

# Chapter 3: Real Estate Theory

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## **I. Introduction**

This chapter deals with the meat of the theory underlying the effect of environmental contamination on property values. It covers numerous subtopics. First, the real estate bundle of rights is described, including the right to control, use, enjoy, and dispose of real property and its surface and non-surface components. Next the reader is reminded of the importance of financing in real estate, covering debt, leverage, loan-to-value, and debt service coverage issues. Then we discuss the ways a loss can be generated once contamination has been set into motion, the importance and sources of information, and who typically has the best information. The chapter then goes through several ways a reduction in property value loss can be recognized, including reduced use and enjoyment, shrinking of the market, and various forms of realized and unrealized capital losses. After that, several factors or conditions that have an effect on the nature, duration, and severity of losses stemming from contamination, based on remediation, land use types, stigma, nuisance, etc., are presented and tied to real estate contamination outcomes.

## **II. The Real Estate Bundle of Rights**

The separate components that comprise the real estate bundle of rights are the essential building blocks of real property. When you own a piece of real estate (land and building and associated rights), you own not just the property and the things attached to it, but a bundle of rights related to the property. Randall Bell's real estate guidebook<sup>1</sup> states that a fee simple estate includes all the bundle of rights (sell, do nothing, lease, enjoy, bequeath, encumber, use, occupy, and so forth). Hence, if you own all the rights, you have fee simple ownership. The bundle includes the right to use the property, enjoy the property, control the property, and dispose of the property, subject only to taxes, zoning, and other police powers. Additionally, property includes the surface rights, air rights, and subsurface rights. If any of these rights are abrogated or altered by contamination, then there is a loss in the property's

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1. RANDALL BELL ET AL., *BELL'S GUIDE: THE COMPREHENSIVE REAL ESTATE HANDBOOK* 48 (Sequoia Publishers 2d ed. 1999).

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value because the owner's property rights have been involuntarily reduced. A thumbnail sketch of each of the rights is described below.

### *A. Right to Use Property*

This right means the owner can conduct certain activities on the property, subject to legal restrictions such as building codes, zoning, easements, and covenants. The owner can decide what to use it for, what not to use it for, whether to occupy the property or lease it out, when to change uses, and when to make improvements or modifications. Generally, one may use one's property in any way that does not create a nuisance for others.

### *B. Enjoy Property*

This means different things if it is an owner-occupied house or an investment property. For an owner occupant, enjoyment means to take advantage of the housing services generated by the property. This means the ability to enjoy the land and any air, light, and water that comes onto the property, its gardens and vegetation, and the warmth and comfort of the building and all its rooms, vegetation, rooftop, clean air and groundwater, and other property components, in a legal manner. In the event that any of these features of the property are impeded, a loss has occurred. For commercial property or residential property for rent, enjoyment means to derive profit from owning real estate. This would be in the form of monthly or annual cash flows. The right to enjoy also includes having the asset appreciate in line with market conditions.

### *C. Control of the Property*

Control of the property is related to being able to use the property how you want to and when you want to, subject to legal restrictions. The right to control property also means being able to exclude others from using it or coming onto it.<sup>2</sup> If people come on to your property without permission, they are trespassing. This loss of control is most commonly associated with the surface of the property (stop or I'll shoot!), but in environmental contamination cases it most typically involves allowing placement of toxic substances in the groundwater under the surface of the property or in the air (which may then fall to the grounds of the property manifesting itself in the form of soil contamination) without the owner's permission. This is commonly called toxic trespass, and there will be a lot more on this later. Another form of loss of control is being unable to refinance a property you own in order to access

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2. John A. Kilpatrick, *Concentrated Animal Feeding Operations and Proximate Property Values*, APPRAISAL J., July 2001, at 301-06.

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capital you have tied up in it. A version of this is where the owner incurs additional costs in order to obtain financing.

### *D. Dispose of Property*

This is the right to sell or bequeath the property when you want to at a fair market price. If you cannot sell at a time of your choosing, within normal market conditions, then this right has been taken away. This means you may not be able to access the equity in your property and move onto other investments. Alternatively, you may be required to act as a lender and extend financing to a future buyer rather than cashing out of the property.

### *E. Surface Rights*

The bundle of rights also has a vertical spatial component. Surface rights are the most widely understood and include the right to use the surface of the property subject to zoning, building codes, covenants, and easements. The real estate bundle of rights is usually thought to apply most directly to the surface of the land. If someone deposits contamination on your soil without your permission, you have lost control of this part of your real estate rights.

### *F. Air Rights*

These are the rights above your land or building, extending up to the legal building limit or height. In other words, if the zoning code allows you to build up to 150 feet, and your existing building is only 50 feet tall, you have unused development rights up to the current zoning building envelope as part of these air rights. According to *Merriam-Webster's Dictionary of Law*,<sup>3</sup> an air right is a property right to the space above a surface or object (as a building) that may be sold or leased for development purposes. Depending on where you live, there may also be rights extending beyond the zoning building envelope toward the sky. In some cases, unused development rights, a form of air rights, can be transferred to others for monetary gain. At some point, you get into common property in the atmosphere because planes travel overhead, as do satellites, without being thought of as violating air rights.

Also, in order to maximize use and enjoyment, it is logical that the property owner also has the right to have the air near the windows and doors of the building as clear as the environment around them. Thus, if a company deposits air pollution on your property, it is a violation of your air rights. If the contaminants arrive without your permission, it is a form of toxic trespass.

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3. MERRIAM-WEBSTER'S DICTIONARY OF LAW (1996). The dictionary cites *Penn Cent. Transp. Co. v. New York City*, 438 U.S. 104, 8 ELR 20528 (1978), in its definition of "air rights."

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### *G. Subsurface Rights*

This includes the water, groundwater, and mineral rights under your land. Technically, the subsurface estate extends from the surface to the center of the earth. In urban areas, the subsurface estate is not an issue for mining or groundwater contamination because mining is not permitted by zoning code, and the groundwater under these properties is rarely used for drinking, which is typically provided by municipal drinking water sources piped in from elsewhere. In some rural areas, however, mining rights are very valuable for water, oil, gas, salt, minerals, metals, or otherwise.

If someone allows hazardous material from their property to encroach on subsurface water or into air pockets underneath your property without your permission, it is toxic trespass. In an urban area, this may get into a basement and present a fire hazard. It would also be of concern to a lender and make it much less unlikely you could get a mortgage secured by the real estate. In rural areas, the same issues apply, but with the added risk of contamination of the drinking water from wells, and its attendant health risks.

### *H. Special Cases for Adjacent or Common Property*

Your property may have a right to use other commonly held property or adjacent body of water. You may have a share of a community that owns common property, say a beachfront area. Also, if you have water frontage on a river, lake, or ocean, you probably own a right up to the mean high tide or high waterline. You may have a right to exclude strangers from your property, but they may typically walk on the beach below the mean high waterline without it being deemed trespassing. The locational premium of the property, which is capitalized into market value, may be intricately tied to the property owner being able to use the water source for recreation, fishing, or a related purpose. If the adjacent body of water is polluted or only partially useable, then the resultant loss of value to the adjacent property is a form of loss.

Take, for example, property along a large river that has been polluted with fuel oil from a pipeline rupture. The property owners bought this property because they enjoyed fishing, boating, swimming, and wildlife. Once the contamination passed by their property, it deposited several inches of congealed fuel oil on “their” beaches and swamp grass. Small animals and fish died, and the land was tainted. However, most of the affected land was below the mean high tide and was technically owned by the state.<sup>4</sup> The state had a cleanup program, and for a year or so the use of the adjoin-

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4. Alternatively, property owners may own less than the full fee ownership between low and high tide marks because of the Public Trust Doctrine, which states that the owner holds the land between high and low tide in trust for the public to use.

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ing river, the feature of the property, was impaired. The market was aware of this publicized spill, and few transactions took place, partly because the recreational water use was the feature of the properties. These waterfront property owners were impacted by the pollution despite the fact that their property was not directly contaminated.

### *I. Special Case for Contract-for-Deed Transactions*

In some cases, buyers acquire property under a land contract, or a contract for deed, instead of getting fee simple ownership. Contract for deed is a form of owner financing that typically involves a weak borrower or weak market. The seller/financier retains title to the property until the loan is paid off. In the interim, the buyer/borrower has most rights of the bundle of rights but title hasn't transferred yet and it won't until the note is paid off.

## **III. Financing Real Estate**

Real estate is usually acquired with some form of financing. This may be debt financing from a lender or equity financing from a limited partner. In general, financing allows the borrower/investor/owner to leverage the amount of financial equity they have in the property, hence increasing the rate of return. Thus, the vast majority of potential real estate buyers use financing, sometimes referred to as "other people's money." Real estate that cannot be financed is atypical and would have a smaller pool of potential buyers. Inability to obtain financing is a form of loss of control of the property.

### *A. Borrower Perspective*

Let's look at leverage from the borrower's perspective. For a typical real estate investment with a rate of return (ROR) of 9.5%, borrowing 80% of the project's value from the bank at an interest rate of 9% may increase the owner's rate of return substantially, say to 12%. Thus, borrowers will always want to borrow more money as long as the interest rate on the mortgage is below the unleveraged rate of return on the investment. In general, borrowers want as much mortgage financing as they can get and are optimistic about their ability to build and manage property, future developments in the economy, and about their property's position in the marketplace.

