

Dealing with the New World of Wetland and Stream Permitting in 2007



Wetland

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Presentation Outline

- Regulations: Then and Now
- Case Study
- “Practicable”
- Permittable Plans
- Compensation Issues
- Permit Compliance

THE REGULATORS

Cindy Skrzycki

Definition of 'Ditch' Is Muddy at Best

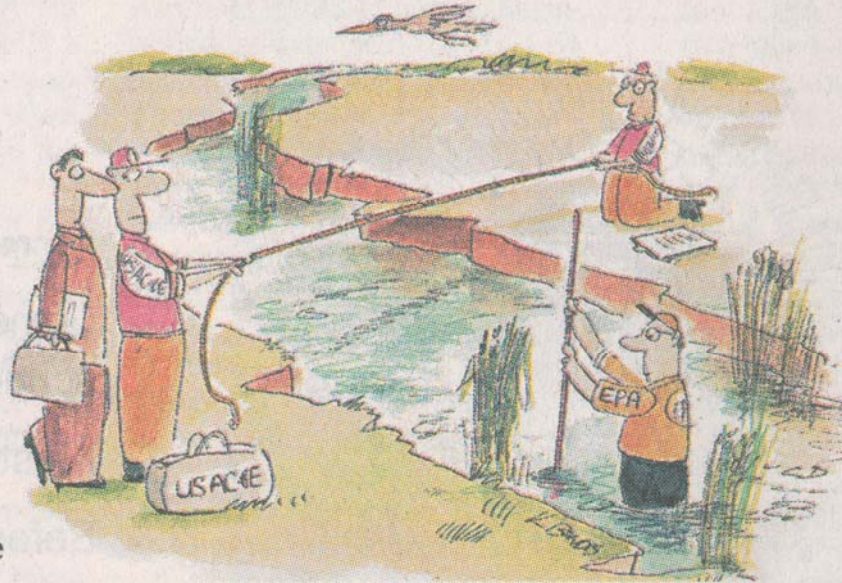
Everyone is digging his own ditch in this debate.

Under the 1972 Clean Water Act, the **Environmental Protection Agency** and the **U.S. Army Corps of Engineers** have jurisdiction over whether a ditch qualifies to be protected as a wetland.

The Corps considers whether a ditch is an isolated, non-navigable waterway open to development or a navigable U.S. waterway that deserves protection. This can include consideration of whether a ditch is a tributary, as some courts have ruled, and, thus, part of a U.S. waterway.

Seem a little confusing?

The distinctions and interpretations are



BY KEITH BENDIS FOR THE WASHINGTON POST

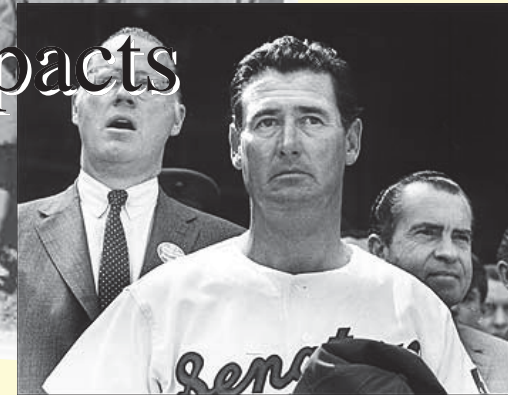
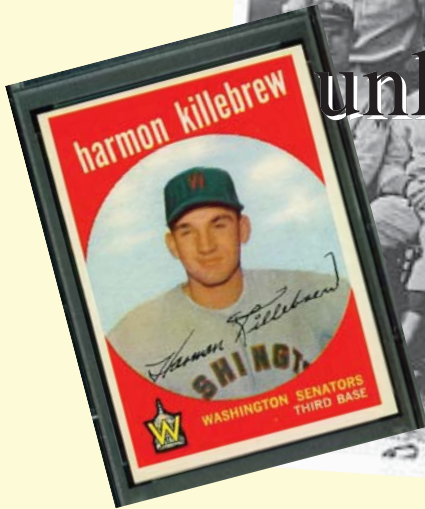
groups don't want ditches given more than their due, while environmentalists see ditches as an intricate part of the nation's hydrologic system that must be protected

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The Good Ole' Days



Until 1984 there were unlimited headwater wetland and stream impacts



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Society increasingly values wetlands and streams

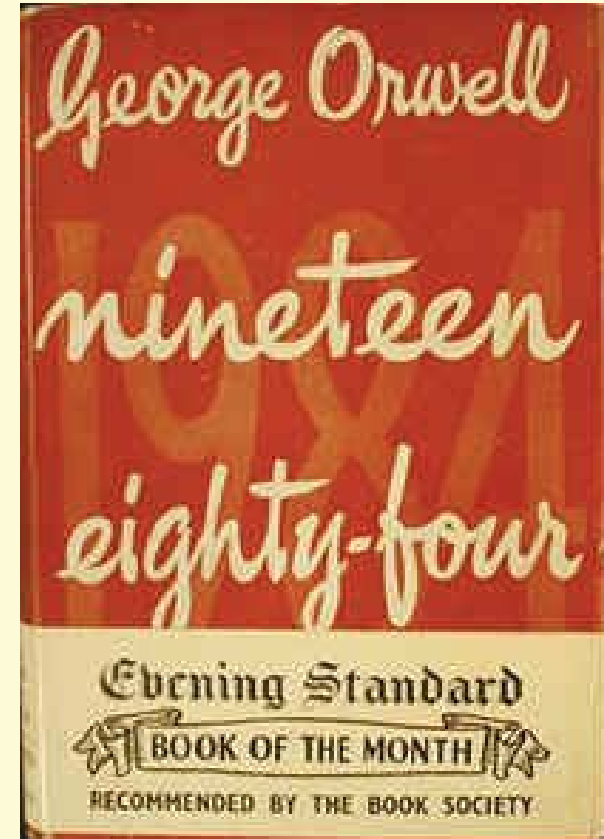
- U.S. gave away wetlands for draining and reclamation, beginning in 1849
- Everglades drainage project (1948)
- Everglades restoration project (2000)
- Over the last 20 years, regulations governing impacts have drastically changed



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1984

- Notify the U.S. Army Corps of Engineers (COE) for impacts to 1 acre or more of headwater wetlands or streams



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Impact Threshold for Mitigation Requirement for Headwaters



- 1977: greater than 10 ac
- 1984: greater than 1 ac at District Engineer's discretion
- Early 1990s: usually required for more than 1 ac (Streams included by area)



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Impact Threshold for Mitigation Requirement for Headwaters (cont.)



- 1996: greater than 1/3 ac (Streams included by area)
- 2000: greater than 1/10 ac; stream impacts greater than 500 lf at District Engineer's discretion
- 2002: greater than 1/10 ac; stream impacts greater than 300 lf



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Permit Regulations Separate Streams in 1996

61 FR 65874-65922 (12/13/1996)

- 1996 - Section 404 permits

Called “*wetlands*” permits colloquially

Early 1990’s some firms did not delineate
stream boundaries

NWP 26 adds new limits- Cannot exceed 500
lf of stream bed.

