



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION



Bureau of Waterways Engineering and Wetlands

Chapter 105

Technical Guidance Update:

Function Based Compensation Protocol

Water Resources Advisory
Committee

October 25, 2017

Tom Wolf, Governor

Patrick McDonnell, Secretary

Programmatic Enhancements

- * Level 2 Rapid Condition Assessments Previously Finalized and Implemented
 - * Palustrine (Doc # 310-2137-002)
 - * Riverine (Doc # 310-2137-003)
 - * Lacustrine (Doc # 310-2137-004)
- * Finalization of Fourth Technical Guidance
 - * Function Based Compensation Protocol (Doc # 310-2137-001)

Aquatic Resources

- * Riverine
 - * Intermittent and perennial wadeable watercourses and their floodways/floodplains
- * Palustrine/Tidal
 - * Wetland environments including unvegetated forms (i.e. mudflats)
- * Lacustrine
 - * Lakes, reservoirs and non-wadeable rivers

Function Based Compensation

- * Pennsylvania Function Based Compensation Protocol (Doc # 310-2137-001)
 - * Standardized Mitigation Process
 - * Provides Predictive Expectations
 - * Provides Statewide and Cross Program Consistency
 - * Reduction of Application Review Times
 - * Reduction of Applicant/DEP Conflicts
 - * Maximizes Use of Application Information

Function Based Compensation

- * Pennsylvania Function Based Compensation Protocol (Doc # 310-2137-001)
- * Common Resource Language
- * Utilized Across Mitigation Sectors: ILF, Banking and Permittee Responsible Mitigation
- * Provides a Transparent Compensation Process
- * Treats Applicants Equitably

Major Revisions

- * Removed the Recreation Function Groups (REC1 and REC2)
- * Moved the RS to the HYD Function Group
- * Revised Applicable Sections to address Function Group changes.
- * Added an Additional Adjustment Factor to Section 7.0 Compensation Value Adjustment - *Watershed Scale Projects*

Major Revisions

- * Final Revised Function Groups - same framework for all resource types
- * More representative of headwater systems

Function Group	Riverine	Wetland	Lacustrine	Description
Resource Support (RS)	√			Role in maintaining watershed quality
Hydrologic (HYD)		√		Hydrodynamics, baseflow, flood storage
Biogeochemical (BGC)	√	√		Vegetation, soils and hydrology
Habitat (HAB)	√	√	√	Community and species level

Minor Revisions

- * Reordered Sections to flow better
- * Provided additional clarifying language throughout to address public comment
- * Replaced use of the Wetland Level 2 Condition Index in the Resource Value Criteria with the Rapid Floristic Quality Index (RFQI)
 - * RFQI Utilizes data from the wetland delineation

Determining Compensation

- * Compensation requirement evaluation performed for each resource function group affected by project
- * Process designed to ensure resource/functional equivalency provided as compensation

Standard Compensation Equation

* **$(CR) = CI \times RV \times AI \times PE$**

* CR = Compensation Requirement

* CI = Condition Index Value (0.00) (from applicable resource condition assessment)

* RV = Resource Value

* AI = Area of Impact (in acres, 0.00)

* PE = Project Effect Factor

Compensation Factors

- * Resource Condition Index (Scale 0.05-1)
- * Resource Value (Scale 1-3)
- * Impact Area – by Resource Function and Impact Type (acres)
- * Project Effect Factor (Scale 0-3)

Resource Condition

- * Use Rapid Condition or Intensive Measures
 - * Since index based, other approaches usable
 - * Process adaptable to utilize best approaches
- * Provides reasonableness to compensation
 - * Low quality resources result in reduced amount
 - * High Quality resources result in increased amount

Resource Value

- * Resource Value - Standardized list of values
 - * Varies by resource type
 - * Foundation in regulations, science and public interest (e.g. Special Protection, Rare wetland communities, special fishery designations)
 - * Significant (3)
 - * Special (2.5)
 - * Quality (2)
 - * Support (1.5)
 - * Minimal(1)

Establishing Impacts

- * Impacts categorized as
 - * **Direct** – loss of resource **area** and function
 - * Occurs through filling, draining, impounding
 - * **Indirect** – loss of resource function only
 - * Occurs through alteration of chemical, physical or biological components of the resource

Project Effect Factor

- * **Specific** Criteria to assign the level of project effect for each resource function group
 - * Criteria for both Direct and Indirect impacts, varies with impact type and resource function group affected.
 - * Project Effect Levels include -
 - * Severe (3)
 - * Moderate (2)
 - * Limited (1)
 - * Minimal (0)

Producing Function Credits

- * **(FCG) = AP x CV x RV x CI**
- * FCG = Function Credit Gain
- * CIDIFF = Condition Index Differential Value (0.00) (difference between existing condition and projected/measured condition)
- * RV = Resource Value
- * AP = Area of project gain (in acres, 0.00)
- * CV = Compensation Value Factor

Producing Function Credits

- * Condition Differential
 - * Level 2 Condition Assessment Use
 - * Generally for planning purposes only, not intended for determining credit levels
 - * Existing Condition must be established in order to establish level of potential resource improvement.
 - * As project design proceeds identification of degradation causes and restorative approaches provide basis for refining selection of key resource parameters that provide quantitative measure of improvement and selection of performance measures and success criteria.

Producing Function Credits

- * Resource Value
 - * Utilizes same Resource Value table and criteria (1-3)
 - * Established for each resource not carried from one type of resource to another.
 - * Resources not interconnected or areas of larger related resources with disparate conditions may have differing resource values (i.e. wetland complexes, isolated wetland areas, stream reaches distantly located).

Producing Function Credits

- * Area of project gain
 - * Defining discrete areas of gains
 - * 2008 Federal Mitigation rule definitions
 - * Existing resource conditions
 - * Established for each resource function group
 - * Can vary in a given unit of area
 - * Must be demonstrated through measurable methodologies

Producing Function Credits

- * Compensation Value (1-3)
 - * Considers extent of project
 - * Multiple resources and function groups
 - * Project type – re-establishment, rehabilitation, etc.
 - * Established for project unless resources are distantly located and considered independent sites.
 - * Allow for Adjustment Factors which increase value
 - * Protecting lands around project area (1.0)
 - * Addressing TMDL/Impairments (1.0)
 - * Watershed Scale Projects (case by case)

Next Steps

- * Final Publication (Anticipate in December)
 - * Technical Guidance – establish effective date based on anticipated time lines for Environmental Assessment revisions and In Lieu Fee (ILF) program
 - * Comment Response Document
- * Revise Environmental Assessment
- * Comprehensive Compensation Policy
- * ILF Program Approval
- * Training and Outreach

Questions?

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