

“All a man needs is confidence and ignorance, and he will be sure to succeed in life.”
– Mark Twain

The Value of Mitigation Banking in Urban South Carolina

**5th Mid-Atlantic Stream Restoration
Conference**

Flintstone, Maryland

16 November 2011

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Richland County, South Carolina



Decker Boulevard Revitalization Plan



Urbanization and growth rates in the northeast section of Richland County are among the highest in South Carolina

Plan recommendations:

1. Development of new parks and open spaces
2. Redevelopment of commercial uses along the Decker Blvd. corridor
3. Major neighborhood infill development concepts
4. Transportation and streetscape enhancements that would make area transportation networks more efficient, safe and attractive



THE RENAISSANCE PLAN
Decker Boulevard/Woodfield Park Area

Recreation/Open
Space



Jackson Creek - A Valuable Project



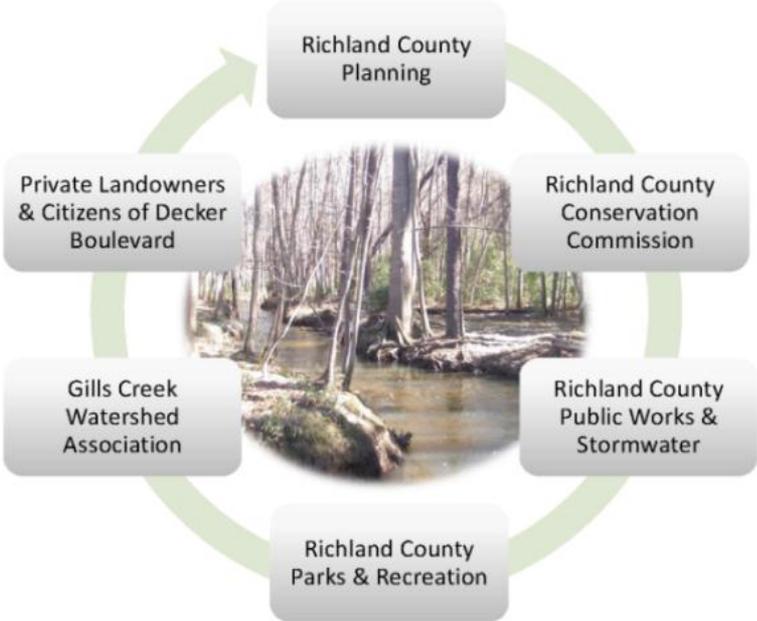
- Existing natural resources and buffers in an urban environment
 - One of the few remaining undeveloped tracts
- Located along Decker Blvd. corridor
- Polluted waterway(s) which connect a chain of lakes
- Existing local regulations discourage development within floodplain - floodway
- Adjacent to local school and commercial establishments
- Majority of undeveloped property owned by two land owners



