PFAS Contamination and Residential Property Values: A Study of Five US Sites within the Assessment Stage of the Remediation Lifecycle
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Special Issues in Land Valuation
by Gary S. DeWeese, MAI
Contents

The Appraisal Journal | Winter 2022 | Volume XC, Number 1

ii Mission Statement
iv Profile: The Appraisal Institute’s 2022 President
v A Message from the Editor-in-Chief
vi Annual Conference Announcement

COLUMNS & DEPARTMENTS

1 Cases in Brief
Recent Court Decisions on Real Estate and Valuation
by Benjamin A. Blair, JD

18 Law & the Appraiser
Eminent Domain 2021 Year in Review
by Bradford B. Kuhn, JD, and Jillian Friess Leivas, JD

75 Letters to the Editor

77 Directory of 2021 New Designees

PEER-REVIEWED ARTICLES

26 PFAS Contamination and Residential Property Values:
A Study of Five US Sites within the Assessment Stage
of the Remediation Lifecycle
by Orell C. Anderson, MAI, Chris Yost-Bremm, PhD, Stephen G. Valdez,
Jason Borras, and Tara Harder

51 The Total Excess Earnings Model Revisited—It’s Not Just
for Going Concerns
by Franz H. Ross, MAI, and Larry Woodall

64 Special Issues in Land Valuation
by Gary S. DeWeese, MAI

ANNOUNCEMENTS

79 New Appraisal Institute Publications
80 Article Topics in Need of Authors
81 Manuscript Guide
82 Appraisal Journal Order Form

COVER PHOTO: Phoenix-Mesa Gateway Airport
by Todd Photographic Services
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Winter 2022 • The Appraisal Journal
Pledger M. “Jody” Bishop III, MAI, SRA, AI-GRS

Pledger M. “Jody” Bishop III, MAI, SRA, AI-GRS, of Mount Pleasant, South Carolina, is the 2022 president of the Appraisal Institute. Bishop’s one-year term as president will be followed by one year as immediate past president in 2023. He also will serve on the Appraisal Institute’s Executive Committee and on its policy-setting Board of Directors. He will be chair of the National Nominating Committee in 2023.

Bishop is currently senior managing director of Valbridge Property Advisors in Charleston, South Carolina. He previously was a partner with Atlantic Appraisals LLC, an associate appraiser with Appraisal Consultants, and a senior staff appraiser with the Charleston County Assessor’s Office.

He has chaired the Demonstration of Knowledge Grading Panel and has served on the Admissions and Designation Qualifications Committee. He has served as president of the South Carolina Chapter. He also is an Appraisal Institute associate instructor, has been a seminar and webinar author, and has served as discussion leader at the Appraisal Institute’s annual Leadership Development and Advisory Council conference.

He was named the 2018 recipient of the Edward W. Adams, SRA, Outstanding Board Service Award, was presented a 2017 President’s Award, and received a 2017 Volunteer of Distinction recognition.
Dear Readers:

Welcome to the 2022 edition of The Appraisal Journal. This year marks the Journal’s ninetieth year of publication. The Appraisal Journal has served as a vehicle for thoughtful discussion of valuation techniques and topics since the inception of the Appraisal Institute in 1932. At that time, Institute President Philip W. Kniskern observed that “improvement and advancement come from the interchange and discussion of ideas and theories, and from sympathetic constructive criticism of actual work and theories.” As we note our ninetieth anniversary, we look forward to continuing to serve as a key forum for development of appraisal ideas, concepts, and methodologies into the future.

The current issue looks at modern application of valuation techniques in present-day situations. The cover article, “PFAS Contamination and Residential Property Values: A Study of Five US Sites within the Assessment Stage of the Remediation Lifecycle,” takes a first look at the impact of PFAS chemicals on local real estate values. PFAS contamination is an evolving area of law and governmental regulation, with state and national standards still under development. This case study discusses how any property impacts are affected by market conditions, location, and property characteristics.

The second feature, “The Total Excess Earnings Model Revisited—It’s Not Just for Going Concerns,” suggests an alternative asset allocation technique for properties with a going concern and some intangible assets. The article presents a case study illustrating a step-by-step process for addressing the asset components of such properties.

The final feature article in this issue, “Special Issues in Land Valuation,” explores situations presenting special land valuation challenges and unique issues. The challenges discussed here include contaminated sites, situations when the highest and best use is not the current use, excess land versus surplus land, plottage value, development rights or entitlements, tax increment financing (TIF) districts, and ecological land. Appraisers need to be prepared to address such situations in land valuation in the context of a sale or exchange, financing, taxes, financial feasibility, condemnation, and contribution to improved properties.

The Appraisal Journal appreciates the contributions of the many outstanding authors, editors, and reviewers over the previous decades, and we encourage you to consider becoming a contributor to The Appraisal Journal as well.

Stephen T. Crosson, MAI, SRA
Editorial Board Chair and Editor-in-Chief
The Appraisal Journal
SAVE THE DATE

The Appraisal Institute hopes that 2022 will be a year of renewed opportunities, and in that spirit, invites you to save the date for its Annual Conference at the Bellagio Las Vegas! This event will offer a chance to connect and reconnect, to learn and grow, to share solutions to common challenges and celebrate our collective success in a safe and fun environment. Stay tuned for more details!

Online registration opening soon.
More info: appraisalinstitute.org/annualconference

*should the COVID pandemic restrict an in-person gathering, a virtual conference or cancellation may be considered.
Recent Court Decisions on Real Estate and Valuation

Management fees paid to hotel owner not part of lodge’s income

The Lodge at Vail (Lodge) is a full-service resort located in the Vail Mountain ski area. It is owned by Lodge Properties Inc. (LPI), which is a subsidiary of Vail Resorts. The Lodge has eighty hotel rooms and various amenities. Additionally, seventy-four private condominiums were built within the Lodge’s building envelope, physically integrated with the hotel portions of the Lodge. Some of the owners of the condominium units choose to rent their units to the public, and when they do so, the owners have the option of using a third-party rental management company to assist with the process. Another subsidiary of Vail Resorts, Vail/Beaver Creek Resort Properties (VBC) is one such company, though the owners are free to manage the rental process on their own or contract with competitors of VBC.

For condo owners who contract with VBC, the contracts are for a one-year term, with the option to terminate the contract with written notice; the contracts automatically terminate upon the transfer of title to the units by the owners. In the contracts, VBC agreed to provide booking and rental management services, daily housekeeping, marketing, and routine maintenance to the condominiums. Guests were also granted access to all Lodge amenities available to other hotel guests. In return, condo owners agreed to pay VBC a management fee of 40% of the gross rental proceeds.

Beginning in 2017, the Eagle County assessor changed its methodology for calculating the Lodge’s net income to include the management fee income received by VBC in the income approach calculations for the Lodge, resulting in a dramatic increase in the property’s value. LPI appealed to the state Board of Assessment Appeals (BAA). LPI contended that the assessor had improperly included in its valuation income VBC generated in connection with its rental management agreements. LPI argued that those revenues constituted intangible assets exempt from property taxation. The BAA found in favor of LPI, concluding that VBC’s rental management income “constituted an intangible asset that, while it might be considered in the valuation of a property outside of taxation, did not reflect additional value to the subject real estate.”

Eagle County appealed the BAA’s order, arguing the BAA erred in determining that the Lodge’s value for tax purposes was different from its valuation in the marketplace and in concluding that the management fee income was an intangible asset. The court of appeals agreed, concluding that the Lodge’s actual value had to be measured by its market value. In the court of appeals’ view, the contributory value of the management income would be considered by a willing buyer and willing seller in any sale of the Lodge, and therefore the income had to be included in the value calculation. LPI and the BAA appealed.

The Colorado Supreme Court began by noting that assessors must separately appraise and value each legally distinct parcel of real property, and the title holders of each separate parcel are responsible for the taxes thereon. It was undisputed that the Lodge and the condominiums are legally separate and distinct parcels of real property, so they must be separately appraised. The question is whether VBC’s net rental management income was generated by the condominiums or whether it was generated by the Lodge.

The supreme court first concluded that, on its face, the income at issue resulted from rentals of
the condos, and the fact that the owners then paid VBC a fee for management services does not alter the fact that the income was derived from condo rentals. Moreover, there was no basis for taking VBC’s income and allocating it to LPI’s ownership of the Lodge. VBC owns no real property at all, and VBC’s contractual income was not generated by the Lodge.

The court likewise disposed of Eagle County’s suggestion that the rental management agreements were, in reality, contracts for the use of the Lodge’s real property and amenities. Many of the amenities are open to the public, and condominium guests pay a separate hotel resort fee that allows them to use the Lodge’s amenities. The condominium owners also pay association fees that offset the costs of maintaining the Lodge’s amenities. These facts belie the assertion that VBC serves as a gatekeeper to the Lodge’s amenities such that access to Lodge amenities is what condo owners are actually contracting for in their agreements with VBC.

The state supreme court also found that the court of appeals misconstrued the income approach. The lower court construed “the foundation of the income approach to valuation” as “the capitalization of such income streams attributable to property ownership.” But the supreme court said that is not the correct standard. Rather, the income approach requires the assessor to consider the income that the subject property is capable of generating. The lower court impermissibly expanded the income approach to include in the valuation the Lodge’s contractual rights to revenue generated by other property.

The lower court’s market value analysis appeared, to the state supreme court, to have conflated the value of Vail Resorts and the value of the Lodge. Although a Vail Resorts subsidiary’s income might well impact the company’s market value, that is a different question from whether the same income was generated by the Lodge. And just as no one would argue that the income VBC generates from providing management services at different resort properties is relevant to the Lodge’s valuation, they would not conclude that VBC’s income from providing services to the condominiums at the Lodge was from the Lodge property itself.

The lower court construed “the foundation of the income approach to valuation” as “the capitalization of such income streams attributable to property ownership.” But the supreme court said that is not the correct standard.

In so ruling, the supreme court rejected the application of case law from Wisconsin suggesting that the management fees were “inextricably intertwined” with hotel income. The Colorado court also pointed out that even Wisconsin’s courts have since limited the applicability of the “inextricably intertwined” precedent. Thus, Eagle County’s citation of that case law was inapposite.

Ultimately, the Colorado Supreme Court concluded that the management fees earned by VBC from contracts with condominium owners were not income generated by the Lodge, and therefore should not have been included in the Lodge’s value. The court saved for another day the question of whether the management fees also constituted exempt intangible property, and it reversed the court of appeals’ decision.

Lodge Properties Inc. v. Eagle County Board of Equalization
Colorado Supreme Court
February 22, 2022
2022 WL 521368
**Title to submerged lands reverts to state**

In 1836, Texas declared its independence from Mexico, and in December 1836, the Congress of Texas (Congress) passed a law stating that all islands belonging to the Republic of Texas (Republic) shall be reserved for government use, except when the president is authorized specially by Congress to sell them. Galveston Island was one such island.

In 1837, Congress authorized the transfer of land to General Thomas Jefferson Chambers, as thanks for his service during the war. The land patent for 13.5 acres on Galveston Island (Lot 30) from the Republic to Chambers was executed in 1839. Congress also authorized the surveying and auctioning of Galveston Island to help pay off war debts, and in 1840, John O’Brien purchased 13.85 acres on Galveston Island (Lot 31). Over time, these lots on the bay side of Galveston Island were transferred to West Gulf Marine Ltd. (West Gulf).

On the lots, West Gulf operates a shipyard for the construction of barges. Access to a deepwater shoreline is an integral component of West Gulf’s business. However, over half of the land in the lots originally conveyed by the Republic has eroded with the passage of time and is now submerged under water in the bay. To prevent further erosion, West Gulf has engaged in bulkheading efforts. In 2010, West Gulf executed a commercial easement lease with the Texas General Land Office (GLO), which asserts that the land submerged in water belongs to the state. Under the lease, West Gulf dredged a large portion of the submerged land for nominal rent payments, but when GLO proposed a new “coastal surface lease” for a much higher annual fee, West Gulf sued, asserting causes of action for trespass to try title and inverse condemnation.

In its case, West Gulf sought to have title declared to the entirety of Lots 30 and 31, including any submerged land that GLO argued belonged to the state. West Gulf alleged that the original patents from the Republic conveyed title to all of the acreage, even that which was subsequently submerged. GLO countered that a suit to try the state’s title is barred by sovereign immunity, and thus, because the evidence showed that superior title and right of possession was held by the state, the case should be barred for lack of jurisdiction. The trial court found that the state owned the submerged lands, and granted GLO’s plea to jurisdiction. West Gulf appealed.

On appeal, West Gulf asserted three claims: that the Republic’s reservation of all islands in 1836 mandates that title to submerged lands did not revert to the state; that the reference to specific acreage in the Chambers and O’Brien patents intended to convey submerged property; and that this case otherwise meets the requirements for keeping title to submerged lands. The court of appeals did not agree.