### *B. Lender Perspective*

Lenders also want to extend financing; it's how they do their business. They need borrowers. Banks want to lend them money at 250 to 300 basis points (or 2 ½ to 3 interest rate points) above their own cost of funds, which typically come from bank deposits. However, lenders are risk averse. They do not want to own any property; they just want the borrowers to pay the mort-

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gage back as agreed. Lenders deal in paper and electronic transfers, not bricks and mortar. Because banks are regulated by the federal government, lenders generally cannot provide first mortgage financing at a loan-to-value ratio higher than 0.8. In other words, if a property is worth \$1 million, banks cannot provide a first mortgage of more than \$800,000 without raising red flags with the regulators. Indeed, for riskier deals, they may only offer a loan of \$600,000 or so on a property with the same market value of \$1 million. Banks also look at ongoing cash flows, preferring a buffer of 15% or more to cover their debt service in the event of variable cash flows. In this example, the bank would require a ratio of debt service payments to future cash flows of 1.15. This is the debt service coverage ratio.

In normal real estate lending practice, especially for residential property, loans are non-recourse to the borrower. This means that only the real estate—not other collateral, such as outside loan guarantees—secures the mortgage. This is known as a real estate deal. When outside credit or loan guarantees are involved, it is referred to as a credit deal.

### C. Lending Example

As an example, consider the retail strip center discussed earlier in Chapter 2.

table 3-1 uncontaminated strip center leveraged		years				
	1	2	3	4	5	
<b>Revenues</b>						
Tenant 1 (5000SF)	\$ 60,000	\$ 61,800	\$ 63,654	\$ 65,564	\$ 67,531	
tenant 2 (5000SF)	\$ 65,000	\$ 66,950	\$ 68,959	\$ 71,027	\$ 73,158	
tenant 3 (10000 SF)	\$ 110,000	\$ 113,300	\$ 116,699	\$ 120,200	\$ 123,806	
less vacancy	\$ -	\$ -	\$ -	\$ -	\$ -	
expense reimb. from tenants	\$ 30,000	\$ 30,900	\$ 31,827	\$ 32,782	\$ 33,765	
interest	\$ 1,200	\$ 1,236	\$ 1,273	\$ 1,311	\$ 1,351	
Gross rents	\$ 266,200	\$ 274,186	\$ 282,412	\$ 290,884	\$ 299,610	
<b>Expenses</b>						
property taxes	\$ 25,000	\$ 25,000	\$ 25,000	\$ 27,500	\$ 27,500	
insurance	\$ 8,000	\$ 8,800	\$ 9,680	\$ 10,648	\$ 11,713	
replacement reserve	\$ 10,000	\$ 10,300	\$ 10,609	\$ 10,927	\$ 11,255	
maintenance	\$ 15,000	\$ 15,450	\$ 15,914	\$ 16,391	\$ 16,883	
utilities	\$ 20,000	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	
other	\$ -	\$ -	\$ -	\$ -	\$ -	
<b>Total expenses</b>	\$ 78,000	\$ 80,150	\$ 82,421	\$ 87,321	\$ 89,861	
<b>Net cash flow</b>	\$ 188,200	\$ 194,036	\$ 199,991	\$ 203,563	\$ 209,750	
Sales price year 5					\$ 2,097,497	
<b>debt service</b>	\$ 153,660	\$ 153,660	\$ 153,660	\$ 153,660	\$ 153,660	
debt service coverage	1.22	1.26	1.30	1.32	1.37	
net cash flow	\$ 34,540	\$ 40,376	\$ 46,331	\$ 49,903	\$ 56,090	
<b>discount factor@ 9%</b>	0.9174	0.8417	0.7722	0.7084	0.6499	
<b>Present value/year</b>	\$ 172,681	\$ 163,316	\$ 154,430	\$ 144,209	\$ 1,499,552	
<b>Total present value</b>	\$ 2,134,168					
<b>Present value /SF</b>	\$ 107					
<b>ROR unleveraged</b>	9.5%					
<b>ROR leveraged</b>	11.7%					
<b>net equity year 4</b>	\$ 328,297					

cash yr 4/asset value

cash yr 4/equity

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In the above example, which is a continuation from Table 2-1, the rate of return on an uncontaminated strip center increased from about 9% without a loan to 11.5% with leverage. Also note that in year 4, the borrower has about \$330,000 in equity in the property (market value less outstanding debt). Finally, the debt service coverage ratio ranges from 1.22 to 1.32 in years 1 through 4, making the bank comfortable.

Lenders adjust their business risk in several ways. If a deal is too risky, they can refuse to extend a loan. If they decide to do the deal, they can offer a loan, but at a lower loan-to-value ratio, say 0.6, down from 0.8. Alternatively or in addition to this constraint, lenders could require the borrower to have more operating cash flows on hand to provide a buffer against debt service payment problems. This buffer is known as the debt service coverage ratio and is typically 1.15 times the debt service. If lenders are uncomfortable, they may increase this ratio to 1.25 or higher, which typically reduces the size of the loan. Other ways lenders may adjust the risk in their favor is to increase the interest rate or to decrease the loan term, say down from 10 years to 7 years. They may also offer an adjustable rate mortgage that transfers the inflation risk part of the interest rate to the borrower. Finally, lenders may require environmental or other types of insurance before extending a loan, or they may insist that insurance be kept as a condition of the mortgage. If not kept, this would place the borrower in technical default on the mortgage loan. That is, they may be outside the loan terms and conditions and subject to foreclosure while still making payments on schedule.

Financial default, failing to keep up with debt service payments, is the downside of leverage. When no funds are borrowed, in a bad year an owner has diminished or maybe even negative cash flow, but she continues to own the property. But when mortgage debt is involved, if the borrower cannot make debt service payments, the loan is in default. Under these circumstances, the lender may elect to foreclose on the borrower and obtain title to the property, thus forcing the borrower to vacate the premises and lose some if not all of her equity position. Bankers generally dislike this option because they do not want to own the property and will typically try to work with defaulting borrowers to restructure the debt and set up a loan-workout program to avoid having to take possession of the property.

### **IV. When Loss From Contamination Begins and Who Bears It**

Once environmental contamination occurs, a loss has been created for one or more of the economic agents involved with the property. These may include current owners, lenders, tenants, potential next buyers, and future buyers down the road. Of course, the responsible polluter may also bear the loss: this is the most appropriate and fair outcome because their actions have caused the property value to decrease in the first place. Presumably, the pol-

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luter also enjoyed use and profit of the source property during the period the release occurred.

So, when does the loss begin, and who bears it? What is certain is that there is a loss to be borne; what is unclear is who shoulders the burden. This is often resolved through insurance, litigation, or some other claims or settlement process. The loss begins when the contamination occurs, or in some cases when there is a perception that there is a problem. This may not be the same time that it is discovered. In some cases, the contamination may be present for years, even a decade or more, before discovery. The key issue is who knew what and when did they know it? It boils down to information.

### *A. The Role of Information*

Because they are closer to the source of contamination, the source property owner (or tenant) is more likely to know more about a contaminative event and know it earlier than potential buyers or adjoining landowners. This is because they may have caused the contamination or release, seen documentation or evidence about the cause (such as unusual activity on the site, or paperwork or correspondence), or observed some effects of the contamination, e.g., stressed vegetation. Source property owners/operators are typically at the property often, maybe even daily, and may have been there for years. Thus, they know about a change in conditions and should be the first to know about a contaminative release. However, unless there is an imminent danger, e.g., explosion, they may not share that information with others on a timely basis, or at all. This would depend on the type of release, if they feel they are at fault or liable, or if they are required by law to disclose the presence of the contamination.

Existing owners of a proximate property affected by off-site contamination are in a similar situation. These individuals are typically at the property on a regular basis, possibly daily, and may have been there for years. They may have seen cleanup crews in action, witnessed monitoring wells being drilled, or received correspondence from attorneys requesting permission to drill wells on their property. Thus, as potential sellers of contaminated property, they know about a change in conditions, certainly more than a potential buyer, but less than the occupant or owner of a property that is the original source of the pollution.

Potential buyers of property, on the other hand, may have just arrived in the area or are not there on a regular basis. This puts them at a disadvantage from an information perspective. Although they may do some due diligence in acquiring a property, it usually means they have to be alerted to a situation before they can find documentation about a potential problem. This might take the form of a Phase 1 environmental study, which would involve a search of the past land use of the property and its environs and a look at public databases about reported environmental events. This is rarely done for



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residential purchases but is typical today for commercial or investment property, especially if there is a mortgage lender involved.

The availability of information is not always symmetrical, with the sellers of property having an advantage. This is inconsistent with the perfect information assumption in the economics of consumer behavior. Because comparable property sale transactions form the basis for determining the loss (realized capital losses, at any rate) in many cases, these comparable sales may be based on conditions where market information asymmetries are in play. For non-publicized environmental events (such as leaking underground storage tanks (LUSTs)), many sales of contaminated property, if not most, take place where there are asymmetries of information. Michael Edelstein, in his book on living with contaminated communities, points out that it is knowledge among stakeholders and occupants, rather than a group of experts, that is the important thing in contamination cases.<sup>5</sup> A market-clearing price may be harder to establish because buyers and sellers may have different perceptions of the cost to cure contamination or whether any stigma or other diminution in value has occurred. Thus, the use of external sales without explicit documentation of disclosure of a contaminative event would understate the loss in a particular situation.

Information about contamination can take many forms. One could be a highly publicized event, such as a pipeline rupture with an explosion or the sudden release of a large amount of product where environmental recovery or containment teams appear suddenly in white suits and do their jobs. Alternatively, if there is a risk of explosion, the fire marshal or fire department may appear on the site. This becomes a matter of public record. Contamination may also be publicized in the newspaper or television, where potential buyers may develop an awareness of it. Depending on the event, it may affect a property, an area, or an entire neighborhood or town.

Alternatively, the source of the contamination may be an insidious creeping type of problem, like a slow release of contaminants into a large watershed, such as a lake. It may take years for the problem to become acute, and then it may take an additional long period of time to bring the problem under control. It may become a matter for public study. For example, a state water pollution control plan may be written on the topic.