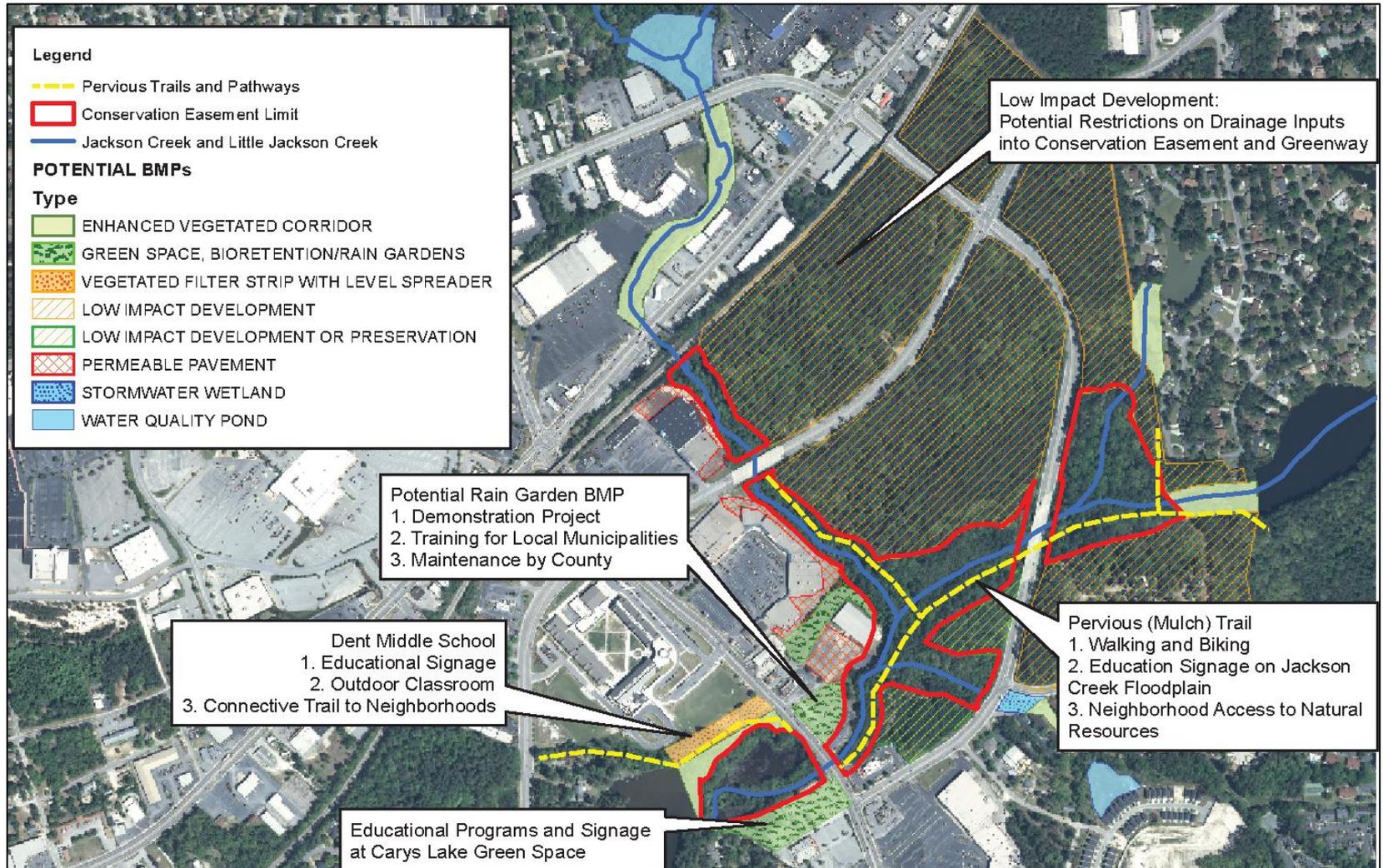
Jackson Creek



Jackson Creek Restoration



Jackson Creek Restoration



Urban Restoration Challenges



- Design and construction constraints associated with urban Restoration projects (challenges we all face):
 - Utilities
 - Land use changes (future land use)
 - Dynamic surface hydrology & groundwater
 - Sediment load
 - Property ownership
 - Water quality
 - Infrastructure
 - Public Perception
 - Limited riparian buffer width
 - Traffic control
- Higher risk, uncertainty and complexity equates to higher design and construct cost to accommodate constraints



Funding



- Bonds (Finance)
 - Green Development Bond
 - Existing Capital Improvement Bond
- General Fund (Taxes)
 - General tax
 - Sales tax
 - Property tax
 - Hospitality tax
- Grants (Federal Funding)
 - FEMA
 - Clean Water Fund
 - 319 Grant
- Mitigation
 - Offset cost via mitigation credit sales



Federal Regulations



- USACE and EPA published revised regulations entitled 'Compensatory Mitigation for Losses of Aquatic Resources' on 10 April 2008
- Regulations, effective 9 June 2008, established performance standards and criteria for the use of permittee-responsible compensatory mitigation, mitigation banks and in-lieu programs.
- Revised regulations established a **preference (or hierarchy) for the use of mitigation banks** over permittee responsible or in-lieu programs

	Federal Register	Thursday, April 10, 2008
		Part II
		Department of Defense
		Department of the Army, Corps of Engineers 33 CFR Parts 325 and 332
		Environmental Protection Agency
		40 CFR Part 230 Compensatory Mitigation for Losses of Aquatic Resources; Final Rule



