Engineers' workshop

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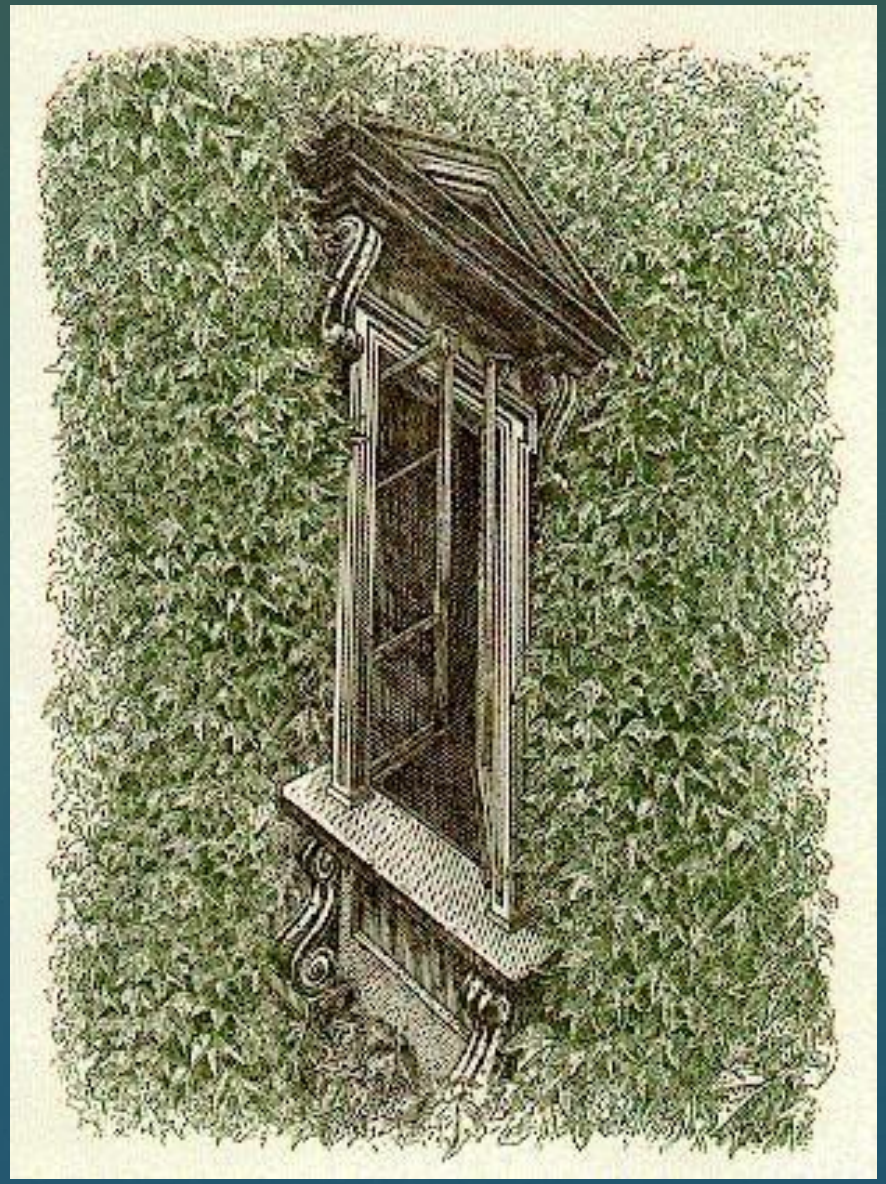
Coon Creek Watershed District


Coon Creek Watershed District



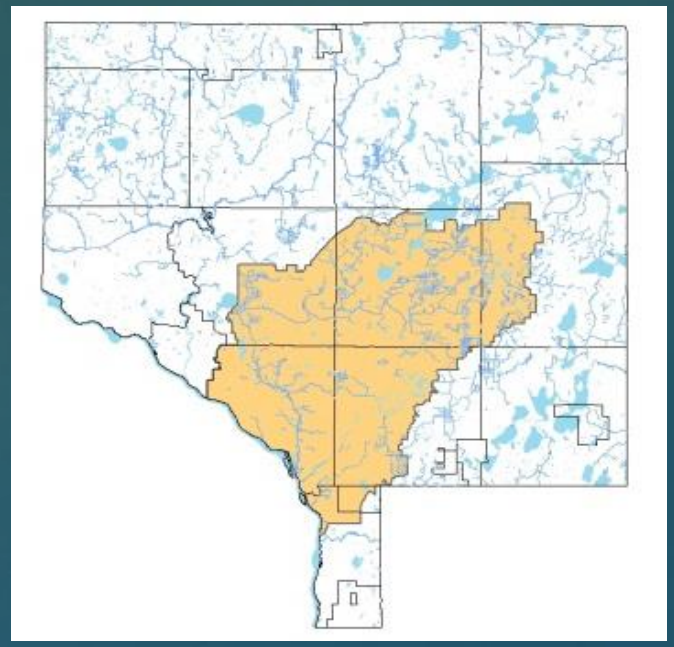
Coon Creek Watershed District

What is a Watershed District?

