



# **Mitigation Plan Development and Approval in North Carolina's In-lieu Fee Program (NC Ecosystem Enhancement Program)**

ELI-ILF Webinar Series – Standard Operating Procedures and Mitigation Plan Development

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## ➤ Presentation Focus

- NCEEP technical guidance to providers and practitioners related to the following:
  - Site/Project Selection
  - Baseline Information
  - Mitigation Work Plan
  - Goals and Objectives
  - Performance Standards
  - Monitoring
- Stream-centric
- NCEEP tools and procedures for Mitigation Plan review and approval

# ➤ **Scope of NC ILF Mitigation Program**

- 10 years of age
- Provides all of NCDOT's off-site mitigation needs
- Nearly 600 Projects statewide including HQP
- ~85% post-construction phase
- 630+ miles of stream, ~30,000 wetland acres
- Approximately 500 million in contracts awarded



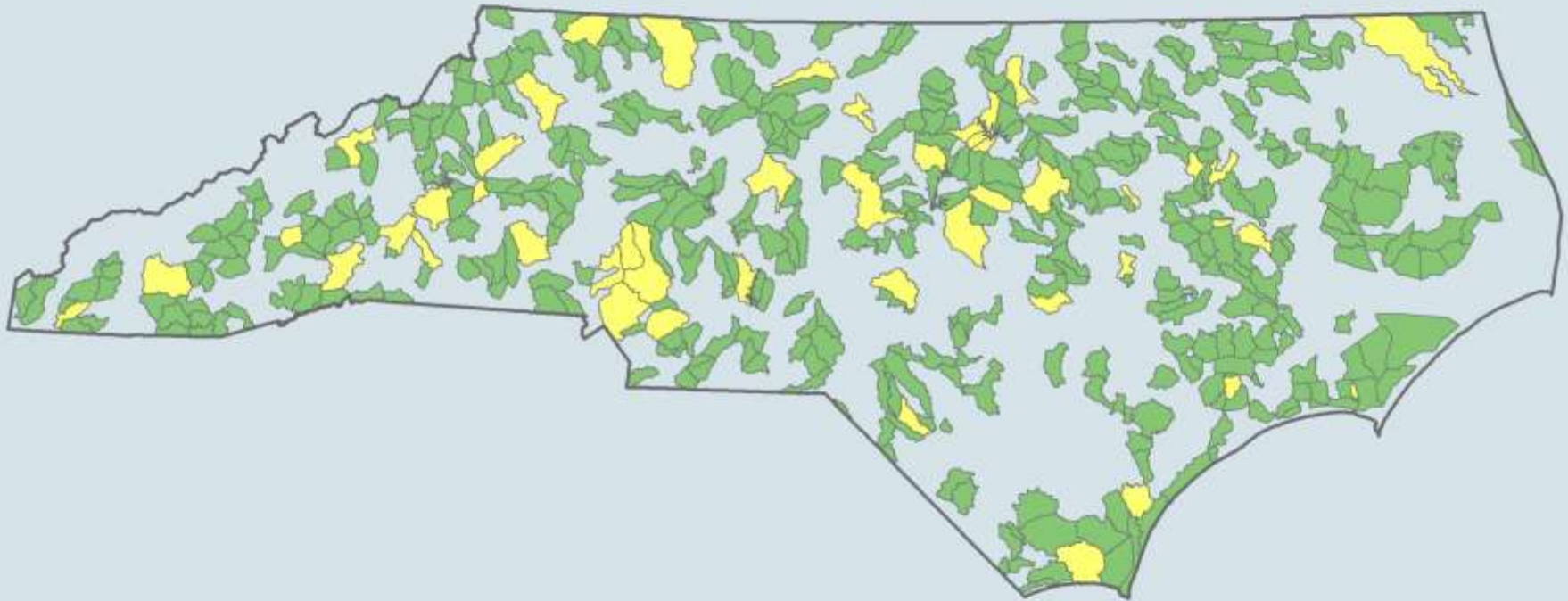
## ➤ **Site/Project Selection and Baseline Information**

- Watershed Planning
- EEP's Mitigation RFP process
- IRT Project Review
- Mitigation Plan Document



