

Stream Restoration Symposium 2019

Lessons Learned from Stream Restoration in Other Jurisdictions

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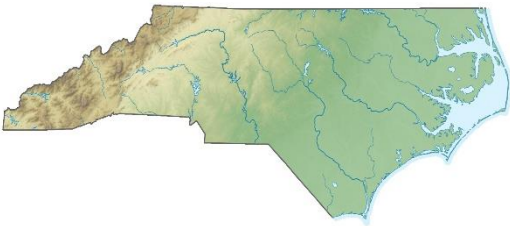


Programmatic Compensatory Mitigation



Division of Mitigation Services
Department of Environmental Quality

Today's Discussion.....



- **Ecosystem Markets**
- **Mitigation Process**
- **In-Lieu Fee Programs (ILF)**
- **North Carolina's In-Lieu Fee Program**
 - Division of Mitigation Services (DMS),
Department of Environmental Quality
- **Lessons Learned**
 - Programmatic
 - Technical

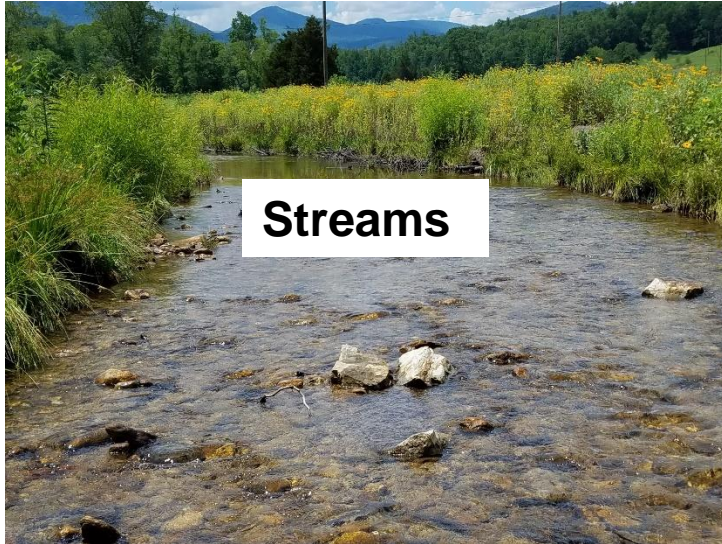


Ecosystem Service Markets

Replacement of beneficial resources

Marketable commodity

Marketable Commodities



Streams



Wetlands



Species



Buffer/Nutrients

Choices for Mitigation Compliance

**Mitigation
Banks**

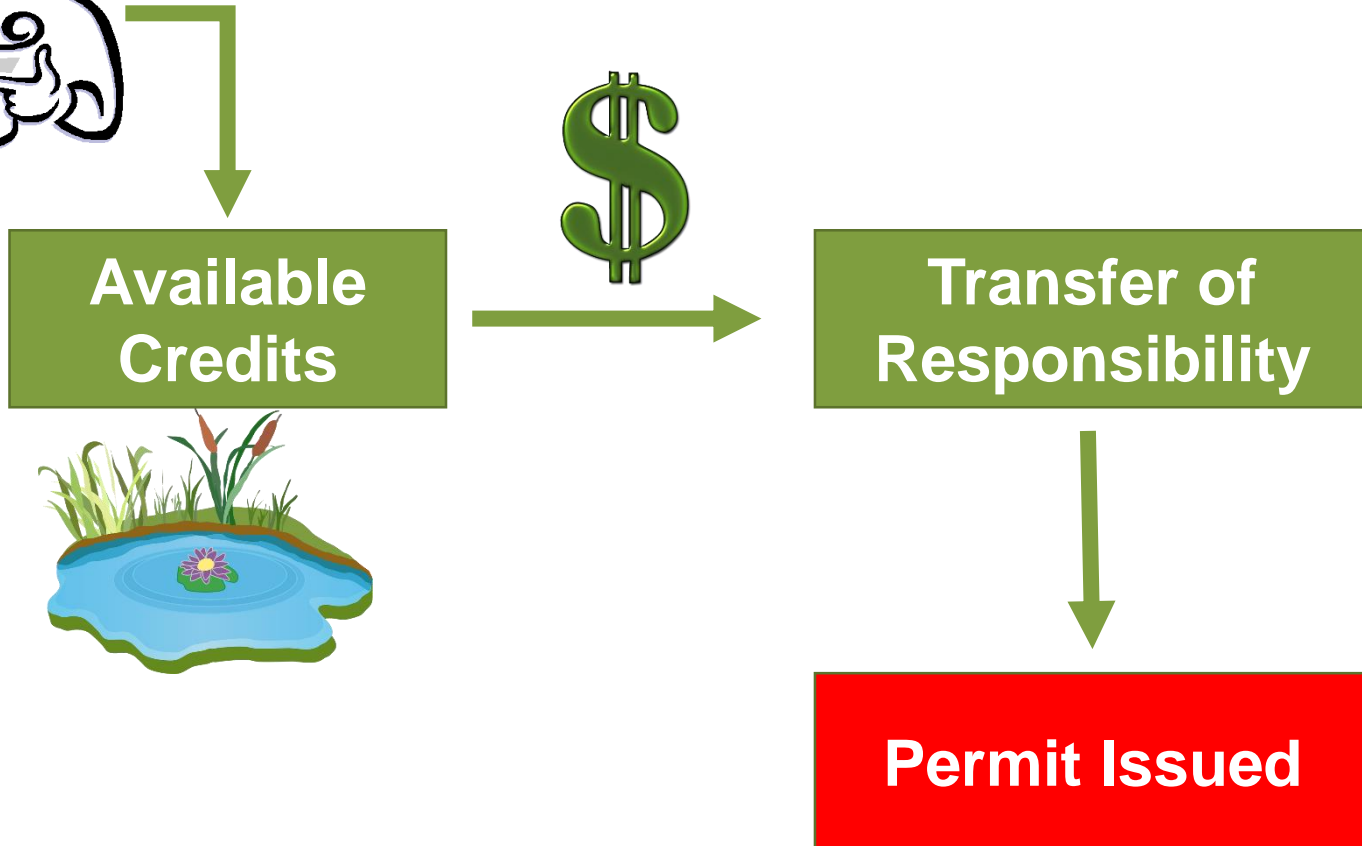
**In-Lieu Fee
(DMS)**

**Permittee
Responsible
Mitigation**



Bank or In-Lieu Fee Process

Permittee



Credit Development (Bank or In-Lieu Fee)