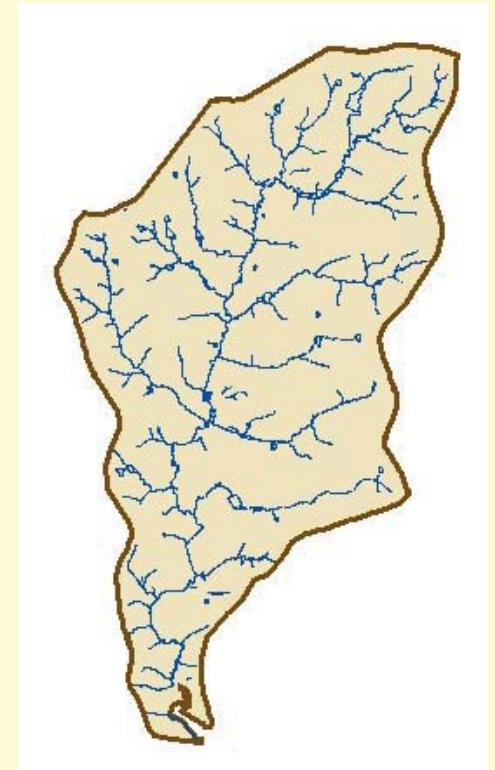
The stream impacts areas were lumped into
wetland impacts and compensated out-of-kind



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Stream Definition?

- 1986 - Final Rule
 - “...All other waters such as intrastate lakes, rivers, streams (including intermittent streams)...”
33 CFR 328.3(a)(3)
 - “...Tributaries of waters identified in paragraphs... of this section...”
33 CFR 328.3(a)(5)
 - “...Non-tidal waters of the United States...in the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark...”
33 CFR 328.4(c)(1)



Stream Definition

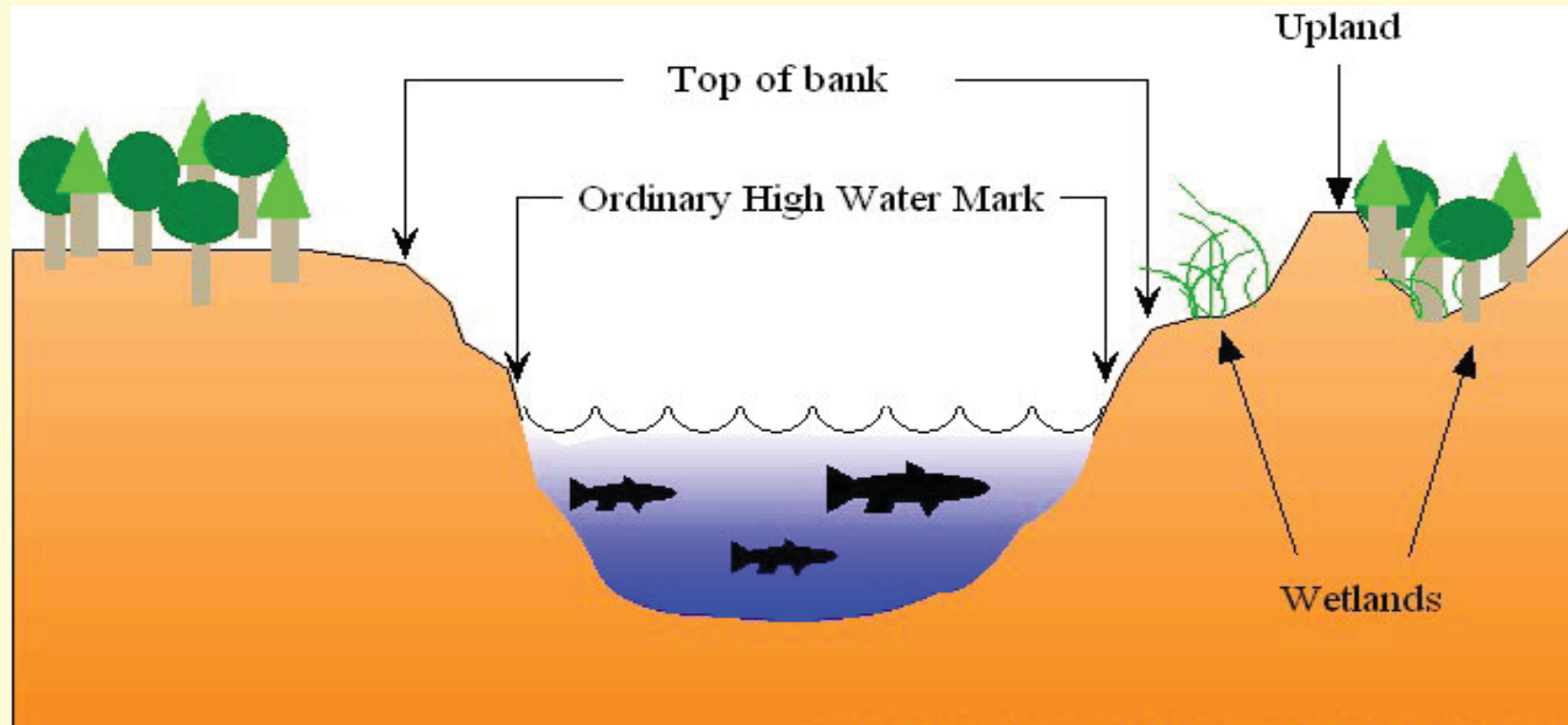
- 1986 - Final Rule
 - “...The term ‘*ordinary high water mark*’ means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas...”

33 CFR 328.3(e)

A logo consisting of a brown oval with the word "Wetland" written inside in a serif font. The oval is positioned above a decorative border of green grass and brown flowers. Below the oval, the text "Studies and Solutions, Inc." is written in a smaller font.

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Ordinary High Water Mark



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Even Ephemeral Streams are Regulated by the COE

- 1994: ephemeral streams are **NOT** regulated

Branch Guidance Letter, COE, Baltimore District, CENAB-OP-R, No.95-01, Oct. 17, 1994 (no expiration date)

- 2000: ephemeral streams **ARE** regulated

65 FR 12897 (March 9, 2000)



Ephemeral Guidance Letter

- 1994 – Branch Guidance Letter, US Army Corps of Engineers, Baltimore District, CENAB-OP-R, No. 95-01, 17 Oct 1994
- Expiration Date: None

“ 2. Project Managers are frequently required to determine the upstream limits of regulatory jurisdiction, including differentiating between intermittent streams, which are regulated {33 CFR 328.3(a)(3)}, and ephemeral streams, which are not regulated. Corps regulations, however, provide neither definitions nor criteria for making consistent determinations of jurisdiction in these stream types.”



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Stream Definitions

- 2000 - 1st time in regulatory history streams are defined and given regulatory meaning



Stream Definitions

- Ephemeral Stream

“An Ephemeral Stream has flowing water only during and for a short duration after precipitation events in a typical year. Ephemeral Stream beds are located above the water table year round. Ground water is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.”

65 FR 12897 (March 9, 2000)



Stream Definitions

- Intermittent Stream

“An intermittent stream has flowing water during certain times of the year, when ground water provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.”

