



Vegetation Management

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Levees and floodwalls

Levees must be properly operated and maintained to reduce flood damage to communities. Inspections determine whether levees are being properly maintained. Vegetation can harm the structural integrity of levees, obscure visibility, impede access for maintenance, and hinder emergency flood-fighting operations. Plantings may provide desirable ecological benefits, but can negatively affect the integrity of a levee, thereby increasing risk to public safety.

Tree roots can cause levee failure

Public safety is the number one priority of the U.S. Army Corps of Engineers. The Corps' levee safety program is designed to maintain public safety by assuring structural integrity and safe operation of our floodwalls and levees.

Hurricane Katrina resulted in a Corps-wide reexamination of vegetation on levees and floodwalls. Tree roots growing on or near a levee or floodwall can greatly accelerate seepage rates during high water. Tree root systems provide an ideal surface for water to flow along. High seepage rates increase the chance of undesirable sand boils on the landward side. Water often removes earthen material as it seeps through the structure. This can result in possible failure of the levee or floodwall.

Many levee systems have a toe drainage system designed to control seepage and uplift pressures. This drainage system must be protected from the invasion of roots, which could clog the system. As the ground is saturated during severe rain or flooding, trees can blow over, leaving large holes or voids in the levee system causing a chain reaction of weakening the project to the point of a breach or failure.

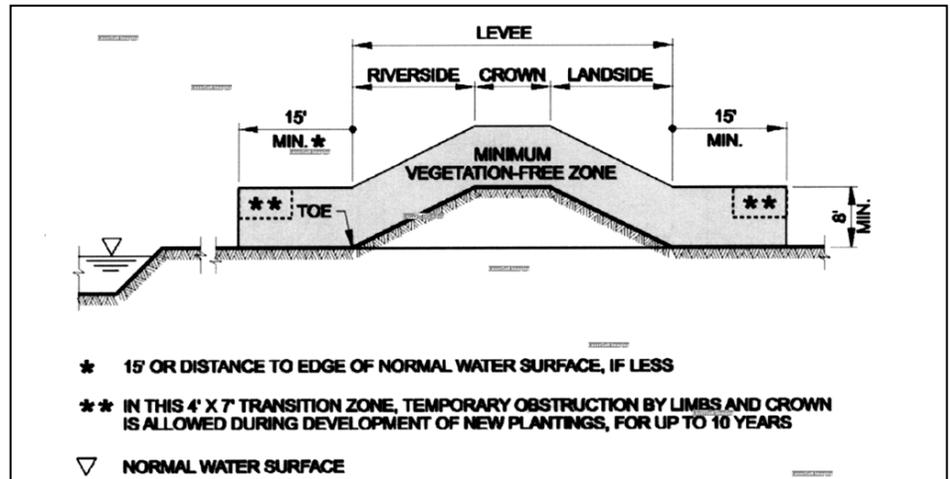
Safe landscaping near levees and floodwalls

Citizens often seek to beautify their environments to create a natural or landscaped effect. Levees and floodwalls were not designed to accommodate plantings. Here are some safe levee landscaping options:

Overbuilt area – Additional soil, along with root barrier, may be added to the levee embankment to allow for plantings.

Plant containers – Large plant containers placed at least 20 feet from the toe of the levee will contain and restrict roots. Plant size should be limited to that of a small flowering tree.

Soil cover at floodwall toe – Depending on the floodwall design, it may be possible to add soil material, allowing for plantings where the vegetation-free zone ends.



In light of engineering analysis conducted after Hurricane Katrina, trees should not be allowed to grow within 15 feet of the levee toe on either side.