Site Identified



Regulatory Review



Mitigation Plan/Construction



Monitoring

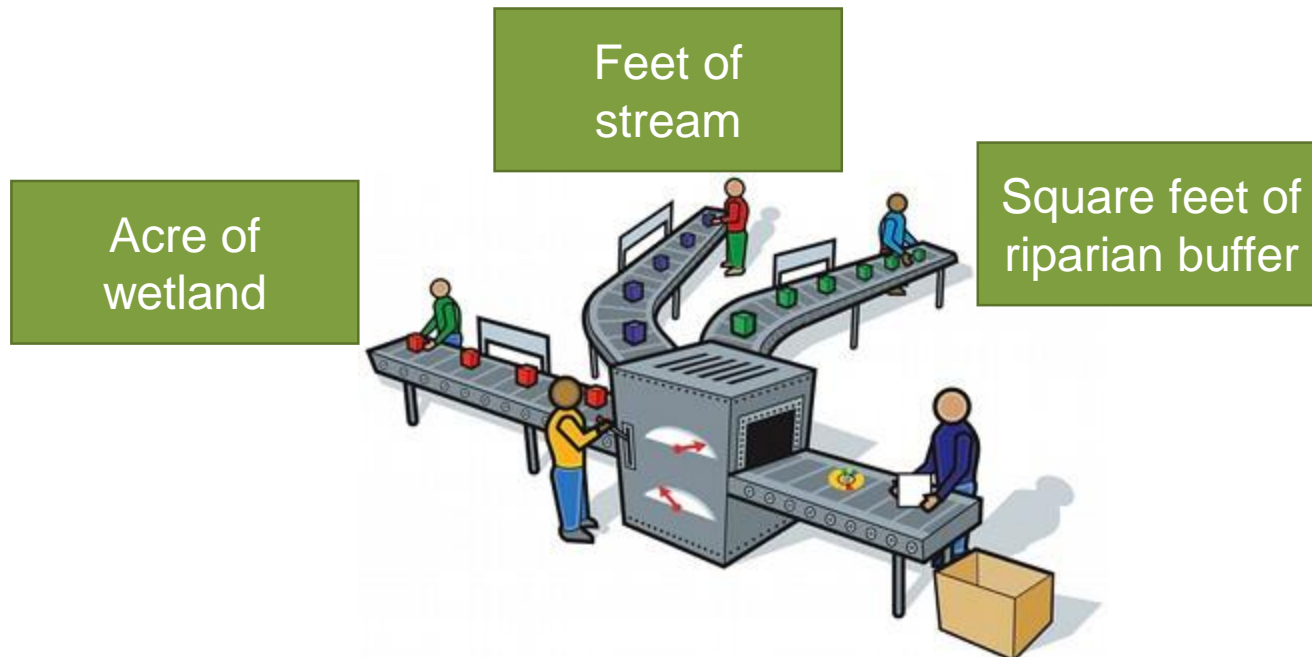


Credit Development (Functional vs Feet/Acres)

