



Prepared for

Mid Rivers Investment Group, L.P.

Prepared by

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February 23, 2015

**PROSPECTUS
PERUQUE CREEK MITIGATION BANK
Wilmer Road
St. Charles County, Missouri**

February 23, 2015

This document describes the features of a proposed stream mitigation bank. This document was prepared by Brookside Environmental Services, L.L.C. (Brookside) on behalf of Mid Rivers Investment Group, L.P., and follows criteria specified by the St. Louis District U.S. Army Corps of Engineers (Corps) in *Mitigation Banking Instrument Outline For Proposed Mitigation Banks Within the State of Missouri, February 2015 (2015 Outline)*. Specifically, this document addresses requirements for a complete prospectus as listed in I(A) through I(H) of the *2015 Outline*, and upon submittal initiates Phase II of the Corps' and Interagency Review Team's (IRT's) review. Phase I review of a draft prospectus dated March 10, 2014 was completed by the Corps and IRT in May 2014.

In 2007, Brookside prepared and submitted a prospectus for a stream mitigation bank at the same location but under different ownership and sponsorship. Positive comments on the 2007 prospectus were received from the Corps and IRT and efforts were underway to develop a banking instrument; however, final financing arrangements could not be made due to the economic recession beginning in 2008. The current prospectus incorporates many of the features proposed in the 2007 prospectus, and addresses comments made by the Corps and IRT at that time.

A. OBJECTIVES

The proposed Peruque Creek Mitigation Bank comprises approximately one mile of a perennial stream and its riparian corridor, totaling approximately 42 acres. The bank is located east of Wilmer Road in the city of Wentzville, St. Charles County, Missouri, as approximately depicted on Figure 1, Location Map, and Figure 2, Aerial Photograph. The bank will comprise a 3,044 linear foot segment of Peruque Creek within an 18-acre tract (West Segment), and a 2,706 linear foot segment of Peruque Creek within the 24-acre tract (East Segment). The width of the riparian corridor varies from 55 to 240 feet wide on both sides of Peruque Creek and includes forested bluffs, open floodplain, a hillside seep, and portions of two unnamed tributaries to Peruque Creek, totaling approximately 350 linear feet of tributary channel. An existing approved mitigation site (Permit No. P-2515), located along an unnamed tributary to Peruque Creek, abuts the West Segment of the Peruque Creek Mitigation Bank.

Undeveloped property comprising several man-made lakes is located west of the Peruque Creek Mitigation Bank, a residential development is located between the West and East Segments of the bank, and single resident properties are located north, east, and south of the bank. The area of the Peruque Creek Mitigation Bank generally comprises undeveloped forested and agricultural land, single resident properties, and residential subdivisions.

Restoring, enhancing, and preserving natural areas not only provide direct benefits to wildlife, but also offer local residents wildlife experiences. These experiences enhance the love and respect for natural areas and the wildlife populations they support. It is important to keep the public in touch with natural areas for it is believed that people only save and protect what they love and appreciate.

Even though the Peruque Creek Mitigation Bank comprises a total of one mile of stream corridor out of a much larger stream system, it is important to take advantage of restoring, enhancing, and preserving what is available. This bank could provide a demonstration for future protection activities of additional stream segments, which, cumulatively, could have significant ecological impact on the watershed.

The overall goal of the Peruque Creek Mitigation Bank is to provide commercial mitigation opportunities by compensating for stream habitat losses in a manner that contributes to the long-term ecological functioning of the Peruque Creek watershed. Historically-lost stream habitat associated with Peruque Creek at the Peruque Mitigation Bank site will be restored, enhanced, and preserved in anticipation of off-site stream habitat losses through authorized activities within the Peruque Creek Mitigation Bank's service area (see Section C; Service Area, below).

B. ESTABLISHMENT AND OPERATION

Establishment and operation of the Peruque Creek Mitigation Bank will strictly follow requirements set forth by the Corps and U.S. Environmental Protection Agency in the April 10, 2008 joint regulation for *Compensatory Mitigation for Losses of Aquatic Resources (2008 Mitigation Rules)*. Development of a final banking instrument will follow criteria specified in *Banking Instrument Outline For Proposed Mitigation Banks Within the State of Missouri, February 2015 (2015 Outline)*, specifically the requirements for a complete instrument as listed in II(1) through II(8) of the *2015 Outline*.

The U.S. Army Corps of Engineers approval of this Instrument constitutes the regulatory approval required for the Peruque Creek Mitigation Bank to be used to provide compensatory mitigation for Department of the Army permits pursuant to 33 C.F.R. 332.8(a)(1). This Instrument is not a contract between the Sponsor or

the Property Owner and the U.S. Army Corps of Engineers or any other agency of the federal government. Any dispute arising under the Instrument will not give rise to any claim by the Sponsor or the Property Owner for monetary damages. This provision is controlling notwithstanding any other provision or statement in the Instrument to the contrary.

1. Mitigation Activities

Proposed physical mitigation activities at the Peruque Creek Mitigation Bank comprise the following in-stream improvements and riparian buffer work:

low-water crossing removal

Two low-water crossings located within the Peruque Creek Mitigation Bank, one in each segment, will be removed (see Photo 1, below). The removals will be conducted during low flow conditions and in a manner that minimizes stream impact to the extent practical under site conditions. Steep stream banks, both upstream and downstream of the crossings, will be stabilized by pulling back to an approximately 1v:3h slope, seeding and blanketing exposed soil, and planting native woody species. Heavy boulders will also be placed at the foot of the pulled back stream bank for further stabilization. The access roads leading down to the crossings will be reshaped to natural stream bank condition. The location of the low-water crossings and access roads are shown on Figure 3; Mitigation Activities.



Photo 1. One of two low-water crossing.

[Note: With the Corps' and IRT's acknowledgement, the low-water crossings were removed in 2007 during preparation of the original prospectus. This work was done early to take advantage of good working conditions and mobilized

equipment and in anticipation of receiving credits upon completion of a final banking instrument. Based on recent conversations with the Corps concerning the current project, Brookside understands that the low-water crossing removals remain acceptable for generating credits and will be evaluated as such.]

debris removal

The limited amount of concrete rubble and debris that is located on the banks of Peruque Creek within the boundary of the Peruque Creek Mitigation Bank will be removed (see Photo 3, below). These items are located along a portion of the right descending bank of the West Segment, as approximately shown on Figure 3.



