

Mitigation

mit·i·ga·tion

ˌmɪdəˈɡæʃ(ə)n/

noun

the action of reducing the severity, seriousness, or painfulness of something.

"the emphasis is on the identification and mitigation of pollution"

Two Mitigation Issues

- Meeting Clean Water Act Section 404/401 requirements for impacts to streams and wetlands (Federal and State)
- Meeting Chapter 12A requirements in Code of Ordinances (City)

Section 401/404 Clean Water Act

- 404 - Army Corps of Engineers (Corps)
- 401 - Missouri Department of Natural Resources (MDNR)
- Permit any activity which may result in discharge into Waters of the US (WOTUS)

Section 401/404 Clean Water Act Projects Requiring Permits

- Bridges
- Culverts
- Roads
- Trails
- Utilities





**DO NOT TRESPASS
OR
DISTURB VEGETATION**
PROTECTED REDEVELOPED

THE PROPERTY LOCATED AT 211 OF COLUMBIA
ENVIRONMENTAL EASEMENT
For Information:
COLUMBIA PUBLIC WORKS
(573) 876-7600

09.16.2013 16:19









04.13.2015 13:56

Mitigation Hierarchy

- Corps' Preference Hierarchy for Mitigation

1. Mitigation Banks



2. In-lieu fee program

- i.e. Stream Stewardship Trust Fund

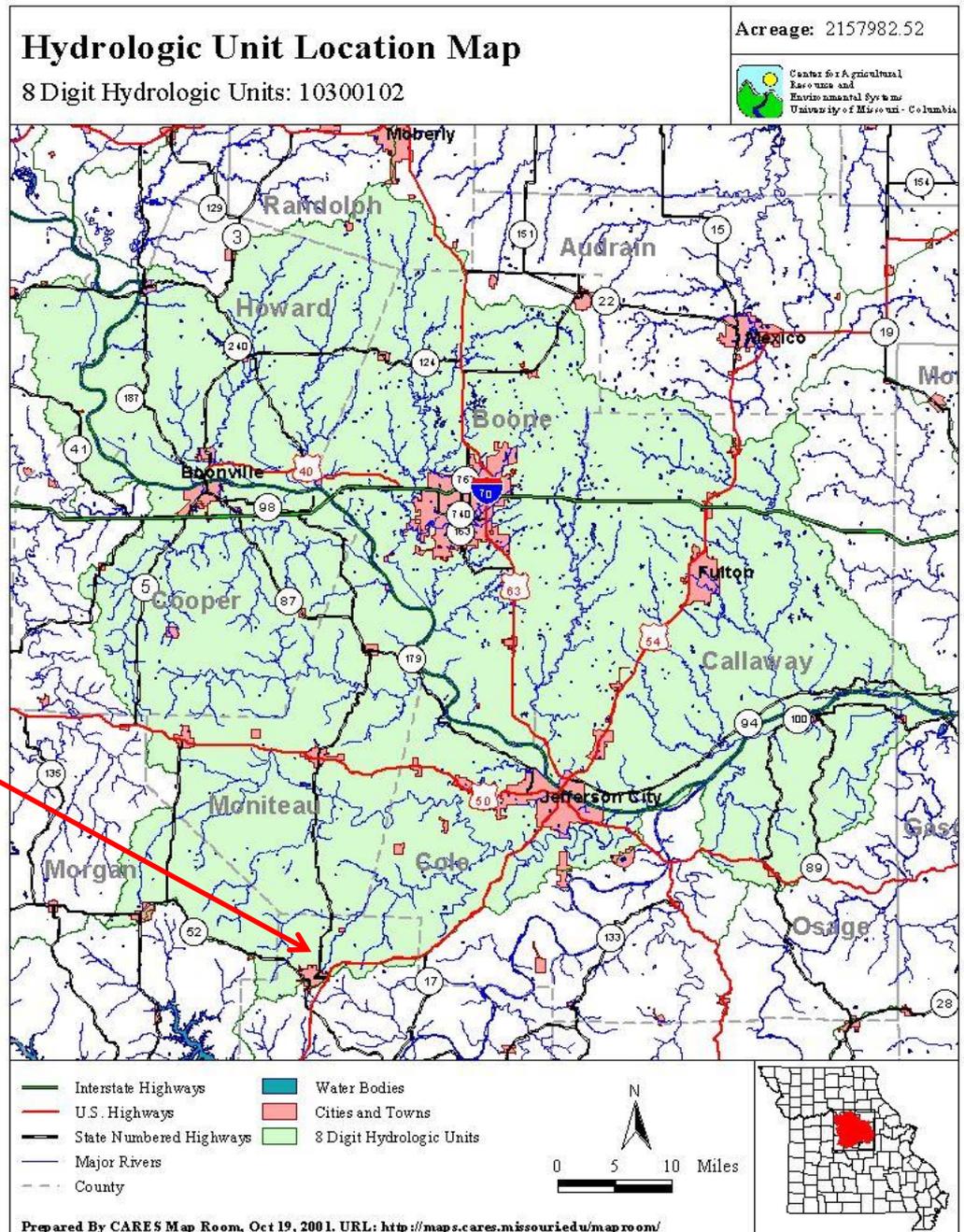
