

Improving the brownfield's timeline for redevelopment

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Abstract

The Brownfield label is applied to properties whenever liabilities are perceived to exceed the value of the asset. The apparent negative asset value impedes the natural process of development. Reduced value may be inferred for a contaminated property because regulatory requirements to control or remove contamination have not been prescribed yet as part of the regulatory process and, therefore, the most expensive remedy with the longest timeline is factored into the property valuation. (If a property can undergo redevelopment without special attention or investment even if contaminated, the Brownfield label typically is not applied.) If an efficient remedy is incorporated into the redevelopment plan, a new focus may be created, engaging many stakeholders to support the change, and providing a means of leveraging resources to accomplish both the community and the property owner's goals.

This paper reviews the factors that have contributed to both the advancement and delay of two redevelopment sites (former refineries) owned by BP in the US. A review of the economics and other incentives from the perspectives of the property owner, the local government, the private investor and other interested parties provides a basis for constructive dialogue among the stakeholders to return the asset to productive use. A well-defined plan with economic support, including resources in addition to the party responsible for cleanup, has shown to reduce the timeline for redevelopment, a critical factor for investors. In these two cases neither the specific remedies nor the reuse plan is as influential in the redevelopment process as is the cooperative approach of the stakeholders. The plans, economics, benefits and the lessons learned from both sites are discussed.

1 Introduction

In the final stage of the life cycle of an asset, facilities are decommissioned and remediated. The question of who determines future land use and hence sets acceptable clean up requirements are critical in terms of planning and executing a successful site exit strategy. In the United States of America, the Resource Conservation and Recovery Act (RCRA) is commonly used by governments to set clean up protocols for oil refineries. While RCRA was intended to focus on the clean up process by establishing very rigid technical protocols, it does not require contemplation of market forces that shape and determine use of an old industrial site. In our analysis of the local markets, we have concluded that these old industrial sites are ideally positioned to support future industrial/commercial activities, meeting broad market needs for commerce vital to the economic sustainability of the community.

In the context of life cycle management, brownfield redevelopment can be defined as returning previously used real estate back to into uses valued by affected stakeholders. In many ways, brownfield redevelopment is the same as development of a typical greenfield site. Where greenfield development is motivated simply by adding value to an undeveloped, or neutrally valued property, brownfield development also contains the element of reducing negative values due to unsightly image and/or environmental impairments.

Converting these negatively valued properties into assets for property owners and communities is not an easy task. Brownfield redevelopment projects generally face challenges of negative public perception, clean up costs, and land use restrictions. These challenges impact the timing of when brownfield properties are available for development, creating financial risks for investors that can be difficult to quantify. In many cases, nearby greenfield properties are immediately available for development, increasing the difficulty of marketing a nearby brownfield property.

However, by not redeveloping brownfield sites, as a society we are actually encouraging urban sprawl and loss of open space. The United States Department of Housing and Urban Development estimates that there are as many as 425,000 Brownfields throughout the United States totaling approximately 5 million acres of abandoned industrial sites in our nation's cities. In recent years, the issue of brownfield redevelopment has increasingly become the focus of both local and national policy debates in the U.S. The environmental and economic benefits of brownfield redevelopment are widely acknowledged. In a recent study done by George Washington University [1], it was found that for every 1 acre of brownfield reused, 4.5 acres of greenspace is saved. According to an independent study conducted by the Council for Urban Economic Development [2], the revitalization of brownfields has created over 22,000 permanent jobs and leveraged \$2.48 in private investment for every \$1 spent by federal, state, or local governments. Enactment of new US Federal legislation in January 2002, the Brownfield Revitalization Act [3], is expected to stimulate more redevelopment. The Act made changes in federal liability and authorized grants for brownfield redevelopment (\$200 m annually for the next five years).

Many mayors, economic development officials and private developers or property owners can point to successful redevelopments where environmental and economic issues have been resolved to the satisfaction of the stakeholders involved. Former manufacturing sites have been converted to attractive riverfront parks, and former military bases have been redeveloped as housing and neighborhood commercial development. Although the size of the property may vary from small lots to tens or hundreds of acres, the issues remain the same. Still, in as many cases, similar sites remain undeveloped and of virtually no benefit to the current owner or the surrounding community and cities of varying sizes across the US continue to struggle to redevelop their properties. What are the factors that contribute to successful redevelopment?