Photo 2. Concrete rubble and household debris along West Segment

levee removal and bank stabilization

Portions of an of existing agricultural levee, located along approximately 2,600 linear feet of the right descending bank of the West Segment will be removed in order to provide high water connection between Peruque Creek and its floodplain. Sections of the levee that contain mature desirable trees will be avoided to the extent possible. A limited number of areas of steep, unstable stream banks within both the West and East Segments will be pulled back to a 1v:3h slope (see Photos 3 and 4, below). Levee removal and slope pull back will be by earthmoving equipment with special care to avoid desirable mature trees along Peruque Creek. All exposed areas will be seeded and blanketed, and planted with native woody species. Levee removal and slope pull back locations are approximately shown on Figure 3.



Photo 3. Segment of agricultural levee. Peruque Creek behind levee.



Photo 4. Undercut bank along Peruque Creek.

native vegetation establishment

Areas of open floodplain adjacent to Peruque Creek, totaling approximately 14 acres and accounting for 41 percent of the 34 acres of total stream buffer, will be seeding with native herbaceous species and planted with native woody species (see Photo 5, below). The approximate locations of buffer enhancement planting are shown on Figure 3.



Photo 5. Buffer planting area adjacent to Peruque Creek.

undesirable vegetation removal

Invasive species appearing on the *Missouri Invasive Plant Species List – Regional Condition 3*, will be controlled, to the extent possible, from the 42-acre Peruque Creek Mitigation Site. These species primarily comprise Bush Honeysuckle and Johnson grass (see Photo 6, below).



Photo 6. Bush Honeysuckle along bank of Peruque Creek.

site protection

The outside perimeter of the Peruque Creek Mitigation Bank will be fenced for protection from trespassers. Signage will be located on the fence to identify the bank.

2. Monitoring and Maintenance

Monitoring will take place to determine the success of the Peruque Creek Mitigation Bank and any corrective measures deemed necessary to achieve and ensure long-term success. Monitoring will take place annually for a period of at least five years from the date of completion of all mitigation activities, and will meet or exceed the monitoring requirements presented by the Corps in *Regulatory Guidance Letter 06-03*. The monitoring period may be extended beyond the five-year minimum depending on the type and extent of corrective measures occurring (if any) after initial mitigation activities.

A maintenance plan will be developed in order to sustain the viability of the Peruque Creek Mitigation Bank once initial construction is completed. Anticipated maintenance items include, but are not limited to: mowing, herbicide treatment, irrigation, limited earthwork, reseeding/replanting, and fencing/signage repair.

Performance standards, including those for plant survival, invasive weed control, and channel stability, will be utilized to objectively determine if the Peruque Creek Mitigation Bank is developing into the desired resource type and providing the expected functions.

An annual monitoring report will be submitted to the Corps and will describe the measured parameters, success of the Peruque Creek Mitigation Bank, and any recommendations necessary to achieve success. Success will be achieved if it can be demonstrated that the performance standards have been met.

3. Credits

Brookside used the April 2013 *State of Missouri Stream Mitigation Method* to estimate the total number of potential credits available at the Peruque Creek Mitigation Bank. Based on proposed mitigation activities, the estimated number of credits is approximately 26,500. Copies of the In-Stream and Riparian Buffer Worksheets used for the estimate, including supporting material, are contained in Appendix A.

[Note: Approximately 2,000 additional credits are possible based on a higher "Priority Waters" rating. The Peruque Creek Mitigation Bank meets the secondary priority waters rating at a minimum, based on its location abutting an approved mitigation site. A primary priority waters rating; however, may be appropriate, based on the presence of mussels, and Indiana and Grey bat habitat. Brookside understands that this determination will be made in coordination with the U.S. Fish & Wildlife Service's Ecological Services Office.]

C. SERVICE AREA

The proposed service area for the Peruque Creek Mitigation Bank is the "Central Plains/Cuivre/Salt" Missouri Ecological Drainage Unit. This watershed area corresponds to the Missouri portion of the U.S. Geological Service's Accounting Unit "Upper Mississippi Salt" (Hydrologic Code 071100) within the boundaries of the St. Louis District Corps. The service area is depicted on Figure 4; Service Area Map.

D. NEED and TECHNICAL FEASIBILITY

A demand for credible stream mitigation options currently exists in St. Charles County, Missouri, where continuous growth has promoted numerous commercial and residential developments requiring stream mitigation. The Peruque Creek Mitigation Bank will provide Clean Water Act – Section 404 Permit applicants in St. Charles County a convenient method of compensatory mitigation for stream habitat losses through authorized activities.

Restoring, enhancing, and preserving historically lost habitat along a one-mile segment of Peruque Creek is viewed as a long-term benefit to the sustainability of the Peruque Creek watershed. Residents of the Peruque Creek watershed, including those of Lake St. Louis, are experiencing negative effects due to stream habitat losses, including: decreases in water quality, increases in flooding, erosion, and sedimentation, and loss of wildlife. The Peruque Creek Mitigation Bank will help to alleviate these negative effects.

The mitigation activities proposed above have been proven successfully on other projects and are technically feasible. Brookside will consult as needed with the Corps, IRT, and industry experts regarding technical issues.

