

From Landfill to Riverfront Park

By Deborah English and Richard Enfield

What could be more pleasant than a riverside park with a marina, camping and multi-use trails within minutes of the revitalized downtown of a major metropolitan area? Kansas City, Mo., is developing such a park along the Missouri River on the closed Riverfront Landfill. When completed, the new Riverfront Park will complement the economic goals of ongoing downtown development projects and contribute to greenspace sustainability objectives.

The proposed plan for the park illustrates the advantages of greenspace redevelopment in the face of the general challenges common to all brownfield projects, as well as the challenges specific to landfill redevelopment.

The evolution of Riverfront Park began in 1952, when the city began operation of the Riverfront Landfill on a 3.5-mile stretch of the Missouri River floodplain. After the landfill closed in 1972, playgrounds and ball fields were built on its western section and the remainder of the site was allowed to revert to native vegetation. When environmental questions and concerns were raised by the U.S. EPA in 1985, the park was closed to the public.

The city engaged SCS Engineers to investigate the landfill and develop closure plans, as required under a consent agreement between EPA and the city. The closure plans included capping areas where high lead concentrations were detected in surface soil and restricting public access to eastern portions of the landfill.

In 2003, the Kansas City Department of Parks and Recreation, with the support of the Missouri Department of Natural Resources (MDNR) and the Kansas City Port Authority, decided to re-establish river access

on the east side. More recently, the city decided to reassess conditions at the site to evaluate potential re-opening of the entire park.

It was believed that years of revegetation with grass and native hardwoods, and flooding of much of the area in 1993, might have reduced previously detected contaminant concentrations, particularly in surface soil. Further investigation and risk evaluation conducted by SCS under the brownfields program indicated that concentrations of contaminants in surface soil and methane in the subsurface did not pose a risk to users of the former park on the west side of the landfill, provided that activities that disturb the subsurface were prohibited, such as digging campfire pits. Investigation of the east side of the former landfill indicated that, although some contaminants were present in surface soils, exposure could be controlled by limited development options, such as the installation of hiking trails over select portions of the former landfill.

The MDNR approved redevelopment and long-term use of the park, and the current master plan was soon developed with financial assistance from Kansas City's brownfields program. The master plan for Kansas City's Riverfront Park includes a marina, RV campground, river overlook, dog parks, and a recreational field added to the existing boat launch on the west side of the park. Multi-use and recreational trails will be created on the east portion of the former landfill.

The near-term objective is to provide the community with multi-use recreational access to the Missouri River; the long-term objective is to connect the park with existing

greenspaces and trails along the river and in the city.

Redevelopment of urban brownfield properties for the types of recreational use proposed for Riverfront Park has many potential advantages, including adding greenspace to the urban core, minimizing remediation costs, and reducing the costs of development.

With the current emphasis on sustainability, cities are eager to redevelop blighted urban properties, particularly if they can add vegetated areas to help control temperatures and improve air quality. In addition, greenspace development minimizes disturbance of subsurface contamination on brownfields, which reduces the cost of redevelopment and the potential exposure of the public and the environment to harmful contaminants.

In the case of former landfills, development must prevent contact with waste, manage methane gas and consider the implications of differential settlement. Greenspace landfill development simplifies management of these issues and reduces costs by minimizing disturbance of the subsurface and the weight of surface structures. As a result, hundreds of landfills nationwide have been redeveloped for recreational uses, such as golf courses, athletic fields and parkland with multi-use trails. Redevelopment of the old Riverfront Landfill follows this trend.

When completed, the park will provide desirable greenspace and river access to complement commercial and residential redevelopment in downtown Kansas City.

Deborah English is a project director with SCS Engineers in Overland Park, Kansas; Richard Enfield is the environmental manager with the Kansas City Department of Parks and Recreation.