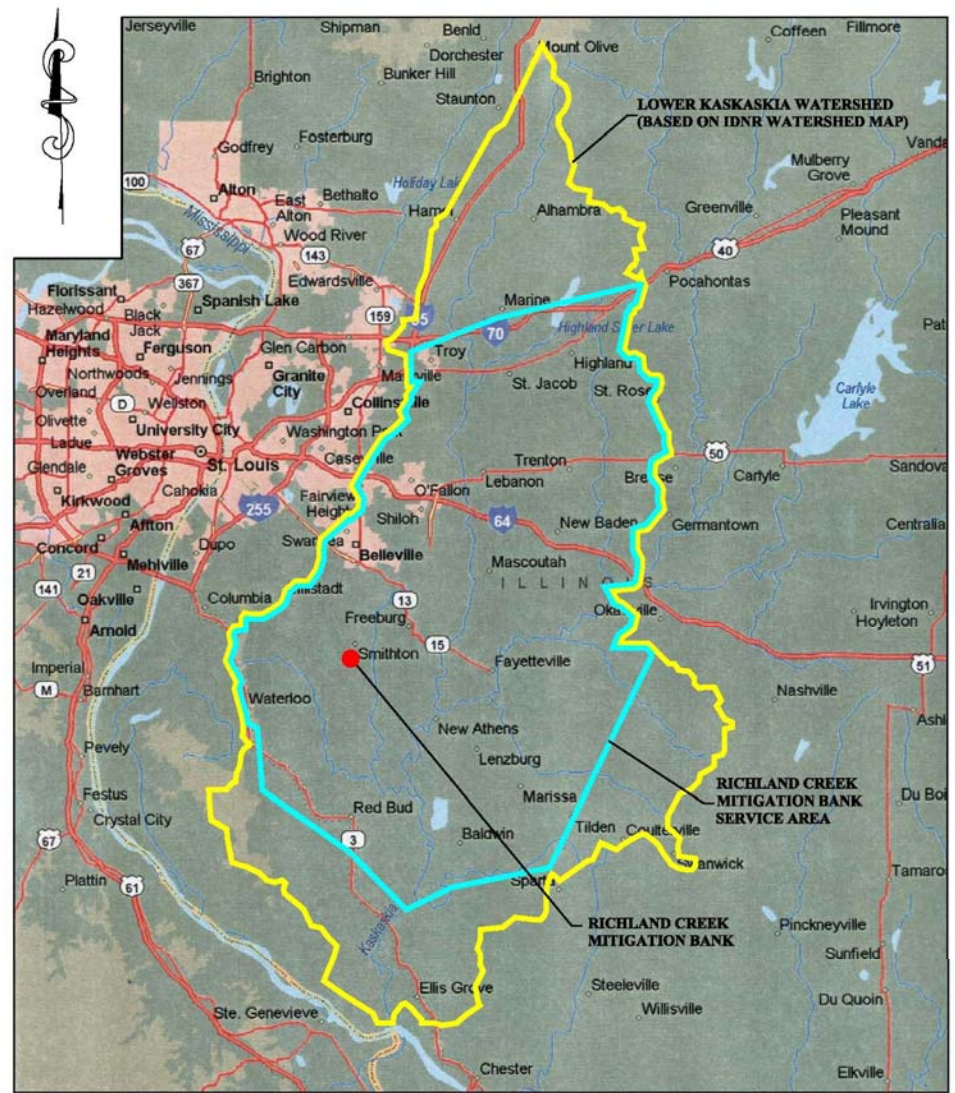


RICHLAND CREEK MITIGATION BANK

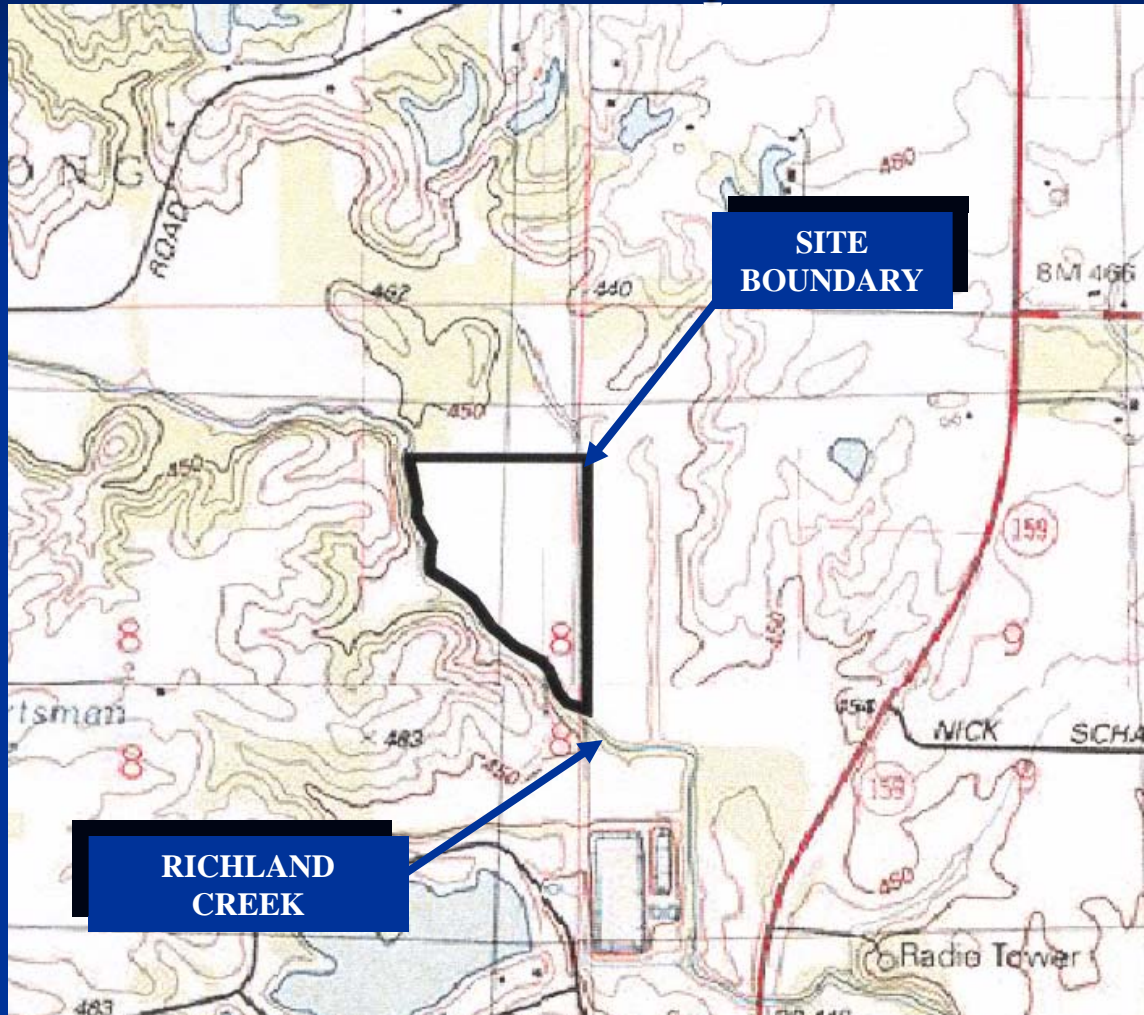


SCI Engineering, Inc.
SCOTT HARDING, CPSS/SC
Vice President



TOPOGRAPHIC MAP

Smithton, IL



RICHLAND CREEK MITIGATION BANK

- **BANK
SPECIFICATIONS**
- **DESIGN**
- **GOALS &
OBJECTIVES**
- **CREDIT
AVAILABILITY**
- **CREDIT
ACCOUNTING**
- **MONITORING**
- **PERFORMANCE
STANDARDS**
- **PRE & POST
CONSTRUCTION**
- **SITE
CONSERVATION**
- **LESSONS LEARNED**