E. OWNERSHIP and LONG-TERM MANAGEMENT

owner/sponsor

Mid Rivers Investment Group, L.P. is the owner of the 42 acres of land on which the Peruque Creek Mitigation Bank will be established, and will be the bank sponsor. As bank sponsor, Mid Rivers Investment Group, L.P. will be responsible for assuring success of the mitigation activities at the Peruque Creek Mitigation Bank. Mid Rivers Investment Group, L.P. will also be responsible for the monitoring, management and maintenance, and overall operation of the Peruque Creek Mitigation Bank.

agent

Brookside Environmental Services, L.L.C., acting on behalf of Mid Rivers Investment Group, L.P., will provide all technical services for the Peruque Creek Mitigation Bank, including: development of the banking instrument, management of all mitigation activities, conducting compliance monitoring, post-installation management and maintenance, and bank operations. Brookside will serve as liaison between the sponsor and Corps.

financial assurances

An appropriate amount of financial assurance in the form of a performance bond will be provided by the bank sponsor to ensure a high level of confidence that the mitigation bank will be successfully completed in accordance with its performance standards. Financial assurances will be phased out once the bank

has been determined to be successful in accordance with its performance standards.

long-term management

After all performance standards have been met, a conservation easement will be established to ensure that the mitigation work is protected in perpetuity. The conservation easement will name a land stewardship entity, resource management agency, or similar with the right to enforce site protections, and will provide the entity the resources necessary to monitor and enforce site protections.

F. SPONSOR QUALIFICATIONS

The owner and sponsor of the proposed Peruque Creek Mitigation Bank, Mid-Rivers Investment Group, L.P., Mr. Jeff Kolb president, has been in operation for 15 years and is responsible for a number of large successful developments in St. Charles County, Missouri. Mid-Rivers Investment Group, L.P. recently acquired the property comprising the proposed bank and is interested in pursuing commercial mitigation banking through its agent, Brookside Environmental Services, L.L.C. Brookside and its associates have extensive experience in natural resources consulting, including stream mitigation and monitoring.

G. SITE ECOLOGICAL SUITABILITY to ACHIEVE BANK OBJECTIVES

The Peruque Creek Mitigation Bank site is ecologically suitable to achieve the bank's objective of contributing to the long-term ecological functioning of the Peruque Creek watershed. The bank's location in an urbanizing region upstream of Lake St. Louis, and the on-site opportunities to restore, enhance, and preserve historically-lost stream habitat make the Peruque Creek Mitigation Bank an ideal candidate for consideration.

While not sufficient alone in solving all of the watershed's problems, the proposed mitigation activities will provide an overall ecologic lift to the local watershed, while helping to maintain and restore the ecological balance of the larger watershed. Components of the ecological lift are described in the following paragraphs.

erosion and sedimentation

Among the many problems typically found in streams within urbanizing watersheds, both the Missouri Department of Natural Resources and the 2005 CDM *Peruque Creek Watershed Study* have identified excess erosion and sediment loads as key issues for Peruque Creek and the Peruque Creek watershed. Excess erosion and sediment loads negatively affect aquatic

organisms and generally degrade the stability and quality of the stream and downstream resources.

When sediment enters a stream through erosion, it settles into the bottom, covering natural substrates and reduces the amount of available habitat for aquatic life. Sediment also smothers bottom dwelling organisms and fish eggs. This results in the loss of food sources for other organisms that are not otherwise directly affected.

Lake St. Louis has experienced significant sediment loads coming from Peruque Creek. The Lake St. Louis Community Association has had to spend hundreds of thousands of dollars every three years to dredge the lake. Sedimentation also contributes to lower aesthetic quality of the lake and Peruque Creek.

wildlife habitat

St. Charles County is one of the fastest growing counties in the State of Missouri. Because of this rapid growth wildlife habitat has been greatly reduced and is shrinking every day as residential and commercial development continues to sprawl. Establishment of the Peruque Creek Mitigation Bank will provide a natural corridor for fish, birds, and terrestrial wildlife to find forage, resting and nesting areas. Enhancing and preserving the habitat will help ensure sustainable animal populations.

The Peruque Creek Mitigation Bank contains a tremendous amount of transitional area which provides ecotones and edge effects which cater to numerous species of plants and animals. The forested riparian has several stands of established trees which are met with grassland species. These areas are intermingled with rock outcroppings and fallen logs, and provide for numerous ecosystems.

Both segments of Peruque Creek comprising the Peruque Creek Mitigation Bank contained historic low-water crossing which restricted normal flow and altered natural stream morphology. The low-water crossings also diminished aquatic organism habitat and movement in the stream. Removal of the low-water crossings will establish new riffle points in place of standing water, which, in turn, will increase population and diversity of aquatic organisms. Removal of the crossings will also provide a continuous migration pathway for fish within and between both segments of Peruque Creek.

water quality

In addition to erosion and sedimentation control, water quality improvements due to the proposed mitigation activities include: shading of the riverine system, and filtering of nutrients and pesticides from urban runoff. Removal of the low-water crossings will also improve water quality as new riffle points act to oxygenate the water.

baseline data

In order to develop baseline data, a stream assessment of Peruque Creek within the Peruque Creek Mitigation Bank was conducted by Brookside Environmental Services, L.L.C. in 2005. Brookside Environmental Services, L.L.C. will use these data, updating as necessary, to help set performance standards.

Plant and wildlife surveys of the Peruque Creek Mitigation Bank have been conducted by Brookside and others. Results of the surveys are contained in Appendix B.

