

BMPS – REALITY VS. THEORY

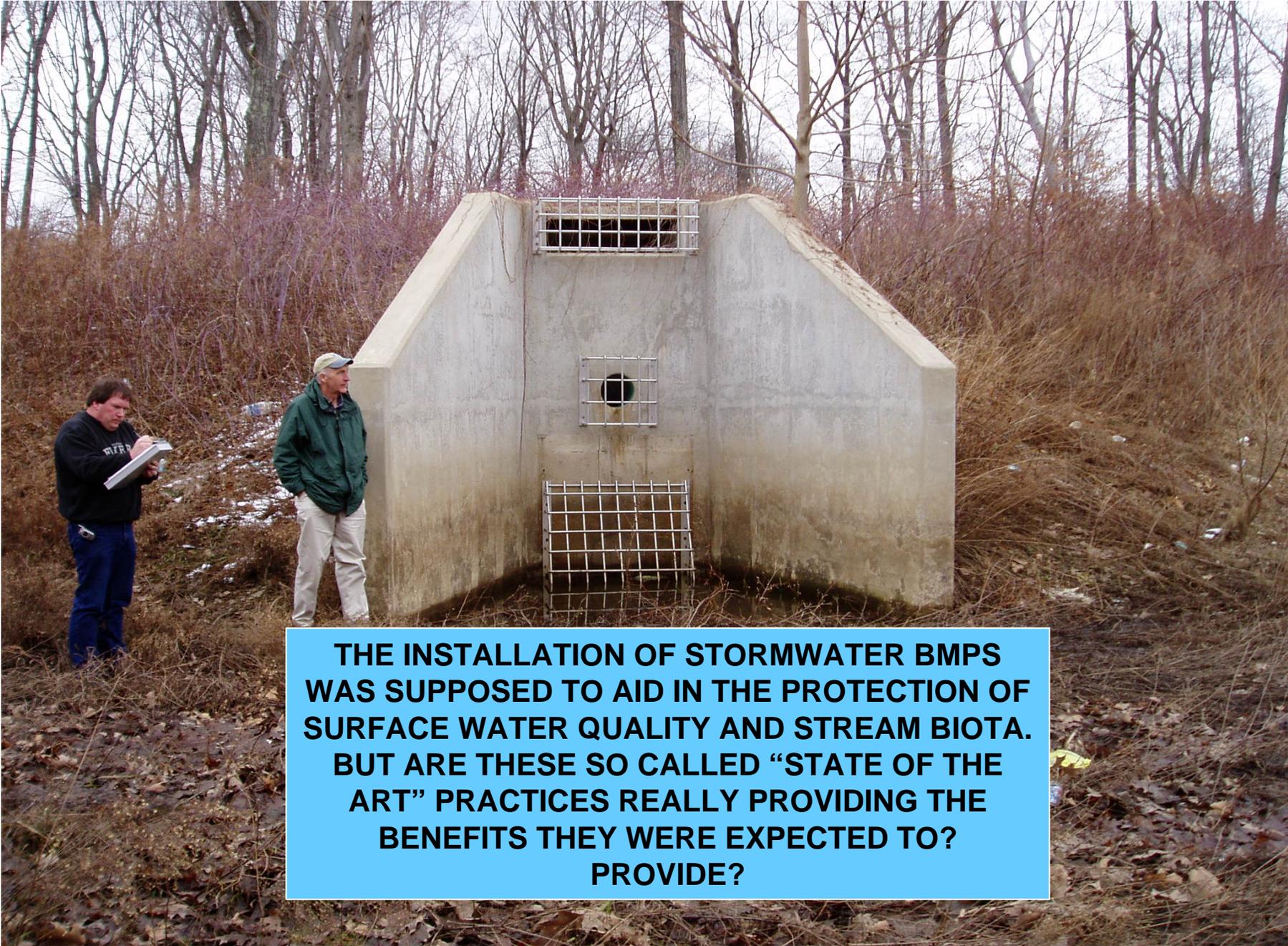
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SESSION H- 6