Another type of knowledge scenario concerning a contamination event would be where the persons associated with the source of the pollution know there is a problem but they have not notified off-site property owners. They may even have commissioned environmental consultants to study the problem and be under some kind of remedial program without the nearby property owners finding out. The state environmental agency or LUST program

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5. MICHAEL EDELSTEIN, *CONTAMINATED COMMUNITIES: LIVING WITH RESIDENTIAL TOXIC EXPOSURE* 4 (Westview Books 2d ed. 2004).

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may have a file on the event, but in most places there is no requirement that adjacent landowners be notified. The contamination may only be discovered when the adjacent property owner goes to drill a water well, or if there is an objectionable odor, or if they break ground for a new addition and smell fumes. Another way that nearby property owners may find out that there may be a contamination problem is if the polluter or their lawyer or other representative asks for permission to drill a test well on their property.

And there may be a perception of a problem without knowledge either way. A property may be at the edge of a zone of influence from a contaminative event. For example, it may be unclear if a property is upgradient or downgradient from an expanding groundwater plume. Until the plume's direction and speed of movement are determined, the property is likely to be negatively affected. This uncertainty, when known, would be reflected in reduced property values.

### *B. Disclosure Requirements*

For residential property, most states have property transfer disclosure laws. Sellers are required to list any known defects about the property. Hence, “checking the box” on the state-mandated residential property sale disclosure form is a sure avenue of notification to potential buyers that there has been or is a problem. The question is usually phrased as: “Are you aware of the presence of *(a known type of problem)* on your property?” Sellers are instructed to answer yes, no, or uncertain about this particular type of defect. Checking yes is certainly a red flag to a potential buyer. It would start a whole different type of conversation about the property, and not one related to its best attributes. It would be expected to decrease the interest of some buyers in the property, hence having them “substitute” another property for their acquisition. Even checking uncertain or don't know may raise issues in a potential buyer's mind. An example of a state residential sale defect disclosure form (from Ohio) is shown as an Appendix to this chapter, e.g., item H.

### *C. Information Asymmetry Favoring the Seller*

To summarize, there is often an asymmetrical availability of information concerning environmental contaminative events that favors the seller. This means that they have an advantage over a potential buyer about an important piece of information about the property in question. In some cases, this knowledge may entice the seller to list the property at below the market price in order to generate a quick sale, with some pressure for a rapid closing, before the buyer can ask too many questions. Thus, a property could sell below market price without buyer knowledge of a problem. The buyer may even feel that they got a good deal. In many situations, the principle of caveat emptor—let the buyer beware—is in play.

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### *D. Reduction in Demand*

An underlying factor that affects the sales price or whether a sale occurs at all is the number of potential buyers that would bid on a property. Without contamination as an issue, markets generally function normally, and potential buyers search for property using available means. This may include looking in a newspaper, driving around, using a multiple listings service (MLS), conducting an Internet search, or (more rarely) personal knowledge of available properties known to the buyer through business relationships or proximity. Searching for a property to acquire takes time and effort, and these search costs are factored into the sales price, typically through payment of a realtor fee, which includes the MLS that helps buyers locate properties of interest.

Once a desired property is found, the buyer seeks to determine more details about it, above and beyond the summary data available through the newspaper or MLS computer printouts. One issue that may come up and be disclosed by the seller is the presence of or concerns about environmental contamination on the property. Once this topic is introduced, the buyer-seller conversation is altered away from positive attributes of the property to a potentially deal-killing topic while the potential buyer assesses their taste for environmental risk. In many cases, the potential buyer will walk away from a contaminated property, especially if the property is not uniquely excellent and if there are some uncontaminated substitutes for it. Hence, this substitution effect acts to depress demand for the property, driving down the sales price. Fewer buyers would be interested in making any offer. The disclosure of the contamination is critical to this outcome, for the buyer needs the information to make an informed decision. Thus, contamination can drive away potential buyers and cause the market for these properties to dry up. This, in turn, increases the likelihood of a discounted sale price because there is a smaller pool of bidders (refer back to Figure 2-2 for the effects of the reduction in demand attributable to contamination).

### **V. Forms a Loss Can Take**

A loss can take different forms when real property is affected by contamination. Some are related to diminished use and enjoyment of the property, while others take the form of a “locked-in” capital loss, a related financial transaction such as seller financing at the time of an actual sale, or a delayed sale. Other forms of loss are unrealized capital losses, loss of liquidity and inability to access capital tied up in real property, default risk, and a change in the discount rate that affects how a potential buyer would look at cash flows or service flows from real estate with respect to present value.

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### *A. Reduced Use and Enjoyment*

When a property cannot be used to its fullest ability, compared with before a contaminative event, then this is a form of loss. Through the discounting process, the reduced use and enjoyment is then capitalized back into a reduced property value. For a residential homeowner-occupant, reduced use may take the form of not being able to occupy the property for a time during and after an evacuation, or not being able to use their groundwater well for drinking or bathing even though they are occupying the residence. It may take the form of not being able to open the windows or not being able to use an adjacent polluted lake for recreation. In all these examples, the right to fully use the property has been taken away and a value loss has occurred.

For a business or investment property, reduced enjoyment would generally mean that profits from the property are lower. This may be a result of excess vacancy attributable to the contamination. Income may be reduced even if tenants do not move out because future tenants may pay less rent to compensate for the environmental risk. There could also be a higher vacancy rate where tenants avoid the building, or there may be downtime to mitigate the risk.<sup>6</sup> Tenant space may not be available to rent out for a period of time. Contamination or fear resulting from an explosion could also lead to reduced sales if the subject property is a day care, retail, or service establishment. Also, any unreimbursed environmental monitoring costs could drive down net revenues for the building by increasing operating costs.<sup>7</sup> These factors would lead (directly or indirectly) to lower cash flows and thus lower profits. A pattern of reduced use of a property will translate into a lower sales price at some point in the future.

### *B. Realized Capital Loss*

The five types of realized capital loss are: (1) a sale below market price where the difference between market value and actual sales price is attributed to the contamination; (2) a delayed sale (including a failed transaction that may have been delayed for years); (3) a property that could not be financed that is sold below market price; (4) seller financing; and (5) loan default.

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6. Richard A. Neustein, *Estimating Value Diminution by the Income Approach*, APPRAISAL J., Apr. 1992, at 283-87; Joseph A. Campanella, *Valuing Partial Losses in Contamination Cases*, APPRAISAL J., Apr. 1984, at 301-04; Joseph A. Campanella, *Commercial Property Values and Toxic Sites*, CAL. LAW., May 1990; Gerald E. Smolen et al., *Hazardous Waste Landfill Impacts on Local Property Values*, REAL EST. APPRAISER, Apr. 1992, at 4-11.

7. Smolen et al., *supra* note 6; Anthony J. Rinaldi, *Contaminated Properties—Valuation Solutions*, APPRAISAL J., July 1991, at 377-81.

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### 1. Sale Below Market Price

This is the “classic” instance of a sale below unimpaired (or “clean”) market value, where the property owner sold a contaminated property at a discount, hence locking in, or realizing, a capital loss. The sale may have taken place without undue delay in marketing the property, at about a normal duration for the local market. In this case, the seller has lost the right to obtain full value for the property, and the right to dispose of the property has been impaired.

Determining if the sale is below market is often challenging. The sale can be compared with similar uncontaminated properties in the same market. Alternatively, the property can be compared with itself before the contaminative event, provided no other major physical improvements such as new square footage or detriments such as fires have taken place. This price must be adjusted for inflation or market appreciation. If a contaminated property has a static value while property around it increases, the underappreciated portion is a form of loss. In very hot markets, a contaminated property may even increase in value. However, the difference in appreciation between the contaminated value and what the property would have sold for at a market appreciation rate is a loss. This is similar to an infant with poor weight gain who has “failed to thrive.”

### 2. Delayed Sale

If a sale takes longer than it normally would have, and this delay is attributable to a contaminative event, this is also a form of loss. This would be the case even if the property transacted at full market value. The reason is that a delay in a sale means that transaction proceeds to the seller would be received later. Due to the time value of money, the discounted present value of the property would be lower. There may also be some carrying costs associated with the property during the holding interval.

The literature states that contaminated properties are more difficult to sell, experience reduced marketability, or may never reach the market. Thus, lack of sale or a delayed sale is a form of loss.<sup>8</sup> Further, there is evidence to support the proposition that LUSTs and other types of environmental contamination experience delayed transactions.<sup>9</sup>

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8. Michael V. Sanders, *Post-Repair Diminution in Value From Geotechnical Problems*, APPRAISAL J., Jan. 1996, at 63-65; Peter J. Patchin, *Contaminated Properties: Stigma Revisited*, APPRAISAL J., Apr. 1991, at 167-72; B. Christensen, *Can Pollution Contaminate Value?*, REAL EST. APPRAISER & ANALYST, Fall/Winter 1987, at 53-55; and John D. Dorchester Jr., *Environmental Pollution: Valuation in a Changing World*, APPRAISAL J., July 1991, at 289-302.
  9. Robert A. Simons et al., *The Effect of Underground Storage Tanks on Residential Property Values in Cuyahoga County, Ohio*, 14 J. REAL EST. RES. 29-42 (1997); Alan Reichert et al., *The Impact of Landfills on Residential Property*

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A delayed sale is a form of a realized capital loss and is an interference with the right to fully enjoy and dispose of the property. The extent of loss would vary depending on how much of a delay there is in the sale. A delay of six months may result in a diminution in present value of just a few percent. Delay for two years could mean a diminution of 20% or more in addition to any loss below the unimpaired full market value.