Credit is established based upon actions taken in
doing the restoration activity

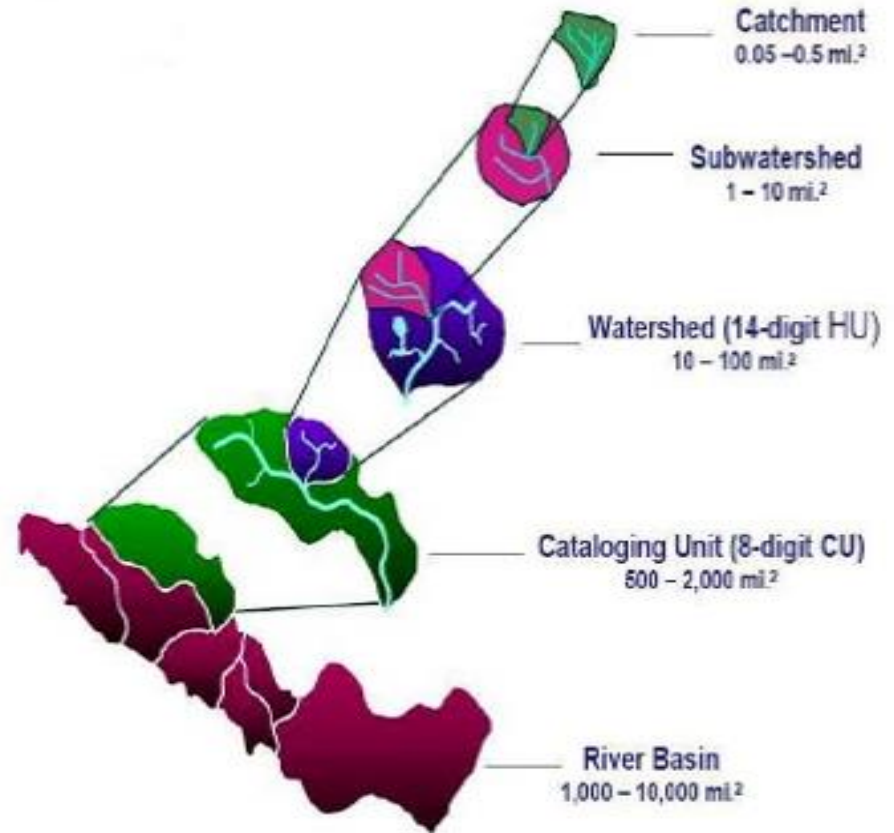
AND

Meeting performance standards



Key Features of In-Lieu Fee Programs

- 3rd Party Mitigation Option
- Watershed based mitigation delivery
- Service Area
 - Specific watersheds
 - Statewide
- Sponsors (approx. 58 currently)
 - Government
 - Non-Governmental Organizations
- In areas of:
 - No banks
 - Not enough banks
- Collect fees from multiple impacts
 - Larger more focused projects
- Established by Instrument (US Army Corps of Engineers)
 - Guideline for operation



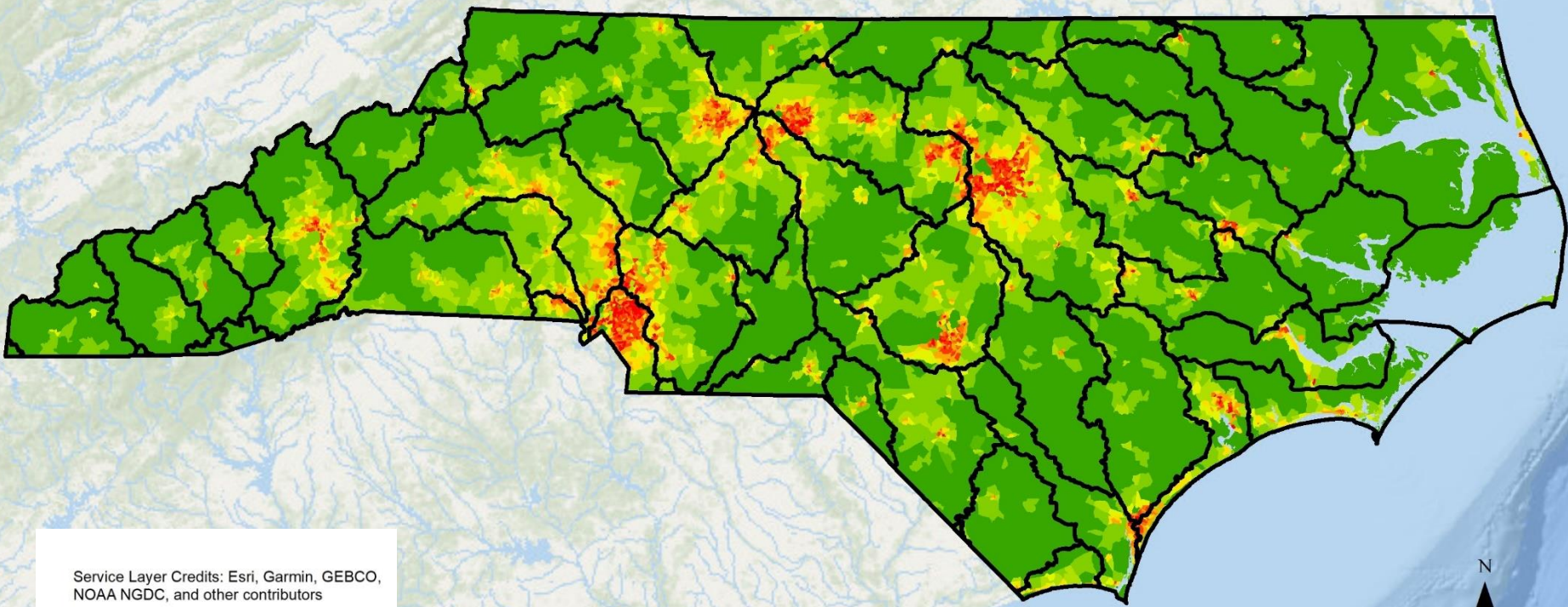
North Carolina's In-Lieu Fee Program

Division of Mitigation Services,
Department of Environmental Quality

DMS







Service Layer Credits: Esri, Garmin, GEBCO,
NOAA NGDC, and other contributors



Service Areas

2010 Census

Population per Sq Mile

0 - 100

101 - 150

151 - 250

251 - 500

501 - 750

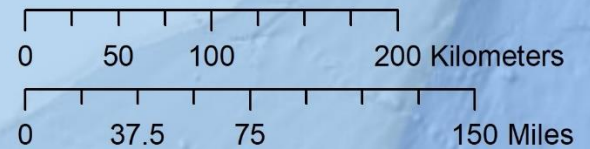
751 - 1200

1201 - 1900

1901 - 2500

2501 - 3700

3700+



WHO WE ARE...

- * Mission Statement:

Provide cost-effective mitigation alternatives that benefit North Carolina's water resources.

- * Fee based ----- No appropriated funds.

- * Began in ...