65 FR 12898 (March 9, 2000)



Stream Definitions

- Perennial Stream

“A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is the supplemental source of water for stream flow.” *65 FR 12898 (March 9, 2000)*



The Problem with Stream Identification

- Consider the analogous situation of wetland identification
 - Wetlands last defined in 1986
 - Field identification parameters developed in the 1987 & 1989 manuals
 - Proposed 1991 manual
 - Subsequent revisions/memoranda implementing 1987 manual
- No field techniques for stream flow characterization published
 - Need standard field techniques that are dynamic enough for year round determination of stream flow



Current Virginia Limits

- State general permits (DEQ)
 - Maximum allowable impacts
 - 500 lf of perennial
 - 1,500 lf of non-perennial (instead of intermittent or ephemeral)



Current Virginia Limits

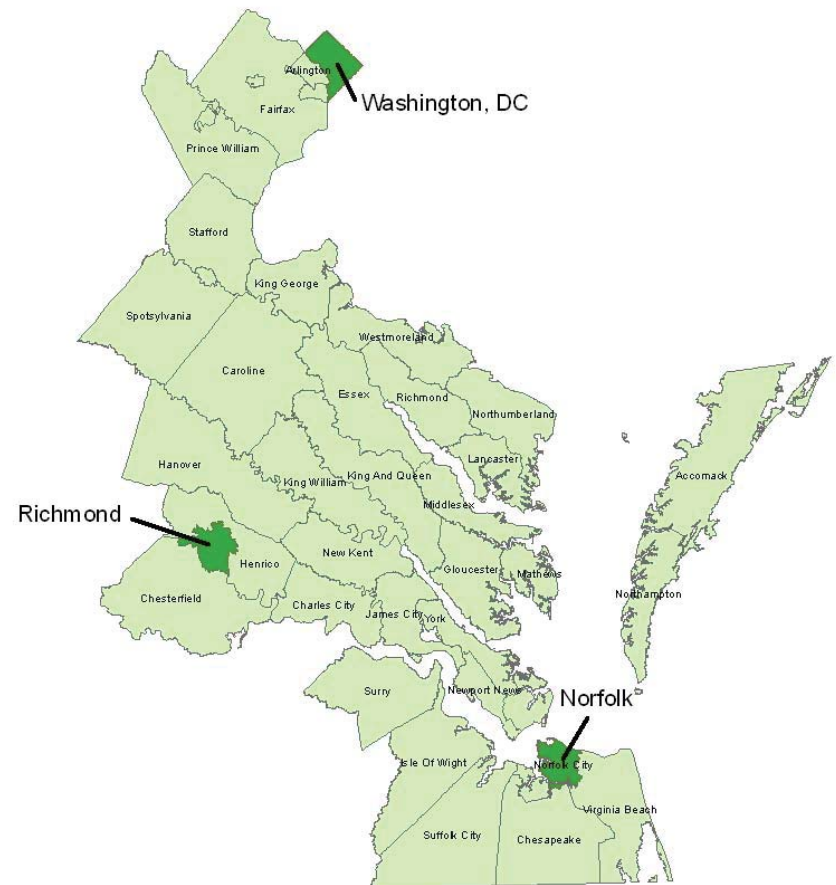
- State Program General Permit (SPGP)
 - 2,000 lf of stream bed (COE realized it was hard to differentiate perennial, intermittent and ephemeral)
 - “The term stream bed is defined as the substrate of stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside the ordinary high-water marks, are not considered to be part of the stream bed...”

Stream Flow Characterization Issues

- Stream Flow Determination
 - Army Corps of Engineers (COE) will not make stream flow determination
 - Neither COE nor Virginia Department of Environmental Quality (DEQ) has technical guidance to make stream flow determination.
 - USGS maps grossly inaccurate
 - Recent Fairfax County mapping of Resource Protection Area suggests +30% more perennial streams exist than depicted on USGS maps

Stream Flow Characterization Issues

- Stream Flow Determination varies regionally
 - Tidewater Virginia required to place 100ft buffer around *water bodies with perennial flow and contiguous wetlands*
 - Each locality allowed to use different methods



Proposed Stream Buffers

- 2000 - General Condition #19

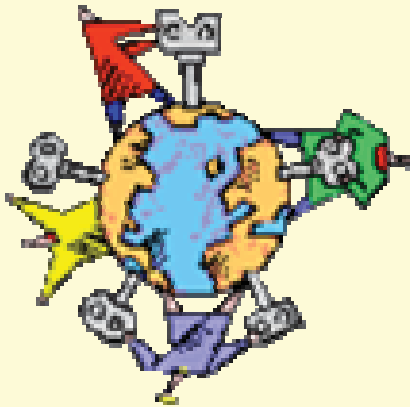
65 FR 12869 (March 9, 2000)

“...An important element of any compensation mitigation plan for projects in or near streams or other open waters is the establishment and maintenance, to the maximum extent practicable of the vegetative buffers next to open waters on the project site...”



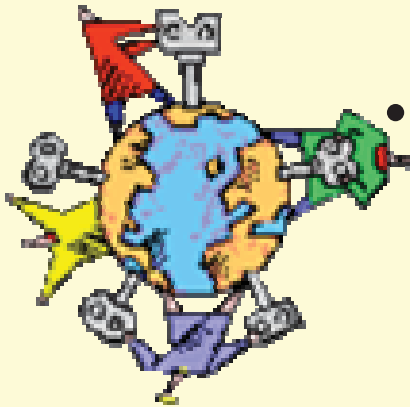
Then Our World Changed Again on September 29, 2004

- A letter from the COE to the industry
 - “We strongly encourage you to consider project designs that take into account the location of waters and wetlands and avoid and/or minimize impacts to them whenever and wherever practicable...



Then Our World Changed Again on September 29, 2004

- A letter from the COE to the industry
 - “We will be scrutinizing plans more closely in the future to insure that all appropriate and practicable measures to avoid and minimize impacts have been incorporated...
 - “We will be contacting localities to seek an opportunity to participate in their evaluation of preliminary plans.”



Case Study



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Case Study

- Same developer
- Same county
- Two office development projects
 - Project A: received permit in Spring 2000
 - Project B: began the permit process in 2005



Case Study

- Project A
 - Impacts:
 - 0.57 ac of palustrine emergent (PEM) wetlands
 - 520 lf of perennial stream
 - 200 lf of intermittent stream
 - Application filed in February 2000
 - COE issued permit in May 2000, DEQ issued waiver in June 2000
 - Mitigation on-site:
 - 1.64 ac of wetland creation and upland buffer enhancement
 - 520 lf of stream channel relocation

Case Study

Project A impact areas



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Project A Plans



—— Existing WOUS

Case Study

- Project B
 - Impacts proposed:
 - 0.62 ac PEM wetlands
 - 1,009 lf intermittent stream
 - Pre-application meeting feedback:
 - avoid 0.05 ac PEM and entire intermittent stream
 - provide 25-ft buffer along stream
 - Use economic analysis to demonstrate the proposed impacts are necessary to maintain “a return of investment sufficient to match... investors’ expectations and needs”