An example at the far end of the spectrum for delayed sale is the failed transaction. If a property had a sales contract with a contingency clause for contamination, and some contaminants were found that caused the transaction to be voided, then this is a form of delayed sales loss. In some cases, the property may remain unsold for over a decade or longer, e.g., *Fairey v. Exxon Corp.*,<sup>10</sup> where the named plaintiff's property in a class action lawsuit remained unsold for 15 years. Such property may also experience operating losses, which also represent a form of loss. Total losses would include these unwanted operating losses, plus the opportunity cost of funds not received (net original sales price less realized residual value), plus out-of-pocket costs and any remediation costs. If the delay is long enough, the present value of the losses can exceed the market value of the property.

### 3. Property Cannot Be Financed

Real estate is usually acquired with a mortgage from a bank or similar form of financing. Owners typically seek to use as little of their own funds as possible. A 10 to 20% down payment is a good rule of thumb. If the property would not be financed by a normal lender, and the potential buyer is aware of this when the offer is made and accepted, then the property would likely sell for less because this deficiency would be capitalized into the sales price. There is sustained evidence that lenders are less likely to provide mortgage loans on contaminated properties.<sup>11</sup>

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*Values*, 7 J. REAL EST. RES. 297-314 (1992); WILLIAM N. KINNARD, TOOLS AND TECHNIQUES FOR MEASURING THE EFFECTS OF PROXIMITY TO RADIOACTIVE CONTAMINATION ON SINGLE-FAMILY RESIDENTIAL SALES PRICES (Real Estate Counseling Group of Connecticut, Inc., Working Paper, 1991).

10. No. 94-CP-38-118 (S.C. July 10, 2003).

11. Bill Mundy, *Stigma and Values*, APPRAISAL J., Jan. 1992, at 7-13 [hereinafter Mundy, *Stigma*]; Bill Mundy, *The Impact of Hazardous Materials on Property Value: Revisited*, APPRAISAL J., Oct. 1992, at 463-71 [hereinafter Mundy, *Revisited*]; Patchin, *supra* note 8; Patricia R. Healy & John J. Healy Jr., *Lenders' Perspectives on Environmental Issues*, APPRAISAL J., July 1992, at 394-98; Simons et al., *supra* note 9; Elaine Worzala & William N. Kinnard, *Investor and Lender Reactions to Alternative Sources of Contamination*, 22 REAL EST. ISSUES 2 (1997); Thomas O. Jackson, *Environmental Risk Perceptions of Commercial and Industrial Real Estate Lenders*, J. REAL EST. RES., Nov./Dec. 2001, at 271-88.

## Real Estate Theory

The main reason property values would decrease if financing were not available is that the buyer would be unable to take advantage of leverage and would have to acquire the property entirely with their own money. Fewer buyers would be interested in a property with this type of problem. To buy a property without leverage would lower the rate of return to a potential buyer. To compensate, the buyer would be expected to offer less for the property to get their investment rate of return back up to industry standards. Thus, if a property cannot be financed and is sold at a loss to reflect this, it is a form of realized capital loss.

### 4. Seller Financing

In the event the prior scenario was in effect and the property could not be financed, the seller has a few options, none of them devoid of loss. She can sell the property at a further discount because it cannot be financed. Alternatively, the seller could act like a bank and take back a note on the property. The seller would then take on the business risk of collecting mortgage payments from the buyer/borrower. In addition, the seller would be unable to cash out funds from the property.

Depending on the terms of the seller-financed mortgage compared with market rate loan terms and interest rates, any additional benefit to the buyer would be capitalized back into the sales price as a premium, while any terms less advantageous to the buyer would be brought into the property as a further discount.

Finally, if the property is owner-occupied and seller financing is required to make a sale, the owner's ability to move up the equity ladder to another house may be impaired because they may not be able to access funds to make the down payment on the other house. Thus, the extent of the real estate loss may extend beyond the property itself into the lives of the owners. In this case, the right to dispose of the property has been reduced.

### 5. Default Risk

Borrowers have been shown to default on a mortgage when their net equity is negative. It is not the only reason why default occurs, but it is consistent with economic loss minimizing behavior.<sup>12</sup> Net equity is negative when the prop-

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12. Kerry Vandell & Thomas Thibodeau, *Estimation of Mortgage Defaults Using Disaggregate Loan History Data*, 13 J. AM. REAL EST. & URB. ECON. ASS'N 292-316 (1985); C. Foster & Robert Van Order, *An Option-Based Model on Mortgage Default*, 3 HOUSING FIN. REV. 351-72 (1984); Robert A. Simons, *Industrial Real Estate Mortgage Default Experience of the New York State Job Development Authority Second Loan Program: A Preliminary Investigation*, 22 J. AM. REAL EST. & URB. ECON. ASS'N 632-46 (1994).

## When Bad Things Happen to Good Property

erty is worth less than the outstanding mortgage principal balance. Since contamination can reduce the market value of the property, it increases the default risk. If the borrower defaults because of contamination, it is a form of realized capital loss.

Environmental contamination can exacerbate the problem by causing the borrower's net equity to go negative and substantially increasing the default risk. Thus, even though the cash flows to a property may be positive, the net equity in the property (market value less outstanding debt) may be negative. In cases like this, owners are much more likely to abandon their property because their net equity position has eroded to below zero. Consider the example of the strip center used earlier, where there was an off-site release that caused a short-term problem and one tenant did not renew its lease. In that case, the owner had additional carrying costs in terms of higher insurance, some legal fees, and environmental monitoring.

table 3-2 Contaminated strip center leveraged		years				
	1	2	3	4	5	
<b>Revenues</b>						
Tenant 1 (5000SF)	\$ 60,000	\$ 61,800	\$ 63,654	\$ 50,000	\$ 51,600	
tenant 2 (5000SF)	\$ 65,000	\$ 66,950	\$ 68,959	\$ 71,027	\$ 73,158	
tenant 3 (10000 SF)	\$ 110,000	\$ 113,300	\$ 116,699	\$ 120,200	\$ 123,806	
less vacancy	\$ -	\$ -	\$ 17,197	\$ -	\$ -	
expense reimb from tenants	\$ 30,000	\$ 30,900	\$ 27,827	\$ 28,662	\$ 29,522	
interest	\$ 1,200	\$ 1,236	\$ 1,273	\$ 1,311	\$ 1,351	
Gross rents	\$ 266,200	\$ 274,186	\$ 261,215	\$ 271,200	\$ 279,336	
<b>Expenses</b>						
property taxes	\$ 25,000	\$ 25,000	\$ 25,000	\$ 27,500	\$ 27,500	
insurance	\$ 8,000	\$ 8,800	\$ 20,000	\$ 22,000	\$ 24,200	
replacement reserve	\$ 10,000	\$ 10,300	\$ 10,609	\$ 10,927	\$ 11,255	
maintenance	\$ 15,000	\$ 15,450	\$ 15,914	\$ 16,391	\$ 16,883	
utilities	\$ 20,000	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510	
environmental monitoring/legal	\$ -	\$ -	\$ 5,000	\$ 5,000	\$ 5,000	
<b>Total expenses</b>	\$ 78,000	\$ 80,150	\$ 97,741	\$ 103,673	\$ 107,348	
<b>Net cash flow</b>	\$ 188,200	\$ 194,036	\$ 163,474	\$ 167,528	\$ 171,988	
Sales price year 5					\$ 1,433,237	
<b>debt service</b>						
debt service coverage	1.22	1.26	1.06	1.09	1.12	
net cash flow	\$ 34,540	\$ 40,376	\$ 9,814	\$ 13,867	\$ 18,328	
<b>discount factor@ 12%</b>	0.8929	0.7972	0.7118	0.6355	0.5674	
<b>Present value/year</b>	\$ 168,036	\$ 154,684	\$ 116,358	\$ 106,467	\$ 910,848	
<b>Total present value</b>	\$ 1,456,392					
<b>Present value /SF</b>	\$ 73					
<b>ROR unleveraged</b>	<b>7.8%</b>					
<b>ROR leveraged</b>	<b>3.2%</b>					
net equity year 4	\$ (311,271)					

The leveraged rate of return has dropped from almost 12% without contamination to about 3.2% after the contamination event, which caused one of three tenants to leave early, hardly a catastrophic outcome. This rate of return is well below industry standards. The borrower's debt service coverage ratio has fallen to 1.06, well below the bank's threshold comfort level. Finally, the borrower's net equity in the property (market value less outstanding principal balance) has gone substantially negative (about \$311,300). However, the



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project still has modest positive cash flows but is clearly diminished as an asset. The owner would probably not be able to refinance this asset, and any amount would be well below the funds available if there were no contamination. These results reflect an erosion of the rights to use, enjoy, and control the property.

### *C. Forms of Unrealized Capital Loss for Unsold Property*

It is easy to visualize the diminution in value when a property has sold for below the market price due to contamination. The loss is permanently “locked in.” However, a loss in value, based on a loss of property rights, can also occur without a sale. This is an unrealized capital loss. The value of the real estate asset, owner’s net worth, and the usefulness of the impaired real estate to the owner, such as being able to refinance the property and access equity capital, is decreased. Also, there is always a chance that an individual would be forced to sell a property, even though they do not plan to, due to unforeseen circumstances. Finally, contaminated property would require a higher discount rate than a comparable uncontaminated one, so property value would be reduced. Thus, contamination becomes a substantial impediment to the property owner, especially in controlling use of the asset as a source of capital and with the right to dispose of the property.

#### 1. Reduction in Net Worth

If a property is worth less, then the net worth of the injured party is diminished. It is similar to having a stock you own go down in value. However, because real estate assets are much less liquid than stocks and because contamination often takes a very long time to remediate, the problem is likely to persist for quite a while, typically several years. The duration of the reduced net worth is a problem in its own right and reflects a reduction in normal business activity.