1997 - Wetlands Restoration Program

2003 - Ecosystem Enhancement Program

2016 – Division of Mitigation Services

WHAT WE DO



Supports
transportation
and
development:

**COST
CONTROLS
REGULATORY
ACCEPTANCE**

Compensatory
Mitigation for
stream,
wetland,
nutrient offset,
and riparian
buffer

Leverages
mitigation
investments
to the benefit
of the state's
natural
resources

PARTNERS
Landowners
Contractors
Investors
Engineers
Cities &
Counties

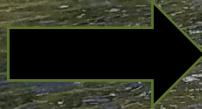
Program Size/Volume

649 total projects



Over 200 active

2.7 million
stream credits



Approx. 4 million
linear feet (1,219,200 meters)

Over 12,000
wetland credits



Approx. 29,000
wetland acres (11,736
hectares)

Average 20 projects contracted per year
(44 projects contracted last year)

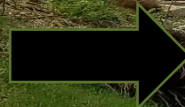
Program Size/Volume in US Dollars.

2.7 million
stream credits



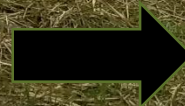
At current fee to
\$1.4 Billion

Over 12,000
wetland credits



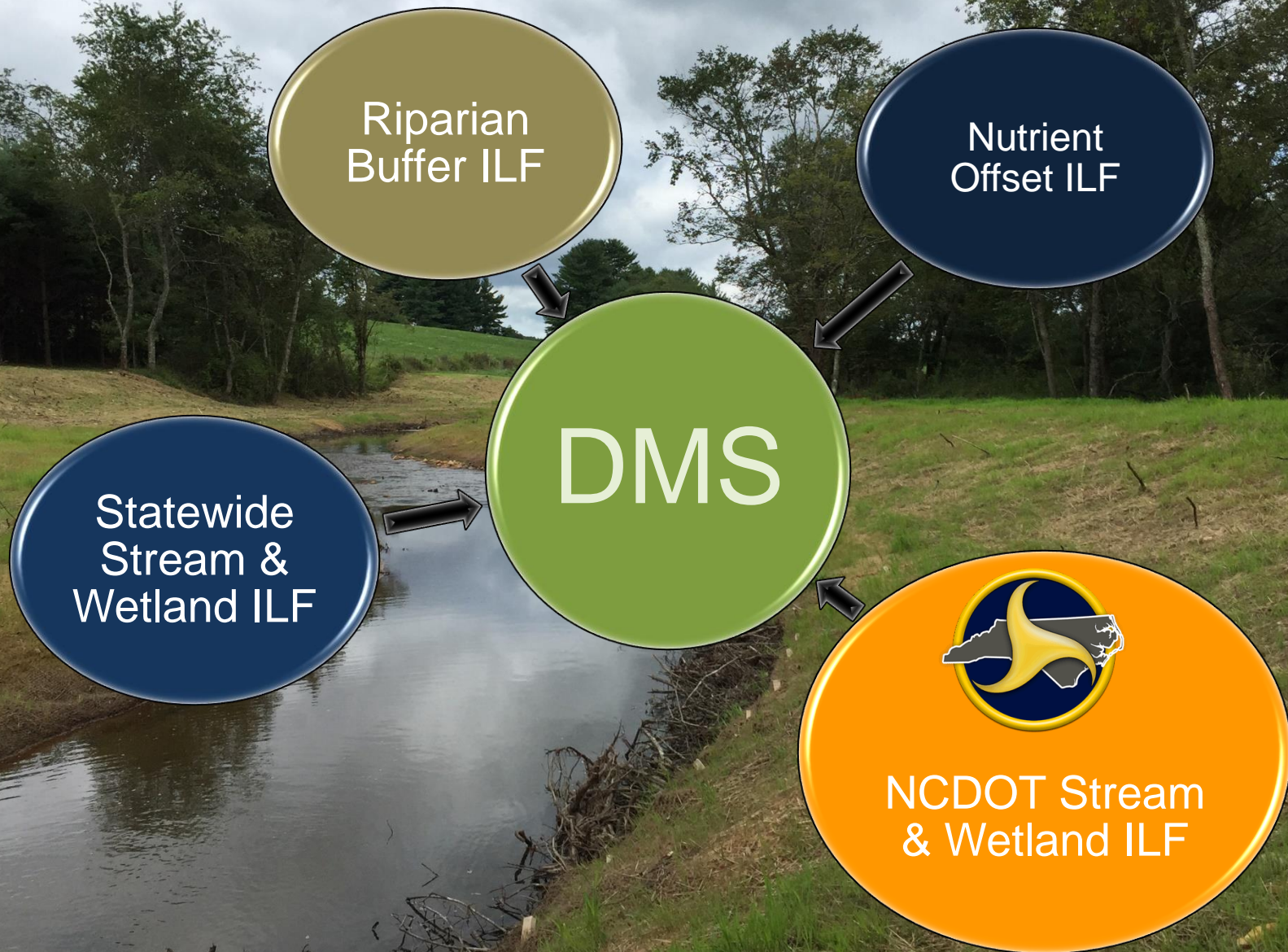
At current fee to
\$627 Million

Average 20 projects
per year.



\$35 to 40 Million per year
for new projects.

DMS Mitigation Programs



Our Partners/Customers.....



NC Department
of
Transportation

Advanced Mitigation

Other Customers

Small Impacts

Developers

DMS Private Sector Customers:

CVS/pharmacy®

OUTBACK
STEAKHOUSE®

ACE
Hardware

AutoZone®

ALDI

CARRABBA'S
ITALIAN GRILL

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BANK
Exigence relationship banking.

THE UMSTEAD
HOTEL AND SPA

ASC

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Auto Parts
Professional
Service is our best part.™

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DOLLAR GENERAL
Save time. Save money. Every day!

FRIDAYS

CRESCENT
STATE BANK

SLEEP
INN

BB&T

Bank of America

THE EAST CAROLINA BANK
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Bojangles'
Famous Chicken & Biscuits

Hampton

Hendrick
BUICK GMC CADILLAC
THE NEWS & OBSERVER

Wendy's
Pizza Hut

verizon

COOK-OUT.

