



Urban rivers behave differently than natural rivers

Did you know that rivers, in their natural state, use winding paths, soil, and plants to safely absorb heavy rainfall? However, in heavily developed and paved cities like San Juan, urbanized rivers have lost these natural defenses to decades of construction, causing rapid and dangerous flooding.

Utilizing modern engineering practices, design and technology is essential to reconstruct these channels, ensuring they can safely divert immense volumes of water and protect vulnerable communities.

Urbanization increases runoff dramatically

- Natural soils and vegetation absorb rainfall and slow runoff.
- Pavement, rooftops, and roads send water directly into the river at high speed.
- This creates higher peak flows than the river ever carried in its natural state.

Urban rivers have limited space to expand

- Buildings, roads, and utilities sit directly along the riverbanks.
- Floodplains that once absorbed water have been filled or developed.

- The river cannot safely spread out during storms without flooding neighborhoods.

Engineered solutions protect people and property

- Floodwalls, channel improvements to increase capacity, and bridge upgrades prevent water from overtopping.
- These structures compensate for the loss of natural floodplains.
- Without engineered protection, urban flooding becomes more frequent and severe.

BOTTOM LINE:

Urban rivers cannot behave like natural rivers because the landscape around them has permanently changed. Modern engineering ensures the river can safely carry stormwater without flooding the communities that now surround it.