PUBLIC NOTICE 18-40 TEMPORAL LOSS MULTIPLIER & PROXIMITY FACTOR CALCULATOR

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23 MAY 2019

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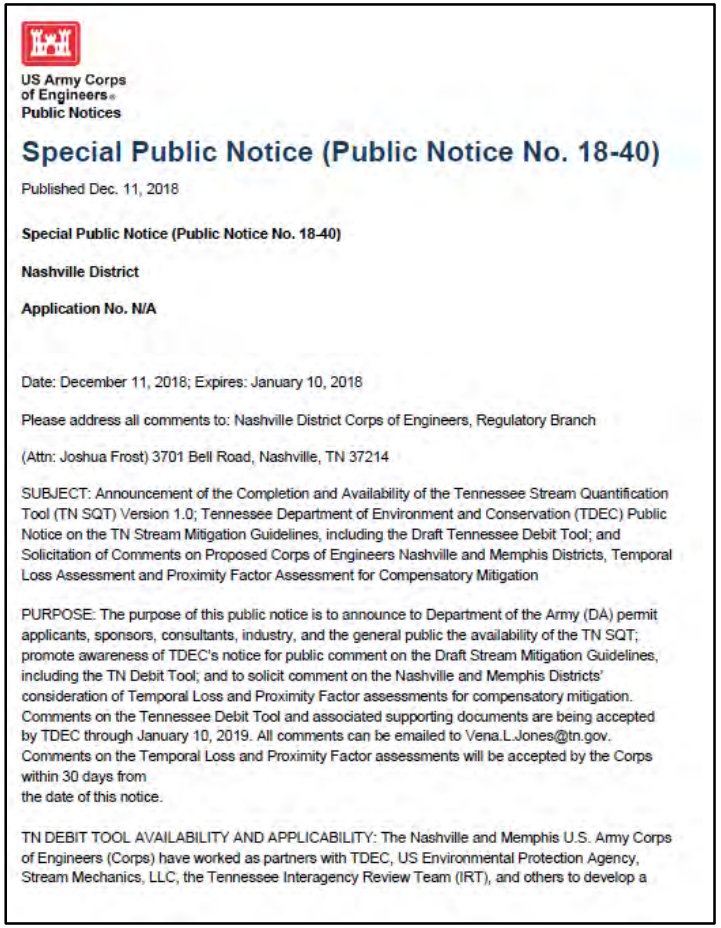
SPECIAL PUBLIC NOTICE 18-40

- PN 18-40 issued on December 11, 2018 – January 10, 2019
- Re-issued on January 10 – February 9, 2019
- Joint Effort between the Nashville District and Memphis District.
- 4 Individual Public Comments Received



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Public Notices

Special Public Notice (Public Notice No. 18-40)

Published Dec. 11, 2018

Special Public Notice (Public Notice No. 18-40)

Nashville District

Application No. N/A

Date: December 11, 2018; Expires: January 10, 2018

Please address all comments to: Nashville District Corps of Engineers, Regulatory Branch

(Attn: Joshua Frost) 3701 Bell Road, Nashville, TN 37214

SUBJECT: Announcement of the Completion and Availability of the Tennessee Stream Quantification Tool (TN SQT) Version 1.0; Tennessee Department of Environment and Conservation (TDEC) Public Notice on the TN Stream Mitigation Guidelines, including the Draft Tennessee Debit Tool; and Solicitation of Comments on Proposed Corps of Engineers Nashville and Memphis Districts, Temporal Loss Assessment and Proximity Factor Assessment for Compensatory Mitigation

PURPOSE: The purpose of this public notice is to announce to Department of the Army (DA) permit applicants, sponsors, consultants, industry, and the general public the availability of the TN SQT; promote awareness of TDEC's notice for public comment on the Draft Stream Mitigation Guidelines, including the TN Debit Tool; and to solicit comment on the Nashville and Memphis Districts' consideration of Temporal Loss and Proximity Factor assessments for compensatory mitigation. Comments on the Tennessee Debit Tool and associated supporting documents are being accepted by TDEC through January 10, 2019. All comments can be emailed to Vena.L.Jones@tn.gov. Comments on the Temporal Loss and Proximity Factor assessments will be accepted by the Corps within 30 days from
the date of this notice.