## ➤ **Site/Project Selection and Baseline Information**

- **Watershed Planning**



**Green – Targeted Local Watersheds**

**Yellow – Watershed Plans**

# ➤ Site/Project Selection and Baseline Information

## Proposal Evaluations



Assessment		Ranking
<b>Section 1.0 - Watershed Module</b>		
1.1	<p>Does the proposed project meet priority goals of the LWP areas? Offeror must describe how a project contributes to goals to receive points. (The following priority goals are explained in greater detail in the <a href="#">Local Watershed Plans</a> (below). 1--reduces sediment loading; 2--reduces nutrient loading; 3--manages stormwater runoff; 4--reduces toxic inputs; 5--provides &amp; improves instream habitat; 6--provides &amp; improves terrestrial habitat; 7--improves stream stability; 8--improves hydrologic function)</p> <p><a href="#">Morgan Creek LWP</a>  <a href="#">Little Alamance, Travis and Tickle Creeks LWP</a>  <a href="#">Troublesome and Little Troublesome Creeks LWP</a></p>	
	Addresses 1 of 8 LWP goals. 1 points	
	Addresses 2-4 of 8 LWP goals. 3 points	
	Addresses 5-8 of 8 LWP goals. 6 points	
	Addresses 7-8 of 8 LWP goals. 10 points	
1.2	<p>Is the proposed project recommended in an LWP Project Atlas? Atlases can be found at:  <a href="#">Morgan Creek LWP Management Plan and Atlas</a>  <a href="#">Little Alamance, Travis and Tickle Creeks Management Plan &amp; Atlas</a>  <a href="#">Troublesome and Little Troublesome Creeks Management Plan &amp; Atlas</a></p>	
	Implements >25% of an atlas-recommended project. 4 points	
	Implements all of an atlas-recommended project. 10 points	
1.3	<p>Is the proposed project located within a high priority focus area of one of the Upper Cape Fear LWPs (Morgan &amp; Little LWP, Troublesome &amp; Little Troublesome LWP, and Travis &amp; Tickle Creeks LWP)? If so, to what extent does the proposed project benefit the focus area priorities? See guidance at the following link:  <a href="#">Focus Area Guidance for Upper Cape Fear LWPs</a></p>	
	Yes, it addresses a low number of focus area priorities. 2 points	
	Yes, it addresses an intermediate number of focus area priorities. 5 points	
	Yes, it addresses most or all focus area priorities. 10 points	
1.4	<p>For proposed projects located within a targeted area, to what extent does the project support the CU-wide functional improvement objectives? (The following CU-wide objectives are explained in greater detail in the <a href="#">Cape Fear River Basin Restoration Priorities</a> report. 1--reduce &amp; control sediment inputs; 2--reduce &amp; manage nutrient inputs; 3--protect &amp; augment designated Significant Natural Heritage Areas)  <a href="#">Cape Fear River Basin Restoration Priorities 2009</a></p>	
	Project addresses 1 of 3 functional improvement objectives. 2 points	
	Project addresses 2 of 3 functional improvement objectives. 5 points	
	Project addresses 3 of 3 functional improvement objectives. 10 points	
1.5	<p>For projects outside of targeted areas, is the project located in a HUC adjacent to a targeted area and does it address CU-wide functional improvement objectives? (See objectives in 1.4 above.)</p>	
	Yes, project HU is adjacent and it addresses 1 of 3 functional improvement objectives. 1 point	
	Yes, project HU is adjacent and it addresses 2 of 3 functional improvement objectives. 3 points	
	Yes, project HU is adjacent and it addresses 3 of 3 functional improvement objectives. 5 points	

# ➤ Site/Project Selection and Baseline Information

## Proposal Evaluations

- Existing Condition Module (Baseline Information)
- Design and Approach Module (Mit Work Plan)
- General Module
  - T&E
  - Continuity with other protected features
  - Manageability of Easement
- Risk and Implementation Module
- QC Program of Provider
- Project Stage



## ➤ **Baseline Information**

- Lateral and Vertical Stability
- Buffer or Wetland Vegetation Condition
- Channel Substrate
- Degree of Prior Manipulation
- Condition of Existing Habitat
- Proximity and Nature of Stressors





# ➤ **Baseline Information**

## **“Functional Balance Sheet”**

### Impairment

- Driver/Cause (hydrological, mechanical)
- Degree (severity of impairment)
- Extent (proportion)
- Stage (what evolutionary stage)
- Rate (expected rate of deterioration)