There is evidence in the peer-reviewed literature to support the notion that nonresidential (income-producing) property could be negatively affected by proximity to environmental contamination even if no sale of the property occurs.<sup>13</sup>

#### 2. Loss of Liquidity in Refinancing

Even without a sale, a property owner may wish to refinance the property but be unable to do so because the lender would not accept the property in a contaminated state as collateral for a loan. This is also a reduction in the right to

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13. James A. Chalmers & Scott A. Roehr, *Issues in the Valuation of Contaminated Property*, APPRAISAL J., Jan. 1983, at 28-41.

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control the property and is a form of unrealized capital loss. In the United States, the average term for a residential mortgage loan is 15 or more years, but the typical loan is paid off and refinanced in about 7 to 10 years. For a homeowner, refinancing could be needed to pay for college for a child, to consolidate bills, to start a business, or to take advantage of lower interest rates. In the case of a contaminated property, the owner may be unable to access capital tied up in their real estate.

For a business, refinancing is a common way to raise operating capital or to finance expansion without being required to dilute shares in the firm by offering more stock. It enables the owner to control the company more closely. Liquidity loss issues indicate that the owner may have lost the ability to use all the rights in their property or that the asset has been financially frozen. This loss in liquidity includes the ability to refinance and loss of full income potential. Such a situation may prevent the owner from obtaining financing and could cause cash-flow problems for the business because the structure may not be used as collateral. In a severe case with lots of sudden vacancy lasting for a prolonged period, a firm could undergo financial stress severe enough to cause mortgage default or bankruptcy. Restrictions on future use are also a concern and may affect both property owners and lenders worried about the value of the real estate as collateral.<sup>14</sup>

### 3. Russian Roulette

Russian roulette is the “game” where a single bullet is put into the chamber of a six-bullet handgun, and the chamber is spun. Each person playing the game puts the gun to their head and pulls the trigger. Only one person is in danger, but it is not known in advance who it is. That person would have a catastrophic experience while the others would emerge from the game apparently unscathed. However, closer examination would reveal that the “lucky” participants were under tremendous stress. If they were made to play the game against their will, a rational person would pay some amount not to undergo the experience. That they would have paid any amount is an indication that there is a negative situation associated with being “apparently unscathed” (analogous to a loss in property value), and the amount they would have paid is the *ex ante* (before the fact) “shadow” price of the expected value of that experience (loss).

In the same vein, even though a property owner does not plan to sell a property, some do end up selling nevertheless. The reasons are often personal: a job change; divorce; death; a unique property opportunity has presented itself; or they changed their minds. As discussed in Chapter 2, in the United States, about 45% of households moved within the past five years, an

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14. Smolen et al., *supra* note 6; Mundy, *Stigma*, *supra* note 11; Sanders, *supra* note 8.

## Real Estate Theory

average of 9% per year.<sup>15</sup> It is also a well-recognized fact that 66% of U.S. households were homeowners in 2000.<sup>16</sup> Homeowners are more stable and move less often. Regardless of why, there is a statistical probability of approximately 5% that a house would be sold in any year. With plausible assumptions on the expected likelihood the event would occur, extent of the loss, and number of time periods of exposure to the contaminated sale below market, the loss to the property owner from being forced to face this situation (sale of contaminated property at a loss) can be quantified using the expected value technique from economics.

If the property were contaminated, it would sell at a loss (if it sold at all) during an impairment period. Thus, even though a homeowner, if asked the day before contamination was discovered (*ex ante*), said they did not plan to sell or leave, the homeowner is still made to face the possibility of this expected value loss involuntarily, hence the Russian roulette analogy.

Consider the following examples. If there is a 5% chance a \$100,000 property would sell at a 20% discount in a given year, and it is impaired for 4 years, then the loss would be calculated as follows:  $\$100,000 \times (0.05 \times 0.2 \times 4) = \$4,000$ , or 4%. If the property is in a fast turnover neighborhood or the homeowner is more likely to be facing a move because of life-cycle issues (with a 7% likelihood of sale that year), and if the house would sell at a 50% discount and is impaired for 6 years, the loss would be  $\$100,000 \times (0.07 \times 0.5 \times 6) = \$21,000$ , or 21%. This form of loss would be in addition to any other losses.

It should be noted that this economic concept may not be strictly compatible with legal theories of permanent and temporary loss in property value.

### 4. Change in Discount Rate

Even though there is no sale, knowledge that a property has contamination would affect the discount rate that should be used to bring future cash flows to present value. This pertains directly to any income property, but it also applies in theory to owner-occupied housing to discount benefits from future housing services. A higher discount rate drives down the present value of the property even if debt structure and revenue do not change.<sup>17</sup> In some cases, an upward adjustment in the risk premium component of the discount rate can be substantial. A two percentage point increase, or about a

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15. U.S. CENSUS BUREAU, U.S. DEPARTMENT OF COMMERCE (DOC), CENSUS OF POPULATION AND HOUSING tbls. 1 & 2 (2003).

16. U.S. CENSUS BUREAU, U.S. DOC, CENSUS OF POPULATION AND HOUSING, SUMMARY TAPE FILE 3 (STF 3) (2003).

17. Neustein, *supra* note 6; Smolen et al., *supra* note 6; Mundy, *Revisited*, *supra* note 11.

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20% reduction in present value, was reported in one survey.<sup>18</sup> However, this adjustment is lower than commonly used rules of thumb in brownfield redevelopment, where managing additional risk is a core part of the real estate development strategy.<sup>19</sup>

Thus, an impaired property would be typified as being contaminated and, therefore, in a higher risk category commanding a higher discount rate. Therefore, its present value would be diminished. Since the discount rate is one of the most important assumptions in valuation of property, increasing the discount rate would have substantial impact on value, even without changes to actual cash flow. It would not be unusual for the property to lose 10% or more of its value just on the discount rate assumption.

Table 3-3 illustrates this point using the leveraged unimpaired strip center example. The only assumption that has been changed is the discount rate, which has been increased from 9% before knowledge of contamination to 12%. Just this one change reduces the property value by 11%, and no cash flow changes of any kind, e.g., increased vacancy, legal costs, have been assumed.

table 3-3 uncontaminated strip center leveraged, higher discount rate

	years				
	1	2	3	4	5
<b>Revenues</b>					
Tenant 1 (5000SF)	\$ 60,000	\$ 61,800	\$ 63,654	\$ 65,564	\$ 67,531
tenant 2 (5000SF)	\$ 65,000	\$ 66,950	\$ 68,959	\$ 71,027	\$ 73,158
tenant 3 (10000 SF)	\$ 110,000	\$ 113,300	\$ 116,699	\$ 120,200	\$ 123,806
less vacancy	\$ -	\$ -	\$ -	\$ -	\$ -
expense reimb. from tenants	\$ 30,000	\$ 30,900	\$ 31,827	\$ 32,782	\$ 33,765
interest	\$ 1,200	\$ 1,236	\$ 1,273	\$ 1,311	\$ 1,351
Gross rents	\$ 266,200	\$ 274,186	\$ 282,412	\$ 290,884	\$ 299,610
<b>Expenses</b>					
property taxes	\$ 25,000	\$ 25,000	\$ 25,000	\$ 27,500	\$ 27,500
insurance	\$ 8,000	\$ 8,800	\$ 9,680	\$ 10,648	\$ 11,713
replacement reserve	\$ 10,000	\$ 10,300	\$ 10,609	\$ 10,927	\$ 11,255
maintenance	\$ 15,000	\$ 15,450	\$ 15,914	\$ 16,391	\$ 16,883
utilities	\$ 20,000	\$ 20,600	\$ 21,218	\$ 21,855	\$ 22,510
other	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total expenses</b>	\$ 78,000	\$ 80,150	\$ 82,421	\$ 87,321	\$ 89,861
<b>Net cash flow</b>	\$ 188,200	\$ 194,036	\$ 199,991	\$ 203,563	\$ 209,750
Sales price year 5					\$ 2,097,497
<b>debt service</b>	\$ 137,061	\$ 137,061	\$ 137,061	\$ 137,061	\$ 137,061
debt service coverage	1.37	1.42	1.46	1.49	1.53
net cash flow	\$ 51,139	\$ 56,975	\$ 62,930	\$ 66,502	\$ 72,688
<b>discount factor@12%</b>	0.8929	0.7972	0.7118	0.6355	0.5674
<b>Present value/year</b>	\$ 168,036	\$ 154,684	\$ 142,350	\$ 129,368	\$ 1,309,194
<b>Total present value</b>	<b>\$ 1,903,632</b>				
<b>Present value /SF</b>	<b>\$ 95</b>				

18. Jeffrey D. Fisher et al., *Valuation of the Effects of Asbestos on Commercial Real Estate*, 5 J. REAL EST. RES. 7 (1993).

19. Robert A. Simons, *Creative Financing for Brownfield Redevelopment*, in *BROWNFIELDS: A COMPREHENSIVE GUIDE TO REDEVELOPING CONTAMINATED PROPERTY* ch. 7 (Todd Davis ed., American Bar Association 2d ed. 2002).

### VI. Conditions That Affect the Extent of Losses

When a property is contaminated, whether by a realized or unrealized capital loss, it can be said to have suffered a diminution in value. In other words, an arm's-length buyer would discount their bid to account for the increased risk and other factors related to the contamination. These factors could include increased investment risk, reduced use, inconvenience related to environmental testing, odors, etc. Any of these may result in a residual decrease in value, sometimes referred to as stigma.

#### A. Stigma

There is no single definition concerning environmental stigma in the context of real estate contamination. Stigma is usually related to discrimination against various segments of the population, such as people with disabilities or acquired immune deficiency syndrome. *Webster's Dictionary* defines it as "a mark or brand, a scar left by a hot iron, a mark of shame or discredit."<sup>20</sup>

Environmental stigma is more difficult to define. In real estate, post-remediation stigma is generally accepted to mean the residual value loss outside of the cost to cure the actual contamination once a property has been contaminated. This definition has evolved over the past 15 years, and courts typically allow this type of stigma damages. However, another legal version of stigma is "proximity stigma," where property is close to a source of contamination but is not actually contaminated. While economists could claim that the property has suffered a diminution in value, many courts do not allow this type of stigma damages on the grounds that there has not been any actual physical injury to the property.

