

tornado hit in July 1992. Cleanup took about two and a half months and involved approximately 600 tons of waste, most of which was green waste. City officials found that the two greatest obstacles to managing the debris were communicating instructions to residents and sorting the green waste to maximize chipping and mulching efficiency.

Flood debris

Debris from floods is caused by structural inundation and high-velocity water flow. As soon as flood waters recede, people begin to dispose of flood-damaged household items. Mud, sediment, sandbags, and other reinforcing materials also add to the volume of debris needing management, as do materials from demolished and dismantled houses.

After the Midwest flood in the summer of 1993, officials in Lincoln County, Missouri, handled the flood debris through dropoff centers as well as county collection. The debris included appliances, wood, shingles, insulation, tires, materials containing asbestos, and household hazardous waste. To comply with state solid waste regulations and county recycling goals, county staff and contractors segregated the debris by waste type. Scrap dealers picked up the appliances, and individuals salvaged the wood. Tires were cut in half for disposal in approved landfills or ground for roadside use. After the flood, the state of Missouri temporarily set aside its recycling

policy, which prohibited landfilling of compostable materials, so that communities could landfill leaves and yard waste. A hazardous waste contractor collected and disposed of household hazardous waste.

Fire debris

While fires leave less debris than other types of disasters, they still generate much waste. For example, demolished houses contribute noncombustible debris. Burned out cars and other metal objects, as well as ash and charred wood waste, also must be managed. In addition, large-scale loss of plants serving as ground cover can lead to mud slides, adding debris to the waste stream.

In Malibu, California, one of the communities hit hardest in 1993 by coastal fires, 268 houses were destroyed; most of them burned to their foundations. Malibu removed fallen trees as well as dead trees that might have fallen on roads or homes, and chipped the trees for mulch. The city left other dead trees standing to help prevent erosion. The city gave property owners six weeks to remove their own debris, then began removing remaining household debris. In clearing the fire debris from about 175 properties, the city collected the same amount of solid waste normally collected in an entire year. The city recycled some concrete and asphalt and lifted daily landfill limits to accommodate the rest of the debris.

The Midwest Floods