The general rule is that a riparian or littoral—a shoreline—owner acquires or loses title to the land gradually added to or taken from the owner’s shoreline. In Texas, title to land covered by the bays and arms of the Gulf of Mexico within tidewater limits rests in the state, and those lands constitute public property that is held in trust for the use and benefit of the people. Only the legislature can grant title to submerged public lands to private parties, and it must expressly provide such a grant in plain and positive language. West Gulf’s case depended on whether there was such a grant.

First, West Gulf argued that the 1836 resolution of Congress meant that Galveston Island was severed from the public domain, and thus GLO should be required to show that the state regained the lots at issue. This argument was based on case law from 1851 that was clarified and narrowed in 1908. Under the later decision, the islands of Texas did not lose their character as public lands owned by the state, and the Republic did not divest itself of title to the submerged lands.

Next, West Gulf argued that the Chambers and O’Brien conveyances included the submerged land because they were specific grants of acreage.
with a specific objective—namely, the payment of debts of the Republic. No prior case had decided this question, so the court began by analyzing both acts of Congress authorizing the Chambers and O’Brien patents. Neither of the acts included plain and positive language regarding submerged land. Further, a reference to a specific number of acres in the patents, standing alone, did not support a conclusion that the acts established the state’s intent to convey title to any subsequently submerged lands. Any conveyance of land under navigable waters must use plain and unmistakable language conveying the land, or else it will not be construed to include them.

Property conveyed by the state to an individual can remain privately owned even if it is submerged under tide waters, but only under very special circumstances in which the state manifests its intent that the landowner continue to own the property even if submerged. Here there was not a plain and unmistakable conveyance of the submerged portions of Lots 30 and 31 in the legislative acts authorizing the lots’ transfers. As a result, the court of appeals concluded that the state of Texas owns the submerged portions of Lots 30 and 31, and therefore the trial court’s order dismissing West Gulf’s claim for trespass to try title and its takings claim was affirmed.

West Gulf Marine Ltd. v. Texas General Land Office, Texas Court of Appeals, 14th Dist., September 30, 2021, 2021 WL 4472502

Deed created right of reentry rather than possibility of reverter

In July 1986, Carter Country Club Inc. (CCCI) conveyed a parcel of property in Lebanon, New Hampshire, to the trustee of the Farnum Hill Trust by deed (the Deed). The Deed contained a provision that stated the premises were subject to the “reservation, conditions, and restriction which shall run with the land and be binding upon the Grantee and his successors and assigns” named in the Deed. Under that provision, “at all times, in perpetuity, a nine-hole golf course shall be maintained and operated on the premises.” And if, at any time, that requirement was not met for a period of one year, “the title to the golf course area shall, at the option of the Grantor or its successors or assigns, revert to Grantor or its successors or assigns.”

In December 1986, CCCI conveyed its rights reserved in the Deed to the Carter Community Building Association (Association), a local nonprofit organization. The December deed purported to convey the right, interest, and title in the reversionary interest retained by the grantor in the Deed. Shortly thereafter, CCCI dissolved.

At some point, the property was conveyed to a new entity also called Carter Country Club Inc. (Plaintiff) that was unrelated to the original CCCI. In August 2018, Plaintiff brought an action to quiet title, naming the Association as a party and claiming that the conveyance of CCCI’s future interest in the property to the Association was void. This claim was based on the theory that the Deed created a right of reentry retained by CCCI, which was not transferable. Further, the Association’s interest in the property, if any, violated the rule against perpetuities and was an unreasonable restraint on alienation.

Following a hearing, the trial court issued an order declaring that Plaintiff held title to the property in fee simple absolute. Relying solely on the language of the Deed, the court concluded that the interest held by CCCI was a right of reentry that was not freely transferable, and because it was not transferable, CCCI’s interest remained vested in CCCI and not the Association. Coupled with another order quieting title to the property as against CCCI, the court agreed with Plaintiff that it held title in fee simple absolute. The Association appealed.
Before the New Hampshire Supreme Court, the Association challenged the trial court’s ruling that the Deed created an inalienable right of reentry that rendered the conveyance of CCCI’s future interest in the property to the Association void. Instead, the Association argued that under the Deed, CCCI retained a possibility of reverter, which CCCI was free to transfer.

But, the court observed that the Deed did not include the words “so long as,” “while,” or “until,” which are the usual and apt words to create a limited estate and indicate an intent that the estate is to terminate automatically upon the happening of the stated condition. The Deed contained none of those words, nor anything else indicating an intent that the grantee’s estate should terminate automatically if the restrictions regarding the operation of a golf course were not met.

Furthermore, the Association’s argument omitted crucial language from the Deed, which provided that, if any of the requirements were not met for a period of one year, the title to the golf course shall at the option of the grantor revert to the grantor or its successors. This language, the court found, negated any conclusion that the parties to the Deed intended the fee to cease automatically upon the happening of a specified event. The trial court therefore did not err by ruling that the interest at issue was a right of reentry. And while the Association challenged the law that a right of reentry is not transferable, the court rejected that argument.

The state supreme court began by summarizing the distinction between rights of reentry and possibilities of reverter. A right of reentry is an interest created and retained by a grantor that is subject to a condition subsequent, the exercise of which results in a forfeiture of estate for the grantee. A possibility of reverter, in contrast, is a future interest retained by a grantor such that the grantee’s estate terminates automatically and reverts to the grantor if the terminating event ever occurs. Thus, the critical distinction is whether reversion is automatic or depends on entry by the person having a right of reentry. Accordingly, to determine whether CCCI’s future interest in the property was transferable, the court needed to decide whether the Deed created a right of reentry or a possibility of reverter.

The Association argued that the terms “revert” and “right of reversion” in the Deed demonstrate that the original parties intended to create a possibility of reverter, while the use of the terms “successors or assigns” evidenced an intent to confer an interest that CCCI could freely transfer. But, the court observed that the Deed did not include the words “so long as,” “while,” or “until,” which are the usual and apt words to create a limited estate and indicate an intent that the estate is to terminate automatically upon the happening of the stated condition. The Deed contained none of those words, nor anything else indicating an intent that the grantee’s estate should terminate automatically if the restrictions regarding the operation of a golf course were not met.

In the trial court, the Association sought to amend its pleadings to argue that, regardless of the nature of the interest retained by CCCI, the Deed created an independently enforceable restrictive covenant that required maintenance and operation of a golf course on the property. In rejecting this amendment, the trial court assumed that, because the Deed created an inalienable right of reentry, CCCI could not have validly transferred its right to enforce the restrictive covenant to the Association.

The state supreme court agreed with the Association that the parties to the Deed intended to create an independently enforceable restrictive covenant, separate and apart from the future interest they intended to convey to CCCI. The
restriction “shall inure to the benefit of Grantor… and its successors and assigns as a covenant that shall run with the land, in perpetuity.” The use of the term “in perpetuity” suggests the parties intended the golf course restriction to remain enforceable irrespective of whether CCCI continued to hold a right of reentry or possibility of reverter. This was an entirely separate question from whether CCCI validly conveyed its right of reentry to the Association, so the trial court erred by denying the amended pleading. The court therefore vacated the trial court’s denial of the Association’s motion to amend and remanded to the trial court for additional proceedings.

*Carter Country Club Inc. v. Carter Community Building Assoc.*
New Hampshire Supreme Court
December 28, 2021
2021 WL 6122609

City did not have duty to disclose environmental contamination

Gavora Inc. (Gavora) is a real estate holding company based in Fairbanks, Alaska. In 1974, Gavora acquired a commercial mall business that held a lease for property owned by the City of Fairbanks (City), and in 1976 the City approved the lease’s assignment to Gavora. In 2002, Gavora exercised the lease’s purchase option.

One of the mall’s tenants that preexisted the lease’s assignment to Gavora was a dry cleaning business, and Gavora continued subleasing to dry cleaning tenants for thirty-five years. The dry cleaning tenants contaminated the groundwater with tetrachloroethylene and trichloroethylene. Later analysis indicated that 80% to 90% of the total on-site contamination was from dry cleaning operations.

In 2009, the Alaska Department of Environmental Conservation (ADEC) notified the City and Gavora that they were potentially liable for environmental remediation related to the groundwater contamination. Gavora sued the City in federal court to apportion liability for the environmental remediation costs, and the federal court concluded that the City and Gavora were jointly and severally liable for the remediation costs, establishing the City’s fault for 55% and Gavora’s fault for 45%.

Gavora later sued the City in state court for misrepresentation, fraud, and breach of implied covenant of fair dealing, among other claims. Gavora alleged that the City either intentionally, negligently, or innocently misrepresented the property as environmentally clean prior to Gavora purchasing it. Although the parties agreed the federal court’s factual findings were binding, they also presented additional evidence.

The trial court determined that the City had no duty to disclose the contamination to Gavora under the Restatement of Torts, which states that a seller who fails to disclose a known material fact during a business transaction is liable as if the seller had made an affirmative misrepresentation if the seller has a duty to disclose the fact. There are five general situations creating such a duty, two of which were at issue. First, a duty arises when a fiduciary or other similar relation of trust and confidence exists between the parties. Second, a duty arises when the seller knows that the buyer is about to enter into a transaction based on a mistaken understanding of facts basic to the transaction, and the buyer would reasonably expect disclosure of those facts because of the parties’ relationship, the customs of the trade, or other objective circumstances. The trial court concluded that neither duty existed here, and ruled for the City. Gavora appealed.

On appeal, Gavora asserted that both duties existed between the City and Gavora. With regard to the fiduciary duty, Gavora contended that the parties transformed their business relationship into a joint venture by coordinating to determine the property’s fair market value. Indeed, the parties pooled resources for the
appraisal, but they did not do so as a single business enterprise, but rather as one step in a transaction between self-interested parties with no shared profits. They disputed how to value the property, negotiated a compromise, and finalized the appraisal instructions, suggesting that neither party disavowed its self-interest. The state supreme court found that this did not give rise to a fiduciary duty.

Gavora also asserted that the parties formed a relation of trust because a governmental entity such as the City has “the highest duty” when entering contracts with its citizens. But the supreme court rejected that argument, noting that the City participated in the transaction as a commercial real estate vendor in the market, which does not by operation of law establish a relation of trust. Thus, the relationship between the parties was a standard business relationship wherein they engaged in an arm’s-length commercial real estate transaction. The trial court did not err by determining that the City had no fiduciary duty to disclose the contamination.

Gavora also contended that there were objective circumstances showing that it reasonably expected a disclosure of the contamination, which was known by the City. For example, Gavora asked that the appraisal meet the industry standard for commercial appraisals, including, among other things, environmental concerns. But the appraisal noted that appraisers are not experts in detecting environmental contamination and explicitly instructed the parties to hire an environmental expert if desired.

Gavora further argued that the City was aware that the appraisal’s assumption that the property was environmentally clean was a mistaken one. But the court emphasized that the relevant question was whether the City knew that Gavora was mistaken, not the appraiser. The appraiser’s lack of knowledge about the contamination was not evidence that Gavora also had no knowledge of the contamination. After all, the parties asked the appraiser to make several assumptions known to be inaccurate when valuing the property, such as the assumption that the property was vacant.

A duty to disclose is rarely imposed where the parties deal at arm’s length and where the information is the type that the buyer would be expected to discover by ordinary inspection and inquiry, including matters of public record. Even though ADEC did not notify Gavora and the City about their potential liability for contamination, the property was listed on ADEC’s publicly available contaminated properties list in 2000. Thus, Gavora—which was represented by a real estate professional in the transaction—had an equal and readily available opportunity to discover the contamination before agreeing to purchase the property “as-is.”

Finally, the Alaska Supreme Court agreed with the trial court that there was no evidence that the City actively deceived Gavora. Gavora’s agent testified that no City employee affirmatively represented the property as uncontaminated, and while the federal court concluded that the City employee should have known about the contamination, there was no evidence that he did. Accordingly, the supreme court affirmed the decision of the trial court in favor of the City.

Indeed, the parties pooled resources for the appraisal, but they did not do so as a single business enterprise, but rather as one step in a transaction between self-interested parties with no shared profits.

Gavora Inc. v. City of Fairbanks
Alaska Supreme Court
December 30, 2021
2021 WL 6141628
Tenant relocation assistance ordinance not preempted by rent control prohibition

In the mid-1980s, the Oregon legislature enacted a measure declaring that the imposition of rent control on housing in Oregon was a matter of statewide concern. To address that concern, a city or county is prohibited from enacting any ordinance or resolution that “controls the rent that may be charged for the rental of any dwelling unit,” with certain exceptions. One exception allows a city to approve rent increases, establish base rents, or limit rents on certain affordable housing.

In 2017, the City of Portland (City) sought to address the displacement of residential tenants from rental properties. To achieve that goal, the City enacted an ordinance requiring landlords to pay relocation assistance to tenants in certain circumstances, including when a landlord increases rent by more than 10% within a twelve-month period and the tenant gives notice that they intend to terminate the agreement. An aggrieved tenant can bring an action against a landlord for up to three months of rent plus actual damages.