Special Purpose Unit of government

for managing water
& related land resources

within a certain watershed

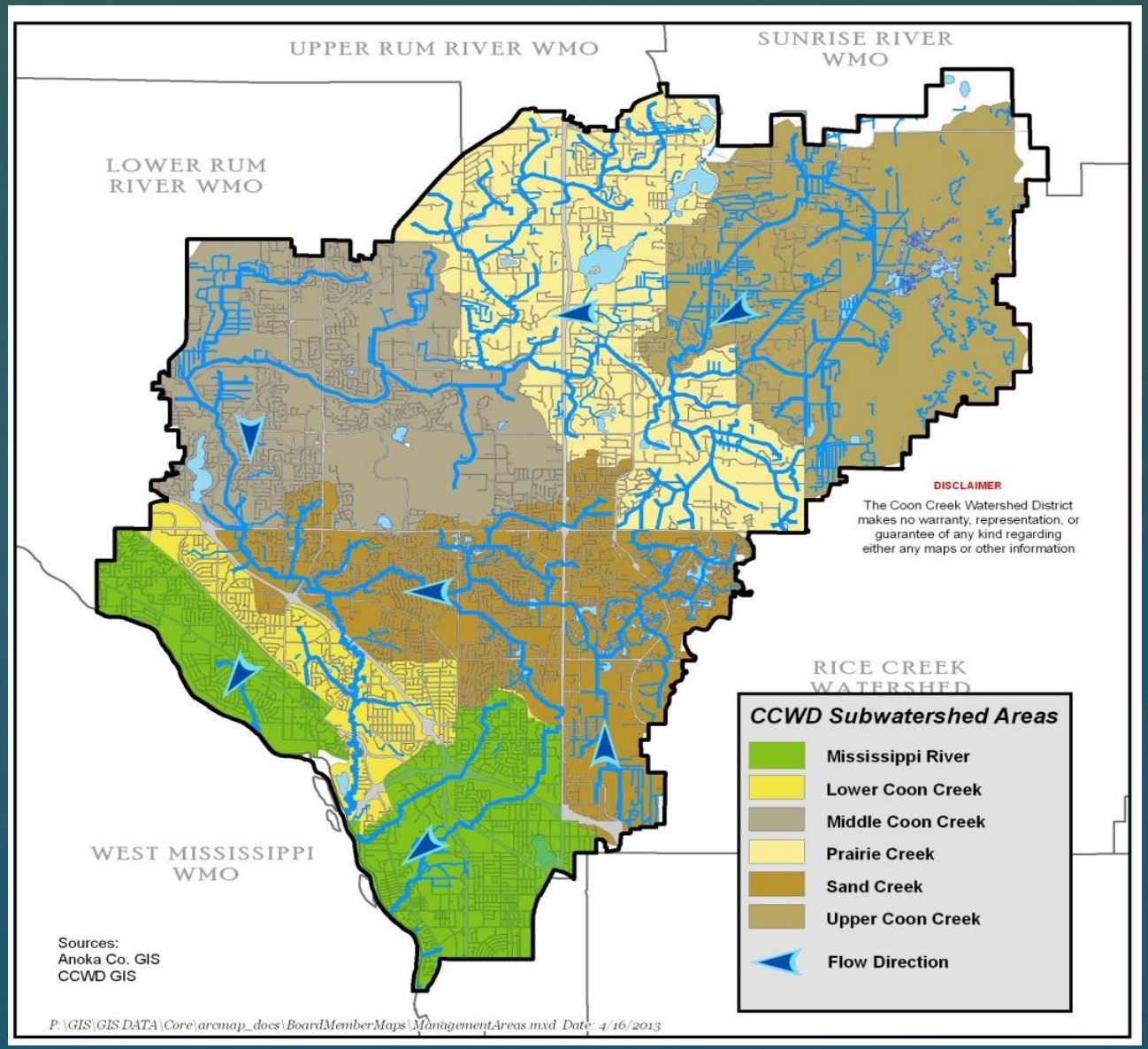


Coon Creek Watershed District

Coon Creek Watershed District

manages drainage
areas of Coon Creek
+
Mississippi River
as of
December 14, 2011

for a total of 107 square miles



CCWD original mission

Ditch Authority

Coon Creek Watershed District


minimize property damage
provide for multiple uses
minimize pollution
Coon Creek Watershed District

Permitting

- Any work within or adjacent to a public ditch within CCWD
- Any work in or adjacent to wetlands, lakes or watercourses
- One or more cumulative acres of land disturbance
- The lands and waters that have been, or may be, covered by the regional flood
- Activities upstream from land that is dependent upon removal of water from the soil profile for their continued use (drainage sensitive uses)
- Appropriation and use of groundwater

Permitting

- High water table, outwash and organic soils
- High infiltration soils
- Highly erodible soils
- Excavation or filling or a combination thereof of sand or other excavation or fill material including the laying, repairing, replacing or enlarging or a culvert or an underground pipe or facility where it crosses a public ditch or waters of the state
- Endangered, threatened or special concern species, elements or communities

Reminder!