3. Permittee-responsible Mitigation

- Mitigation implemented and maintained in perpetuity by permittee

Project seeking bank
must look in it's own
"watershed" first

Lower Missouri-Moreau

So a project w/ unavoidable
impacts north of Eldon would be
strongly encouraged to buy
credits from a bank in our Lower
Missouri-Moreau watershed.



So What is a Mitigation Bank?

- Land where high quality habitat is established, maintained, and preserved
 - Wetlands
 - Stream Riparian Areas
- Credits are sold to recover the cost of construction and maintenance
 - Helps infrastructure and development projects meet Clean Water Act requirements

Who Benefits?

- Infrastructure projects that have unavoidable impacts to wetland and/or streams
 - Streamline regulatory process
 - Provide certainty of mitigation success
 - Relieves road builders from being habitat specialists
 - Public Infrastructure projects are major beneficiary





Who Benefits?

- Wildlife Habitat
- Water Quality
- Our Community
 - Hinkson Creek restoration (CAM)
 - Wildlife Viewing
 - Trails & Tourism
 - Income to expand natural resources



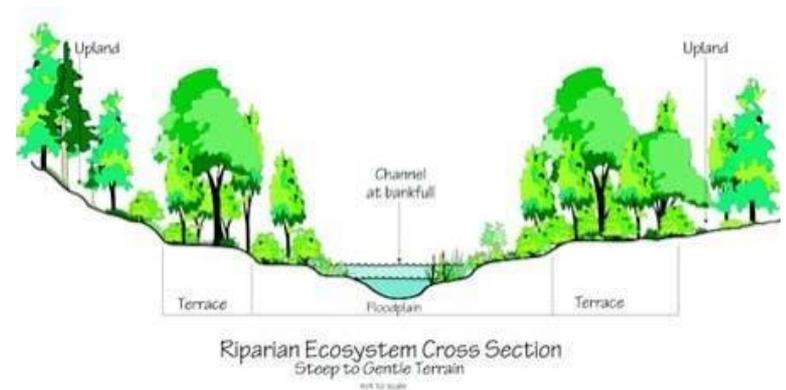
How Does It Work?

