

REMIEDIATING WORMTOWN:

PRIORITIZING BROWNFIELD SITES FOR REDEVELOPMENT IN WORCESTER

INTRODUCTION

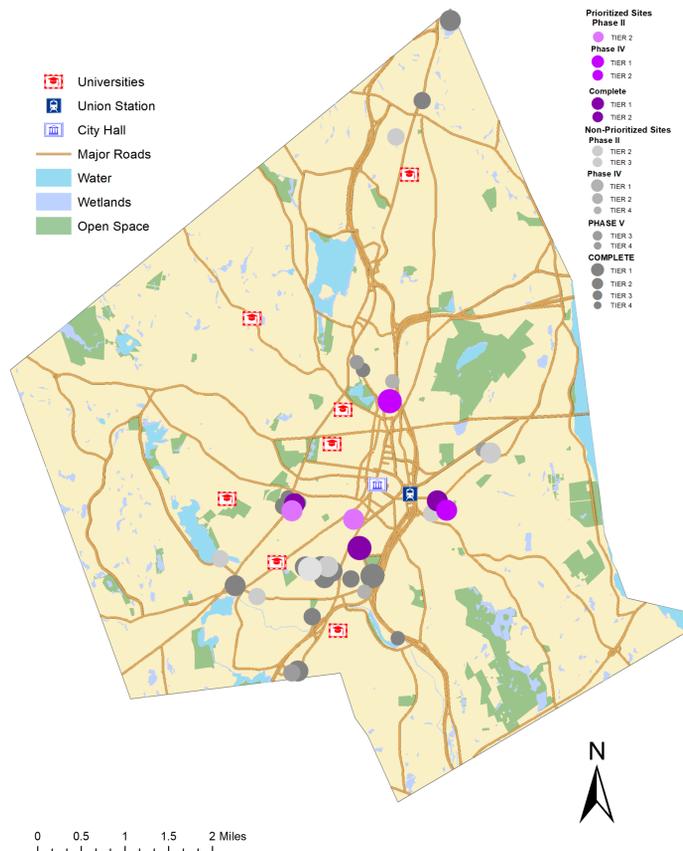
The remediation and subsequent development of brownfield sites represents a well-studied interdisciplinary sphere within urban planning, architecture and landscape architecture, environmental studies, and historic preservation. The Environmental Protection Agency (EPA) defines a brownfield as a property whose expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Apart from the hazardous materials that pollute the site and the surrounding area, brownfields stand as public eyesores to local residents who pass by the derelict, abandoned property of overgrown shrubbery, or broken windows of defunct warehouses.

One of the major steps in determining whether or not a site is suitable for transformation is to assess site contamination and initiate the process of depollution. The EPA enactment of the Brownfields Revitalization Act of 2002 codified the practices, policies involved in remediation. Through this act, the EPA was also able to provide a series of grants that support revitalization efforts.

Some results of redevelopment are the effects on the local community. Overall, the redevelopment of the property itself improves the living environment for city inhabitants, it enhances the quality of life, public safety, and the image of the city. It improves the neighborhood aesthetics and has the potential to provide new public recreation enhancements through the generation of open and green space. Additional positive effects include those which generate overall economic development, such as providing employment through cleanup and subsequent reconstruction of the site and promoting development which in turn raises tax revenue.

This final project presents a spatial analysis of selected brownfield sites in the City of Worcester, Massachusetts. The research question that guided this analysis is:

Which criteria determine prioritization for development of brownfield sites?



METHODOLOGY

Study Method: Suitability Analysis

Site Environmental Criteria

Phase of Cleanup – Indicates which phase of the cleanup process the release/site is in. There are five Phases in the process, ranked from lowest to highest: Phase I, Phase II, Phase IV, Phase V, and Complete.

Tier – Site classification based on the level of contamination that was assessed at the site. Lower tiers have lower levels of contamination with more permanent solutions; higher tiers represent sites with more temporary solutions based on lingering contaminants and land use restrictions. Tiers in this analysis are ranked from highest to lowest: Tier I, Tier II, Tier III, and Tier IV.

Social Sustainability Criteria

Environmental Justice (EJ) Index – Census block groups that are highlighted in pink display the EJ communities based on income. Sites are prioritized if they are located within an EJ community.

Property Values – Displayed by average property value within census block group. Sites located within moderate to higher value areas were prioritized. Lower property values increase development potential and return on investment, and if they are surrounded by more moderately-price properties, then they are less likely to be located within lower-income communities.

Rental Rates – Rental rates were calculated within each census block group. Sites were prioritized if they are located in areas where there is a lower frequency of renters. Residents who rent are more likely to face displacement if development of a brownfield site causes surrounding property values to rise.

Population Density – Population density was calculated based on each census block group. Sites were prioritized if they were located in areas with lower to moderate density. As infill development increases density, it can spur economic benefits in the neighborhood including more transit options, and increased commercial activity.

DISCUSSION

The analysis generated seven sites in Worcester that met the criteria for prioritization based on an Attribute Query that was performed. The following sites, descriptions, and rankings are as follows:

Address	Description	Tier	Phase
42 Quinsigamond Ave	Vacant Gas Station	Tier I	Complete
344 Franklin Street	Vacant Factory	Tier II	Complete
99 Dewey Street	Vacant Lot	Tier II	Complete
84 Prescott Street	Parking Lot	Tier I	Phase IV
27 Wall Street	Vacant Lot	Tier II	Phase IV
119 Dewey Street	Vacant Warehouse	Tier II	Phase II
35 Hermon Street	Vacant Warehouse	Tier II	Phase II

These sites are located in areas that are within 1.5 miles of Downtown Worcester, and are contained within census block groups that are considered Environmental Justice communities, and have low to moderate average property values, rental frequency, and population density.

Sites were also prioritized based on their cleanup status and tier. Tiers III and IV were automatically eliminated from consideration, as they come with risks and conditions. Therefore, Tiers I and II were prioritized, and were ranked based on their cleanup status.