1. Make sure your application has 2 hard copies of
   - **all** of the required materials
   - **all** at same time!

2. Large Plans –only what we need:
   - no transportation, landscaping, etc.

1. Schedule Pre-Application meeting

2. Got Wetland? Submit delineation report & Wetland application for each, if applicable

DEADLINES ON COONCREEKWD.ORG

3. Submit Grading & Development Application materials

a. Geotechnical report

b. Erosion & Sediment Control Plan

c. Preliminary Plat

d. Threatend/Endangered spp

e. Grading Plan

f. **Drainage Calculations***

*VOLUME MGMT

*RATE CONTROL

*WATER QUALITY

*use Atlas 14 & NAVD 1988

g. Schedule & timeline

h. $1,510 check to CCWD

Findings

Does the project impact:

- Ditches & Drainage
- Floodplain
- Drainage Sensitive Uses –areas can change
- Groundwater
- Historic sites
- Wetlands
- Wildlife

Findings

Does the project meet requirements for:

- Stormwater & hydraulics
- Soils & erosion control
- Maintenance (O & M Agreement &/or D & U easements)
- Local Planning & Zoning
- Water quality

Grading & Development

1. Site Stabilization
2. Post Construction Test
3. Pretreatment to an Infiltration Basin
4. O & M Agreement, D & U Easements
5. Ditch Easements

1. Site stabilization

(MPCA Stormwater Permit
Iv.b.2 erosion prevention practices and
appendix A.C.1.a)

Provide Note on plans that stabilizing vegetation will be provided within 7 days of rough grading.

2. Post Construction test

Infiltration Basin

iii.D.d Permanent Stormwater management system

The applicant ***must acknowledge on their plans*** that they will conduct a post construction test

3. Pretreatment to an Infiltration Basin

Sumps

Siting and Design Considerations

The performance of catch basins is related to the volume in the sump (i.e., the storage in the catch basin below the outlet). Lager *et al.* (1977), described an "optimal" catch basin sizing criteria, which relates all catch basin dimensions to the diameter of the outlet pipe (D). Dimensions are:

- The diameter of the catch basin should be equal to 4D.
- The sump depth should be at least 4D. This depth should be increased if cleaning is infrequent or if the area draining to the catch basin has high sediment loads.
- The top of the outlet pipe should be 1.5 D from the inlet to the catch basin.

- http://www.stormwatercenter.net/Pollution_Prevention_Factsheets/CatchBasins.htm

4. OM & DU

Operations & Maintenance Agreements
(2 copies!)

