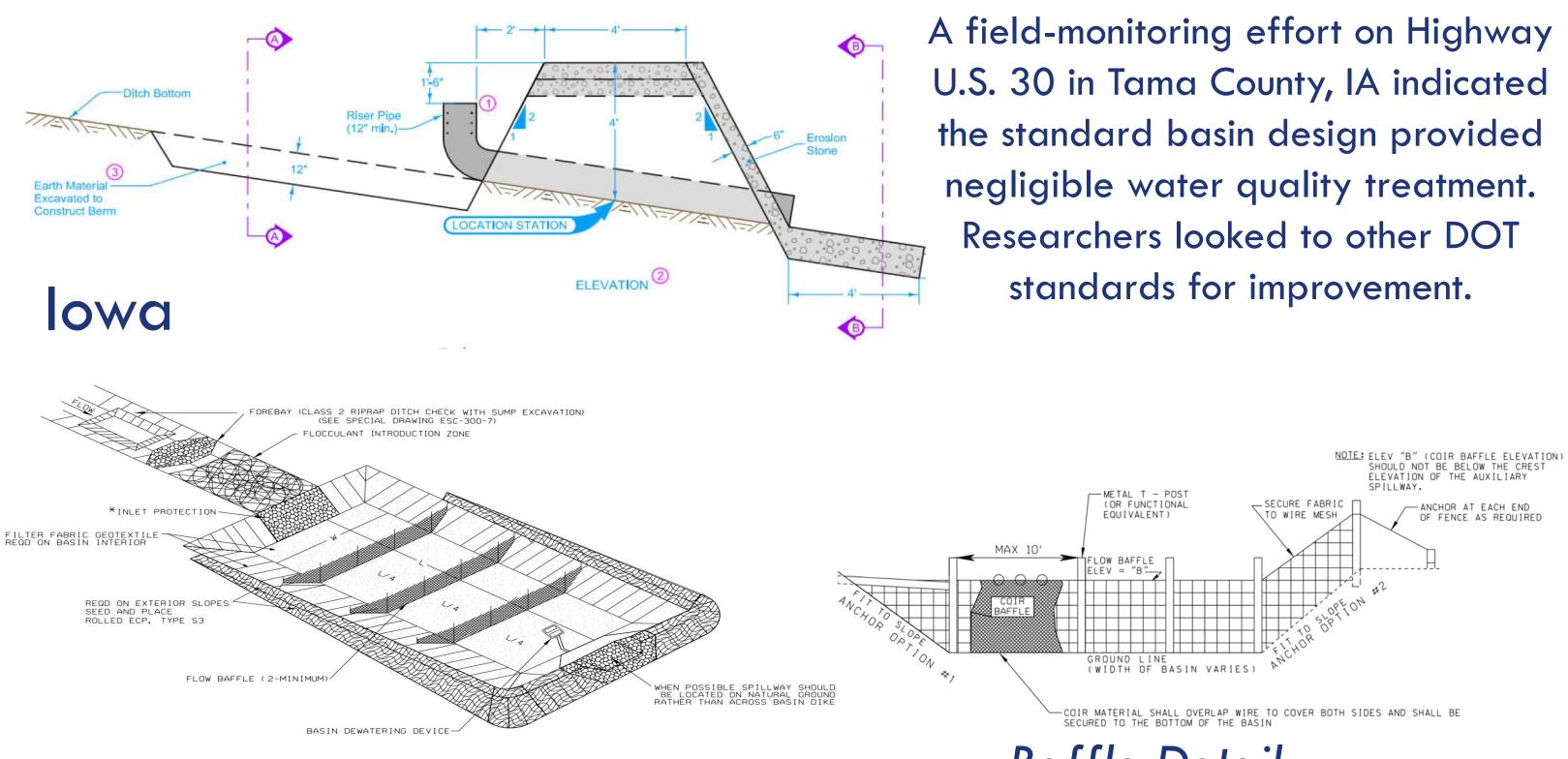


Sediment basins capture, detain, and treat sediment-laden stormwater from construction sites by providing residence time to promote gravitational settling of suspended particles prior to offsite discharge.

# **DOT Sediment Basin Design Examples**



## Alabama

Baffles are installed within a sediment basin perpendicular to inflow to **distribute** the flow across the basin width, dissipate inflow energy and reduce turbulence. This prevents the resuspension of settled sediment particles and pollutants.