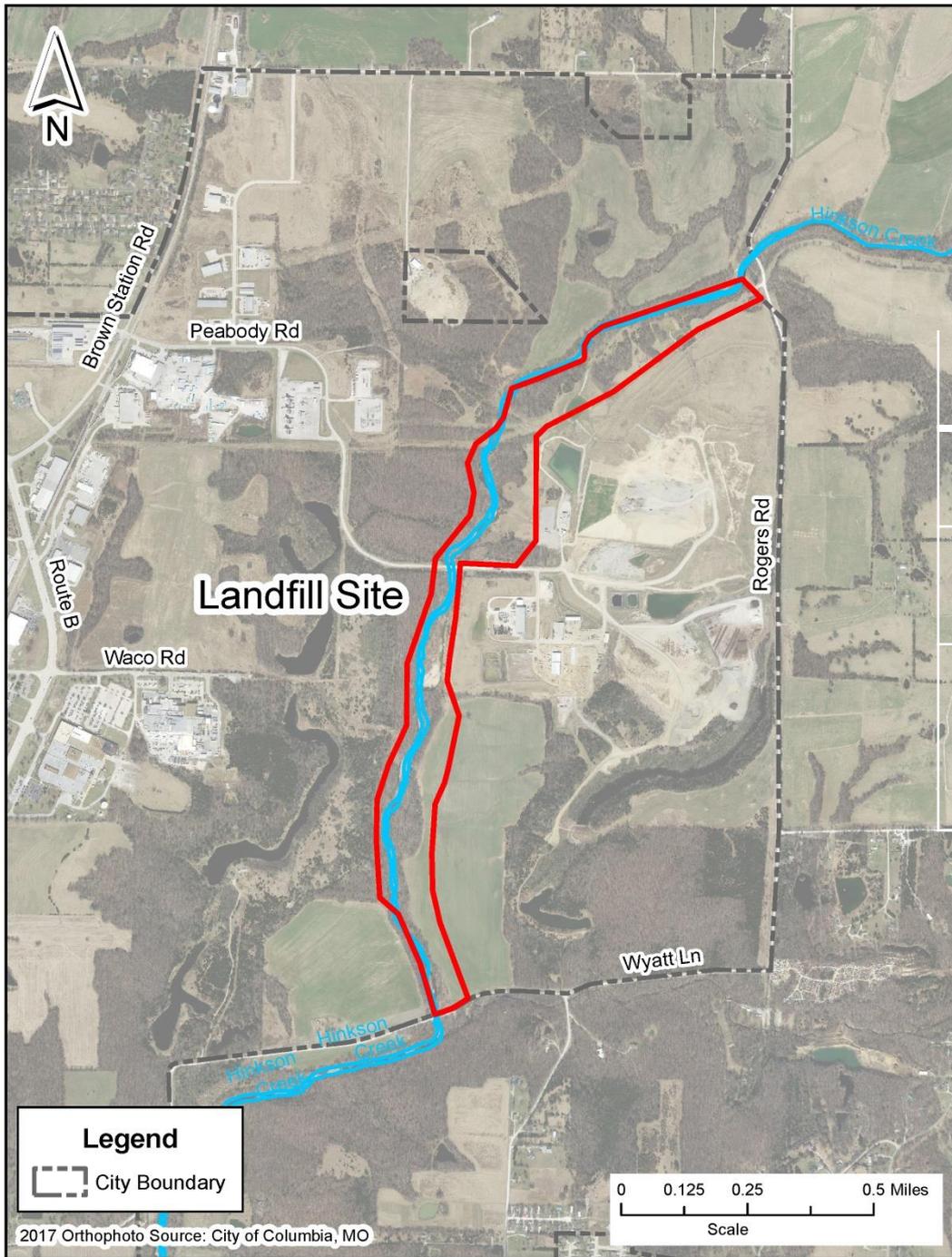
- Interagency Review Team (IRT)
- Public Notice
- Banking Instrument
- Credits Available
- Phase Improvements
- Credits sold
- Continue Improvements
- Maintenance