Drainage & Utility easements

5. Ditch Easements

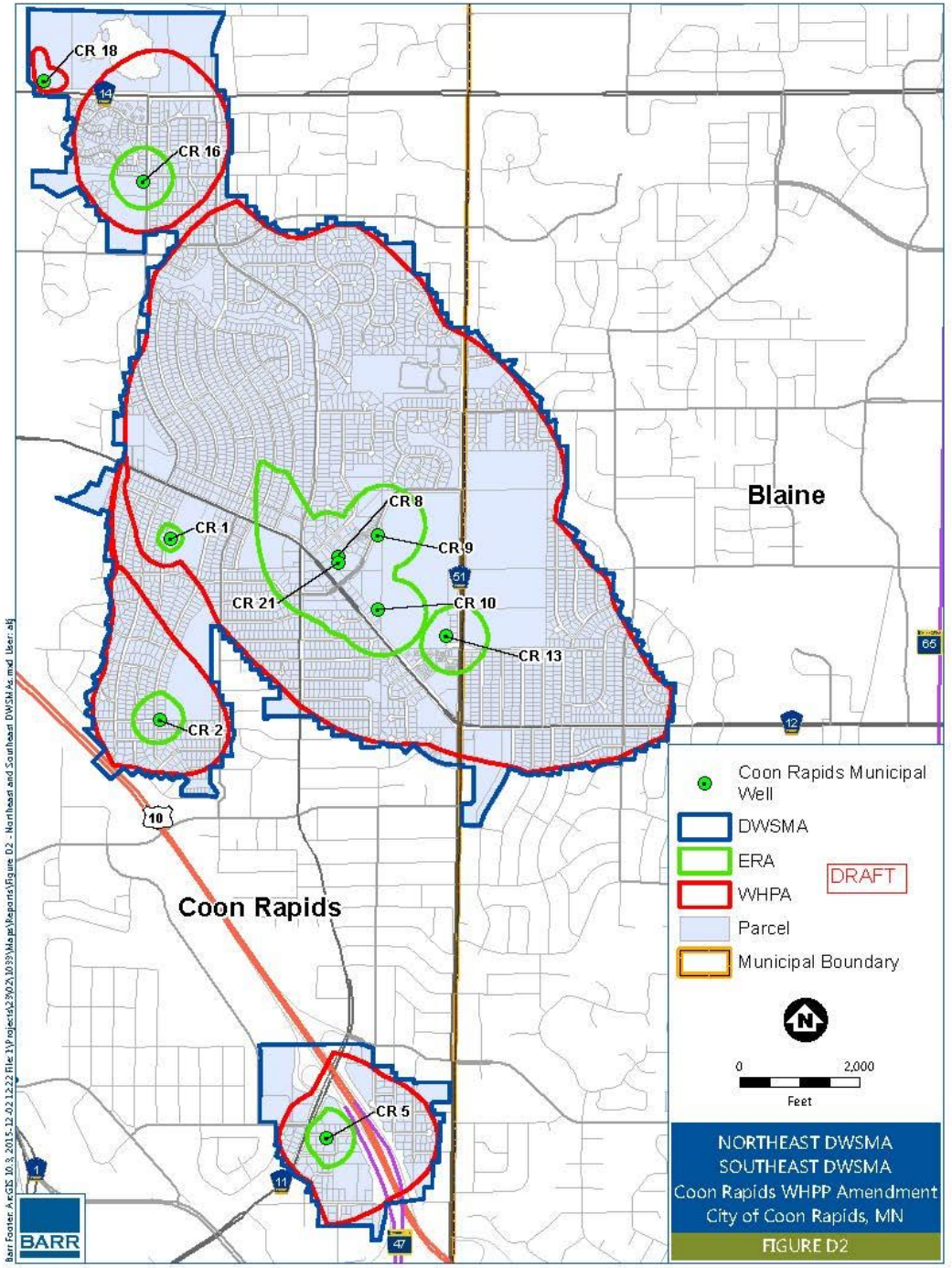
Triggers for Redesign, Delays

- Wetlands
- WHPA
- DWSMA
- Drainage Sensitive Uses
- Contaminated site
- T & E Species

Get Approval the First Time

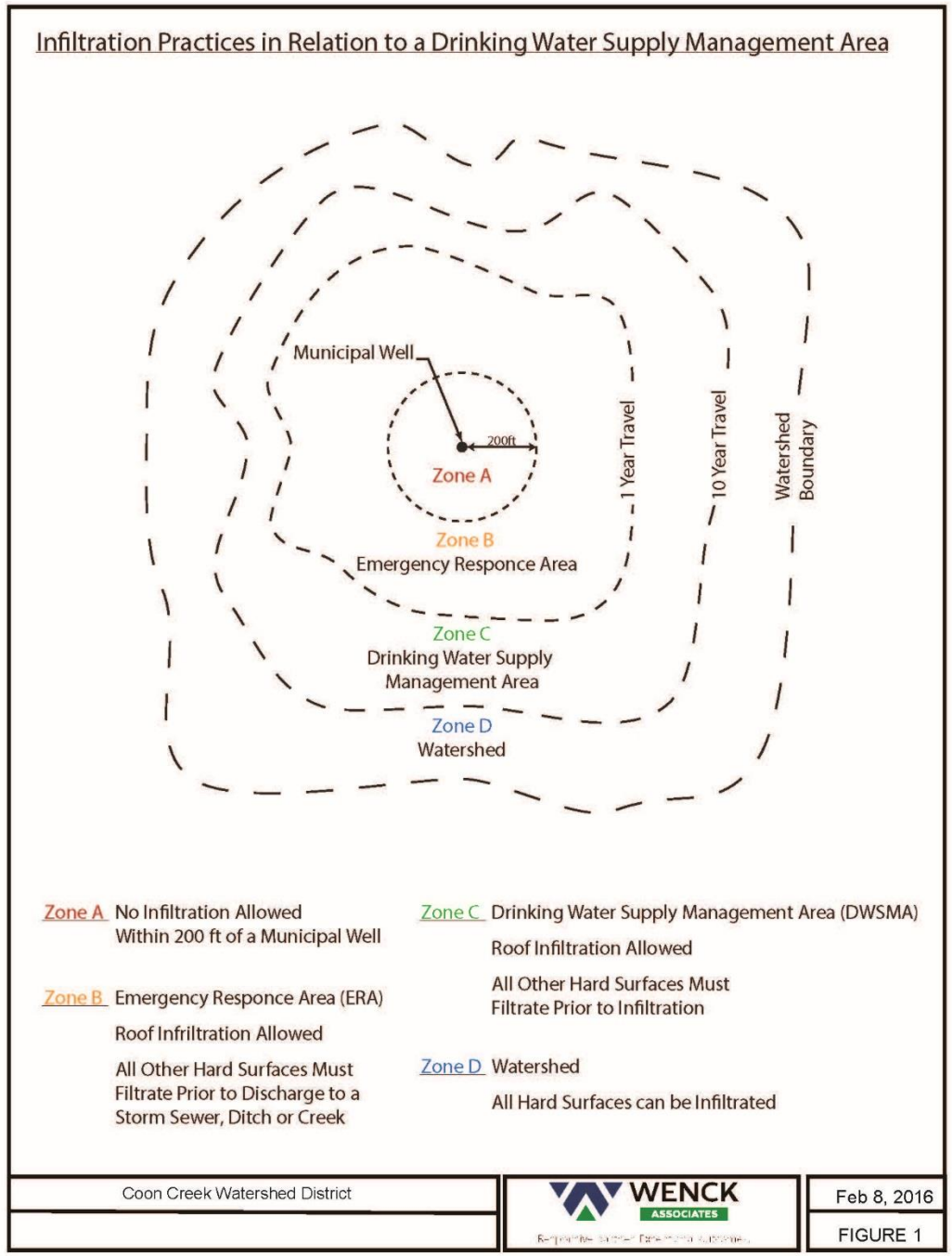
- Pre-application meeting! – especially linear projects!!
- Concurrent submittal with city