A group of landlords (Plaintiffs) filed suit seeking a judgment declaring the ordinance to be invalid and permanently enjoining enforcement of the ordinance. The basis for this suit was that the legislature had intended to ban ordinances that had the indirect effect of controlling rent. The Plaintiffs contended that the state statute preempts any local ordinance that exerts influence over the rent that may be charged, not just prototypical “rent control” ordinances. Because the ordinance here influences the rents that landlords charge, it would be preempted under this theory. The City countered that the statute only preempts ordinances that legally bar landlords from setting their rent at whatever rate they wish. Here, the ordinance does not regulate the price that landlords can charge for their rental units.

The trial court held that if the legislature had intended to ban ordinances that had the indirect effect of controlling rent, it could have done so, but did not.

The court considered the express exception relating to affordable housing to demonstrate that the statute’s intent was to prohibit just rent control ordinances. The exception permits localities to approve rent increases and establish base rents on affordable housing. The exception allowing rent control supports an understanding that “control the rent” in the statute refers to laws that restrain or direct influence over rents.

The Plaintiffs also argued that the City’s ordinance affected “the rent that may be charged,” because the word “may” has two meanings. The first means “has permission to,” but the second means “be in some degree likely to,” thus describing the rent that landlords are to some degree likely to charge. The court found the Plaintiffs’ argument tenuous. A definition of the word “may,” which the Plaintiffs asserted was correct,
would bar any ordinance that regulated or exerted influence over the rent that landlords might charge, from trash collection or compost ordinances to city efforts to support local businesses and encouraging people to move to the City—all of which could affect the rents landlords might be likely to charge.

Finally, the court considered whether the City’s ordinance ran afoul of the statute by regulating or exercising influence on the rents the Plaintiffs could permissibly charge, such that it effectively constitutes rent control. The ordinance neither mandates nor forbids landlords to set their rents at, above, or below certain amounts. Landlords may increase rent by more than 10% without paying the relocation assistance payment if, for example, the tenant decides to stay, because the payment is not triggered automatically by the rent increase, but by the tenant’s subsequent decision to relocate.

The required payments are also not identified as penalties but as relocation assistance, and the mere fact that the ordinance may discourage landlords from raising the rent in certain circumstances does not mean the ordinance is an impermissible end-run around the statute. Although the ordinance may have the effect of altering a landlord’s calculus regarding how much it will increase rent in any given twelve-month period, the ordinance does not amount to a de facto prohibition on rent increases in excess of 10%. Accordingly, the court concluded that the City’s ordinance is consistent with the state statute, and it neither controls the rent nor effectively does so in violation of the law. The decisions of the lower courts were affirmed.

Owen v. City of Portland
Oregon Supreme Court
November 4, 2021
368 Or. 661

Valuation of corporate headquarters must comply with statutory requirement to use sales comparison approach

Nationwide Mutual Insurance Company (Nationwide) owns two buildings in downtown Des Moines, Iowa, that serve as the company’s headquarters. One building, built in 2002 and remodeled periodically, has seven stories and contains around 800,000 square feet. The second building, built in 2007, has four-to-five stories and contains around 372,000 square feet. Both buildings are single-occupant, build-to-suit, and owner occupied.

In 2006, Nationwide entered into an Urban Renewal Development Agreement with the Des Moines City Council, which provided that Nationwide would receive economic incentives to increase the size of the buildings. The agreement, which remained in effect for the 2017 and 2018 tax years, called for a minimum assessed value of $78.5 million for the first building and $36 million for the second. Nationwide was permitted to contest assessments above those levels but could not seek to reduce the buildings’ values below the agreed minimum.

For the 2017 and 2018 tax years, the Polk County Assessor increased the assessed values of the properties to $87 million and $45 million, respectively, and Nationwide contested the values. The Polk County Board of Review (Board) upheld the assessments.

In its appeal to the district court, Nationwide hired two appraisers to value the properties, because an Iowa statute shifts the burden of proof in certain cases when a taxpayer offers two appraisals as evidence. Nationwide’s first appraiser considered all three approaches to value but relied significantly on the sales comparison approach because it specifically focused on single-tenant office buildings sold for continued single-office use. He used three comparable sales in Des Moines, and three elsewhere in the Midwest. His sales approach indicated values of $39.4 million and $22.6 million, respectively.
Similarly, Nationwide’s second appraiser considered fee simple sales of comparable properties in Des Moines and elsewhere in the Midwest. In discussing his reconciliation, he testified that the sales comparison approach “deserves the most weight and is the most reliable in this case.” His sales approach indicated values of $48.2 million and $26 million, respectively.

In its appeal to the district court,

Nationwide hired two appraisers to value the properties, because an Iowa statute shifts the burden of proof in certain cases when a taxpayer offers two appraisals as evidence.

The Board also presented the testimony of two appraisers. The Board’s first appraiser gave the sales comparison approach the least amount of weight because he relied on sales from much larger markets and because some of the sales were sale-leasebacks. The Board’s second appraiser considered sales, but only one was a fee simple sale, and he used multitenant properties as comparables. He gave equal weight to the sales and income approaches. Both appraisers’ values supported or exceeded the original assessments.

The district court concluded that Nationwide produced two disinterested witnesses who indicated that the market value of the property was less than the value determined by the Board. This had the effect of shifting the burden to the Board to uphold the assessed values. The court concluded that the Board’s appraisals were more reliable and should be afforded more weight than Nationwide’s appraisals. The court made no finding that the fair market value of the property could not be readily established by the sales comparison approach but relied on the cost approach in affirming the assessments. Nationwide appealed.

In Iowa, all taxable property is valued at its actual value, which means the fair and reasonable market value. Iowa law also gives preference to the sales comparison approach, limited to “normal transactions reflecting market value,” not “abnormal transactions not reflecting market value” unless adjusted. Indeed, other approaches to value may be considered “if, and only if, market value cannot be readily established through the preferred” sales comparison approach. Thus, the statute—and its application by the Iowa courts—mandates that the assessor first attempt to determine fair market value using comparable sales.

On appeal, Nationwide claimed that the Board failed to meet its burden because the Board’s appraisers did not adequately follow the statutory scheme for property valuation. According to Nationwide, the Board did not present competent evidence to uphold the assessment, because the Board’s appraisers did not rely on comparable sales to determine the value of the properties. Nationwide also argued that the Board’s appraisers should not have considered the other approaches, because the evidence showed that market value could readily be established through comparable sales.

The court of appeals agreed. The rule requires that a factfinder first determine that the sales comparison approach is unworkable before considering the other approaches. Here, the district court made no such finding. In fact, it found that Nationwide’s experts had produced sufficiently credible evidence that the burden shifted to the Board. The district court did not analyze comparable sales, instead relying on the cost approach to value the buildings.

After reviewing the evidence, the court of appeals concluded that neither of the Board’s appraisers relied upon the sales comparison approach, and therefore did not follow the statutory scheme for the valuation of property.
Also, their testimony presented by the Board did not carry the Board’s burden to show that the value could not be established by the sales approach. Accordingly, the court reversed the decision of the district court. However, even though Nationwide’s evidence showed a value below the agreed minimum assessed values in the economic development agreement, the court declined to set the assessments below that minimum. Nationwide’s assessments were reduced to the minimum called for in its agreement with the Des Moines City Council.

Nationwide Mutual Insurance Co. v. Polk County Board of Review
Iowa Court of Appeals
February 16, 2022
2022 WL 468679

Construction lien attaches to fee simple interest, even if contractor was hired by tenant

Vineyard Properties of Utah LLC (Vineyard) owns a commercial building that it leased to a tenant in 2017. The lease term was sixty-seven months, and the tenant negotiated for rent reductions for the first six months to allow the tenant to pay for improvements to the property. Shortly after signing the lease, the tenant hired RLS Construction (RLS) to make improvements to the property, primarily electrical projects. Vineyard authorized the tenant to carry out the work, but Vineyard did not hire RLS or contractually obligate itself to pay for the work.

Upon completion of the work, the tenant abandoned the property. RLS invoiced the tenant, who left an unpaid balance, and then RLS recorded a construction lien against the property for the remaining balance. Vineyard countersued to foreclose its lien against both Vineyard and the tenant.

The district court ruled in favor of RLS, concluding that construction liens attach to the property at issue, absent any requirement to show that improvements requested by a tenant were installed at the direction of the landlord. Vineyard appealed, asserting that RLS’s construction lien was valid, but attached to the tenant’s leasehold interest, not Vineyard’s fee interest.

The court of appeals noted the significance of the question, observing that liens against an owner’s fee interest tend to be more valuable than liens against a leasehold interest. A tenant possesses only a right to occupy a property in return for lease payments and, unless the lease payments are well below market rate, there is often little value to be gained by foreclosing upon and selling a tenant’s leasehold interest. If the issue had arisen a decade earlier, Vineyard would have won, but changes to Utah’s construction lien statute changed the legal landscape.

Prior to 2011, Utah’s law provided that contractors shall have a lien on which they rendered the service, “whether at the instance of the owner or of any other person” acting by the owner’s authority. Moreover, the lien attached “only to such interest as the owner may have in the property.” And though the term “owner” was not defined, Utah’s courts supplied a judicial understanding broad enough to potentially include both landlords and tenants. Using that judicial definition, Utah’s courts determined that a construction lien was only valid against the specific owner at whose instance the work was done. In that environment, if a lessee directed the improvements without the authority of the lessor, only the leasehold interest would be burdened by the resulting lien.

In 2011 and 2012, though, the Utah legislature amended relevant portions of the construction lien statutes. First, the legislature removed the “at the instance of” language, and then it provided general internal definitions for several
terms, including “owner” and “project property.” Following the amendments, the owner was “the person who owns the project property,” which was in turn defined as “the real property on or for which construction work is provided.” Thus, liens attach to the interest that the owner has in the property that is the subject of the lien.

Applying the new law, the court observed that there was no dispute that RLS performed construction work on the property, and that RLS had a valid lien against at least part of the property. But the question remained whether the “property” was Vineyard’s fee interest or the tenant’s leasehold.

The court began by noting that the definition of “project property” was expansive and appeared to reference the entire reality upon which the work was performed, including all of the sticks in the proverbial bundle of rights. Thus, the court interpreted the term to be broad enough to include Vineyard’s fee interest, even though Vineyard did not hire RLS to perform the work.

The inquiry could not end there, however, because the lien attaches only to the interest that the owner has in the project property. Thus, Vineyard argued, even if RLS’s lien is valid against the entire property, it does not attach to anything other than the tenant’s leasehold interest, because the tenant is the owner that commissioned the work. But while the legislature could have provided a section-specific definition of “owner,” it did not, so the general definition added in 2012 applies to the whole of the statute. Under that new definition, the owner is simply the person that owns the project property, which the court had already concluded was Vineyard’s fee interest.

The court also examined the concept of ownership, noting that ownership is a collection of rights to possess, use, and enjoy property. As the fee owner of the property, Vineyard is unquestionably an owner of the property. And thus, because Vineyard is the owner of the underlying property upon which RLS performed work, it was appropriate for RLS’s construction lien to attach to Vineyard’s interest therein. Accordingly, the court concluded that under the current version of Utah’s construction lien statute, RLS’s lien attached to Vineyard’s fee interest, even though Vineyard did not contract with RLS. The district court’s ruling was affirmed.

Vineyard Properties of Utah LLC v. RLS Construction LLC
Utah Court of Appeals
December 30, 2021
2021 WL 6141045

Lessee does not have obligation to repair sinkhole

The Pearl River Valley Water Supply District (District) is an agency of the state of Mississippi that operates and manages the Ross Barnett Reservoir and surrounding lands. It is authorized to lease or sell lands that were previously taken by condemnation.

In 1983, the District entered into a development lease with Lakeshore Pointe Inc. (LPI) in which LPI leased a 22.79-acre parcel for the purpose of developing residential apartment and condominium units. Later, in 1996, LPI assigned 14.32 acres of the original lease to Lakeshore Point LLC (LPL) as approved by the District. LPL’s assigned area was eventually developed as Windward Bluff Subdivision.

In 2018, Jad Khalaf (Khalaf) leased 2.09 acres of land in the subdivision abutting the reservoir. Due to a collapsed storm drainpipe, a sinkhole formed on Khalaf’s property. The District demanded that Khalaf repair the drainpipe and sinkhole, but Khalaf refused, asserting that the responsible parties were the District or the Windward Bluff Homeowners’ Association (HOA).

Ultimately, the District repaired the storm drainpipe and the sinkhole, splitting the repair costs with the HOA, but then the District sued
Khalaf, alleging that his lease placed the responsibility on him to repair the faulty drainpipe and resultant damage. The District also asserted a breach of contract claim, seeking to cancel Khalaf’s lease based on his refusal to remedy the sinkhole or recoup the repair costs.

The chancery court ruled in favor of Khalaf, finding that he was not responsible to maintain or repair common property or storm drainage pipes, and that the responsibility lies with the District, the developer, or the HOA. The District appealed.