Case Study

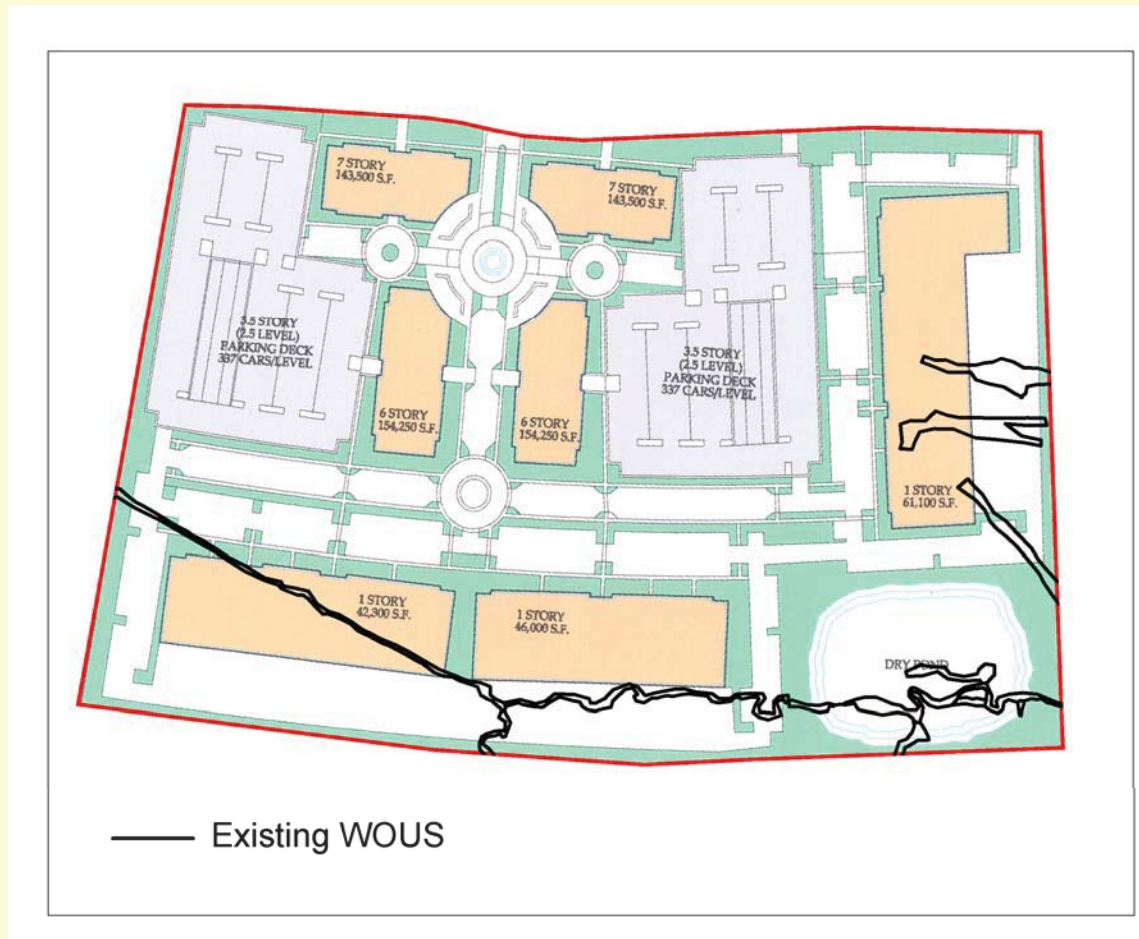
Project B impact areas



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Project B Plans



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Comparison of Regulatory Wetland Values

Project A

Permitted in 2000



Project B

Opposition to impact in 2005



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Practicable

“Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purposes.”

40 CFR 230.3(q), Guidelines for Specifications of Disposal Sites for Dredged or Fill Material in 45 FR 85344, December 24, 1980, and as amended at 58 FR 45037, August 25, 1993

How Practicable relates to...

- **Project purpose**

Can the project's **purpose** and **need** still be achieved if the proposed impact is avoided?

- **Examples:**

- Is a golf course practical with 14 holes instead of 18?
- Can the proposed runway still handle the 747 if its length is reduced by half?

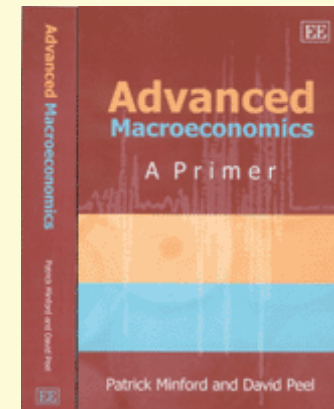


How Practicable relates to...

- **Economics of the impact**

Compare the cost of avoidance with the cost of mitigation for the proposed impact.

If a bridge can avoid impact to 2 ac of wetlands and streams at a cost of \$4 million, and mitigation costs \$500,000, avoiding the impact is not practicable in **some** people's opinion.



How Practicable relates to...

- **Economics of project**

Should the \$4 million bridge be compared to the overall project cost of \$500 million instead of mitigation cost? Is a project cost increase of less than 1% practicable?

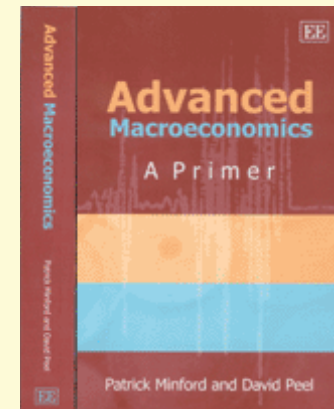
COE recently requested applicants demonstrate that they cannot receive a reasonable rate of return by avoiding impacts.



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Practicable – one developer's experience



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Results of December 2004 pre-application meeting

- A letter from the COE with the following comments:

“Since your proposal will require an individual permit, we need to consider the practicability of off-site location for your proposed development. You are requested to provide the criteria and analysis used in your evaluation of other sites, why other sites were dismissed, and why you selected the proposed site.”

Individual Permit Practicable Alternatives Test

You must rebut two presumptions to pass:

- That practicable alternatives (i.e., other sites) exist for the proposed nonwater – dependent activities, and*
- That such alternatives result in less adverse impacts on the aquatic environment than do applicant’s proposals.*

Results of December 2004 pre-application meeting

- A letter from the COE with the following comments:

“We believe you may have additional opportunities to avoid and minimize those and (*sic*) impacts and still have a viable project. Therefore, we request that you analyze the scenarios listed below and provide us with the information outlined in the enclosure:

 1. Your proposal.
 2. A modified proposal that eliminates all filling in waters and wetlands...except for road crossings and utility lines.
 3. A modified proposal that eliminates as much filling of waters and wetlands as practicable while maintaining a return of investment sufficient to match you and your investors’ expectations and needs.”

If you can't beat 'em....Join 'em



Twelve Step Program to a permittable plan:

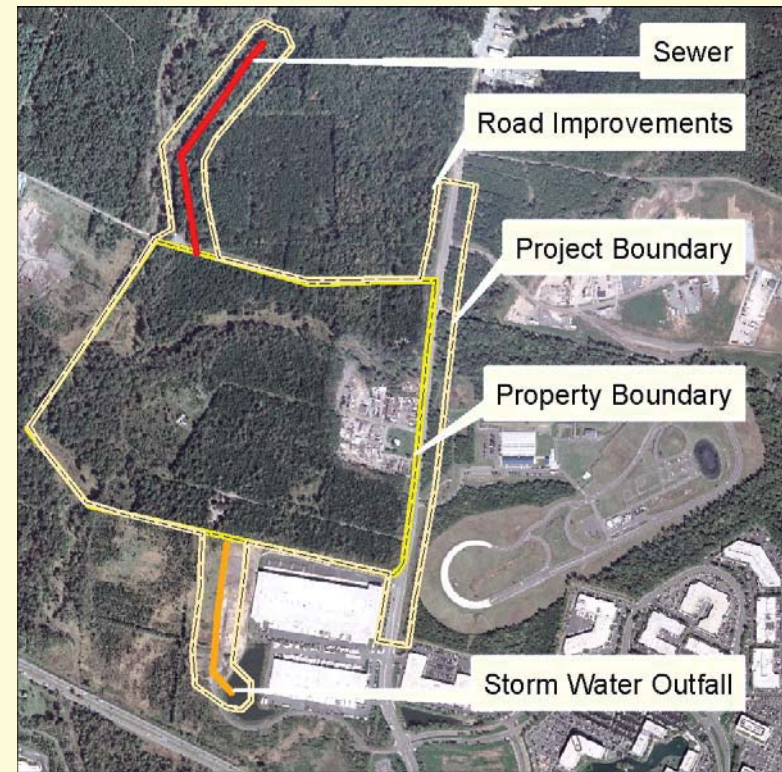


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Step One: Define Boundary of Expected Work

- On-site boundary
- Off-site road improvements
- Off-site utilities
- Off-site staging areas
- Off-site access roads
- Adequate outfall improvements



Step Two: Identify Resources

A. Delineate all streams, wetlands, and ponds

- Waters of the United States (WOUS) and Waters of the Commonwealth



B. Survey all WOUS

Step Two: Identify Resources (cont.)