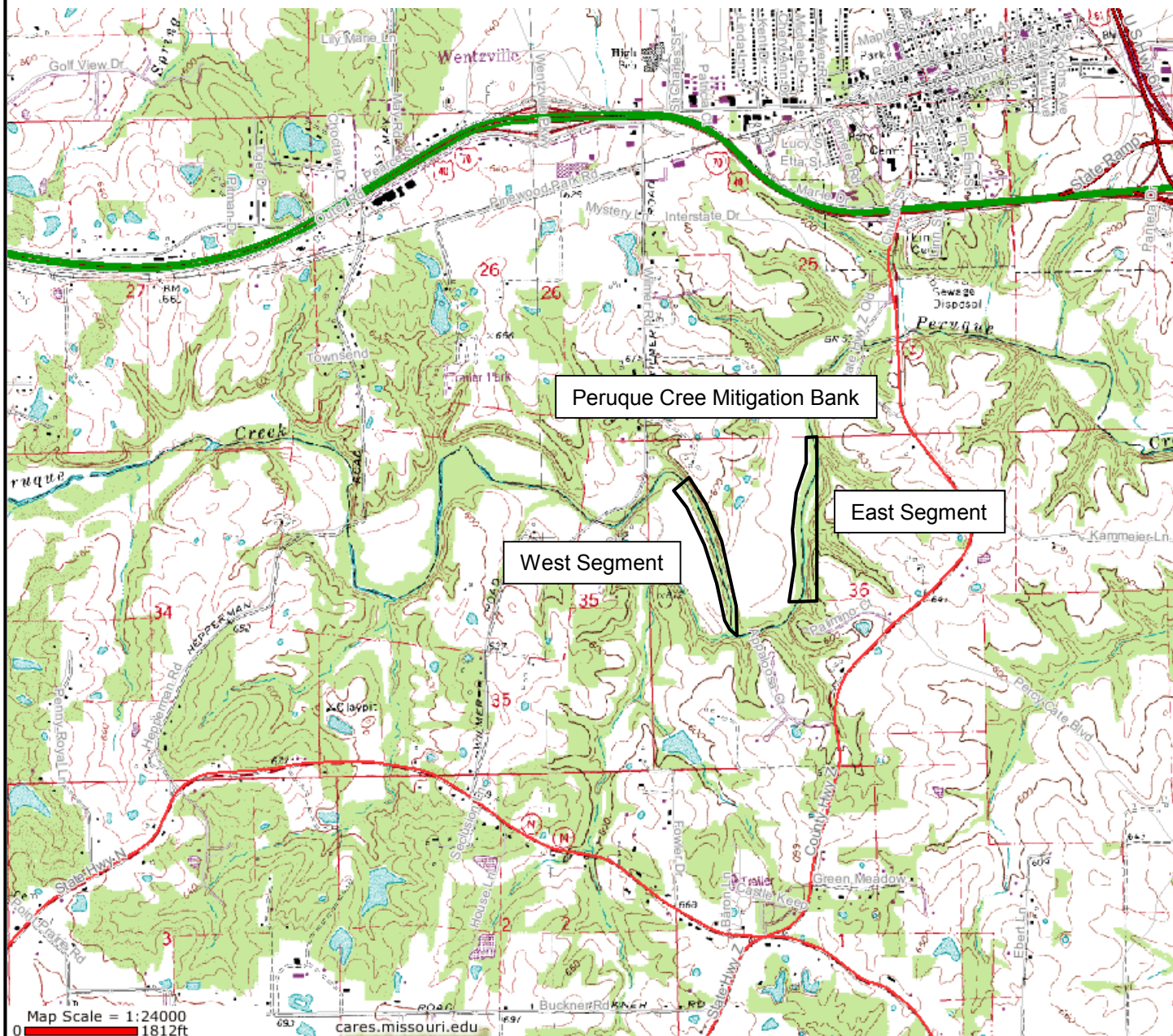
watershed approach

In designing and implementing the proposed mitigation activities, careful attention will be paid to the role Peruque Creek plays within the wider watershed. The 2005 CDM *Peruque Creek Watershed Study* and other watershed specific information from local, state, and federal agencies will be extensively utilized.

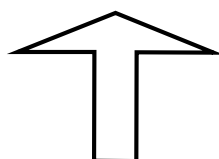
H. SUSTAINABILITY OF HYDROLOGIC SOURCE

The hydrologic source of Peruque Creek at the location of the Peruque Creek Mitigation Bank comprises the approximately 36-square mile upstream watershed. The overall amount of water draining to Peruque Creek at this location is not considered a limiting factor; however, urbanization within the watershed has resulted in changes to stream flow patterns along Peruque Creek. The loss of wetlands and connectivity between the stream channel and its floodplain has decreased base flow during dry periods. Increases in impervious areas have led to higher runoff volumes and flash flows during storms.

While little can be done to alleviate upstream watershed problems at the Peruque Creek Mitigation Bank alone, on-site mitigation activities will focus on returning the stream channel and riparian corridor to their natural conditions which will allow for more attenuation of extreme flows caused by urbanization.



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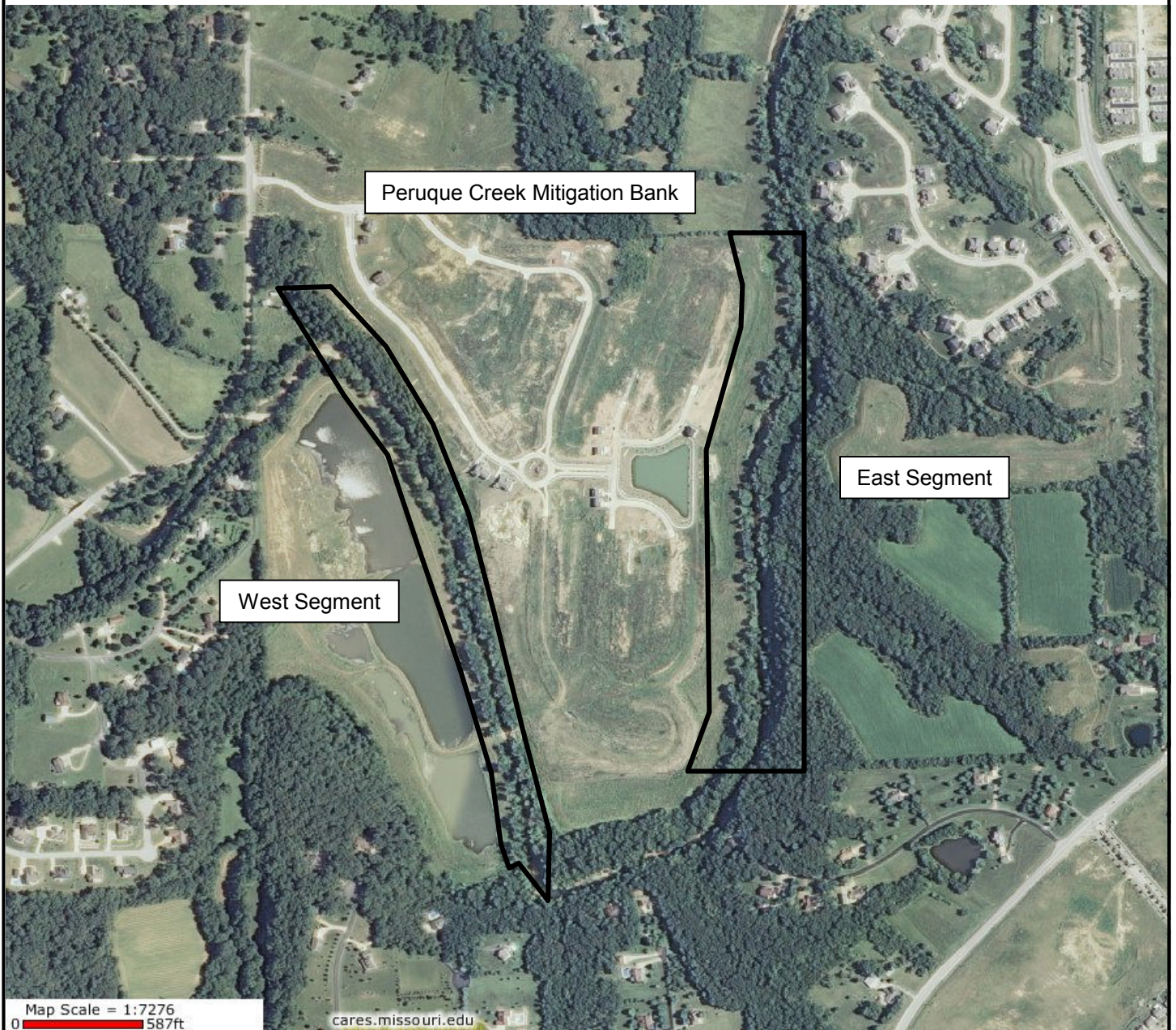