Given the nature of the case, the Mississippi Supreme Court began by citing the relevant language in each of the leases and assignments. The 1983 lease between the District and LPI specified that the lessee agreed that it would “at its own cost and expense keep all improvements in a good state of repair at all times” and that the lessor would “have no responsibility for maintenance of any part of the premises and improvement.” The same language appeared in the lease assignment from LPI to LPL, which was eventually developed into the Windward Bluff Subdivision.

The assignment between LPL and Khalaf was somewhat different. The assignment referenced the original lease but required the lessee, at his own cost and expense, “to keep all improvements in good state of repair at all times... and at all times maintain all structures and facilities, including retaining walls, surface water drainage systems, and sea walls, in a good state of repair.” Khalaf, as the lessee, was also “responsible for any damage that may be caused to Lessor’s property by the activities of Lessee and shall exercise due diligence in the protection of all improvements.” The HOA covenants for the subdivision reserved to the HOA and District blanket easements for “repairing, replacing, and maintaining all utilities” serving the subdivision, including storm drainage.

The District asserted that all of the leases, including Khalaf’s lease, were developer’s leases in which the District had no responsibility for maintenance of any part of the premises. Therefore, Khalaf stepped into the shoes of the subdivision’s developer when he executed the lease, including his assumption of the responsibility for the storm drainage easement that was located on his leased property. The court rejected this characterization. First, Khalaf’s lease mandated that Khalaf use the premises for residential purposes only. Second, his lease incorporated only some of the terms of the prior leases, even stating that it was an “assignment in part.” But most importantly, the lease provided that Khalaf would use the leased premises in accordance with the subdivision’s covenants, including the easements.

Also, because Khalaf took the leasehold subject to covenants reserving storm drainage easements to the HOA and District, he was not responsible for repairing the pipe installed long before he entered into the lease.

While the District argued it never adopted the covenants as being applicable to Khalaf’s leasehold, it was a party to Khalaf’s lease. And the terms of the lease were binding on Khalaf, LPL, and the District. The lease was recorded in the land records for Khalaf’s property in the office of the District’s lease department. The covenants referenced in the recorded lease reserved to the HOA and the District easements for repairing storm drainage.

Here, the storm drainpipe was installed by a developer, either LPI or LPL, pursuant to the site plan approved by the District. The pipe’s function is not to drain surface water from Khalaf’s property but to drain the entire subdivision through...
Khalaf’s property into the reservoir. Therefore, it was not a “surface water drainage system” for Khalaf’s property for which he was responsible. Also, because Khalaf took the leasehold subject to covenants reserving storm drainage easements to the HOA and District, he was not responsible for repairing the pipe installed long before he entered into the lease. Accordingly, the court found that regardless of whether the HOA or the District was responsible for the faulty storm drainpipe, Khalaf was not responsible. The decision of the chancery court was affirmed.

Pearl River Valley Water Supply District v. Khalaf
Mississippi Supreme Court
December 9, 2021
2021 WL 5832307

Hospital-affiliated clinics that serve hospital’s stated purpose are tax exempt

Perham Hospital District (District) is a public, nonprofit healthcare organization formed in 1976 to provide health care to rural communities near Perham, Minnesota. The District is a municipal corporation and political subdivision of the state. Since its formation, the District has owned and operated a 25-bed critical access hospital that provides a full continuum of care.

In 2011, the District acquired the business, assets, and real property of three clinics to serve the needs of the surrounding communities, concluding that the clinics would be convenient and necessary to running and improving the hospital. The clinics and the hospital are not separate entities; all operate under the hospital’s license.

Otter Tail County (County) classified the clinics as commercial properties and thus subject to property tax, determining that the statutory exemption for hospital districts is available only to hospitals, not clinics. The District filed refund claims, contending that the clinics were properly classified as exempt property. The County denied the claims, and the District appealed to the state tax court.

Before trial, the tax court construed the statutory exemption to mean property that is used “to acquire, improve, and run” the hospital. The tax court reached this conclusion by tracing this statutory language used in describing a hospital district’s purposes. Thus, according to the tax court, in order for property to be exempt, the hospital district must own, use, or occupy the property to acquire, improve, and run the district’s hospital.

Based on the evidence presented at trial, the tax court concluded that the District’s clinics were exempt because the District used them for a statutory purpose. The court recognized that this determination rested upon the meaning of the term “hospital” and the extent to which a hospital is distinct from a clinic. Then, based on the empirical question of what hospitals actually do, rather than a dictionary definition, the court found that the standard was met because the District occupied and used the clinics to improve and run the hospital during the tax years at issue. The County appealed the decision to the state supreme court.

On appeal, the County argued that the parties’ dispute centered on what constitutes a hospital, what hospitals do, and whether clinics can operate as a hospital. The County did not challenge the tax court’s interpretation of the exemption statute, so the supreme court did not address that issue. Instead, the only issue that needed to be addressed was the tax court’s conclusion that the District owned, used, and occupied the clinics to improve and run the hospital.

To answer that question, the County focused on what it means to “improve” a hospital for purposes of the exemption. Relying on dictionary definitions and the licensing requirements for hospitals, the County argued that hospitals and clinics are separate and distinct facilities based on the different services those facilities provide. The County further contended that the word
“improve” should be read in a technical context rather than with a common meaning; when that technical meaning is applied, none of the clinics would improve the hospital's operations because the clinics did not increase the value of the hospital real property.

The court rejected the County’s proposed reading and stated that a hospital is a place where sick or injured persons are given medical or surgical care. This definition is broad, meaning a place that provides patient care. The definition does not rule out the possibility of a hospital providing all types of care, nor that the definition prefers inpatient care over outpatient care. The court stated that given the plain meaning of the term, there was no need to delve into the specific operational and regulatory details of what a hospital does to understand whether the District's clinics were used to improve and run a hospital. Thus, based on the plain meaning of the statutory terms, the factual question before the tax court was whether the District owned, used, or occupied the clinics to make the hospital better and run the hospital.

The tax court reasonably pointed to the District's use of the clinics to help attract physicians and patients, improve overall hospital service delivery, and increase patient follow-up. The court noted that Perham had been designated as a “medically underserved area” under federal law, and the clinics supported the hospital in serving that key purpose. Given the evidence in the record, the state supreme court agreed with the tax court that the clinics were operated to improve and run a hospital. Accordingly, the tax court’s determination that the clinics were exempt from taxation was affirmed.

*Perham Hospital District v. County of Otter Tail*
Minnesota Supreme Court
January 24, 2022
969 N.W.2d 366

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**Decline in hotel revenue during and after condemnation should be considered in takings compensation**

Bentleyville Garden Inn Inc. (BGI) owns and operates an 86-room hotel near Interstate 70 in Pennsylvania. In 2015, the Pennsylvania Department of Transportation (PennDOT) filed a declaration of a partial taking of BGI's property. The declaration sought a permanent acquisition of 1.14 acres for the placement of a new exit ramp from the interstate, and a temporary acquisition of 0.856 acres for use during construction. PennDOT paid BGI $286,915 in compensation for the partial taking, and in March 2016, began construction that was completed in November 2018.

BGI filed a petition for the appointment of a Board of Viewers, who, after a hearing, awarded BGI $2.9 million. PennDOT appealed the award as excessive, and the case went to trial before a jury.

At trial, eight witnesses testified—four for each party. BGI’s owner testified that before construction, the hotel was operating at full capacity and was effectively buffered from highway noise by an open field. After construction, however, the hotel’s occupancy rate dropped by more than half, and the hotel’s revenues remained depressed, even as local competitors saw revenue improvements.

BGI also offered the testimony of a hotel valuation expert, who performed a study to determine the impact of PennDOT’s taking on the value of BGI’s property, which projected a significant decline in the hotel’s average daily room rate. In addition, BGI offered an appraisal and testimony by a real estate appraiser, who valued the land permanently taken by PennDOT as well as the impact of the project on BGI’s remaining property. He used the hotel’s net income before the taking and after the taking, which showed total damages of $2.9 million.

PennDOT offered an environmental consultant who testified about a sound study he per-
formed to project noise levels along the Interstate, which concluded that no remediation was necessary since the traffic noise would not exceed 72 decibels. PennDOT also offered the testimony of its own appraiser, who valued the land taken by PennDOT at a similar value as BGI’s expert. However, PennDOT’s appraiser did not believe the construction project adversely affected BGI’s

The court found that neither PennDOT nor PennDOT’s appraiser understood the distinction between valuing a property based on the property’s net rental income versus the income or profits of a business conducted by a tenant.

remaining property. So, while PennDOT’s appraiser agreed that the hotel had experienced a drop in occupancy rates and revenue, he did not consider those factors, because in his view the loss of business income is not compensable in an eminent domain case. Accordingly, he used the hotel’s before-taking revenue in both his before-taking and after-taking valuations.

After the trial, the jury returned a verdict in favor of PennDOT, awarding just $355,000 in damages. It awarded damages for injury to the fair market value of BGI’s remaining property caused by proximity to PennDOT’s project. BGI sought to have the jury verdict overturned, but the trial court denied the motion, so BGI appealed.

On appeal, BGI argued that the jury verdict was unlawful for two reasons. The opinion of PennDOT’s appraiser was not competent because it was based on an erroneous assumption, namely that Pennsylvania law did not permit an account-

ing of the hotel’s depressed revenue to inform the calculation of the after-taking value of the property. Second, the appraiser’s opinion was incompetent because he assumed, contrary to the evidence, that the proximity of PennDOT’s construction did not affect BGI’s remaining property. PennDOT countered that the testimony was competent, because a condemnee’s loss of business income is not compensable under Pennsylvania’s eminent domain code.

The appellate court began by observing that a jury’s determination must be given considerable weight by an appellate court. A new trial should only be granted in truly extraordinary circumstances, where the jury’s verdict is so contrary to the evidence as to “shock one’s sense of justice.” The court, however, concluded this was such a case, because the testimony of PennDOT’s appraiser was not competent.

Pennsylvania law requires the payment of just compensation for the taking of real property, which consists of the difference between the market value of the entire property immediately before the condemnation and the market value of the property interest remaining immediately after the condemnation. In evaluating the after-taking value, consideration must be given to the damages or benefits specially affecting the remaining property due to its proximity to the improvement for which the property was taken.

The income approach is an accepted method of determining value in eminent domain proceedings. However, Pennsylvania law prohibits the use of the income approach to establish the value of a leasehold interest of a tenant conducting business on the property subject to condemnation. Nothing in the law, though, prohibited the consideration of the after-taking income of the property; such consideration was actually necessary.

The court found that neither PennDOT nor PennDOT’s appraiser understood the distinction between valuing a property based on the property’s net rental income versus the income or profits
of a business conducted by a tenant. PennDOT confused the authorization of capitalizing income to value real property with the prohibition against capitalizing income to value a leasehold interest. Moreover, PennDOT’s appraiser did not consider the damages affecting the remaining property by the highway construction, instead assuming that damages to BGI’s property could not be considered because the construction project was temporary in nature. The court found this to be a mistake. The highway ramp was permanent, and the disruption caused by the three-year construction project was lasting in its effect.

On the other hand, BGI’s appraiser explained that willing buyers and sellers looking at the property would consider the income-producing capability of the property. PennDOT argued this would allow BGI to recover the loss of income arising from the alleged loss of business attributed to the construction project, but the court disagreed. BGI’s appraiser considered the loss of income to determine the change in the value of the property, and the court agreed that the effects of the partial taking would have been considered by any informed and willing buyer trying to estimate the expected income from BGI’s property.

Accordingly, the court concluded that PennDOT’s appraisal was not competent, because it erred by assuming that a decline in the hotel revenue, whether projected or actual, could not be used to do an after-taking fair market value of the property. Only BGI’s appraiser provided competent testimony of the fair market value of the property. Since the jury relied solely upon PennDOT’s appraisal, which was found to be incompetent, the jury’s verdict could not stand. The court ordered a new trial to determine the amount of just compensation owed by PennDOT.

Pennsylvania Dept. of Transportation v. Bentleyville Garden Inn Inc.
Pennsylvania Commonwealth Court
October 1, 2021
2021 WL 4483462

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Eminent Domain 2021 Year in Review

Abstract
2021 brought multiple developments on the eminent domain front, including the special occasion when the US Supreme Court heard two takings cases. In addition, 2021 saw passage of the Infrastructure Investment and Jobs Act, which aims to provide federal funding for infrastructure projects for many years to come. This article highlights the key 2021 eminent domain court decisions by the Supreme Court and provides a summary of the 2021 federal legislation; both will impact right-of-way consultants, appraisers, and real estate practitioners. In doing so, it makes note of new case law and upcoming projects—both of which will likely shape this industry for many years to come.

The power of eminent domain derives from the US Constitution and from various state constitutions. Thus, the heart of this power is constitutionally granted, but the outer bounds of such power is determined by the courts. Every takings case defines and contextualizes the bounds of the eminent domain power. In 2021, eminent domain and right-of-way professionals received two decisions from the US Supreme Court. These two cases addressed (1) issues pertaining to per se takings, and (2) the reach of the federal eminent domain power against a state of the United States.