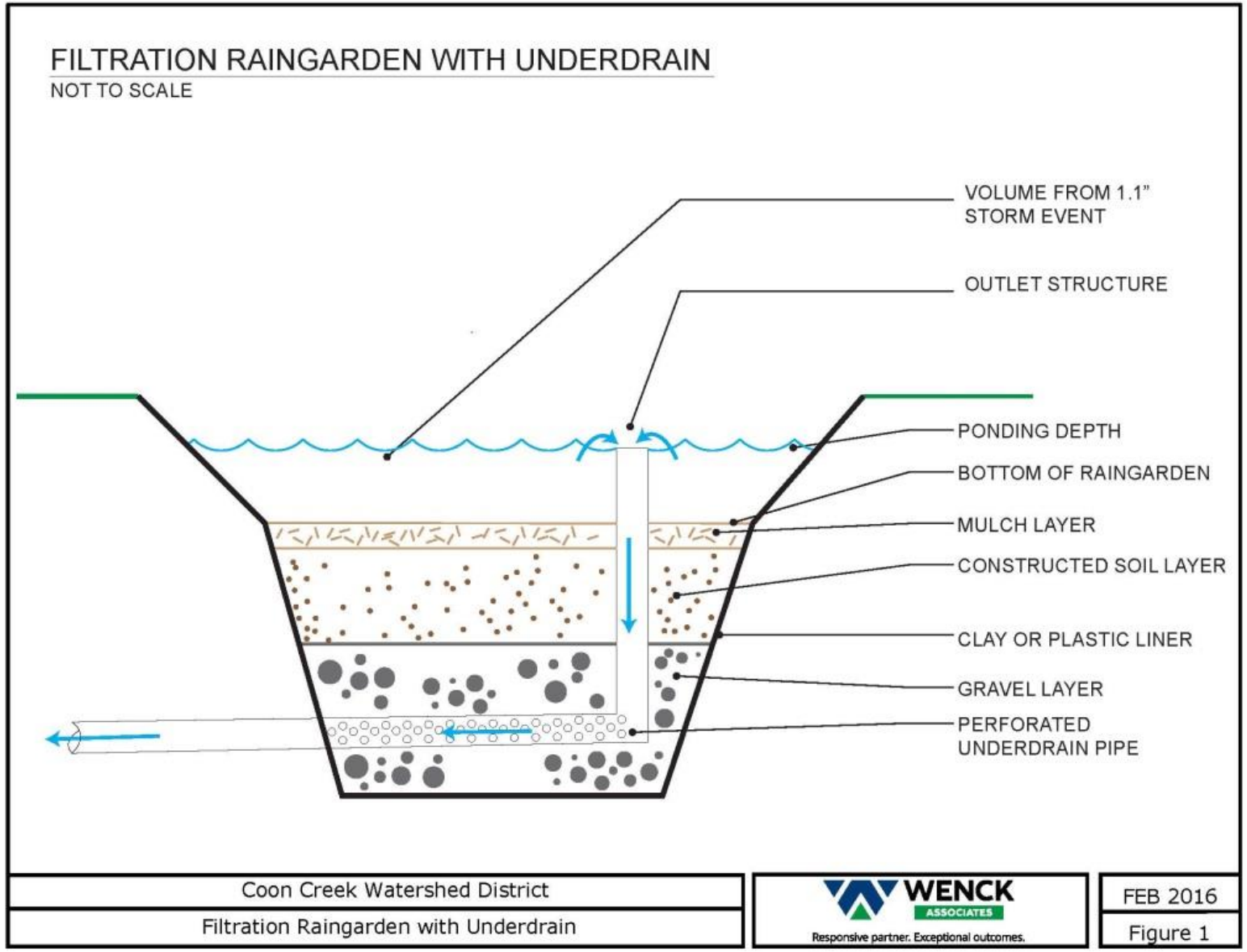
Drinking Water Supply Management Area Infiltration Rules