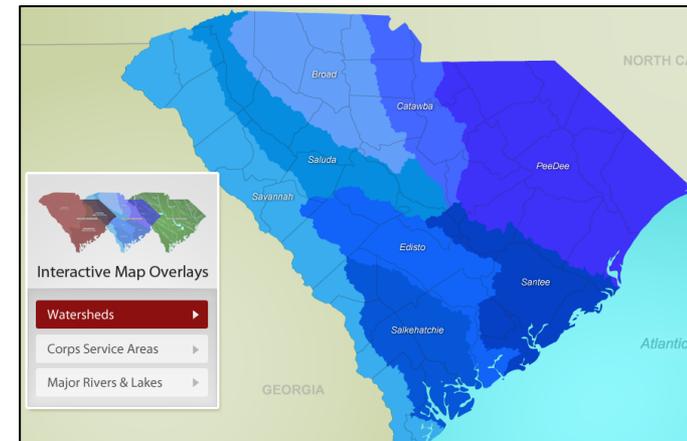
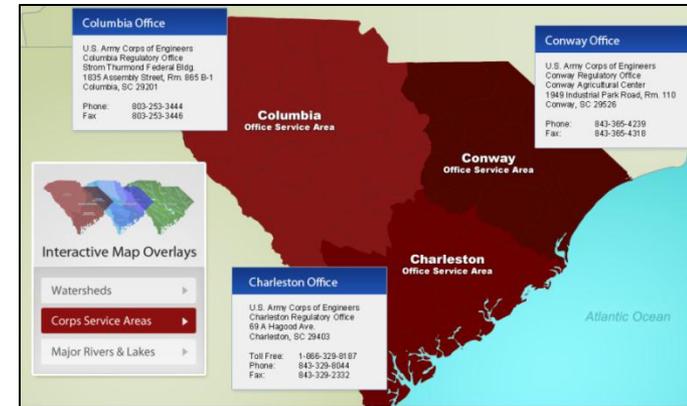
USACE Charleston District



- Published 7 Oct. 2010
- Replaced Standard Operation Procedures (SOP) for Compensatory Mitigation dated 19 September 2002
- Limited to DA permits authorized by the Charleston District's Regulatory Division
- **Updated method for calculating proposed mitigation credits**
- Preservation activities by themselves are not considered sufficient to offset adverse impacts to aquatic resource functions and services

- **At least 50% of the mitigation credits** generated should be the result of restoration or enhancement activities

 **TIDEWATER**
ENVIRONMENTAL SERVICES INC.



Banking Process

To create a new bank (or In-Lieu Fee Program)

1. Prospectus submitted to the Corps for approval
2. Public Notice and comment process
3. Sponsor submits Mitigation Banking Instrument
4. Interagency review, w/dispute resolution process if needed
5. Instrument is vetted and approved

Once MBI is approved:

- Corps approval required to release credits (Bank)
- Approval required to utilize credits (DA permit)

Total required FEDERAL REVIEW time (phase II – IV) ≤ 225 Days

Does not include:

- Preparation of the Prospectus and MBI
- Time required to revise banking documents or respond to IRT comments
- Baseline data collection (1 Yr)

Compensatory Mitigation Rule Timeline for Bank or ILF Instrument Approval*			
Event		# of Days**	
Phase I	Optional Preliminary Review of Draft Prospectus	30	DE provides copies of draft prospectus to IRT and will provide comments back to the sponsor within 30 days.
	Sponsor Prepares and Submits Prospectus ~DE must notify sponsor of completeness w/in 30 days of submission~		
Phase II	Day 1** Complete Prospectus Received by DE		
	Day 30	30	Public notice must be provided within 30 days of receipt of a complete prospectus
	Day 60	30	30-Day Public Comment Period
	Day 90	30	DE must provide the sponsor with an initial evaluation letter within 30 days of the end of the public comment period.
DE distributes comments to IRT members and sponsor within 15 days of the close of the public comment period.			
Sponsor Considers Comments, Prepares and Submits Draft Instrument ~DE must notify sponsor of completeness w/in 30 days of submission~			
Phase III	Day 1 Complete Draft Instrument Received by IRT Members		
	Day 30	30	30-day IRT comment period begins 5 days after DE distributes draft instrument to IRT members
	Day 90	60	DE discusses comments with IRT and seeks to resolve issues ~ # of days variable~
Within 90 days of the receipt of a complete draft instrument by IRT members, the DE must notify the sponsor of the status of the IRT review.			
Sponsor Prepares Final Instrument ~Sponsor provides copies to DE and all IRT members~			
Phase IV	Day 1 Final Instrument Received by DE & IRT		
	Day 30	30	DE must notify IRT members of intent to approve/not approve instrument within 30 days of receipt.
	Day 45	15	Remainder of time for initiation of dispute resolution process by IRT members
IRT members have 45 days from submission of final instrument to object to approval of the instrument and initiate the dispute resolution process.			
INSTRUMENT APPROVED/NOT APPROVED, or DISPUTE RESOLUTION PROCESS INITIATED			

EPA/Corps draft 4/02/08

Total Required Federal Review (Phases II-IV): 5225 Days
 *Timeline also applies to amendments
 **The timeline in this column uses the maximum number of days allowed for each phase.