While case law plays a primary role in shaping the rules by which eminent domain is conducted, ultimately the power of eminent domain is needed to further the public good through public projects. The passage of the Infrastructure Investment and Jobs Act in 2021 highlighted the fundamental purpose of the eminent domain power as a mechanism necessary to carry out the development of public projects. The infrastructure legislation is a response to the aging infrastructure in the United States and other gaps in meeting the needs of citizens. While the infrastructure act is not an exercise of eminent domain itself, it is a source of funding for much-needed development within the county—development that is unlikely to come to fruition without the power of eminent domain.

Therefore, 2021 was significant because it produced US Supreme Court case law that will continue to shape the bounds of eminent domain. The year also saw passage of federal legislation that will expand and shape public projects, which may involve eminent domain acquisition of property for those projects. So, the years to come are expected to be busy for right-of-way and eminent domain practitioners as funding is received and public projects kick off.

US Supreme Court Decisions

The US Supreme Court does not often hear eminent domain and inverse condemnation cases, but when it does, the decisions tend to shift the landscape for eminent domain and right-of-way professionals. For example, the previous Supreme Court decisions in Hawaii Housing Authority v. Midkiff, Kelo v. City of New London, and Knick v. Township of Scott, Pennsylvania all have become part of common parlance in the right-of-way community and impacted the use and rules of

1. US CONST. amend. V; also see for example, CAL. CONST. art. I, § 19.
eminent domain. Therefore, it is particularly noteworthy that the Supreme Court heard not one but two takings cases in 2021: Cedar Point Nursery v. Hassid and PennEast Pipeline Company, LLC v. State of New Jersey. While it always takes a substantial period of time for the impacts of a particular case to be fully understood, these cases are positioned to have impacts similar to their predecessor cases from the Supreme Court.

Cedar Point Nursery v. Hassid

In Cedar Point Nursery v. Hassid, the first eminent domain case heard by the US Supreme Court in 2021, the Court took on the validity of a California union access policy that permitted union officials to spend up to three hours a day, 120 days a year, trying to recruit new union members, while on an agricultural employer’s private property. The regulation permitting union officials to directly access farm property is a holdover from when farm workers had little access to media and were essentially cut off from any union messaging.

Cedar Point Nursery was in the middle of the strawberry harvest season when representatives of the United Farm Workers entered the facility and began using bullhorns to inform the workers that they should join the union, thereby disturbing the facility’s operations. Notably, the union representatives did not provide the notice required under the statute. At the Fowler Packing Company, a different facility, union organizers attempted to gain access but were unsuccessful. Worried about future disruptions, the grower companies joined together and filed suit in federal district court, claiming the access regulation effected an unconstitutional per se physical taking, via an access easement, without compensation of their property. The district court dismissed, on the grounds that this was not a per se taking but rather should be analyzed as a regulatory taking and judged against the Penn Central test, which the growers did not attempt to satisfy.

The Court of Appeals for the Ninth Circuit affirmed. Subsequently, the US Supreme Court granted certiorari.

The Supreme Court was asked to determine whether this regulation granting labor organizations a right of access to an agricultural employer’s private property for purposes of soliciting support for unionization was an unconstitutional per se physical taking—specifically, whether an uncompensated appropriation of an easement that is limited in time effects a per se physical taking.

In discussing the history and differences between per se takings and regulatory takings, the Court noted that “government action that physically appropriates property is no less a physical taking because it arises from a regulation.” As applied, the union access regulation “appropriated a right to invade the growers’ property and therefore constitute[d] a per se physical taking.” Additionally, the Court noted that the infrequent duration of the union intrusion does

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6. Cedar Point Nursery, 594 U.S. ____.
9. Cedar Point Nursery, 594 U.S. ____.
10. Cedar Point Nursery, 594 U.S. ____.
not preclude recovery for a taking. It stated: “The fact that a right to take access is exercised only from time to time does not make it any less a physical taking.” The issue of duration bears only on the amount of compensation, not on whether or not there has been an invasion. Therefore, the access regulation resulted in a per se physical taking, entitling the property owners to just compensation.

The Court also addressed three slippery slope arguments. First, it said it would still distinguish between takings and trespass, the latter being isolated physical invasions without a granted right of access. Second, it stated that many government-authorized physical invasions that are consistent with longstanding restrictions on property will not amount to takings. For example, requiring a landowner to abate a nuisance on its property is not a taking, because there was never a right to engage in the nuisance in the first place. And traditional privileges to access private property, such as to make an arrest, are not takings. Third, the Court noted that the government may require property owners to yield a right of access in order to receive certain benefits. Thus, government health and safety inspection requirements generally will not constitute takings.

This expansive view of what constitutes a per se taking is viewed as a victory for property owners and raises questions about the government’s ability to regulate private property. While it will take time for other cases to arise and apply the Cedar Point rationale and findings, it is possible that other scenarios of government-authorized invasions of property will be deemed a taking.

**PennEast Pipeline Company, LLC v. New Jersey**

The PennEast Pipeline Company, LLC v. State of New Jersey case analyzed whether a private party could exercise the federal eminent domain power to seize land that belongs to a state without violating the Eleventh Amendment.

In order for an interstate pipeline to be built, a natural gas company must obtain a certificate of public convenience and necessity from the Federal Energy Regulatory Commission. Certificate holders are permitted to use the federal eminent domain power to acquire the land necessary to build the pipelines. PennEast Pipeline Company (PennEast Pipeline) was granted a certificate authorizing the construction of a pipeline. Construction of the pipeline required some land owned, at least in part, by the State of New Jersey, and the gas company intended to use the federal eminent domain power to obtain the land. The State of New Jersey sought to dismiss the eminent domain complaints on the ground of sovereign immunity. The Third Circuit determined that the certificate holders were not authorized to condemn property from nonconsenting states. According to the Third Circuit, while the federal government can delegate its eminent domain power to private parties (i.e., the gas company), it was not apparent that the federal government can also delegate its exemption for state sovereign immunity.

In order to evaluate the State of New Jersey’s sovereign immunity defense, the Supreme Court analyzed the federal eminent domain power. Historically, as the federal eminent domain power evolved, it became clear that a state cannot con-

11. *Cedar Point Nursery*, 594 U.S. ____.
tion or restrict the use of that power. Consent of a state is not a precondition to the exercise of the federal eminent domain power. Further, the fact that the land is owned by a state does not preclude the exercise of the federal eminent domain power. Thus, the Supreme Court made clear that the federal eminent domain power can be used to acquire state lands and that the states do not need to consent to such action. The next question before the Court was whether this power (with the extent of its scope) could be delegated to private parties.

On this question, the Supreme Court determined that there was a long history of delegating the federal eminent domain power to private parties to condemn land for a variety of public works. Thus, taken together, not only does the exercise of the federal eminent domain power not require the consent of states, that power can be delegated to private parties. The Court discussed a long history of case law in the United States that led to this conclusion.

Applying this in the PennEast Pipeline situation, the Natural Gas Act delegated the power of eminent domain to companies that obtain a certificate of public convenience and necessity. This power includes the ability to condemn necessary lands, including land in which a state holds an interest. The State of New Jersey still argued that state sovereign immunity prevented it from being sued without consent. However, the Court concluded that the states consented upon the founding of the federal eminent domain power, and thus waived the sovereign immunity protection. Therefore, while nonconsenting states are generally immune from suit, the states surrendered this immunity from the exercise of federal eminent domain power when they ratified the Constitution. PennEast Pipeline could condemn land for the State of New Jersey.

This case provides a substantial discussion on the source and scope of the federal eminent domain power, including its history, its ability to be delegated, and its superior position to state eminent domain power. Additionally, this case will have implications for natural gas pipeline projects, eminent domain, and states’ rights.

Interestingly, a little over a month after this decision came out PennEast Pipeline announced that it would be halting the acquisition of property needed for its pipeline, as there were remaining legal and regulatory hurdles that made construction timing uncertain. Among the remaining permits and legal approvals were Clean Water Act permits, which New Jersey has denied to date. As demand for natural gas remains high, the underlying need for a gas pipeline remains. As such, despite having US Supreme Court approval on some fronts, it will be interesting to see if PennEast Pipeline eventually receives all other necessary approvals and restarts construction of the pipeline.

While the future of PennEast Pipeline’s pipeline through Pennsylvania and New Jersey is uncertain, this case still carries precedential value for other natural gas pipeline projects and the exercise of federal eminent domain against states.

15. Peter Hall, “PennEast Was Suing 70 Property Owners to Get Land to Build Its Natural Gas Pipeline. This Week It Suddenly Stopped, Citing Regulatory and Legal Hurdles,” The Morning Call, August 10, 2021, https://bit.ly/36AMsXH.
17. Phillips, “PennEast Cancels Pipeline Project.”
**Infrastructure Investment and Jobs Act**

While the case law discussed above will impact the framework of future eminent domain actions, the catalyst for many such eminent domain actions will likely be the Infrastructure Investment and Jobs Act (P.L. 117-58), which President Biden signed into law on November 15, 2021. The act provides for $1.2 trillion in federal spending over the next five years. The funding will be allocated to roads, bridges, major infrastructure projects, transit and rail systems, broadband upgrades, airports, ports, waterways, electric vehicles, improvements to power and water systems, and environmental remediation. Some of the funds are to be allocated to existing programs at higher funding levels in the near term, while other parts of the funds will be allocated to create new programs.

The history of infrastructure funding—or lack thereof in more recent times—highlights the importance of this infrastructure funding legislation. The current infrastructure system in the United States received a score of C− from the American Society of Civil Engineers in 2021, thereby demonstrating the need to invest in maintaining and improving our infrastructure system.¹⁸

**Projects Eligible for Funding**

In the past, infrastructure funding primarily focused on the maintenance of infrastructure, with only modest funding for new improvements.¹⁹ This infrastructure act provides funding for project initiation in a variety of new programs and sectors as well as maintenance.

Of the $1.2 trillion provided, there is approximately $559 billion in new spending. The other portion of the funding is allocated to highways and other infrastructure that is part of normal federal agency spending and programs, including the Inland Waterways Trust Fund, the Transportation Emergency Relief Funds, the Airport and Airway Trust Fund, and the Harbor Maintenance Trust Fund.

**Roads, Bridges, and Related Programs**

The infrastructure law provides that roads, bridges, and related programs will receive $110 billion—the largest portion of the new funding. This investment in repairing and reconstructing the nation’s bridges is the single largest investment since the construction of the interstate highway system.²⁰ The funding in this sector is anticipated to help repair approximately 15,000 highway bridges.²¹

Each state will have varying needs; state departments of transportation (DOT) will play an important role in identifying priorities. For example, Colorado is expected to receive $225 million over the next five years to fix aging bridges across the state.²² These bridge replacements ²² will improve safety and mobility, relieve congestion, and strengthen Colorado’s economy as goods and people can move more efficiently between the state’s mountain communities and urban centers.”²³ This is but one example of how federal funds will make their way to a state

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²³. “Bennet, Perlmutter Celebrate Bipartisan Infrastructure Funding Support.”
agency—here, Colorado DOT—and be put to use for localized projects.

Energy and Power
More than $65 billion will be invested towards energy, power, and the electric grid. These investments are designed to upgrade power infrastructure, lower costs, and help reduce emissions. Of this, $7.5 billion will be used for the construction of electric vehicle (EV) charging infrastructure.

For EV charging stations, $5 billion is designated for high-use corridors, particularly interstate highways, with the goal of making charging stations just as easy to access as traditional gas stations. Currently, Texas, California, and Florida are receiving the largest allocations for EV stations, based on a formula that mirrors traditional highway grants to states. These expenditures are examples of how the federal funds will be used to not only maintain the existing infrastructure system, but also modernize and upgrade it.

Rail
For passenger rail, $66 billion is slated for high-speed rail, safety, Amtrak, and other rail modernization projects. The White House noted that the United States lags behind the rest of the world in developing high-speed rail infrastructure. The act is designed to help close the gap. For example, the Northeast Corridor rail route between Washington and Boston is set to receive funding to help repair and replace crumbling bridges and tunnels. Improvements to this infrastructure will help increase safety, reduce service disruptions, and make trips faster. In addition, Amtrak will also be able to greatly expand its network into new communities, such as Nashville, Phoenix, and Las Vegas.

Airports and Ports
Port infrastructure and waterways are expected to receive around $17 billion, and airports anticipate $25 billion to address repair and maintenance backlogs, congestion, and modernization. These improvements are intended to strengthen supply chains and reduce bottlenecks that have impacted the United States’ competitiveness in global markets. Among the many airports receiving funding are Atlanta International Airport, Los Angeles International, and Chicago O’Hare. Funds will likely be spent on “runways, taxiways, safety, terminal, airport transit connections, and roadway projects.”