Early attempts to define stigma have been attributed to Peter Patchin. He observed that stigma was loosely defined as the residual property loss after remediation, and despite remediation, the property's value was not necessarily made whole due to the perception of possible liability.<sup>21</sup> This is not a strict definition as much as an observation based on why some forms of contamination made real estate less marketable after remediation. Patchin later expanded his definition of stigma to include underlying causes such as fear of additional cleanup costs, fear of liability, and the inability to secure financing. He also restated his earlier observation that the costs to cure a property are often not the only costs, with stigma making up the difference.<sup>22</sup>

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20. WEBSTER'S COLLEGIATE DICTIONARY (9th ed. 1991).

21. Peter J. Patchin, *Valuation of Contaminated Properties and the Sales Comparison Approach*, APPRAISAL J., Jan. 1988, at 7-16.

22. Patchin, *supra* note 8.

## When Bad Things Happen to Good Property

Bill Mundy's discussion of stigma uses the definition of social stigma and applies it to environmental stigma. Stigma is simply the product of an event that upsets the environment. Mundy outlines seven characteristics to assess the severity of stigma: (1) disruption; (2) concealability; (3) aesthetic effect; (4) responsibility; (5) prognosis; (6) degree of peril; and (7) level of fear.<sup>23</sup> His quantification of stigma notes the likely impact on rent, occupancy, expenses, and rates regarding capitalization and/or the discount rate.

James Chalmers and Scott Roehr defined stigma as "the reduction in value caused by contamination resulting from the increased risk associated with the contaminated property."<sup>24</sup> Richard Roddewig's definition of stigma combines the Appraisal Institute's definition that stigma is "an adverse public perception about a property that is intangible or not directly quantifiable."<sup>25</sup> He further explains that it is the financial impact in addition to remediation costs.<sup>26</sup> One widely recognized component of stigma is fear or uncertainty about a future recurrence, and another is a chilling effect.<sup>27</sup>

Stigma on a contaminated property has been shown to be greater before remediation than afterwards.<sup>28</sup> Even after a successful cleanup, a reduction in property value is expected, and it may take a very long time for the affected property to regain its full, unimpaired value. Failed transactions may also occur as a result of form of stigma. In addition, the stigma of a bad address should be controlled for determining damages.<sup>29</sup> Courts have accepted the notion of permanent post-cleanup stigma. Also, some courts have considered stigma damages in cases of incomplete repair where the property has not been totally remediated.<sup>30</sup> This is probably becoming more common, given the recent emergence of risk-based corrective action cleanup strategies.

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23. Mundy, *Stigma*, *supra* note 11 and Mundy, *Revisited*, *supra* note 11.

24. Chalmers & Roehr, *supra* note 13, at 33.

25. ENVIRONMENTAL RISK AND THE REAL ESTATE APPRAISAL PROCESS, SEMINAR WORKBOOK ch. 1, at 128 (Appraisal Institute 1994).

26. Richard Roddewig, *Stigma, Environmental Risk, and Property Value: 10 Critical Inquiries*, APPRAISAL J., Oct. 1996, at 376-77.

27. Patchin, *supra* note 21; Sanders, *supra* note 8; Mundy, *Revisited*, *supra* note 11; Patchin, *supra* note 8; Campanella, *supra* note 6.

28. Paul Syms, *Perceptions of Risk in the Valuation of Contaminated Land*, 15 J. PROP., VALUATION & INVESTMENT 27-39 (1997).

29. Michael Elliot-Jones, *Stigma Damages and the Bad Address* (1996) (unpublished paper) (on file with author).

30. Peter J. Patchin, *Contaminated Properties and the Sales Comparison Approach*, APPRAISAL J., Oct. 1994, at 402-09; B. Hogin, *Post-Cleanup Stigma Claims: The Latest From the War Over Hazardous Waste*, 10 TOXICS L. REP. (BNA) 918 (Feb. 1995); Timothy J. Muldowney & Kenall W. Harrison, *Stigma Damages: Property Damage and the Fear of Risk*, DEF. COUNSEL J., Oct. 1995, at 525-38.

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A main concern of market players is if the contamination has the potential for a future reoccurrence. Once contamination has been definitively remediated, any residual value loss is typically related to mistakes made during remediation that indicate that some future action will be needed or that contamination from the same source may reoccur. One study showed a 2 to 5% reduction in property value based solely on the potential for a future reoccurrence of a pipeline rupture.<sup>31</sup>

Stigma also has a legal definition, discussed more carefully by attorneys in Chapter 8. Some courts allow damages for stigma while others consider it inappropriate. Disallowing stigma is inconsistent with the economists' view that perceptions, real or not, are what economic agents use to make consumption decisions and are real factors in the marketplace that affect value. For this reason, sometimes a loss in property value is referred to as diminution in value, rather than stigma, to avoid conflict between the legal and economic definitions.

### *B. Nuisance*

Nuisance is defined by *Webster's Dictionary* as "harm, injury, annoying unpleasant, obnoxious."<sup>32</sup> Having to put up with the aggravation related to remediation—the noise, unwanted visitors, dust, smells, etc.—diminishes the use and enjoyment of the property and is a nuisance. Nuisance is also closely tied to zoning law, which prohibits close proximity of noxious or objectionable uses, e.g., a pig farm, to residential land uses. Depositing contaminated material on a nearby property is in many ways very similar to a zoning violation. Putting up with nuisance represents diminished use and enjoyment of the property, and this is translated into lower property value.

### *C. Role of Remediation and Site Cleanup*

The amount of loss in value is closely tied to whether or not the property has been or can be cleaned to its pre-contaminated state. If not, then the property is remediated to state-mandated action levels. In these cases, the property can be considered to be remediated, but contamination remains on the property. This is not the same as clean and generates a stigma.

It is not the intention of this book to delve deeply into environmental cleanup procedures, but a rudimentary introduction is appropriate.<sup>33</sup> In a ge-

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31. Robert A. Simons, *The Effects of Oil Pipeline Ruptures on Non-Contaminated Easement-Holding Property*, APPRAISAL J., July 1999, at 255-63.

32. WEBSTER'S COLLEGIATE DICTIONARY (9th ed. 1991).

33. For a real estate-related discussion, see ROBERT A. SIMONS, TURNING BROWNFIELDS INTO GREENBACKS (Urban Land Inst. 1998), which discusses remediation techniques in the brownfield context. Alternatively, HERMAN

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neric sense, contamination can invade the ecosystem, our bodies, and property receptors. We can be exposed to it by breathing it, washing with it or touching it (dermal contact), ingesting it directly, or by eating food contaminated with it. All these ways are called “pathways.” The strategy of environmental cleanup is to disallow the link between the contamination and the receptor, thus blocking the pathways and keeping the contamination “safely” away from the receptor. This may involve removing the contamination from the site and taking it to a landfill, diluting it, encapsulating it (completely), capping it (top only), destroying it (for example by burning), chemically changing it to inert substances (bioremediation or other techniques), binding it to vegetation (phytoremediation), or any combination of these techniques. Removing soil can be fairly fast, direct, and successful in that all the contamination may be removed. Remediating contaminated groundwater can take extensive engineering, a lot of time, and may only be partially successful in that some contamination typically stays in the ground.

States have determined how much contamination of various substances may remain for the site to be cleaned to an acceptable risk level. This is usually referred to as an action limit or maximum contamination level (MCL). For example, the MCL for benzene (a component of gasoline) in drinking water is five parts per billion. States generally determine the MCL by following the lead of the U.S. Environmental Protection Agency, but some states may have different (typically higher) standards.

Another related aspect of contamination is the “acceptable” risk related to projected cancer deaths per unit of population. Typically, the acceptable level of risk is between 1 cancer death in 10,000 ( $10^{-4}$ ) to one cancer death in one million ( $10^{-6}$ ). Thus, having a site remediated to a MCL or other standard is not the same as having the site clean because some contamination remains and some additional risk is present.

Before a site is remediated, there would be a bigger discount due to the uncertainty about whether or not remediation can be successful, its costs, who would pay, how long it would take, and the amount of nuisance experienced by property users. After remediation, most of these issues have been resolved, so the remaining reduction in property value or stigma discount would be less.<sup>34</sup> Lenders also respond in a similar way to pre-remediated property and are much more parsimonious with their funds than they are with property after remediation where lending practices converge on non-

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KOREN & MICHAEL BISESI, HANDBOOK OF ENVIRONMENTAL HEALTH AND SAFETY: PRINCIPLES AND PRACTICES (Lewis Publishers 3d ed. 1996), is a good source for understanding contamination and the ways that it affects property, the human body, and ecosystems.

34. Syms, *supra* note 28.



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mality.<sup>35</sup> The value of the property would approximate full market value eventually, probably after a decade or so.

### *D. Temporary Versus Permanent Loss*

One important consideration is the temporal nature of the losses: are they temporary, permanent, or both? Temporary losses occur for a period of time and then taper off or stop, typically after the underlying contaminative condition is “cured.” These temporary losses include but are not limited to: funds lost due to rental vacancy because of fumes or contamination on site; cost to remediate the problem; out-of-pocket expenses related to funding an alternative place to live or work; time spent away from work; and consulting, leasing, marketing and/or legal fees related to dealing with the contamination. For rural or agricultural property, temporary losses may include crop or livestock losses, lost use of contaminated land for a period of time, lost income from not being able to use or lease those lands, and opportunity costs related to investment in water supply or other infrastructure.