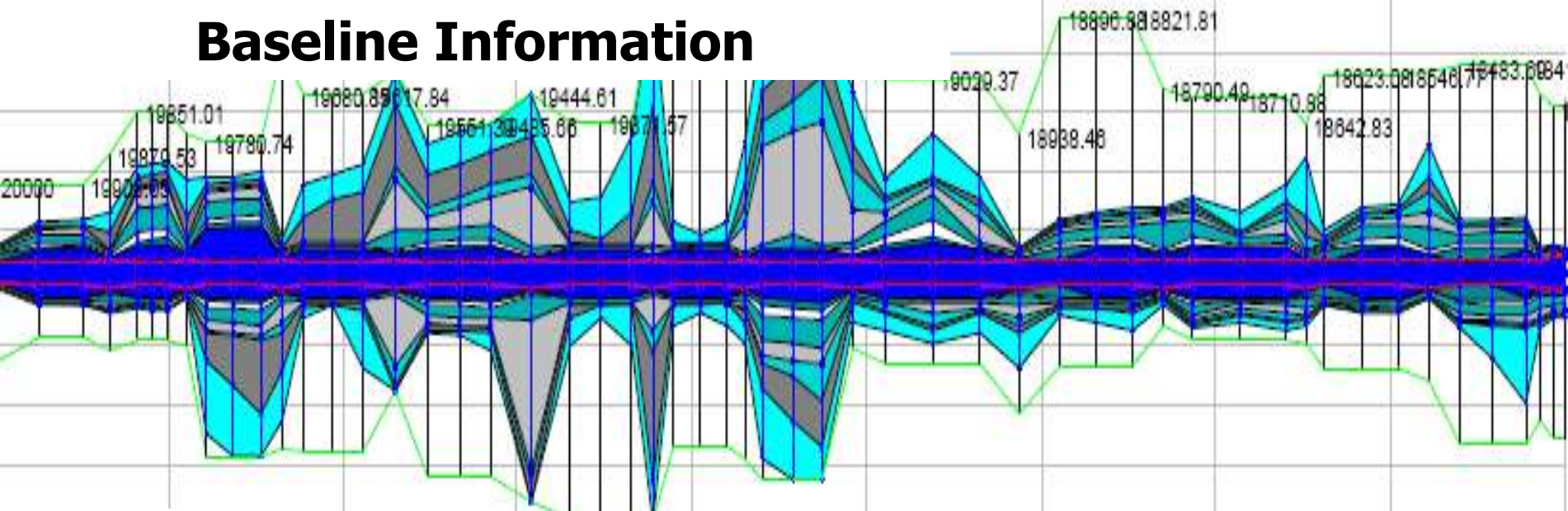
Contrast and Compare with:

### Existing features of value (standing value)

- Existing resources (Habitat Complexity)
- Mature vegetation
- The sustainability of these features



# Baseline Information



Legend	
	WS Bankfull
	WS 2-YR
	WS 2x Bkf
	WS 4x Bkf
	WS 50-YR
	WS 8x Bkf
	WS 100-YR
	WS 100-YR FUT-FEM
	Ground
	Bank Sta

