior Consultant	\$ 140.00
Project Scientist II	120.00
Project Scientist I	110.00
Staff Scientist II	100.00
Staff Scientist I	75.00
Technician	60.00

Support Services

Secretary I	\$ 35.00
Senior Secretary/Project Administrator	45.00

Expenses and Subcontracts

Direct expenses including supplies, communication, travel and lodging as well as Subcontracts managed by Nutter & Associates will be charged at 1.15 times direct cost.

Attachment: SOW (1163 : Watershed Protection Plan)





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www.NutterInc.com

Professional Services Contract

Proposal No. & Date	Proposal No. 13-055 September 12, 2014
Project Name	Watershed Protection Plan Long-term Monitoring
Project Location	Kingsland, Georgia
Description of Services	Year 1 Watershed Protection Plan Monitoring

Cost of Services <i>(Please select one option)</i>	1. NAI to conduct all required monitoring and reporting	\$49,983.00
	2. NAI to conduct water quality and biological monitoring and reporting; City to conduct bacteriological monitoring	\$41,519.00
	3. NAI to conduct only biological monitoring and reporting; City to conduct water quality and bacteriological monitoring	\$23,246.00

Client Name	City of Kingsland
Address	107 South Lee St. Kingsland, GA 31548
Telephone No.:	_____
Cellular No.:	_____
Fax No.:	_____
E-Mail:	_____

Client hereby acknowledges that this Proposal is provided subject to the general terms and conditions set out on the reverse side of this Proposal (the "Terms and Conditions"), which are hereby incorporated as a part of this Proposal. Client's acceptance of this Proposal shall be deemed an acceptance of the Terms and Conditions.

Authorized by:

Signature

Authorized Name

Send Invoices to attention of: _____



TERMS AND CONDITIONS

Client hereby accepts the following general terms and conditions ("Terms and Conditions") applicable to Nutter & Associates, Inc.'s performance of the services described in the attached Proposal (the "Services"):

1. Payment Terms. Client shall pay all amounts due to Nutter & Associates, Inc. ("Nutter & Associates") upon receipt of each invoice from Nutter & Associates. Any amounts not paid by Client within thirty (30) days of the date of such invoices shall accrue interest at a rate of one and one half percent (1.5%) per month until such time as such amounts are paid in full. Client shall be responsible for all reasonable attorney's fees incurred by Nutter & Associates in connection with the collection of any amounts properly due and payable to Nutter & Associates in accordance with the terms of the Proposal and these Terms and Conditions.

2. Performance Standard. Nutter & Associates shall perform the Services using the care and skill ordinarily exercised by organizations performing services in the fields of soil and hydrologic evaluation, ecosystem evaluation and land treatment in the same or similar locality as the location where the Services are rendered. Client hereby acknowledges that Nutter & Associates makes no other representation or warranty with respect to the Services. Client further acknowledges that any oral or written reports furnished by Nutter & Associates shall not be construed as any representation or warranty with respect to the Services. NUTTER & ASSOCIATES HEREBY EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTIES WITH RESPECT TO THE SERVICES, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

3. Limitation of Liability. Client hereby agrees that Nutter & Associates' total aggregate liability for any damages incurred by Client in connection with Nutter & Associates' performance of or failure to perform the Services shall not exceed the greater of (i) Fifty Thousand and No/100 Dollars (\$50,000.00) or (ii) Nutter & Associates total fee for the Services. IN NO EVENT SHALL NUTTER & ASSOCIATES BE LIABLE FOR ANY INDIRECT, INCIDENTAL CONSEQUENTIAL, PUNITIVE OR RELIANCE DAMAGES, INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOST PROFITS, SAVINGS OR REVENUES OR INCREASED COST OF OPERATIONS, REGARDLESS AS TO THE NATURE OF CLIENT'S CLAIM AGAINST NUTTER & ASSOCIATES.

4. Insurance Coverage. Nutter & Associates shall maintain the following insurance coverages during the period in which the Services are performed: (i) worker's compensation and employer's liability insurance coverage with coverage limits which conform to the requirements of applicable law; (ii) comprehensive general liability insurance coverage on an occurrence basis in an amount not less than \$1,000,000.00 per claim with an aggregate limit of not less than \$2,000,000.00; and (iii) automobile liability insurance coverage for both bodily injury and property damage with a combined single limit of \$1,000,000.00. Nutter & Associates shall provide Client with a certificate of insurance evidencing the aforementioned insurance coverages upon request by Client.

5. Damage to Man-Made Objects. Client shall be responsible for disclosing the presence and accurate location of all underground or otherwise hidden man-made objects which might interfere with field tests or boring to be performed by Nutter & Associates as part of the Services. Client hereby agrees to indemnify and hold Nutter & Associates harmless from and against all claims, suits, losses, personal injury, death and

damage to property ("Indemnified Claims") resulting from unusual subsurface conditions or damage to subsurface structures or objects owned by client or any third parties in connection with Nutter & Associates' performance of the Services where such unusual subsurface conditions or the presence of such subsurface structures or objects are not disclosed by Client to Nutter & Associates in writing prior to the performance of the Services. Client's obligation to indemnify Nutter & Associates in accordance with this Section 5 shall include all expenses incurred by Nutter & Associates in connection with Indemnified Claims, including, without limitation, Nutter & Associates' reasonable attorney's fees.

6. Damage to Work in Place. Client hereby acknowledges that there is the possibility of the occurrence of certain events or conditions which may affect work performed by Nutter & Associates as part of the Services ("Work in Place") and which are outside of the control of Nutter & Associates. Client further acknowledges and agrees that the occurrence of any of the following events and conditions shall not obligate Nutter & Associates to re-perform or replace any Work in Place:

(a) The occurrence of either natural (including, without limitation, weather events) or unnatural (including, without limitation, upstream discharges) events which cause damage to Work in Place, including, but not limited to: (i) failure of any structures installed as part of the Work in Place; (ii) the erosion of or failure of any stream banks; (iii) the erosion or displacement of existing or planted vegetation within stream channels, riparian valleys or riparian zones; or (iv) wind damage to existing or planted vegetation within stream channels, riparian valleys or riparian zones;

(b) The occurrence of either natural (including, without limitation, weather events) or unnatural (including, without limitation, upstream discharges) which cause physical modification of any stream channels;

(c) The cutting and/or removal of either existing vegetation or vegetation planted by Nutter & Associates within the stream channel, riparian zone or riparian valley adjacent to or upstream from the Work in Place; and

(d) Drought conditions which inhibit or permanently damage the vegetative success of vegetation.

In the event any Work in Place is damaged or destroyed as a result of the occurrence of any of the aforementioned events or conditions, Client may request that Nutter & Associates perform such work as may be necessary to correct such damage or destruction. Nutter & Associates shall provide Client with a new proposal for the performance of such work, and Client may but shall not be obligated to engaged Nutter & Associates to perform such work in accordance with the terms of the new proposal.

7. Governing Law. The Proposal and these Terms and Conditions shall be governed by the laws of the State of Georgia.

8. Entire Agreement. The Proposal and these Terms and Conditions constitute the entire agreement between Nutter & Associates and Client with respect to the Services. The Proposal and these Terms and Conditions supersede all prior agreements, proposals, representations, statements or understandings, whether written or oral concerning the Services.

9. Binding Effect. The Proposal and these Terms and Conditions shall be binding upon any successors and assigns of Nutter & Associates and Client.



DRAFT

WATERSHED PROTECTION PLAN

City of Kingsland

Kingsland, GA

August 2014



PREPARED BY

NUTTER & ASSOCIATES, INC.

360 Hawthorne Lane

Athens, GA 30606-2152

Phone: 706.354.7925

Fax: 706.354.7928

NutterInc.com


Nutter & Associates
environmental consultants

Attachment: Kingsland WPP revised July 2014_reduced (1163 : Watershed Protection Plan)

DRAFT

WATERSHED PROTECTION PLAN

City of Kingsland

Kingsland, GA

August 2014



PREPARED BY

NUTTER & ASSOCIATES, INC.

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environmental consultants

Attachment: Kingsland WPP revised July 2014_reduced (1163 : Watershed Protection Plan)

WATERSHED PROTECTION PLAN

Prepared for:

City of Kingsland, Georgia

Prepared by:

Nutter & Associates, Inc.
Athens, Georgia
NutterInc.com

August 2014

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EXECUTIVE SUMMARY

The City of Kingsland, in conjunction with Nutter & Associates, Inc. and Carter & Sloop Consulting Engineers, has prepared a Watershed Protection Plan (WPP) pursuant to NPDES permit requirements established by the Georgia Environmental Protection Division (EPD). Based upon the results of water quality monitoring obtained during the Watershed Assessment conducted during 2007, a series of watershed management activities are being proposed to help identify water quality problem areas and initiate public outreach and education.

The City of Kingsland conducted a Watershed Assessment as required for NPDES permit renewal for expansion of the Kingsland Wastewater Treatment Plant (WWTP) from 2.2 to 4.4 million gallons per day (MGD). The results of the Watershed Assessment identified potential water quality problem areas. With the exception of station Horsepen Creek (HC01) and Crooked River (CR02), the remaining eight stations exceeded Georgia Water Quality Standards for at least one parameter. Four stations had dissolved oxygen concentrations below state criteria, two stations had elevated fecal coliform concentrations, two stations exceeded the chronic aquatic life use concentrations for total lead, and one station exceeded the chronic aquatic life use concentration for ammonia. Other than the above mentioned criteria, all parameters were within acceptable ranges. Overall, nutrient and metal contamination does not appear to be a serious threat to water quality within the proposed Kingsland service area. In addition, the extreme drought of early 2007 likely had a concentrating effect on nutrients, metals, and bacteria at each monitoring station which was not representative of normal water quality conditions. Although some Georgia Water Quality Standards were exceeded, water quality characterization during normal rainfall conditions should be conducted to accurately assess water quality within the proposed service area.

The biological communities at the six monitored stations ranged from "good" to "very poor" based upon GA EPD Indices of Biological Integrity (IBI). The tidal influence at some of the stations and drought conditions resulted in a lack of characterization of the fish and benthic macroinvertebrate communities at two stations. Benthic macroinvertebrate communities were in at least "fair" condition at Horsepen Creek (HC01), Little Catfish Creek (LCC01), and the unnamed tributary to the Crooked River (UT01), while stations Gum Branch (GB01), Crooked River (CR01), and Caney Branch (CB01) had "poor" to "very poor" IBI scores. The results of the fish community assessment showed diverse fish assemblages at stations Little Catfish Creek (LCC01), Crooked River (CR01), and Gum Branch (GB01). Station Caney Branch (CB01) had an undiverse fish community, and fish collections were not conducted at the unnamed tributary to the Crooked River (UT01) and Horsepen Creek (HC01) stations. Overall, it appears that physical habitat alteration as a result of historic stream disturbance and channelization is having more of an adverse effect on the biological communities than current water quality conditions.

Based upon the Watershed Assessment, water quality within the proposed Kingsland service area is fair. The WPP is designed to be a living guidance document, through which WPP modifications and best management practice (BMP) adaptive management objectives can be implemented based upon the proposed water quality monitoring program, locations, and

results. The effects of stormwater will be closely monitored during long-term monitoring to determine the need for more stringent and protective stormwater management ordinances and BMP development.

This WPP was prepared for the City of Kingsland by Nutter & Associates, Inc. Valuable input was provided by Kingsland and Carter & Sloope Consulting Engineers.

1.0 INTRODUCTION

This WPP for the Kingsland Wastewater Treatment Plant (WWTP) located in the City of Kingsland, Camden County, Georgia is being developed as a part of NPDES permit renewal. The Kingsland WWTP services an area of approximately 85.4 square miles that includes a portion of Camden County and the City of Kingsland. This WPP outlines a water quality monitoring program and strategies for pollution identification, prevention, and public outreach. The City of Kingsland is located on a divide between the St. Mary's sub-basin to the south and Cumberland-St. Simons sub-basins to the north. A small area of the north-western portion of the service area is located within the Satilla sub-basin. The Crooked River watershed, the lower St. Mary's watershed, and the lower Satilla watershed are the three drainages within the proposed service area (Figure 1).

A Watershed Assessment for the facility was initiated in February 2007 and completed in January 2008. The final Watershed Assessment was submitted to the EPD in January 2008. The Watershed Assessment was approved by EPD on March 11, 2009. This WPP document utilizes the findings of water quality and biological monitoring conducted as a part of the Watershed Assessment. Elements of this WPP include implementation of structural and non-structural BMPs that are enforceable through ordinances and a long term monitoring plan. The long term monitoring plan documents the effectiveness of the BMPs towards meeting water quality improvements and streams requiring further action if water quality improvements are unsuccessful.

2.0 LEGAL AUTHORITY

2.1 Political Jurisdiction

2.1.1 Responsible Parties

City of Kingsland
107 South Lee Street
Kingsland, Georgia
(912) 729-5613

2.1.2 Local Zoning and Development Authorities

Kingsland Development Authority
Camden County

2.1.3 Resources Available for Plan Implementation

As a part of the WPP, the City of Kingsland will utilize a variety of resources to implement the proposed management activities and objectives.

2.2 Code and Regulation Evaluation

2.2.1 City of Kingsland Municipal Code and Ordinances

The City of Kingsland Municipal Code, which contains all ordinances adopted by the Council of the City of Kingsland through December 13, 2010, can be found online through the City's webpage:

<http://library.municode.com/index.aspx?clientID=12608&stateID=10&statename=Georgia>

A review of all applicable codes and ordinances was conducted to evaluate the effectiveness in which the City could regulate and enforce water quality problem areas and/or violations. Chapter 9 (Flood Damage Prevention), Chapter 17 (Soil Erosion and Stormwater), Chapter 18 (Solid Waste Management), Chapter 22 (Utilities), and Chapter 25 (Environmental Criteria) contain codes and ordinances that help protect water quality and water resources, as well as providing jurisdiction for the enforcement of code violations. A brief review of the applicable codes is included below.

2.2.1.1 Chapter 9: Flood Damage Prevention

This code establishes protection of and control over the alterations to natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters within the city limits. Chapter 36 also prohibits floodplain modifications that will alter natural hydrology and result in increased flood heights, velocities, and/or erosion.

2.2.1.2 Chapter 17: Soil Erosion and Stormwater

This chapter of the municipal code outlines ordinances that regulate and enforce nuisances, storm water management, and soil, erosion, sedimentation, and pollution control. Article II of this Chapter details permitting, compliance, and procedures for land disturbing activities located within the City. The City has adopted the minimum requirements and BMPs outlined in Code Section 12-5-30 of the Georgia Water Quality Control Act and the Manual for Erosion and Sediment Control in Georgia. This code also establishes a 25-foot buffer on all streams within the city limits, a 50-foot buffer on all streams classified as "trout streams", and requires state certification for individuals seeking construction and/or building permits. The City of Kingsland is the designated Local Issuing Authority and holds, in conjunction with Camden County, all inspection and enforcement responsibilities. Article III of this Chapter details regulation of development of unimproved land or the alteration of previously improved land that may affect the retention of stormwater or irrigation water on the site. It also details the effects of alterations or developments on soil erosion and water quality. It establishes approved methods of water retention, calculations for stormwater runoff, the use of stored water for irrigation, and the retention of stormwater draining into tidal areas.

2.2.1.3 Chapter 18: Solid Waste Management

Article I of this Chapter prohibits unlawful dumping of any solid waste within the City of Kingsland, including any waters located within the City. It also prohibits the operation of any sanitary landfill within the city without written approval of the city council and a state permit and establishes materials collected by the City solid waste service. Enforcement shall be the responsibility of the director of public works or county solid waste supervisors. Article II establishes litter control along public right-of-ways of roads or highways, water or watercourse, shores or beaches, park, playground or recreation areas, and residential or farm properties, timberlands or forests within the City.

2.2.1.4 Chapter 22: Utilities

Article IV of the Chapter established a 100 foot buffer wellhead protection zone for all city public water supply wells and prohibits the use or storage of hazardous materials, septic tanks or drain fields, impervious surfaces other than roofs, sidewalks, streets and driveways serving permitted buildings, sanitary landfills, hazardous waste disposal sites, stormwater infiltration basins, and underground storage tanks to be located within the buffer wellhead protection zone. It also prohibits sanitary sewer lines to be located within a 150 foot buffer of a wellhead. Article VI establishes an outdoor water use schedule for nondrought and drought periods and Article VII restricts outdoor watering of landscape. The City of Kingsland is the enforcement authority for these articles. Article VIII established rules and regulations governing private sewage disposal systems, building sewers and connections, the use of public sewers, wastewater discharge permits and reports, and inspections, monitoring, enforcement and penalties.

2.2.1.5 Chapter 44: Environmental Criteria

The purpose of this code is to establish groundwater recharge protection districts to protect the quality and quantity of the present and future water supply of the City of Kingsland, to minimize the transport of pollutants and sediment to the water supply, and to maintain the

yield of the water supply watershed. Article II establishes regulations governing septic drain field systems, agricultural waste impoundment sites, and new above ground storage of chemical or petroleum products.

2.2.2 Camden County Ordinances

The Camden County Municipal Code, which contains all ordinances adopted by the Camden County Board of Commissioners can be found online through the County's webpage (<http://www.co.camden.ga.us/index.aspx?NID=493>). A review of all applicable codes and ordinances was conducted to evaluate the effectiveness in which the County could regulate and enforce water quality problem areas and/or violations. Chapter 50 (Solid Waste) and Chapter 62 (Utilities) contain codes and ordinances that help protect water quality and water resources, as well as providing jurisdiction for the enforcement of code violations. A brief review of the applicable codes is included below.

2.2.2.1 Chapter 50: Solid Waste

This Chapter prohibits unlawful dumping of any solid waste, including any waters located within the county. It also establishes a solid waste collection service and litter control. Enforcement shall be the responsibility of the Camden County Code Enforcement Officers.

2.2.2.2 Chapter 62: Utilities

This Chapter established rules and regulation governing private sewage disposal systems, building sewers and connections, the use of public sewers, wastewater discharge permits and reports, inspections, monitoring, enforcement and penalties, and water and wastewater standards and ordinances.

2.2.3 Land Use Plans

2.2.3.1 City of Kingsland Water Conservation Plan

The plan was completed in October 2006 and revised in September 2008. A copy of the Water Conservation Plan is included in Appendix A. The plan established water conservation measures and standard operating procedures, a drought contingency plan, implementation measures, benefit analysis, conservation education, future demand forecast, and plan adoption.

Section 2.0 of the plan contains water conservation measures that include leak detection and elimination, recycling and reuse of treated water, water conservation codes, outdoor water use, and water audits that have become standard operating procedures that are managed in accordance with the City's Code. Section 6.0 pertains to conservation education that includes in-house training of City personnel, professional association training through workshops and seminars, and public education with the creation of a web-page, educational brochures, special events or promotional booths at City events, public service announcements on the radio, and presentations for school and civic programs.

2.2.3.2 Greenprint for Camden County Georgia

The Greenprint for Camden County, Georgia, a report by the Trust for Public Land provides a strategic plan for local governments to make decisions about growth while promoting and protecting natural resources and biodiversity by identifying area for land conservation, resource protection, park and trail creation and steps for implementation. A copy of the greenprint can be found in Appendix B.

The greenprint outlines protection of water quality in Camden County through identification of water protection as a high priority, protecting small streams, and focusing of development away from important water bodies and areas. Recommendations to implement conservation and protection strategies will occur through strengthening the current comprehensive plan policies, actively working with land owners, working with adjacent counties within the same watershed to study water quality and establish common goals, protection of smaller streams, headwaters and wetlands, establishment of source water protection projects, and institution of countywide buffers for ground and surface water supplies, rivers and lakes, and waterfronts.

2.2.4 Water and Sewer Upgrades

The City of Kingsland proposed to increase flow of effluent discharge flow to the St. Mary's River from a permitted average monthly flow of 2.2 MGD to 4.4 MGD to meet the wastewater treatment needs of the community. The existing WWTP is a secondary treatment facility designed to remove organic wastes, suspended solids, and nutrients. Biological treatment is currently provided by a continuous flow activated sludge process. The sequenced batch reactor system was placed in service in June 2009. The Orbital oxidation ditch system is current in standby. The system is permitted for 2.2 MGD with the option to upgrade to 4.4 MGD upon approval from EPD.

3.0 FUNDING

3.1 Cost to Implement Plan

Task	Responsible Party(s)	City of Kingsland Capital Cost
Community-based water quality monitoring program ^a	City of Kingsland	\$0
Public outreach and education	City of Kingsland	\$5,000
City of Kingsland Water Conservation Plan ^a	City of Kingsland	\$0
Greenprint for Camden County, Georgia ^a	City of Kingsland and Camden County	\$0
St. Mary's River Basin Management Plan ^a	City of Kingsland, Camden County, and Coastal Georgia Regional Development Commission	\$0
Satilla River Basin Management Plan ^a	Camden County and Coastal Georgia Regional Development Commission	\$0
Long-term water quality monitoring	City of Kingsland	\$49,983 ^b
Total Year 1 WPP Implementation		\$54,983

a No direct costs are included in the WPP task, although City of Kingsland personnel and resources will be allocated to implement the task.

b Cost estimate is the maximum possible amount. Depending on the level of effort providing by the City during water quality sampling, proposed costs could be less.

3.2 Potential Funding Sources

All proposed watershed management activities will either have no direct cost to the City of Kingsland or funding will be generated from the City's General Fund. Although no direct costs are included for the "community-based water quality monitoring program", City personnel and resources will be required to implement the management plan. Long-term water quality monitoring will be funded through the City's General Fund and will utilize both City and subcontractor resources to implement the plan.

Currently, the City of Kingsland does not expect to access outside funding to implement the proposed Watershed Protection Plan.

4.0 POLLUTANT SOURCES AND MANAGEMENT

4.1 Baseline Water Quality Conditions and Pollutant Sources

The results of water quality and biological monitoring conducted between February and July 2007 are detailed in the Watershed Assessment report (June 2008). Based upon results obtained during watershed monitoring, the most significant source of pollution within and surrounding the Kingsland service area appears to be tied to nonpoint source (NPS) pollution from land use/land cover change. The presence of low dissolved oxygen concentrations, sedimentation, total lead concentrations, high water hardness, and elevated fecal coliform levels was correlated with natural factors such as high summer temperatures, sediment oxygen demand, low flow, drought conditions, high organic matter content, and saltwater interface with tidal influence. Additionally, channelization, road crossings, and storm water run-off in streams has negative impacts on the availability and quality of aquatic habitats for the colonization of fish, macroinvertebrates, and other aquatic organisms.

4.2 Future Growth and Development

Based upon review of anticipated areas of future growth published by the Coastal Georgia Regional Development Center (CGRDC, 2007), existing potential environmental stressors, watershed location and jurisdictional authority, and the results of water quality and biological monitoring, three watersheds have a high priority, one watershed has a moderate priority, and six watersheds have a low priority for point and NPS pollution management plan implementation.

Station	Future Growth	Water Quality Stressor				Priority
		Non-point source runoff	Stormwater runoff and Sediment	Fecal Coliform	Biological	
HC01	◆	◆				Low
CR01		◆				Low
UT01		◆	◆		◆	Low
CB01		◆	◆		◆	High
GB01	◆	◆	◆		◆	High
LCC01		◆	◆	◆		Moderate
CC01		◆				Low
MC01	◆	◆	◆	◆		High
MB02		◆				Low
CR02		◆				Low

The three high priority watersheds indicated above (CB01, GB01, and MC01) are located in areas of anticipated future growth and development or in areas of established residential and commercial land uses (Figures 2 through 6). As a result, the implementation of pollution source abatement ordinances, including stormwater management and sediment and erosion control BMP and inspection requirements, should be implemented. As observed in some of the other assessed watersheds, including CB01 and LCC01, that have experienced historic growth and development, land use change can result in increased stormwater run-off, sedimentation, and pollutant loading. By ensuring adequate pre-construction water and pollutant management techniques, water and biological quality will be preserved while maintaining sustainable economic growth.

The one moderate priority watershed indicated above (LCC01) is currently located in an area that may experience low intensity future growth, but its watershed has a relatively high percentage of existing developed land uses (Figure 3), including areas with high impervious surface percentages (Figure 4). Areas of new growth and development within each watershed should still be required to manage stormwater and sediment effectively, but existing land use will continue to contribute to the water quality impairments indicated above. The high economic and resource cost to retrofit existing structures for better pollution source management lessens the priority for plan implementation.

Although a large portion of the City of Kingsland has a high percentage of developed land, future development maps and land use plans indicate that residential, commercial, and industrial growth are expected within northern and western portions of the service area (CGRDC, 2007) (Figures 2 and 3). As a result, increased impervious surface areas and alterations to current hydrological characteristics are likely within these new development areas. The City of Kingsland should ensure the establishment of BMPs into the City's planning process for future growth that function to protect watersheds and water quality of the service area.

5.0 BEST MANAGEMENT PRACTICES (BMPs)

As previously discussed, the most significant source of pollution within and surrounding the Kingsland service area appears to be tied to NPS pollution from land use change. The City should work to ensure implementation of structural and non-structural management measures that will address issues and sources of pollution identified in the City's Watershed Assessment should these issues persist during the long-term monitoring period.

5.1 Structural

The primary objective of the WPP is to monitor the need for more stringent stormwater management within the Kingsland WWTP service area. If existing ordinances prove to be inadequate in protecting water quality in receiving waters, the City of Kingsland will develop a more stringent ordinance to establish stormwater runoff limits, construction methods and design guidance, and routine inspections to ensure that new development does not result in degradation of the water resources within the service area.

Specifically, a list of management objectives will be reviewed and adopted by the City to determine the capacity of the existing stormwater management ordinance in controlling adverse stormwater effects on downstream waters and to improve and protect water quality and aquatic habitats for all water bodies located within the Kingsland service area. Some of the objectives are included below:

- Establish decision-making processes surrounding land development activities that protect the integrity of the watershed and preserve the health of water resources;
- Ensure that new development and redevelopment maintain the pre-development hydrologic response in their post-development state as nearly as practicable in order to reduce flooding, streambank erosion, nonpoint source (NPS) pollution and increases in stream temperature, and maintain the integrity of stream channels and aquatic habitats;
- Improve design and application criteria for the construction and use of structural stormwater control facilities that can be used to meet the minimum post-development stormwater management standards;
- Encourage the use of nonstructural stormwater management and more effective stormwater site design practices, such as the preservation of greenspace and other conservation areas, to the maximum extent practicable. Coordinate site design plans, which include greenspace, with the county's greenspace protection plan;
- Establish provisions for the long-term responsibility for and maintenance of structural stormwater control facilities and nonstructural stormwater management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety;

- Maintain administrative procedures for the submission, review, approval and disapproval of stormwater management plans, and for the inspection of approved active projects, and long-term follow up;
- Ensure future efforts to minimize direct impacts to waters (road crossings, channelization, and dredging); and,
- Assure the establishment of BMPs into the City's planning process for future growth that function to protect watersheds and water quality of the service area.