If temporary losses are sustained and continue into the future, they can affect permanent property value through reduction in future projected net cash flow and/or lower housing or shelter services. Because the present value of future losses is capitalized into the value of the asset, these increases in vacancy, nuisance, or additional expenses related to environmental monitoring, as well as having to disclose ongoing environmental conditions to potential buyers or tenants, would reduce the asset value accordingly. There is typically a further diminution in value above and beyond this cash flow effect based on the potential for future reoccurrence, having to disclose that contamination was present on the property (regardless of the outcome), or stigma. This is primarily related to having to disclose the presence of contamination and having to “check the box” on the residential disclosure form.

Because losses can be thought of as permanent at a point in time, a property may have sustained both temporary losses from the time the contamination was discovered until the point in time that the analysis is conducted and permanent losses from that point forward. This is important because most states have laws on the statute of limitations. These legal facts may drive the type of losses that can be sought in court.

With the passage of time, markets eventually will tend to forget about the contaminative event. The state real estate disclosure forms typically only require the seller to list defects over a certain time period, say 5 to 10 years. The contamination may also naturally attenuate or become diluted. These trends will bring the property’s value back toward full value, which may be reached after a prolonged period of time. This time period could be years or decades

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35. Jackson, *supra* note 11; Worzala & Kinnard, *supra* note 11.

## When Bad Things Happen to Good Property

in groundwater cases and sooner for soil or air pollution depending on the potential for a future reoccurrence. This loss can be measured relative to the generally upward price trend through inflation and appreciation that drives nearly all real estate markets.

### *E. Rentalization*

Another type of permanent change that may be attributable to contamination is when an entire residential neighborhood, primarily occupied by homeowners, is affected by a persistent source of contamination, say a fume-belching factory or plant. The area becomes known as undesirable or risky, and a pattern emerges where the homeowners leave the area and rent out their properties instead of selling them to other homeowners. Because home ownership is an elastic good in the economic sense (in that there are many substitutes, including rental housing), homeowners with choices will elect to buy elsewhere, and the area becomes primarily populated by renters, where housing is more inelastic (fewer substitutes for rental housing). Thus, through time, the neighborhood can change near the plant. More rental units in an area are associated with lower property values, lower voting percentages, less upkeep, and other well-known outcomes. Further, the neighborhood can become stigmatized through this rentalization process, which may be associated with environmental contamination. For example, Hank Jenkins-Smith and his colleagues, in their article on soil contamination near a smelter, mentioned instances where people buy homes for eventual use as rental properties.<sup>36</sup> If this trend can be attributed to the noxious source of pollution, then more profound neighborhood effects could be evident.

### *F. Land Use Types*

Environmental contamination can also affect properties differently based on what type of land use is involved and where it is located. These types may include residential homeowner, residential rental property, property with a mobile home, industrial, public property, or commercial land uses such as office, retail, or hotel. In addition, raw land and agricultural land uses are potential categories. In general, more expensive properties with fewer substitutes can be expected to have a large discount in price.

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36. Hank Jenkins-Smith et al., *Information Disclosure Requirements and the Effect of Soil Contamination on Property Values*, 45 J. ENVTL. PLAN. & MGMT. 323-39 (2002).

### VII. Summary and Conclusions

This chapter has addressed the meat of the real estate theory underlying the effect of environmental contamination on property values. It covered the real estate bundle of rights, including the rights to control, use, enjoy, and dispose of real property and its surface and non-surface components. This was considered in the context of real estate finance, covering debt, leverage, loan-to-value, and debt service coverage issues. Because real estate is typically acquired with financing, the inability to finance property in the normal manner is a serious issue, even without a sale. We next consider the ways a loss can be generated once contamination has been set into motion, and the importance and sources of information. We go through several ways a reduction in property value loss can be recognized, including reduced use and enjoyment, shrinking of the market, and various forms of realized and unrealized capital losses. We close with a look at several factors or conditions that have an effect on the nature, duration, and severity of losses stemming from contamination based on remediation and land use types. The next chapter looks at the academic empirical literature on these issues and considers the extant literature on each type of contamination and source.

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### Appendix

#### Important Information Regarding the New Residential Property Disclosure Form

The Division has just completed the necessary process to adopt into law a new Residential Property Disclosure Form. This marks the first time the form has been updated since the form's inception in June of 1993. The new form – reflecting more stringent disclosure – is the result of collaboration between the Division and the Ohio Association of REALTORS, which presented the findings of an OAR Task Force that studied the form and made recommendations for improvements.

Per Rule 1301:1-4-10 of the Ohio Administrative Code, the form goes from a two-page legal-size document to a four-page letter size document. The new form contains an effective date of *1/1/04* in the upper right hand corner of the first page. Questions have been added to require disclosure of whether a property has been inspected for mold, whether there is any smoke damage to the property, whether the property is located in a flood plain or the Lake Erie Coastal Erosion Area and whether the property is located in a historical area or an area subject to fees and assessments. Additionally, sellers will be required to provide more meaningful disclosure of problems and defects with mechanical systems, water quality and intrusion and nonconforming uses of the property. Finally the form includes a notification to the purchaser of how to obtain information with respect to Ohio's Sex Offender Registration and Notification Law. The new form with heightened levels of disclosure will assist both sellers and buyers in averting legal action by ensuring that many of the issues that result in litigation are known up front. Licensees will likewise benefit, because the new form is consistent with industry standard in other jurisdictions.

The new form will become law **January 1, 2004**. This means:

1. The OLD form must be utilized through December 31, 2003, and
2. The NEW form must be utilized on and after January 1, 2004

In other words, the NEW form *may not* be utilized prior to the effective date of January 1, 2004 and the OLD form *may not* be utilized after January 1, 2004. OLD forms executed prior to January 1, 2004 do not need to be re-executed after January 1, 2004 on the NEW form.

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## STATE OF OHIO DEPARTMENT OF COMMERCE

Effective 1/1/04

### RESIDENTIAL PROPERTY DISCLOSURE FORM

Pursuant to section 5302.30 of the Revised Code and rule 1301:1-4-10 of the Administrative Code.  
**TO BE COMPLETED BY OWNER (Please Print)**

Property Address: \_\_\_\_\_  
\_\_\_\_\_

Owners Name(s): \_\_\_\_\_  
\_\_\_\_\_

Date: \_\_\_\_\_, 20\_\_\_\_

Owner  is  is not occupying the property. If owner is occupying the property, since what date: \_\_\_\_\_

**Purpose of Disclosure Form:** This is a statement of the condition of the property and of information concerning the property actually known by the owner as required by Ohio Revised Code Section 5302.30. Unless otherwise advised in writing by the owner, the owner, other than having lived at or owning the property, possesses no greater knowledge than that which could be obtained by a careful inspection of the property by a potential purchaser. Unless otherwise advised, owner has not conducted any inspection of generally inaccessible areas of the property. THIS STATEMENT IS NOT A WARRANTY OF ANY KIND BY THE OWNER OR BY ANY AGENT OR SUBAGENT REPRESENTING THE OWNER OF THE PROPERTY. THIS STATEMENT IS NOT A SUBSTITUTE FOR ANY INSPECTIONS. POTENTIAL PURCHASERS ARE ENCOURAGED TO OBTAIN THEIR OWN PROFESSIONAL INSPECTION.

**Owner's Statement:** The representations contained on this form are made by the owner and are not the representations of the owner's agent or subagent. This form and the representations contained in it are provided by the owner exclusively to potential purchasers in a transfer made by the owner, and are not made to purchasers in any subsequent transfers. The information contained in this disclosure form does not limit the obligation of the owner to disclose an item of information that is required by any other statute or law to be disclosed in the transfer of residential real estate. For example, although some questions are limited to the past five years material problems or defects that occurred over five years ago that have not been fully corrected are required to be disclosed.

**Instructions to Owner:** (1) Answer ALL questions. (2) Identify any material matters in the property that are actually known. (3) Attach additional pages with your signature if additional space is needed. (4) Complete this form yourself. (5) If some items do not apply to your property, write NA (not applicable). If the item to be disclosed is not within your actual knowledge, indicate Unknown.

THE FOLLOWING STATEMENTS OF THE OWNER ARE BASED ON OWNER'S ACTUAL KNOWLEDGE

A) **WATER SUPPLY:** The source of water supply to the property is (check appropriate boxes):

- |  |                                       |                                      |
|--|---------------------------------------|--------------------------------------|
| <input type="checkbox"/> Public Water Service  | <input type="checkbox"/> Holding Tank | <input type="checkbox"/> Unknown     |
| <input type="checkbox"/> Private Water Service | <input type="checkbox"/> Cistern      | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Private Well          | <input type="checkbox"/> Spring       | _____                                |
| <input type="checkbox"/> Shared Well           | <input type="checkbox"/> Pond         | _____                                |

Do you know of any current leaks, backups or other material problems with the water supply system or quality of the water?