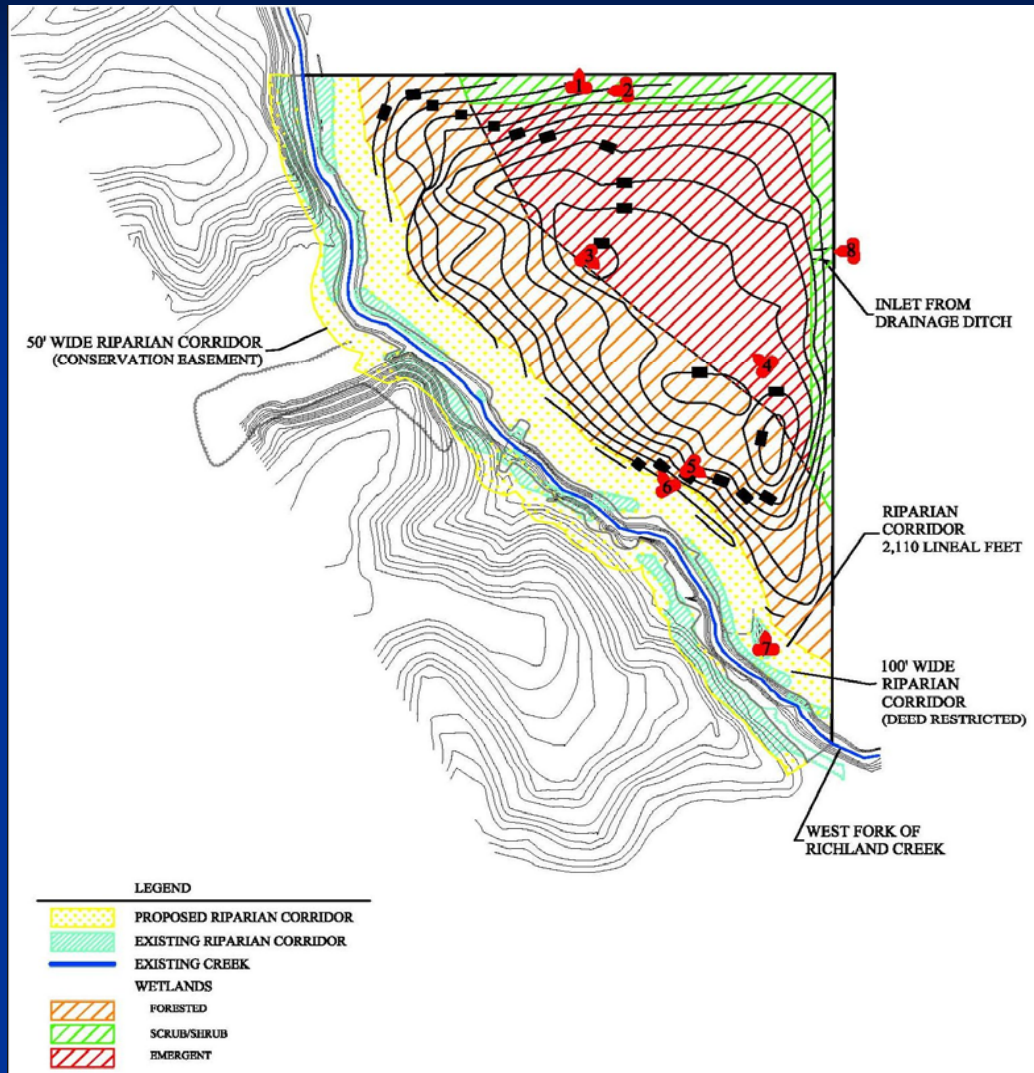


MITIGATION BANK SPECIFICATIONS

	ACRES	L.F.	CREDITS
Proposed Riparian Corridor	4.2	2,110	21.1
Existing Riparian Corridor	0.6	----	----
Existing Creek	1.1	2,110	----
Proposed Wetland	19.8	----	19.8
Forested	(9.3)	----	(9.3)
Scrub/Shrub	(2.3)	----	(2.3)
Emergent	(8.2)	----	(8.2)
TOTAL	25.7	----	40.9