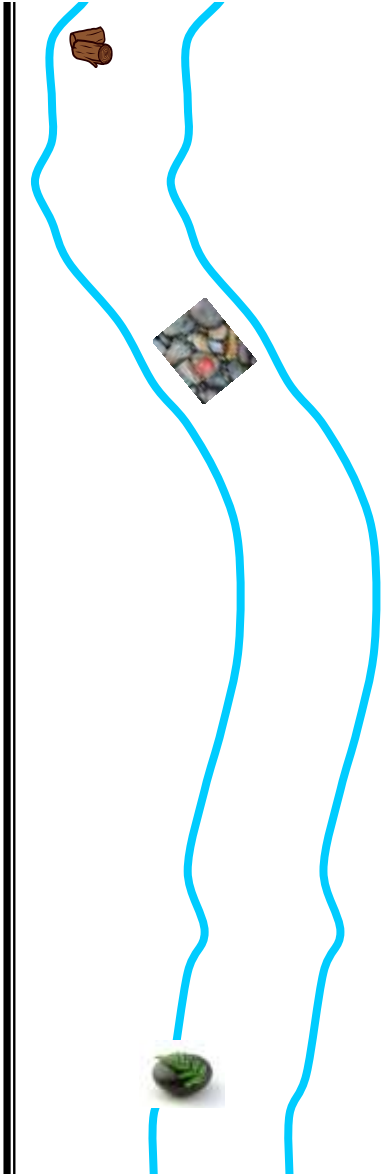
## Example –

**Flood contours > bankfull flows. Exhibit and stats are potential indicator of projects flood attenuation potential.**

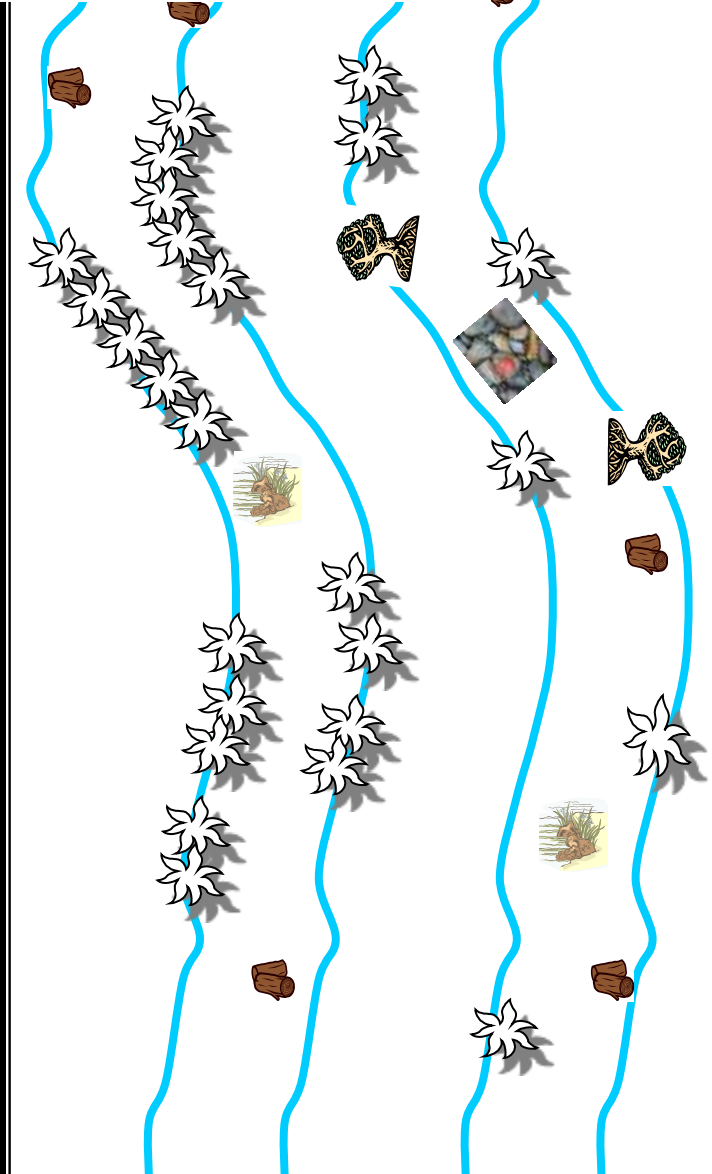