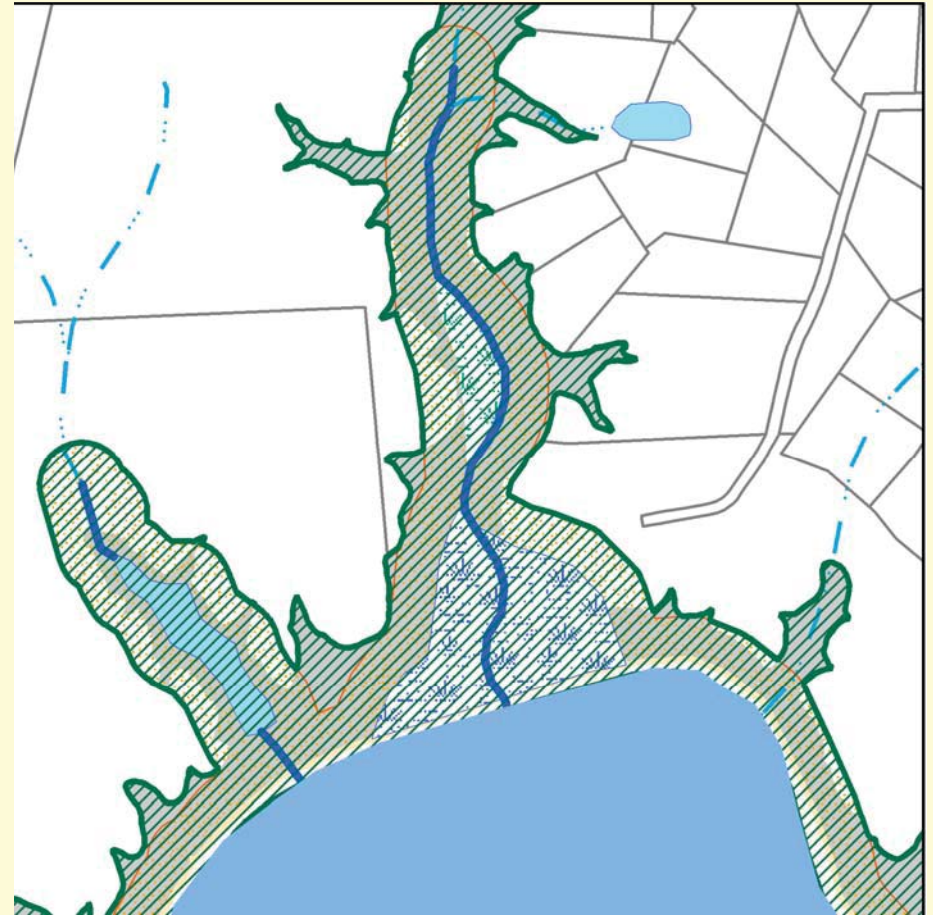
C. Locate all riparian corridor systems

- COE (25 to 50ft buffer recommended from all WOUS)
- Floodplains (local and FEMA)
- Resource Protection Areas (RPA)
- Fairfax County
 - Environmental Quality Corridor (EQC)
- Prince William County
 - Comprehensive Plan
 - Design and Construction Standards Manual



RPA (Fairfax County Definition)

- RPAs shall include any land characterized by one or more of the following features:
 1. a tidal shore
 2. a tidal wetland
 3. a water body with perennial flow
 4. a nontidal wetland connected by surface flow and contiguous to a tidal wetland or water body with perennial flow
 5. i) a buffer area that includes any land within a major floodplain, or
ii) any land within 100 feet of a feature listed in (1)-(4)

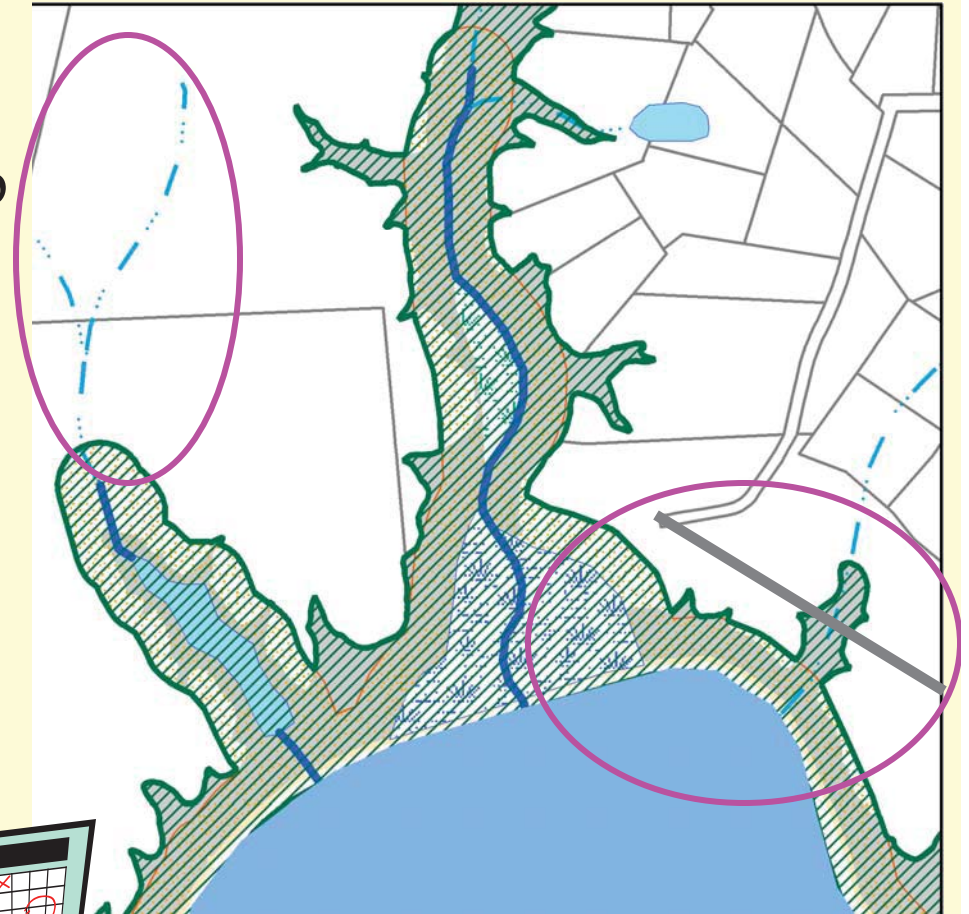


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RPA Locality Considerations

- Some localities include intermittent streams and steep slopes
- Impacts can require
 - waivers or exceptions
 - potentially a public hearing



can be time-consuming!