If new and/or re-development stormwater runoff management is found to be ineffective at preventing downstream hydrological and/or water quality perturbations, more stringent stormwater management requirements will be implemented. The results of long-term water quality monitoring as required in the WPP will be utilized.

5.2 Non-structural

Two primary non-structural BMPs are incorporated into the Watershed Protection Plan: 1) public outreach and education and 2) participation in land use and basin management plans.

5.2.1 Public Outreach and Education

The City of Kingsland currently has an established public outreach and education program that publishes fliers, information, and materials on environmentally related topics. Publicly distributed information includes water conservation methods and tips, natural resource protection and education, and free materials available to residents to promote water use efficiency. As a part of the WPP, the City of Kingsland will continue to provide environmental education and public outreach to City and County residents. Other sources of public outreach and education include developing relationships with the NRCS, Camden County Extension Office, and other community stakeholders to conduct workshops and educate the public on the importance of protect water quality resources from NPS pollution.

Based upon community interest and involvement, the City of Kingsland will facilitate the development of a local Georgia Adopt-A-Stream monitoring program to involve the community in water quality assessments within the City of Kingsland. The Program will be utilized to promote education about NPS pollution and ways to alleviate water quality stressor introduction.

Additional outreach and educational activities to promote community interest and involvement in the protection of water quality include organizing and conducting an annual community clean-up effort through participation in Rivers Alive. The City could also coordinate with the Camden County School district, board of education, and teachers to establish an environmental education component through the Project WET Foundation, Project Learning Tree, or Project Wild environmental education programs.

5.2.2 Land Use and Basin Management Plans

The City of Kingsland Water Conservation Plan established water conservation measures and drought contingency plan, implementation measures, benefit analysis, conservation education, future demand forecast, and plan adoption. The plan also ensures education and training of City Personnel, professional association training through workshops and seminars with The Georgia Association of Water Professionals, Georgia Water-Wise Council and The Georgia Rural Water Association, and public education.

The Greenprint for Camden County, Georgia outlines protection of water quality in Camden County through identification of water protection as a high priority, protecting small streams, and focusing of development away from important water bodies and areas.

The St. Mary's and Satilla River Basin Management Plans establishes a frame work for the City of Kingsland and Camden County in conjunction with the Coastal Georgia Regional Development Commission to enact and enforce zoning, stormwater and development ordinances, wastewater treatment planning, and participation in programs to protect wetlands and significant groundwater recharge areas (GAEPD, 2002a; GAEPD, 2002b). The management plans will facilitate these initiatives through the implementation and enforcement of erosion and sediment control programs, buffers, stream side management zones, forestry and agricultural BMPs, local non-point source management programs, and streambank and stream restoration activities. It also establishes public involvement in monitoring and individual awareness through public outreach and education using technical information, project wet and educational programs, and establishment of a local Georgia Adopt-A-Stream monitoring program.

6.0 MANAGEMENT OF 303(d) LISTED STREAM SEGMENTS

Stream Segment	Reach Location	Criterion Violated	Designated Use	TMDL Development Status	Proposed Management
Horsepen Creek	Headwaters to St. Mary's River	DO, FC	Fishing	<u>DO</u> : TMDL Completed 2001, <u>FC</u> : TMDL Completed 2006	None Proposed
St. Mary's River	Catfish Creek to Millers Branch	DO	Fishing	<u>DO</u> : TMDL Completed 2006	None Proposed

The locations of 2012 303(d)/305(b) supporting and non-supporting stream segments surrounding the Kingsland WWTP are presented in Figure 4 and Appendix C. Long-term biological and water quality monitoring stations are proposed on one of the 303(d)/305(b) stream segments (HC01). No specific management is proposed for these stream reaches.

7.0 SCHEDULE FOR IMPLEMENTING THE MANAGEMENT MEASURES

An estimated schedule for the implementation of the management measures proposed as a part of the WPP is included below. Due to financial restraints, resource availability, and fiscal cycles, the anticipated completion/ implementation schedules may vary during the Plan implementation. Updates for all watershed management activity schedules will be provided in the annual monitoring reports.

Watershed Management Activity and Milestones	Anticipated Date of Completion / Implementation
Public Outreach and Education	
Education information development	Ongoing
Community based water quality sampling program	2014-2015
Sponsored stream and roadside cleanups	2014-2015
Environmental education curriculum	2014-2015
City of Kingsland Water Conservation Plan	Ongoing
Greenprint for Camden County, Georgia	Ongoing
River Basin Management Plans	Ongoing
Water Quality Assessment	
Document BMP effectiveness and alleviated water quality problems	Annually, every June 30
Reporting	Annually, every June 30

8.0 LONG TERM MONITORING PLAN

8.1 Purpose and Objectives

The long term monitoring plan will utilize results generated during the Watershed Assessment conducted between February 2007 and January 2008 in order to:

- document stream improvement;
- identify water quality impairments and streams requiring further action; and,
- provide information on the effectiveness of BMPs toward meeting water quality standards, including any required modifications.

8.2 Identification

8.2.1 Parties Responsible for Water Quality Monitoring

Nutter & Associates and members of the City of Kingsland will conduct all water quality monitoring requirements during the WPP. Based upon resource and personnel availability, Nutter & Associates may provide additional sampling training to City personnel such that the City can conduct all water quality sampling pursuant to the WPP. Additionally, Nutter & Associates and City personnel will conduct "stream walks" along the major drainage features in order to identify any potential point and/or sub-basin pollutant sources.

8.2.2 Proposed Long-term Monitoring Stations

The City's service area covers a much larger area than the jurisdictional authority of the City of Kingsland; therefore, monitoring stations were selected for the Watershed Assessment to cover the larger geographic area. Ten total stations were sampled within the City's service area and six of these stations were sampled for both water quality and biological assessments (HC01, CR01, UT01, CB01, GB01, and LCC01) (Nutter & Associates, 2008). The four remaining stations (CC01, MC01, MB01, and CR02) were only used for water quality monitoring (Nutter & Associates, 2008). Based upon the findings of the Watershed Assessment, geographic location, and economic feasibility of long-term monitoring and implementation, a revision of water quality monitoring station locations surrounding Kingsland is proposed. In order to best address NPS pollution and determine the effectiveness of BMPs implemented within the City's jurisdictional area, six of the ten monitoring stations assessed during Watershed Assessment will remain as long-term water quality monitoring locations.

It is recommended the Crooked River at Tony Road (CR01), Catfish Creek at Clarks Bluff Road (CC01), Miller's Branch at Mariners Village (MB01), and Crooked River at US Highway 17 (CR02) monitoring stations not be included in the long-term monitoring requirements. During the monitoring period, intermittent and low flow conditions were observed at CC01

and MB01. Station CR02 is strongly influence by tidal conditions and elevated nutrient concentrations or metal exceedences were not observed at this station during the monitoring period. Additionally, CR01 had no metal or bacteriological exceedences or elevated nutrient concentrations during the monitoring period. Based on the results of the Watershed Assessment, these watersheds are considered low priority watersheds, which are located outside of the City's jurisdictional authority. To ease the financial burden of the City, it is recommended these stations not be included within the long-term monitoring sampling. Station HC01 (Horsepen Creek at Greenville Road) is also considered a low priority watershed that is located outside the jurisdictional authority the City, but it will remain as a monitoring station during long-term monitoring due to the current listed status on the EPD 305(b)/3039(d) integrated report.

At the request of EPD, a reconnaissance based on aerial photography and the observed conditions during the monitoring period was conducted to determine an alternative location for Station LCC01. It was suggested to relocate Station LCC01 from Scrubby Bluff Road to the end of Lindy Lane (N 30° 45' 56.5", W 81° 40' 35.37"). However, relocation of LCC01 to Lindy Lane would change the sampling location to a downstream location on May Creek. Station MC01 is located just upstream of Lindy Lane and moving the location of LCC01 to this location would not result in a larger portion of the southernmost part of the service area being sampled. Additionally, by relocating LCC01, a larger portion of the service area that includes the western portions of City limits would not be included within an assessment. Therefore, it is recommended that Station LCC01 remain at Scrubby Bluff Road.

8.2.3 Locations of Monitoring Stations

Following an extensive reconnaissance of the service area to determine the most suitable location for biological and water quality monitoring, the table below presents the proposed location of the six monitoring stations (Figures 5 and 6).

Station	Monitoring Parameters	Latitude (DD)	Longitude (DD)
HC01	Water Quality Only	30.795038	-81.794442
UT01	Water Quality Only	30.821480	-81.712889
CB01	Biological & Water Quality	30.823588	-81.688355
GB01	Biological & Water Quality	30.812440	-81.627004
LCC01	Water Quality Only	30.780554	-81.685373
MC01	Water Quality Only	30.772543	-81.666078

Horsepen Creek at Greenville Road (HC01)

HC01 is located west of Kingsland on Horsepen Creek which is a tidally influenced tributary to the St. Marys River. The station is accessed from the Greenville Road bridge crossing near the western border of the service area and just west of Temple Church Road (Plate 1, Figures 5 and 6). This stream drains a 6.10 mi² watershed composed of agricultural (18%), residential (5%), forested (56%), and wetland (21%) land cover areas in the St. Marys

River watershed (Table 1.). Since Horsepen Creek is a Georgia EPD 303(d) listed stream for fecal coliform and dissolved oxygen but is also tidally influenced, Station 1 will be used for water quality monitoring only.

Unnamed Tributary to Crooked River (UT01)

UT01 is located north of Kingsland on an unnamed tributary of the Crooked River (Plate 2). The tributary drains the large Meadows subdivision located off Colerain Road northwest of the City of Kingsland. This station is accessed from Colerain Road west of its intersection with U.S. Highway 17 and drains a 0.97 mi² mixed use watershed composed of agricultural (12%), developed (12%), forest (53%), and wetland (24%) land covers (Table 1, Figures 5 and 6). UT01 will be used for water quality monitoring only and is not a tidally influenced stream.

Caney Branch at Colerain Road (CB01)

CB01 is located in the Crooked River watershed downstream of Kingsland at the Colerain Road crossing east of U.S. Highway 17 and drains a 4.06 mi² mixed use watershed composed of agricultural (10%), developed (19%), forest (36%), and wetland (34%) land covers (Table 1, Figures 5 and 6). The station is located on the downstream side of the culvert which crosses under the highway (Plate 3). The tributary drainage area lies between U.S. Highway 17 to the west and Interstate 95 to the east. This tributary drains Caney Swamp and residential and commercial areas in central portions of the service area and is not a tidally influenced stream. CB01 will be used for water quality and biological monitoring.

Gum Branch at Colerain Road (GB01)

GB01 is located in the eastern portion of the service area in the community of Harrietts Bluff and is a tributary to the Crooked River (Plate 4). The station is located upstream of Colerain Road just east of its intersection with Gross Road and drains a 4.42 mi² mixed use watershed composed of agricultural (12%), developed (32%), forest (34%), and wetland (22%) land covers (Table 1, Figures 5 and 6). GB01 is not a tidally influenced stream and will be used for water quality and biological monitoring.

Little Catfish Creek at Scrubby Bluff Road (LCC01)

LCC01 is a tidally influenced stream and is located on Little Catfish Creek in the center of the service area and in the St. Marys watershed. It is located upstream of Scrubby Bluff Road, just east of its intersection with U.S. Highway 17 (Plate 5) and drains a 2.57 mi² mixed use watershed composed of agricultural (9%), developed (43%), forest (29%), and wetland (18%) land covers (Table 1, Figures 5 and 6). Since LCC01 is tidally influence and observed conditions during the Watershed Assessment were more indicative of a swamp system, it will be used for water quality monitoring only.

May Creek at Scrubby Bluff Road (MC01)

MC01 station is located on May Creek downstream and southeast of Kingsland (Plate 6) and is located upstream of Scrubby Bluff Road, west of Interstate 95. It drains a 3.09 mi² mixed use watershed that is not tidally influenced and is composed of agricultural (9%), developed (47%), forest (24%), and wetland (19%) land covers (Table 1, Figures 5 and 6). MC01 will be used for water quality monitoring only.

8.2.3 Monitoring Schedule

Georgia EPD has established criteria for the number of monitoring events required for watershed assessment. EPD has also established criteria for scheduling water quality, bacteriological, and biological monitoring events. An estimated schedule for water quality monitoring is detailed in Table 2.

8.2.4 Monitoring Procedures

8.2.4.1 Water Quality Monitoring

Dry weather monitoring event samples will be collected as grab samples. One dry weather water quality event will be conducted annually between October and February. Dry weather monitoring will be conducted immediately prior to benthic macroinvertebrate sampling semi-annually. The remaining two dry weather events will be conducted annually between May and October.

One wet weather water quality event will be conducted annually between November and March. Wet weather monitoring events are timed to collect composite samples over the course of the complete hydrograph for a storm event of at least 0.2 inches (0.5 cm) of rainfall and at least 72 hours since the last storm event. During wet weather events, a rain gage will be used to estimate precipitation during the monitoring event; precipitation data from the closest climatic data station will be obtained and used in interpreting monitoring results.

Samples will be collected at mid-channel one meter below the water surface, or at locations where total water depth is less than 2 meters, samples will be collected at mid-depth. Metal samples will be collected using "clean techniques" (EPA Method 1669). Dissolved metals will be calculated based upon published U.S. EPA guidance (USEPA, 1996); other samples will be collected as unfiltered samples. For tidally influenced monitoring stations (HC01 and LCC01) measurements and samples will be collected at ebb-flow as close to low slack tide as possible. Field parameters (temperature, pH, dissolved oxygen, and specific conductance) will be measured in-stream with a multi-parameter sonde; turbidity samples will be collected for field analysis. Field measurements and observations will be recorded on a watershed monitoring field data sheet, or equivalent data will be recorded in a field notebook. To minimize potential disturbance of stream sediments, all samples that will be submitted to a laboratory for analysis will be collected prior to performing field parameter measurements.

All samples collected for laboratory analysis will be field preserved in accordance with the requirements of the analytical methods presented in Table 3. Metals samples will be individually double-bagged. Sample containers will be placed in an ice chest with ice to maintain samples at a temperature of 4° C or less until they are received by the analytical laboratory.

A chain of custody form noting sample identification, date, time, number of containers, sample matrix, sample parameters, preservatives, laboratory, sampling personnel and project manager will be completed and will accompany the samples to the laboratory. The chain of custody will be signed by the field sampler and the date and time noted, then the chain of custody will be sealed in a Zip-loc bag and taped inside of the lid of the ice chest.

Samples will be transmitted by overnight courier to the analytical laboratory and will be analyzed within the holding times specified for the analytical methods listed in Table 3.

8.2.4.2 Bacteriological Monitoring

Georgia EPD requires that bacteriological density data for fecal coliform bacteria and *Escherichia coli* bacteria be collected as a geometric mean based on at least four samples collected within a 30-day period at intervals not less than 24 hours. A minimum of two geometric means are required for the period from May to October. Samples will be collected on a regular schedule, regardless of the weather. In-situ water quality measurements, including water temperature, dissolved oxygen, pH, and specific conductivity, will be conducted in conjunction with each bacteriological grab sample event.

Bacteriological samples will be collected as grab samples at mid-channel one meter below the water surface, or at locations where total water depth is less than 2 meters, samples will be collected at mid-depth. Filled sample containers will be placed in an ice chest with ice to maintain samples at a temperature of 4° C or less until they are received by the analytical laboratory.

A chain of custody noting sample identification, date, time, number of containers, sample matrix, sample parameters, preservatives, laboratory, sampling personnel and project manager will be completed and will accompany the samples to the laboratory. The chain of custody will be signed by the field sampler and the date and time noted, then the chain of custody will be sealed in a Zip-loc bag and taped inside of the lid of the ice chest. Samples will be transmitted to the analytical laboratory and will be analyzed within the holding times specified for the analytical methods listed in Table 3.

8.2.4.3 Benthic Macroinvertebrate Monitoring

Sample locations have been designated on two of the major drainages within the Kingsland service area (Figures 5 and 6). Biological monitoring will be used to assess the affects of future growth and development. Biological monitoring will be conducted semi-annually during WPP monitoring. One water quality sample event (dry weather and associated *in-situ* water quality) will be conducted in conjunction with benthic macroinvertebrate sampling, and will be collected prior to collection of macroinvertebrates and habitat data.

A physical habitat assessment will be conducted at each site where biological monitoring is to occur, and will utilize the habitat assessment protocol provided in the most recent Georgia EPD Macroinvertebrate Biological Assessment of Wadeable Streams in Georgia (currently GAEPD, 2007) SOP. The parameters that will be included in this assessment are: epifaunal substrate and instream cover, embeddedness, velocity/depth combinations, pool/substrate variability, channel alteration, sediment deposition, channel flow status, channel sinuosity, riparian vegetation, bank stability, and bank vegetative protection.

Benthic macroinvertebrate sampling will occur between the months of October and February and will utilize the most recent Georgia Macroinvertebrate Assessment SOP (currently GAEPD, 2007). The sampling protocol will be based on multi-habitat sampling methods outlined within the most recent Georgia Environmental Protection Division (GAEPD) Standard Operating Procedure for Freshwater Macroinvertebrate Biological Assessment (currently GAEPD, 2007). Due to the location of the sampling stations, Ecoregion metrics will be calculated for each station using region 75f Index of Biotic Integrity (IBI) (Figure 7). For low gradient streams, dip-net sampling will be conducted along a 100-meter reach in the following habitats where present: 6 sweeps along undercut banks/rootwads, 3 sweeps of soft sediment/sand, 3 handfuls of leaf packs, 8 pieces of woody debris, partially decomposed and immersed, and 3 sweeps in macrophyte beds, when present. For high gradient streams, dip-net sampling will be conducted along a 100-meter reach in the following habitats when present: 3 sweeps in fast riffles, 3 sweeps in slow riffles, 5 pieces of coarse woody debris, 3 sweeps along undercut banks/rootwads, 3 handfuls of leaf packs, 3 sweeps of soft sediment/sand, and 3 sweeps in macrophyte beds, when present.

Samples will be processed and subsamples taken in a Caton-type subsampler to attain 200 ($\pm 20\%$) individuals. Most taxa will be identified to either the genus or species level, but some taxa, including Oligochaeta, Polychaeta, Nemata, Hirundina, Cladocera, Ostrocodae, Neoloricata, and Planaria, may remain at a higher taxonomic level. Chain of custody records, basic sorting and subsampling techniques, identification methods, and level of effort will be documented (GAEPD, 2007). Other quality control/assurance measures, including duplicate subsampling, making voucher collections, estimates of precision, calculating sorting efficiency, and long term specimen storage are not required by Georgia EPD.

Level IV Ecoregion specific Macroinvertebrate Multi-metric Indices (MMI) have been developed by EPD. All the stations in the service area are located in Ecoregion 75f (Figure 8). The metrics included in the 75f IBI are percent Oligochaeta, percent Tanypodinae/Total Chironomidae, tolerant taxa, and percent filterer.

8.2.4.4 Fish Community Monitoring

As detailed in the Georgia Water Resources Division Standard Operating Procedures (GADNR, 2005), an Index of Biotic Integrity for fish communities has not been developed for the region of Georgia located along the Atlantic Ocean. As a result and due to the tidal influence, fish sampling will not be conducted as a part of the Watershed Protection Plan. The results of fish sampling and habitat characterization as a part of the January 2008 Watershed Assessment did not provide valuable information.

8.2.5 Water Quality Parameters

Water quality monitoring parameters, test methods, detection limits and water quality standards are summarized in Table 3. Temperature, pH, dissolved oxygen, and specific conductance will be measured in the field using a multi-parameter sonde that has been calibrated in advance of monitoring. Turbidity will also be measured in the field using a turbidimeter that has been calibrated in advance of monitoring. Flow will be measured or estimated at all stations during each monitoring event using a flow meter. Parameter analyses will be in accordance with the approved test procedures set forth in 40 CFR 136.

9.0 REPORTING REQUIREMENTS

Once the WPP is approved by EPD, the City of Kingsland will submit to the State the following information by June 30th of each year:

- Annual certification of WPP implementation;
- Long-term monitoring data submitted in electronic format that includes water quality data in EPD's excel format, long-term habitat and biological data, scanned copies of all field sheets, laboratory taxa lists, and macroinvertebrate spreadsheets, GIS coverages of the City's jurisdictional limits, service area, and subwatershed units (unless already submitted), and photographs of the sample sites; and,
- An annual Progress Report that includes discussion of the monitoring data and results, evaluation of data trends in terms of water quality and the health of biological communities, specific actions or BMPs that have been implemented, and a summary of any changes or revisions to the WPP (if necessary).

10.0 REFERENCES

Georgia Regional Development Center (CGRDC). 2007. Joint Comprehensive Plan 2007 - 2027: Camden County, City of Kingsland, City of St. Marys, and City of Woodbine.

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2002a. Saint Marys River Basin Management Plan,
http://www.gaepd.org/Documents/st_marys.html.

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2002b. Satilla River Basin Management Plan,
<http://www.gaepd.org/Documents/satilla.html>.

Georgia Environmental Protection Division. 2007. Macroinvertebrate biological assessment of wadeable streams in Georgia: Standard Operating Procedures. Georgia Department of Natural Resources, Water Protection Branch, Atlanta, Georgia. March 2007.

Nutter & Associates, Inc. 2008. City of Kingsland Watershed Assessment.

United States Environmental Protection Agency (USEPA). 1996. The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion. United States Environmental Protection Agency, Office of Water, EPA 823-B-96-007, June 1996.

Table 1. 2008 landcover within each monitoring station watershed.

	Percent Landcover Classification					
Landcover Classification	HC01	UT01	CB01	GB01	LCC01	MC01
Developed	5	12	19	32	43	47
Agricultural	18	12	10	12	9	9
Forest	56	53	36	34	29	24
Wetland	21	24	34	22	18	19

Table 2. Estimated 2014-2015 water quality monitoring schedule.

Sampling Task	2014				2015					
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
Water Quality										
In-situ		D		W		D			D	
Analytical		D		W		D			D	
Bacteria (Fecal coliform & E.Coli)	X								X	
Biological										
Benthic Macroinvertebrate Community		X								
Annual Status Reporting										
Due June 30th annually										X

D = dry weather monitoring, W = wet weather monitoring, X = general sample event of report submittal

Table 3. Water quality parameters, test methods, and reporting limits, Kingsland Watershed Protection Plan.

Parameter /Units	Method	Method Detection Limit	Reporting Limit	Water Quality Standard
Water temperature (°C)				32.2 ° EC (equivalent to 90 ° EF)
Air temperature (°C)				
pH (S.U.)				Within the range 6.0 - 8.5
Dissolved Oxygen (mg/L)				A daily average of 5.0 mg/L; no less than 4.0 mg/l at all times
Specific Conductance (µS/cm)				
Turbidity (NTU)				Refer to 391-3-6-.03(5)(d)
Biochemical oxygen demand, 5-day (mg/L)	405.1	2	2	
Chemical oxygen demand (mg/L)	410.4	1.2	2	
Total suspended solids (mg/L)	160.2	4	5	
Total Phosphorus (mg/L)	365.4	0.021	0.05	
Phosphorus: ortho (mg/L)	365.1	0.05	0.05	
Total Kjeldahl Nitrogen	351.2	0.13	0.5	
Ammonia nitrogen (mg/L)	350.1	0.024	0.05	
Nitrate nitrogen (mg/L)	353.2			10 (MCL)
Nitrite nitrogen (mg/L)	354.1			1.0 (MCL)
Cadmium -Total (µg/L) ¹	6020A	0.1	0.5	Freshwater 1.3 (2.0); Coastal 9.3 (42)
Copper -Total (µg/L) ¹	6020A	0.39	2.5	Freshwater 5.0 (7.0); Coastal 3.1(4.8)
Lead -Total (µg/L) ¹	6020A	0.5	1.5	Freshwater 1.2 (30); Coastal 8.1 (210)
Zinc -Total (µg/L) ¹	6020A	3.5	20	Freshwater 65 (65); Coastal 81 (90)
Total Hardness, Ca, Mg (mg/L)	6010	0.05	0.25	
Fecal Coliform (CFU/100 ml)	SM 9221E	2	2	
E. Coli (CFU/100 ml)	SM 9221B	2	2	
Enterococci (CFU/100 ml)	SM 9230C	2	2	

1 Standards for metals are expressed as chronic or acute for freshwater or for coastal and marine estuarine waters. Acute criteria are in parentheses, chronic criteria without parentheses. Acute criteria will not be exceeded under 1Q10 or higher flow, chronic criteria will not be exceeded under 7Q10 minimum flow. The in-stream criterion for metals is expressed in terms of the dissolved fraction in the water column. Conversion factors used to calculate dissolved criteria are found in the EPA document National Recommended Water Quality Criteria - Correction, EPA 822-Z-99-001, April 1999. The in-stream criteria for Cu and Pb are lower than the EPD laboratory detection limits (the criterion may be higher than or lower than EPD laboratory detection limits depending upon the hardness of the water). The aquatic life criteria for these metals are expressed as a function of total hardness (mg/l) in a water body. Values in the table above assume a hardness of 50 mg/l CaCO₃. For other hardness values, the following equations from the EPA document - National Recommended Water Quality Criteria – Correction, EPA 822-Z-99- 001, April 1999 should be used. The minimum hardness allowed for use in these equations shall not be less than 25 mg/l, as calcium carbonate and the maximum shall not be greater than 400 mg/l as calcium carbonate.