Internet and Broadband
Internet connectivity across rural communities and tribal lands has been severely lacking, a problem exacerbated by the pandemic. The act

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27. “President Biden’s Bipartisan Infrastructure Law,” WhiteHouse.gov. The 2022 Beijing Winter Olympics spotlighted the high-speed rail connecting the various Olympic venues and emphasized how behind, comparatively, the United States is in passenger rail services.
32. Shepardson, “US to Award $2.89 Billion to Airports.”
includes $65 billion for broadband infrastructure improvements to develop and expand interconnectivity in underserved rural and tribal communities. Not only will this funding help to develop the physical infrastructure, it will also help to lower prices for internet service, making access more affordable.34

This $65 billion will be allocated across a variety of existing programs, new programs, and one-time grants, an additional $2 billion will be appropriated to the existing Tribal Broadband Connectivity Program.35 This program “seeks to deploy or expand high-speed internet access services to Tribal lands” to help develop services to address “digital inclusion, affordability, telemedicine, workforce development, and other similar goals.”36 Like with other areas of investment, the funding strives to do more than merely preserve an aging system—it aims to improve it.

**Water**

Currently, up to 10 million American households and 400,000 schools and childcare centers lack safe drinking water.37 Under the act, water and wastewater infrastructure will receive $55 billion to replace lead pipes, remove contaminants, and satisfy other safe water and wastewater needs.38 The funding and projects will vary by state. For example, Minnesota expects to receive $680 million over the next five years to make infrastructure upgrades to wastewater and drinking water systems.38 This funding will go towards replacing various service lines and cleaning up water contaminants. One challenge in replacing lead service lines is that many parts of such lines are privately owned, which makes it difficult to determine where these lines are and if they need to be replaced.39 This federal money will be used, in part, to help inventory lead service lines.40

**Public Transportation**

Public transportation will receive approximately $39 billion in new funding to modernize transit, including improvements to help eliminate greenhouse gas emissions and improve accessibility for the elderly and people with disabilities.41

For example, the Bay Area Rapid Transit (BART) system located in California’s San Francisco Bay Area, anticipates that the funds will support its Train Control Modernization Program.42 BART’s program will increase train frequency, rebuild tracks and other critical infrastructure, and improve accessibility, including through modernizing elevators.43

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36. Frappier and Samuels, “Congress Invests Historic $65 Billion.”
40. Orenstein and Hackett, “There’s Big Money for Water Quality Issues.”
43. “Bay Area Transit Agencies Cheer Infrastructure Bill Passage,” BART.
Conclusion

Case law from 2021 and previous years continues to shape the bounds of the eminent domain power. Practitioners should be aware of the legal precedents in their particular jurisdictions. Local courts may have divergent interpretations on the scope and limitations of the eminent domain power, and the underlying grant of constitutional authority may differ in each state. In addition, the US Supreme Court continues to periodically provide overarching guidance and direction on government’s ability to employ the power of eminent domain.

Just as it will take time to see the impacts of the recent US Supreme Court cases, it will take time to see the impacts of the rollout of the Infrastructure Investment and Jobs Act. The distribution of funds and the initiation of projects will require coordination across many levels of federal and state agencies and government. In addition to the primary funding categories previously summarized, funding will also be made available to address climate change, cyberattacks, extreme weather events, environmental cleanup, reclaiming mines, and capping abandoned wells.44

While many of the anticipated projects are designed to modernize and upgrade existing systems, some upgrades are likely to require the acquisition of additional property rights—be it for a larger footprint to build improvements or temporary construction easements to allow for the actual construction work to be conducted. The many projects calling for entirely new infrastructure—new Amtrak lines, new pipelines, new electrical grids, etc.—will also involve eminent domain and right-of-way professionals. Funds are already starting to be allocated, and many governmental agencies and levels of government will work together to obtain funds, identify and prioritize projects, and initiate the improvements. The Infrastructure Investment and Jobs Act of 2021 encompasses an enormous source of funding that is likely to drive the right-of-way and eminent domain industries for many years to come.

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44. “President Biden’s Bipartisan Infrastructure Law,” WhiteHouse.gov.
PFAS Contamination and Residential Property Values

A Study of Five US Sites within the Assessment Stage of the Remediation Lifecycle

by Orell C. Anderson, MAI, Chris Yost-Bremm, PhD, Stephen G. Valdez, Jason Borras, and Tara Harder

Abstract
This article presents the findings of an empirical study of residential property sales from 2005 through 2019 in areas surrounding five source sites known to be polluted with per- and polyfluoroalkyl substances (PFAS). The five sites are located in Georgia, Alaska, Wisconsin, California, and Arizona. By controlling for property and market characteristics, the hedonic regression model isolates the impact of PFAS awareness on sale prices. This allows for observation of any consistent pattern of diminution across geographies. Little to no evidence of diminution was found. The results are mixed and vary with local market, property, and environmental considerations.

Introduction

Per- and polyfluoroalkyl substances (PFAS), a family of thousands of synthetic compounds with a wide array of applications, are currently being studied as potential health hazards. The discovery of PFAS in public and private water supplies has led to increased media attention, regulation, and litigation throughout the United States and abroad. For example, on July 22, 2020, the Michigan Department of Environment, Great Lakes, and Energy announced new drinking water standards for seven types of PFAS. To date, the Michigan standards are some of the most stringent any state has applied to this class of substances. The day after the Michigan standards were announced, the governor of New Hampshire signed a bill regulating four types of PFAS in drinking water in that state. In February 2020, the Australian federal government reached a $212.5 million settlement for three class action lawsuits resulting from PFAS contamination1 of residential water supplies surrounding military bases in Australia.2

While there has been considerable research into the environmental presence and health effects of different types of PFAS, there has been no systematic analysis of the potential influence of PFAS contamination on residential real estate values. This article examines five residential real estate markets in the United States where there is public knowledge of PFAS contamination. A hedonic regression model is used to measure the effect of this contamination on real estate markets surrounding known source sites in Georgia, Alaska, Wisconsin, California, and Arizona. By controlling for property and local market characteristics, the analysis isolates effects on value attributable to general public awareness—but not specific market participant actual knowledge or disclosure of PFAS—while in the assessment

1. The definition of contamination in USPAP Advisory Opinion 9 (AO-9) is not instructive here, as at the date of this study, PFAS was not classified as a hazardous substance nor were there enforceable levels for remediation.
2. The authors were retained as experts in the class action litigation in Australia.
phase of the remediation lifecycle. The results of
the hedonic model reveal variation in the effects
of PFAS contamination on local real estate values
across the five studied geographies.

This article begins with an overview of PFAS
contamination and regulation in the context of
real estate valuation practice. The next section
includes a brief review of the relevant empirical
literature. The research methodology and data
sources are then described, followed by brief
environmental histories of the five source sites.
The results of the study are then presented.

Per- and Polyfluoroalkyl
Substances (PFAS)

The family of chemicals collectively referred to
as PFAS includes thousands of synthetic com-
 pounds. Two of the most common PFAS, perflu-
 rooctane sulfonate (PFOS) and perfluorooctanoic
 acid (PFOA), were produced in the United
States for industrial, military, and commercial
purposes beginning in the 1940s and continued
until their domestic production was phased out
during the early 2000s. PFAS repel both water
and oils and are resistant to high temperatures,
making them suitable for many applications in
industrial and consumer products, such as water-
proof clothing, food packaging, carpet materi-
als, firefighting foam, and nonstick cookware.
Studies in the 1990s that revealed the ubiquity
of PFAS in exposed workers and the general pop-
ulation led to investigations into their potential
health effects in the early 2000s. Unfortunately,
the qualities that make PFAS effective in indus-
trial and consumer applications also make them
persistent in the environment. PFAS migrate
readily through groundwater, do not degrade, and
bioaccumulate in animal tissues.

Regulatory Limits

In the authoritative appraisal literature, most of
the definitions of environmental contamination
closely align with the definition from USPAP
Advisory Opinion 9 (AO-9):

Adverse environmental conditions resulting from
the release of hazardous substances into the air, surface
water, groundwater or soil. Generally, the concentra-
tions of these substances would exceed regulatory limits
established by the appropriate federal, state, and/or
local agencies.

PFAS exist in an uncertain regulatory environ-
ment. There is currently no enforceable federal
regulation of any PFAS in drinking water. Though the US Environmental Protection
Agency (EPA) is in the process of determining
appropriate regulations for PFOS and PFOA
under the Safe Drinking Water Act, the only
relevant federal drinking water standards for
over ten years have been the non-enforceable
EPA health advisories established in 2009 and
2016. In January 2009, the EPA established a
Provisional Health Advisory for PFOS and
PFOA in drinking water. The 2009 advisories
for PFOA and PFOS were 0.4 and 0.2 parts per

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3. Appraisal Standards Board, Advisory Opinion 9 (AO-9), “The Appraisal of Real Property That May Be Impacted by Environmental Con-
tamination,” in USPAP Advisory Opinions, 2020–2021 (Washington, DC: Appraisal Foundation, 2020), defines the remediation lifecycle as
“a cycle consisting of three stages of cleanup of a contaminated site: before remediation or cleanup; during remediation; and after
remediation. A contaminated property’s remediation lifecycle stage is an important determinant of the risk associated with environmen-
tal contamination. Environmental risk can be expected to vary with the remediation lifecycle stage of the property.” (Lines 93–96) The
before-remediation stage of the lifecycle is often referred to by the more descriptive term assessment stage. See, for example, Orell C.

4. Interstate Technology Regulatory Council, “Regulations, Guidance, and Advisories for Per- and Polyfluoroalkyl Substances (PFAS),”

5. Appraisal Standards Board, Advisory Opinion 9 (AO-9), Lines 74–76.


non-regulatory and provide technical information to state agencies and other public health officials on health effects, analytical method-
ologies, and treatment technologies associated with drinking water contamination. EPA’s health advisory level for PFOA and PFOS offers
a margin of protection for all Americans throughout their life from adverse health effects resulting from exposure to PFOA and PFOS in
drinking water.”
billion (ppb), respectively. In May 2016, the EPA released a Lifetime Health Advisory for combined concentrations of PFOS and PFOA of 70 parts per trillion (ppt). Thus, on a federal level, the current EPA standards are non-enforceable health advisories and only apply to PFOS and PFOA.

In the absence of federal action, multiple states are in the process of establishing their own standards and regulations. The five sites in the case study are in Alaska, Arizona, California, Georgia, and Wisconsin. None of these states currently have—or had at any point during the 2005–2019 study period—an enforceable regulation for any PFAS in drinking water. Each of the five states has enacted different combinations of advisories, standards, and guidelines; these are subject to change. Currently, Georgia and Arizona have no state-level standards. Alaska has a November 2016 regulatory cleanup level for PFAS in groundwater or soil and a non-regulatory advisory guideline for drinking water. California has non-regulatory notification and response levels for drinking water supplies set in 2018 and lowered in February 2020. Wisconsin is the only state of the five that is actively in the process of establishing regulatory levels for PFAS in drinking water. On June 21, 2019, the Wisconsin Department of Health Services recommended groundwater enforcement standards (a more stringent requirement for cleanup) and preventive action limits for PFOS and PFOA individually or combined. In Wisconsin, there is currently a groundwater advisory, a fish and wildlife consumption advisory, and regulations for soil.

But even as state-level standards are set, they are sometimes rolled back or suspended from enforcement by litigation. For example, in 2019 the governor of Alaska rolled back regulations for five PFAS, deferring instead to the EPA. In New Hampshire, a 2019 injunction in a lawsuit brought by potentially responsible parties stopped the regulatory process only to have the regulations established in a 2020 bill.

The concept of a single, or central, regulatory limit is further complicated by the fact that PFAS is an umbrella term that refers to thousands of related compounds. For example, soil and groundwater cleanup levels in Alaska are set for PFOS and PFOA individually, while a proposed regulation in Massachusetts applies to the summed concentrations of six PFAS. In Vermont, meanwhile, the standards apply to five PFAS.

**Market Perception**

It is not the role of the real estate appraiser to determine whether a property is contaminated. From a valuation perspective, the question of whether a property is physically contaminated is not as important as whether there is an observable market perception of environmental risk. This is acknowledged within the USPAP Advisory Opinion 9 definition of environmental risk:

> The additional or incremental risk of investing in, financing, buying, or owning property attributable to its environmental condition. This risk is derived from perceived uncertainties concerning:
> 1) the nature and extent of the contamination;
> 2) estimates of future remediation costs and their timing;
> 3) potential for changes in regulatory requirements;
> 4) liabilities for cleanup (buyer, seller, third party);
> 5) potential for off-site impacts; and
> 6) other environmental risk factors, as may be relevant.

(Emphasis added.)

