Transportation: Revitalizing Brownfields

Did you know?

Abandoned commercial or industrial sites known as brownfields are being cleaned up and redeveloped with transportation dollars, and transportation projects are the key to successful urban revitalization efforts across the country.

In 1998, the federal government gave the green light for transportation agencies to support the cleanup and redevelopment of former industrial or commercial sites known as brownfields. Since that time, transportation has served a vital role in bringing life back to these valuable, but idled properties.[21]

By supporting brownfields redevelopment, transportation is supporting smart land use and urban renewal. Successful revitalization projects across the country illustrate a whole list of benefits from transportation-related brownfields redevelopment, including environmental cleanup, infrastructure renewal, job creation, tax-base development, economic development, historic preservation, and provision of housing.[22]

Redevelopment of these urban areas brings new services and amenities to neglected neighborhoods; reduces time spent in traffic; and increases the use of transit, walking, and biking—all while helping to preserve undeveloped areas known as greenfields. And the central location of many urban brownfields allows for upgrades to existing transportation infrastructure, rather than building new roads.

In addition to redevelopment efforts, transportation has brought needed funds to clean up contaminated sites as a result of intersection improvements and roadway widenings. This includes the remediation of many hundreds or thousands of corroding and leaking underground tanks that store oil and gasoline.

In recent years, highway projects have been the key to successful revitalization efforts—providing needed funding and technical resources to revitalize brownfields, and turning what was once a liability into an asset.

Transportation funds are contributing to brownfields redevelopment in a number of ways:

- By paying for cleanup of environmental contamination that lies in the path of a transportation project or on the site of a former transportation project. For example, transportation funds may be used to assess and clean up a brownfield site where a road, walkway, bikeway, or transit facility will be built by a transportation agency.

Opposite and above – A model of the future Atlantic Station in Atlanta, Georgia. Billed as the largest urban brownfield development in the United States, Atlantic Station is a $2 billion smart-growth project on a 138-acre brownfield site in the heart of midtown on the former site of an Atlantic Steel facility. Redevelopment of the site hinged on transportation elements—including a highway bridge to connect it both transit and the highway.

Photos courtesy of Atlantic Station LLC, Atlanta, Georgia

- By stimulating the re-use of brownfields, and enhancing those properties for private or public users by improving access to the sites. For example, state departments of transportation may use federal highway dollars to pay for ramps, roads, bikeways, and walkways that connect a brownfield to an existing road. In addition, transit agencies may enhance their services near residential and employment centers located on former brownfields by building bus or rail stops, and erecting signs and streetlights.[23]

Photo courtesy of Atlantic Station LLC, Atlanta, Georgia

Economic benefits of the the Atlantic Station project includes creation of jobs and economic development where infrastructure already exists.

Atlantic Station, Atlanta, Georgia

Billed as the largest urban brownfield development in the United States, Atlantic Station is a $2 billion smart-growth project on a 138-acre brownfield site in the heart of midtown Atlanta, on the former site of an Atlantic Steel facility.

The impressive urban redevelopment initiative hinged on its transportation elements. For adequate access, the plan required construction of a highway bridge to connect the site to both transit and the highway. But because Atlanta had not met Clean Air Act standards, the bridge would have been prohibited under a standard interpretation of Environmental Protection Agency regulations. This obstacle was removed after an analysis showed that the smart-growth aspects of the redevelopment would help reduce air pollution through shorter and fewer auto trips with fewer emissions. The analysis, coupled with EPA's use of regulatory flexibility under an innovative program called Project XL, allowed the development to proceed.[24]

A long list of environmental and economic benefits of the project includes: cleanup of an old industrial property; separation of sanitary and

Supporting Smart Land Use

Reusing brownfields is particularly smart land use because of brownfields' central location and connection to existing transportation systems. Their reuse has two benefits:

- **Value**: Redevelopment cleans up and reuses underused and potentially dangerous land right where it's most valuable—central to the most people, to the most businesses, and to existing, paid-off infrastructure. In sum, redevelopment turns a liability into an asset.
- **Growth with less traffic:** Redevelopment that's central to people and businesses reduces the traffic from new jobs and housing in two ways: first, more of these trips can be by foot and by transit, placing less demand on roads. Second, for trips on roads, central location means that the trips are on average shorter, reducing demand for road space. And often these trips are on roads that have been underused since the decline of the industry that used to occupy the brownfield. Putting trips on those roads can be far less costly.