Cadmium acute criteria= $(e^{1.0166[\ln(\text{hardness})]} - 3.924)(1.136672 - [\ln(\text{hardness})(0.041838)])$ µg/l

Cadmium chronic criteria= $(e^{0.7409[\ln(\text{hardness})]} - 4.719)(1.101672 - [\ln(\text{hardness})(0.041838)])$ µg/l

Copper acute criteria= $(e^{0.9422[\ln(\text{hardness})]} - 1.700)(0.960)$ µg/l

Copper chronic criteria= $(e^{0.8545[\ln(\text{hardness})]} - 1.702)(0.960)$ µg/l

Lead acute criteria= $(e^{1.273[\ln(\text{hardness})]} - 1.460)(1.46203 - [\ln(\text{hardness})(0.145712)])$ µg/l

Lead chronic criteria= $(e^{1.273[\ln(\text{hardness})]} - 4.705)(1.46203 - [\ln(\text{hardness})(0.145712)])$ µg/l

Zinc acute criteria= $(e^{0.8473[\ln(\text{hardness})]} + 0.884)(0.978)$ µg/l

Zinc chronic criteria= $(e^{0.8473[\ln(\text{hardness})]} + 0.884)(0.986)$ µg/l

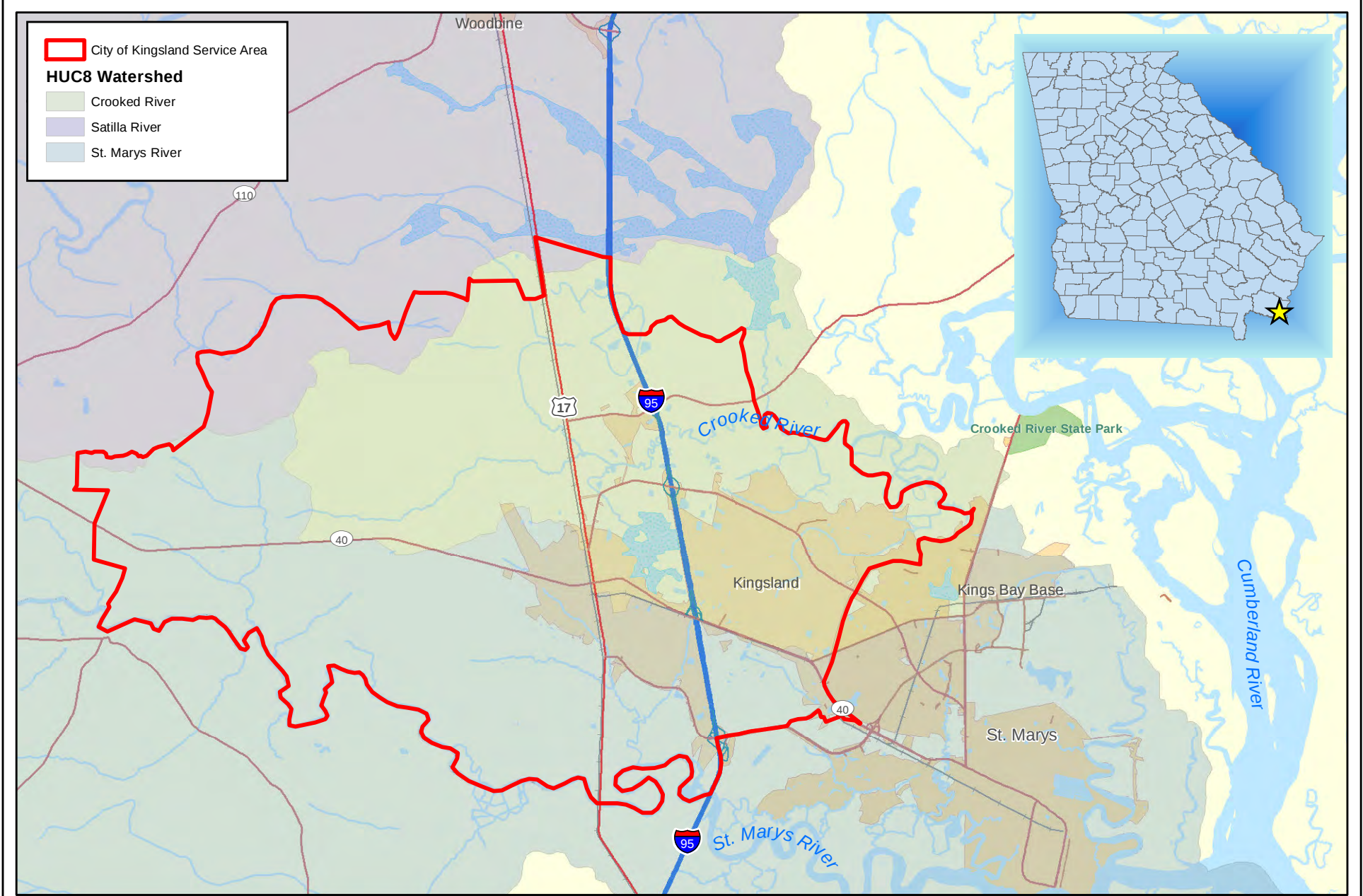


Figure 1. Vicinity map, City of Kingsland, Georgia.

0 1.5 3 6 Miles



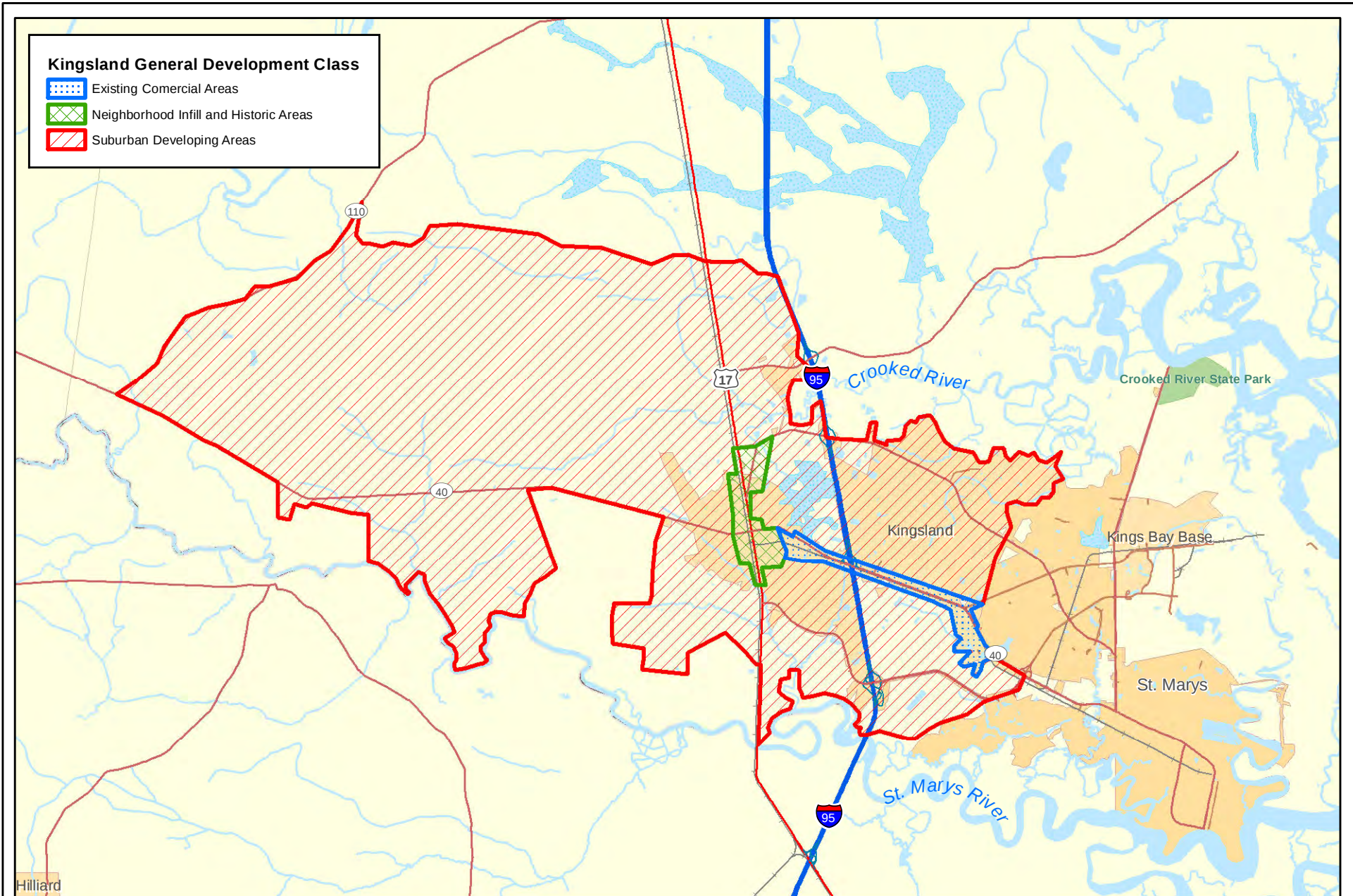


Figure 2. Existing and future areas of development. (Data Source: Coastal Georgia RDC)

0 1.5 3 6 Miles



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environmental consultants

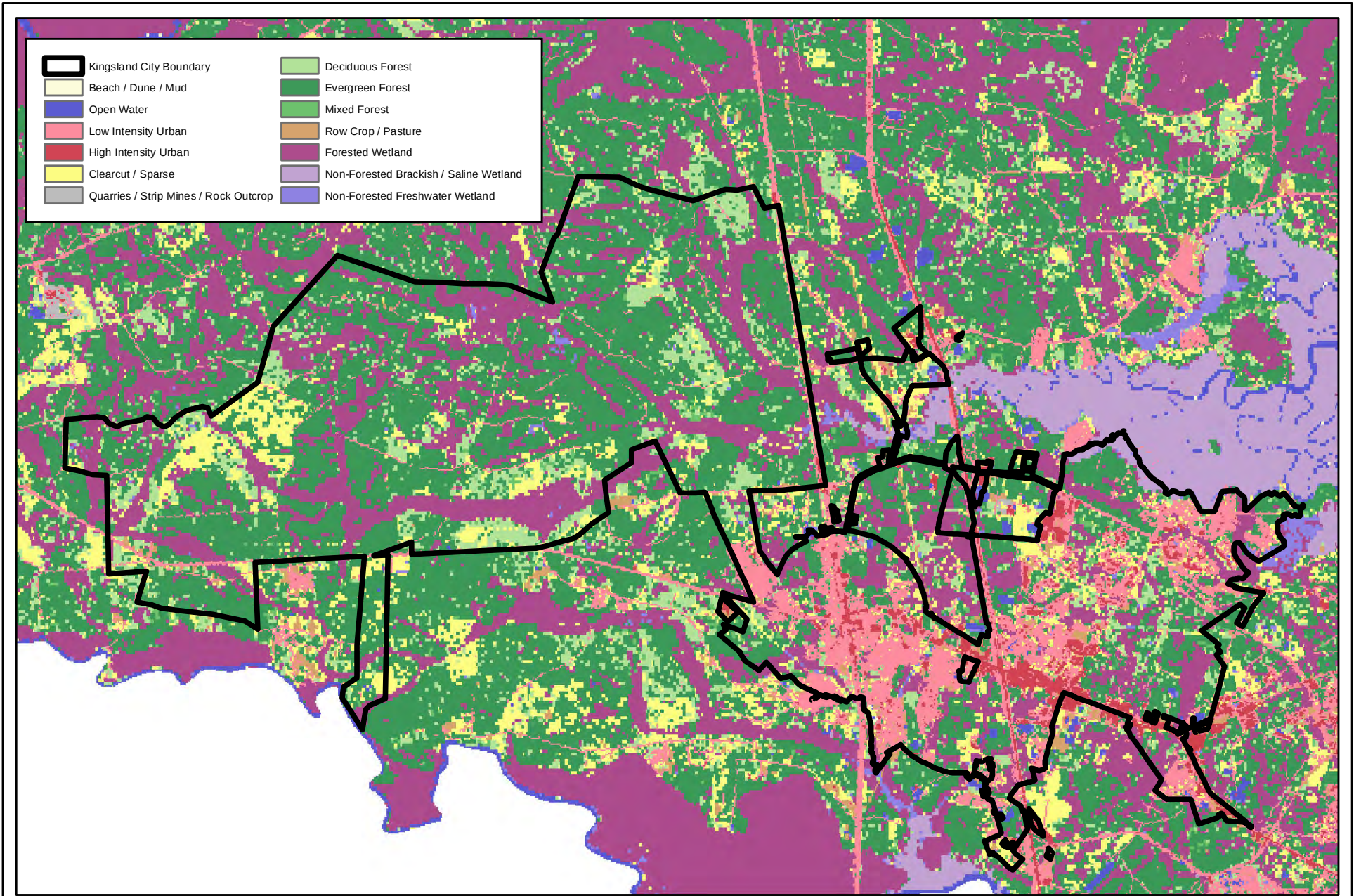


Figure 3. 2008 landcover within the Kingsland service area.

0 1 2 4 Miles



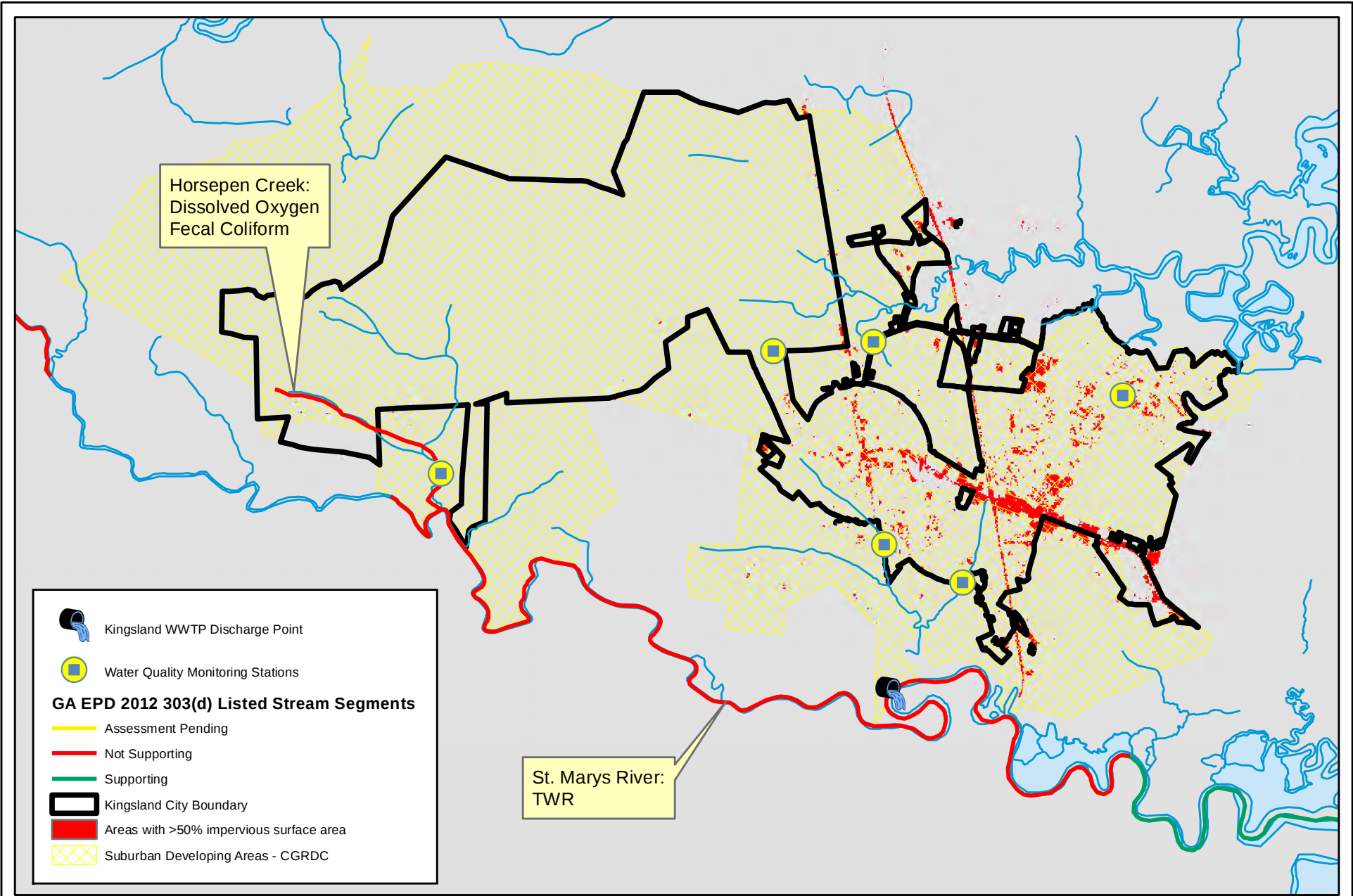


Figure 4. Locations of 303(d) listed stream segments and potential environmental stressors.



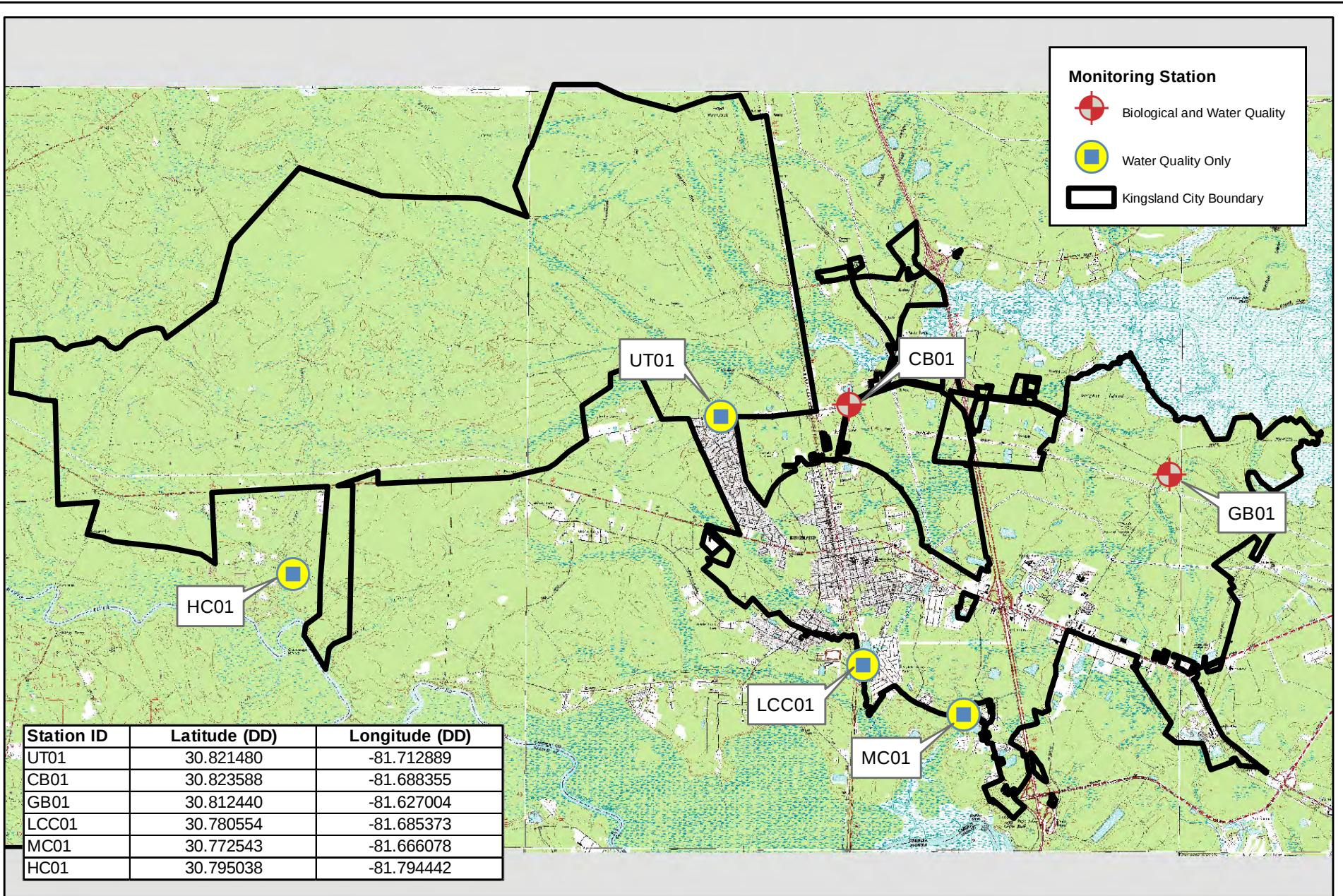


Figure 5. Locations of water quality monitoring stations.

0 1 2 4 Miles



Nutter & Associates
environmental consultants

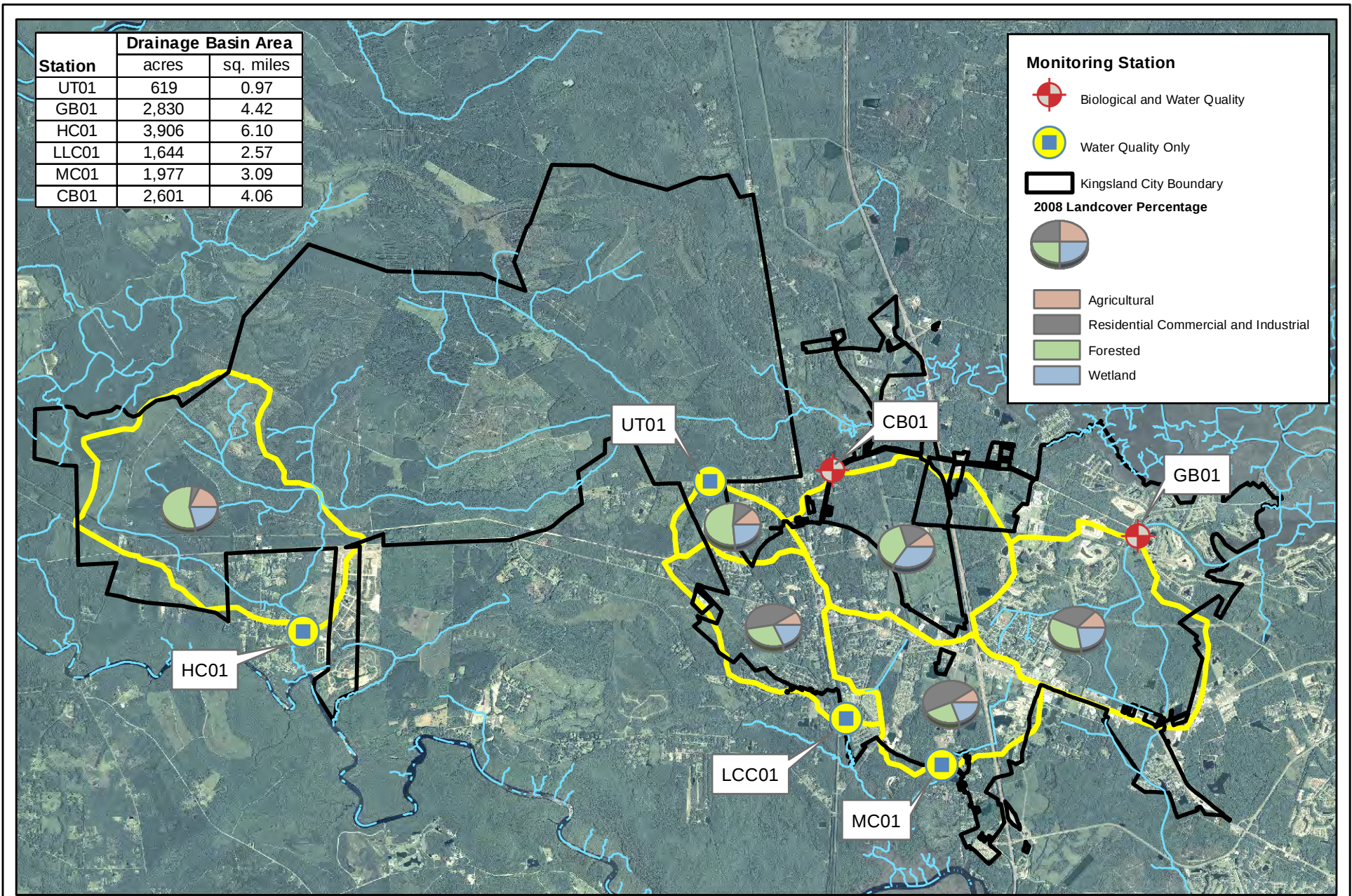


Figure 6. Locations of water quality monitoring stations and drainage basin landcover.

0 1 2 4 Miles

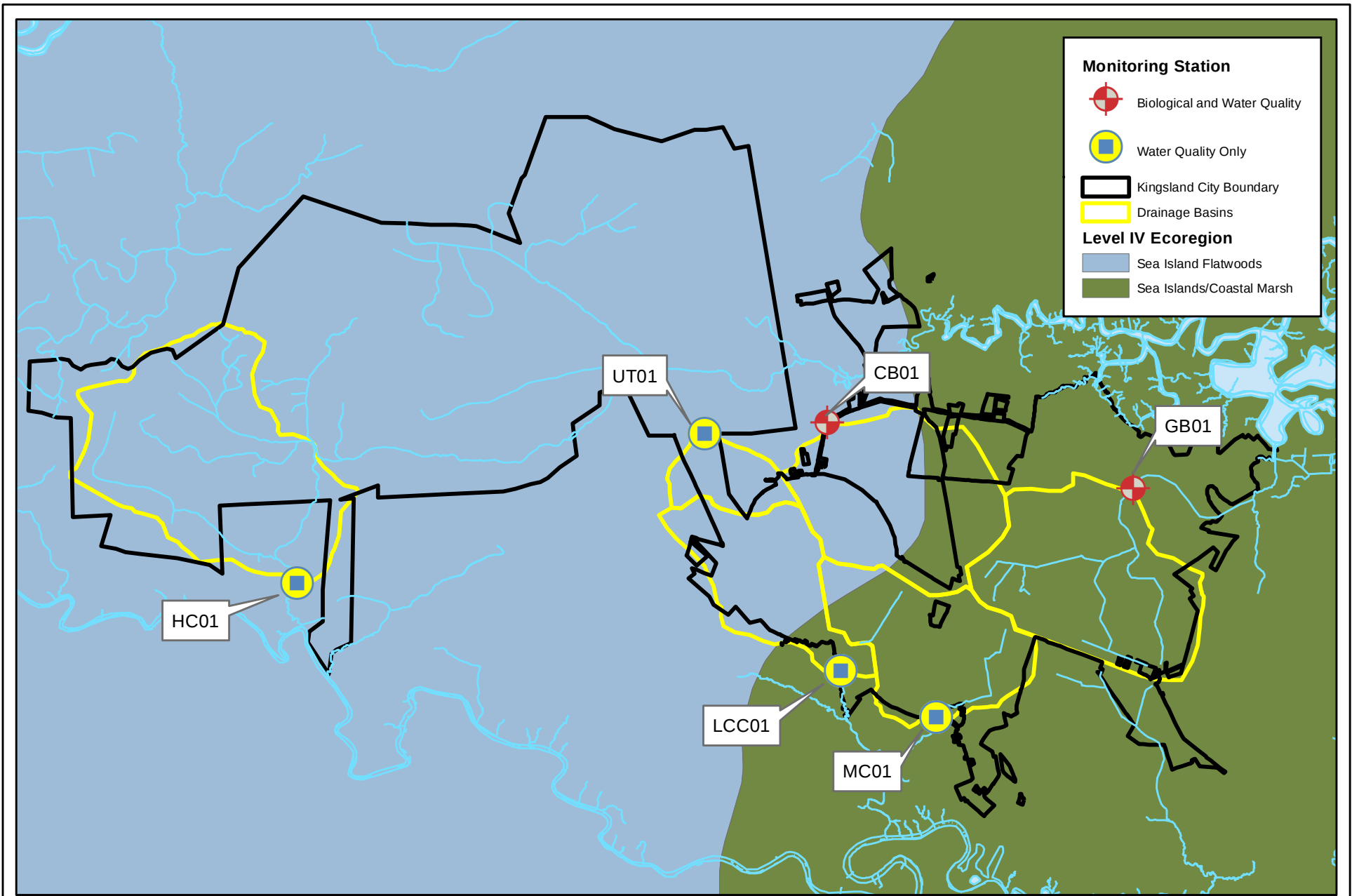


Figure 7. Level IV Ecoregion map.