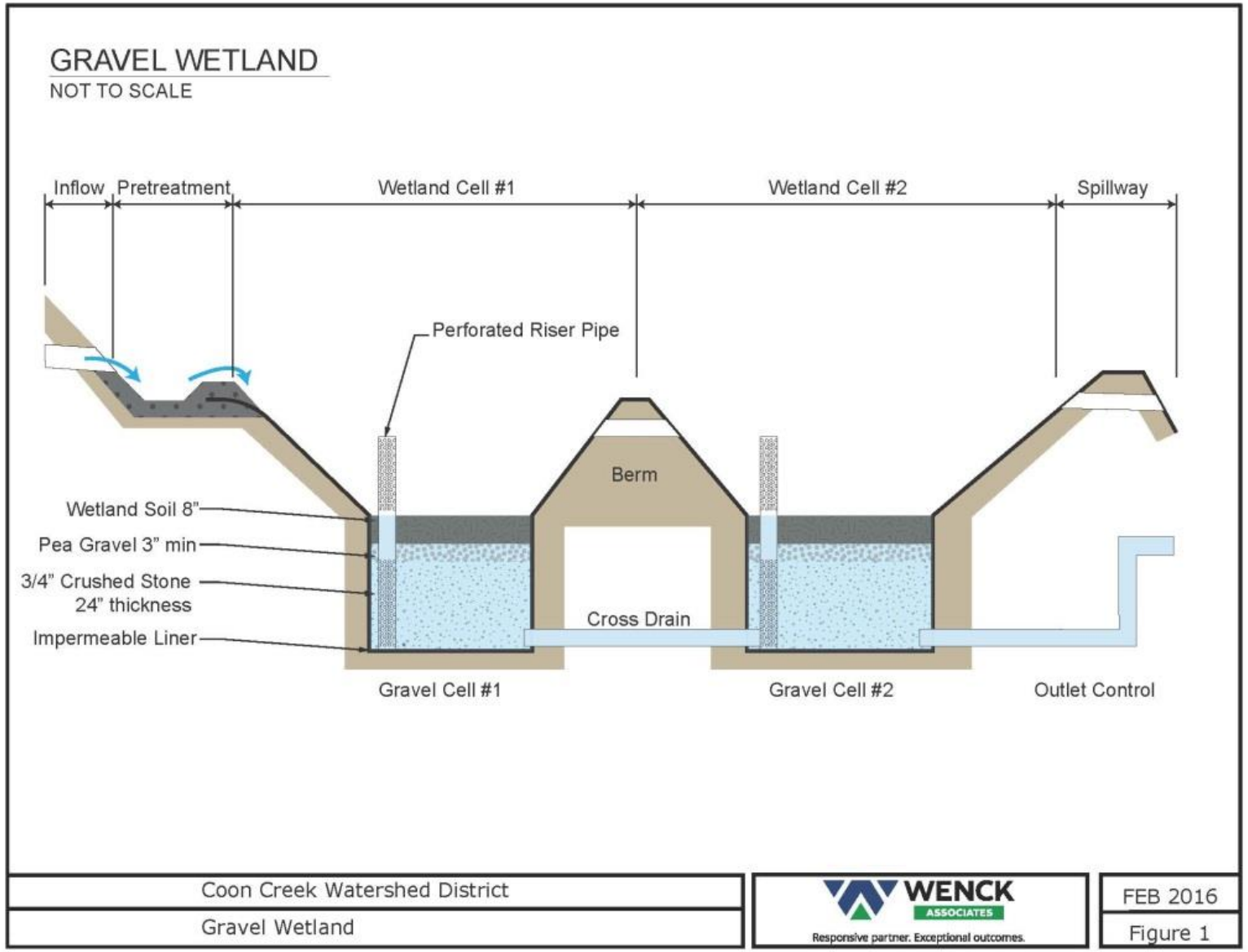
Coon Creek Watershed District

There will be four infiltration practice zones in a well head protection area





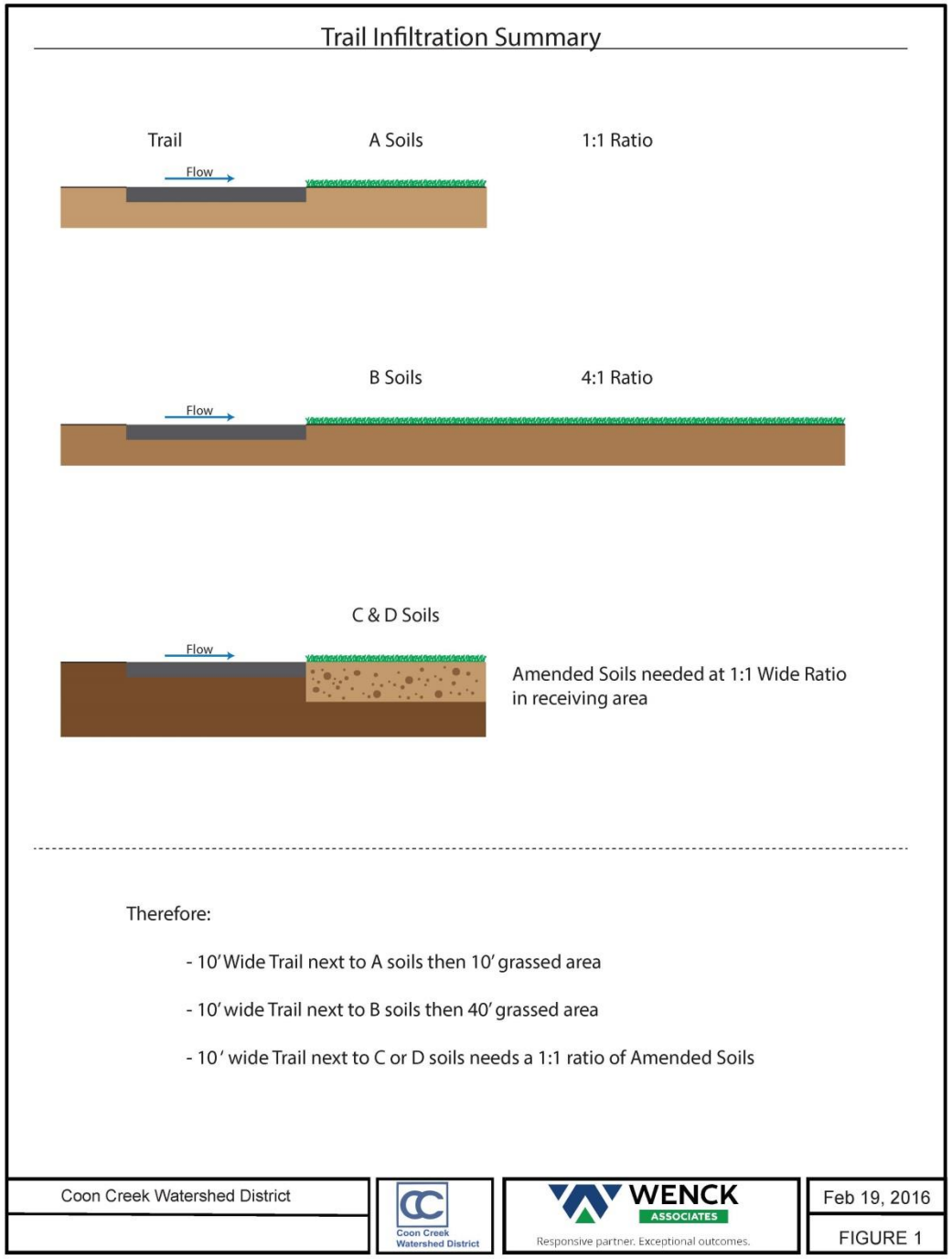
An option for paved area pretreatment



Submerged gravel wetland as another option for paved area pretreatment

One more…Trails and District Rules

The rule depends on trail width and adjacent soil



Amended soil option

STANDARD OPERATING PROCEDURE (S.O.P.) FOR: *AMENDED SOIL QUALITY AND DEPTH TEST*

Coon Creek Watershed District

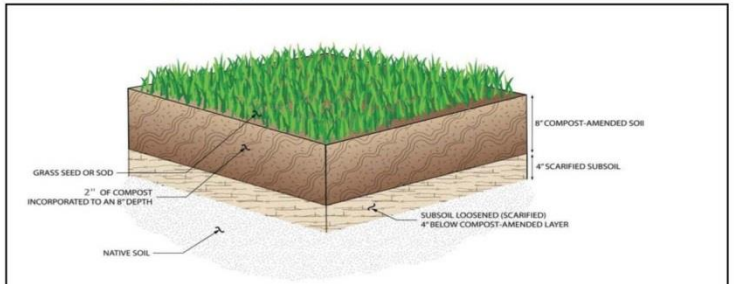


Figure 1: Shingle Creek / West Mississippi Watershed Management Commissions' amended soil standard

The main conditions to be confirmed are:

1. Provision of eight (8) inches of compost amended soil or imported topsoil.
2. Four (4) inches of scarified (loosened) subsoil below the topsoil layer (for a total uncompacted depth of 12 inches).
3. Grass seed or sod.

SITE INSPECTION SUPPLIES: 1.) Sturdy shovel, 2.) Tape measure or 12" ruler, 3.) Rod Penetrometer (see Step 4 for details)

The following steps may be completed at multiple visits as a project progresses or in one final project approval inspection:

Step 1: Compare site conditions with the approved Plan Set.