2 Stakeholders

Stakeholders with an interest in the redevelopment of a brownfield property can include the property owner, regulatory agencies, local elected officials, community groups, residents and business owners in the surrounding area, and private financiers and developers. Each of these stakeholder groups may have a different motivation for engaging in the redevelopment of a brownfield property, and their concerns must be balanced to create a successful development project. It is important that all pertinent groups are actively engaged throughout the redevelopment process and that each group's needs and expectations can be assessed, evaluated and balanced for an overall project approach.

The approach to stakeholder involvement often separates a successful brownfield redevelopment project from similar, but less successful projects. In some cases, the issues surrounding a redevelopment cannot be resolved to the satisfaction of all the stakeholders involved and the process stagnates. A successful brownfield redevelopment results in an end use that is beneficial to all stakeholders: property owner, regulatory agencies, the community, potential investors, and potential users.

To begin with, a brownfield project must satisfy the regulatory stakeholders that in the United States are represented by the U.S. Environmental Protection Agency on a national level, and by state or local environmental agencies that are charged with implementing U.S. EPA programs and regulations for their jurisdiction. The U.S. EPA and a number of state governments have made great progress in recognizing that a successful brownfield project does not stop with the completion of a remedial action and the elimination of threat to human health or the environment.

A successful redevelopment often starts with regulatory issues but quickly incorporates the needs and expectations of the local community. Local leaders and residents often bring a range of concerns to the table when a redevelopment project is initiated. They are often driven by the desire to regain the economic benefits, including jobs and tax revenue, that were lost when an industrial facility closed operations in their community. The local community may also be driven by concern over environmental conditions at the former refinery or other industrial property. When a facility is in operation, providing employment and

delivering economic development benefits to the community, residents are often tolerant of the environmental impact associated with such a facility. Such facilities were often built before or during the early years of a town's development and upon closure, leave a large vacant space in the center of a town's landscape.

When a site reduces or ceases operations, the community's tolerance can rapidly decrease. In many cases, community leaders often see environmental regulatory action as a tool to prompt action at a former industrial facility and force the property owner to consider redevelopment. Local communities are also motivated to improve the quality of life in their community, and this includes eliminating the unattractive nuisance that an underutilized industrial property represents.

An equally important stakeholder in brownfield redevelopment is the owner of the targeted property. A brownfield redevelopment project must provide a compelling benefit to the owner of the property. The perception remains in the United States that it is cheaper and easier for an industrial property owner to retain ownership of a former industrial property, comply with environmental regulations as necessary and reduce liability by restricting access to the property. There are, in fact, benefits to an industrial property owner being an active participant in brownfield redevelopment. Benefits include reduced costs through lease or transfer of underutilized land, enhanced partnerships with state and federal regulatory agencies, and improved reputation in the local community as the owner becomes a partner in sustainable development for the community. A concern from an owner's perspective is that encouragement in redevelopment at one site may set similar expectations for stakeholders at other sites that do not have the same potential.

Involvement of potential users prior to development can provide assurance to both the property owner and regulators that remediation activity is directed to specific end uses and is both protective and cost effective. Early involvement by potential investors provides guidance in the design and of future institutional controls to both the owners and regulators.

Factoring the concerns of all parties into the design of the remediation approach, rather than discovering new issues after the completion of remediation, can enhance the property value and generate a better solution for all stakeholders. Our research has identified the concerns of stakeholders and are summarized in the following table:

Table 1: Summary of Stakeholder Concerns and Interests

Stakeholders	Their Concerns and interests
Environmental agencies	Assurance of future foreseeable land use Assurance of viable engineered barriers and institutional controls Assurance that use does not pose threat to human health or environment

Table 1: Summary of Stakeholder Concerns and Interests - *continued*

Stakeholders	Their Concerns and interests
Community	Assurance that redevelopment is safe Creation of jobs and commerce opportunities New sources of tax revenues Creation of new image for community Preservation of greenspace and natural areas
Current owner	Reduction of environmental liabilities Reduction of operating expenses Development of a viable exit strategy for excess property Brand image with customers and community Setting realistic expectations with stakeholders
Potential users	Large land parcels near customers and suppliers Access to transportation Access to utilities Availability of labor Price sensitivity Environmental protection
Potential investors	Assurance that investment will not be impacted by remaining contamination Assurance that investment is not subject to future environmental liabilities from prior use