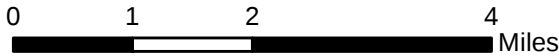




Plate 1. Horsepen Creek (HC01).



Plate 2. Unnamed tributary to the Crooked River (UT01).



Plate 3. Caney Branch (CB01).



Plate 4. Gum Branch (GB01).



Plate 5. Little Catfish Creek (LCC01).



Plate 6. May Creek (MC01).

APPENDIX A

City of Kingsland, Water Conservation Plan

Attachment: Kingsland WPP revised July 2014_reduced (1163 : Watershed Protection Plan)

City of Kingsland, GA.



WATER CONSERVATION PLAN

OCTOBER, 2006
[Revised September 2008]

Completed By:



Carter & Sloope
CONSULTING ENGINEERS

1.0 SYSTEM MANAGEMENT

The City's water system flow data for the twelve month period (July 2007 – June 2008) indicates an Annual Water Use (AWU) of roughly 689.617 million gallons of water. (*Reference Exhibit 1 – "City of Kingsland Water Use Data"*). Metered and miscellaneous accounted for water use, provided over the same period, accounts for 578,899,000 gallons or $\approx 84\%$ of the AWU. Approximately 16 percent of this annual volume is Un-Accounted for Water (UAW) use. The vast majority of the UAW results from inaccurate and incomplete data, under both billed and non-billed water usage. The City does maintain good records of un-metered water usage during maintenance activities. Typically maintenance activities (i. e. hydrant flush, DOT usage) accounts for approximately 8 to 10 % of the UAW. Additionally system leakages will make up a large portion of the UAW percentage. The City's current water system maintenance, which consists of ongoing management with early leak detection and repair, will continue.

The Monthly Groundwater Withdrawal is recorded at the well head. Total monthly water usage fluctuates with peak usage occurring in the spring through early summer, March through June (see figure1.1). These meters are checked for accuracy annually. Under this "Water Conservation Plan" the City focuses on improved service area metering, as well as documentation of any non-metered flows through the establishment of improved volume estimating and reporting. This will improve or reduce the overall percentage of UAW for the City in the continuing goal to improve City wide water conservation.

Total Monthly Water Usage

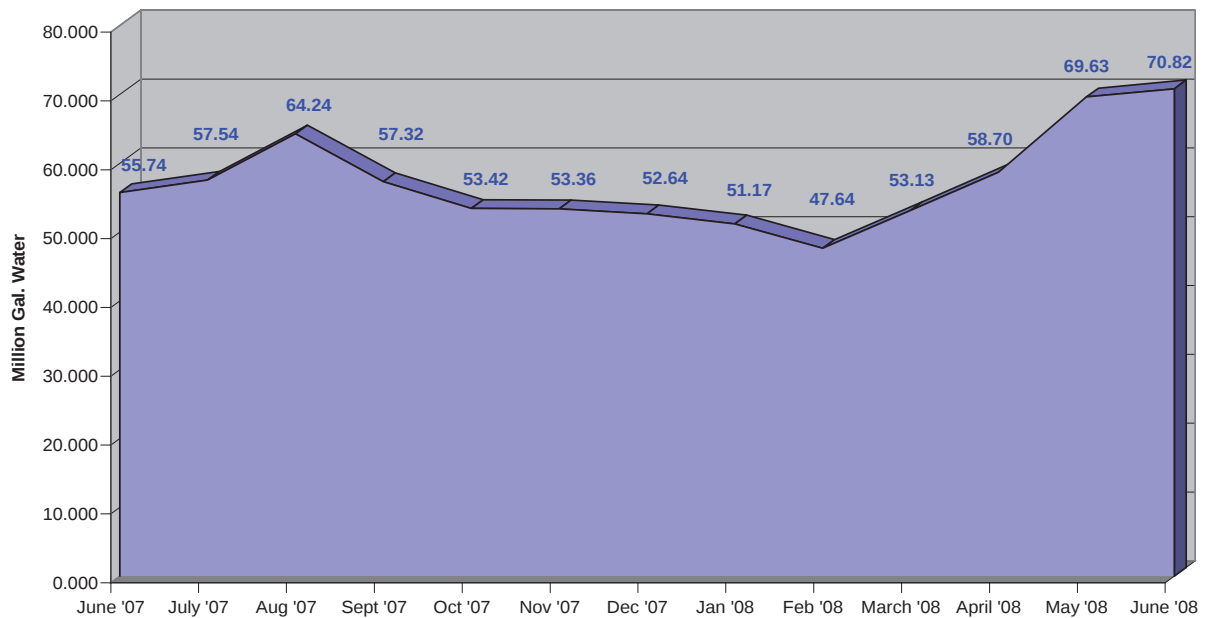


Figure 1.1 – Total Monthly Usage

2.0 WATER CONSERVATION MEASURES / SOPs

The City's Water Conservation Measures are outlined below. These measures, as a primary element of this Water Conservation Plan, become STANDARD OPERATING PROCEEDURES (SOPS) for the Utility's Operations and are managed in accordance with the City's Utility Code (*Chapter 22 of the City Code, see Appendix A*).

Additional measures include an informative/education plan for the end-users/citizens. The City's Code, Chapter 22 – Articles I and II, specifies unlawful use of water during emergency or drought situations as well as establishing a progressive consumption rate and connection fee schedule which maintains control over water access and use (reference appendix A – City Code Chapter 22 – ARTICLE II, for progressive rate schedule).

2.1 Leak Detection and Elimination

The City's Leak Management program consists of early detection through visible observation and reporting of leaks by both maintenance staff and citizens/customers. Large fluctuations in

water use which are noted at the time of service meter readings/billings or are noted at the well head meters during their recordings will be promptly investigated.

A planned formal system wide leak detection survey has not been found necessary. Should ongoing Leak Management indicate an extended or pervasive problem, a complete leak detection survey will be completed. Observations and recordings of both leaks and water use fluctuations will continue to serve in water use management as these methods are functional. During meter readings active observation and documentation of the condition of the service meters and the extent of any leaks will continue to be a primary focus for maintenance staff. Any necessary upgrades or replacements will be scheduled immediately (within a maximum of 8 hrs), depending upon other scheduled repairs. In maintaining the City's overall water conservation initiatives and in order to further reduce the annual UAW, maintenance staff will now include an estimated volume of water lost with a reported leak. Utility department staff will record the estimated water which is lost during a leak using the "Leak Volume Estimate Log". This estimate will be based upon line size, and the estimated pressure and duration of the discovered leak. Staff will compile an annual list of the detected and repaired leaks along with the total estimated volume of water loss. (Ref. exhibit 2 for "Leak Volume Estimate Log").

2.2 System Maps

The City maintains a Water System Map within their Geographical Information System (GIS) data base. The map will be updated on a Bi-Annual basis in order to maintain an accurate record of the City's potable water utility. This data base is planned for augmentation to provide a data base information record which will include type of activity, dates etc. which will be attached to the Water System Base Map. This tracking of completed system retrofits; meter maintenance and replacements; new meter, line and valve connections will bring about an improved management and maintenance scheduling which will improve Water Conservation and the annual UAW percentage. The current Water System Map is included in Appendix B.

2.3 Meter Maintenance

City Service Meter repair/replacement and maintenance procedures will be maintained through active inspections/observations, documentation and reporting. Over the past two to three years the City has been actively replacing the service meters. To date all meters have been replaced throughout the entire service area. Maintenance and repair will continue to be managed through the general utility maintenance process. During the meter reading and utility billing process the

meters which are found broken/damaged, leaking or are suspected to be out of calibration will be immediately reported to management for replacement/repair or recalibration as necessary. All repairs will be completed within a maximum of 8 hrs depending upon the extent of the associated problem and other scheduled repairs. Annually, under the City's ongoing water conservation initiatives, the service meters will be checked/calibrated for the top 10% of users. The balance of the meters will be checked on a five (5) year schedule.

The City's three Well Head Pumps and Meters will continue to be checked annually. Step tests for each well pump will be completed to check the condition of the pumps (i.e. wear and percent operating efficiency). The pumping rates, at system pressure, will be compared with a reading from the corresponding flow meter at operating pressure. Any necessary maintenance to restore the pumps to acceptable efficiencies and/or meter repair/replacement will be completed immediately.

2.4 *Recycling or Reuse of Treated Water*

Water treatment, consists of chlorination and aeration at the well head, thereby limited water use / consumption during treatment is realized. Consumption is limited to loss through air release valves during pump startups. Operation and maintenance of equipment (e.g. pumps, meters) should continue to limit water consumption. Any general/routine maintenance activities at the well sites requiring water use shall be documented for water use accounting and reduced UAW reporting. The "Miscellaneous Water Use Log" sheet will be used to record this use (see exhibit 3).

2.5 *Plumbing Ordinances and/or Water Conservation Codes*

The City's Building and Zoning Department enforces all applicable ordinances including Georgia State Building Code which incorporates the 2000 International Building Code and Maximum Flow and Water Consumption Plumbing Code. Additionally the City Code (*Chapter 22, Section 22-2 "Unlawful use of water during emergency or drought situations"*) specifies as follows:

Sec. 22-2. Unlawful use of water during emergency or drought situation.

- (a) Except as directed by the mayor or his legally appointed representative, during emergency or drought situations as proclaimed by the mayor:
 - (1) No users shall do any outside watering of any kind, including street flushing, public or private fountains, public or private park irrigation or watering of lawns, gardens, shrubbery, trees and so forth.
 - (2) No commercial or public use, such as filling of swimming pools or motor vehicle washing of any kind shall be permitted.
 - (3) No commercial or home laundry use shall be permitted except during the hours of 7:00 p.m. to 7:00a.m.
- (b) The person performing any of the acts proscribed by this section, and any person who, with the knowledge of such violation, receives the benefit from any such service or product, shall be deemed guilty of an offense.
- (c) Any person who shall violate the provisions of this section shall be deemed guilty of an offense, and upon conviction thereof shall be punishable as follows:
 - (1) Any person found to be violating the provisions of this section shall be served a written notice stating the nature of the violation, and shall be issued a warning ticket for the violation.
 - (2) On the second violation, water service shall be terminated, and a reconnection fee will be charged, per each violation, as set forth in the schedule of fees and charges.
 - (3) For all subsequent violations, a reconnection fee shall be charged, per each violation, as set forth in the schedule of fees and charges.

(Ordinance No. 1987-21, § I, 12-28-87)

State law reference – Georgia Safe Drinking Water Act of 1977, O.C.G.A. § 12-5-171 et seq.

(Reference the complete Code – Chapter 22, Utilities Code in Appendix A)

2.6 Outdoor Water Use

The Board of Natural Resources adopted Rules for Outdoor water Use, Chapter 391-3-30. Under the rules, Georgians are required to follow schedules for outdoor water use during both non-drought periods and during periods of declared drought. The rules are consistent with the Board of Natural Resources adopted Georgia Drought Management Plan.

Therefore pursuant to the Georgia Department of Natural Resources Environmental Protection Division, Chapter 391-3-30 the following outdoor water use schedule and prohibitions shall apply to operational management of the Water Utility.

2.6.1 Outdoor Water Use Schedule During Non-Drought Periods

Outdoor water use under this required schedule, other than exempted activities as defined in Rule 391-3-30.05 (GA-DNR, Environmental Protection Division), shall occur as follows:

- Odd-numbered addresses shall be allowed to water on Tuesdays, Thursdays or Sundays.
- Even-numbered addresses shall be allowed to water on Mondays, Wednesdays and Sundays.

All outdoor watering shall be limited to a maximum of two (2) ½ hour periods within the above referenced schedule. All end-users shall be notified, through the information flyers included with their bill mailing, of the newly mandated schedule and time limitation along with conservation techniques to employ during watering (e.g. early morning or late afternoon watering, soaking vs. sprinkling, use of xeriscape plantings and mulching, etc.).

2.6.2 Outdoor Water Use Schedule During Declared Drought Periods

Outdoor watering during designated drought periods will follow the schedule and prohibitions as outlined in Rule 391-3-30.04 - GA-DNR, Environmental Protection Division (reference Appendix C).

Drought level and official designation standards are outlined in Section 3.0, Drought Contingency Plan, of this Water Conservation Plan.

2.7 Prevention of Unauthorized Use

Contractors are required to apply for metered service with the Utilities Department. All water use for commercial and residential construction activities will be metered. The Utilities Department maintains meter readings before and after the Certificate of Occupancy (CO), to assure authorized and documented use. Bulk water use will be scheduled for bulk tanker truck loading from the Utility Department, these volumes will be accounted for and recorded (reference exhibit 4 for “Bulk and Public/Institutional Water Use Log”).

Utility Department staff, City Police and Meter Readers will monitor and report unauthorized use by contractors and new residents as well as unauthorized use of fire hydrants. To reduce UAW use, department staff will record all incidents of unauthorized use with a best estimate of

the volume used. This data will be compiled and totaled annually to reduce the percentage of UAW.

2.8 Fire Department and other un-metered uses

Water used by the Fire Department for fire fighting, hydrant testing and/or training will be recorded. Monthly reports compiling a list, hydrants and/or training and fire fighting events and the associated water volume used will be submitted to the City Utility Department (reference exhibit 5 for Hydrant Flush and Fire/Rescue Use Log).

Other un-metered uses will be authorized under controlled use with use volumes reported to the Utility Department upon conclusion or setup of permanent metered service.

2.9 Water Audits

Water Audits will be completed as a means of checks and balances. Primary emphasis will be placed on the UAW accounting procedures. Additionally, documentation of education and compliance with other conservation procedures will be checked.

The audits will be completed by an independent party on an annual basis or as deemed necessary by Utility Management in order to maintain good progressive conservation (reference exhibit 6 – “Water Audit Work Sheet”). As noted in the Audit Work-Sheet should the reported UAW exceed 10% a plan and schedule of remedial action will be formulated.

Upon completion of the Annual Audit the utility management will complete and submit to the state the following EPD report forms (reference exhibit 7):

- Water Metering Reporting and Tracking Form
- Outdoor Water Use Reporting and Tracking Form
- Water Loss Control Program Annual Reporting Form

3.0 DROUGHT CONTINGENCY PLAN

Given the City's water source is from the confined Floridan Aquifer particular water level indicators pursuant to this aquifer source are not defined. Thereby the larger state-wide indicators used to determine drought severity (under a DNR statewide notification) will be incorporated by the City.

The State's drought declaration process, which includes established triggers and four action levels are outlined in the Georgia Drought Management Plan (reference Appendix D). As referenced above in Section 2.6.2, the associated outdoor watering schedules and restrictions are outlined in GA-DNR - Rule 391-3-30.04.

Consistent with the State's action level four, which allows for no outdoor watering, Kingsland City Code - Chapter 22, Section 22-2 "Unlawful use of water during emergency or drought situations" prohibits use of water, as set forth, during drought periods (referenced above in Section 2.5).

The established priorities for water use under the drought contingency will follow those recommended by the State of Georgia, as follows:

1. Emergency Facilities
2. Domestic consumption and personal uses
3. Agricultural uses
4. Industrial uses
5. Other, such as: lawn, irrigation (sprinklers), vehicle wash, gardening etc.

The Mayor, City Manager or Council Members can declare a water emergency. A water emergency is defined as: "Overuse of ground water resources resulting in affected supply of potable water".

4.0 IMPLEMENTATION OF CONSERVATION MEASURES

Water conservation measures outlined herein under this written plan are ongoing. Implementation of specified/outlined and necessary improvements will be completed under the ongoing management of the City's water utility and the Standard Operating Procedures (SOPs) as outlined in this WCP.

5.0 ANALYSIS OF BENEFITS

The benefit of the water conservation measures will be realized in the associated cost for the production of a gallon of water. Under this Water Conservation Plan the reduced UAW volume will equate to either 1.) a direct savings of water or 2.) an increased billing by the gained percentage of accounted for water.

Considering the total volume of water used any reduction in the percentage of the UAW will translate to a cost benefit to the City Utility. With the incorporation of these conservation measures, a reduction in UAW will be realized. An estimated 10% to 30% annual reduction in the UAW will quickly bring the UAW amount to a negligible volume (See figure 5.1 below).

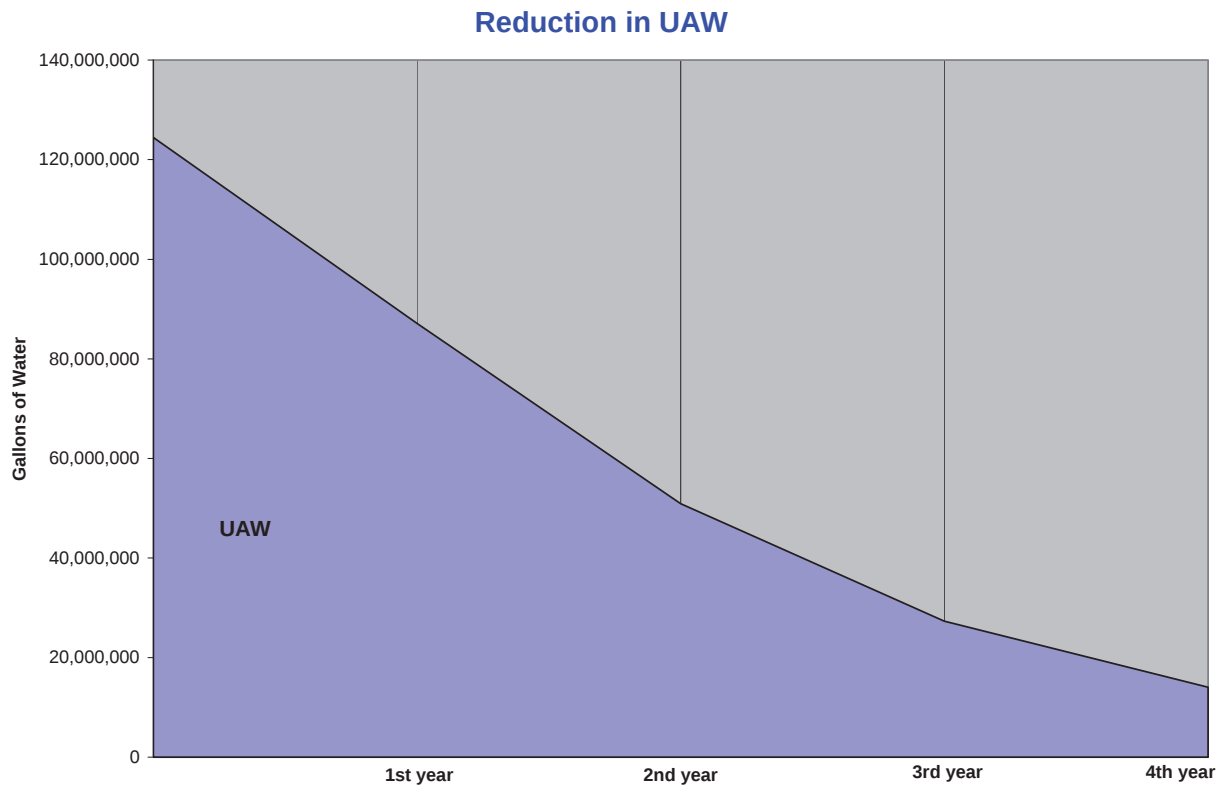


Figure 5.1 – Reduction in UAW

6.0 CONSERVATION EDUCATION

Conservation Education is an important part of the City's overall Water Conservation Plan. The City Utility Department goes through an extensive and sometimes expensive process to obtain and deliver potable water to the residents of Kingsland. As populations continue to grow across Coastal Georgia it becomes increasingly difficult to obtain and treat economically feasible water resources. As the City grows it is important to educate both city personnel and the public as to the means in which we can conserve our Potable Water Resource.

The efforts to conserve will greatly depend upon the awareness and understanding of the city personnel operating the utility as well as the end-users, the citizens. The City's efforts must be evaluated as the Water Conservation Plan elements are employed and we move forward in time. This will be accomplished through a variety of assessments and measurement of the usage within the specific categories (e.g. commercial, residential, industrial, institutional and agricultural). While actual Un-Accounted Water (UAW) volume will continue to be a focus under the Utility's management (as discussed in the previous sections of this Plan) and improvements in UAW reporting will continue to be refined as the City proceeds forward in time. The water usage within the individual service metered categories will be dependent upon the end-user's ability and willingness to understand and employ the water conservation methods outlined. To promote effective exercise of conservation with these end-users, the City will incorporate the use of periodic questionnaires, to be included with the water bills, which poll the end-users regarding their use of conservation methods.

6.1 *Education for City Personnel*

Education of City personnel will consist of a two (2) tiered process. Initial education will consist of in-house training, consisting of their introduction to the necessity of water conservation in all water uses and the details of this Water Conservation Plan (WCP). Utility management as well as staff personnel will be trained in proper water use accounting and the Standard Operating Procedures (SOPs) (conservation measures) under the required operation and maintenance of the Utility (reference section 2.0 above). The elements of the WCP and the need for the Utility to reduce the annual reporting of UAW will be a primary focus of the staff's in-house training.

Beyond this ongoing in-house training practice the City will incorporate professional association training through workshops and seminars to supplement and further the over-all

conservation concepts and techniques. “The Georgia Association of Water Professionals”, “The Georgia Water-Wise Council”, and “The Georgia Rural Water Association” are some of the out-side sources to be utilized in completion of the training of staff. This extended education process will begin with Utility Management followed by select staff and personnel in other City departments as necessary.

6.2 **Public Education**

Education of the utility’s end-users, the public, is very important to our water conservation efforts and the public’s education will be a process to build awareness and understanding. To accomplish this education the City will employ a variety of methods/programs. These programs will incorporate secondary language publications where necessary and be completed under a phased process. They will include:

- Creation of an Interactive and Informative Web-Page linked to the City’s web-site. The site will include basic conservation concepts and techniques, water service/rate information and general environmental, economic and regulatory benefits. The site will give contact information for the Water Utility (phone, e-mail etc.) for questions regarding the water conservation initiative.
- Educational Brochures will be developed and used to be mailed with the monthly bills. These informative bill inserts will employ GA Rural Water Association and AWWA publications as well as newly developed brochures to educate the public in the complete details regarding conservation concepts and techniques. These topics will include:
 - Benefits of keeping water local, reducing demand and withdrawals.
 - Water conservation and water quality issues.
 - Benefits of Re-use and information regarding the planned initiatives.
 - Efficiencies in conservation, community and individual cost savings.
 - Over-all costs in providing water.
 - Water-Smart initiatives (landscaping, irrigation types-techniques).
 - Everyday saving techniques.
- Hold special events or promote booths at City events promoting conservation.
- Offer public service announcements on radio.
- Arrange presentations for schools and civic organizations.

7.0 **PREPARATION OF DEMAND FORECAST**

7.1 **Population**

According to the Georgia Office of Planning and Budget (OPB) population data, the City of Kingsland had a 2004 population of ≈11,588 persons, with the Camden County population

forecasted to approach 53,000 persons by 2015. However, it is important to note that these OPB population numbers (based upon the 2000 census data) fall far short of the actual numbers. They do not account for the continuing accelerated growth rate across the Coastal Regions of Georgia. This has become very evident with the coastal communities in their planning service initiatives.

Camden County has seen large growth over the past few years. Based upon Georgia Office of Planning and Budget the forecasted growth over the period from 2000 – 2015 will approach 25%. In actuality, as discussed above, the Georgia OPB forecast falls short of actual growth currently exhibited. Kingsland is experiencing growth closer to an annual rate of between 10% and 20%. Based upon these growth rates and an expanding service area the City's Service Area Population and thus water consumption will continue its rapid growth. Reference figure 7.1 below.

