

Challenges in Fostering Growth: Putting Contaminated Land to Use

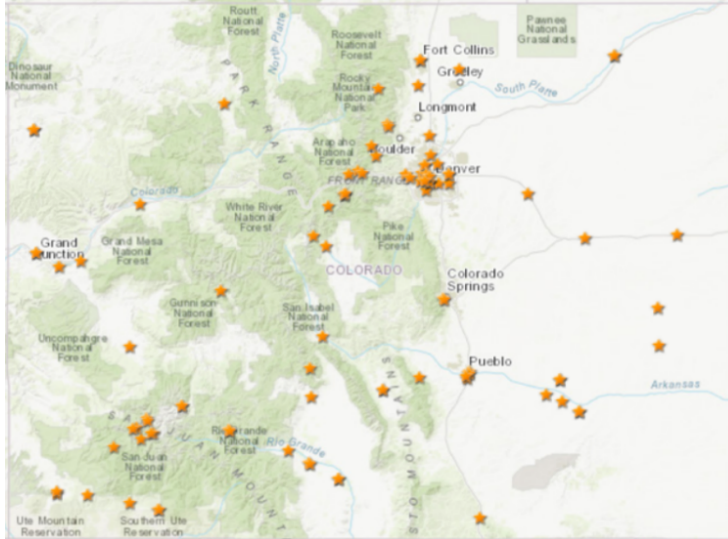
Michael Trouw and Jesse Silverstein

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<https://redi.colostate.edu/>

- Most cities and towns have a growing stock of property and which needs to be cleaned up in order to be put to new use.
- Contaminated land is under-utilized due to uncertainty, potential risk, and effort associated with cleaning up a contaminated site. This situation may generate negative community effects such as urban sprawl and neighborhood decline, as well as restrict entrepreneurial activities.
- Communities can combat inefficiencies in contaminated land reuse by increasing available information and providing funding incentives for cleanup.

Some land use decisions can impose serious, and sometimes long-lasting impacts on property values. Leaky gas station tanks, dry cleaners, and industrial production facilities seep chemicals into the ground contaminating the soil, water, and air surrounding the property. Older buildings used asbestos as flame resistant insulation before it was discovered to be highly toxic. In order to continue using these properties the contaminant must be cleaned up, whether completely or just good enough for a specific land use. Higher profile and larger scale environmental disasters such as the Exxon Valdez oil spill or the Love Canal landfill incite government response, community awareness, and funding while these smaller less contaminated sites are often overlooked. These smaller and less contaminated sites are referred to as “brownfields,” in contrast to greenfields which refers to never-developed property.



A comprehensive list of all brownfield sites in the United States does not exist, most likely due to their smaller scale and level of contamination relative to Superfund sites, which are placed on a National Priorities List by the US Environmental Protection Agency, such as the Asarco smelting plant in Denver’s Globeville neighborhood. Most collective lists of brownfield properties stem from parties interested in gaining funding to help with the cleanup, or to make sure that they are cleaned up to an acceptable standard for future use and released from liability. Using the Colorado [database of brownfields](#), we can see on the map to the left that these sites are present across broad geographical regions of the state, with the highest concentration in the most populated areas. And

there are likely more brownfields across the state: the Colorado database only contains sites which have been submitted to the state government, either for help with funding or oversight for cleanup standards. Therefore, it does not contain sites which owners know are contaminated, but perhaps think the difficulty of cleanup is high and they would rather just leave the property off the market.

In a booming state economy, with property values rising rapidly along the Front Range in particular, one would think that the opportunity costs of leaving such sites vacant might outweigh cleanup costs. REDI research has shown that the uncertainty surrounding the cost and time of cleanup and potential future liability keeps individuals from considering sites which are truly or even just potentially contaminated. Historically, if an

individual purchased a plot of land without knowing it was contaminated, they could still be held accountable for cleanup costs in the future. This liability has been reduced with the Federal Brownfields Act, under which if a buyer can show they tested for and were not aware of contamination prior to the sale, they are not held as a responsible party. However, the uncertainty and unease around the cleanup itself has remained. Since brownfields are dealt with infrequently, the lack of market information leads to potential misperceptions about the potential profitability of these sites post-cleanup, generating a stigma effect. Stigma in this context refers to the fear in excess of the true market risk of liability, potential costs, and difficulty selling properties which have been identified as brownfields.

This stigma effect is significant and reduces market efficiency as these properties are underutilized compared to what would be best for a community. The table below shows the results of a REDI survey which asked real estate professionals what capitalization rate they would expect for three types of contaminated properties compared to a clean, never contaminated site. A capitalization rate is the rate of return on a property investment, calculated as net operating income divided by the purchase price. The surveyed individuals were told that the cost of cleanup would be directly removed from the purchase price, which was intended to remove the uncertainty surrounding cost.

Capitalization Rate	Clean	Gas	Dry-Clean	Solvent/Degreaser
Mean	10.5	12.37	12.89	13.91
Variance	7.1	18.77	25.05	24.44

Investors require on average a 2-3.5% increase in the profitability of a project in order to work with a brownfield site even when told they would be compensated for the cleanup costs. Additionally, the variance of the capitalization rate results suggest that individuals are unfamiliar with these types of contamination, with a much larger spread between individual responses than for the clean property.

This stigma is consequential. Having a derelict property in a neighborhood reduces property values and disincentivizes the inflow of new amenities. Potential entrepreneurs may be more likely to choose a greenfield property on the community's edge over a brownfield property in a denser area, increasing urban sprawl which increases commute times and fuel use. Additionally, the negative side-effects of these derelict areas are likely to disproportionately affect the poor, as the relatively wealthy can live in areas which do not have abandoned gas stations and industrial buildings.

Closing this gap in market efficiency requires increased information and funding. Analysis of the survey data showed the critical determinant in an individuals' willingness to work with contaminated properties was prior experience. Even those who had a negative experience with the Colorado voluntary cleanup program were more likely to invest in brownfield properties in the future than those who had no experience at all, implying that any increase in information was useful. The Colorado Department of Public Health [Brownfields Program](#), which provides oversight for the cleanup process, tax credits, loans, and up to \$250,000 a year in project funding. To build on this important foundation, Colorado could create a more comprehensive list of potential brownfield properties instead of waiting to be contacted by interested parties, increase funding available for environmental assessments and remediations, and host information sessions targeted to both the general public and interested developers to increase awareness of what these sites are and what help is available.