# Baseline Information



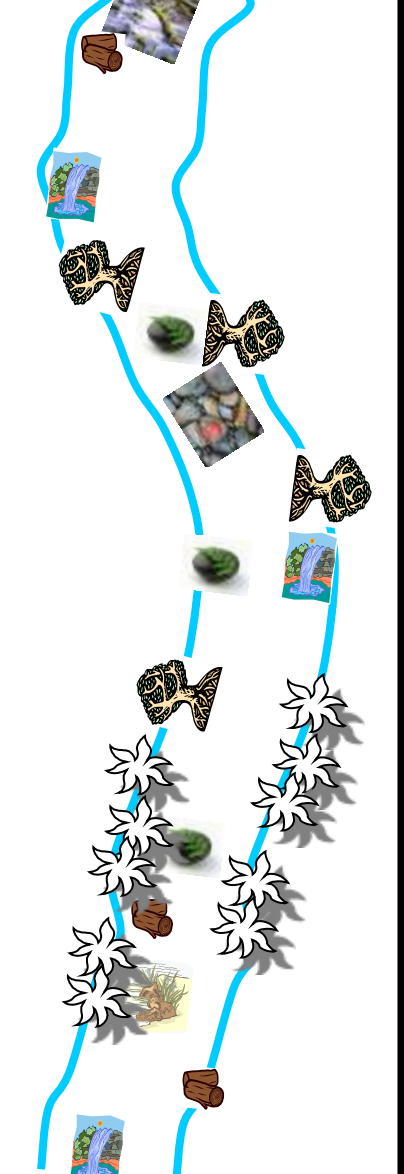
No Cover



Sparse



Moderate

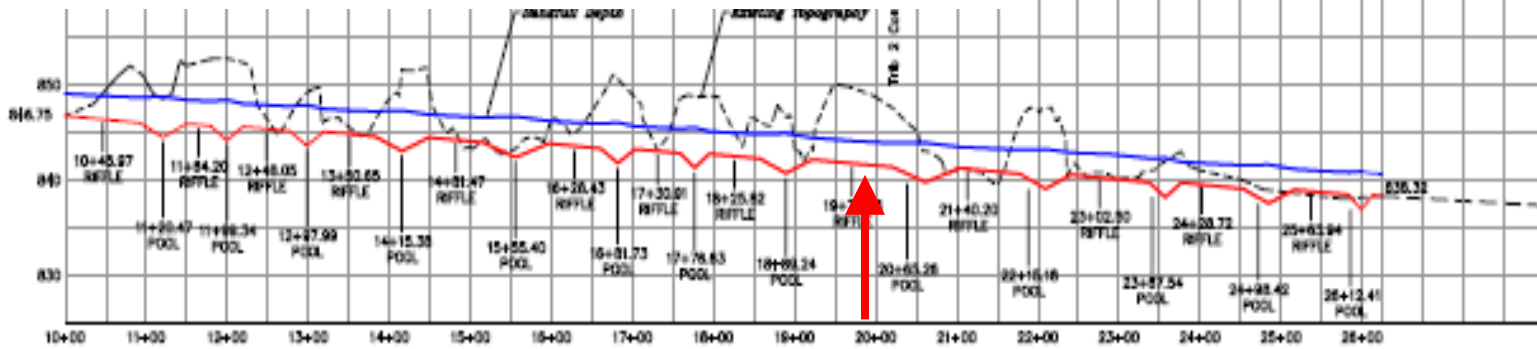


Extensive



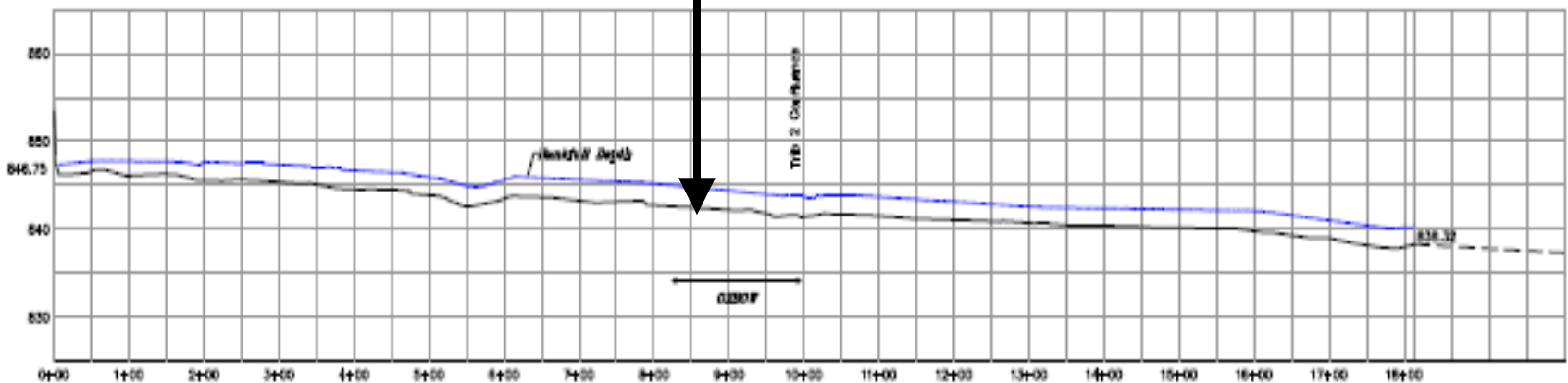
# PROPOSED LONGITUDINAL PROFILE

## Baseline