NORTH

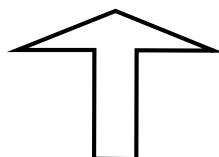
Figure 1
Location Map

Perqure Creek Mitigation Bank
St. Charles County, Missouri

Wentzville, MO 7.5-Minute USGS Topographic Map



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phone: 636-614-2698



NORTH

Figure 2
2010 Aerial Photograph

Peruque Creek Mitigation Bank
St. Charles County, Missouri

Figure 3a – Mitigation Activities
Peruque Creek Mitigation Site (West Segment)

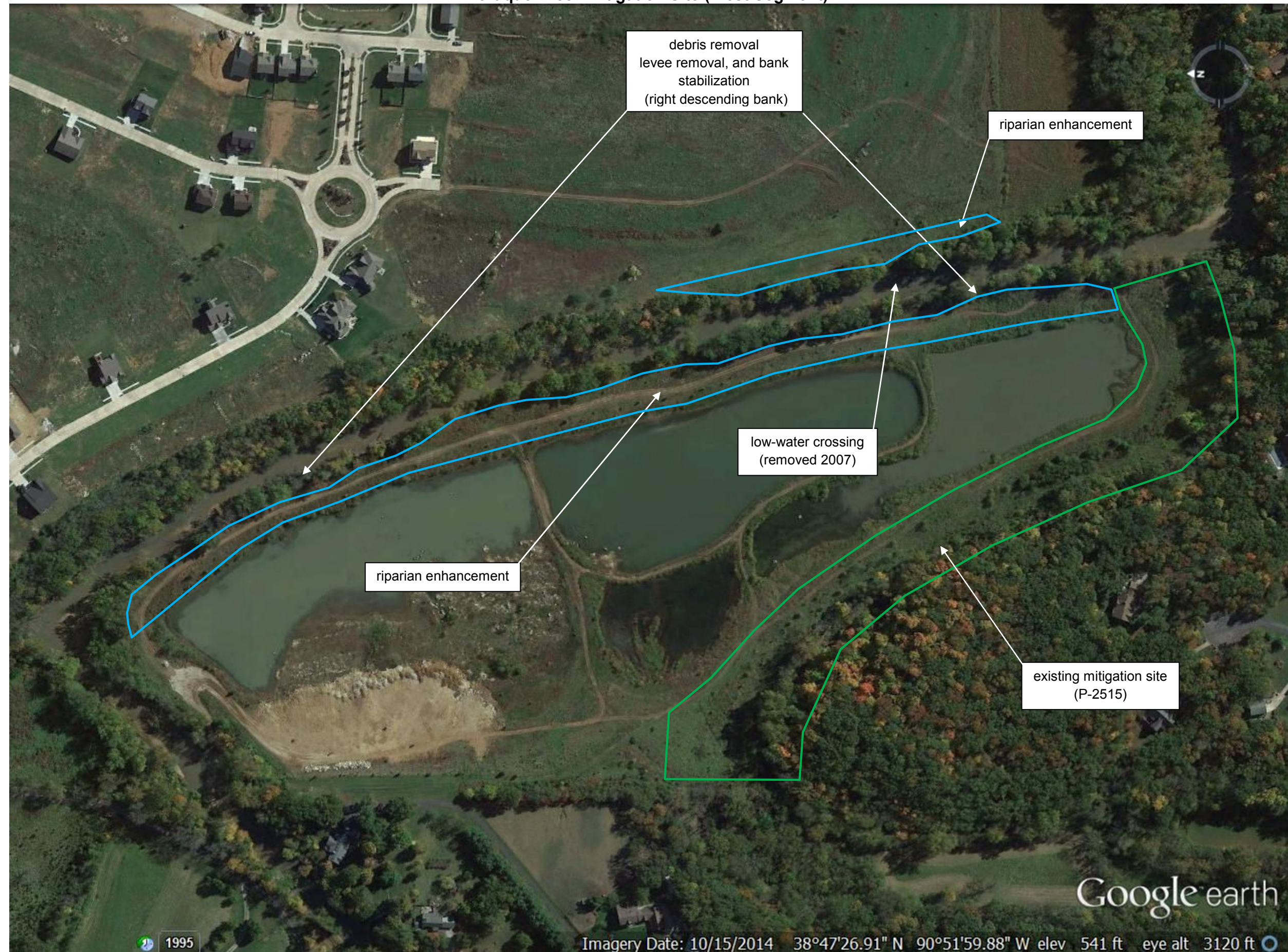
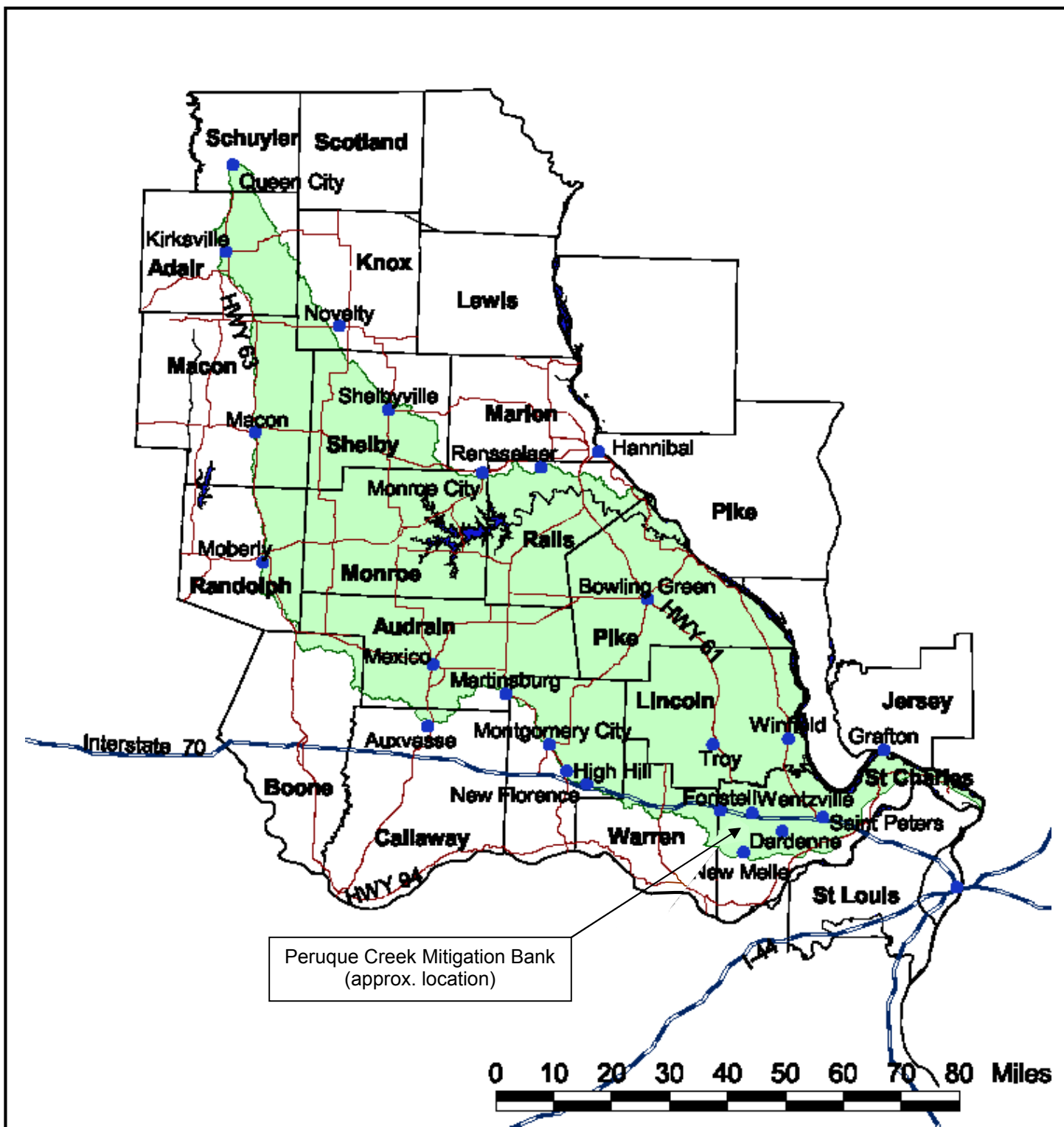
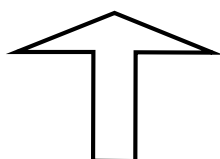


Figure 3b – Mitigation Activities
Peruque Creek Mitigation Site (East Segment)





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NORTH

Figure 4 Service Area
Missouri Central Plains/Cuivre/Salt
Ecological Drainage Unit
(within St. Louis USACE district)

Peruque Creek Mitigation Bank
St. Charles County, Missouri
Map adopted from St. Louis District USACE Web Site

APPENDIX A

Credit Calculation Worksheets

(based on April 2013 *State of Missouri Stream Mitigation Method*)

IN-STREAM WORKSHEET (2-23-15)
Peruque Creek Mitigation Bank

Stream Type	Ephemeral 0.15	Intermittent 0.2	Perennial 0.4	
Priority Waters	Tertiary 0.05		Secondary 0.2	Primary 0.4
Net Benefit	Stream Relocation to Accommodate Authorized Project 0.5		Moderate 1.2	Good 2.4
Site Protection	Corps approved site protection without third party grantee 0.1		Corps approved site protection recorded with third party grantee, or transfer of title to a conservancy 0.4	
Credit Schedule	Schedule 1 0.3		Schedule 2 0.1	Schedule 3 0.0

Factors:	Net Benefit Segment 1 (1,749 lf)	Net Benefit Segment 2 (750 lf)	Net Benefit Segment 3 (300 lf)	Net Benefit Segment 4 (245 lf)	Net Benefit Segment 5 (1,225 lf)	Net Benefit Segment 6 (721 lf)	Net Benefit Segment 7 (760 lf)
Stream Type	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Priority Waters	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Net Benefit	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Site Protection	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Credit Schedule	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Sum Factors: (M)=	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Stream Length Benefited ¹ : (LF)=	1,749	750	300	100	1,225	505	0
Credits: (C) = M X LF	6471.3	2775.0	1110.0	370.0	4532.5	1868.5	0.0
Total Instream Credits Generated C X LK Factor* =	n/a	n/a	n/a	n/a	n/a	n/a	n/a

In-Stream Credits Generated = 17,127.3

1. See descriptions and lengths of proposed in-stream work on following page.

In-Stream Work:

- | | |
|-----------|---|
| Segment 1 | Artificial (agricultural) levee removal (1,749 lf-impact).
Low water crossing removal (1,170 lf-impact). |
| Segment 2 | Artificial (agricultural) levee removal (750 lf-impact).
Low water crossing removal (500 lf-impact). |
| Segment 3 | Artificial (agricultural) levee removal (300 lf-impact). |
| Segment 4 | Artificial (agricultural) levee removal (100 lf-impact). |
| Segment 5 | Low water crossing removal (1,225 lf-impact). |
| Segment 6 | Low water crossing removal (505 lf-impact).
Resloping and reshaping stream bank (250 ft-impact). |
| Segment 7 | no in-stream work planned. |

RIPARIAN BUFFER WORKSHEET (2-23-15 draft)

Peruque Creek Mitigation Bank

Stream Type	Ephemeral 0.15	Intermittent 0.2	Perennial 0.4	
Priority Waters	Tertiary 0.05	Secondary 0.2	Primary 0.4	
Net Benefit (for each side of stream)	Riparian Restoration/Establishment, Enhancement, and Preservation Factors (select values from Table 1 - see also Minimum Buffer Width (MBW), page 15)			
Supplemental Buffer Credit	Condition: Buffer established, enhanced or preserved on both streambanks. To calculate: (Net Benefit Stream Side A + Net Benefit Stream Side B) / 2			
Site Protection	Corps approved site protection without third party grantee 0.05	Corps approved site protection recorded with third party grantee, or transfer of title to a conservancy 0.2		
Credit Schedule	Schedule 1 0.15		Schedule 2 0.05	Schedule 3 0.0
Temporal Lag (years)	Over 20 -0.3	10 to 20 -0.2	5 to 10 -0.1	0 to 5 0.0

Factors:	Net Benefit 1 (1,749 lf)	Net Benefit 2 (750 lf)	Net Benefit 3 (300 lf)	Net Benefit 4 (245 lf)	Net Benefit 5 (1,225 lf)	Net Benefit 6 (721 lf)	Net Benefit 7 (760 lf)
Stream Type	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Priority Waters	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Net Benefit ¹	Stream Side A	0.35	0.3	0.35	no riparian	0.38	0.4
	Stream Side B	< MBW	0.3	< MBW	< MBW	0.4	0.35
Supplemental Buffer Credit	0	0.3	0	0	0.39	0.38	0
Site Protection	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Credit Schedule	Stream Side A	0.15	0.15	0.15	0.15	0.15	0.15
	Stream Side B	0.15	0.15	0.15	0.15	0.15	0.15
Temporal Lag	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
Sum Factors: (M)=	1.25	1.85	1.3	0.95	2.12	2.08	1.35
Length of Stream Buffered: (LF)=	1,749	750	300	245	1,225	721	760
Credits: (C) = M X LF	2186.3	1387.5	390.0	232.8	2597.0	1496.1	1026.0
Total Instream Credits Generated C X LK Factor* =	n/a	n/a	n/a	n/a	n/a	n/a	n/a

In-Stream Credits Generated = 9,315.6

1. Riparian widths, slopes, and Minimum Buffer Widths (MBWs) listed on the following page.

Riparian widths, slopes, and MBWs (all to receive "buffer enhancement"):

Segment 1A	width = 103 ft slope = 4% MBW = 188 ft	Segment 1B	width = 68 ft slope = 71% MBW = 188 ft
Segment 2A	width = 96 ft slope = 2% MBW = 50 ft	Segment 2B	width = 80 ft slope = 14% MBW = 74 ft
Segment 3A	width = 120 ft slope = 3% MBW = 52 ft	Segment 3B	width = 45 ft slope = 10% MBW = 66 ft
Segment 4A	no riparian	Segment 4B	width = 10 ft slope = 5% MBW = 56 ft
Segment 5A	width = 136 ft slope = 1% MBW = 50 ft	Segment 5B	width = 167 ft slope = 34% MBW = 114 ft
Segment 6A	width = 140 ft slope = 0% MBW = 50 ft	Segment 6B	width = 108 ft slope = 20% MBW = 86 ft
Segment 7A	width = 154 ft slope = 0% MBW = 50 ft	Segment 7B	no riparian

APPENDIX B

Vegetation, Wildlife, and Fish Lists

**VEGETATION LIST
PERUQUE CREEK MITIGATION BANK
Wilmer Road
St. Charles County, Missouri**

2015

Common grasses, forbs, and woody species found on the Peruque Creek Mitigation Bank site.

<i>Bromus inermis</i>	Smooth Brome
<i>Carex blanda</i>	Eastern woodland sedge
<i>Chasmanthium latifolium</i>	River oats
<i>Dichanthelium clandestinum</i>	Deer- tongue grass
<i>Elymus canadensis</i>	Canada wild rye
<i>Elymus virginicus</i>	Virginia wild rye
<i>Helianthus maximiliani</i>	Maximillian sunflower
<i>Muhlenbergia sylvatica</i>	Woodland muhly grass
<i>Panicum dichotomiflorum</i>	Fall panicum
<i>Solidago canadensis</i>	old field goldenrod
<i>Sorghum halepense</i>	Johnson Grass
<i>Tridens flavus</i>	Purple top
<i>Aster pilosus</i>	Frost aster
<i>Asclepias syriaca</i>	Common milkweed
<i>Helianthus strumosus</i>	Woodland sunflower
<i>Silphium perfoliatum</i>	cup plant
<i>Salvia azurea</i>	Blue Sage
<i>Penthorum sedoides</i>	Ditch Stonecrop
<i>Desmodium paniculatum</i>	tick trefoil
<i>Rhubsus alumnus</i>	oldfield blackberry
<i>Quercus rubra</i>	Red Oak
<i>Celtis occidentalis</i>	Hackberry

