

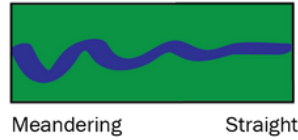
**The destructive power of a flood is caused by the quantity and speed of the water. To mitigate the effects of flooding, we need to allow water to slow down and give it a chance to soak into the ground.**

## **SLOW IT DOWN**

Preserving the natural curves of the waterway is important for slowing water flows and preventing erosion.

By leaving room for the waterway to move naturally, rather than straightening or constraining it, you actually help reduce flood impacts.

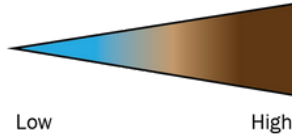
**Creek Curves**



**Water Velocity**



**Erosion**



## **SOAK IT UP**

The natural environment can act as a sponge, reducing the amount of water entering the waterway. By allowing water to soak in into the soil, we can reduce flooding.

Strategies to soak up water before it reaches the waterway include:

- Plant riparian buffers along waterways
- Rain gardens
- Rain barrels
- Permeable pavement
- Cover crops
- Wetland restoration
- Reforestation



## **THE DANGERS OF DREDGING**

**HOW SHORT-TERM THINKING LEADS TO LONG-TERM COSTS**

### **The Power of Water**

Increasing flood frequency across the US has led many communities to consider dredging waterways as a solution to reducing the severity of these events.

Data shows that dredging can actually exacerbate the impacts of flooding and degrade natural stream functions, leading to significant costs to landowners.



Contact Kentucky Division of Water for more information

# Dredging Increases Erosion

Dredging is a deepening and straightening of a waterway, allowing water to move at a higher volume and speed. This effect increases the farther downstream you go and your waterway increases in size.

High water speeds lead to bank and bottom scouring, increasing erosion rates in streams. While erosion is a natural process, the increased flows and destabilization of the creek-bed by dredging may actually speed the process up and lead to significant property damage.

In the long-run this damage can be costly, and ultimately worsen the effects of flooding events.



Photo: Sustainable Streams LLC

## Erosion is Expensive



***\$1 Billion/Year***

**Estimated cost of repairs to state highway infrastructure damaged by erosion along streams, nationally.**

## Potential Impacts

Destroys aquatic habitat critical for fish and other important aquatic organisms

Leads to land loss from bank collapse and slumping

Causes damage to critical infrastructure like roads, bridges, water, sewer, gas and electric lines

Increases maintenance costs for structures clogged or damaged by debris dislodged in erosive events

Siltation and suspension of nutrients and chemicals from the streambed may cause issues with drinking water sources leading to increased water treatment costs and higher water bills for consumers

## Boone County Case Study

**A 2014 report by Sanitation District #1 found that an estimated \$2.6 million worth of infrastructure damage was caused over a 7-year period by erosion along streams in the Dry Creek Watershed.**

**Critical infrastructure within the "Extreme Risk Zone" in this watershed, defined as all stream crossings located within a 50ft offset from the center line of the main waterway, is valued at over \$7 million.**

## For More Information and References

SCAN ME