Information



**Uplift in bedform diversity, faceted nature of bed profile existing and proposed  
Instream Habitat Potential**

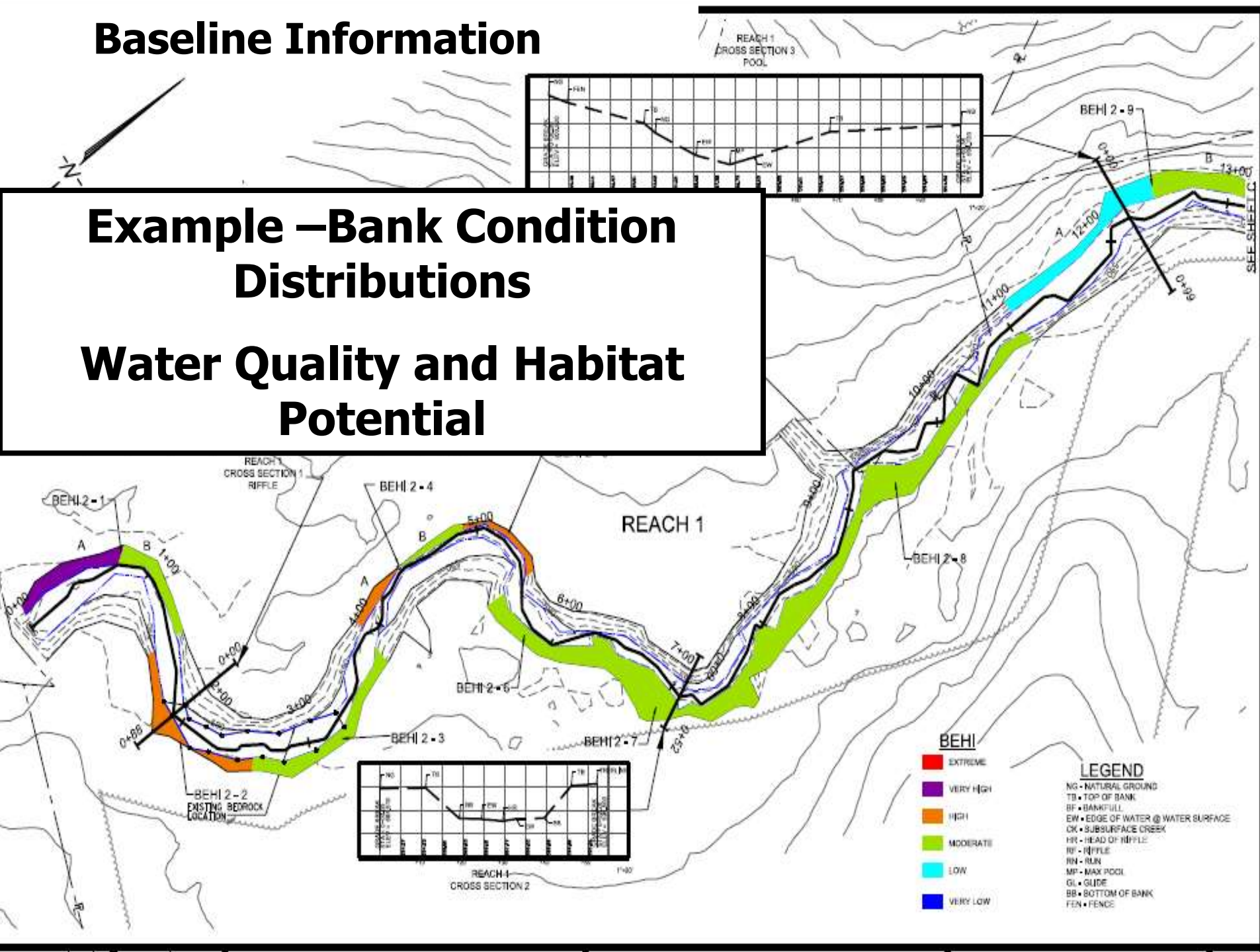
## EXISTING LONGITUDINAL PROFILE (FOR COMPARISON)