3 Economic Factors

The economics of most brownfield properties are generally similar, that is, the potential cost of remediation outpaces the value of the real estate. This scenario is typical when the next use of the property is undefined and, therefore, the most stringent environmental conditions must be met to satisfy any future use of the land. This condition can be overcome when one or more of the following are incorporated into the development:

- A less costly remediation remedy is tied to the future use plan;
- A remediation solution is leveraged to supplement development expenditures;
- Tax-based incentives are used to supplement the site attractiveness;
- The local employment base represents a competitive advantage
- The site has one or more features unique to the area and is advantaged over potential greenfield developments

4 Case Examples

In both cases cited in this paper, BP, as a property owner, acts to facilitate redevelopment projects. The Casper, Wyoming and Wood River, Illinois properties are similar in nature: former refineries, operated by BP Amoco (now BP). In Casper, Wyoming, BP is working with the Wyoming Department of

Environmental Quality (WDEQ) to achieve regulatory closure for approximately 3,000 acres of property. Upon regulatory closure, the property will be leased to the City of Casper and Natrona County for redevelopment as a mixture of light industrial, commercial and recreational development, and preserved natural habitat. In Wood River, Illinois, BP has collaborated with the City of Wood River and a private developer to accelerate investigation, remediation and regulatory closure at the former refinery and redevelop the property as a combination of light industrial, commercial, riverfront recreational development and open space.

4.1 Casper, Wyoming refinery

The Casper, Wyoming refinery was founded by Standard Oil (a predecessor of Amoco- now BP) in 1914 to tap the Salt Creek Oil Field north of Casper. Casper, Wyoming is a City of approximately 50,000 residents, located in the largely rural western United States. When the population of surrounding Natrona County is included, the area's population is approximately 66,000. Although Casper is a small urban area, it is the second largest city in Wyoming. The City first developed as a stop for pioneers traveling to the American west. It marks the point where five major westward trails (the Bridger, Bozeman, Mormon, Pony Express and Oregon Trails) met. Later, Casper thrived as an oil town, and several major refining operations were opened to pump and process the oil found outside the town. The town's identity is closely tied to the petroleum industry and the BP refinery was a major employer for the Casper area before closing its refining operations.

After 77 years of operation, the Casper refinery closed in 1991. BP retained ownership of the entire property and continues to use a portion of the property for distribution operations, but the majority of over 3,000 acres has been underutilized since closure of refining operations. These properties include approximately 350 acres located along the banks of the North Platte River, immediately west of Casper's central business district. They also include approximately 400 acres of former tank farm property, located on the northern edge of the city and several thousand acres of property surrounding and including Soda Lake, a man-made lake originally created by BP for wastewater disposal.

Upon closure of BP's refining operations in Casper, the city and county realized the loss of jobs and tax revenue. The residents of the area were also confronted with the attractive nuisance of an industrial property, located in the heart of their community, that was no longer providing any economic benefit to its residents. Many residents also feared lingering environmental impacts from the refining operations that might spread beyond the physical borders of BP's property.

The closure of the Casper refinery was part of a broader corporate effort to consolidate operations across the company. The oil boom years in Wyoming had passed and many refineries were scaling back operations and closing their doors. However, BP still retained a large acreage of property in Natrona County and continued to bear the burden associated with general maintenance, liability and

property taxes (although reduced). There was no precedent for transfer of such a property for use as anything other than a refinery and it seemed inevitable that BP would continue to retain these liabilities.

BP worked with the Wyoming Department of Environmental Quality (WDEQ) to comply with regulatory requirements for the closed Casper facility. The investigation and remediation schedule was driven by the WDEQ and BP focused on compliance with the schedule.

In 1997, the citizens of Casper and Natrona County formed a group to address what they perceived as the problem associated with the former BP refinery property. They voiced the opinion that the refinery property should be returned to productive use quickly and provide some benefit to the community. Without action, the former BP refinery left a large gap in both the economic and physical landscape of Casper and Natrona County and the residents filed a lawsuit to initiate movement towards redevelopment.

A 1998 ruling by the United States District Court resulted in a remedial agreement between BP and the WDEQ. It outlined an approach to investigation and remediation of the former refinery in Casper. The ruling also led to a Reuse Agreement between BP, the City of Casper and Natrona County, which provided a mechanism for redevelopment of the areas of the property that are no longer utilized by BP operations. This redevelopment was to be guided by a collaborative process, including input from the City of Casper and Natrona County, which were collectively represented by a newly formed Joint Powers Board. BP would contribute land for lease, infrastructure improvements and funding for building construction, operations and maintenance and economic development, to seed the redevelopment of the former refinery properties.