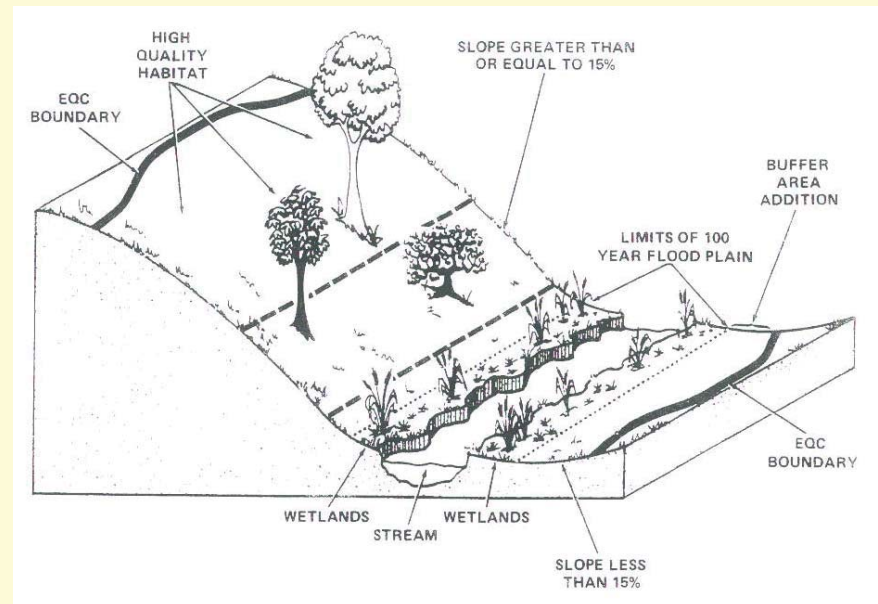


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Fairfax County EQC

- Major and minor 100 yr. floodplain
- Slope 15%+ adjacent to floodplain or if no floodplain, 15% + within 50ft of the channel
- Wetlands
- Land within corridor that is within 50ft plus 4 additional feet for each % slope measured perpendicular to stream bank
- High quality habitat



Prince William County

- *Comprehensive Plan*

EN-Policy 5 – Action Item 10 →

“Encourage” the preservation of a minimum 50 foot buffer along each side of all waterways excluded from RPA



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Prince William County

- *Design and Construction Standards Manual* (2006)
 - Must conserve steep wooded slopes along perennial streams
 - Minimum 40 foot setback from wetlands for dwellings (when permit not obtained)



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Step Two: Identify Resources (cont.)

D. Locate all adjacent steep slopes

E. Search for ETS – Locate if found

- Protection areas vary by species
- Time of year may preclude location
- State or Federal?



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Step Two: Identify Resources (cont.)

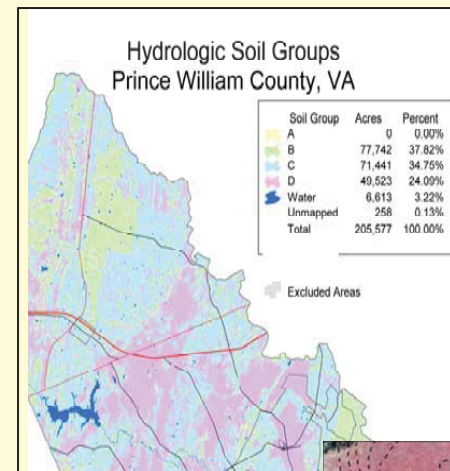
F. Locate cultural resources

- Phase I study does not precisely locate resources
- If potentially eligible, go to Phase II or have study area boundary refined, flagged, and surveyed

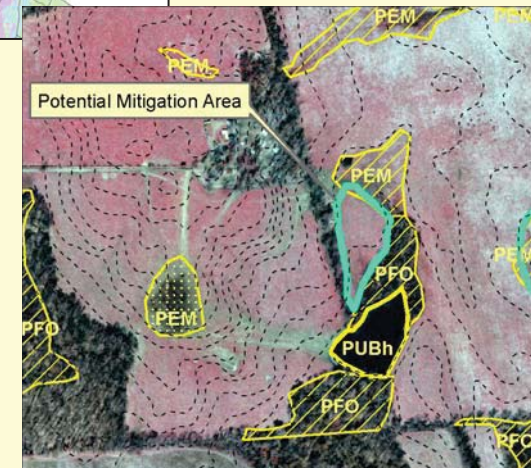


Step Two: Identify Resources (cont.)

G. Depict soil types by hydrologic group (A, B, C or D)



H. Locate potential on-site stream and wetland mitigation areas



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Step Three: Create a Conservation Design Plan Base Map

- A. The first step of a LID design
- B. Establishes a land-use frame work that will lead to a plan permittable by the COE and DEQ
 - LID is **not** required by the COE if SWM/BMP facilities do not impact WOUS (outfalls are allowed)
- C. Ideally a surveyed boundary is used and all resources are tied to the same coordinate system (horizontal and vertical)



Low Impact Development

Adapted from Reigning in the Storm – One Building at a Time: a basic guide to Low Impact Development, Northern Virginia Regional Commission, 2005

1. Conservation

Identify and protect natural features that provide natural stormwater control functions.



2. Minimization of impacts

Limit clearing, grading, and the addition of impervious surfaces.

3. Direction of runoff to natural areas

Disconnect runoff from impervious areas to slow down water movement and capture the resource so it can infiltrate natural areas, evaporate, or be reused.



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Low Impact Development

Adapted from Reigning in the Storm – One Building at a Time: a basic guide to Low Impact Development, Northern Virginia Regional Commission, 2005

4. Use of small-scale controls

Incorporate multiple practices that work to reproduce natural processes with rainfall, including infiltration, detention, retention, evaporation, and groundwater recharge. These practices include rain gardens, green roofs, vegetated swales, cisterns, and amended soils.

5. Pollution prevention and education

Practice erosion and sediment control, and prevent soil compaction during site preparation and construction. Educate others regarding practice of LID techniques and maintenance of stormwater infiltration facilities.



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Step Four: Rank Specific Resources

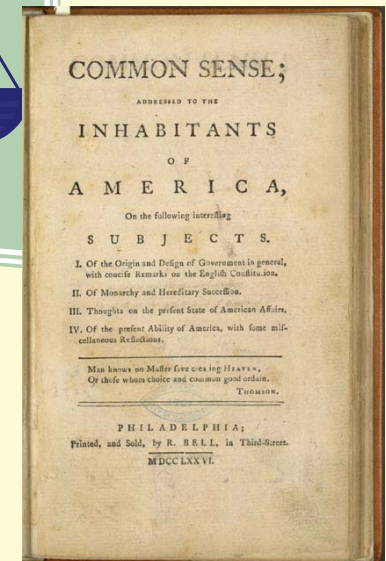
A. Functions and values

B. Not all are equal

C. No accepted system-
use common sense



$$\begin{aligned}Q(t) + R(t) &= 1 \\R(t) &= 1 - Q(t) \\R(t) &= 1 - \int_{0,t} f(s)ds \\R(t) &= \int_t^{\infty} f(s)ds\end{aligned}$$