HYATT®

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Quarles.

FAIRFIELD
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ingles

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foods

LOWE'S
Home Improvement Warehouse

H

Holiday Inn®

Walmart

KFC

WILCO
HESS

McDonald's

Microtel®
Inns & Suites

FAMOUS FOR
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STEAKBURGERS

PIEDMONT
TOWN CENTER

Precision
Tune
AutoCare

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SHEETZ
MADE TO ORDER

Walgreens
Super Express Lube

TRIANGLE
TOWN
CENTER
& COMMONS

NH
NORTH
HILLS

QUINTILES
WAFFLE
HOUSE

POLO
RALPH LAUREN

PEPSI®

STANLEY STEEMER

Gregory Poole

CAT

DMS Public Sector Customers:



Inspiring Appreciation and Conservation of North Carolina's Aquatic Environments



Preparing ALL students for bright & prosperous futures by Deliberately & Intentionally providing Rigorous & Relevant instruction in every classroom, every day

What makes a good “site” for a compensatory mitigation project?



Regulatory Review

- Agreement on credits generated (based on feet or acres)
 - Restoration – 1:1
 - Creation – 3:1 to 5:1
 - Enhancement – 1.5:1 to 3:1
 - Preservation – 5:1 to 10:1
- Methods of restoring the site
- Impacts associated with construction
- Credit release
- Performance criteria
 - What to monitor?
 - How long?



After 21 years..... what have we learned?



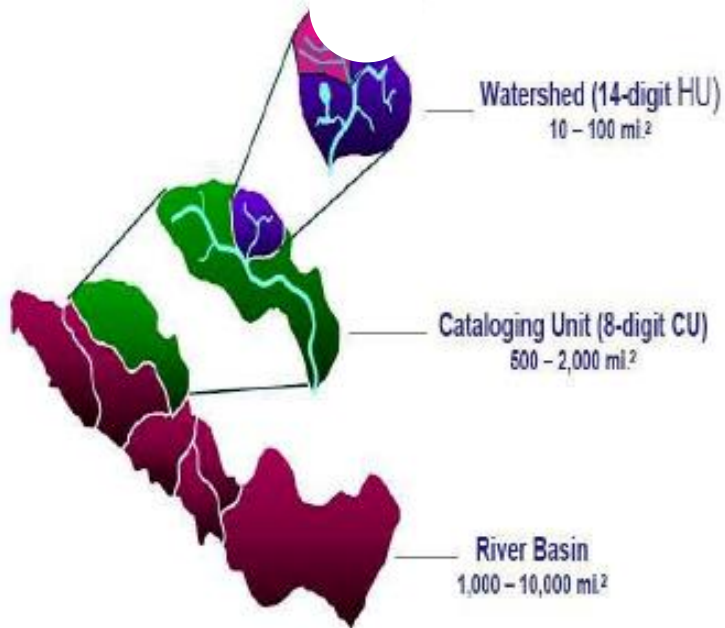
PROGRAMATIC LESSONS LEARNED



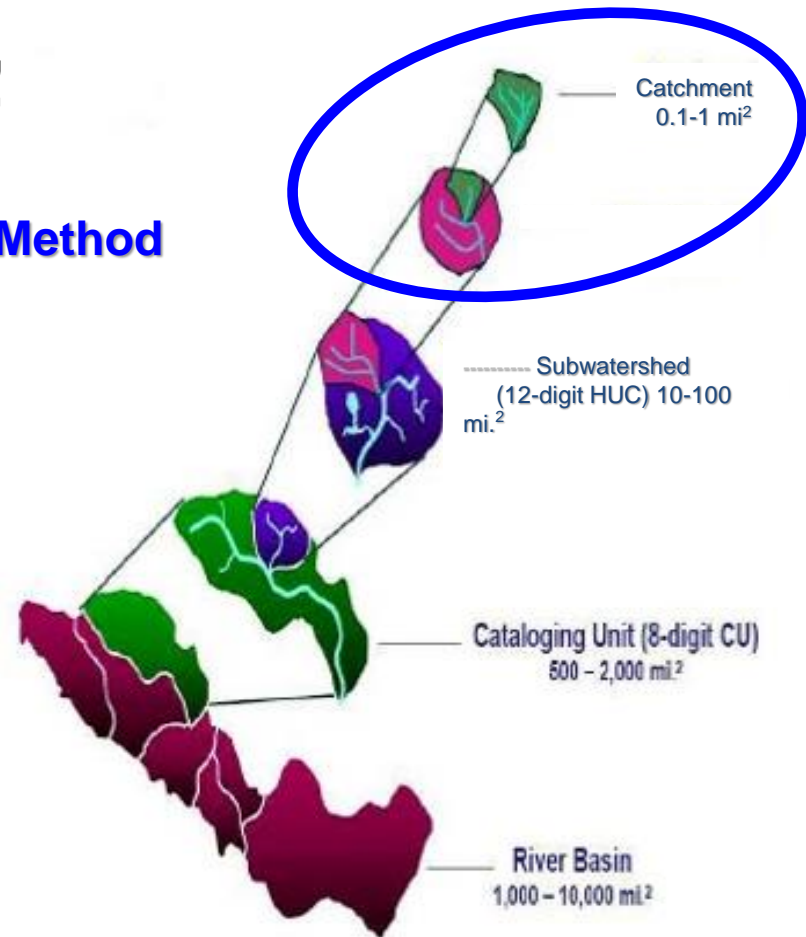
Spatial vs Functional Watershed Approach

Scale Matters!!