Make sure site conditions match these details:

-Soil amendment areas match approved drawings.

-Areas with amended soils have been fenced off during construction to prevent soil compaction.

Step 2: Inspect delivery tickets for compost and topsoil.

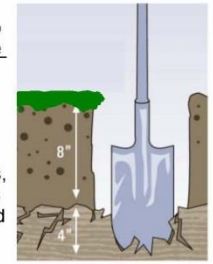
Permitee must provide original delivery tickets for all soil and compost products stating the following information:

-Soil specification stating that the soil consists of 20-25% compost by volume or soil test showing 5% organic matter by loss-on-ignition test.

-Total quantities for each soil product and compost.

-Product descriptions and sources.

Step 3: Verify depth of amended soils and scarification.



Use a shovel to dig at least **one test hole per acre** to verify eight inch topsoil depth, incorporation of amendments, and four inches of uncompacted soil.

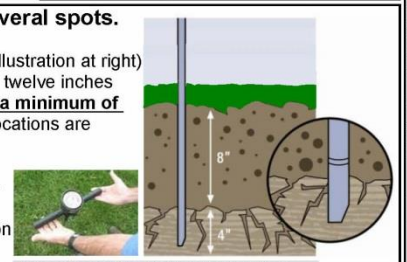
-The top eight inches of soil should be easy to dig using a garden spade driven solely by your weight. The soil should be darker than the unamended soil below, and particles of added compost (organic matter) are likely to be visible. Soil that requires vigorous chipping with the shovel to penetrate does not meet the requirement.