Yes  No If "Yes", please describe: \_\_\_\_\_

Is the quantity of water sufficient for your household use? (NOTE: water usage will vary from household to household)  Yes  No  
If owner knows of any leaks, backups or other material problems with the water supply system or quality or quantity of the water since owning the property (but not longer than the past 5 years), please describe and indicate any repairs completed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Owner's Initials \_\_\_\_\_ / \_\_\_\_\_ Date \_\_\_\_\_ / \_\_\_\_\_

Purchaser's Initials \_\_\_\_\_ / \_\_\_\_\_ Date \_\_\_\_\_ / \_\_\_\_\_

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OAC 1301:1-4-10

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**Property Address** \_\_\_\_\_

**B) SEWER SYSTEM:** The nature of the sanitary sewer system servicing the property is (check appropriate boxes):

- |                                       |  |   |
|---------------------------------------|--|---|
| <input type="checkbox"/> Public Sewer | <input type="checkbox"/> Private Sewer | <input type="checkbox"/> Septic Tank    |
| <input type="checkbox"/> Leach Field  | <input type="checkbox"/> Aeration Tank | <input type="checkbox"/> Filtration Bed |
| <input type="checkbox"/> Unknown      | <input type="checkbox"/> Other _____   |   |

If not a public or private sewer, date of last inspection: \_\_\_\_\_

Do you know of any current leaks, backups or other material problems with the sewer system servicing the property?  Yes  No

If "Yes", please describe: \_\_\_\_\_

If owner knows of any leaks, backups or other material problems with the sewer system since owning the property (but not longer than the past 5 years), please describe and indicate any repairs completed: \_\_\_\_\_

**C) ROOF:** Do you know of any current leaks or other material problems with the roof or rain gutters?  Yes  No

If "Yes", please describe: \_\_\_\_\_

If owner knows of any leaks or other material problems with the roof or rain gutters since owning the property (but not longer than the past 5 years), please describe and indicate any repairs completed: \_\_\_\_\_

**D) WATER INTRUSION:** Do you know of any previous or current water leakage, water accumulation, excess moisture or other defects to the property, including but not limited to any area below grade, basement or crawl space?  Yes  No

If "Yes", please describe and indicate any repairs completed: \_\_\_\_\_

Do you know of any water or moisture related damage to floors, walls or ceilings as a result of flooding; moisture seepage; moisture condensation; ice damming; sewer overflow/backup, or leaking pipes, plumbing fixtures, or appliances?  Yes  No

If "Yes", please describe and indicate any repairs completed: \_\_\_\_\_

Purchaser is advised that every home contains mold. Some people are more sensitive to mold than others. If concerned about this issue, purchaser is encouraged to have a mold inspection done by a qualified inspector. Have you ever had the property inspected for mold by a qualified inspector?  Yes  No

If "Yes", please describe and indicate whether you have an inspection report and any remediation undertaken: \_\_\_\_\_

**E) STRUCTURAL COMPONENTS (FOUNDATION, BASEMENT/CRAWL SPACE, FLOORS, INTERIOR AND EXTERIOR WALLS):**

Do you know of any movement, shifting, deterioration, material cracks/settling (other than visible minor cracks or blemishes) or other material problems with the foundation, basement/crawl space, floors, or interior/exterior walls?  Yes  No

If "Yes", please describe: \_\_\_\_\_

If owner knows of any repairs, alterations or modifications to control the cause or effect of any problem identified above, since owning the property (but not longer than the past 5 years), please describe: \_\_\_\_\_

Do you know of any previous or current fire or smoke damage to the property?  Yes  No

If "Yes", please describe and indicate any repairs completed: \_\_\_\_\_

**F) MECHANICAL SYSTEMS:** Do you know of any current problems or defects with the following mechanical systems? If your property does not have the mechanical system, mark N/A (Not Applicable).

	YES	NO	N/A		YES	NO	N/A
1) Electrical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8) Water softener	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Plumbing (pipes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	a. Is water softener leased?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Central heating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9) Security System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Central Air conditioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	a. Is security system leased?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) Sump pump	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10) Central vacuum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Fireplace/chimney	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11) Built in appliances	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Lawn sprinkler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12) Other mechanical systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If the answer to any of the above questions is "Yes", please describe and indicate any repairs to the mechanical system since owning the property (but not longer than the past 5 years). \_\_\_\_\_

Owner's Initials \_\_\_\_\_ / \_\_\_\_\_ Date \_\_\_\_\_ / \_\_\_\_\_

Purchaser's Initials \_\_\_\_\_ / \_\_\_\_\_ Date \_\_\_\_\_ / \_\_\_\_\_

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**G) WOOD BORING INSECTS/TERMITES:** Do you know of the presence of any wood boring insects/termites in or on the property or any existing damage to the property caused by wood boring insects/termites?  Yes  No

If "Yes", please describe: \_\_\_\_\_

If owner knows of any inspection or treatment for wood boring insects/termites, since owning the property (but not longer than the past 5 years), please describe: \_\_\_\_\_

**H) PRESENCE OF HAZARDOUS MATERIALS:** Do you know of the previous or current presence of any of the below identified hazardous materials on the property?

	Yes	No	Unknown
1) Lead-Based Paint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Asbestos	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Urea-Formaldehyde Foam Insulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Radon Gas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

a. If "Yes", indicate level of gas if known \_\_\_\_\_

5) Other toxic or hazardous substances  Yes  No

If the answer to any of the above questions is "Yes", please describe and indicate any repairs, remediation or mitigation to the property: \_\_\_\_\_

**I) FLOOD PLAIN/LAKE ERIE COASTAL EROSION AREA:**

	Yes	No	Unknown
Is the property located in a designated flood plain?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the property or any portion of the property included in a Lake Erie Coastal Erosion Area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**J) DRAINAGE/EROSION:** Do you know of any current flooding, drainage, settling or grading or erosion problems affecting the property?  Yes  No

If "Yes", please describe: \_\_\_\_\_

If owner knows of any repairs, modifications or alterations to the property or other attempts to control any flooding, drainage, settling, grading or erosion problems since owning the property (but not longer than the past 5 years), please describe: \_\_\_\_\_

**K) ZONING/CODE VIOLATIONS/ASSESSMENTS/HOME OWNERS ASSOCIATION:** Do you know of any violations of building or housing codes, zoning ordinances affecting the property or any nonconforming uses of the property?  Yes  No

If "Yes", please describe: \_\_\_\_\_

Is the structure on the property designated by any governmental authority as a historic building or as being located in an historic district? (NOTE: such designation may limit changes or improvements that may be made to the property).  Yes  No

If "Yes", please describe: \_\_\_\_\_

Do you know of any recent or proposed assessments, which could affect the property?  Yes  No

If "Yes", please describe: \_\_\_\_\_

Is the property subject to any rules or regulations of, or the payment of any fees or charges to, a Homeowners Association, Condominium Association or any other Community Association?  Yes  No

If "Yes", please describe: \_\_\_\_\_

Owner's Initials \_\_\_\_/\_\_\_\_/\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

Purchaser's Initials \_\_\_\_/\_\_\_\_/\_\_\_\_ Date \_\_\_\_/\_\_\_\_/\_\_\_\_

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**L) BOUNDARY LINES/ENCROACHMENTS/SHARED DRIVEWAY/PARTY WALLS:** Do you know of any of the following conditions affecting the property? Yes No

1) Boundary Agreement	<input type="checkbox"/>	<input type="checkbox"/>	4) Shared Driveway	<input type="checkbox"/>	<input type="checkbox"/>
2) Boundary Dispute	<input type="checkbox"/>	<input type="checkbox"/>	5) Party Walls	<input type="checkbox"/>	<input type="checkbox"/>
3) Recent Boundary Change	<input type="checkbox"/>	<input type="checkbox"/>	6) Encroachments From or on Adjacent Property	<input type="checkbox"/>	<input type="checkbox"/>

If the answer to any of the above questions is "Yes", please describe: \_\_\_\_\_

**M) UNDERGROUND STORAGE TANKS/WELLS:** Do you know of any underground storage tanks (existing or removed), oil or natural gas wells (plugged or unplugged), or abandoned water wells on the property?  Yes  No

If "Yes", please describe: \_\_\_\_\_

**N) OTHER KNOWN MATERIAL DEFECTS:** The following are other known material defects in or on the property: \_\_\_\_\_

For purposes of this section, material defects would include any non-observable physical condition existing on the property that could be dangerous to anyone occupying the property or any non-observable physical condition that could inhibit a person's use of the property.

**Owner represents that the statements contained in this form are made in good faith based on his/her actual knowledge as of the date signed by the Owner. Owner is advised that the information contained in this disclosure form does not limit the obligation of the owner to disclose an item of information that is required by any other statute or law or that may exist to preclude fraud, either by misrepresentation, concealment or nondisclosure in a transaction involving the transfer of residential real estate.**

OWNER: \_\_\_\_\_ DATE: \_\_\_\_\_

OWNER: \_\_\_\_\_ DATE: \_\_\_\_\_

**RECEIPT AND ACKNOWLEDGEMENT OF POTENTIAL PURCHASERS**

Potential purchasers are advised that the owner has no obligation to update this form but may do so according to Revised Code Section 5302.30(G). Pursuant to Ohio Revised Code Section 5302.30(K), if this form is not provided to you prior to the time you enter into a purchase contract for the property, you may rescind the purchase contract by delivering a signed and dated document of rescission to Owner or Owner's agent, provided the document of rescission is delivered prior to all three of the following dates: 1) the date of closing, 2) 30 days after the Owner accepted your offer, and 3) within 3 business days following your receipt or your agent's receipt of this form or an amendment of this form.

**I/WE ACKNOWLEDGE RECEIPT OF A COPY OF THIS DISCLOSURE FORM AND UNDERSTAND THAT THE STATEMENTS ARE MADE BASED ON THE OWNERS ACTUAL KNOWLEDGE AS OF THE DATE SIGNED BY THE OWNER.**

**Owner makes no representations with respect to any offsite conditions. Purchaser should exercise whatever due diligence purchaser deems necessary with respect to offsite issues that may affect purchaser's decision to purchase the property. Purchaser should exercise whatever due diligence purchaser deems necessary with respect to Ohio's Sex Offender Registration and Notification Law (commonly referred to as "Megan's Law"). This law requires the local Sheriff to provide written notice to neighbors if a sex offender resides or intends to reside in the area. The notice provided by the Sheriff is a public record and is open to inspection under Ohio's Public Records Law. If concerned about this issue, purchaser assumes responsibility to obtain information from the Sheriff's office regarding the notices they have provided pursuant to Megan's Law.**

My/Our Signature below does not constitute approval of any disclosed condition as represented herein by the owner.

PURCHASER: \_\_\_\_\_ DATE: \_\_\_\_\_

PURCHASER: \_\_\_\_\_ DATE: \_\_\_\_\_