# Baseline Information

## Example – Bank Condition Distributions

## Water Quality and Habitat Potential



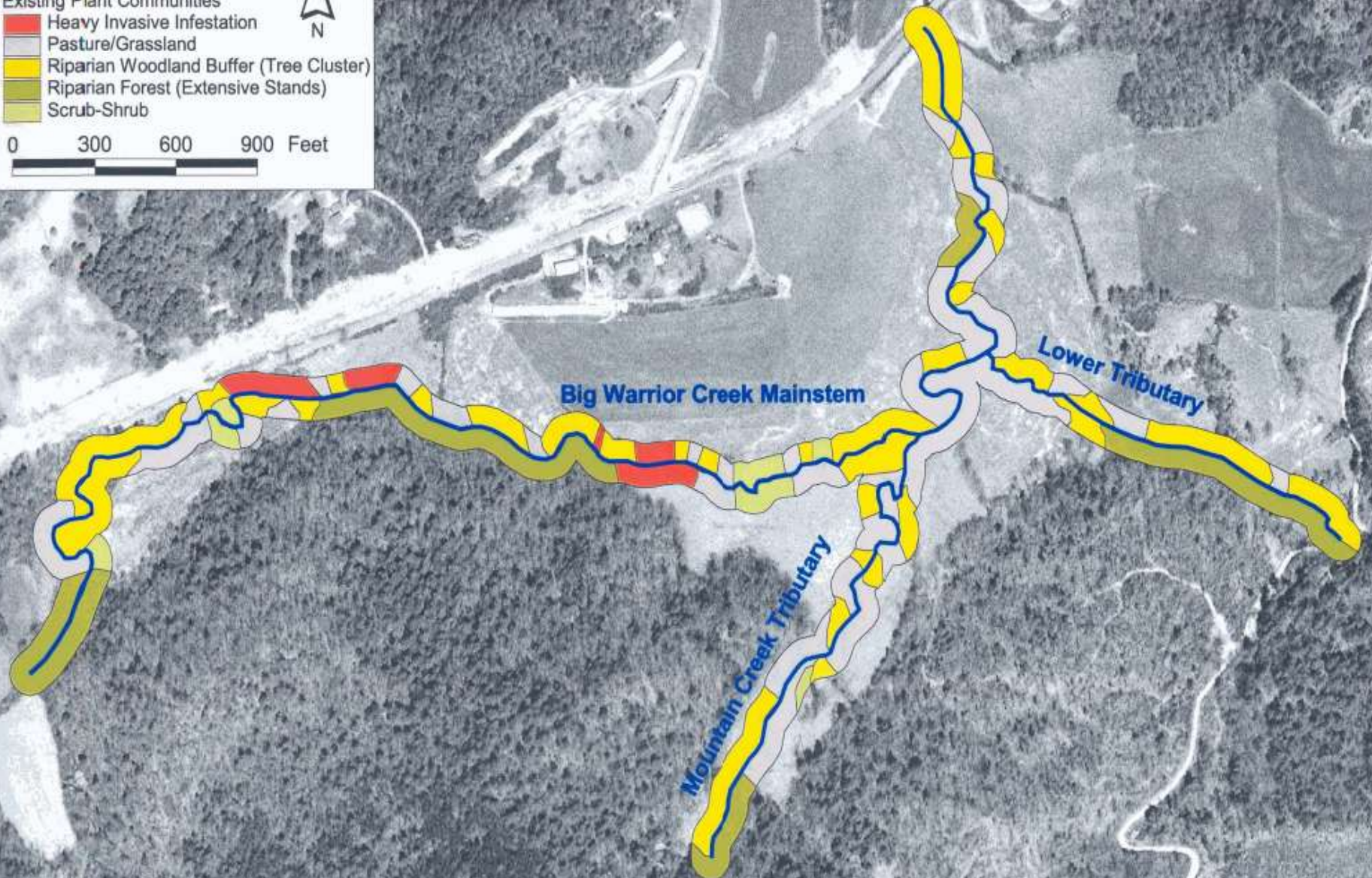
# Baseline Information

## LEGEND

-  Stream Restoration Site
-  Existing Plant Communities
-  Heavy Invasive Infestation
-  Pasture/Grassland
-  Riparian Woodland Buffer (Tree Cluster)
-  Riparian Forest (Extensive Stands)
-  Scrub-Shrub



0 300 600 900 Feet



# Framework for Arriving at Mitigation Work Plan, Goals, Performance Standards and Monitoring

Watershed and Project Stressors

Attendant Functional Losses/Reductions

Project Site Characteristics - Stream

Stream Evolutionary Factors

Channel Boundary Factors

Alignment Factors

Uplift modifiers

High uplift yield opportunities

Standing value (bugs, instr hab, buf)

Constraints

Maximum Remaining Uplift Potential

Risk

Cost

Approach / Level of Intervention (Work Plan)

Assessment/Monitoring Timeframe

**Tailored Goals, Objectives and Performance Standards**



# Current Mitigation Plan Guidance – A Work in Progress

- Planning to revise by the end of 2013
- Overlap with other frameworks
- “Functional Pyramid” Framework

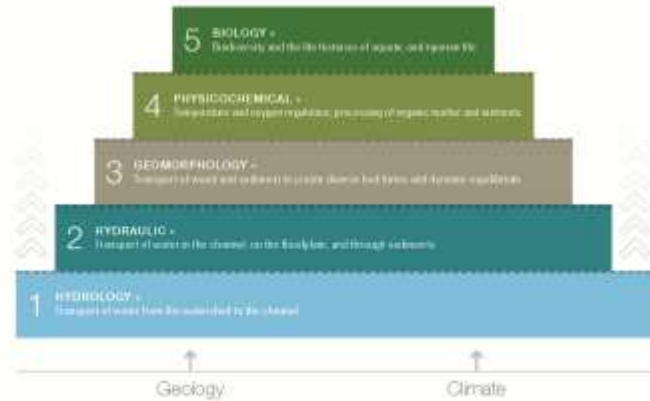






Chapter 4: The Stream Functions Pyramid

FIGURE 4.1 STREAM FUNCTIONS PYRAMID — OVERVIEW  
(See Appendix A for a full-size version.)



A Function-Based Framework  
for Stream Assessment & Restoration Projects

EPA 843-K-12-006 » May 2012

**Harman, W., R. Starr, M. Carter, K. Tweedy, M. Clemmons, K. Suggs, C. Miller. 2012. *A Function-Based Framework for Stream Assessment and Restoration Projects*. US Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Washington, DC EPA 843-K-12-06.**



# Internal Technical Mitigation Plan Review

- Early IRT interaction
- EEP technical review
- Matrix management – team review
- For streams a review checklist is utilized



# Natural Channel Design REVIEW CHECKLIST



**Harman, W., R. Starr. 2011. Natural Channel Design Review Checklist. US Fish and Wildlife Service, Chesapeake Bay Field Office, Annapolis, MD.**