Banking Challenges



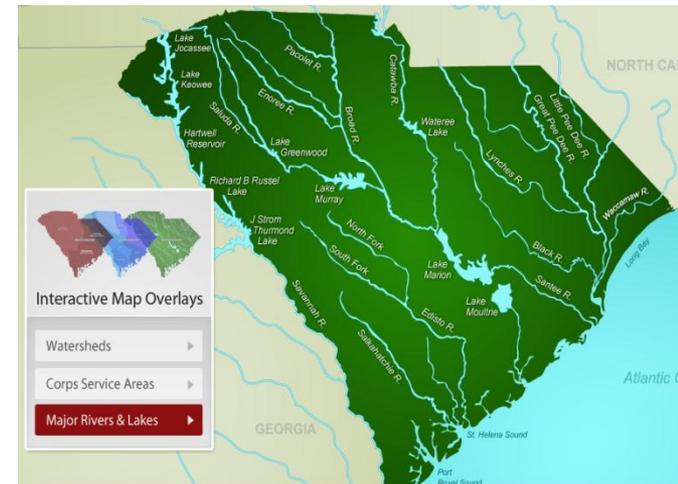
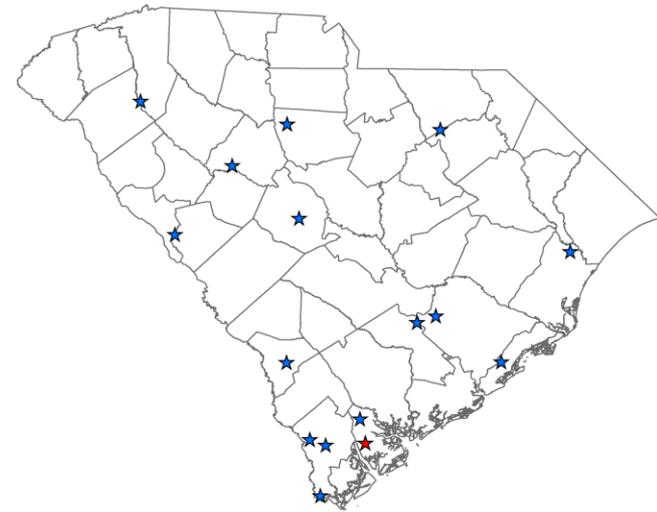
1. Limited number of banks approved since Rule released (2008)
2. Functional lift provided through urban restoration
3. Regulatory preference for rural restoration/mitigation
4. Watershed approach
5. Reference data
6. Finite success criteria
7. Credit calculations don't incorporate all value added



Approved Banks



- Limited number of mitigation banks approved since 2008 based on new regulations
- One Mitigation Bank approved which meets the Rule requirements and Charleston District guidance
 - Marine Corps Air Station (MCAS) Beaufort Wetland Mitigation Bank
- *The Rule is still new*



Urban Restoration

Functional Lift

- Function:
 - 2008 Rule identifies ‘no net loss’ of function
 - *Credit – a unit of measure representing accrual or attainment of aquatic functions at a compensatory mitigation site*
 - Credits based on net improvement, an evaluation of the net level of functional lift to an aquatic resource resulting from a proposed mitigation action.
 - Chemical, biological and physical (dimension, pattern and profile)
- *Where appropriate, district engineers may consider the relative ecological value of scarce aquatic resources in urban areas (at both the impact and mitigation site) in determining appropriate compensation ratios [2008 Rule]*

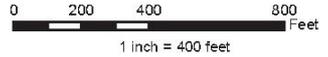


Jackson Creek Mitigation Bank Functional Lift



Figure 3: Mitigation Units

Draft Prospectus
Jackson Creek Mitigation Bank
Richland County, South Carolina



Date: March 4, 2011
Source: SCDNR and Richland County
Coordinate System: NAD 83 StatePlane SC FIPS 3900 Feet

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Jackson Creek Mitigation Bank

Functional Lift

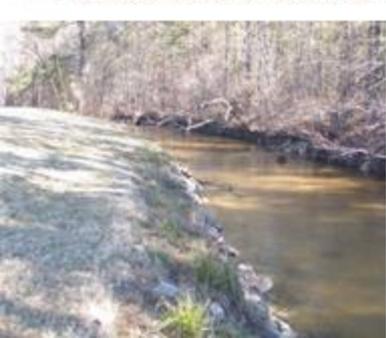


Stream Enhancement

- Condition: Historically channelized, eroding banks
- Proposed Activity: Construct natural channel bedform features and stabilize erosive banks
- Functional Lift: physical and biological lift provided via bank stabilization and bedform diversity. Activities designed to promote and support development of a moderately diverse biological community

Wetland Enhancement

- Condition: Invasive species, groundwater hydrology impaired
- Proposed Activity: Floodplain grading, Invasive species management and planting of native vegetation
- Functional Lift: Chemical and biological lift provided via water quality treatment and habitat enhancement