TN DEBIT TOOL AVAILABILITY AND APPLICABILITY: The Nashville and Memphis U.S. Army Corps of Engineers (Corps) have worked as partners with TDEC, US Environmental Protection Agency, Stream Mechanics, LLC, the Tennessee Interagency Review Team (IRT), and others to develop a

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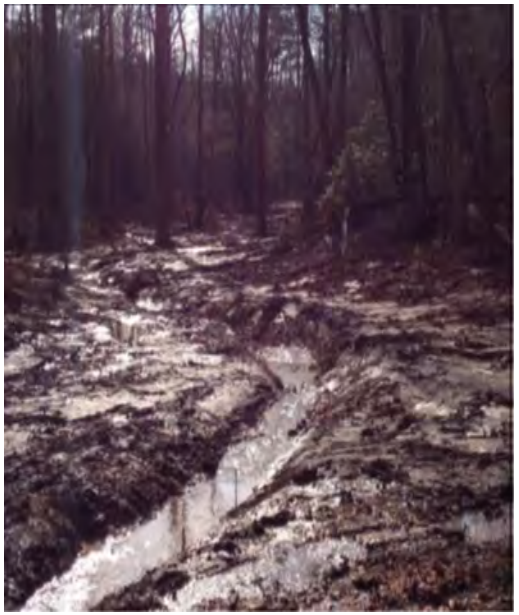
OVERVIEW OF TEMPORAL LOSS MULTIPLIER

Temporal loss is the time lag between the loss of aquatic resource functions as a result of permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site.



COMPENSATING FOR TEMPORAL LOSS IN ACCORDANCE WITH THE MITIGATION RULE

- The Federal Mitigation Rule states that compensation ratios of greater than 1:1 can be applied to account for factors including temporal loss (332.3 (f)).

- The DE shall require, to the extent appropriate and practicable, additional compensatory mitigation to offset temporal losses of aquatic functions that will result from the permitted activity (332.3 (m)).

TEMPORAL LOSS MULTIPLIER APPLICABILITY

- TLM will be assessed for DA permit actions when:
  - Mitigation plan include the purchase In-Lieu Fee (ILF) Program Advance Credits;
  - PRM completed after permitted impacts;
  - PRM Sponsored compensatory mitigation plan has failed to meet success criteria.
- Temporal loss will be addressed by adding a 3% per year multiplier to the required mitigation amount.

IN-LIEU FEE ADVANCED CREDITS

- Advance Credits – credits allocated to an approved ILF Program that are available for sale prior to ILF Restoration Project Implementation.

- ILF Programs have three growing seasons to acquire sites and make the initial physical and biological improvements after the first advance credit in that service area is secured by a permittee (332.8 (n)(4)).

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TEMPORAL LOSS MULTIPLIER ASSESSMENT

- For Permittees purchasing the first Advanced Credit within an ILF Program Provider Service Area, the temporal loss multiplier would be assessed at 12%.

- Additional Temporal loss multipliers will be assessed for each additional year beyond the standard 3 Year growing season timeframe to implement the initial project, provided that the Permittee's proposed mitigation plan is determined to be environmentally preferable.