Source: G. Alexander Taft, Association of Metropolitan Planning Organizations[25]

Atlantic Station Redevelopment: Exemplary Transportation and Environmental Improvements[26]

The Atlantic Station project incorporates many transportation and environmental improvements that will serve as a model in brownfield redevelopment and smart growth.

Transportation Improvements:

- **Multimodal bridge:** A new bridge is currently being built to assist with transportation flow. The 130-foot-wide bridge will include transit, pedestrian, and bicycle elements along with automobile lanes. The bridge will contain two general-purpose travel lanes and one dedicated transit/bike lane in each direction with sidewalks on both sides. Sidewalks will be 22 feet wide on the south side of the bridge and 30 feet wide on the north side.
- **Sidewalks:** Pedestrian-friendly sidewalks will be provided on all surface streets in the development and as part of most off-site roadway improvements.
- **Electric car charging stations:** Priority parking as well as charging stations will be available for electric vehicles.
- **Shuttle service:** The project will include operation of a clean-fueled, rubber-tired transit shuttle system that will circulate between the nearby MARTA (mass transit) station and the development. The shuttle will operate on a frequency matching the existing mass transit station schedule.
- **Proximity of businesses:** The close intermingling of the businesses (on average less than 1,500 feet apart) and retail locations with the development's residential properties (and with existing neighborhoods) will promote pedestrian traffic.
- **Parking:** The property will feature shared parking for retail and office, including metered, street-side parking throughout the shopping district.
- **Regional bike network:** Atlantic Station will provide cyclists with a connection to a bi-state multi-use trail system.
- **Transportation facilities design:** Non-standard lane widths, turning radii, and block size will be utilized to reduce roadway cross-sections and promote pedestrian activity.
- **Alternative transportation incentives/programs:** Atlantic Station will incorporate a car-share program using electric vehicles, electric charging stations, VIP parking for car pools, guaranteed ride home, etc.

Environmental Improvements

- **Contaminated soil:** 11,800 dump truck loads (approximately 165,000 tons) of contaminated material were removed from the site.
- **Trees:** The developer is planting 2,800 new trees on the property and in surrounding neighborhoods.
- **Groundwater:** The remediation plan involved a groundwater interception system to collect groundwater on-site. The development will monitor and treat (if necessary) intercepted groundwater prior to discharge to the city sewer system.
- **Stormwater:** The development will provide detention facilities to reduce the peak runoff from the post-development condition to less than or equal to the pre-development conditions. The design of these detention facilities includes an aesthetically pleasing one-acre pond in the center of residential development.
- **Air quality:** Redevelopment of the site includes a monitoring program (in conjunction with the EPA) consisting of site design criteria and transportation performance targets. These measures are in place to ensure that the redevelopment is designed and built with elements that encourage alternatives to single occupancy vehicle trips.
- **Energy:** An environmentally friendly central cooling system will save building owners more than $35 million in construction costs, while operating more than 25 percent more efficiently than traditional building HVAC systems resulting in lower energy bills for tenants. A two-mile-long network of 36-inch pipes will deliver chilled water from a 50,000-square-foot central cooling plant to office, residential and retail buildings as they are built at the 140-acre development.
- **Recycled materials:** During the property's reclamation, concrete building foundations were uncovered. Atlantic Station broke this concrete into smaller pieces and reused the crushed material as backfill. This recycled concrete accounted for 132,000 cubic yards of material. Additionally, the 164,000 cubic yards of granite that was removed in order to create a level building site was crushed and reused as backfill. By using these large amounts of existing material, Atlantic Station reduced the amount of material that had to be taken to construction and debris landfills and lessened the material that had to be brought in from outside sources.

storm sewer systems; reduction of auto emissions; and creation of jobs and economic development where infrastructure already exists.

The multi-use development will give residents and workers a variety of transportation benefits including short trips and the option of walking, biking, or taking transit. And EPA now is allowing other cities to take air quality credit for similar smart-growth development projects.