The Hinkson/Perche Creek Wetland & Stream Mitigation Bank

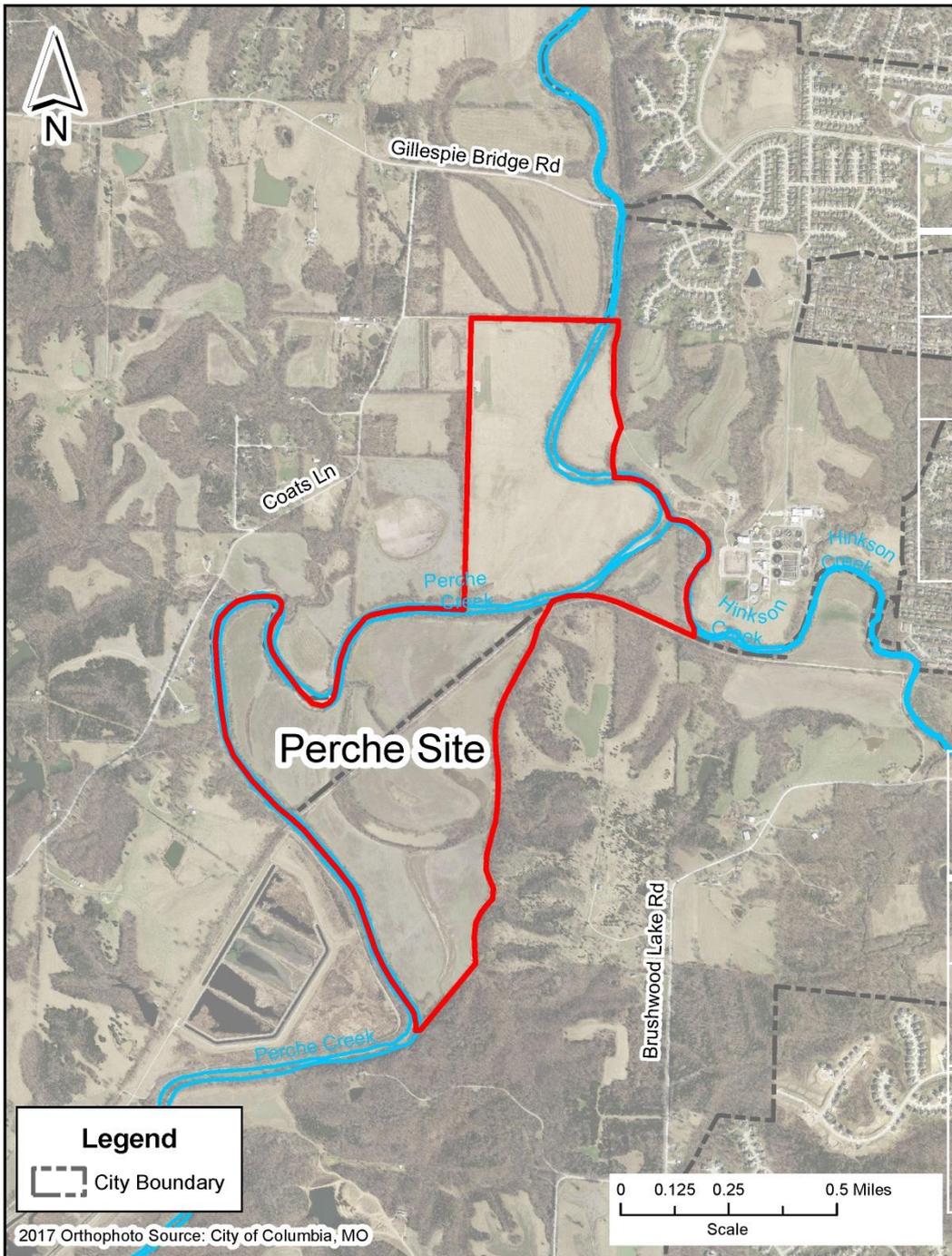
- Two sites are proposed
 - Landfill
 - Perche Creek





Stream Riparian Area 20 acres

Stream Credits	13,900
Cost to Develop	~\$50,000
Yearly Maintenance	~\$2,000
Mitigation potential value @ \$25/credit	\$347,500



Stream Riparian Area

55 acres

Stream Credits	43,500
Cost to Develop	~\$137,500
Yearly Maintenance	~\$6,000 / yr
Mitigation potential value @ \$25/credit	\$1,087,500