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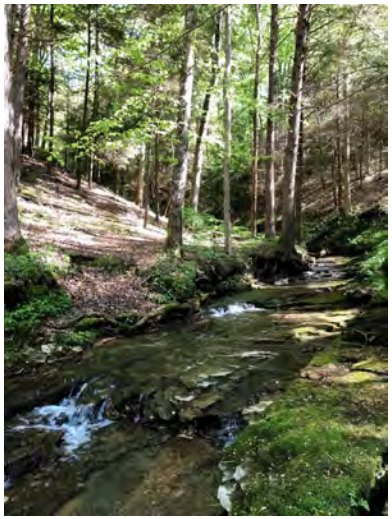
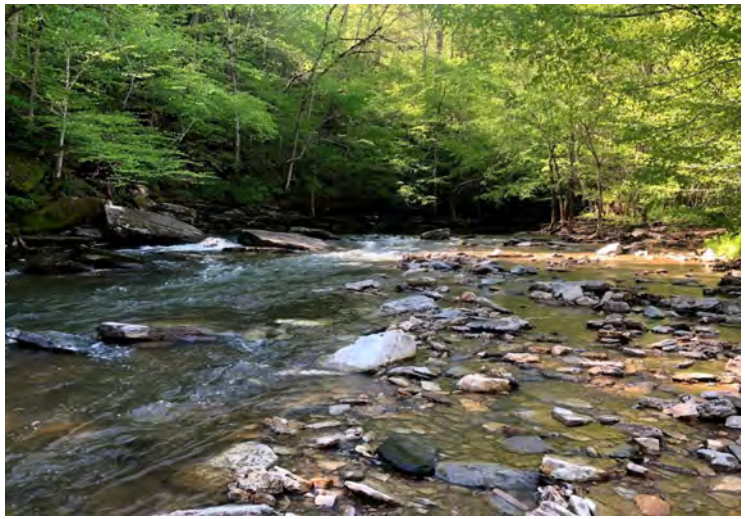
NO TEMPORAL LOSS ASSESSED WHEN:

- Mitigation Bank Credit Purchase
- ILF Project Released Credits Purchased
- Permittee Responsible Mitigation project constructed prior to or concurrent with aquatic resource impacts.





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TEMPORAL LOSS METHODOLOGY

- Methodology for adopting this specific percentage rate for temporal loss was adapted from the **economic discount rate** used in Habitat Equivalency Analysis (HEA), which is a Damage Assessment and Restoration Program utilized by the NOAA.

- **Economic Discount Rate** is based on the standard economic assumption that the public places a greater value on having resources available in the present rather than having their availability delayed until the future.

- The economic literature supports a discount rate of approximately 3% per year.

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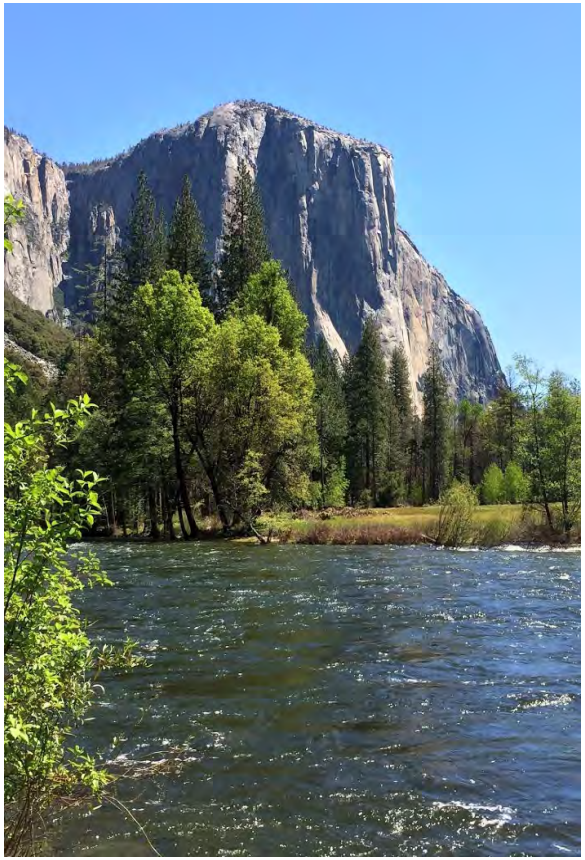
PROXIMITY FACTOR BACKGROUND

- Proximity Factor utilized in other Corps Districts such as Jacksonville, Mobile, and Fort Worth.

- Proximity Factor has been used in the Nashville District on a case-by-case basis previously.

- Mitigation Rule provides for proximity factor consideration: The DE must require a mitigation ratio greater than 1:1 where necessary to account for the distance between the affected aquatic resource and the compensation site (33 C.F.R. 332.3 (f)(2)).



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PROXIMITY FACTOR CALCULATOR APPLICABILITY

- Mitigation Credits are to be purchased outside an approved primary or secondary service area of a Bank.

- Mitigation credits are to be purchased outside an approved service area of an ILF Program.