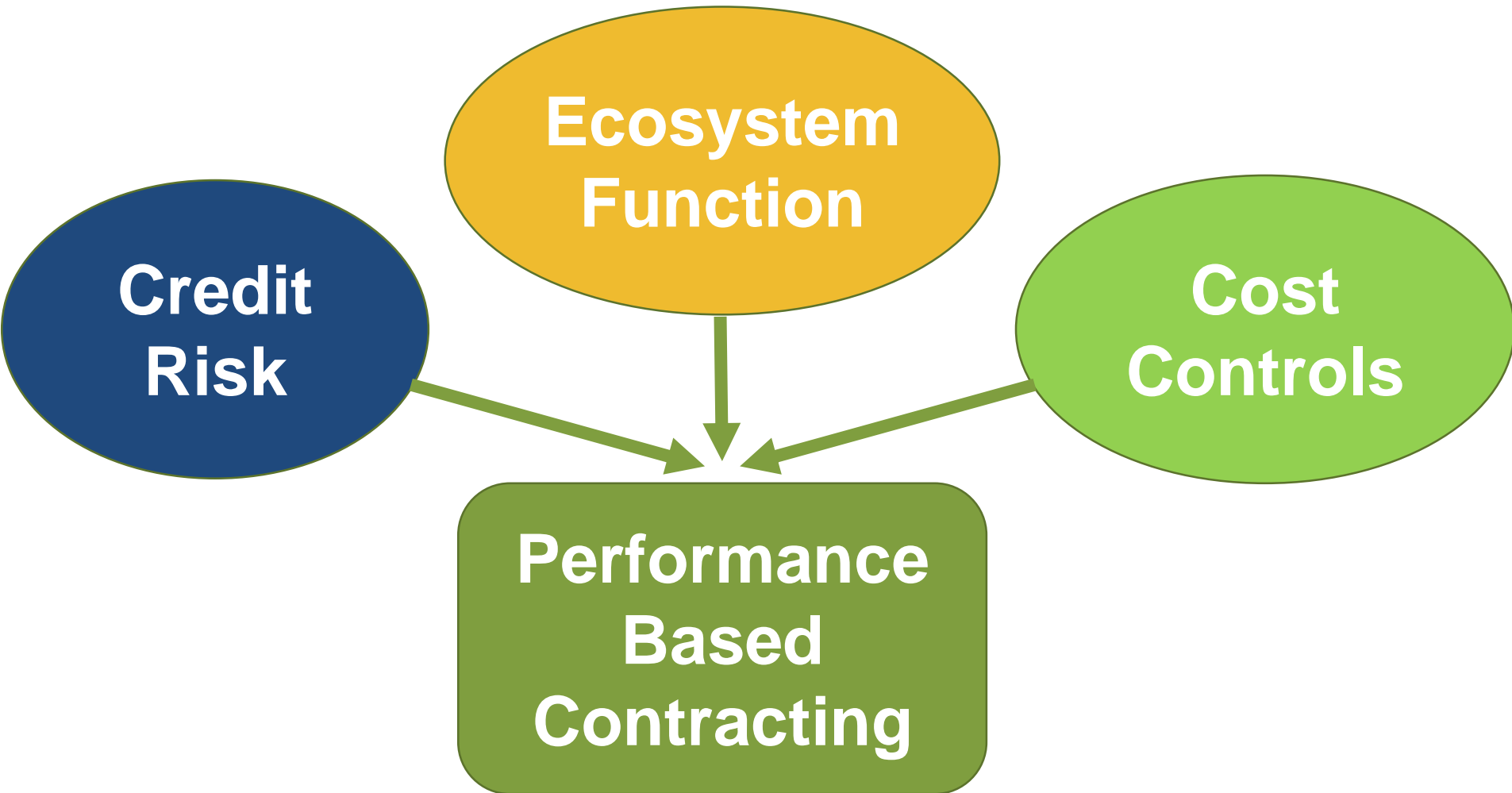
Old Method



New Method



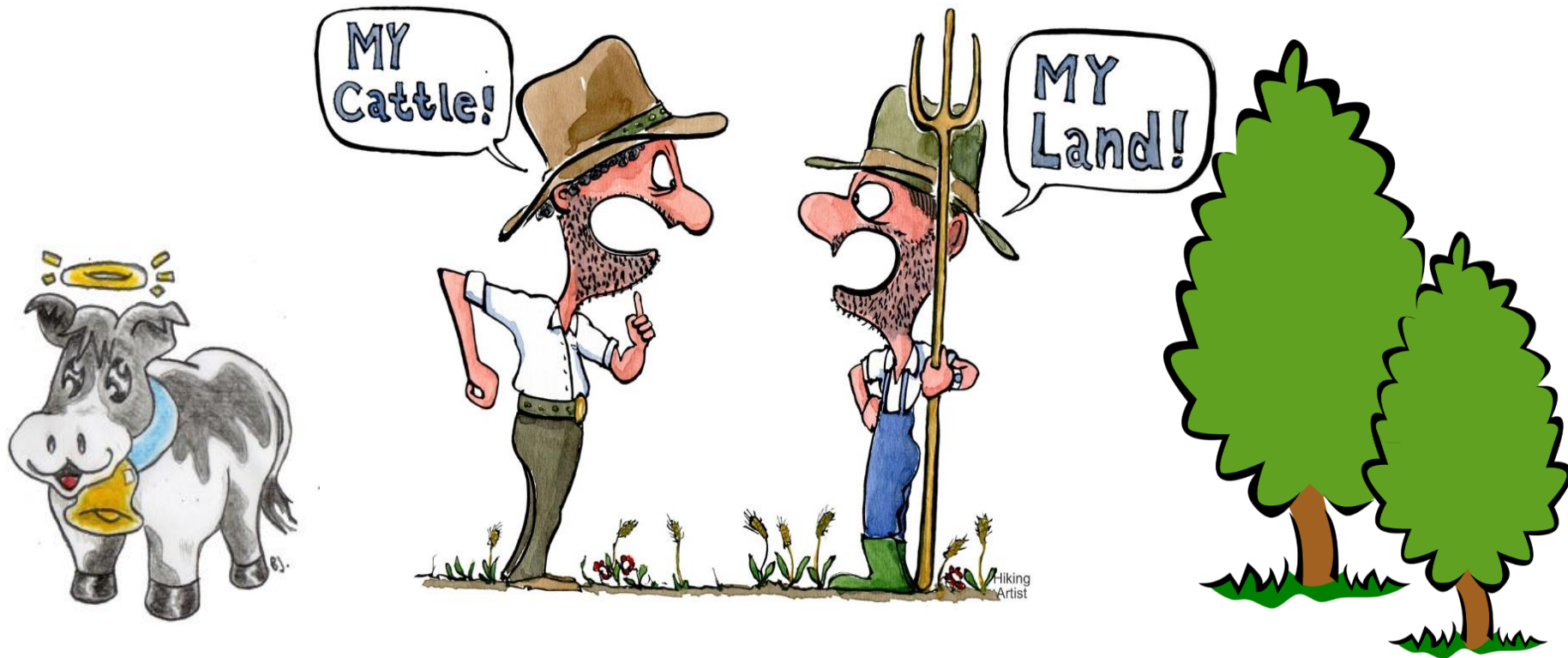
Credit Procurement



DMS Fee Schedules Since Inception

Fiscal Year	Stream (ft)	Riparian Wetlands (ac)	Non-Riparian Wetlands (ac)	Coastal Marsh (ac)	Notes
1995 -2003	\$125	\$24,000	\$12,000	\$120,000	
2003 - 2008	\$200 - \$258	\$24000 - \$30,790	\$12000 - \$15,396	\$120,000 - \$153,945	Annual inflation index.
2008 - 2018					
Standard Fee	\$244 - \$300	\$33,696 - \$40,580	\$22,113 - \$26,631	\$146,615 - \$176,561	Rule making- two-tiered fee structure, then annual inflation index.
High Fee	\$323 - \$394	\$59,600 - \$71,772	\$43000 - \$51,782	\$146615 - \$176,561	
2018-2019					
Statewide Standard	\$525.65	\$52,273.99		\$560,000	Actual Cost Method
Premium Rate Areas		\$91,984.41 - \$133,052.45			(Freshwater Wetland)