Wetland Area

100 acres

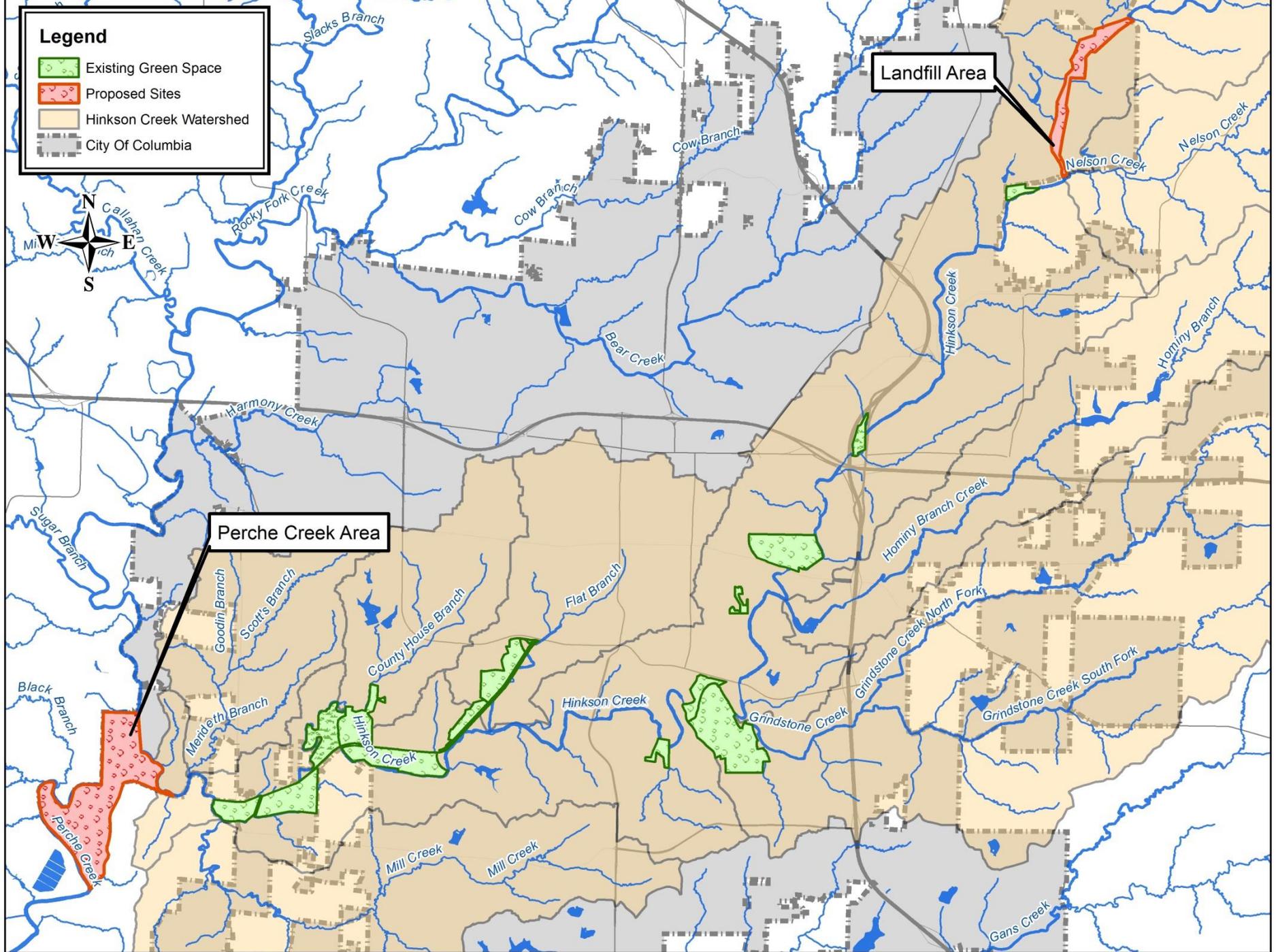
Wetland Credits (can sell partial credits)	100
Cost to Develop	~\$200,000
Yearly Maintenance	~\$10,000 /yr
Mitigation potential value @ \$15,000/ credit	\$4,500,000



Mitigation Bank

Legend

- Existing Green Space
- Proposed Sites
- Hinkson Creek Watershed
- City Of Columbia



Mitigation Bank – Next Steps

- IRT and Public Notice
- Develop Banking Instrument
- Ordinance to Council for approval
- Council approves individual resolutions for credits sold
- Staff develops, maintains and manages

Two Mitigation Issues

Two Solutions

- Meeting Section 401/404 Clean Water Act requirements for impacts to streams and wetlands - **FEDERAL**
 - Hinkson-Perche Creeks Wetland & Stream Mitigation Bank
- Meeting Chapter 12A requirements in Code of Ordinances - **CITY**
 - Storm Water In-Lieu Fee

Meeting Chapter 12A requirements in Code of Ordinances

- Redevelopment (typically)
- Due to site constraints cannot provide
 - Volume Detention
 - Water Quality BMPs
- Board of Adjustment grants variances

Section 12A-110

- The **board of adjustment** (in certain instances) can impose reasonable mitigation measures:
 - 1) The purchase and donation of privately owned lands ... to protect water quality and aquatic habitat.
 - 2) The construction of a stormwater management facility or other drainage improvements on previously developed property...
 - 3) At the petitioner's request, **monetary contributions to fund stormwater** related studies and projects. The monetary contribution established by the director and based on the cubic feet of storage required.

Next Steps - Chapter 12A

- Develop in-lieu fee program
- Set a fee per cubic foot of volume
- Storm Water Utility will use fee revenue to fund studies and projects
- Bring program to Council for approval

Two Mitigation Issues

Two Solutions

- Meeting Section 401/404 Clean Water Act requirements for impacts to streams and wetlands - **FEDERAL**
 - Hinkson-Perche Creeks Wetland & Stream Mitigation Bank
- Meeting Chapter 12A requirements in Code of Ordinances - **CITY**
 - Storm Water In-Lieu Fee

Questions?

Google Maps



Imagery ©2016 Google, Map data ©2016 Google 500 ft

Perche Creek Mitigation Site