The Path to Brownfields Assessment, Cleanup and Sustainable Redevelopment

1. Public, private, and non-profit partnerships are critical to rebuild communities

Nebraska Ave. Property, Twin Cities, MN

2. Engaging and notifying the community increases successful reuse and redevelopment

Public Park, Culver City, CA

3. Federal and state grants can assist communities to inventory and assess sites

Hopi Reservation, AZ

4. Planning re-use options realistically ensures long-term project success

Depot Park, Gainesville, FL

5. Long-term stewardship ensures public health and safety

Mary Alice Park, Arlington, TN

6. Appealing and attractive designs garner community support and increase redevelopment value

Jordan Valley, Park City, UT

7. Greener cleanup and remediation minimizes environmental and public health impacts

Riverside Mills, Providence, RI

**Depot Park images provided by Matthew Dubé, Gainesville Community Redevelopment Agency*

1. Bringing Together the Public, Private, and Non-Profit Sectors

Brownfields can unite groups in rebuilding a community. Work with existing organizations, where possible, to identify sites and prioritize community needs. Use existing plans and infrastructure as a basis for redevelopment. *To learn more, please see: www.epa.gov/brownfields/partnr.htm*

2. Involving the Community

There's a good reason why applicants for EPA brownfields grant funds must notify the public. Community awareness of the assessment and cleanup process, and opportunities for public involvement increase a site's chance for successful reuse. In addition, community involvement identifies potential economic opportunities for local entrepreneurs, businesses, and local job training. *For additional information, please see: www.epa.gov/brownfields OR www.epa.gov/superfund/community*

3. Identifying and Assessing Sites

Knowing which properties may be contaminated, then confirming the existence and extent of soil and groundwater contamination is critical to moving ahead with revitalization efforts. Project investors and potential property buyers need this information to plan effectively and protect their interests. *To learn more about assessment funding from EPA, please see www.epa.gov/brownfields/assessment_grants.htm*

4. Planning for Property Reuse

Redevelopment options depend on site zoning and planning requirements, and local and regional market interest. Have a grand vision, but be realistic about what is economically feasible. Bear in mind that reusing infrastructure can help preserve the sense and history of a community. *To learn more, please see: www.epa.gov/brownfields/anat_bf.htm*

5. Cleaning Sites and Providing for Long-Term Stewardship

The focus is cleaning sites to risk-based standards based on the reuse to protect the environment and public health. Site cleanup may require coordination with state, tribal and local regulatory agencies to remove, treat, or manage soil and groundwater contamination. At some properties, engineering controls and land use restrictions are used to prevent exposure to contamination that remains in place. These engineering and institutional controls must be factored into future site redevelopment plans. *For additional information, please see www.epa.gov/swerosps/bf/tools/tti_lucs.htm OR www.epa.gov/oswer/tribal/*

www.epa.gov/brownfields
www.epa.gov/LANDREVITALIZATION

6. Beautifying Brownfields

Artful design is an important element of brownfields cleanup and redevelopment. Regardless of end use, consider ways to improve appearance and functionality. Thoughtful choices in site layout, building construction, landscaping, and greenscaping add long-term value and benefit to the community. When replacing an existing hardscape or structure, try to deconstruct, reuse, and recycle all possible materials. Consider minimizing turf grass and paved areas, and incorporating native landscaping or trees that require minimal watering. *For additional information, please see: www.asla.org OR www.epa.gov/greenscapes*

7. Minimizing Environmental and Public Health Impacts

The private sector and environmental authorities are working towards "greener cleanups" to find ways to reduce air and water pollution caused by site redevelopment activities such as cleanup, demolition, and new construction. Examples of initiatives and requirements include reducing diesel emissions for heavy equipment, retaining vegetation to prevent erosion and limit dust, and incorporating low impact and sustainable development approaches. Reusing soils within the work site to create mounds or berms can be used for windbreaks, reduce noise, and add visual interest. *To learn more, please see: www.epa.state.il.us/land/greener-cleanups OR www.epa.gov/brownfields/tools/tti_pub_hlt.htm*

Elements to Increasing Sustainable Development and Improving Public Health

1. Planning Shared or Complete Streets

Create safe access for all users—pedestrians, bicyclists, transit riders and motorists. Some elements of a complete street include sidewalks, bike lanes, medians, special bus lanes, many crosswalks, audible pedestrian signals, and more. Integrating sidewalks, bike lanes, transit amenities, and safe crossing into the initial project design spares the expense of later retrofits. *For additional information, see www.completestreets.org*

2. Creating Green Space

Research finds that green landscaping can improve public safety, contribute to reducing violent crime, and increase feelings of well-being. Green space fosters frequent, friendly interaction among neighbors—the foundation of community social ties. The more "green" in the surroundings, the greater the effect. Green landscaping designs are also lower maintenance, environmentally friendly, and cost-efficient. *For additional information, see www.lhhl.uiuc.edu OR www.epa.gov/greenscapes*

United States Environmental Protection Agency

Office of Solid Waste and Emergency Response

EPA-560-F-08-002
January 2008

3. Designing Storm Water Management or "Green Infrastructure"

Use of natural systems helps to manage storm water and improve water quality. Examples of green infrastructure include: green roofs, rain gardens, bioswales, or the use of phytoremediation. Increase the use of permeable hardscapes to minimize rainwater runoff and erosion. These approaches also offer aesthetic alternatives to the typical "gray' infrastructure, like sewers and detention ponds. *For additional information, see: www.nrdc.org/water/pollution/rooftops/rooftops.pdf; to calculate the value of green infrastructure, see: greenvalues.cnt.org/calculator*

4. Using Green Building Materials and Natural Light

Design space with natural light. It increases productivity and mental well-being while reducing the use of electricity. Indoor air pollution can be 2 to 5 times as great as outdoor air pollution. Therefore, the use of green building materials is an important component of a "health" building. Green building materials (e.g., non-toxic paint) also allow less toxic indoor environments and also promote conservation by using renewable resources (e.g., bamboo flooring). Recycled material products (e.g., rubberized asphalt, recovered plastic lumber) also require lower maintenance costs. *For additional information, see: www.epa.gov/iaq/greenbuilding AND www.usgbc.org*

5. Providing Access to Transit

The availability and access to bike paths, walking trials, and public transit results in higher levels of physical activity, improved mobility for the young, elderly, and disabled, less time commuting, and fewer motor vehicle accidents. In addition, fewer cars on the road results in fewer lung irritants in the air. *For additional information, see: www.apta.com/research/info/online*

6. Integrating Mixtures of Uses or "Smart Growth"

By integrating stores, schools, offices, and homes, people tend to be more physically active and pedestrian safety increases. Smart growth designs also increase the economic vitality of a community by keeping retail dollars within the area and increasing tax revenues. *To learn more, see www.smartgrowthamerica.org/health.html OR www.epa.gov/smartgrowth*

7. Planting Native Plants and Trees

Planting native plants and trees provides a hardy, drought-resistant, and low-maintenance landscape while beautifying and benefiting the environment. In addition, trees are linked to improvements in mental health, reduce the urban heat island effect, help manage storm water, save energy, and improve air quality. *For additional information, see: www.epa.gov/greenacres OR www.fs.fed.us/psw/programs/cufr*