Property and Stewardship



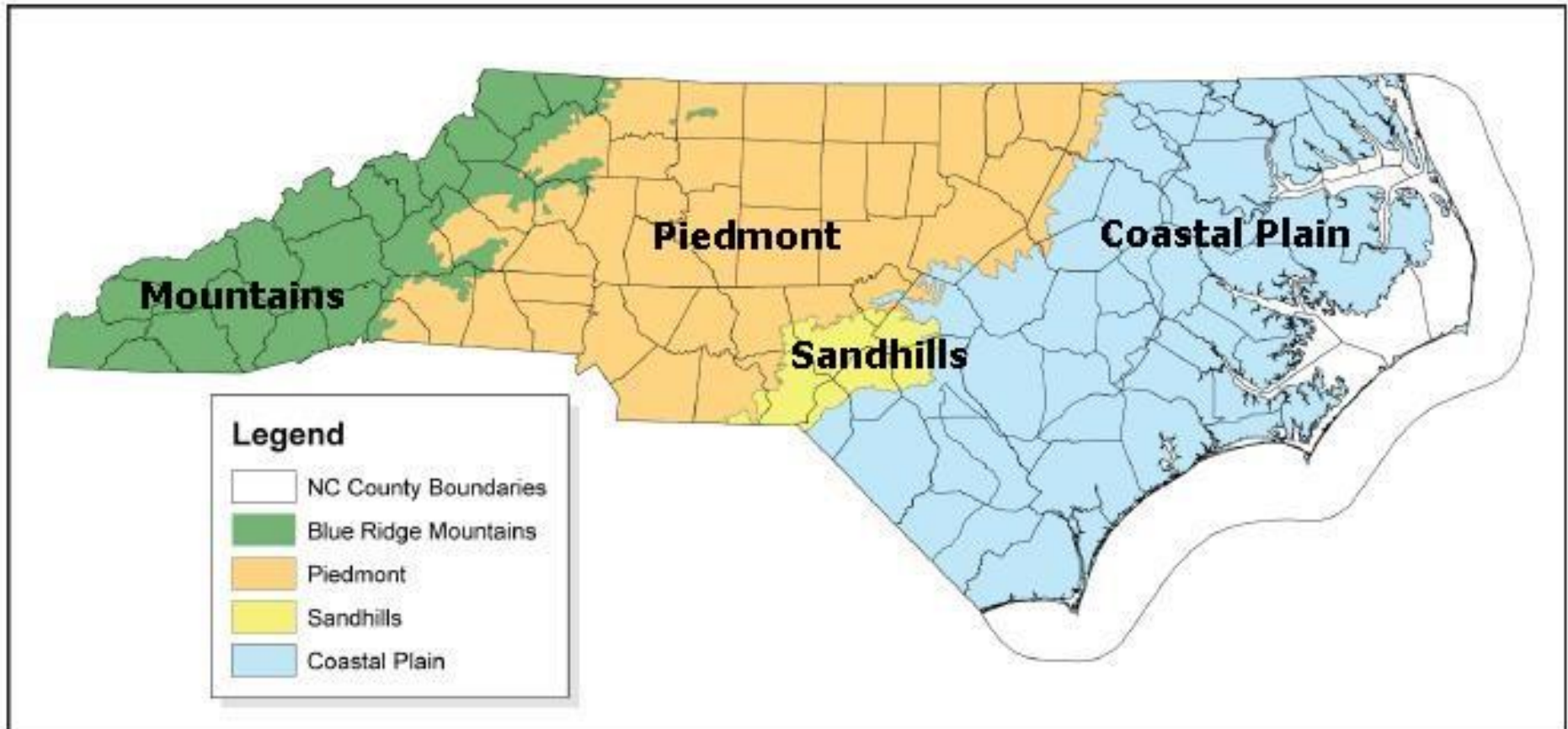
Managing Costs with Technology




TECHNICAL LESSONS LEARNED



Consider Landscape Diversity

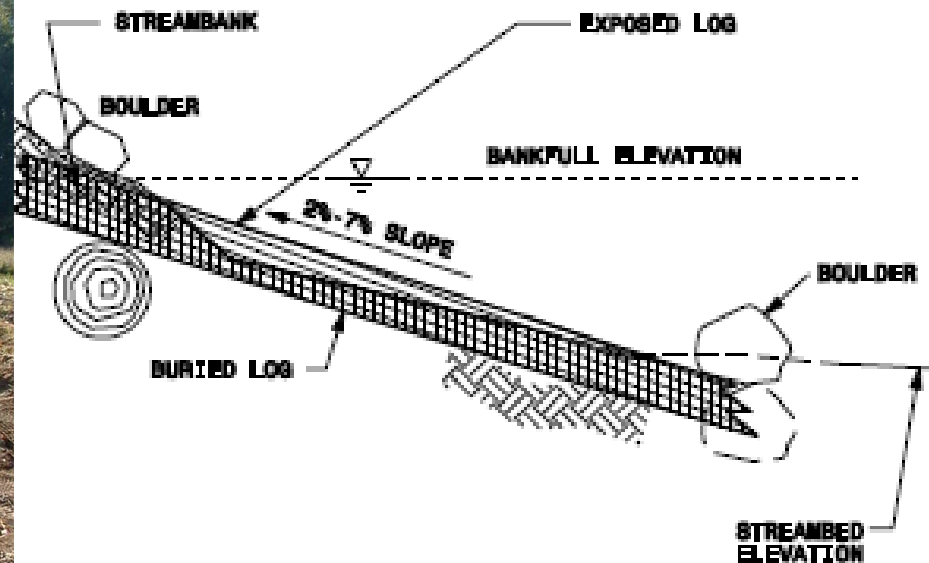




Rock structures in sand
bed system.....

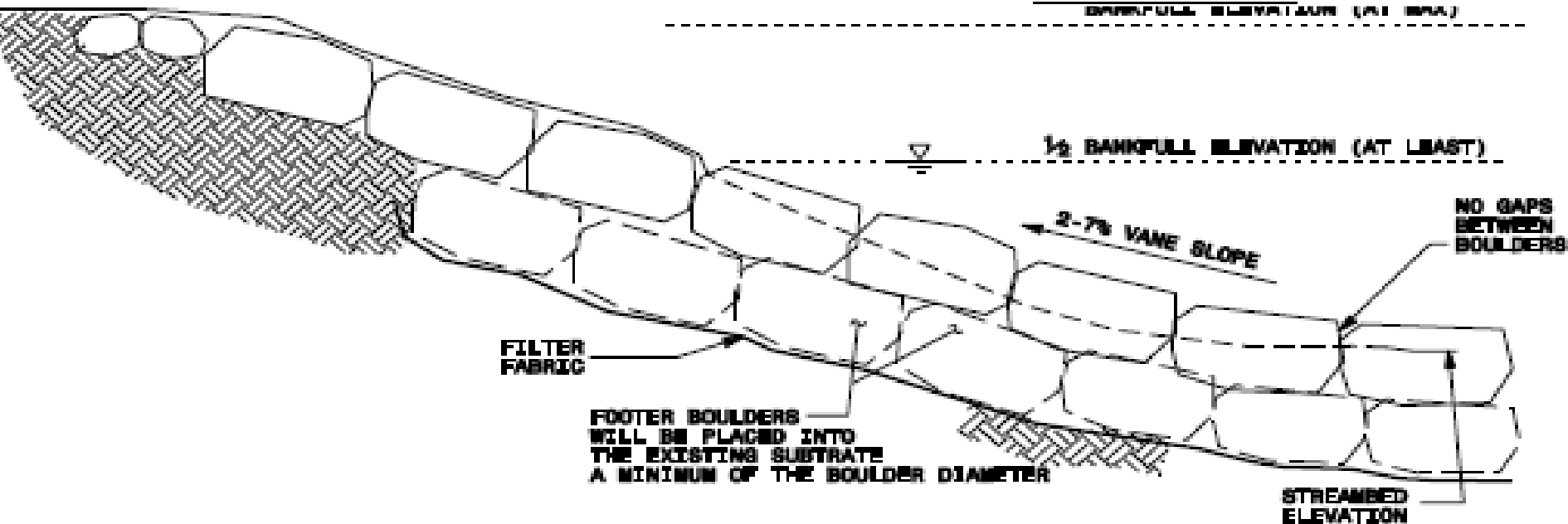
REALLY?





SECTION A-A

BANKFULL ELEVATION (AT 100%)



SECTION B-B



Sediment Transport



We all have our Bugaboo's...



Bugaboo Pre-Construction



Bugaboo Year 14



Understand the risks.....



stream of consciousness





Any Questions?

Tim Baumgartner
Director

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Department of Environmental Quality

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