Riverfront Heritage Trail, Kansas City

Riverfront Heritage Trail, in Kansas City, Kansas and Missouri, is an excellent example of transportation's support for brownfields redevelopment. The project is a nine-mile-long, bi-state system of bicycle and pedestrian paths coordinated with bus transit service connecting Kansas and Missouri along the urban riverfront.

This brownfields urban redevelopment initiative will revitalize an idled riverfront area—covering over 18 linear miles and linking the downtown business districts of both Kansas Cities. Benefits include visitor access to the Kansas and Missouri Rivers, creation of an urban archaeological park in the original Town of Kansas river settlement, and connection of retail and residential centers through a flourishing Rivermarket area. A restored natural area will provide opportunities for visitors to learn about wetlands and river ecology. The trail also will function as a transportation alternative, serving an employee base of over 150,000 and a residential population of over 60,000.

Substantial transportation funding was contributed to the $22 million dollar project—including $3 million from Transportation Enhancements Program funds as well as $1.2 million from the Congestion Mitigation and Air Quality Improvement program.

The project illustrates many of the benefits of transportation-related brownfields redevelopment. It creates an alternative transportation system that cleans up and recycles contaminated land, addresses air quality issues, and facilitates redevelopment of other brownfields in the area.

Stamford Urban Transitway and Intermodal Center

Another good example of transportation improvements tied to brownfield redevelopment can be found in Stamford, Connecticut. Stamford's Urban Transitway and Intermodal Transportation Center Improvements project illustrates transportation improvements underway in an area undergoing brownfields redevelopment. The area's brownfields project includes redevelopment of three large brownfields in two low-income neighborhoods by the city's harbor, including:

- a 40-acre abandoned manufactured gas plant;
- a 17-acre fuel oil depot; and
- a 22-acre manufacturing complex.

The transportation improvements will provide better access to major activity centers in the area, reducing travel time and cutting down on motor vehicle emissions.

The Stamford Urban Transitway and Intermodal project will provide a one-mile transitway, including a bus lane shared with high-occupancy vehicles, providing a direct link from Interstate 95 to the new Intermodal Transportation Center. The transportation improvements are being funded by a variety of sources, including the New Starts Program under the Transportation Equity Act for the 21st Century (TEA-21).

Brownfields: Transportation Development Across the Country

Description/Site	Location	Brief Description of Project
American Axle Plant	Northeast Buffalo, New York	Development of an access road along an old rail corridor to attract businesses to vacant, underutilized parcels along the corridor.
Euclid Corridor	Cleveland, Ohio	Improvement of a transportation corridor occurring in the vicinity of systematic brownfields improvements.
Freight-Related Development of Abandoned Industrial Sites	North Jersey, New Jersey	Freight-related redevelopment of brownfields, including port expansion and roadway/guideway development
Gateway District	Salt Lake City, Utah	Rejuvenation of a 650-acre, blighted industrial district that currently divides the west and east sides of Salt Lake City.
Lawrence Gateway and Merrimack Riverwalk	Lawrence, Massachusetts	Extension of a walkway providing pedestrian and bicycle access to downtown and to the city's National Heritage Park.
North Marine Drive	Portland, Oregon	Relocation and improvement of an outdated road through contaminated land that provides access from an Interstate freeway through an industrial district dotted with brownfields.
Phalen Corridor Initiative	St. Paul, Minnesota	Comprehensive community initiative, including transportation improvements, to restore the economic, physical, and social prosperity of St. Paul's East Side.
Riverfront Heritage Trail	Kansas City, Kansas, Kansas City, Missouri	Development of a nine mile-long, bi-state system of bicycle and pedestrian paths, coordinated with bus transit service connecting the two cities.
Stamford Urban Transitway and Intermodal Center Improvements	Stamford, Connecticut	Transitway and Intermodal Center improvements being undertaken in the vicinity of brownfields redevelopments.
Wellston Technology Park	Wellston, Missouri	Development of brownfields being driven by a transportation improvement project: opening of a Metrolink station.

Source: *Transportation and Brownfields Redevelopment: Review and Analysis of Current Practice*, Adjo Amekudzi and Ignatius Bomunung, presented at the Transportation Research Board Annual Meeting, January 2003