The hypothesis of the study presented in this article is that residential properties within a 1.5-mile radius of the source of PFAS contam-
ination are impaired either with environmental contamination (as non-source properties) or with environmental risk (as adjacent or proximate properties). These properties are herein-after referred to as the “impaired subject areas.” The unimpaired control areas are those properties within a 10-mile radius of the point-source, excluding the central 1.5-mile radius subject area. Though groundwater contamination does not radiate out from a central point, the literature discussed in the next section provides evidence that, under certain circumstances, buyers may pay for distance from a perceived environmental disamenity. Incorporation of contamination plume maps and zones of potential environmental risk established by qualified environmental experts—which were not available for this study but may be required under certain assignments—would therefore enhance the accuracy of the analysis.\(^\text{15}\)

**Literature Review**

The measurement of any observable impacts of contamination on property values has been an active area of economics and appraisal research since the mid-1980s. This research has found that point-source contamination can impact nearby real estate values. There are several extensive literature reviews that provide an in-depth treatment and essentially find mixed results. There is consistent evidence that elevated health risks due to contamination may be capitalized into surrounding property values, but there is disagreement about the extent and duration of any impacts. Some studies find no impacts whatsoever.\(^\text{16}\) Perhaps because valuation professionals are trained to think carefully about the relationship between time and value, the appraisal literature, much of it published in *The Appraisal Journal*, often focuses on the question of market resiliency in the time period following remediation.\(^\text{17}\) For the last thirty years, scholars and practitioners in the appraisal profession have grappled with how to classify and measure what is commonly referred to as stigma (environmental risk and market resistance are more precise terms) in the post-remediated, ongoing stage of the remediation lifecycle.\(^\text{18}\) *The Appraisal of Real Estate*, fifteenth edition, describes stigma as an adverse public effect on property value produced by the market’s perception regarding a property, commonly the identification of increased risk. This risk is derived from perceived uncertainties surrounding a detrimental condition such as environmental contamination ... which penalizes the marketability of the property and may also result in a diminution in value. ... The negative perception of a particular site may be short-term or long-term, depending on the source of the stigma and changing market reactions to the nature of the event.\(^\text{19}\)

The text notes that “the three significant factors in the analysis of stigma are the real or imagined cause of the stigma, the duration of the effect of the stigma, and the geographical extent of the influence of the stigma.”

Since the primary pathway that exposes residential properties—and the occupants—to PFAS is groundwater and municipal water systems, the research into the impacts of contaminated groundwater is of importance. Much of the groundwater-specific research that does exist finds that groundwater contamination has little

\(^{15}\) The 1.5-mile radius was selected because it represented the most consistent tradeoff across the various markets studied in terms of the number of sales close to the site versus those that were farther away. As a sensitivity analysis, the analysis was re-run for alternative thresholds, ranging the cutoff from 0.75 through 2.0 miles away, in increments of 0.25 miles. Adjusting the threshold within this range of alternatives did not qualitatively alter the findings.


or no impact on residential real estate; this is especially true for earlier research. In a 1993 study, Page and Rabinowitz find no impacts in six of seven residential case studies—and a rebound after two years where there was an impact.\textsuperscript{20} Dotzour in a 1997 paper in The Appraisal Journal finds no impacts to residential properties following discovery of groundwater contamination, though this study used a sample that was entirely reliant on a public water supply.\textsuperscript{21} Boyle, Poe, and Bergstrom find small and temporary impacts due to highly publicized arsenic contamination in two towns in Maine.\textsuperscript{22}

On the other hand, in a 2015 article Muehlenbachs, Spiller, and Timmins report declines of up to 16.5\% for groundwater-dependent homes within 1.5 km of newly drilled shale gas wells.\textsuperscript{23} In a series of individually published studies and collaborations between 2012 and 2018, Guignet attempted to introduce the role of media and property-specific awareness metrics into the residential groundwater contamination data—often using data sets related to leaking underground storage tanks. For example, Zabel and Guignet find that the most highly publicized leaking underground storage tank sites experienced small price effects following discovery, and these effects increased along with the duration of the environmental investigation, with impacts as high as 12.4\% up to 1 km away for a particularly notorious site.\textsuperscript{24} Thus, the development of richer data sets incorporating geospatial methods and property-specific contamination, exposure, and publicity measures has allowed for more nuanced results. Despite the addition of techniques for better data gathering, work remains in the study of how long any impacts last after discovery.

**Valuation of Contaminated Real Estate**

In the context of property valuation, contamination falls under the umbrella term of *detrimental conditions*. Although detrimental conditions can significantly complicate a valuation assignment, the presence of a detrimental condition does not necessarily result in property value diminution. This distinction is central to the valuation of contaminated real estate. The question the appraiser attempts to answer is not whether the detrimental condition exists, but rather how much weight the market gives to that detrimental condition relative to the aggregate of other factors that influence value.\textsuperscript{25} It is possible that the detrimental condition is so great that markets may consider a property "no-go" until it has been remediated, but likewise, it is possible that markets may ascribe little, if any, discount to environmental contamination. Whatever the outcome, an appraiser’s analysis and determination of this price of risk, if present, must be based on the analysis of relevant transactional market data and not simply an assumption.\textsuperscript{26}

The appraisal profession in the United States has developed a system of methodologies for valuing real estate affected by contamination. Previously, the potential value impact of contamination was either disregarded or estimated by subtracting remediation costs from the unimpaired market value. The technique used may be considered suitable in some places or circumstances but not others. For example, guidelines of the International Valuation Standards, the Australian Property Institute, and the Royal Institution of Chartered Surveyors have not yet set out comprehensive valuation methodologies for environmentally contaminated real estate.


\textsuperscript{25} Randall Bell, *Real Estate Damages*, 3rd ed. (Chicago: Appraisal Institute, 2016).

\textsuperscript{26} Appraisal Standards Board, AO-9, Lines 170–171.
The standards and methods for appraising contaminated real estate in the United States can be found in peer-reviewed literature, authoritative texts of the valuation and economic professions, professional training courses, organizational guide notes, and codified federal and state valuation laws. The fundamental valuation framework focuses on characterizing contaminated sites as source, non-source, adjacent, or proximate properties (SNAP) and the stage a property falls into within the remediation lifecycle (before, during, and after cleanup), while considering any market-supported cost, use, and risk issues. Cost, use, and risk are the three value elements of property value diminution. The foundational prerequisites of a reliable analysis include adherence to the Uniform Standards of Professional Appraisal Practice competency requirements, the use of acceptable methodology and relevant terminology, and consideration of relevant property characteristics.

Methods typically accepted by the real estate market and the US judicial system include the cost, sales comparison, and income approaches to value. Supporting techniques include impaired comparable adjustment grids, case study analysis, unimpaired and impaired paired data testing, before and after sales assessment, literature review, market trending, regression analysis, and in situations where insufficient market transactions are available, contingent valuation. These methods are employed to varying degrees to express property value diminution as a percentage of unimpaired value. These methods can be supplemented with market questionnaires, interviews, or surveys as support.

Case Study Methodology
The methodology used in the case study presented here is hedonic regression analysis. Hedonic regression analysis is a form of regression analysis used by real estate experts to quantify various property characteristics into meaningful component parts and to isolate each part's economic contribution to observed prices. One benefit of a regression analysis for determining property value impacts is that it can simultaneously control and estimate for multiple property influences. For example, regression allows the analyst to identify the contributory value of an additional bathroom, while controlling for the incremental value effect from the additional square footage provided by that bathroom.

Another benefit of regression analysis is the ability to quantify the reliability of its output. For example, looking at the statistical significance of various factors can provide an appraiser with a sense of whether a particular property value adjustment is warranted.

Whether with regression analysis or another generally accepted method, the use of relevant data is a critical component to measuring property value effects from contamination, if any. USPAP Advisory Opinion 9, for example, emphasizes that “analysis of the effects of increased environmental risk and uncertainty on property value (environmental stigma) must be based on market data, rather than unsupported opinion or judgment.” As in all appraisal methods, comparable sales should be relevant to the subject property. In the current regression analysis, efforts are made to ensure compatibility by limiting each study area to several specific comparable factors, such as geography and property type. We therefore caution that hedonic effects found in a specific region of the United States or for a specific property type may not be applicable elsewhere.

Data
The data in the study come from ATTOM Data Solutions, a vendor of property data extracted from county recorder offices. The data include property characteristics (e.g., square footage, type of property, acreage) as well as information on recorded sales, including sale price, sale type (e.g., arm’s-length, REO), and sale date. Each observation used in the analysis is an individual, single-family residential property sale. The study focuses on five localities where there is a history of local media coverage surrounding nearby PFAS sites. These five sites are Dalton, Georgia; Fairbanks, Alaska; Madison, Wisconsin; Mather, California; and Mesa, Arizona. The residential sales data span 2005 through 2019. Sales infor-

The information for these data is summarized in the summary statistics, organized according to area, in Exhibit 1. The mean sale prices ranged from Dalton with generally lower-priced homes (mean $158,804), to Madison, Mather, and Mesa with higher-priced homes.

**Discussion of Variables Used**

The dependent variable used is sale price. There are two versions of sale price: one is logged and one is sale price raw, as appraisers typically view it (“unlogged”). A log transformation is sometimes used for the dependent variable to control for statistical issues that can occur, such as heteroskedasticity.  

A number of independent variables are used to explain the dependent variable(s). Many of these are control variables, designed to capture common influences on real estate value. Selection of control variables is critical in a regression analysis, because the exclusion of any important control variables could inadvertently bias any measurement of contamination found. This issue is known as an “omitted variable bias.” Control variables included square feet (interior living area), bedrooms, total baths, building age (in years), and lot size (in square feet). In addition, the analysis included binary variables corresponding to the year in which each sale occurred (known as “fixed effects”). These Sale Year variables control for general changes in real estate values over time (e.g., the 2008–2009 downturn), regardless of whether a sale was impacted by proximity to contamination. All of these independent variables are unlogged.

The main independent variable of interest is designed to measure differences in values between the areas affected by contamination (the Subject) and the areas nearby but unaffected by such contamination (the Control). In particular, a value of ‘1’ for the Subject variable was coded if a sale was in the affected area, and ‘0’ otherwise. Similarly, a value of ‘1’ was coded if the sale took place after the discovery of contamination (regardless of Subject or Control status) and was coded ‘0’ otherwise. The intersection of these two variables is the main variable of interest: of whether the sale took place in the affected area, after the discovery of contamination. By comparing how Subject properties performed relative to their Control counterparts, in the “After” period relative to the “Before” period, any changes in trend between the two after the discovery of contamination can be quantified. The use of these two binary (‘0’ or ‘1’ valued) “Subject” and “After” variables in this way is what is known as a “difference-in-difference” regression. This difference-in-difference approach can control for variability in housing prices over time as well as general differences between Subject and Control areas.

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**Exhibit 1 Summary Statistics by Area**

<table>
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<tr>
<th>Area</th>
<th>Count</th>
<th>Mean ($)</th>
<th>Std. Dev. ($)</th>
<th>Min. ($)</th>
<th>Max. ($)</th>
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</thead>
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<td>12,310</td>
<td>158,804</td>
<td>233,078</td>
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<td>12,400,000</td>
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<td>119,317</td>
<td>26,889</td>
<td>1,047,375</td>
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<td>Madison, WI</td>
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<td>315,403</td>
<td>381,012</td>
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<td>18,300,000</td>
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<td>Mather, CA</td>
<td>159,970</td>
<td>311,390</td>
<td>452,496</td>
<td>25,500</td>
<td>90,900,000</td>
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<td>Mesa, AZ</td>
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<td>447,294</td>
<td>786,594</td>
<td>26,135</td>
<td>22,200,000</td>
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</tbody>
</table>
Case Study of Five PFAS Sites

The case study involves areas surrounding five source sites known to be polluted with per- and polyfluoroalkyl substances (PFAS) located in Georgia, Alaska, Wisconsin, California, and Arizona. At the time the study was conducted, the sites were within the assessment stage of the remediation lifecycle.

Environmental Timelines and Dates of Awareness

The hedonic method assumes that the buyer is aware of the factors—such as bedrooms, square footage, or contamination—included as independent variables. Buyer awareness of contamination in a market could arise from testing activities, community outreach, film, television, print media, or any other means. The dates of awareness chosen in this study are based on the fact patterns described for each location. After establishing a date of awareness for each subject test area, transactions of impaired sales were compared to unimpaired Control Area sales.

Dalton, Georgia

The identified source of PFAS contamination in Dalton, Georgia, is the Dalton Utilities Loopers Bend Wastewater Treatment Plant (Appendix Figure 1). Dalton is a global center of carpet manufacturing, an industry that has made heavy use of PFAS compounds for carpet protection and stain resistance. Following a 2008 study that showed elevated levels of PFAS in the Conasauga River downstream from the Loopers Bend facility, the EPA tested the municipal drinking water in Dalton and other towns near the wastewater treatment plant. In 2009, tests found that levels in these municipal water supplies did not exceed the then-current 2009 EPA health advisories.

In late 2009, subsequent testing of 110 private wells within one mile of the facility revealed one well with concentrations of PFOS above the EPA advisory. Dalton Utilities connected this property to the public water supply. In August 2010, Dalton Utilities provided the EPA with reporting showing the results of this testing. Given this environmental timeline, we consider the after period for measuring potential property impacts as any time after August 10, 2010, the date of the Dalton Utilities report.