Low Value and High Value

- Streams



- Wetland



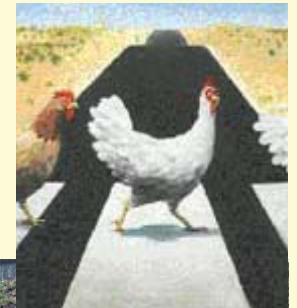
- Forest



Step Five: Rank Impact Acceptability

A. Acceptable

- Road crossings (unless other alternatives exist)
- Utility crossings
- SWM/BMP outfalls



Step Five: Rank Impact Acceptability

B. Not Acceptable

- In-line SWM/BMPs
- Residential units, parking lots, ball fields



C. Potentially Acceptable

- Big industrial complexes
 - Box Retail
 - Malls
 - Office Buildings



Step Six: Follow the Mitigation Sequence

- Mitigation is a sequential process:

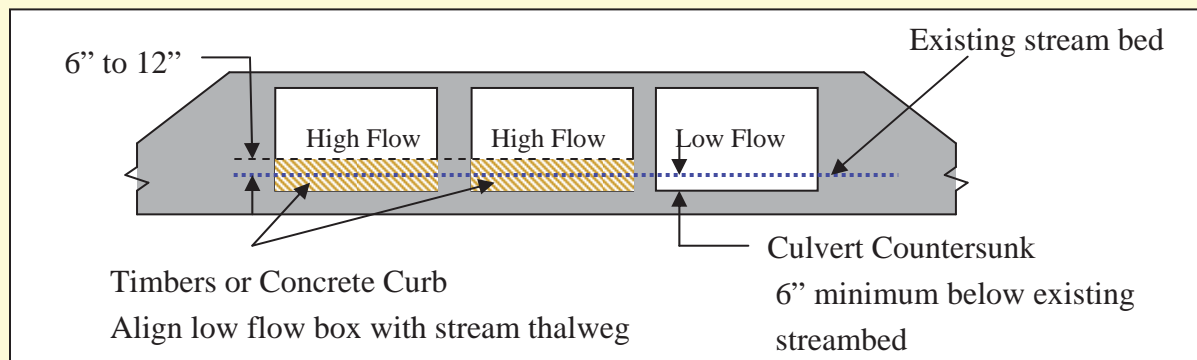
Avoidance - to the maximum extent practicable

Minimization - of impacts that could not be avoided

Compensation - for remaining unavoidable impacts

Step Seven: Minimize Impacts

- Road Crossings
 - Depress culvert
 - Span stream
 - Floodplain culvert



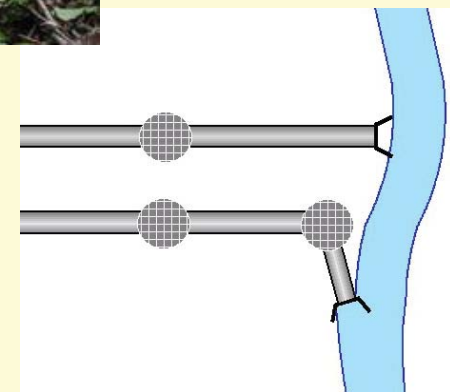
Step Seven: Minimize Impacts (cont.)

- Utilities
 - Cross perpendicular
 - Clay blocks
 - Restore with wetlands topsoil at original contours



Step Seven: Minimize Impacts (cont.)

- Outfalls
 - Blend into flow path
 - Is receiving channel “adequate”?



Step Eight: Create the Proposed Plan

- Avoid impacts to the maximum extent practicable
- Include SWM and utility concepts – explain in narrative
- Save and date plan for JPA
- Use LID principle #2, minimization of impacts:
Locate the buildings, parking lots, and roads on a site to minimize impacts to wetlands and streams and maintain connections between natural areas.



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Step Nine: Check Scope of Work

These areas are commonly missed in initial planning

- On-site sewer and water lines
- Off-site utilities
- Off-site road improvements
- “Adequate” stormwater outfalls
- Staging area impacts
- Temporary stream crossings
- SWM/BMP
 - Check size
 - Locate in A/B soils
 - Are practicable LID elements included?
(If SWM/BMP facilities are proposed in WOUS)



Step Ten: Evaluate Impacts vs. On-site Mitigation Opportunities

A. Do you have enough appropriate on-site area for mitigation?

- Proper soils
- No trees
- Hydrology source



B. Design on-site or select off-site options

Step Eleven: Pre-Application Meeting

- Try to have a pre-application meeting with the COE and DEQ to present proposed plan and show the process of creating the plan
- Explain why further avoidance and minimization is not practicable



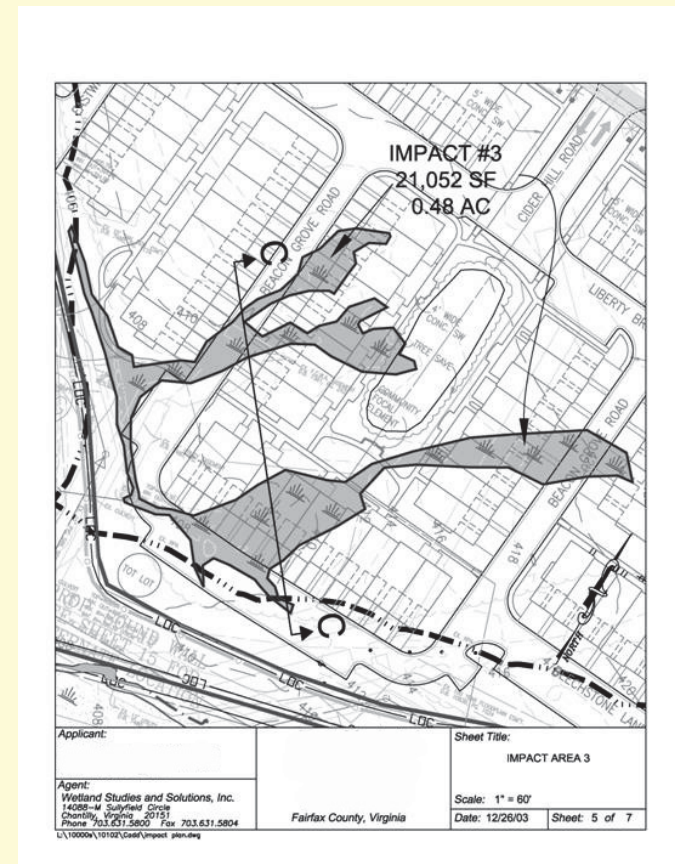
Step Twelve: Finalize Project

- Tweak plan based upon pre-application meeting comments
- Save and date each version for the JPA

and...

Step Twelve: Finalize Project (cont.)