-The next four-inch depth of soil should be loose enough to penetrate with the shovel.

Step 4: Check soil depth in several spots.

Use a simple "rod penetrometer" See illustration at right) to confirm that the soil is uncompacted twelve inches deep at **ten locations per acre - with a minimum of ten on smaller sites**. Additional test locations are encouraged.

The rod penetrometer should enter the soil 12 in. deep, driven solely by the inspector's weight. Irregular scarification or rocks in the lower layer may require probing a few spots at each location to reach the full depth.



A rod penetrometer is a 4 foot long, 3/8 inch or 10 mm diameter stainless steel rod with a 90 degree bend 5 inches form the top to make a handle, and a 30 degree bevel cut 1/8 inch or 3 mm into the side of the tip.

Q & A

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     Large Plans –only what we need;
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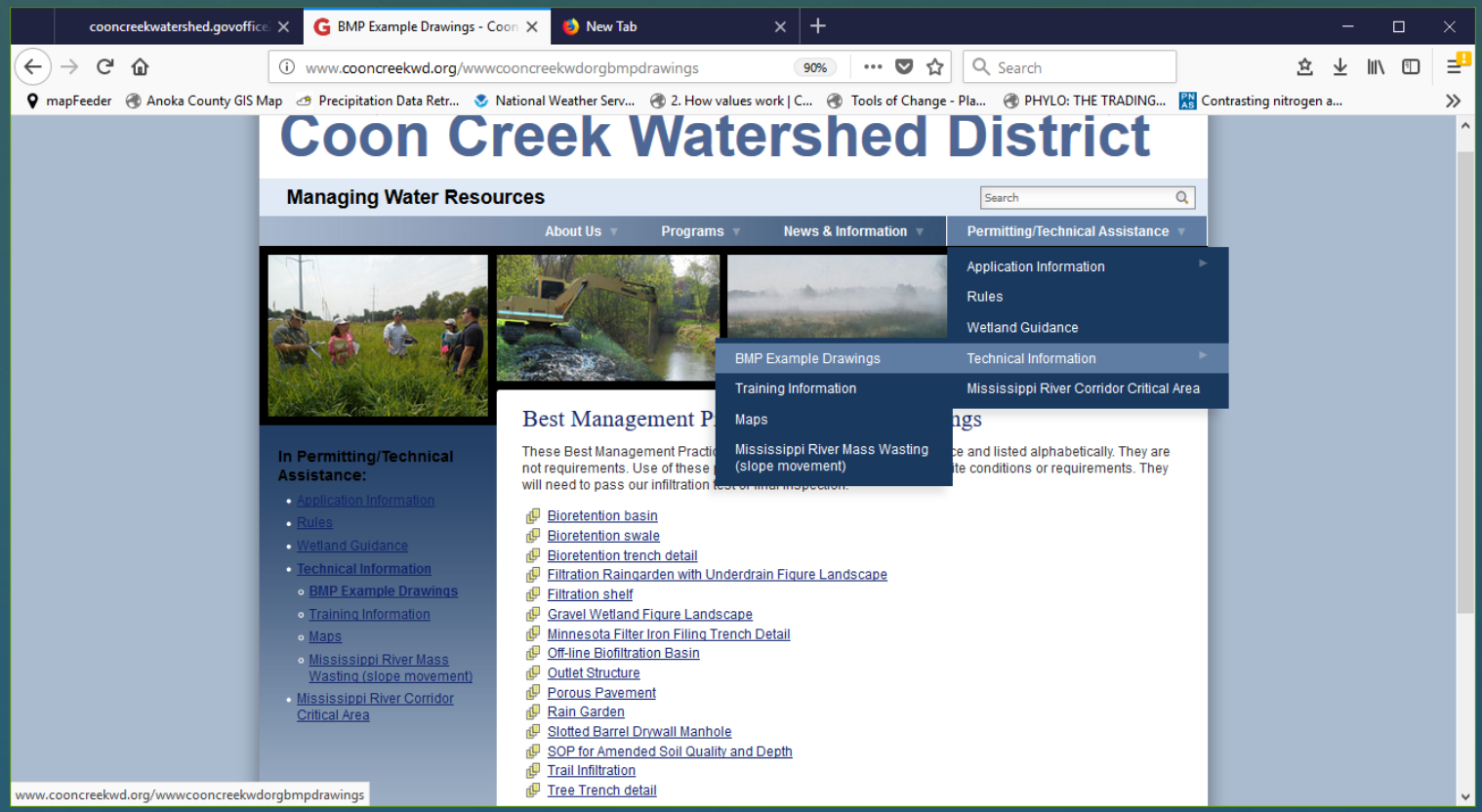
References



www.cooncreekwd.org

Comments, Suggestions, & Questions

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Thank You