

CWEA 2017 FALL SEMINAR

Maryland Department of Transportation
State Highway Administration





You have 3
wishes...
Choose wisely!

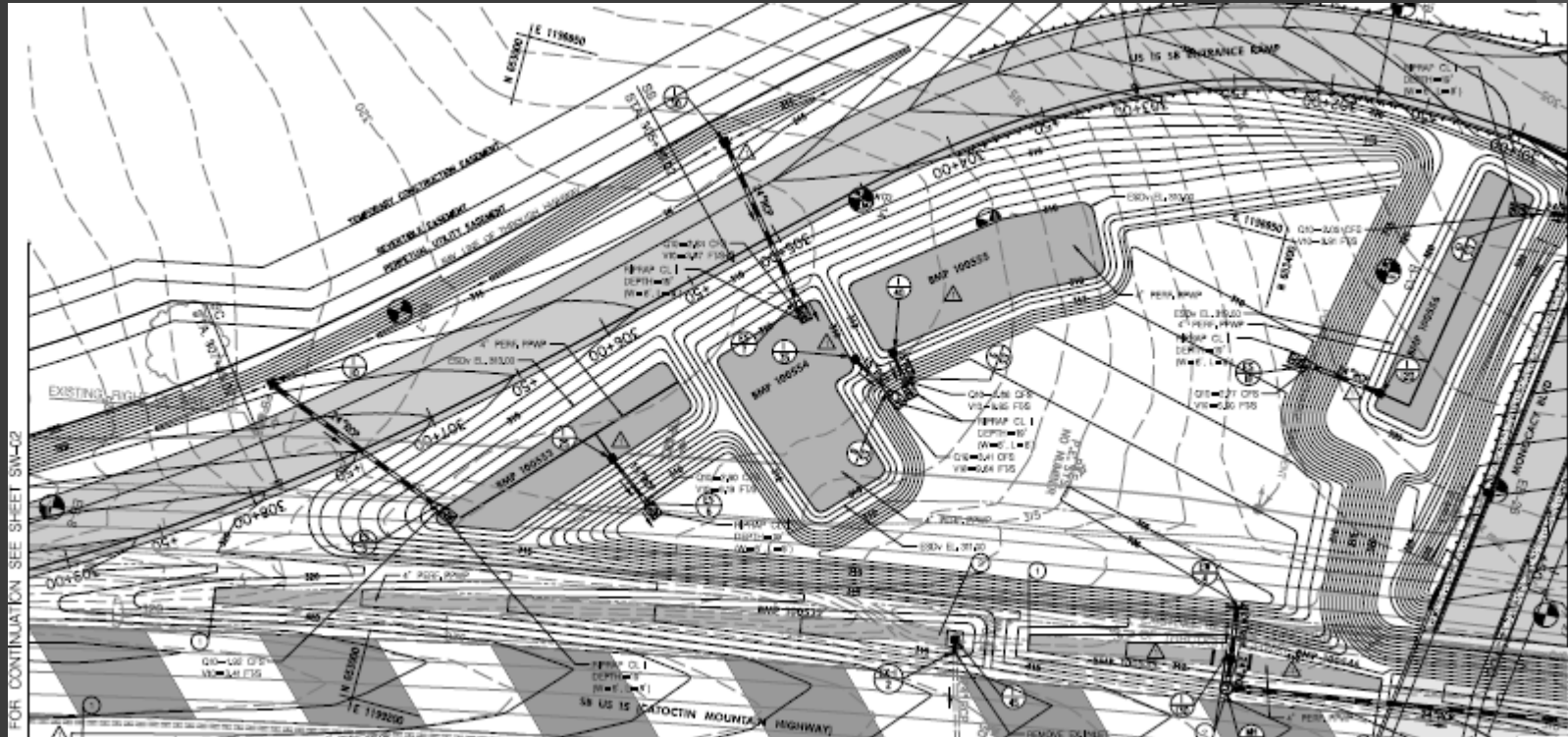
Wish #1: Design Flexibility

- Allow designers the flexibility of using either ESD facilities or structural facilities instead of mandating ESD to the MEP

Example: US 15 at Monocacy Blvd

- New Intersection and Park & Ride
- Construction cost = \$32 Million
- Impervious Area Treated (IAT) = 20 ac.
- SWM Design:
 - 68 ESD treating 19 acres of impervious (21 Bioswale, 47 Micro-Bioretenention)
 - 1 Bioretention treating 1 acre of impervious