MITIGATION DESIGN



Originally existed as actively managed agricultural floodplain bordered by the West Fork of Richland Creek with little to no riparian corridor.



MITIGATION DESIGN

Worked with the Corps to modify tree planting spacing to 30' x 30' per nursery recommendations and therefore decreasing the competition.



Bank Goals & Objectives



The Richland Creek Mitigation Bank (RCMB) was created to establish and protect 25.7 acres of restored and enhanced riparian corridor and various types of wetlands.



Bank Goals and Objectives

RCMB provides

- Improved water quality
- Flood control
- Stream bank stabilization
- Habitat for wildlife and aquatic species
- Source of groundwater recharge and discharge
- Aesthetics



WETLAND CREDIT AVAILABILITY

ACTIVITY	PROPOSED CREDITS	TOTAL CREDITS (%)	ACTUAL SOLD
Pre-construction	3.0	15	1.15 (5%)
Post-construction	7.9	40	3.67 (19%)
2 nd year performance standards	8.9	45	14.48 (73%)
Total	19.8	100	19.3 (97%)

Post-Construction conditions allowed purchaser to buy a “finished” credit



CREDIT ACCOUNTING

- The majority of credits were sold within 5 years
- Sold 20% and 30% respectively of wetland and stream credits within 18 months
 - overcame all construction costs
- Currently, stream credits sold out and less than 1 wetland credit left
- They were purchased by:
 - 35% Government and 65% Private
- Average price: \$7000/stream credit, \$18000/wetland



ANNUAL MONITORING



Conducted
annually for 5
years.

Annual monitoring
reports sent to
Mitigation Bank
Review Team
(MBRT).

Standards were met
after 5th monitoring
year.



ANNUAL PERFORMANCE STANDARDS

Year	WOODY VEGETATION SURVIVAL (%) Standard	WOODY VEGETATION SURVIVAL (%) Actual	STREAM BANK STABILIZATION FUNCTIONING (%) Standard	STREAM BANK STABILIZATION FUNCTIONING (%) Actual	HERBACEOUS VEGETATION COVERAGE (%) Standard	HERBACEOUS VEGETATION COVERAGE (%) Actual
1	65	96	70	100	N/A	50
2	70	92	75	100	50	60
3	75	88	80	100	60	60
4	80	87	85	80	70	70
5	80	83	90	100	75	75



PERFORMANCE



- Planted and natural recruitment of vegetation has successfully progressed from early successional and disturbance species, towards emergent and hydrophytic species.
- Hydric soils and hydrology have developed and are consistent with wetland criteria.



