RICHLAND CREEK MITIGATION BANK

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## MITIGATION BANK SPECIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>ACRES</th>
<th>L.F.</th>
<th>CREDITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Riparian Corridor</td>
<td>4.2</td>
<td>2,110</td>
<td>21.1</td>
</tr>
<tr>
<td>Existing Riparian Corridor</td>
<td>0.6</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Existing Creek</td>
<td>1.1</td>
<td>2,110</td>
<td>----</td>
</tr>
<tr>
<td>Proposed Wetland</td>
<td>19.8</td>
<td>----</td>
<td>19.8</td>
</tr>
<tr>
<td>Forested</td>
<td>(9.3)</td>
<td>----</td>
<td>(9.3)</td>
</tr>
<tr>
<td>Scrub/Shrub</td>
<td>(2.3)</td>
<td>----</td>
<td>(2.3)</td>
</tr>
<tr>
<td>Emergent</td>
<td>(8.2)</td>
<td>----</td>
<td>(8.2)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>25.7</td>
<td>----</td>
<td>40.9</td>
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</table>
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.
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

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>PROPOSED CREDITS</th>
<th>TOTAL CREDITS (%)</th>
<th>ACTUAL SOLD</th>
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<tbody>
<tr>
<td>Pre-construction</td>
<td>3.0</td>
<td>15</td>
<td>1.15 (5%)</td>
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<tr>
<td>Post-construction</td>
<td>7.9</td>
<td>40</td>
<td>3.67 (19%)</td>
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<tr>
<td>2nd year performance standards</td>
<td>8.9</td>
<td>45</td>
<td>14.48 (73%)</td>
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<tr>
<td>Total</td>
<td>19.8</td>
<td>100</td>
<td>19.3 (97%)</td>
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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

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

SCI ENGINEERING, INC.
Wetland Construction 2003

SCI ENGINEERING, INC.
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
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
Streambank Stabilization

Since streambank stabilization, no further erosion has been observed.

Stabilized bank - 2006
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
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.
CONTACT

Scott D. Harding, CPSS/SC
Vice President
SCI Engineering, Inc.
sharding@sciengineering.com
www.sciengineering.com