Estimated Service Area Population Growth

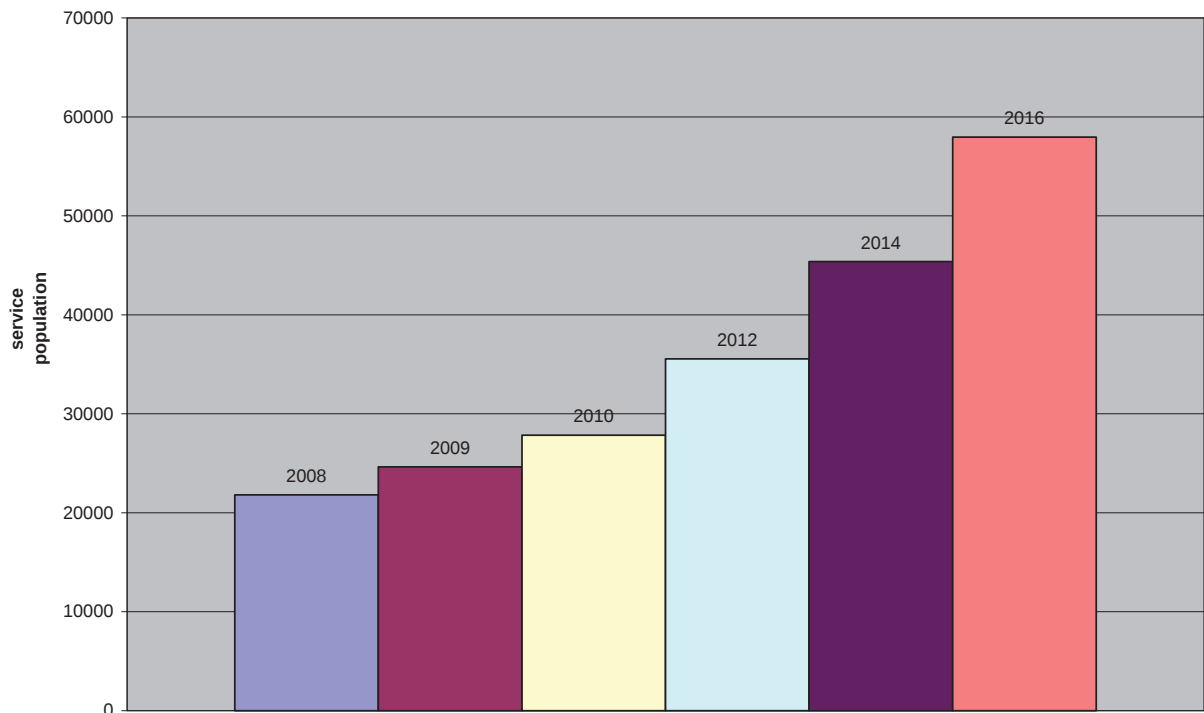


Figure 7.1 – Estimated Service Area Population Growth

7.2 Current Usage

Total current usage is approximately 689 million gallons of water annually. Expectedly usage does fluctuate daily. Review of the Monthly Average Daily Use (total monthly metered use divided by number of days in month) once again indicates a peak use through the spring and summer of the year. Figure 7.2 shows a Peak Monthly Average Daily Use of 2.36 MGD.

Comparison of the Annual Average Daily Use (total annual usage divided by 365 days) in MGD with the Peak Monthly Average Daily Use indicates a Percent Peak Usage of 24.94 % (See Exhibit 1 – “City of Kingsland Water Use Data”).

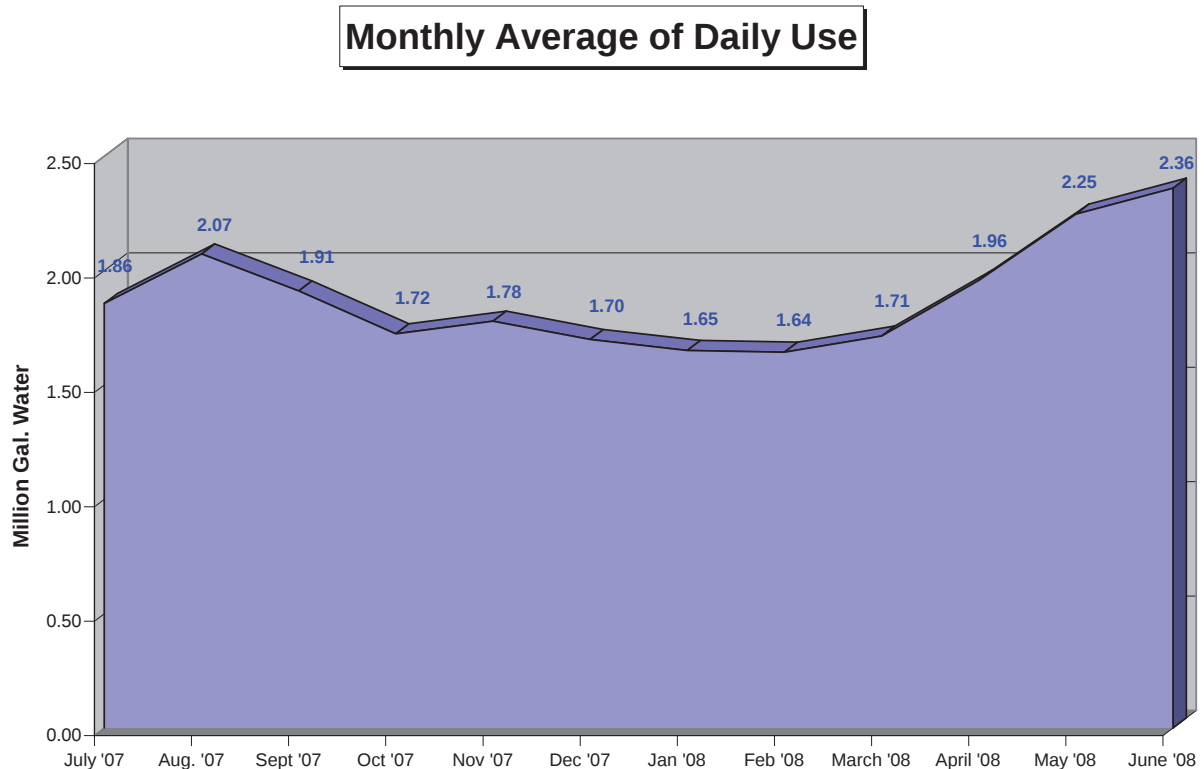


Figure 7.2 – Monthly Average of Daily Use

7.3 Future Demand

The City water system serves residential, commercial and institutional use customers. Future water usage is calculated using the equivalent per capita consumption of approximately 72

gals/day; which is based upon current total annual water use and the estimated service area population. This per capita daily usage is adjusted upwards, based upon the expanding service population with the associated growth in commercial usage as well as a peak usage factor arriving at a Per Capita Daily Usage of around 90 gals. (Reference Exhibit 1 – “City of Kingsland Water Use Data”). The estimated future water usage is depicted in Figure 7.3 below.

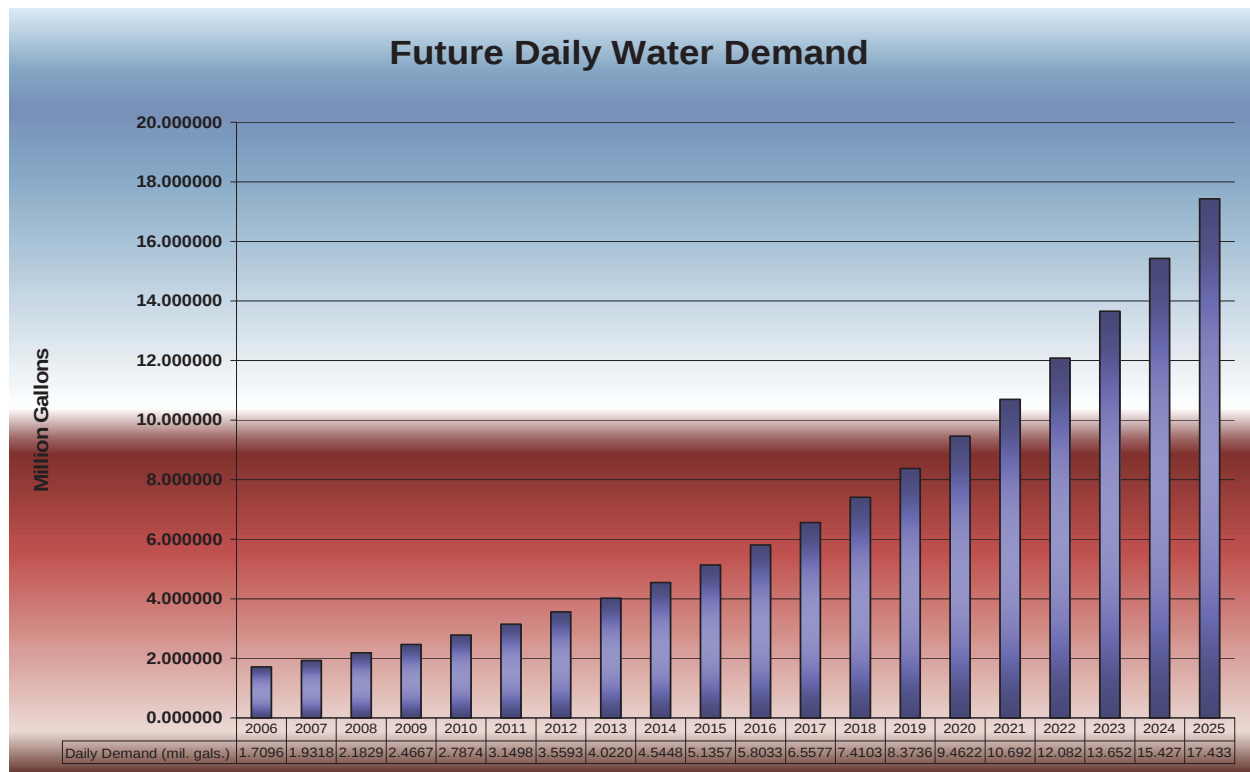


Figure 7.3 – Future Daily Water Demand

8.0 PLAN ADOPTION

The Utility Department will maintain the elements of this plan in a consistent means under the ongoing management of the Utility. The conservation measures and plan elements will be reviewed periodically and updated as necessary in the City’s ongoing efforts to improve water conservation. This Water Conservation Plan is approved by the City of Kingsland Utility Department in accordance with Chapter 391-3-2-.04 (11) of the Georgia Department of Natural Resources, Environmental Protection Division Groundwater Use Rule, and the United States Environmental Protection Agency Water Conservation Plan Guidelines.

APPENDIX B

Greenprint for Camden County, Georgia

Attachment: Kingsland WPP revised July 2014_reduced (1163 : Watershed Protection Plan)

*The Trust for Public Land conserves
land for people to enjoy as parks, gardens,
and other natural places, ensuring livable
communities for generations to come.*

A report by The Trust for Public Land

Greenprint for Camden County, Georgia



Attachment: Kingsland WPP revised July 2014_reduced (1163 : Watershed Protection Plan)

THE TRUST *for* PUBLIC LAND
CONSERVING LAND FOR PEOPLE

The Trust for Public Land gratefully acknowledges the following for their assistance with the Camden County, Georgia Greenprint:

Our Greenprint Partners

City of St. Marys, Georgia
Georgia Department of Natural Resources, Coastal Resources/Coastal Management Division
National Oceanic and Atmospheric Administration

The Greenprint Steering Committee

Bill Alexander, Woodbine BHT/certified arborist
Jim Bailey, Camden Land Trust
Janet Brinko, St. Marys Tourism
William Brunson, Camden County Public Service Authority
Holly Christensen, Coastal Georgia Community College
Cumberland Island National Seashore
Becci Curry, St. Marys Elementary School
Angie Eaton, Camden County
Neil Guillebeau, Kings Bay Naval Submarine Base
Darren Harper, City of Kingsland
Jo Hickson, Coastal Georgia Greenway
Terry Landreth, Camden Bicycle
Julie Monahan, Up the Creek Outfitters
Gordon Rogers, Satilla Riverkeeper
Alyce Thornhill, City of St. Marys

Many individual stakeholders and interested parties contributed greatly to this report by attending public workshops, sitting for interviews, and providing review and response to our numerous questions. Among them are Kathy Chapman, U.S. Fish and Wildlife Service; Eloise Thompson, Camden Historical Society; Loretta Riggins Hylton, Camden County Planning and Building Director; and, Bill Gross, local builder and community volunteer.

The numerous agencies and organizations that provided data on which to build the Greenprint include:

Camden County
Camden County Public Service Authority
City of Kingsland
City of Woodbine
City of St. Marys
Coastal Georgia Regional Development Center
Ecological Solutions, Inc.
Georgia Department of Natural Resources, Wildlife Resources Division
jb+a, inc.
University of Georgia Data Clearinghouse

Special thanks to Neil Guillebeau for going above and beyond the call of duty, and to Gordon Rogers and Jim Bailey for getting to the truth on the ground.

All photographs are courtesy of Michael Wray for Michael Wray Photography.

Greenprint *for* Camden County, Georgia

A report by

THE
TRUST
for
PUBLIC
LAND



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What is a Greenprint?



A Greenprint is a strategic planning, communication and decision-making tool comprised of opportunity maps and an action plan that:

- ✿ Connects where people live to where they can enjoy the outdoors;
- ✿ Improves access to water for fishing, boating, paddling and wildlife;
- ✿ Improves the health of natural systems to support water quality, drinking water source protection, mitigate storm events, and maintain habitat for wildlife diversity; and
- ✿ Enhances the economic viability of the overall community as a place to live, work, and play.

Greenprinting is The Trust for Public Land's (TPL) unique application of Geographical Information System (GIS) modeling, which helps local governments and communities make informed decisions about how they want to grow smartly while promoting and protecting their highest values. Greenprinting identifies the best opportunities for land conservation, restoration and resource protection, new park creation and trail development, and lays out practical action steps for implementation.

TPL's greenprinting process fosters collaboration among diverse community stakeholders to produce an easy-to-understand, dynamic tool for prioritizing land protection opportunities that considers community values as well as environmental, social, economic, educational, cultural, and recreational interests. The process involves these key steps:

Constituency Building

- Identifying Community Interests and Values
- Establishing Conservation Goals and Criteria to Express Community Values

Data Gathering and Analysis

- Assembling GIS Data
- Creating GIS Models
- Ranking (Weighting) Goals and Criteria According to Community Priorities
- Translating Models into Opportunities Maps

Greenprint Results and Strategic Action Recommendations

- Identifying Practical Strategies for Implementation

A Greenprint is *not*

- A map of land-use prohibitions
- Determined by a single perspective
- Limited to only protecting wildlife and biodiversity
- For condemning or taking land

The Camden County Greenprint



Coastal Georgia, like much of the Low Country to the north of it, was considered a sweetly tranquil place, prized for its fertile soils and tall pines. Today, however, it has transformed into a destination for second homes, snowbirds, and military retirees, all of which generate substantial impact on the environmental, cultural and recreational assets that have drawn people to these marshy shores in the first place. Sacred views of the waterfront—both from the land and from the rivers—increasingly are dotted with development. Historic fisheries and shrimping areas are not as prolific as in past days, and areas long accessed by the public for fishing, hunting, paddling, and hiking sit behind the walls of gated neighborhoods.

While this growth has injected the local economy with much-needed energy, it also poses new challenges for managing resources, meeting recreational needs, achieving connectivity across land not just for wildlife but for the social fabric, and providing safe passage for all along busier streets. For these and other reasons, the Georgia Department of Community Affairs (DCA) selected Camden County as one of its first five Signature Communities.* Camden County outlined three initiatives as part of the DCA two-year technical assistance program, and the Camden County Greenprint was one of them.

Camden County sought assistance from TPL to:

- ❖ Create a fact-based, community-supported vision of what the “green” infrastructure of Camden County should be, recognizing the inherent natural, recreational, cultural, and historical value of the area as well as the increasing pressures of growth and development on these values;
- ❖ Create a defensible planning tool based upon community values and existing conditions to guide growth by focusing development in certain areas while conserving and protecting identified special and environmentally sensitive areas;
- ❖ Establish a cross-jurisdictional relationship among the Cities and County for greenspace planning efforts consistent with the Greenprint;
- ❖ Build public support and encourage public participation throughout the process; and,
- ❖ Provide a plan of action for implementation of the Greenprint.

On behalf of the county, the City of St. Marys acted as the project manager for the Greenprint. The City applied to the Georgia Department of Natural Resources (DNR) for a Coastal Incentive Grant, a program funded to the states by the National Oceanic and Atmospheric Administration (NOAA), and was awarded the funding to support the Greenprint in October 2006. TPL was hired to facilitate the Greenprint in November that same year.

*The Georgia Department of Community Affairs (DCA) Signature Communities Program was started to provide all of DCA's tools to maximum advantage for deserving communities, thus comprehensively addressing local needs. It is intended to help communities reach ever higher levels of community achievement and quality of life for their citizens and is limited to communities that are serious about improving local quality of life through effective planning, implementation and taking a comprehensive approach to addressing community improvement issues. The program recognizes these communities and gives them specialized technical and financial assistance with implementing key initiatives identified in their comprehensive plans. St. Marys, Kingsland, Woodbine, and Camden County were selected for this program in FY 2006, the program's first year.

Greenprint Methodology

In order to achieve the aforementioned goals and to create an “opportunity map” for an effective and sustainable system of recreation and conservation spaces to guide the growth of Camden County, the Greenprint focused on the following tasks:



- ❖ Assessing existing conditions by developing a comprehensive GIS database of community assets;
- ❖ Conducting stakeholder input and public outreach through a series of meetings, interviews, workshops, and presentations;
- ❖ Developing an interactive GIS model that defines and prioritizes conservation opportunities;
- ❖ Testing model results for validity;
- ❖ Identifying key strategies for immediate and long-term action to implement the Greenprint.

Constituency Building

To build the constituency for the Greenprint, a broad-based group of individuals representing a variety of interests—including environmental, development, parks and recreation, agriculture/silviculture, recreational fishing, academic, utility, the Naval base, and the cities—was brought together as the Camden County Greenprint Steering Committee. The Steering Committee’s role involved:



- ❖ Identifying shared community values
- ❖ Creating a vision
- ❖ Establishing goals of the Greenprint
- ❖ Providing technical expertise for criteria and data collection
- ❖ Weighing the goals and criteria in priority order for GIS modeling
- ❖ Representing their respective constituencies
- ❖ Communicating with the general public about the Greenprint

After the Steering Committee identified shared values and goals, TPL held four public workshops in May 2007 to validate these ideas and to gather input on more specific criteria to meet these goals. TPL also met with a number of individual stakeholders who expressed interest in the project to gather their insight. In August 2007, TPL shared the preliminary findings with the cities and county, then used GIS to map and model the goals and criteria.

From November 2007 through January 2008, the Steering Committee convened three times to refine the model goals and criteria, and provide additional input into sources for the best available GIS data.

In February 2008 TPL held workshops that were open to the public with the St. Marys, Kingsland and Woodbine City Councils. Each of the three councils provided input on their priorities for the goals and criteria. Using this input, the Steering Committee met again to weight the goals and criteria for final GIS modeling.

The overall process, including stakeholder input, data gathering, model development and review, and final reporting, occurred over a period of fourteen months.

Core Values

Access to Water

For the Camden County Greenprint, the Steering Committee defined access in physical, visual, and equitable terms. People need places distributed throughout the county to get in, on, and around the water. For a community defined by its rivers, people need to see the waters daily, whether while driving, biking, walking, or working.

Healthy Community

With the ability to access a network of greenways, trails, bikeways and public spaces in easy reach of where people live, people are more likely to participate in outdoor recreation and physical activity; thus, reducing heart disease, obesity, diabetes, and stress. Camden County needs a diverse and distributed recreational infrastructure to achieve a healthy community status.

Sustainable "Green" Economy

Investment in a healthy community makes good economic sense because it can sustain itself through market fluctuations and diversify its revenues. Camden County is ripe to be Georgia's Front Porch, a welcoming natural place where people can camp, ride miles of trails, frequent one-of-a-kind locally owned shops, and enjoy Cumberland Island National Seashore. Furthermore, a healthy environment reduces the need for public investment in water treatment, reduces health care costs, and generates interest in business relocation because of a high quality of life.

Water Quality

There is an old song about being "knee deep in a river and dying of thirst," where abundance was taken for granted. The single thread weaving together all of these values—beauty, recreation, health, economy—is the health of Camden County's waters. As scientist and conservationist Luna Leopold wrote, "The health of our waters is

the principal measure of how we live on the land." Maintaining a high level of water quality also supports the abundant fisheries that are so tied to residents' quality of life.

Beauty/Aesthetics

Bounded by the Satilla River, the Atlantic Ocean, the Little Satilla River, Crooked River, and the St. Marys River, gorgeous waterfronts framed by honeyed marshes and live oak stands abound. Instead of the visual assault of billboards and chain-store signs, many roads are lined with pine forests and historic structures that celebrate a past while remaining vital to the future. These are the very things that bring people to Camden County, and the things they do not want to lose.

Connectivity

Fragmented landscapes affect not only wildlife but people and their ability to safely reach their destinations, the outdoors, and one another. The Safe Routes to Schools program and the Coastal Georgia Greenway are but two of a number of plans to develop a greenways and bikeways network in the county, which would serve residents and visitors alike and could become the backbone of an eco-tourism economy.

Historic Preservation

Camden is one of the eight original counties created by the Georgia State Constitution in 1777. Camden's story is told in the tabby ruins, former rice plantations, remnants of docks that held cargo for ships bound for Europe, African-American cemeteries and ancient landscapes—most of which are not permanently protected.

Camden County Greenprint Vision

We envision a Camden County that celebrates its natural and cultural heritage through progressive conservation of its environmental, historical, and recreational assets. By providing our residents and visitors with a diverse system of greenways and river trails, wildlife corridors, parks, and open space, we embrace healthy living and a vibrant, sustainable economy rooted in our community's unique identity.



Data Gathering and Analysis

The tables on the following three pages provide a list of the Greenprint Goals and GIS Modeling Criteria identified through the stakeholder input process. These tables detail the individual goal and criteria rankings determined by the Steering Committee with input from the cities of St. Marys, Kingsland, and Woodbine.

Legend of Greenprint Model Acronyms

- DCA - Georgia Department of Community Affairs
- DNR - Georgia Department of Natural Resources
- GA CWCS - Georgia Comprehensive Wildlife Conservation Strategy
- NWI - National Wetlands Inventory
- NRCS - National Resources Conservation Service
- RDC - Coastal Georgia Regional Development Center
- RR - Railroad
- T & E - Threatened and Endangered Species
- TPL - The Trust for Public Land

Camden County Greenprint Model

Final Model Criteria - March 31, 2008

Goal	Goal Weights	Model Criteria	Criteria Weights	Methodology	Data (Description)	Data Source
Protect Water Quality	35%					
		Vegetated Riparian Corridors	10%	Buffer rivers by 250 ft and minimize developed areas. Priority (5) is given to Mixed Cover Forest and Cypress Gum Swamp corridors. Medium-high (4) priority is given to other non-developed corridors and medium (3) priority is given to developed corridors.	Landcover High Priority Water Features	GA Data Clearinghouse DNR
		High Priority Streams, Coastal Waters, and Watersheds	20%	Priority (5) is given to high priority streams and coastal waters buffered by 100 ft.	High Priority Water Features	DNR
		Large Contiguous Fresh-Water Wetlands	15%	Prioritized (5) contiguous wetlands 5 acres and greater, that aren't intersected by roads.	Wetlands Roads	NWI, GA Data Clearinghouse Camden County
		Protect Undeveloped Areas, with Natural Floodplain, and Suitable Soils to Reduce Erosion and Filter Contaminate Surface Water	10%	Identified and prioritized (5) areas with permeable soils, natural floodplain, and vegetation that help reduce runoff, contribute to groundwater systems, and offer natural filtering.	SSURGO Soil Database, Flood Areas - Camden County, Landcover - GA Data Clearinghouse	NRCS Camden County GA Data Clearinghouse
Improve Environmental Health of Community	25%	Marshland	15%	Prioritized (5) all marshlands buffered by 100 ft., beyond 25' marsh line	Marshland	RDC
		High-Priority Marine Species	10%	Prioritized (5) high-priority marine habitat and estuarine wetlands (potential marine habitat) buffered by 1/8 mile.	Harvest Areas Water Features	DNR Coastal Resources Division Camden County
		Protect Aquifer Recharge Areas	20%	Prioritized (5) aquifer recharge areas	Aquifer Recharge Areas	Camden County
		State and Federal T&E Species	30%	Identified areas of overlap between generalized locations of federal or state designated threatened and endangered species and Potential Conservation Areas as described by DNR's wildlife strategy. These areas are considered a high priority (5), and all other generalized occurrence areas with T and E species that do not overlap a Potential Conservation Area were designated as moderate priority (3).	Conservation Opportunity Areas Rare Species General Locations T and E Species	DNR
		Shore Bird Habitat	20%	Identified and prioritized (5) habitats used by shorebirds designated as Species of Concern by the GA CWCS. Habitats used by all other species of shorebirds that are not Species of Concern are designated as moderate (3) or low priority (2). Of these, habitats used by multiple species were designated as moderate (3) while habitats used by a single species were ranked low priority (2).	Landcover	GA Data Clearinghouse
		High Quality Pinelands	25%	Prioritized (5) remnant natural communities with intact long-leaf pine.	Landcover	GA Data Clearinghouse
		Shore Bird Habitat	25%	Identified and prioritized (5) sandhills.	Landcover	GA Data Clearinghouse

10.5.b

Camden County Greenprint Model

Final Model Criteria - March 31, 2008

Goal	Goal Weights	Model Criteria	Criteria Weights	Methodology	Data (Description)	Data Source
Improve Access to Water	15%					
		Uplands Adjacent to River	20%	Identified two or more acres of continuous uplands within 1/8 mile of high priority streams and coastal waters, and within 100 ft of roads. Areas that are non-wetlands and non-flooded are ranked a high priority (5), and wetland habitats are ranked medium priority (3).	Roads High Priority Water Features Landcover	Camden County DNR GIS Data Clearinghouse
		Adjacent to Protected Lands	20%	Identified all lands within 1/4 mile of protected lands and 1/8 mile of high priority streams, coastal waters, and watersheds, and within 100 ft of roads. Areas that are non-wetlands and non-flooded are ranked a high priority (5), and wetland habitats are ranked medium priority (3).	Parks, Protected Lands Roads, High Priority Water Features	RDC, TPL, Steering Committee Camden County DNR
		Bridge Crossings at Rivers, Streams	25%	Prioritized (5) ingress and egress and rights-of-way adjacent to roads and bridges across rivers and streams (US 17 and St. Marys river).	Bridges Water features Kayak access points	GA Data Clearinghouse Camden County TPL, Steering Committee
		Important Parcels	35%	Prioritized (5): ● Water and Sewer Facility in St. Marys/End of Weed Street - Parcel data that marks the site where the water pump out station is situated in the City of St. Marys overlooking the marsh-lands; eventually it is going off-line. ● Durango Mill Redevelopment Site (riverwalk) - Overlaid Durango Mill parcel and highlighted location of proposed riverwalk ● Halifax Docks ● Hog Pen Bluff	Parcels	Camden County
Preserve Community Character	15%					
		Historic Districts	45%	Prioritized (5) historic districts.	Historic Districts Coastal Historic Sites	Steering Committee RDC
		Scenic Viewsheds	45%	Prioritized (5) scenic viewsheds.	Parcels	Camden County
		Fish Camps	10%	Prioritized (5) fish camps.	Fish Camps	Steering Committee

Camden County Greenprint Model

Final Model Criteria - March 31, 2008

Goal	Goal Weights	Model Criteria	Criteria Weights	Methodology	Data (Description)	Data Source
Provide Recreational Access and Improved Connectivity	10%	Potential and Existing Bike Routes	25%	Identified potential and existing bike routes. Priority (5) is given to potential bike routes and medium priority (3) is given to existing bike routes.	Existing and Potential Bike Routes	DCA, Camden County Steering Committee
		Connect Existing Trails to Schools, and Parks, and River Access Locations	55%	Prioritized (5) the least cost path between hubs and destinations using low-cost opportunities. HUBS: Abandoned RR Corridor (north/south, east/west), Existing bike and hiking trails OPPORTUNITIES: Potential bike and hiking trails, Undeveloped/natural areas, Forest roads, Street routes (Colerain Road-Laurel Parkway-St. Marys Road-40 and US 17 to Folkston), planned trails. DESTINATIONS: Schools, Parks, Ferry landing in St. Marys, Durango Mill to St. Marys Waterfront, Output from access to water criteria	Existing and Potential Bike Routes Parks Roads Landcover Schools Abandoned Railroad	DCA, Camden County Steering Committee RDC, TPL GA Data Clearinghouse
			20%	1. Determine where there are "gaps" in the greenspace availability across the landscape -Greenspace under 5 acres serves a 1/8mi walking distance and greenspace over 5 acres serves a 1/4mi walking distance 2. Construct a demographic profile to identify gaps with the most urgent "need" for parklands. 50% - Population density 25% - Kids under the age of 18 25% - Individuals with Income less than 25k per year Overlaying greenspace gaps with greenspace needs produces a park equity priority map, with high conservation value (5) assigned to those areas with both insufficient park coverage and highest demographic need.	Existing and Potential Bike Routes Parks Roads Landcover Schools Abandoned Railroad	Parks - RDC, TPL, Steering Committee Demographics - TPL

Greenprint Results and Strategic Action Recommendations

The following maps and summaries present the results of the Camden County Greenprint model. The maps are organized in order of goal priorities with composite maps for the county and each of the cities following.



