Stream Mitigation – Opportunities, Challenges and Strategies

Local Government Perspective

James A. Thomas, PWS, CWB
Overview

- 2008 Mitigation Rule
- Watershed basis for mitigation planning
- Mitigation banking in Central Texas
- Local government role & interest
- Opportunities, challenges, and strategies for mitigation areas / banks
2008 Mitigation Rule – Preference Hierarchy

- Third-party mitigation
  - Mitigation banks (proposed, not currently available)
  - In-lieu fee (ILF) (currently not available)

- Watershed approach, permittee-responsible mitigation projects*

- Permittee-responsible mitigation projects
  - On-site / in-kind
  - Off-site / out-of-kind
2008 Mitigation Rule – Watershed Approach

- Improve and maintain watershed functions
- Efficiency of managing large vs. multiple small sites
- Opportunity to achieve multiple purposes
- Reduce land use conflicts & enhance probability of success
Watershed approach

- Lower construction costs per linear foot
Site Selection – What to look for

- **Restoration** first...then enhancement, preservation, & establishment
- Diverse aquatic / upland conditions
- Public lands - no conflicting federal / state restrictions
- Private lands - fee for title acquisition preferable
- Intangibles (ecology, location, history, etc.)
8-Digit Hydrologic Units
EPA Level III Ecoregions

Legend
- TXRAM Geographic Scope
- County Boundary

EPA Level III Ecoregions (Griffith et al. 2004)

1. South Central Plains (i.e., Pineywoods)
2. East Central Texas Plains (i.e., Post Oak Savannah/Claypan Area)
3. Texas Blackland Prairies
4. Cross Timbers
5. Edwards Plateau
6. Southern Texas Plains
7. Central Great Plains
8. Southwestern Tablelands
9. High Plains
Service Area Determination

- Combination of watershed and ecoregion
Options – levels of commitment

- Mitigation credit buyer
- Permittee-responsible off-site / in-kind recipient
- Joint watershed mitigation site (phased) coordination
- Mitigation bank sponsor / partner
Local Government Role in Mitigation

- Mitigation for public projects
- Public tax money
  - Keep local vs. best value?
  - Enhancing public lands / adjacent land values
- Watershed benefits – ecological & water quality
- Secondary benefits – education, safety, streamline future development, etc.
Local Government Role

- Self-mitigating projects
  - NWP 27 - Restoration
  - Bio-technical stabilization efforts
Strategies to Maximize Public Benefit

- Watershed-level coordination
- Evaluate streams at reach level for phased mitigation
- Preliminary agency / stakeholder coordination
- Advertise availability to local stakeholders (public & private)
- Permittee-responsible mitigation projects pay majority of cost
Challenges

- Urban settings require special design considerations
  - Biotechnical channel design
  - Fluvial geomorphology analysis
- Restoration - engineering complexity and contingency planning
- Invasive, exotic species encroachment
- Long-term monitoring (5-years), management, and sustainability
Challenges

- Permittee-responsible projects require similar documentation to mitigation banks
- Protective measures - conservation easements
- Financial assurances & market fluctuations
- Uncertain level of risk
Opportunities

Public-private partnerships

• Shared risk / costs
• Minimize project-by-project requirements
• Credits available for public projects at reduced rate
• Mitigation credits available to expedite local development
Special Considerations

Plan with 20+ years in mind
Texas Rapid Assessment Method (USACE-FW)

- Rapid, repeatable, field-based method
- Measures multiple metrics
- Generates single score of condition
- Developed to fit USACE regulatory program
Texas Rapid Assessment Method (TXRAM)

- Assess potential impacts
- Compare alternatives
- Monitor changes over time
- Measure ecological “lift” of mitigation*
- Streams and wetlands modules
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TXRAM – Restoration Planning

- Floodplain Connectivity
TXRAM – Restoration Planning

- Buffer Condition

- In-stream habitat
General Project Initiation Phases

- Watershed planning
- Feasibility study / market analysis
- Mitigation site identification
- Baseline surveys / condition assessment
- Conceptual site planning
- Formulate approach (bank, ILF, or phased PRM area)
- Initiate formal process
Summary

- Mitigation is a rapidly changing market
- Involvement at some level generally necessary
- Local government considerations
  - Cost / risk analysis
  - Future mitigation needs
  - Watershed conditions
  - Long-term land use