**NJDEP BUREAU OF FRESHWATER AND
BIOLOGICAL MONITORING**

WATER MONITORING AND STANDARDS





**THE INSTALLATION OF STORMWATER BMPS
WAS SUPPOSED TO AID IN THE PROTECTION OF
SURFACE WATER QUALITY AND STREAM BIOTA.
BUT ARE THESE SO CALLED “STATE OF THE
ART” PRACTICES REALLY PROVIDING THE
BENEFITS THEY WERE EXPECTED TO
PROVIDE?**



**LET US LOOK AT WATER QUALITY
CONCERNS FIRST**

MAJOR PROBLEM AREAS INCLUDE:

- 1) THE OVERUSE OF LOW FLOW
CHANNELS**
- 2) LITTLE OR NO MAINTENANCE**





**NOTE CLOSENESS
OF INLET TO
OUTLET**

**LOW FLOW CHANNEL
CONDITIONS DURING LESS
THAN THE DESIGN STORM**





INLET

WE CAN THROW IN A LITTLE MORE THERMAL SHOCK ALONG THE WAY THANKS TO THE HEATED CONCRETE

INLET

OUTLET





**ANOTHER ITERATION OF THE LOW
FLOW CHANNEL CONFIGURATION**



**A BREACHED LEVEL SPREADER WITHIN
A DRY EXTENDED DETENTION BASIN**

**BASIN BREACHED DUE TO GRASS
CLIPPINGS GOING ANAEROBIC UNDER
RESIDUAL WATER**

BREACH





**ANOTHER
UNMAINTAINED
LOW FLOW
CHANNEL**





**WITH EXPECTED
RESULTS – WAITING
TO BE FLUSHED
OUT WITH THE NEXT
STORM**





**MORE LOW FLOW
CHANNELS –
BORING ISN'T IT?**

**SEE CLOSEUP OF
OUTLET IN NEXT
SLIDE**





**AGAIN SOLIDS
BUILDUP
WAITING FOR
THE NEXT
STORM**





**RUNOFF DURING
LESS THAN THE
DESIGN STORM**

**LITTLE RETENTION
HERE – INTO THE
CONCRETE
CHANNEL AND OUT
IT GOES**





**HYDROGEN SULFIDE IS A
GREAT MOTIVATOR FOR
PROPER MAINTENANCE**





**STORMWATER RETENTION / DETENTION POND IN
MIDDLE OF MULTI – MALL COMPLEX**





**ADD A LITTLE SALT
ON THE WAY!**





**STORMWATER OUTFALLS AT
MALL**



CHEMICAL SAMPLING RESULTS AT THE OUTFALL OF MALL

- SEDIMENT
ACUTELY TOXIC
- SEDIMENT
PETROLEUM
HYROCARBONS =
1,430 MG/KG
- FOUND
ANTHRACENE,
PYRENE,
CHRYSENE AMONG
OTHER PAHs



WATER QUANTITY ISSUES ARE EQUALLY AS IMPORTANT



**SEE NEXT SLIDE FOR
OUTLET DETAIL**





**CHANNEL WIDTH UPSTREAM OF
OUTFALL**



**CHANNEL WIDTH
DOWNSTREAM OF OUTFALL**



**MULTIPLE DRY EXTENDED DETENTION
BASINS FROM THIS INDUSTRIAL AREA
ALL EVENTUALLY END UP IN THIS
TRIBUTARY**



**STREAM CHANNEL FURTHER
DOWNSTREAM**



**ORIGINAL
GROUND**



**IN SPITE OF ALL THOSE DETENTION
BASINS UPSTREAM THIS IS THE END
RESULT**



SOME RECOMMENDATIONS

- ELIMINATE CONCRETE LOW FLOW CHANNELS TOTALLY OR AS MUCH AS POSSIBLE AND SUBSTITUTE SAND OR FRENCH DRAINS NEAR OUTLET.
- REQUIRE A MINIMUM PATH LENGTH OF 90% THROUGH DRY EXTENDED DETENTION BASINS TO STOP SHORT-CIRCUITING BETWEEN INLETS AND OUTLETS.
- REQUIRE SOME EXAMINATION OF DOWNSTREAM RECEIVING CHANNEL AND BANK SOIL STABILITY.