- Document project details:
 - Overall plan graphic
 - Detailed 8½ x 11” impacts (plan and cross section)
 - Avoidance narrative/plans: story of sequential analysis
 - Match compensation to impacts
 - Document LID measures



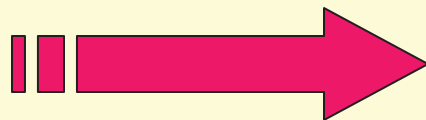
Keeping Civil Site Plans in Compliance



Keeping Civil Site Plans in Compliance

- The Problem : **Plans Change**

- Review comments
- Constructability comments
- Erosion & sediment (E & S) controls don't fit
- Land planner improvements
- Client suggestions



Little things move and the dominos fall

Steps to Keeping Civil Site Plans in Compliance

1. Show surveyed WOUS **boldly** on all plans and define in legend
 - In project area (and within 100 feet of boundary if possible)
 - Identify by Cowardin classification (PFO, PSS, etc.)
 - Reference the delineation source along with COE Jurisdictional Determination number and date
2. Shade and label every permitted or proposed impact area



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Steps to Keeping Civil Site Plans in Compliance

3. List proposed (pending or approved) impacts in a table, along with permit numbers and submission or approval dates
4. Depict and label all areas (WOUS, buffers, and mitigation sites) to be protected with an easement or restrictive covenant. *Treat these areas like property lines of uncooperative owners*



Steps to Keeping Civil Site Plans in Compliance

5. Show all this data on every plan of any type; double check for conflicts on the grading plan and E & S plan
6. Most people will avoid these areas when they are highly visible particularly if requested by the developer



Compensation Site Issues



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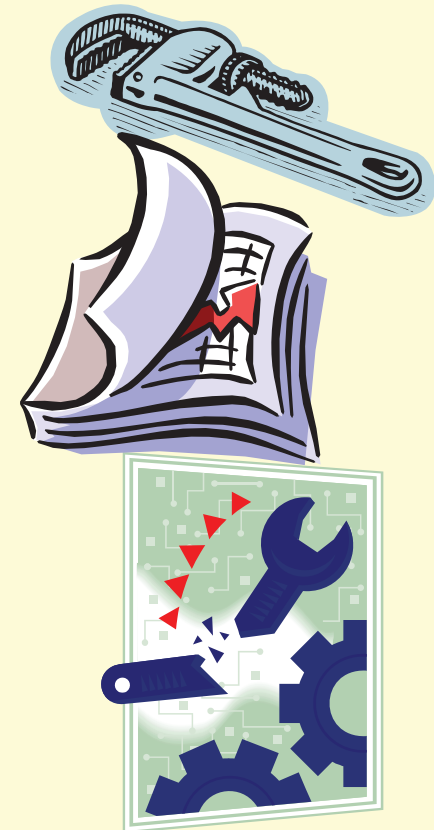
Compensation Site Issues

- Published studies show:
 - Success rates range from 27 to 50%
 - Due in part to 22 to 38% of sites are never built
- Compensation sites must be **constructed**!
- Submit As-Built survey (and build correctly)

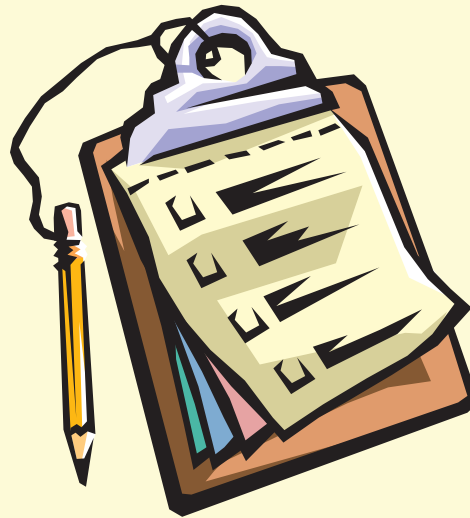


Compensation Site Issues

- Usually have 5 to 10 years of required maintenance and monitoring
 - Lack of maintenance leads to problems
 - Monitoring Reports:
 - file in years 1, 2, 3, 5, 7 and 10
 - *eventually agencies notice when reports are not filed*
 - If they fail- **they must be fixed**



Maintaining Permit Compliance



Maintaining Permit Compliance

1. Make it a contractual obligation for all plans to show the wetland and stream preservation information
2. Promptly record all easements/restrictive covenants, depict on all plans and submit to regulatory agencies **before you sell or donate the property**



Maintaining Permit Compliance

3. Include specific conformance with actual COE/DEQ/VMRC permits in construction contracts
4. Protect WOUS with wire fence when limits of clearing are within 50ft



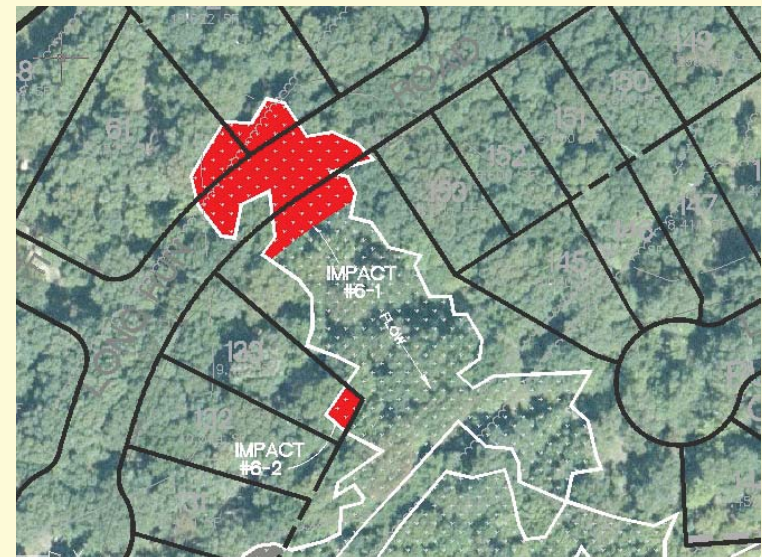
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Maintaining Permit Compliance

5. Monitor and report on construction activities using...

A. Ortho-rectified aerial photo

- Submit
 - before construction
 - annually until all impacts have been taken
- Must show
 - WOUS
 - authorized impact areas



Maintaining Permit Compliance

5. Monitor and report on construction activities using

B. Ground photographs of impact areas

- Submit
 - before construction
 - during the first, second, and third months of construction
 - semi-annually until the end of construction



Maintaining Permit Compliance

6. E & S Control

- All wetland permits require proper E & S controls



Wetland

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Maintaining Permit Compliance

6. E & S Control (cont.)

- Virginia Stormwater Management Program permit:

needed for land disturbance areas

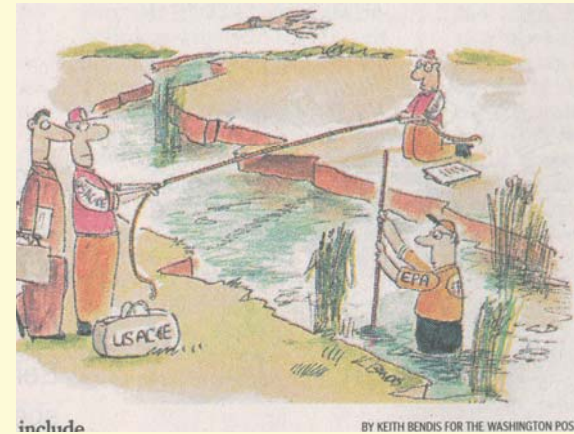
- 2,500+ sf in Chesapeake Bay Preservation Areas (RMAs and RPAs)
- 1 ac or larger everywhere else

inspections

- once every 14 calendar days AND
- “within 48 hours of the end of any runoff producing storm event”

Conclusions

- The world has changed
 - no one is giving away wetlands!
 - Old NWP 26 policy of “one free acre” is gone
- The smallest rivulet of water is regulated by the government
- Most streams and wetlands now need buffers



Conclusions

- You must avoid impacts to the maximum extent practicable
- The preferred means of mitigation is avoidance
- After you get the permits, you have to follow the rules!