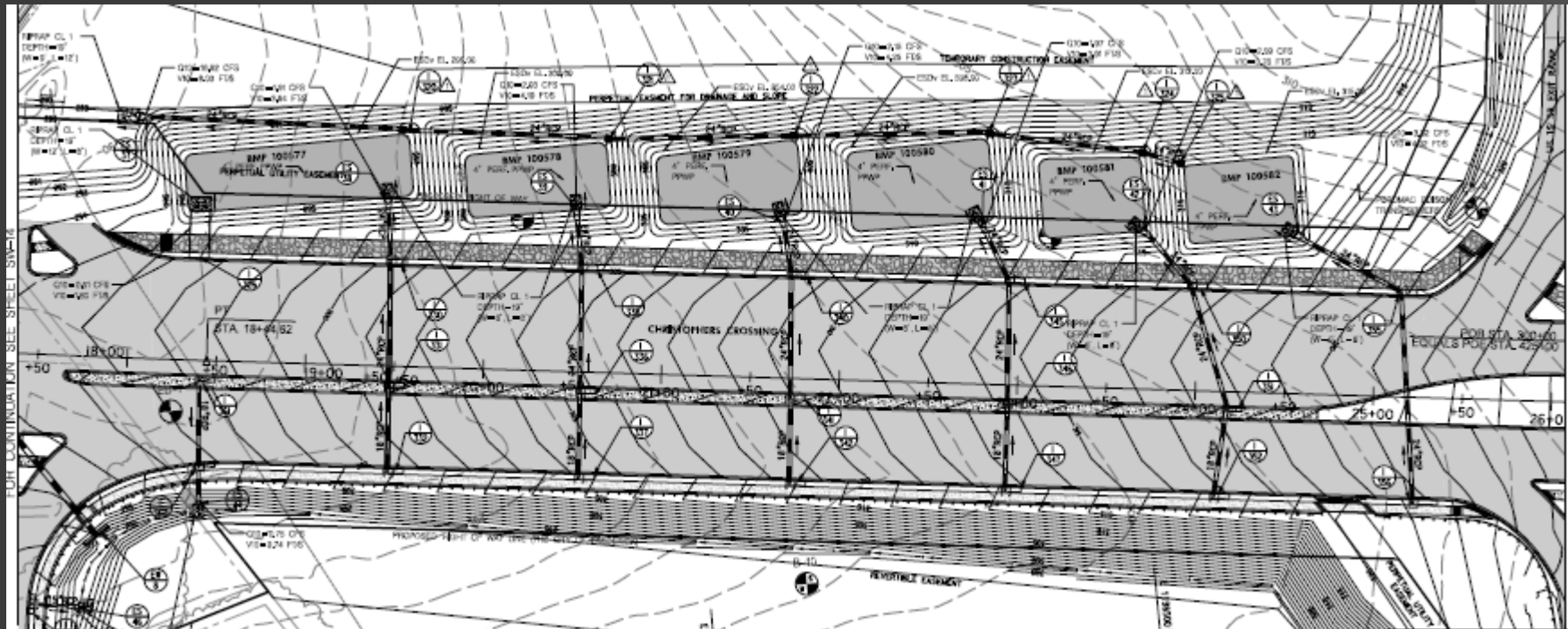
Example: US 15 at Monocacy Blvd



3 MBR: IAT = 0.75 acres in footprint of 0.75 acres (1:1)
versus

1 Wet ED Pond: IAT = 5.25 acres in 0.75 acre footprint (7:1)

Example: US 15 at Monocacy Blvd



6 MBR: IAT = 1.8 acres in footprint of 0.9 acres (2:1)

versus

1 Wet ED Pond: IAT = 6.3 acres in 0.9 acre footprint (7:1)

Wish #2: Cpv Alternatives

- ⦿ Allow alternative methods of channel protection for narrow linear projects
- ⦿ Examples:
 - ADA Compliance
 - Sidewalks
 - Bike lanes
 - Multi-use paths

Example: MD 140



Google

Image capture: Oct 2016 © 2017 Google United States Terms Report a

Cpv Alternatives

- Establish a limit (width or area)
- Require stable outfalls
- Require alternative treatment in watershed
 - Channel Stabilization
 - Outfall Stabilization
 - Stream Restoration
 - Slope Stabilization
 - Tree Planting

Wish #3: Update Chapter 5

- ⦿ Reconcile SWM Manual and current practices
 - IART vs. Table 5.3
- ⦿ Reconsider ESD DA limits
 - 1 DA ac for GS vs. velocity/depth criteria

Wish #3: Update Chapter 5

- ◎ Expand ESD choices
 - What are other states using?
 - What if groundwater is too high for BS/MBR, low for WS, and GS isn't enough?
 - Is Bioretention with DA < 3 acres = ESD?
- ◎ Clarify known points of confusion

$C_{pv} = ESD_v - WQ_v!!$

No!!!
 $C_{pv} = ESD_v$





Questions?