Wetland Mitigation



Pre-construction 2002

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Wetland Construction



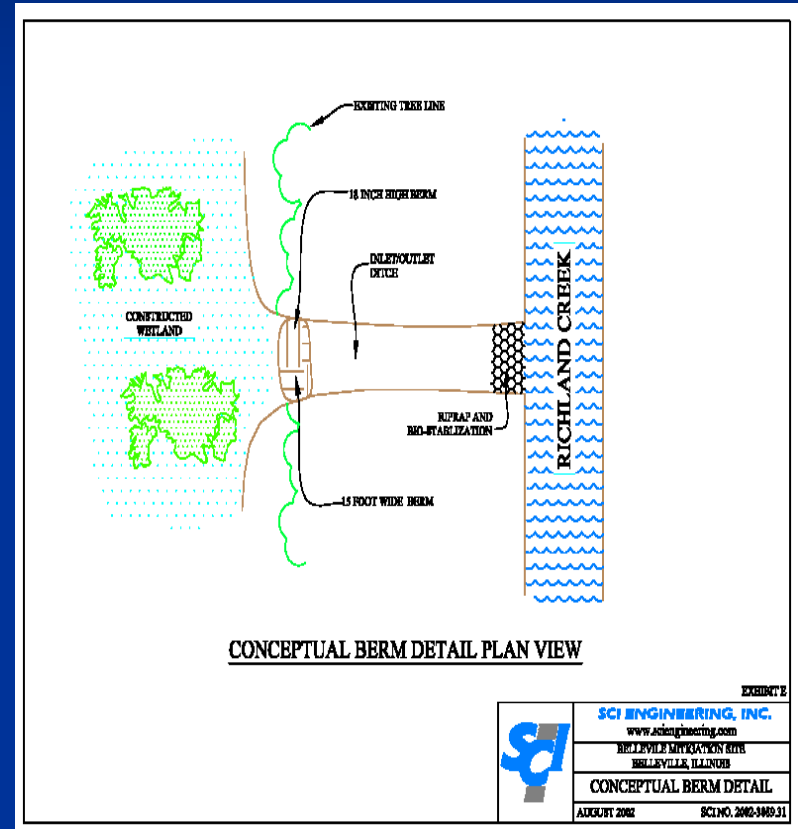
Wetland Construction 2003

SCI ENGINEERING, INC.



Wetland Performance

- Hydrology issues arose in the first year of monitoring.
- The inlet/outlet to the wetland (from Richland Creek) was set too high, allowing deep water to stand for long periods.
- The outlet was lowered 10 inches to allow more water to flow out while still holding enough water to maintain wetland hydrology.



Wetland Mitigation



Post Construction 2009

SCI ENGINEERING, INC.



RIPARIAN PERFORMANCE



- The restored riparian corridor planted with trees and shrubs continues to increase in canopy coverage.
- In-stream habitat was monitored and observed to provide habitat for fish and macroinvertebrates.
- Erosion of streambanks and water quality was monitored as well.



Streambank Stabilization



Annual monitoring in 2006 identified a sloughed bank slope



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RIPARIAN PERFORMANCE



- The sloughing of the streambank was able to be repaired.
- Grading and additional re-vegetation efforts successfully stabilized the streambank.

New saplings in riparian corridor - 2006



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Streambank Stabilization



Since streambank stabilization, no further erosion has been observed.

Stabilized bank - 2006



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Post Construction Performance



- The site continues to attract waterfowl such as herons, ducks, shorebirds, egrets and geese.
- Amphibians and other wildlife have been observed as well.

Successful Mitigation

- Success within the mitigation bank
 - Site suitability and conditions
 - Proximity to developed land (reduce chance of adjacent land owner interference)
 - Habitat was restored from land in agricultural practice
- RCMB provides diverse habitat including Emergent, Scrub-Shrub, and Forested Wetlands adjacent to the West Fork of Richland Creek
- Received Engineering Award in 2006 for Design



SITE CONSERVATION

The stream and its riparian corridor as well as the wetlands have been placed under a conservation easement and recorded with the St. Clair County Recorder of Deeds in 2002.

This action will protect the mitigation area from future development and disturbance.

Deed restricted areas may be turned over to a state or local entity as passive park acreage.

Currently the mitigation bank sponsor is looking at a conservation agency to take over the mitigation area.



LESSONS LEARNED

Look closely at potential invasives in nearby vegetative communities. Maintenance of invasives can be overwhelming and eat up profits.

Allow for easy alterations in hydrology and utilize original herbaceous seed bank.

Keep track of adjacent property owners who may be too interested in hunting the property. Post signs if necessary.

Try to incorporate both wetland and stream credits in the same mitigation bank, providing more diversity to buyers.





Questions ?



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