- If Permittee- Responsible Mitigation proposed outside the 8-digit HUC associated with the project impacts.

USE OF PROXIMITY CALCULATOR

- Generally used to evaluate impacts and compensatory mitigation occurring within the same Major River Drainage or same Level III Ecoregion.
- Mitigation proposed outside Major River Drainages or Level III Ecoregions will be reviewed on a case-by-case basis.
- Compensatory mitigation proposed to occur more than 3 HUCs from the impact site would require additional consideration during permit application review.
- Other methods to calculate a proximity factor may be considered on a case-by-case basis.
- Decision will be based on what is the most environmentally preferable alternative to effectively offset unavoidable permitted impacts.

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INCORPORATED PUBLIC NOTICE COMMENTS

- Expanded the number of watersheds to include all within Tennessee and the Nashville District.

- Beta Testing the Tool based on changes to the equation.

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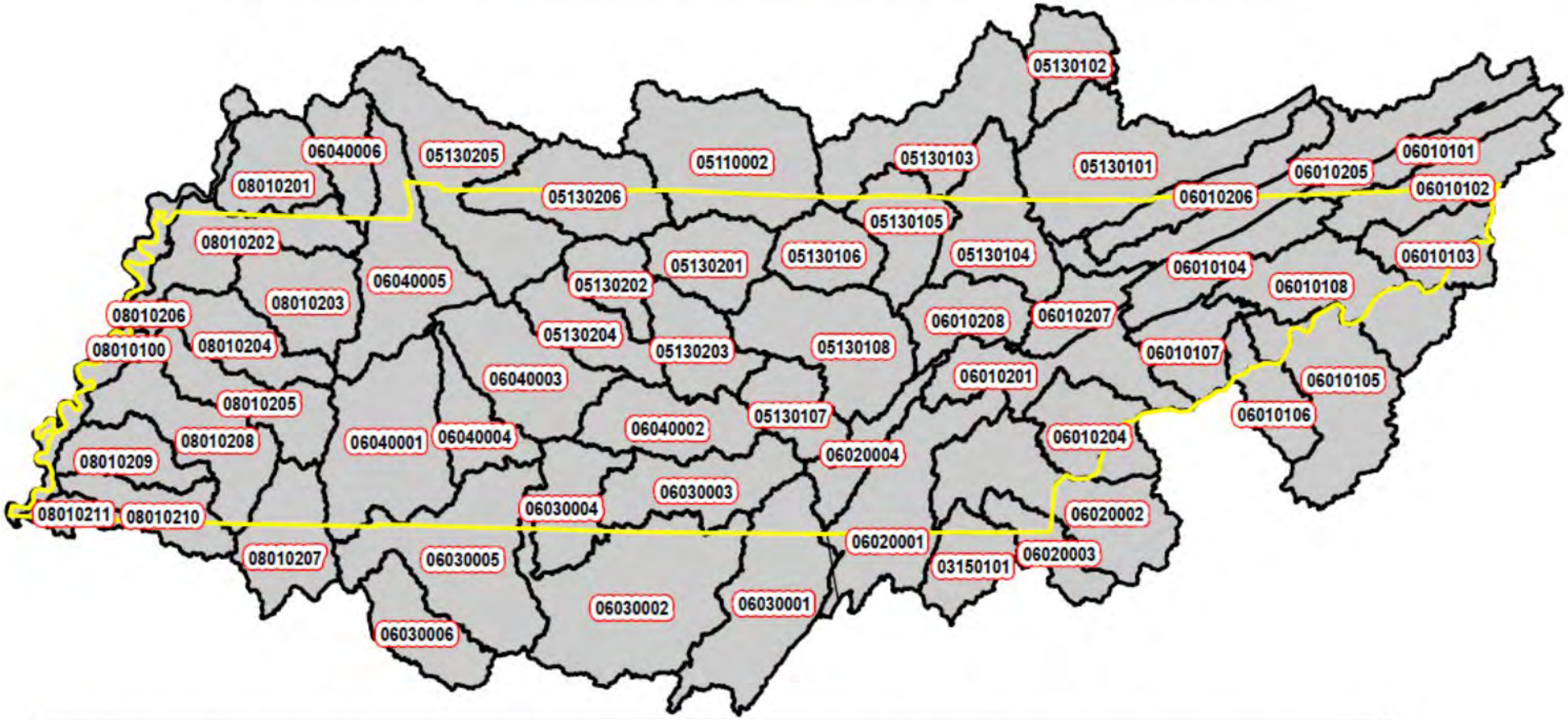
Nashville District - HUC 8 units for Proximity Factor