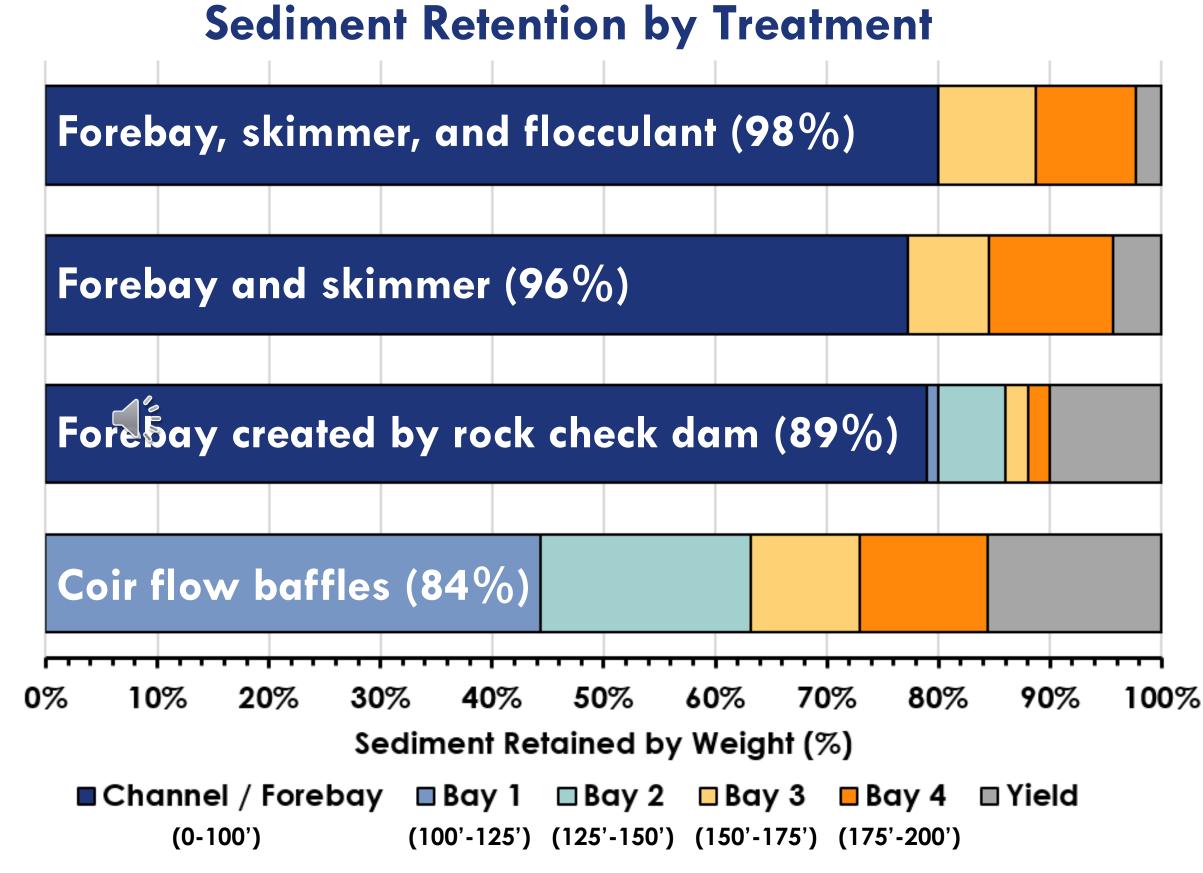


## **Previous Testing**

How does sediment capture improve using structural treatments in an in-channel sediment basin? Answered with large-scale testing techniques at the AU-SRF

- Sediment and flow intro were calibrated using IA statewide average rainfall distributions and CNs
- IA native soils were introduced during testing
- Sediment retention and water quality were monitored to evaluate performance of sediment basin.

In-channel sediment basins utilize existing site conveyance channels to detain sediment from stormwater, minimizing the required right of way needed for construction stormwater management. Effective design of the sediment basins is critical for sediment capture and water quality improvements.



### Future research aims to answer..

successive porous baffles?

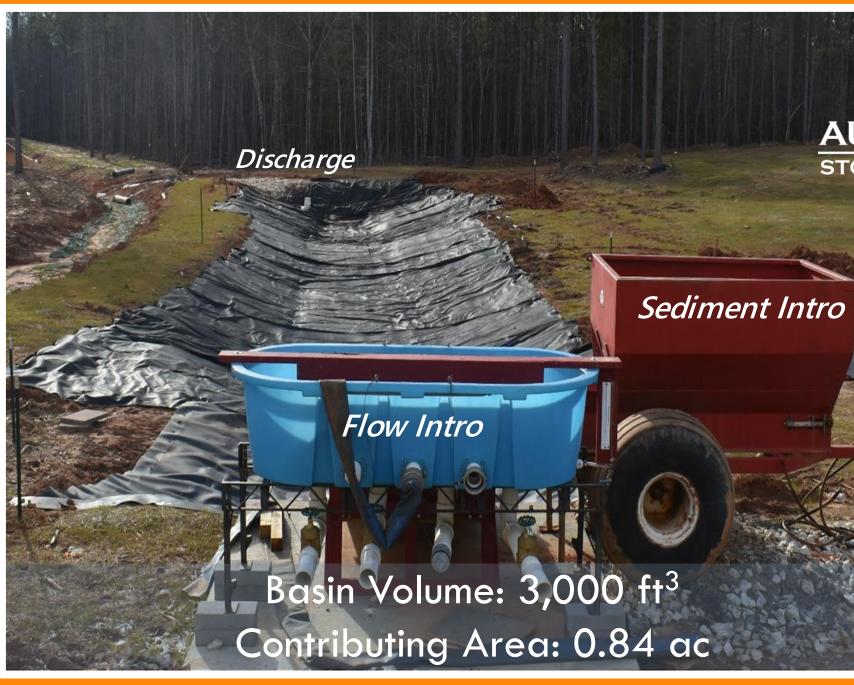
### **Proposed Study**

Future research proposes to evaluate the performance of various "enhanced" baffle installations under controlled flow and sediment introduction rates. Performance will be evaluated by quantifying sediment retention and water quality improvements (i.e., turbidity and TSS).

### Impact

- DOT construction activities

Ongoing research also includes the assessment of DOT spending on erosion and sediment control nationwide.



### **Difference in Deposition**



If an enhanced first baffle, such as a rock check dam, is implemented, will there still be a need for

Improve in-channel sediment basin design with scientifically-backed results Provide a design alternative where a traditional settling pond is not feasible on site Reduce the cost and effort associated with effective sediment basin design and implementation during