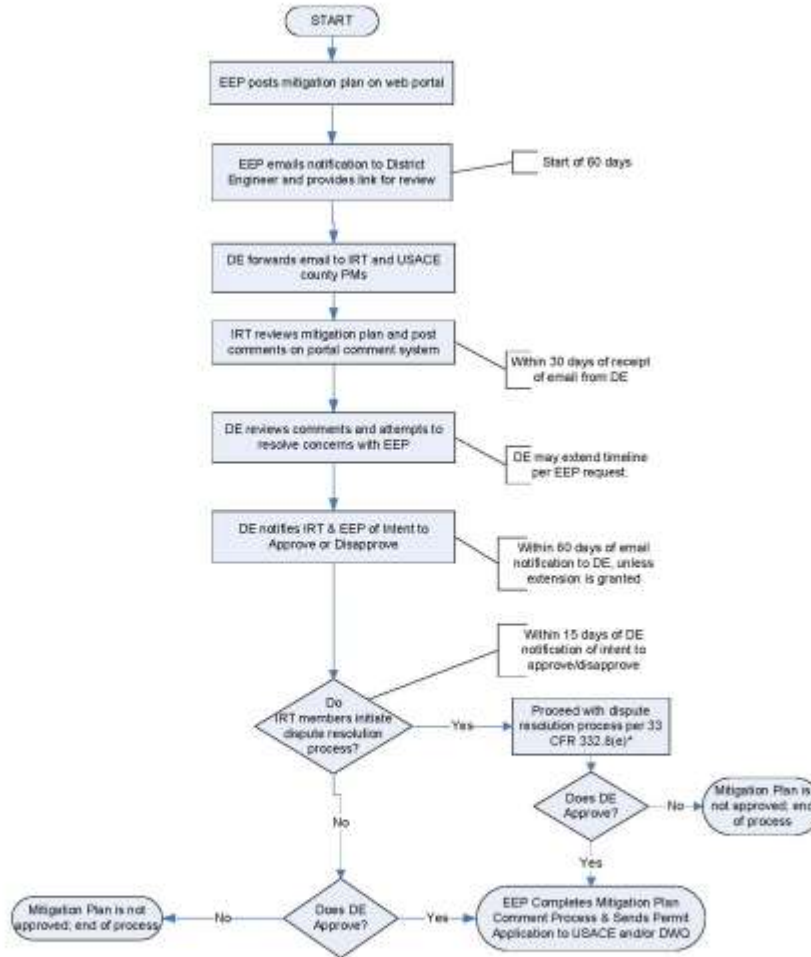


# IRT Review Process

**60 Days**

## IRT Mitigation Comment & Approval Process

Streamlined Review Process, 33 CFR 332.8(g)(2)



Mitigation Plan Comment Process	
ID No. IMP.PRO.01.01.01	Page 1 of 1
Owner: Jurek, Jeff	05/29/2011 Rev. 0

\* DE must be notified by letter from a senior official of the agency represented on the IRT within 15 days of receipt of DE's notification of intent to approve the modification per 33 CFR 332.8(e)

\*\*\*\*PROJECT DOCUMENTS\*\*\*\*

### EEP & IRT PARTNERSHIP

#### Draft Mitigation Plan Index

Please click on the navigation bar tabs above to gain access to materials as they are made available.

Show  Search:

entries:

Date Uploaded	IMG ID - Site Name
2013/7/10	95015 - St. Clair Creek
2013/8/13	95353 - Sea Site
2013/8/13	95721 - Sew. Sert
2013/8/21	94657 - Crooked Creek #2
2013/8/23	95350 - Hopewell Stream

Showing 1 to 5 of 5 entries

### EEP & IRT PARTNERSHIP

Please click on the navigation bar tabs above to gain access to materials as they are made available.

This web portal is intended to provide members of the NCIRT with the opportunity to comment on Draft Mitigation Plans proposed by NCEEP. In accordance with the 2005 Federal Mitigation Rule (33 CFR 332.5(g)(2)), members of the NCIRT will have 30 days from being notified that a plan is on the web portal to provide comments to the USACE District Engineer on the plan. Copies of Draft Mitigation Plans that are available for review can be accessed using the links in the searchable index to the left side of the page. Once accessed, the plans may be reviewed on screen, printed, or saved to your computer.

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## Mitigation Plan Review Comments

Please provide your comments on Draft Mitigation Plans using the form below. Comments posted by other NCIRT members may also be viewed on this page. Once Mitigation Plans have been finalized, they will be removed from this page, but may still be accessed on NCEEP's document management page.

\* Required

Agency Name \*

Reviewer Name \*

Comment(s) \*

Project Name \*

Please select a project using this drop down menu.

Never submit passwords through Google Forms.