- TN_State_Boundary
- 03150101 Conasauga
- 05110002 Barren
- 05130101 Upper Cumberland
- 05130102 Rockcastle
- 05130103 Lake Cumberland
- 05130104 South Fork Cumberland
- 05130105 Obey
- 05130106 Cordell Hull Lake
- 05130107 Collins
- 05130108 Caney Fork
- 05130201 Old Hickory Lake
- 05130202 Lower Cumberland-Sycamore
- 05130203 Stones
- 05130204 Harpeth
- 05130205 Lower Cumberland
- 05130206 Red
- 06010101 North Fork Holston
- 06010102 South Fork Holston
- 06010103 Watauga
- 06010104 Holston
- 06010105 Upper French Broad
- 06010106 Pigeon
- 06010107 Lower French Broad
- 06010108 Nolichucky
- 06010201 Watts Bar Lake
- 06010202 Upper Little Tennessee
- 06010203 Tuckasegee
- 06010204 Lower Little Tennessee
- 06010205 Upper Clinch
- 06010206 Powell
- 06010207 Lower Clinch
- 06010208 Emory
- 06020001 Chickamauga
- 06020002 Hiwassee
- 06020003 Ocoee
- 06020004 Sequatchie
- 06030001 Guntersville Lake
- 06030002 Wheeler Lake
- 06030003 Upper Elk
- 06030004 Lower Elk
- 06030005 Pickwick Lake
- 06030006 Bear
- 06040001 Lower Tennessee-Beech
- 06040002 Upper Duck
- 06040003 Lower Duck
- 06040004 Buffalo
- 06040005 Kentucky Lake
- 06040006 Lower Tennessee
- 08010201 Bayou De Chien-Mayfield
- 08010207 Upper Hatchie

N

0 20 40 80 120 160 Miles

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Mitigation Calculation for:	Project Name / File Number
Bank Name:	Bank Name

PROXIMITY FACTOR CALCULATION

$$P_x = \sqrt{\frac{(\#HUCs)}{2} + \frac{\log10\ (IA)}{\log10\ (IA+BA)}}$$

IA = Impact Watershed in Acres
BA = Bank Watershed in Acres
#HUCS = number of HUCs crossed between the impact watershed and the bank watershed

		Area (Sq Miles)
IA	05130108 Caney	1149974
BA	05130205 Lower Cumberland	1493611
#HUCS	3	
P_x =	1.56	

OUTSIDE ECOREGION CALCULATION

Level III Impact Ecoregion	Ecoregion 71 - Interior Plateau
Level III Bank Ecoregion	Ecoregion 71 - Interior Plateau
Ecoregion Multiplier =	0.00

TOTAL MULTIPLIER

P_x + Ecoregion Multiplier =	1.56

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Mitigation Calculation for:	Project Name / File Number
Bank Name:	Bank Name

PROXIMITY FACTOR CALCULATION

$$P_x = \sqrt{\frac{(\#HUCs)}{2} + \frac{\log10\ (IA)}{\log10\ (IA+BA)}}$$

IA = Impact Watershed in Acres
BA = Bank Watershed in Acres
#HUCS = number of HUCs crossed between the impact watershed and the bank watershed

		Area (Sq Miles)
IA	05130104 South Fork Cumberland	884881
BA	05130205 Lower Cumberland	1493611
#HUCS	5	
P_x =	1.85	

OUTSIDE ECOREGION CALCULATION

Level III Impact Ecoregion	Ecoregion 69 - Central Appalachians
Level III Bank Ecoregion	Ecoregion 71 - Interior Plateau
Ecoregion Multiplier =	0.10

TOTAL MULTIPLIER

P_x + Ecoregion Multiplier = 1.95

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QUESTIONS

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