At this date, the remedial agreement has been finalized and remediation and redevelopment planning for the former refinery properties are underway. Three separate properties, amounting to over 3,000 acres, are to be leased to the Joint Powers Board for a 99-year term. The Soda Lake property is to be preserved as natural habitat, the former tank farm properties are to be redeveloped as 400 acres of light industrial and warehouse operations, and the 350 acres along the North Platte River, known as the Platte River Commons, is being developed as an 18-hole golf course, office space and a potential hotel/convention center to complement the recreational development at the property.

From BP's perspective, the Casper refinery project has evolved into a successful redevelopment project. What began as a legal fight to resolve conflicting goals of BP, WDEQ and the Casper community developed into a partnership where each party contributed to and realized benefit from the redevelopment of the former refinery property.

BP has built a stronger working relationship with the WDEQ and is on track to achieve regulatory closure at the Casper refinery property. The lease agreement includes deed restrictions that limit BP's liability for future uses by new owners and operators of the properties.

In addition, BP has built an active working partnership with the Casper community, led by the Joint Powers Board. The lines of communication

amongst stakeholders have been opened, and BP has worked closely with the Joint Powers Board and the broader community to develop a viable redevelopment plan for the former refinery property. BP has rebuilt its corporate reputation and goodwill in the Casper community, which was diminished when the refinery was closed and jobs for the community lost, through participation in the redevelopment process. This includes aggressive attention to environmental issues at the property, BP participation in community visioning exercises and funding of the redevelopment effort through creation of an economic development fund and construction of infrastructure.

4.2 Wood River, Illinois refinery

The town of Wood River is approximately 11,000 residents, and its history is closely linked to that of the refinery. The town grew up around the refinery, and it was a major employer and contributor to the community. Wood River is located in the River Bend Region of Illinois, a series of 13 small communities, stretching along the Mississippi River. The area developed around large industry, including several major refineries, steel mills and additional manufacturing operations. It was ideal for this type of industry, given its access to transportation routes of the Mississippi and railroad. However, as the U S economy shifted away from heavy industry, and trucking and air replaced rail and barge as leading modes of shipping, the region suffered an economic decline, and many of the area's largest employers and corporate property tax payers reduced operations or completely closed during the last two decades.

The former Wood River refinery includes approximately 800 acres of property along the Mississippi River in Illinois, just 20 miles northeast of St. Louis, Missouri. The refinery was constructed in 1907 and consists of two major parcels: the Main Plant and the Riverfront property. Activities at the Main Plant have included refining, storage and marketing of petroleum and related products. Uses of the refinery's Riverfront property have included various containment ponds, disposal facilities, and product transfer activities at the Mississippi River heavy oils and light oils docks.

Most operations at the Wood River property were closed by 1997; however, petroleum marketing operations, including a terminal in the northwest portion of the Main Plant and operation or lease of over 30 bulk storage tanks, continue. Outstanding environmental issues, including soil and groundwater impacts, are currently being addressed through investigations, remediation and ongoing monitoring.

BP took the lessons learned in Casper, Wyoming and approached the Wood River property with the goal of creating a positive redevelopment project that would reduce environmental liability, create value for the Wood River community, and enhance relationships among BP, the City and state and federal regulatory agencies.

BP approached the Illinois EPA and the City of Wood River with a novel idea: they asked to aggressively approach the investigation and remediation of the

Wood River property, which had been designated a RCRA Corrective Action site, and work together to identify ways to stimulate the reuse of the property. The City of Wood River and Illinois EPA were receptive to the idea.

BP took the initiative in the redevelopment, creating a conceptual plan for redevelopment and conducting market studies to identify potential end-users for the property. The reuse concept plan, developed by BP with input from the City of Wood River and private developers, included several hundred acres of mixed uses, including retail, commercial and industrial development, recreational opportunities along the Mississippi riverfront and preserved natural habitat.

A private developer from the Wood River community stepped forward to express an interest in the redevelopment project. While a developer is a logical participant in most redevelopment projects, their involvement at the Wood River property is somewhat unique in that the developer has committed to the project in the early stages and has been actively involved in planning and identifying viable options for reuse.

BP worked with the Illinois EPA to develop and gain approval for an innovative approach to investigation and remediation of the Wood River property. The property was divided into parcels, based on the redevelopment concept plan, and an investigation plan was built around these redevelopment parcels. Parcels that were known to have little environmental impact, or those with the highest redevelopment potential, were targeted first.