- ❖ Map 1. Opportunities to Protect Water Quality
- ❖ Map 2. Opportunities to Improve Environmental Health
- ❖ Map 3. Opportunities to Improve Physical and Visual Access to Water
- ❖ Map 4. Opportunities to Preserve Community Character
- ❖ Map 5. Opportunities to Provide Recreational Access and Improved Connectivity
- ❖ Map 6. Composite of Opportunities to Meet Countywide Goals
- ❖ Map 7. Composite of Opportunities to Meet Goals in the City of St. Marys
- ❖ Map 8. Composite of Opportunities to Meet Goals in the City of Kingsland
- ❖ Map 9. Composite of Opportunities to Meet Goals in the City of Woodbine

The maps are color-coded with dark red showing the highest opportunities for conservation according to the criteria weighting, burnt umber as moderately high, and orange as moderate. This color coding helps show where the county and municipalities can most efficiently direct their human and financial resources to meet the listed goal(s).

The map summaries provide more detailed information into how each map can be used for decision-making purposes, as well as provide strategic action recommendations for implementation to achieve a particular goal. Synergy among the maps exists, and implementing one strategy in one goal area clearly improves opportunities in another. For example, setbacks along rivers and streams not only improves visual access to the shoreline but also improves water quality and bird habitat. To avoid redundancy, an implementation strategy will be mentioned only once.

In reading the maps, remember that they are showing areas of opportunity for conservation and they are not land-use prohibitions. In all cases, we recommend that private property rights be honored, but that private property owners act responsibly. From a smart growth perspective, these maps may be helpful in:

- ❖ Directing growth toward less sensitive areas by transferring development densities away from lands needed for water quality;
- ❖ Siting required water storage or greenspace features in areas identified as important to meet those goals;
- ❖ Planning for new recreation facilities to meet level of service standards near where new development occurs;
- ❖ Mitigating storm events by restoring critical habitat designed to minimize flooding and to capture storm surges;

- ❖ Working with the Department of Transportation to implement great streets that are not designed just for moving cars but for safely accommodating multiple modes of transportation, including bicycles and pedestrians.

Opportunities to Protect Water Quality



If there is one overarching theme to the Camden County Greenprint it is that the community values the marshes and wetlands for many reasons. Preserving, protecting and restoring the coastal and riparian areas achieves a number of goals—water quality, environmental health, physical, and visual access to the water.

TPL found that most of the public believes that these areas are under some form of permanent regulatory protection. However, the Coastal Marshlands Protection Act protects only those estuarine areas up to 5.6 feet above mean high-tide level. DNR is authorized to protect these tidal wetlands, requiring permitting for activities and structures within this zone. There is a 25-foot buffer required for all State Waters and it starts from the marsh jurisdiction line and extends 25-foot landward. A 50-foot buffer is required for commercial and community parcels that are attached to a marsh structure requiring a marsh permit. Freshwater wetlands receive little to no state protection and are primarily under the jurisdiction of the U.S. Army Corps of Engineers.

To truly protect water quality for humans and marine life, pervious surfaces must dominate the landscape. The Center for Watershed Protection concludes that even at 25 percent impervious cover, the health of rivers and streams degrades. Through its Comprehensive Plan update, Camden County has the opportunity to provide regulatory protection at or better than the state level, as well as offering a layer of protection for wetlands that does not currently exist. The County should focus policies on:

- ❖ Incorporating Water Protection as a High Priority
- ❖ Protecting Small Streams
- ❖ Focusing Development Away from Important Water Areas to De-fragment Landscapes



Recommended Implementation Strategies

- ❖ Strengthen current Comprehensive Plan policies in the Natural Resources section to include groundwater, surface water, and aquifer recharge areas as high priorities for protection. Link source water protection to stormwater management within the Comprehensive Plan as well as within key county and city ordinances. These policies should be tied to financial benefits and demonstrate how successful protection can cap and reduce flood management and treatment costs over time.

- ❖ Actively work with landowners to improve and maintain forest cover through tree ordinances. According to TPL's and the American Water Works Association's publication, *Protecting the Source*, a 10 percent increase in forest cover in water source areas decreased treatment and chemical costs by approximately 20 percent.

- ❖ Use the Greenprint to open discussions with Brantley, Charlton, and other counties within the Satilla watershed to create a multi-jurisdiction watershed plan to study changes in water quality and

establish common goals, shared targets for land protection within the watershed as well as best management practices, and benchmarks for achievement. The activities in those watersheds exert significant impact on the health of Camden's waterways and must be addressed through collaborative efforts. Private foundations as well as state and local funding can pay for this planning effort.

❖ *Protecting the Source* also found that protecting small streams had far greater impact on the health of water systems than even the larger tributaries, yet they are rarely mapped and some of the first to be built upon. However, small streams constitute up to 85 percent of the total stream length and collect most of the surface runoff and pollutants from the land. To that end, one area to focus on are the environmentally sensitive wetlands and floodplains along Catfish Creek and Little Catfish Creek.

❖ The headwaters of the Crooked River sit within the wetlands recently annexed by the City of Kingsland. Proposed development within this area must consider the impacts to the Crooked River system, including the following:

- ❖ Minimizing wholesale clear cutting for development and maintaining forest cover as much as possible to prevent erosion;
- ❖ Buffering key wetlands and streams from intense development through setbacks;
- ❖ Acquiring significant resources for permanent protection;
- ❖ Mitigating impacts through restoration activities; and,
- ❖ Requiring developers to provide a plan for public spaces and water features that connect with countywide greenspace and greenway programs, and that follow the natural systems as much as possible; thus requiring less public investment in infrastructure.

❖ Include source water protection projects within existing and future public funding programs for land acquisition and restoration.

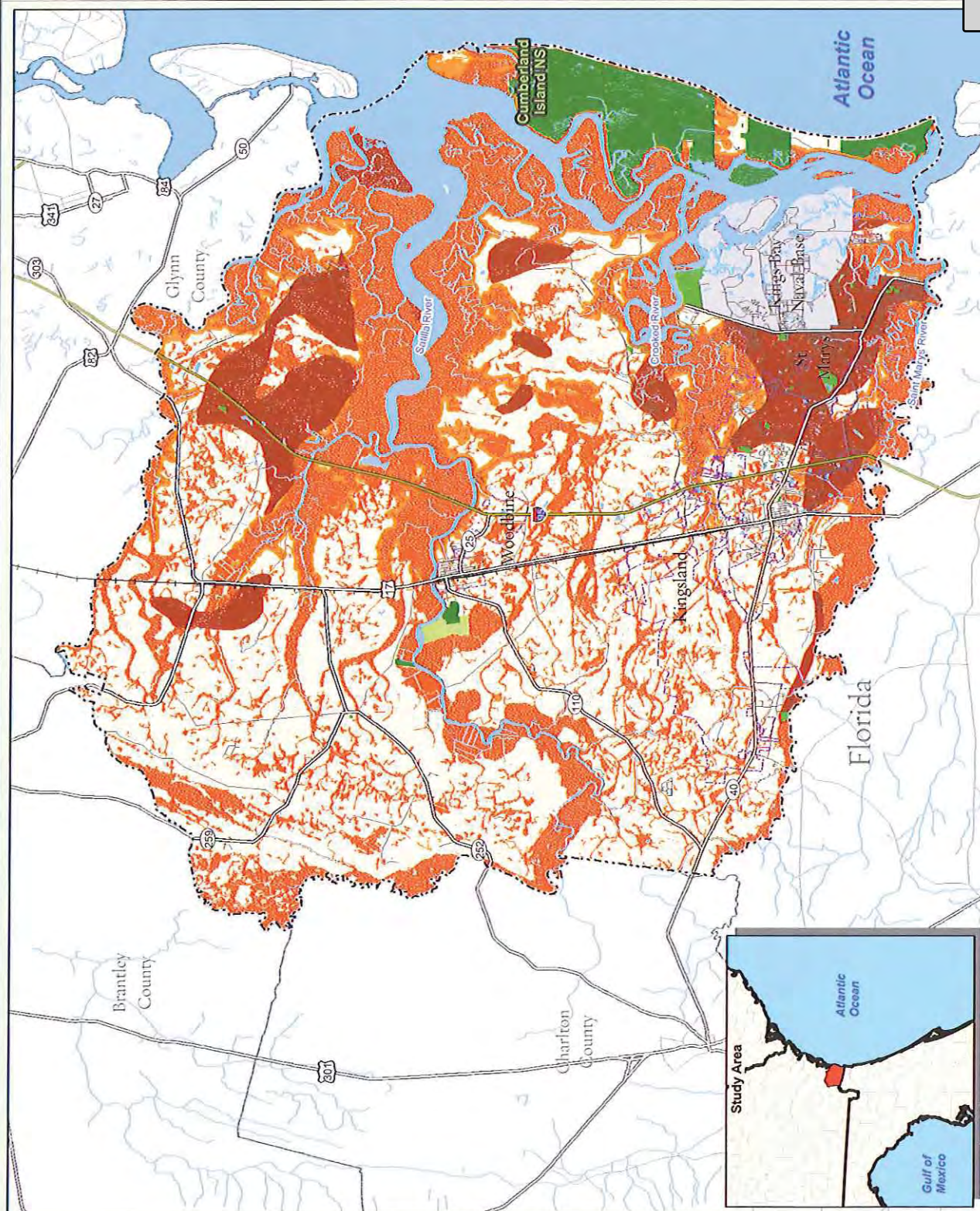
❖ Around ground and surface water supplies, such as rivers and lakes, buffers between 50- to 100-feet are recommended. For higher priority areas, such as aquifer recharge zones and pristine estuaries, buffers up to 250-feet might be necessary.

- ❖ Variances within these zones should be granted only for low-impact footprints and require mitigation and restoration.

❖ Institute a countywide Purchase and/or Transfer of Development Rights Program to conserve working waterfronts and tidal and freshwater wetlands beyond the 25-foot buffer zone. This program will require a county ordinance and administrative process that is specific to identifying receiver areas for transferred rights.

This map displays the Protect Water Quality Opportunities results for the Camden County, GA Greenprint. Areas in red are considered high priority while areas shown in orange are considered moderate priority.

Criteria	Weights
High Priority Streams, Coastal Waters, and Watersheds	20 %
Protect Aquifer Recharge Areas	20 %
Large Contiguous Fresh-Water Wetlands	15 %
Marshlands	15 %
Protect Undeveloped Areas, with Natural Floodplain, and Suitable Soils to Reduce Erosion and Filter Contaminants	10 %
High-Priority Marine Species	10 %
Vegetated Riparian Corridors	10 %



Environmental Health Opportunities

Because of Camden County's rich natural resources, almost any activity within its boundaries impacts habitat for threatened and endangered species. But, as the saying goes, if it's good for the fish, it's good for the people.



Investing in habitat protection makes economic sense for Camden County. Wildlife viewing ranks among the highest eco-tourism activities in the world, which has a cascading effect for local business such as bed and breakfasts, trail and fishing guides, outfitters and restaurants. Property values near greenbelts and natural areas maintain and increase more substantially than those in homogeneous subdivisions, furthering the preservation of Camden's community identity as a great place to live.

Recommended Implementation Strategies

- ❖ Permanently protect the large, contiguous wetlands around the mouth of the St. Marys River and Cumberland Sound for Right Whale habitat through fee simple acquisition, conservation easement or purchase of development rights.



- ❖ Acquire remnant long leaf pine and sandhill habitat. Identify key areas surrounding these stands to buffer and de-fragment.

- ❖ Identify best practices, sustainable building materials, and construction methods, such as elevated walking trails that promote light filtration and composting toilets for use in parks and environmental centers. Immediately begin the process of obtaining state, county, and municipal approvals for the use of these materials and methods in parks and other areas.

- ❖ Develop a comprehensive public awareness program to educate and inspire appreciation and advocacy of Camden's natural resources:

- ❖ In addition to the on-going wayfinding program, incorporate a multi-faceted signage program that includes instructive, informational, and educational signs. Work with public agencies to leverage funding for the installation of signage on greenways, trails, paddling sites, boat ramps, and in parks. Improve environmental education signage at waterfront access points through wildlife signage.
- ❖ Incorporate environmental education into municipal and county web sites.
- ❖ Expand environmental clean-up programs.
- ❖ Institute take-in/take-out programs at all resource-based parks, camping, and waterfront access sites to minimize trash and debris in sensitive areas.



Greenprint for Camden County, Georgia

Access to Water Opportunities



Being able to experience first-hand the magic of the marine environment creates conditions for people to better care for it in the future. During the course of the Greenprint, we learned that many areas along the waterfront that were once available for public enjoyment and viewing were now behind guard houses or blocked by new buildings. In the course of evaluating this goal, we mapped all existing areas for public access to the shoreline, including boat ramps, and identified focus areas for new places to fish, boat, paddle, or sit and reflect.

Recommended Implementation Strategies

❖ Acquire or protect important sites that improve physical and visual access to the waterfront:

- ❖ Hog Pen Bluff
- ❖ Halifax Docks
- ❖ Lands around the intersection of US 17 and the St. Marys River
- ❖ Eastern street ends in the residential downtown area of St. Marys that overlook coastal marshes

❖ Develop a countywide blueways (water trails) plan that includes varying degrees of difficulty, trailheads, primitive camping sites, and linkages to greenways systems:

- ❖ Assess intersections of bridge and river crossings for creation of paddling launches and pull-offs, parking, and camping.
- ❖ Coordinate a blueway system with neighboring counties for connectivity to the Satilla River.
- ❖ Create a set of criteria for ideal waterway and upland conditions for siting boating and paddling facilities.
- ❖ In conjunction with tourism offices, outfitters, and trail guides, produce a waterproof map for paddlers.

❖ With Woodbine's Satilla Riverfront walkway as a model, create elevated walkways and fishing platforms at key points, such as the St. Marys River at US 17.



Camden County, Georgia Greenprint

This map displays the Improve Access to Water Opportunities results for the Camden County, GA Greenprint. Areas in red are considered high priority while areas shown in orange are considered moderate priority.

Criteria weights are as follows:

Important Parcels	35 %
Bridge Crossings at Rivers, Streams	25 %
Uplands Adjacent to River	20 %
Adjacent to Protected Lands	20 %

Legend

Improve Access to Water Opportunities

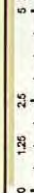
- High
- Moderate - High
- Moderate
- Low - Moderate

Parks and Protected Land

- Parks
- Georgia Coastal Land Trust
- Georgia Department of Natural Resources
- Federal Land
- City Limits

Transportation

- Interstate
- Highway
- Major Road
- Abandoned Railroad
- Waterbodies
- Wetland
- Boat Ramp



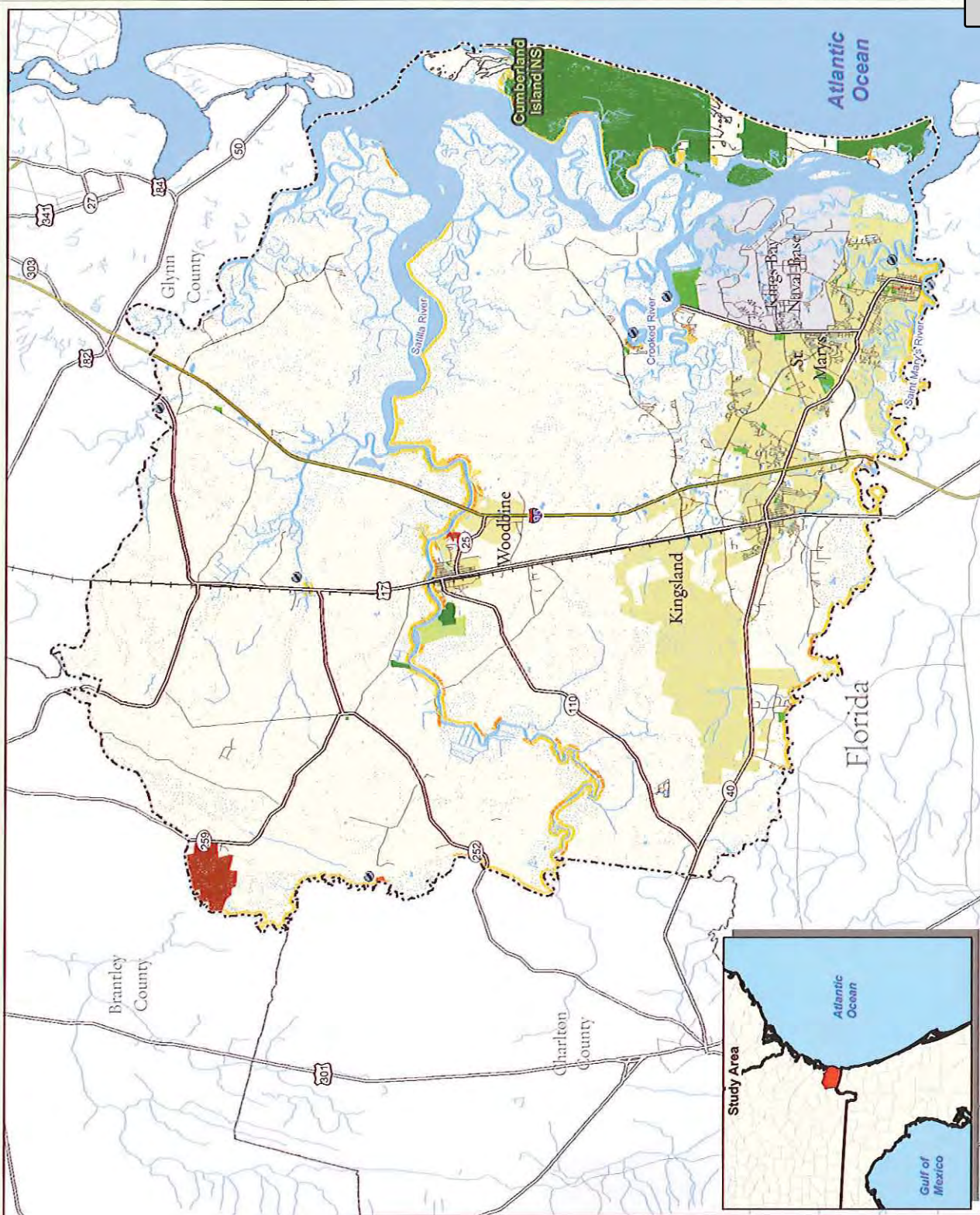
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Community Character Opportunities



As Camden County welcomes new residents and the landscape is altered to accommodate housing, service centers, and transportation, current residents expressed a desire to maintain the community's character as much as possible through the preservation of historic structures and landscapes and by honoring the area's past.

Recommended Implementation Strategies

Create incentives for historic preservation of private properties—a number of tools exist for protecting and restoring historic properties and landscapes, including:

- ❖ Historic Preservation Easements
- ❖ Conservation Easements
- ❖ Revolving Loan Programs
- ❖ Tax Incentives

Permanently protect and restore key historic and archaeological sites—while historic sites throughout the county have been mapped, few have permanent protection and most are privately owned. Key sites identified include:

Structures

- ❖ Tarboro General Store
- ❖ Black Hammock Plantation
- ❖ Wayside Plantation
- ❖ Cambry Plantation
- ❖ Ivanhoe Plantation
- ❖ Tabby Houses in Dover's Bluff
- ❖ Hazellhurst Plantation
- ❖ Liza Randolph Home

Landscapes

- ❖ Grover Island
- ❖ Satilla Bluff
- ❖ African-American Cemeteries
- ❖ Bullhead Bluff



❖ Maintain and expand historic districts—include first- and second-tier residential neighborhoods and develop design guidelines for compatible infill development within districts.

❖ Designate scenic byways—US 17 from Woodbine to the county line, and the Old Post Road (Old Jefferson Highway) from US 17 to the Satilla River.

Camden County, Georgia Greenprint

This map displays the Preserve Community Character Opportunities results for the Camden County, GA Greenprint. Areas in red are considered high priority while areas shown in yellow are considered low priority.

Criteria weights are as follows:
 Historic Districts 45 %
 Scenic Viewsheds 45 %
 Fish Camps 10 %

Legend

Preserve Community Character Opportunities

- High
- Low

Parks and Protected Land

- Parks
- Georgia Coastal Land Trust
- Georgia Department of Natural Resources
- Federal Land
- City Limits

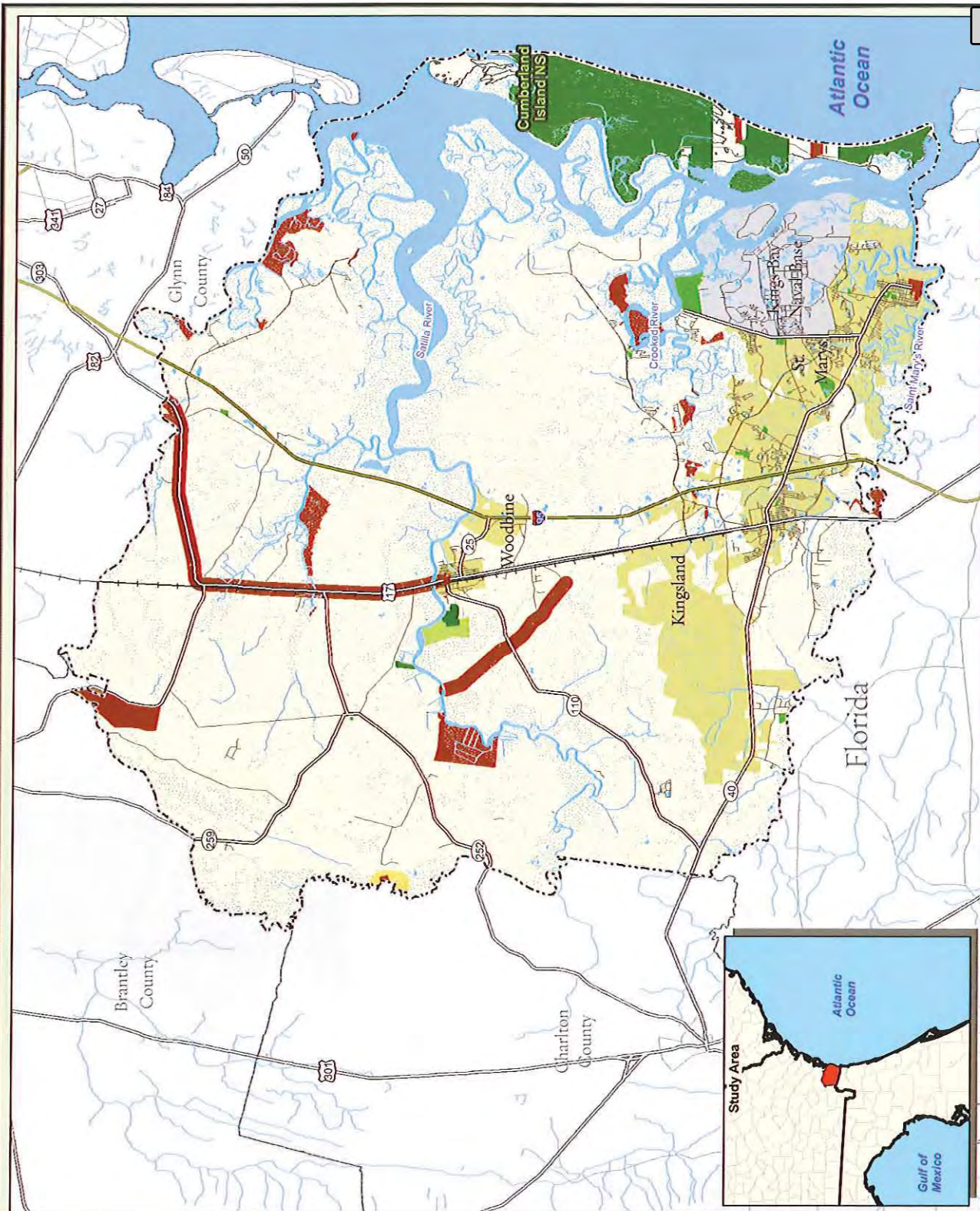
Transportation

- Interstate
- Highway
- Major Road
- Abandoned Railroad
- Waterbodies
- Wetland

Camden County Boundary



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Recreation and Connectivity Opportunities



Cities celebrated for their livability—Portland, Oregon; Seattle, Washington; Austin, Texas; Minneapolis, Minnesota; Chicago, Illinois—share common traits. Early on they planned then followed through on great parks and greenways systems. Walkability, outdoor living, and accessible waterfronts are part of their cultures, their policies, and their brand. Camden County residents seek the very same attributes for their community. And with its location in the southeast, Camden enjoys great weather almost year-round—something those other cities do not.