<i>Juglans nigra</i>	Black walnut
<i>Gledetsia triacanthos</i>	Honey locust
<i>Robinia pseudacacia</i>	Black locust
<i>Populus deltoides</i>	Cottonwood
<i>Platanus occidentalis</i>	Sycamore
<i>Prunus serotina</i>	Black Cherry
<i>Ulmus rubra</i>	Slippery Elm
<i>Acer sacharinum</i>	Silver Maple
<i>Cercis canadensis</i>	Red Bud
<i>Cornus obliqua</i>	Silky Dogwood
<i>Cornus racemosa</i>	Gray Dogwood
<i>Sambucus canadensis</i>	Elderberry
<i>Fraxinus pennsylvanica</i>	Green Ash
<i>Quercus palustris</i>	Pin Oak
<i>Carya glabra</i>	Pig Nut Hickory
<i>Symphoricarpos orbiculatus</i>	Coral Berry
<i>Asimina triloba</i>	Paw Paw
<i>Betula nigra</i>	River Birch
<i>Maclura pomifera</i>	Osage orange
<i>Quercus macrocarpa</i>	Bur Oak
<i>Lonicera maackii</i>	Bush Honeysuckle
<i>Elaeagnus angustifolia</i>	Russian Olive
<i>Pyrus calleryana</i>	Callery Pear
<i>Campsis raticans</i>	Trumpet Creeper
<i>Vitis aestivalis</i>	Wild Grape
<i>Wisteria frutescens</i>	American Wisteria

**WILDLIFE LIST
PERUQUE CREEK MITIGATION BANK
Wilmer Road
St. Charles County, Missouri**

2015

Common wildlife found on the Peruque Creek Mitigation Bank site.

Birds

Canada goose, *Branta Canadensis*
Wood duck, *Aix sponsa*
Mallard, *Anas platyrhynchos*
Blue-winged teal, *Anas discors*
Wild turkey, *Meleagris gallopavo*
Great blue heron, *Ardea Herodias*
Snowy egret, *Egretta thula*
Green heron, *Butorides virescens*
Turkey vulture, *Cathartes aura*
Red-tailed hawk, *Buteo jamaicensis*
Cooper's hawk, *Accipiter cooperii*
Killdeer, *Charadrius vociferous*
Mourning dove, *Zenaida macroura*
Great horned owl, *Bubo virginianus*
Great horned owl, *Bubo virginianus*
Ruby-throated hummingbird, *Archilochus colubris*
Yellow-bellied sapsucker, *Sphyrapicus varius*
Downy woodpecker, *Picoides pubescens*
Hairy woodpecker, *Picoides villosus*
Pileated woodpecker, *Dryocopus pileatus*
Red-headed woodpecker, *Melanerpes erythrocephalus*
American crow, *Corvus brachyrhynchos*
Blue jay, *Cyanocitta cristata*
Black-capped chickadee, *Poecile atricapilla*
Tufted titmouse, *Baeolophus bicolor*
White-breasted nuthatch, *Sitta carolinensis*
American robin, *Turdus migratorius*
Eastern bluebird, *Sialia sialis*
European starling, *Sturnus vulgaris* (I
White-throated sparrow, *Zonotrichia albicollis*
Northern cardinal, *Cardinalis cardinalis*
Purple finch, *Haemorhous purpureus*

Terrestrial Wildlife

Coyote *Canis latrans*
Gray fox *Urocyon cinereoargenteus*
Red fox *Vulpes vulpes*
White-tailed deer *Odocoileus virginianus*
Red fox *Vulpes vulpes*
Striped skunk *Mephitis mephitis*
American mink *Neovison vison*
Raccoon *Procyon lotor*
Opossum *Didelphis virginiana*
Eastern cottontail *Sylvilagus floridanus*
Beaver *Castor Canadensis*
Fox squirrel *Sciurus niger*
Eastern gray squirrel *Sciurus carolinensis*
Groundhog *Marmota monax*
Eastern mole *Scalopus aquaticus*

FISH LIST
PERUQUE CREEK MITIGATION BANK
Wilmer Road
St. Charles County, Missouri

Data provided by Missouri Department of Conservation.

Sampled from Wilmer Road access point.

6/29/2001

Species	# EFed	# seined	total #	% abundanc e	native family	native spp
gizzard shad		1	1	0.2%	1	1
common carp	1		1	0.2%	1	
stoneroller spp.	172	13	185	35.4%		1
bluntnose minnow	17	37	54	10.3%		1
redfin shiner		57	57	10.9%		1
red shiner	6	43	49	9.4%		1
sand shiner	1		1	0.2%		1
golden redhorse	14	1	15	2.9%	1	1
yellow bullhead	4		4	0.8%	1	1
slender madtom	7		7	1.3%		1
northern studfish	2	3	5	1.0%	1	1
green sunfish	33		33	6.3%	1	1
hybrid sunfish	2	1	3	0.6%		
bluegill	2		2	0.4%		1
longear sunfish	23		23	4.4%		1
smallmouth bass	1		1	0.2%		1
black crappie	1		1	0.2%		1
orangethroat darter	39	35	74	14.1%	1	1
johnny darter	2	2	4	0.8%		1
logperch		1	1	0.2%		1
fantail darter	1	1	2	0.4%		1
Totals	328	195	523	100.0%	7	19

8/1/2005

Species	# EFed	# seined	total #	% abundanc e	native family	native spp
creek chub	1	1	2	0.3%	1	1
stoneroller spp.	291	8	299	48.9%		1
bluntnose minnow	37	33	70	11.4%		1
redfin shiner	1	49	50	8.2%		1
red shiner	2	1	3	0.5%		1
sand shiner		6	6	1.0%		1

golden redhorse	6		6	1.0%	1	1
yellow bullhead	3		3	0.5%	1	1
slender madtom	2		2	0.3%		1
northern studfish	6	4	10	1.6%	1	1
blackstripe topminnow	5	5	10	1.6%		1
green sunfish	49		49	8.0%	1	1
bluegill	12	1	13	2.1%		1
longear sunfish	63	1	64	10.5%		1
largemouth bass	1		1	0.2%		1
orangethroat darter	9	2	11	1.8%	1	1
johnny darter	2	7	9	1.5%		1
logperch		4	4	0.7%		1
Totals	490	122	612	100.0%	6	18