In 2001, BP received a letter of No Further Action from the Illinois EPA for a 7-acre parcel at the northwest corner of the Main Plant. This parcel is located along Madison Street, the south edge of Wood River's Central Business District. It is being targeted for retail development to complement existing development in the Central Business District and bring visitors and sales tax revenue to the City of Wood River. A second, larger parcel located at the northeast corner of the Main Plant is expected to receive a letter of No Further Action within the next year.

The City of Wood River continues to partner with BP toward the common goal of redevelopment. The City acts as an advocate for the project to government agencies and elected officials and has begun efforts to attract end-users to the property through marketing and economic development tools. The Main Plant portion of the property lies within the River Bend Enterprise Zone, which provides tax incentives for job creation and abatements for purchases of materials or equipment purchased within the Enterprise Zone. The City has also committed to adapting its local zoning codes for the property to encourage redevelopment and provide a mechanism for enforcement of covenants and restrictions for future users that will protect BP's liability.

Through this experience, BP has built a strong relationship with the Illinois EPA, as well as the U.S. EPA. The U.S. EPA named the Wood River property one of five RCRA Redevelopment Pilot Projects in 2001. This program is designed to enhance partnerships between property owners and regulatory agencies and develop innovative approaches to remediation and redevelopment at RCRA properties. The program has provided a forum for stakeholders in the redevelopment, including the U.S. EPA, Illinois EPA, BP, the City of Wood

River, and the lead developer, to discuss constraints facing the redevelopment project and develop ways to overcome these.

The Wood River redevelopment is still in progress, but can be considered successful to the extent that it has set reasonable expectations for executing redevelopment. The project's major stakeholders, including BP, regulatory agencies, the City leaders and residents, and a private developer, have worked together to create a successful project. BP has built a strong working relationship with the Illinois EPA and been identified by the U.S. EPA as a model for future redevelopment projects through the RCRA Brownfields Prevention Pilot Project. In addition, BP has partnered with the City and a private developer to share the financial burden of a redevelopment and created a vision for reuse that creates value for the developer, the City and community residents.

5 Summary of lessons learned

At both the Casper, Wyoming and Wood River, Illinois sites, redevelopment continues to progress. In the end, both projects are expected to successfully achieve remediation and reuse of these properties. The difference was in our initial approach. In the Casper project, we first attempted to define and satisfy RCRA clean up requirements and then address other stakeholder needs. This approach created confusion and inefficiencies in achieving final clean up agreements. Relevant community stakeholders felt disenfranchised and at times frustrated with their perception that the technical discussions between BP and EPA were going too slowly. To correct this, community stakeholders were then brought into the process and participated in setting land use goals. The community, EPA and BP are now working together to implement those goals and the project is moving forward. In the Wood River project, we applied those lessons learned and began with involving community stakeholders earlier in the clean up process. As a result, remediation issues took less time to resolve as community interests were visibly incorporated into the process, creating comfort for EPA in approving clean up plans. The lesson that should be taken from a review of the Casper, Wyoming and Wood River, Illinois redevelopment projects is that when key project stakeholders work together, respecting not only the interests of but the concerns of other parties, a project can provide benefit to all parties and result in a brownfield returned to active use. A successful redevelopment project must address a range of issues, not limited only to environmental regulations.

Through redevelopment, the corporate property owner can reduce liability, improve relationships and enhance brand value. The regulatory agencies can achieve regulatory closure, assure protection of human health and the environment, and reduce urban sprawl. Investors can confidently create new wealth. New users are protected from the impacts of past operations and have access to all of the original benefits of the location. The local community can create new jobs and generate new tax revenue while creating a new vision and

image by incorporating the latest trends in architecture, recreation, greenspace and infrastructure into the redevelopment.

References

- [1] Deason, J.P., G.W. Sherk, G.A. Carroll, The George Washington University, *Public Policies and Private Decisions Affecting the Redevelopment of Brownfields: An Analysis of Critical Factors, Relative Weights and Areal Differentials*, submitted to the Office of Solid Waste, US EPA, September, 2001.
- [2] Council for Urban Economic Development, independent study. *The ECS Land Reuse Report 2001*, ECS, an XL Capital company, Exton, PA.
- [3] Public Law 107-118 (H.R.2869)- “ Small Business Liability Relief and Brownfields Revitalization Act” January 11, 2002.