Recommended Implementation Strategies

Incorporate recreation and walkability into the Comprehensive Plan update:

- ❖ Conduct a Level of Service Analysis for recreation lands and facilities as part of the Comprehensive Plan update. Determine the amount of acreage needed to serve residents as well as the types of outdoor and indoor recreation facilities to support current and future demands.
- ❖ Adopt the principles of the Complete the Streets Coalition (www.completestreets.org), to improve pedestrian and bicycle safety, ease traffic congestion, encourage physical health, and improve the beauty. Complete the Streets recommends the following:
 - ❖ Wide sidewalks to support pedestrians, outdoor dining
 - ❖ Designated bicycle lanes
 - ❖ Wide shoulders
 - ❖ Plenty of crosswalks, raised if possible
 - ❖ Refuge medians
 - ❖ Bus pullouts
 - ❖ Special bus lanes
 - ❖ Audible pedestrian signals
 - ❖ Sidewalk bulbouts



Establish a formalized countywide Citizens Greenways Advisory Council to:

- ❖ Prioritize greenways network segments.
- ❖ Seek private and public grants for acquisition and development of greenways, trails, and safe routes to schools.
- ❖ Recommend design guidelines for trails.
- ❖ Develop a public information strategy for the greenways network.

Assemble land for a Greenways network:

- ❖ Acquire abandoned railroad corridor along US 17, the ownership of which has reverted to adjacent land owners.
- ❖ Develop a program for donation of easements along areas identified for greenways.
- ❖ Work with Georgia Department of Transportation (GDOT) to revise road expansion programs to include greenway segments.

Create an ecotourism plan that brands the County as a premier destination:

- ❖ Establish an ecotourism committee with representation from Cumberland Island National Seashore, Crooked River State Park, the municipal tourism offices, recreational outfitters, environmental educators, guides, and others to focus on the synergies between recreation, tourism, and the hospitality industries that will become the basis for a marketing/public relations campaign and well as a business development plan.
- ❖ Conduct an economic benefit analysis of current ecotourism opportunities to understand the direct and indirect economic impacts to Camden County.
- ❖ Create marketing materials that “brand” Camden County for ecotourists.



This map displays the Provide Recreational Access and Improved Connectivity Opportunities results for the Camden County, GA Greenprint. Areas in red are considered high priority while areas shown in orange are considered moderate priority.

Connect Existing Trails to Schools, and Parks, and River Access Locations	55 %
Potential and Existing Bike Routes	25 %
Park Gap Analysis	20 %

Provide Recreational Access and Improved Connectivity Opportunities

- High**
Camden County Boundary
Moderate
Parks
Georgia Coastal Land Trust
Georgia Department of Natural Resources
Federal Land
City Limits
- Transportation**
Interstate
Highway
Major Road
Abandoned Railroad
Waterbodies
Wetland



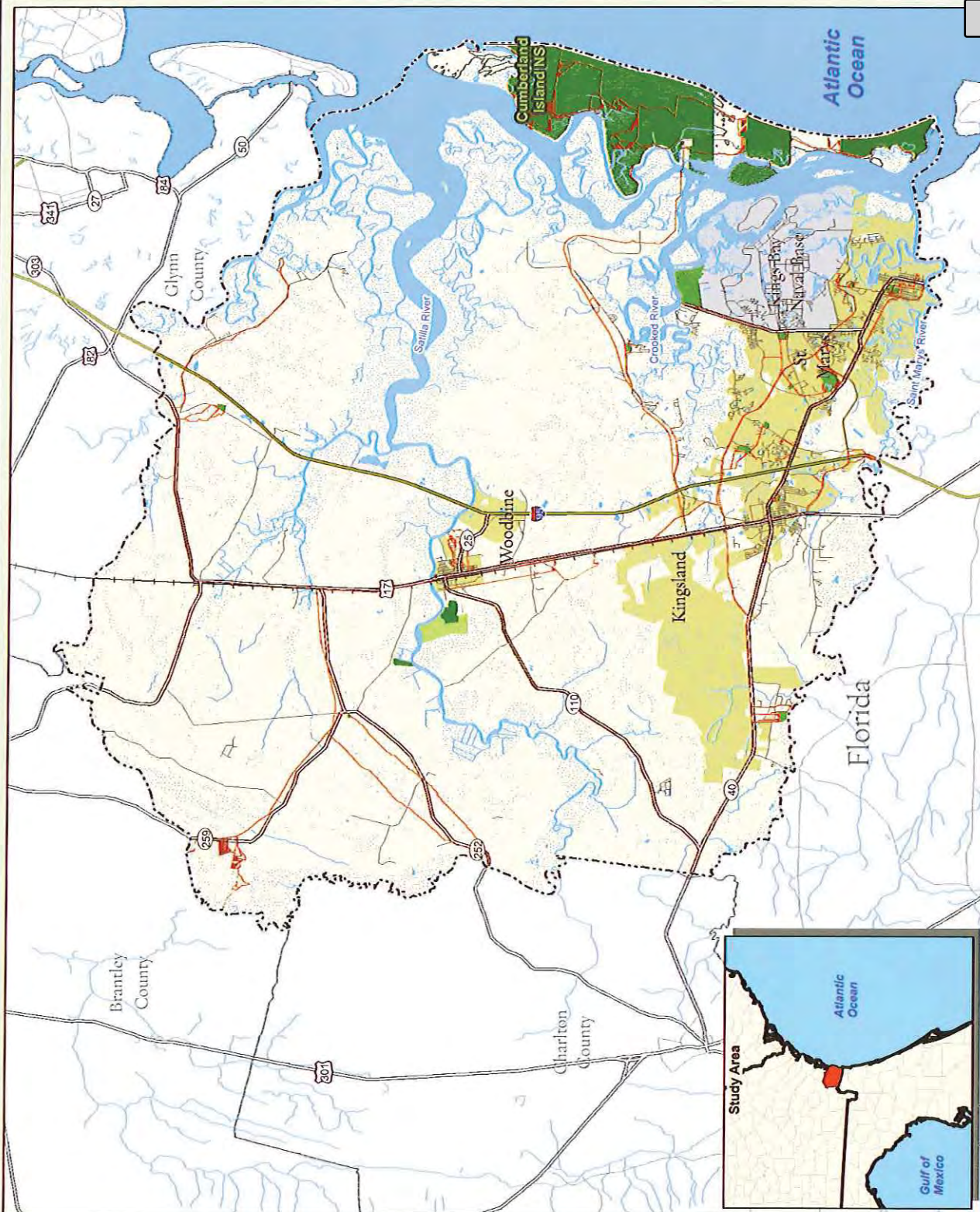
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The next set of maps show overall conservation opportunities across the county and within the municipalities. The opportunities are derived from a composite analysis of the five Greenprint goals ranked and modeled in priority order. Again by color coding, these maps show where land conservation and restoration opportunities meet multiple goals; thus, achieving greater “bang for the buck” and meeting the criteria for diverse funding sources.

Countywide Opportunities

Recommended Implementation Strategies

Incorporate the Greenprint Model

For long-term viability and applicability to the county’s planning and conservation efforts, TPL’s Greenprint model is a flexible, dynamic tool that can be incorporated into the County’s existing GIS programs or accessed through a web-based internet service. Either option allows the Greenprint to move beyond static maps and reports to a usable framework for decision-making at the county and city levels. With easy access to the Greenprint model, practitioners will be able to print color-coded maps, run parcel prioritization exercises, develop strategic analysis reports on specific queries, and run property profiles for acquisition assessments and grantwriting.

Option 1 – Conveyance would allow for desktop delivery of the model for use in-house by County or city staff. TPL will provide on-site training and ongoing technical assistance. This option gives the county complete access to the model framework, which allows county GIS staff to perform maintenance on the model as data and priorities change. This option does not provide a web-based component for sharing with partners. This option requires prior training/experience with ArcGIS Spatial Analyst and Model Builder. The county must also have ArcGIS 9.2 and Spatial Analyst licenses to support this option. The cost for this option is approximately \$6,000.00.

Option 2 – Conveyance would be via ArcGIS Server—new software technology from ESRI, the leading GIS software provider—as a web-based internet mapping service, or IMS. This conveyance would provide an interactive Greenprint model for easy access by the county, municipalities, and select stakeholders, as the model can be password protected. It will allow users to view modeling results and generate property-specific profiles based on the Greenprint goals and criteria. TPL will perform maintenance on the model if data and/or priorities change. TPL will host the model on its server for an agreed-upon period of time, and provide maintenance support at a level to be mutually agreed upon by all parties. The cost for this option is approximately \$10,000, which could be paid for through a cost-share agreement among the county and cities.

Improve Development Processes within the County

- ❖ Use Greenprint as a Smart Growth Tool – Add Greenprint review as one of the elements of the county's Smart Growth Checklist.
- ❖ Strengthen Subdivision and Development Regulations – Require greenspace for parks, trails and greenways, water storage, and set-asides within developments that also connect to countywide networks.
- ❖ Provide Incentives to Landowners – Couple incentives with strengthened regulations, by providing landowners streamlined permitting procedures, above minimum considerations for development around set-aside areas.
- ❖ Institute Developer Exactions/Impact Fees – Since 1990, the State of Georgia has authorized local governments to enact impact fees, but few counties or municipalities have taken advantage of this source for covering the costs of growth and the infrastructure needed to support it such as roads, schools, fire and police, parks, water, and sewer. Georgia law requires that local governments meet these requirements to impose impact fees:
 - ❖ Adopt a Capital Improvements Element within its Comprehensive Plan that stipulates projections for future public needs;
 - ❖ Establish an Impact Fee Advisory Committee with representation from the local real estate development community;
 - ❖ Create an ordinance that governs the service areas, the per unit schedule of fees for specific land uses, the basis for the fee calculation, and allowable credits for developer-provided services or land donations for public uses;
 - ❖ Hold public hearings to gather input prior to the adoption of the impact fee ordinance.

Generate Funding

A dedicated funding source for land protection is integral to the success of Camden County's conservation goals. A number of financing options are available to the county and the cities, all of which could be used to leverage the existing Special Purpose Local Option Sales Tax (SPLOST) program with state and federal funding sources. There is no one-size-fits-all possibility, and a combination of these options from the city to the county levels is the best approach to long-term achievement of the Greenprint.

Local funding options include:

General Obligation Bonds

- ❖ Georgia counties or municipalities may provide that bonds be issued solely for the purpose of acquiring lands and/or building parks.
- ❖ Counties, municipalities, and special districts may issue bonds subject to a limit of 10 percent of the assessed value of all taxable property within each locality.
- ❖ New debt may be issued only upon the approval of a simple majority of the voters in an election.
- ❖ A \$5 million bond would cost a homeowner with the median value of a home \$125,100 less than \$16.00 a year for 20 years. A \$40 million bond would cost that same homeowner approximately \$127 a year for 20 years.
- ❖ Because the financing is spread over a period of years, future homeowners who will benefit will also contribute.

Property Tax

- ✦ An uncommonly used funding source allows Georgia counties and municipalities to levy a dedicated property tax for parks and recreation, including land acquisition.
- ✦ There is no limit to the property tax levy amount; however, typically no more than 1 mil is levied per \$1,000 of property valuation.
- ✦ Majority approval by the voters is required to levy the property tax for this purpose, but not for general government operations.
- ✦ Counties and municipalities may create special districts for this tax.

Special Purpose Local Option Sales Tax (SPLOST)

- ✦ Counties may levy up to 2 percent more to the current 4 percent Georgia sales tax to finance specific infrastructure projects, including the building and maintenance of parks, schools, roads, and other public facilities.
- ✦ Counties must vote to put a SPLOST on the ballot, which must be approved by a majority of voters. In 2007 Camden County voters approved a 1 percent SPLOST, which generated an estimated \$75 million for infrastructure improvements related to transportation, and water and sewer.
- ✦ The SPLOST endures for the shorter of five years or when the specified maximum amount has been raised.

Conservation Finance

Regardless of whether the economic times are robust or challenging, voters across America have said “yes” to increased funding for conservation. Since 1988, 76 percent of all conservation finance measures have passed, generating more than \$46.1 billion for land acquisition, water resource protection, park development, and greenways. No matter if they are traditionally red or blue, states vote green. Georgia is no exception. Almost 80 percent of county finance measures in the state have passed since 1996.

The recommended approach to a local conservation finance measures involves the following tasks:

Public Opinion Survey

Understanding likely voters’ attitudes will help frame the measure and subsequent public education campaign. Hiring a respected pollster, which costs between \$15,000-\$18,000 for the size of Camden County and which can be paid for through a fundraising effort, will provide scientifically valid results to build the case for the finance measure (or not). Topics, such as the following, will be explored:

- ✦ Acceptance/Tolerance
- ✦ Amount and Type of Funding Measure
- ✦ Timing
- ✦ Types of projects
- ✦ Messages
- ✦ Messengers

Grassroots Involvement

A local, volunteer campaign committee comprised of community leaders from all sectors—business, civic, development, environmental, recreational—will help fundraise for the public education effort and serve in an ambassador capacity to spread the word.

Public Education

A comprehensive communication strategy that utilizes a variety of tools—printed materials, speakers bureaus, web site, ballot language, earned media—will provide the larger Camden community with the

benefits and costs of the proposed funding measure so that they can make an informed choice when they vote.

State Funding

The Georgia Land Conservation Program (GLCP), which replaced the state's Community Greenspace Program in 2005, provides several land conservation funding options, including grants, low interest loans, and tax incentives, which augment local, state, and federal funding sources to achieve the permanent conservation of land through the acquisition of conservation easement and fee simple ownership.

- ❖ Grant and loan applications are due March 1, June 1, September 1, and December 1 of each year. Each application project area is visited by GLCP staff and scored, generally, within five weeks of receipt.
- ❖ All qualified cities and counties within the state, regardless of size, are eligible to apply for funding under the GLCP. To be a qualified city or county, a community must be in compliance with the DCA and the Department of Audits and Accounts. Additionally, the DNR may submit projects of statewide significance. More about this program is available at www.glcp.org.

Other Potential Funding Sources

In 2001 consultant Tiffany L. Busby prepared the Camden County Community Greenspace report to serve as the planning document for the State's former Community Greenspace Funding Program, which was discontinued in 2005. That report called for a goal of permanently preserving 20 percent of the county's land area. In that report, two other funding mechanisms were proposed to create local funding opportunities:

- ❖ A Real Estate Transfer Tax would earmark a \$.10 portion of the real estate transfer fee toward land acquisition for environmentally endangered lands, new parks, and other greenspace. This fee would require General Assembly authorization, but if more counties pursued this type of funding, the case could be made for a statewide program to fund land acquisition. The State of Florida has successfully used this instrument since 1990, first with Preservation 2000 then with its successor program, Florida Forever. At least \$300 million is available annually for numerous acquisition programs.
- ❖ Stormwater Utility Fees are tied to the development of a stormwater master plan, and fees can be used to acquire lands in flood-prone undeveloped areas to avoid the expense of flood management systems and water treatment facilities.

Create a Countywide Land Protection Program

Dedicated funding for conservation will require spending money in the most effective, efficient, and timely manner for the types of projects the community supports. TPL produced *Developing and Managing Effective Programs: A Handbook and Technical Assistance for Local Government Land Conservation* to help answer the question, “we’ve got the dollars, now what?” The guidebook offers best practices and applications for achieving a successful conservation program. Effective programs share the following qualities:

- ❖ Balance between flexibility and accountability
- ❖ Fairness with all parties who interact with the program
- ❖ Transparent process
- ❖ Clarity in procedures
- ❖ Value to community (economic outcomes)
- ❖ Commitment to public involvement
- ❖ Responsive to stakeholders
- ❖ Leverage additional funding

The most successful programs achieve these qualities through:

- ❖ Citizen oversight that provides advice to staff
- ❖ Sufficient staffing to operate program
- ❖ Clear criteria for project selection
- ❖ Strong research and due diligence
- ❖ Strategic partnerships with conservation groups
- ❖ Management and stewardship
- ❖ Respectful relationships with landowners
- ❖ Public communication

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Camden County, Georgia Greenprint City of St. Mary's

This map displays the Overall Conservation Opportunities results for the City of St. Mary's which is within the Camden County, GA Greenprint study area. Areas in red are considered high priority while areas shown in orange are considered moderate priority.

Goal weights are as follows:

Protect Water Quality	35 %
Improve Environmental Health of Community	25 %
Improve Access to Water	15 %
Preserve Community Character	15 %
Provide Recreational Access and Improved Connectivity	10 %

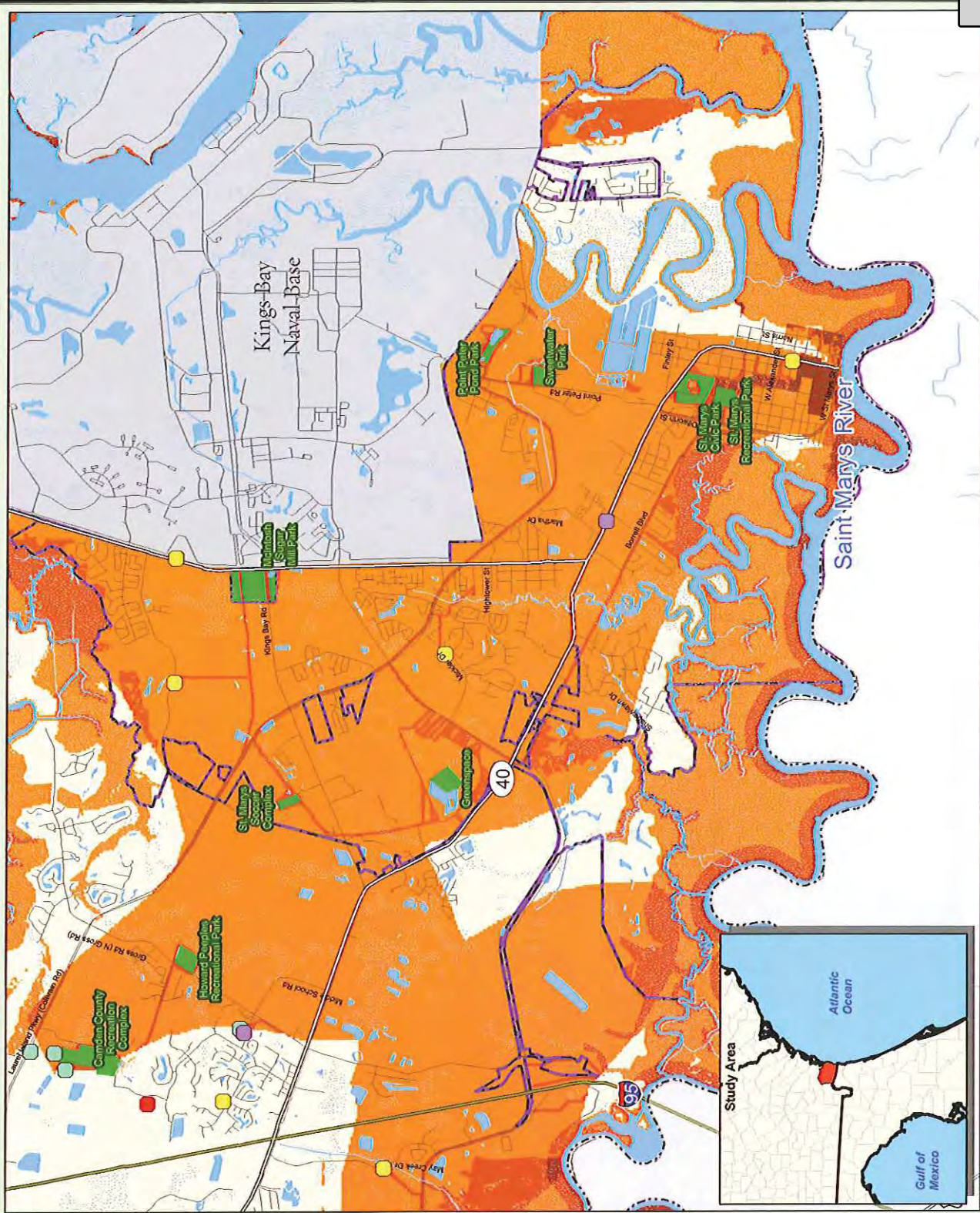


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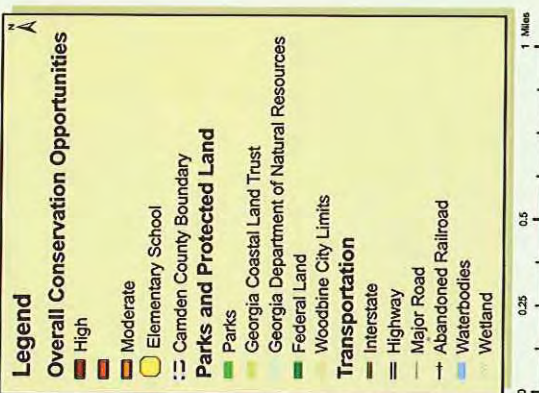
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Camden County, Georgia Greenprint City of Woodbine

This map displays the Overall Conservation Opportunities results for the City of Woodbine which is within the Camden County, GA Greenprint study area. Areas in red are considered high priority while areas shown in orange are considered moderate priority. Goal weights are as follows:

- Protect Water Quality 35 %
- Improve Environmental Health of Community 25 %
- Improve Access to Water 15 %
- Preserve Community Character 15 %
- Provide Recreational Access and Improved Connectivity 10 %



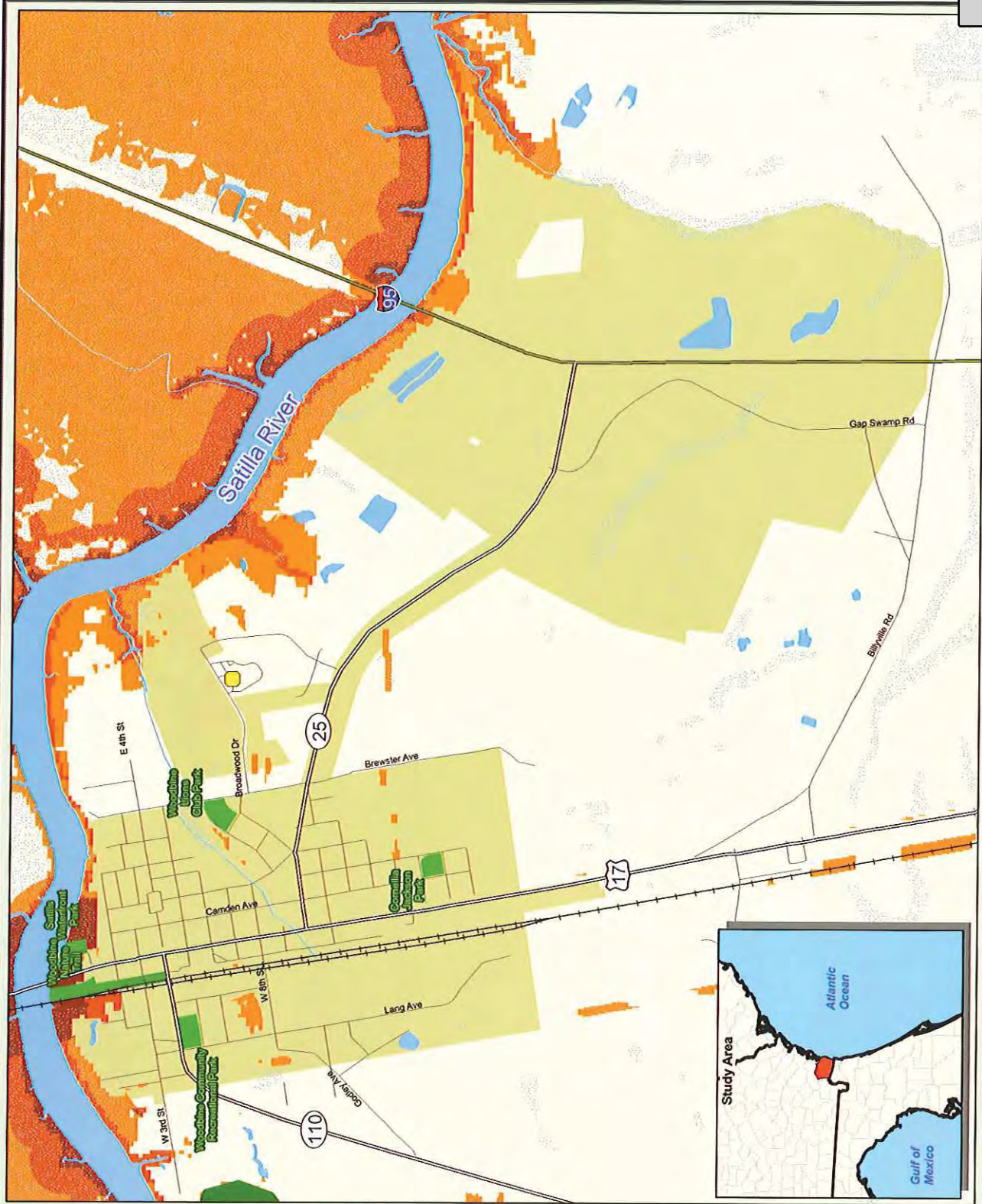
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Conclusion

The Camden County Greenprint model has been developed using the best GIS data sets available during the course of the process. By its nature, the model is dynamic, and may be updated as new data becomes available. In order to maintain the integrity of the process, any update will require that the stakeholders in the process be consulted, and, if necessary, the model criteria be re-weighted.

As investments are made, and community conservation goals identified through the Greenprint are met, the stakeholders will have the opportunity to revisit the overall goals and criteria and adjust them to reflect updated needs.

The Camden County Greenprint is the offspring of many worthy plans that went before, some that got off the shelf and into the ground and some that did not for a variety of reasons. Because this process is built upon the values held by Camden's residents, is visually captured through mapping and modeling, and followed through with practical steps for implementation, Camden County now has a flexible tool to use for future land use decisions, smart growth measures, and park and recreation planning. Community groups also can use the Greenprint to raise grant funds for implementation, and become partners in creating a greener, more sustainable Camden County.