Jackson Creek Mitigation Bank Functional Lift



Buffer Enhancement

- Condition: Invasive species
- Proposed Activity: Invasive species management, planting of native vegetation
- Functional Lift: Chemical and biological lift provided via water quality treatment and construction of near channel habitat



Stormwater BMPs

- Condition: Limited on-site or site adjacent BMPs
- Proposed Activity: Construction and retrofit of on- and off-site stormwater BMPs to provide stormwater quantity and quality control
- Functional Lift: Chemical and biological lift provided via water quality treatment and stormwater volume and peak discharge regulation



Regulatory Preference

- Entrepreneurial Risk vs. Ecological Risk (T. BenDor et. al., 2011)
- The task of regulatory agencies is to minimize ecological risk
 - Risk reduction for the regulator shifts risk to the mitigation banker (entrepreneurial risk)
- *While federal policy establishes broad rules, a large degree of autonomy in interpreting and implementing the policy is left to local-level (district) staff within the Corps, a source of variability in how mitigation banks are regulated (T. BenDor et. al., 2011)*



Watershed Approach

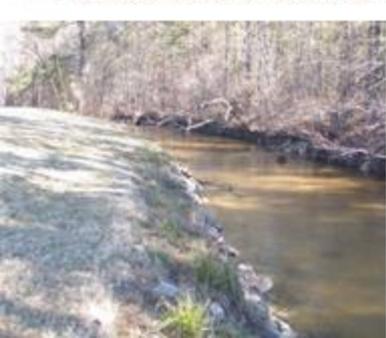


- **"South Carolina is becoming increasingly more of an urban state"** (Doug Woodward, research economist at the University of South Carolina)
 - South Carolina's population increased 15.3% in the past decade
 - Ranks among the nation's 10 fastest-growing states
 - *Fueled by the growth in counties near Charleston and Myrtle Beach as well as nearby Charlotte, N.C. (Ron Barnett, The Greenville SC News, Updated 3/24/2011)*
- Should compensatory mitigation for impacts to urban aquatic systems be conducted in rural areas?
 - *Allowable if the requirements of the 2008 Rule and the Section 404 Guidelines are met*
- **Compromise and Solutions:**
 - Limit service area
 - Include urban factors (e.g., land use or population density) to increase proposed credits

Reference data



- Stream mitigation credits computed based on reference data, typically pristine systems
- Final score utilized to determine net improvement (value added)
- Is baseline data of existing system (comparison of pre- vs. post-construction) sufficient to establish functional lift?



The term 'reference standard' is used for the subset of reference aquatic resources that are the least disturbed and exhibit the highest levels of functions. For the purposes of compensatory mitigation for DA permits, reference sites are used to help establish realistic objectives for compensatory mitigation projects.

Finite Success Criteria

- Static systems encouraged
- Stream restoration criteria usually based on degree of variance from reference
- *The target values or range of values for the parameters specified in the performance standards should be calibrated with the reference site(s). [2010 Guidance]*
- Current guidance doesn't allow for high level of variability associated with an urban or developing environment

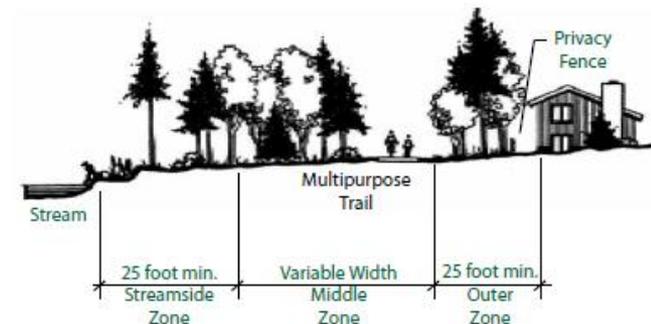


Value Added



Additional value added (not incorporated into credit calculations)

- Aesthetics and accessibility
- Preserved greenspace, undevelopable property, in an urban environment
- Reestablishing habitat corridors
- Floodplain mitigation
- Water Quality improvements, no existing water quality trading or credit framework established in South Carolina



Conclusion

Cutting the Red Tape

*'Regulations don't always follow common sense' –
USACE Charleston District Project Manager*

- Unique process in South Carolina
- Moving forward with baseline data collection, landowner coordination and conceptual design
- Charleston district is adapting based on their experiences with other District offices, projects and professionals (Will Harman - Richard Starr framework)
- Exploring alternative funding options in conjunction with mitigation banking and permittee responsible mitigation opportunities



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