APPENDIX C

Georgia Environmental Protection Division 2010 Intergrated 305(b)/(303(d) List Satilla and St. Marys River Watershed

Draft 2014 Integrated 305(b)/303(d) List

Streams - Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Ogeechee River	Long Creek to Hwy. 102 near Jewell	Ogeechee			12 miles	1		
R030602010103	Hancock/ Washington County	Fishing						
1.4								
Rocky Comfort Creek	Joes Creek to Ivey Branch near Edgehill	Ogeechee			10 miles	1		TMDL completed FC 2005.
R030602010301	Glascock/ Jefferson County	Fishing						
10								
Schaffer Creek	Headwaters to Big Creek (Kellys Pond)	Ogeechee			10 miles	1		
R030602010404	Burke/ Jefferson County	Fishing						
4								
Tributary to Taylors Creek #1	Drainage Canal to Taylors Creek, Fort Stewart	Ogeechee			2 miles	1		TMDLs completed Cu (2000), Pb (2000), Hg (2000).
R030602030503	Liberty County	Fishing						
1								
Williamson Swamp Creek	Kittrell Creek to Sun Hill Creek	Ogeechee			5 miles	1		
R030602010504	Washington County	Fishing						
4								
Bishop Creek	Headwaters to Jeff Davis/ Appling County Line (Downstream Hazelhurst)	Satilla			2 miles	1		
R030702020102	Jeff Davis County	Fishing						
1								
Boggy Creek	Dry Creek to Little Satilla Cr. N. of Screven	Satilla			1 miles	1		TMDLs completed DO (2001), FC (2006).
R030702020402	Wayne County	Fishing						
55								

Draft 2014 Integrated 305(b)/303(d) List

Streams - Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Hurricane Creek R030702010801 1	Whitehead Creek to d/s Little Creek. Jeff Davis/ Bacon County	Satilla Fishing			9 miles	1		
Little Satilla River R030702011104 1	Sixty Foot Branch to Satilla River Pierce/ Wayne/ Brantley County	Satilla Fishing			6 miles	1		
Otter Creek R030702010505 1	Tiger Creek to Seventeen Mile River Coffee County	Satilla Fishing			2 miles	1		
Red Bluff Creek R030702010301 10	Little Red Bluff Cr. to Satilla River E. of Pearson Atkinson County	Satilla Fishing			7 miles	1		TMDL completed DO 2001.
Reedy Creek R030702020403 55	Headwaters to Big Satilla Cr. near Screven Appling/ Wayne County	Satilla Fishing			13 miles	1		TMDLs completed DO (2001), FC (2006).
Satilla River R030702010304 1,55	Smut Branch to Red Bluff Creek Atkinson County	Satilla Fishing			5 miles	1		
Seventeen Mile River R030702010501 1	Otter Creek(Douglas) to Twentynine Mile Creek Coffee County	Satilla Fishing			8 miles	1		

Draft 2014 Integrated 305(b)/303(d) List

Streams - Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Sweetwater Creek	Black Water Creek to Big Satilla Cr. near Baxley	Satilla			12 miles	1		TMDLs completed DO (2001), FC (2006).
R030702020201	Appling County	Fishing						
1,10								
Bear Creek	Lavonia	Savannah			1 miles	1		
R030601040105	Franklin County	Fishing						
1								
Bear Creek	SCS Pond to Unawatti Creek, Lavonia	Savannah			1 miles	1		
R030601040104	Franklin County	Fishing						
1								
Beaverdam Creek	Tributary to Grove Creek (Commerce)	Savannah			5 miles	1		
R030601040204	Jackson/ Banks County	Fishing						
1								
Beaverdam Creek	Looks Branch to Little Beaverdam Creek	Savannah			9 miles	1		
R030601080402	Burke/ Jenkins/ Screven County	Fishing						
4								
Beaverdam Creek	McDonald Branch to Brier Creek, near Sylvania	Savannah			5 miles	1		
R030601080401	Screven County	Fishing						
1								
Boggy Gut Creek	McDuffie/Columbia/Richmond Co. Line to Brier Creek	Savannah			7 miles	1		
R030601080204	Richmond County	Fishing						
4								

Draft 2014 Integrated 305(b)/303(d) List

Streams - Not Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Alabaha River	Hurricane Creek to Tan Trough Creek	Satilla	FC	NP	7 miles	5	2015	EPD needs to determine the "natural DO" for the area before a use assessment is made.
R030702011003 1,55	Pierce County	Fishing						
Alabaha River	Tan Trough Cr. to Satilla River	Satilla	FC	NP	12 miles	4a		TMDL completed FC 2011.
R030702011004 1	Pierce County	Fishing						
Big Creek	South Prong Big Cr. to Satilla River	Satilla	DO	NP	5 miles	4a		TMDL completed DO 2001.
R030702010704 55	Brantley County	Fishing						
Big Satilla Creek	Headwaters near Hazlehurst to Sweetwater Cr. near Baxley	Satilla	DO, FC	UR	34 miles	4a		TMDL completed DO (2001), FC (2006).
R030702020101 1,10,52, 55	Jeff Davis/ Appling County	Fishing						
Big Satilla Creek	Sweetwater Creek to Colemans Creek	Satilla	FC	NP	12 miles	4a		TMDL completed FC 2011. EPD needs to determine the "natural DO" for the area before it can be determined whether the dissolved oxygen criteria are being met.
R030702020302 55	Appling/ Pierce/ Brantley County	Fishing						
Broxton Creek	Seven Cr. to Seventeen Mile River near Broxton	Satilla	FC, DO	NP	6 miles	4a		TMDL completed DO (2001), FC (2006).
R030702010401 10	Coffee County	Fishing						
Buffalo Creek	Little Buffalo Cr. to Satilla River	Satilla	FC, DO	NP	6 miles	4a		TMDLs completed FC (2011), DO (2001).
R030702011102 1,55	Brantley County	Fishing						

Draft 2014 Integrated 305(b)/303(d) List

Streams - Not Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
City Drainage Canal	Trib. to Satilla River, Waycross	Satilla	FC	UR	3 miles	4a		TMDL completed FC (1998 & 2006).
R030702010701	Ware County	Fishing						
2,55								
Colemans Creek	Dry Branch S. of Surrency to Big Satilla Cr. near Screven	Satilla	FC	UR	17 miles	4a		TMDLs completed DO (2001), FC (2006).
R030702020301	Appling/ Wayne County	Fishing						
55								
Dry Creek	Headwaters to Boggy Creek	Satilla	FC	NP	11 miles	4a		TMDL completed FC 2011. EPD needs to determine the "natural DO" for the area before it can be determined whether the dissolved oxygen criteria are being met.
R030702020406	Wayne County	Fishing						
55								
Dry Creek	Headwaters to Hurricane Creek	Satilla	FC	NP	9 miles	4a		TMDL completed FC 2011. EPD needs to determine the "natural DO" for the area before it can be determined whether the dissolved oxygen criteria are being met.
R030702010606	Coffee County	Fishing						
55,59								
Hog Creek	Downstream CR185 to Hurricane Cr. near Nicholls	Satilla	FC	UR	10 miles	4a		TMDL completed FC 2006.
R030702010602	Coffee County	Fishing						
1,10								
Hog Creek	Hurricane Cr. to Satilla River S. of Nicholls near Bickley	Satilla	FC, DO	NP	15 miles	4a		TMDLs completed DO (2001), FC (2006).
R030702010601	Coffee/ Ware County	Fishing						
1,10,55								
Hurricane Creek	Bear Creek to Dry Creek	Satilla	FC	NP, UR	4 miles	4a		TMDL completed FC 2011. EPD needs to determine the "natural DO" for the area before it can be determined whether the dissolved oxygen criteria are being met.
R030702010603	Coffee County	Fishing						
55								

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Streams - Not Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Hurricane Creek	Downstream Little Cr. to Ten Mile Cr. near Alma	Satilla	FC, DO	NP	20 miles	4a		TMDLs completed FC (2006), DO (2001).
R030702011001	Bacon County	Fishing						
1,10								
Little Hurricane Creek	Ga. Hwy. 32 to Hurricane Cr.	Satilla	DO, FC	NP	22 miles	4a		TMDLs completed DO (2001), FC (2006).
R030702010901	Bacon/ Ware/ Pierce County	Fishing						
1,10								
Little Satilla Creek	Keene Bay Branch to Dry Branch near Odum	Satilla	FC	UR	10 miles	4a		TMDL completed DO (2001), FC (2006).
R030702020404	Wayne County	Fishing						
10								
Little Satilla Creek	Dry Branch to Boggy Creek (Dry Creek)	Satilla	FC	NP	9 miles	4a		TMDL completed FC 2011. EPD needs to determine the "natural DO" for the area before it can be determined whether the dissolved oxygen criteria are being met.
R030702020407	Wayne County	Fishing						
55								
Little Satilla Creek	Boggy Cr. to Little Satilla River near Screven	Satilla	DO, FC	NP	3 miles	4a		TMDLs completed FC (2011), DO (2001).
R030702020401	Wayne County	Fishing						
1,55								
Little Satilla River	Big Satilla Cr. to Sixty Foot Branch	Satilla	DO	NP	10 miles	4a		TMDLs completed DO (2001), FC (2006).
R030702020502	Pierce/ Wayne/ Brantley County	Fishing						
1,55								
Otter Creek	Long Branch to Griffin Branch	Satilla	FC	NP	2 miles	5	2015	EPD needs to determine the "natural DO" for the area before it can be determined whether the dissolved oxygen criteria are being met.
R030702020503	Pierce County	Fishing						
1								

Draft 2014 Integrated 305(b)/303(d) List

Streams - Not Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Pudding Creek	Park Bay to Satilla River N. of Pearson	Satilla	DO, FC	NP	9 miles	4a		TMDLs completed DO (2001), FC (2006).
R030702010201	Atkinson County	Fishing						
10								
Roses Creek	Upstream Ga. Hwy. 206 to Seventeen Mile River near Broxton	Satilla	FC	NP	9 miles	4a		TMDLs completed FC (2006), DO (2001).
R030702010402	Coffee County	Fishing						
10								
Satilla Creek	Hunters Cr. E. of Ocilla to Satilla River	Satilla	DO	NP	7 miles	4a		TMDLs completed DO (2001), FC (2006).
R030702010102	Irwin/ Coffee County	Fishing						
10								
Satilla River	Satilla Cr. to Reedy Cr. near Douglas	Satilla	DO	NP	12 miles	4a		TMDL completed DO (2001).
R030702010101	Coffee County	Fishing						
10,71								
Satilla River	Pudding Cr. to Smut Br. near Pearson	Satilla	FC, DO	NP	8 miles	4a		TMDLs completed DO (2001), FC (2006).
R030702010302	Atkinson County	Fishing						
1,10								
Satilla River	U.S. Highway 84/Ga. Hwy. 38 to 6 miles downstream Hwy 15/121	Satilla	TWR	UR	23 miles	4a		TMDL completed TWR (2002).
R030702011103	Ware/ Pierce/ Brantley County	Fishing						
1,10								
Satilla River	Six miles d/s of Ga. Hwy. 15 to Buffalo Creek	Satilla	TWR	NP	53 miles	4a		TMDL completed TWR (2002).
R030702011105	Pierce/ Brantley County	Fishing						
1,9								

Draft 2014 Integrated 305(b)/303(d) List

Streams - Not Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Satilla River	Buffalo Creek to Bullhead Bluff	Satilla	TWR	NP	27 miles	4a		TMDL completed TWR (2002). EPD needs to determine the "natural DO" for the area before it can be determined whether the dissolved oxygen criteria are being met.
R030702011207	Camden/ Brantley/ Charlton County	Fishing						
1,9								
Satilla River	Rose Cr. to White Oak Cr.	Satilla	DO	UR	19 miles	4a		TMDL completed DO (2001).
R030702011201	Camden County	Fishing						
1,55								
Seventeen Mile River	Twenty Mile Cr. N. of Douglas to Otter Cr. downstream Gen. Coffee St. Park	Satilla	DO, FC	UR	7 miles	4a		TMDLs completed DO (2002), FC (2006).
R030702010502	Coffee County	Fishing						
1,55								
Seventeen Mile River	Twentynine Mile Cr. to Satilla River	Satilla	FC, DO	NP	13 miles	4a		TMDLs completed FC (2011), DO (2002).
R030702010503	Coffee/ Atkinson/ Ware County	Fishing						
1,55								
Bear Creek	Downstream Lavonia WPCP	Savannah	DO	M	2 miles	4a		TMDL completed DO 2000.
R030601040101	Franklin County	Fishing						
1,2								
Beaverdam Creek	Downstream Commerce	Savannah	DO	M	1 miles	4a		TMDL completed DO 2000.
R030601040202	Jackson County	Fishing						
1								
Beaverdam Creek	Confluence of North & South Beaverdam Creeks to Richard B. Russell Lake near Elberton	Savannah	FC	NP	8 miles	4a		TMDL completed FC 2005.
R030601030313	Elbert County	Fishing/ Drinking Water						
10								

Draft 2014 Integrated 305(b)/303(d) List

Streams - Assessment Pending For Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Wolfe Creek R030602030413 55	Headwaters to Canoochee River Candler County	Ogeechee Fishing			13 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Big Branch R030702010903 55	Mill Branch to Little Hurricane Creek Bacon County	Satilla Fishing			4 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Boggy Creek R030702020405 55	Headwaters to Lake Lindsay Grace Wayne County	Satilla Fishing			10 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Cox Creek R030702010710 55	Headwaters to the Satilla River Ware County	Satilla Fishing			7 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Kettle Creek R030702010711 55	Headwaters to the Satilla River Ware County	Satilla Fishing			10 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Little Hurricane Creek R030702010902 55	Headwaters to Ga Hwy 32 Jeff Davis/ Coffee/ Bacon County	Satilla Fishing			17 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Little Red Bluff Creek R030702010303 55	Headwaters to Red Bluff Creek Atkinson County	Satilla Fishing			8 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Satilla River R030702010204 1,55	Reedy Creek to Indian Creek Coffee County	Satilla Fishing			7 miles	3		TMDL completed FC 2011. EPD needs to determine the "natural DO" for the area before a use assessment is made.

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Streams - Assessment Pending For Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Satilla River	Seventeen Mile River to US Hwy 84/Ga. Hwy. 38	Satilla			27 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
R030702010703	Ware County	Fishing						
1,55								
Sixty Foot Branch	Headwaters to Otter Creek	Satilla			10 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
R030702020504	Pierce County	Fishing						
55								
Beaverdam Creek	Big Branch to McDonald Branch	Savannah			7 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
R030601080403	Screven County	Fishing						
10								
Beaverdam Creek	Pruitt Creek to unnamed tributary approximately 0.3 miles from Hart County Line	Savannah			4 miles	3		This site has a narrative rank of fair for macroinvertebrates. Waters with a narrative rank of fair will remain in Category 3 until EPD completes the reevaluation of the metrics used to assess macroinvertebrate data.
R030601030312	Hart/ Elbert County	Fishing						
59								
Devils Branch	Headwaters to Runs Branch	Savannah			8 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
R030601090209	Effingham County	Fishing						
55								
Lockner Creek	Headwaters to the Savannah River	Savannah			9 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
R030601090311	Effingham County	Fishing						
55								
Runs Branch	Sand Pond to Cowpen Branch	Savannah			7 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
R030601090206	Effingham County	Fishing						
1,55								

Draft 2014 Integrated 305(b)/303(d) List

Streams - Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Wildcat Creek	Headwaters to Lake Burton	Savannah			6 miles	1		
R030601020108	Rabun County	Fishing						
4								
Boone Creek	Upstream St. Marys River	St Marys			6 miles	1		TMDL completed DO 2001.
R030702040602	Charlton County	Fishing						
55								
Corn House Creek	Upstream St. Marys River	St Marys			7 miles	1		TMDLs completed DO (2001), FC (2006).
R030702040701	Charlton County	Fishing						
55								
St. Marys Trib. 5 (aka Cooner Branch)	Upstream St. Marys River	St Marys			3 miles	1		TMDL completed DO 2001.
R030702040901	Charlton County	Fishing						
55								
Bear Creek	Reedy Cr. to Indian Cr. near Berlin	Suwannee			7 miles	1		TMDL completed DO 2001.
R031102040402	Colquitt County	Fishing						
10								
Bear Creek	U/S Giddons Mill Cr. to d/s Ga. Hwy. 37/76, Adel	Suwannee			3 miles	1		
R031102030405	Cook County	Fishing						
1,3								
Beatty Branch	Headwaters to Cat Creek	Suwannee			3 miles	1		
R031102030306	Lowndes County	Fishing						
1								

Draft 2014 Integrated 305(b)/303(d) List

Streams - Not Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Turkey Branch R030601090207 55	Headwaters to Runs Branch Effingham County	Savannah Fishing	FC	NP	13 miles	4a		TMDL completed FC 2010. EPD needs to determine the "natural DO" for the area before it can be determined whether the dissolved oxygen criteria are being met.
Uchee Creek R030601060101 10,69	Tudor Branch to upstream Little River near Evans Columbia County	Savannah Fishing	FC	UR	3 miles	4a		TMDL completed FC 2005.
Warwoman Creek R030601020210 4,9	Finney Creek to Sarah's Creek Rabun County	Savannah Fishing	Bio M	NP	6 miles	4a		TMDL completed Bio M 2001.
Warwoman Creek R030601020209 9,10	Sarah's Creek to Chattooga River Rabun County	Savannah Fishing	FC, Bio M	NP	4 miles	4a		TMDLs completed FC (2005) & Bio M (2001).
Whites Creek R030601080105 4	Tributary 1 mi u/s of Old Milledgeville Road to Brier Creek McDuffie County	Savannah Fishing	Bio F	NP	4 miles	5	2014	
Horsepen Creek (aka Temple Creek) R030702040909 55	Temple Creek to the St. Marys River Camden County	St Marys Fishing	DO, FC	NP	1 miles	4a		TMDLs completed DO (2001), FC (2006).
North Prong St. Marys River R030702040306 1,55	Headwaters to Cedar Creek Charlton County	St Marys Fishing	TWR	NP	19 miles	4a		TMDLs completed DO (2001), TWR (2002).

Draft 2014 Integrated 305(b)/303(d) List

Streams - Not Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
North Prong St. Marys River	Cedar Creek to South Prong St. Marys River	St Marys	TWR	NP	9 miles	4a		TMDL completed TWR (2002).
R030702040307	Charlton County	Fishing						
10,55								
Spanish Creek	Long Branch to St. Marys River	St Marys	DO, FC	UR	4 miles	4a		TMDLs completed DO (2001), FC (2006).
R030702040801	Charlton County	Fishing						
55								
St. Marys River	Confluence of North & South Prong of St. Marys River to Cornhouse Creek	St Marys	TWR	NP	34 miles	4a		TMDL completed TWR 2002.
R030702040601	Charlton County	Fishing						
1,9,55								
St. Marys River	Cornhouse Creek to St. Marys Cut	St Marys	TWR	NP	21 miles	4a		EPD needs to determine the "natural DO" for the area before it can be determined whether the dissolved oxygen criteria are being met.
R030702040905	Charlton/ Camden County	Fishing						
1,9,55								
St. Marys River	Upstream Cabbage Bend to Catfish Cr.	St Marys	DO	NP	15 miles	4a		TMDL completed DO 2001.
R030702040903	Camden County	Fishing						
10								
Tributary #6 to St. Marys River	Headwaters to St. Marys River	St Marys	As	I2	3 miles	4b		Data from EPD's Harzardous Waste Branch. Facility under a corrective action plan.
R030702040908	Charlton County	Fishing						
56								
Alapaha River	U.S. Hwy. 280 to Sand Creek	Suwannee	DO	NP	29 miles	4a		TMDL completed DO (2001).
031102020301	Wilcox/ Ben Hill/ Turner/ Irwin County	Fishing						
0,62								

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Streams - Not Supporting Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Alapaha River	Sand Creek to U.S. Hwy. 129/Ga. Hwy. 11	Suwannee	DO, TWR	NP	16 miles	4a		TMDLs completed DO (2001), TWR (2002).
R031102020402	Irwin/ Tift/ Berrien County	Fishing						
10,62								
Alapaha River	U.S. Hwy. 129/Ga. Hwy. 11 to Stateline	Suwannee	TWR	NP	102 miles	4a		TMDL completed TWR (2002).
R031102021201	Berrien/ Atkinson/ Lanier/ Lowndes/ Echols County	Fishing						
1,9,55								
Alapahoochee River	Confluence of Mud and Grand Bay Cr. to Stateline	Suwannee	FC	NP	11 miles	4a		TMDL completed FC (2011), TWR (2002).
R031102021101	Echols County	Fishing						
1,55								
Bear Creek	City of Adel Lake to Withlacoochee River	Suwannee	FC	M	4 miles	4a		TMDLs completed FC (2000 & 2006), DO (2001).
R031102030404	Cook County	Fishing						
10								
Cane Creek	Rooty Branch to Okefenokee Swamp near Homerville	Suwannee	DO	NP	6 miles	4a		TMDL completed DO 2001.
R031102010102	Clinch County	Fishing						
1,10,55								
Cat Creek	Beatty Mill Creek to Withlacoochee River near Ray City	Suwannee	DO	NP	4 miles	4a		TMDL completed DO 2001.
R031102030304	Lowndes County	Fishing						
10,62								

Draft 2014 Integrated 305(b)/303(d) List

Streams - Assessment Pending For Designated Uses

Reach Name/ ID #/ Data Source	Reach Location/ County	River Basin/ Use	Criterion Violated	Potential Causes	Extent	Category	Priority	Notes
Sweetwater Creek R030601080103 59	Headwaters to Brier Creek McDuffie County	Savannah Drinking Water			8 miles	3		This site has a narrative rank of fair for macroinvertebrates. Waters with a narrative rank of fair will remain in Category 3 until EPD completes the reevaluation of the metrics used to assess macroinvertebrate data.
Whites Creek R030601080102 1	Downstream Thomson WPCP McDuffie County	Savannah Fishing			2 miles	3		Stream had previously been listed for Tox and was removed from lists in 2006 based on municipality passing WET tests. TMDL completed Tox 2000. Not enough instream data to place water in Category 1.
Clay Branch R030702040305 1.59	Headwaters to Spanish Creek Charlton County	St Marys Fishing			4 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Spanish Creek R030702040802 55	Little Spanish Creek to Long Branch Charlton County	St Marys Fishing			6 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Deep Creek R031102020206 59	Headwaters to Red Oak Creek Crisp County	Suwannee Fishing			4 miles	3		This site has a narrative rank of fair for macroinvertebrates. Waters with a narrative rank of fair will remain in Category 3 until EPD completes the reevaluation of the metrics used to assess macroinvertebrate data.
Suwannee Creek R031102010105 55	Little Suwannee Creek to Water Oak Creek Ware County	Suwannee Fishing			10 miles	3		EPD needs to determine the "natural DO" for the area before a use assessment is made.
Tributary to Alapaha River #5 R031102020103 59	Headwaters to the Alapaha River Wilcox County	Suwannee Fishing			2 miles	3		This site has a narrative rank of fair for macroinvertebrates. Waters with a narrative rank of fair will remain in Category 3 until EPD completes the reevaluation of the metrics used to assess macroinvertebrate data.

COK-09122014-Water Tank Maintenance Service
Tuesday, September 30, 2014

Name

Origination	HARRIETT'S BLUFF TANK	HOWARD PEEPLES PARK TANK	S. GROVE BLVD TANK	Total 10 Years
Tank Pro, Inc.	\$168,620.00	\$175,120.00	\$252,650.00	\$596,390.00
Pittsburg Tank & Tower Maintenance	\$342,950.00	\$342,950.00	\$713,250.00	\$1,399,150.00
American Tank Maintenance	\$143,000.00	\$143,000.00	\$255,000.00	\$541,000.00
Utility Services Co., Inc.	\$148,151.00	\$148,151.00	\$187,000.00	\$483,302.00



CITY OF KINGSLAND
Municipal Utilities Department
Water System
PO Box 250
Kingsland, Georgia 31548

Oct. 9, 2014

Kenneth Smith, Mayor
Alex Blount, Council Member
James McClain, Council Member
Daniel Minckler, Council Member
Charles Grayson Day, Council Member

107 South Lee St.
P.O. Box 250
Kingsland, GA 31548

Dear Mayor and Members of Council:

The top three companies have provided proposals for a maintenance program for the water storage tanks for the City of Kingsland. The proposals have specific and detailed information as to what each company has to offer.

You have been given the proposals but I would like to offer my recommendation and a brief explanation of what I learned from the proposals.

Utility Services is a company that provided a proposal. Utility Services is the company we were using. The company changed ownership and the quality of their work has been unsatisfactory. We are no longer using this company. Since we stopped using them due their standard of performance I do not want to use this company again.

American Tank Maintenance is a company that provided a proposal. Former employees of Utility Services formed this company approximately two years ago. The information included in their proposal does not mention having the amount of equipment needed to perform the maintenance that we need on our tanks. It does not mention having the number of maintenance crews needed to handle the maintenance we need on our tanks. Sub-contractors would provide much of the work through this company.

Tank Pro Inc is a company that provided a proposal. Tank Pro Inc has been in business for over twenty-three years. This company has its own equipment and does not use sub-contractors. They have an exceptional safety program and safety record. Tank Pro, Inc. has

ten crews to perform the work. This company has approximately sixty accounts and they maintain 153 tanks.

After reviewing these proposals, my recommendation of a maintenance company is Tank Pro Inc. The experience this company has will be an asset to the City of Kingsland in maintaining the water storage tanks now and in the future.

There is a difference in the cost quoted by each company. I believe the workmanship and experience Tank Pro Inc offers will be well worth the cost to the City of Kingsland. The maintenance by this company will ensure properly maintained water storage tanks and in turn will help provide safe, top quality water for the citizens of Kingsland.

Chuck DuBose
Water Superintendent
City of Kingsland

City of Kingsland
ASPHALT RESURFACING BID TABULATION
Bid Opening: September 23, 2014

VENDOR	Total Price
Rowell Contracting Inc 693 Third St. Folkston, GA 31537	NO BID
Blackjack P.O. Box 1295 Kingsland, GA 31537	NO BID
Kudzue P.O. Box 1799 Yulee, FL 32097	\$78,866.88
Charlie Hester Const. P.O. Box 606 Kingsland, GA 31537	NO BID
Duval Asphalt 7544 Phillips Hwy. Jacksonville, FL 32256	\$100,288.55
Seaboard Const. P.O. Box 1437 Brunswick, GA 31521	\$74,967.46
Littlefield Const. 1518 Albany Ave. Waycross, GA 31503	NO BID
Ellis & Ellis 451 E. Hilton Kingsland, GA 31537	NO BID
East Coast Asphalt 822 RC Drive Douglas, GA 31535	\$70,376.00

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*Recommended by Bill Coleman

Attachment: Asphalt Resurfacing Bid Tabulation (1148 : BID AWARD: Asphalt Resurfacing-Project #1)