Fairbanks, Alaska

The Fairbanks region of Alaska has several PFAS sites where elevated levels of PFAS have been detected in both private and public water supplies. In this study, the impact PFAS contamination on real estate transactions within 1.5 miles of the Fairbanks International Airport (Appendix Figure 2) is examined. In October 2017, the airport notified the Alaska Department of Environmental Conservation (DEC) of on-site PFAS levels exceeding the EPA health advisory and the DEC cleanup levels. Subsequent testing of downgradient drinking water wells began in November 2017 and continued through April 2018. Initial sampling results showing wells over the EPA advisory levels were provided to the airport in late November 2017. A public meeting was held at a local hotel on December 18, 2017, with presentations by the DEC, the Fairbanks International Airport, and the Alaska Department of Health and Social Services. This stakeholder meeting is used as the date of public awareness for the PFAS contamination in the Fairbanks real estate market.

Madison, Wisconsin

In April 2018, the Wisconsin Department of Natural Resources (DNR) notified the Madison Water Utility that shallow groundwater near

34. EPA, “Region 4: Water Protection—Release of Perfluorochemicals (PFCs) from the Dalton Utilities Loopers Bend Wastewater Treatment Plant (Dalton Utilities) in Dalton, Georgia,” February 20, 2016.
one of the municipal wells in Madison contained PFAS (Appendix Figure 3). In 2018, the Wisconsin Air National Guard declared responsibility for cleanup of the PFAS contamination, suspected to be from the Truax Air National Guard Base. Testing revealed that one of the water utility’s municipal wells contained PFAS, though at levels below the EPA advisory. The utility shut off the affected well. Later testing has confirmed the presence of PFAS at levels below the EPA health advisories and the stricter Wisconsin standards proposed to the DNR by the Wisconsin Department of Health Services. The local utility held a community meeting on March 6, 2019, in which representatives explained the potential for PFAS contamination in municipal water. The date of this community meeting is used as the date marking public awareness of PFAS contamination in the Madison study area.

Mather, California
The source of PFAS contamination in Mather, California, is the Mather Airport, formerly called the Mather Military Base (Appendix Figure 4). PFOS, PFOA, and several other contaminants (TCE, hydrocarbons, antifreeze, and hazardous metals) have been discovered at the site. The site was listed by the EPA on the National Priorities List in 1987. EPA investigations identified a total of 89 areas of contamination, including multiple groundwater plumes and soil contamination sites. Sources of human exposure have been eliminated, but soil vapor extraction and groundwater pump-and-treat systems continue. In 2016, PFAS compounds were found within a well near Mather. A remediation system was operable by September 2017. Following a March 2018 study that identified the US Air Force (USAF) as the responsible party for the PFAS contamination, the site became the subject of a cost recovery and property damage suit against the USAF and the federal government. The USAF conducted an environmental site assessment in March 2019, but details were not publicly released. Since PFAS contamination was found on January 1, 2016, that date is used as the most conservative date of awareness of contamination in Mather.

Mesa, Arizona
The suspected source of PFAS contamination in Mesa, Arizona, is the former Williams Air Force Base (Appendix Figure 5). The 4,043-acre site was placed on the National Priorities List in 1989 and is the current site of the Phoenix-Mesa Gateway Airport, the Arizona State University Polytechnic Campus, and Chandler-Gilbert Community College. Though the site was listed in 1983 primarily for its contamination with benzene and other gasoline components and additives, the USAF began testing for PFAS in March 2018. PFAS were found in groundwater near the landfill, the fire training area, a fuel spill site, and the fire station. Groundwater characterization for PFAS is ongoing, and testing results are not expected to become public information until the US Department of Defense and the EPA finalize regulatory thresholds. On October 16, 2018, a meeting was held at the airport administration building with stakeholders and USAF representatives. This meeting is used in this study as the date of awareness of PFAS contamination in Mesa.

40. We include Mather and Mesa as study areas but caution in interpretation of the results here on account of their preexisting status as Superfund sites.
41. “The National Priorities List (NPL) is the list of sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.” EPA, “Superfund: National Priorities List (NPL),” https://bit.ly/3upE26e.
PFAS Contamination and Residential Property Values

Results
The results of the hedonic regression indicate a varied range of outcomes. Measuring the hedonic effects by comparing price trends before and after the date of public awareness of the potential contamination, the precise outcomes differ across localities. However, most market responses to public awareness of PFAS are nonexistent and, in one case, significantly positive. No consistent pattern of diminution was found across the regions and model specifications. These results are described in more detail in the paragraphs that follow. A more concise summary is displayed in Exhibit 2.

Log Model and Linear Model Results
Homes in Dalton, Georgia, proximate to the PFAS site sold at a higher average price after public awareness, relative to homes that were located farther away. While the model coefficients for these proximate homes are positive, they are not statistically significant at any conventionally accepted threshold. This suggests that for these proximate homes, there is no identifiable divergence in price after public announcements regarding contamination, relative to homes farther away.

Why might there be no effect in Dalton? It may be that, as homes nearby were connected to municipal water, exposure concerns were mitigated. Other influences may have also outweighed PFAS concerns, such as the fact that the surrounding residential properties and the buyers that located to this market prioritized property-specific characteristics over environmental factors.

Similarly, the log specification (Exhibit 3) for homes in Fairbanks, Alaska, shows negative but statistically insignificant price impacts for homes more proximate to the source site. This means that no difference can be identified between homes close to the PFAS site and homes further away. Evidence for a negative effect becomes somewhat more apparent when looking at the linear specification (Exhibit 4); however, this effect is only observable at the 10% level of significance. This higher significance threshold suggests a healthy degree of caution in interpreting whether price discounts truly exist in this market.

Taking the two models together, it appears that any price diminution for Fairbanks would be weak or nonexistent. This may be attributable to the fact that the site is in a mixed-use area, with many homes already near other industrial uses. The location of homes near preexisting industrial uses may render any incremental PFAS effects more difficult to isolate. Analysis of the area is further complicated by the presence of two known PFAS plumes and a chlorinated solvents plume as well as separate plumes in the nearby populated areas of North Pole and Moose Creek. Given the geographic isolation of Fairbanks in central Alaska, a lack of substitution for housing also may have impacted sensitivity to environmental considerations.

No observable impact was found for homes proximate to PFAS in Madison, Wisconsin. In the linear model (Exhibit 4), the most-proximate homes experienced no statistically significant differences in growth rates, relative to homes more distant. However, for the log specification (Exhibit 3), proximate homes experienced relatively higher prices in the period after the assumed awareness date—a finding which is statistically significant at better than the 5% level. The positive outperformance of price trends for the proximate homes in Wisconsin is surprising, but it is notable that in the annual year coefficients (which are designed to capture broader market time trends, regardless of proximity) display some of the strongest rebounds after the awareness date when compared to the other areas studied. In other words, it is possible that strong positive trends in the market can outweigh concerns about environmental contamination. Put simply, a heated seller’s market may lead to a pool of buyers who are less sensi-

Exhibit 2  Proximity to Environmental Contamination—Hedonic Effect Summaries

<table>
<thead>
<tr>
<th></th>
<th>Dalton, GA</th>
<th>Fairbanks, AK</th>
<th>Madison, WI</th>
<th>Mather, CA</th>
<th>Mesa, AZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Model</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Positive</td>
<td>Negative</td>
<td>Neutral</td>
</tr>
<tr>
<td>Linear Model</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Negative</td>
<td>Negative</td>
</tr>
</tbody>
</table>

www.appraisalinstitute.org
tive to such issues. However, testing this hypothesis is beyond the scope of this study.

Mather, California, is the exception to the lack of diminution found in the other areas. In both the linear and logarithmic models, prices of homes within 1.5 miles of the source point of contamination sold at discounts compared to homes between 1.5 miles and 10 miles away. While these measured discounts were not large (about 3.4% of property value), both were statistically significant at better than 1% level. Yet, as mentioned previously, other environmental factors complicate the analysis for Mather, as this source site was already a Superfund site (listed in 1987) and affected by airport noise prior to the discovery of PFAS.

Finally, findings in Mesa, Arizona, were mixed. While the linear model suggests a negative and statistically significant pricing effect, the log model shows no difference whatsoever between proximate and distant properties. Generally (though not always) results from logarithmic models tend to be more robust to outliers than linear ones. The contrasting effects between linear and log models may signify extreme sales in the data. While all the linear models excluded any outlier observations that exhibited absolute residuals of greater than three standard deviations (thus excluding approximately the most extreme 5% of sales in the data), it is still possible that substantial variation of property characteristics in the area are driving differences between the two specifications.

Reconciling the differences between logged and non-logged versions of the model for each area, the results were generally found to be similar. Dalton, Mesa, and Fairbanks, for example, had insignificant effects for either specification. Madison had positive effects under both specifications, although only one of these (the log specification) was statistically significant. Mather, meanwhile, was statistically significant and negative for both. Specifications involving logged dependent variables are often perceived as being more robust to the presence of outliers. The consistency in results between log and non-logged specifications suggests that individual sale outliers for any of these areas are not a concern.

If so, such dissimilar findings may indicate a lack of credibility of aggregate regression modeling for this area. This would imply a need for a more geographically focused study for Mesa—that is, a more careful delineation of the various submarket areas within Mesa via personal inspection of the affected area(s), with the advice of a local expert appraiser informing this process. Alternatively, it may indicate that PFAS effects are specific to the region impacted, as well as other event-specific information, such as the extent of contamination and method of conveyance. At the least, these results indicate the need for any analyses and conclusions regarding environmental risk from PFAS to be specific to the region studied and not applied as a one-size-fits-all opinion about diminution or lack thereof.

**Alternative Considerations: Subject and Control Area Buffer Zones**

While the Subject and Control Area boundaries are clearly delineated, they may not necessarily correspond to the area that is truly impacted. A more credible analysis of the market area would likely involve delineation according to a recognized zone of contamination, such as a plume map. The lack of any mapping is a limitation of this study.

One approach to ameliorating this concern is to define a buffer area between the Subject and Control Areas. This helps to eliminate sale observations that may exhibit “bleed-through,” or ambiguity about whether the home is impacted or not. To that end, the regressions were reestimated but excluded any sales that were in a buffer zone or a specific circular region between Subject and Control. Three alternative buffer zones were used with a 0.25 (1.50–1.75 miles), 0.50 (1.50–2.00 miles), and 0.75 (1.50–2.25 miles) radius. Sales within these radial regions were removed from the analysis, and the regressions reestimated. These effects, presented in Exhibit 5, indicate that bleed-through in the exercise definition between Subject and Control does not impact the previously summarized results. Decreased property values for Subject Area sales in Mather, for example, remain consistent at between approximately 2.4% and 2.5%, regardless of the choice of cutoff distance for the buffer zone.

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46. We thank an anonymous referee for this suggestion.
**Exhibit 3** Log Model Regression of Sale Prices

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Dalton, GA</th>
<th>Fairbanks, AK</th>
<th>Madison, WI</th>
<th>Mather, CA</th>
<th>Mesa, AZ</th>
</tr>
</thead>
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<td>Living Area (SF)</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.000***</td>
<td>0.001***</td>
<td>0.000***</td>
</tr>
<tr>
<td></td>
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<td>[0.000]</td>
<td>[0.000]</td>
<td>[0.000]</td>
<td>[0.000]</td>
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<tr>
<td>Bedrooms</td>
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<td>-0.017**</td>
<td>-0.043***</td>
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<td></td>
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</tr>
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<td>Total Baths</td>
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<td>Building Age</td>
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<td>[0.000]</td>
<td>[0.000]</td>
<td>[0.000]</td>
<td>[0.001]</td>
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<tr>
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<td>Subject Sale</td>
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<tr>
<td>After</td>
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<td>-0.738**</td>
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<td>Subject, After</td>
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<td>0.191</td>
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<td>0.198*</td>
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CONTINUED >
### Exhibit 3 (continued)

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<thead>
<tr>
<th>Characteristic</th>
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<th>Madison, WI</th>
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<th>Mesa, AZ</th>
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<td>0.364</td>
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<td>0.658</td>
<td>0.598</td>
<td>0.722</td>
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Note: An additional year fixed effect (2019) was dropped from the analysis in three of the specifications, because of collinearity between year fixed effects and the “After” categorical fixed effect. High Variance Inflation Factor (VIF) scores for Mesa meant that the number of bedrooms variable was dropped for this model. (For the other areas, all VIF scores were below 10.)

This table regresses the natural log of sale prices of residential arm’s-length home sales on various property and sale characteristics, as well as variables to identify PFAS proximate (Subject) hedonic effects. Sale outliers, as measured by an absolute standardized residual of greater than 1.96, are excluded from the analysis. Robust standard errors are included.

***, **, and * represent (two-tailed) significance at greater than a 1%, 5%, and 10% significance level, respectively.
### Exhibit 4 Linear Model Regression of Sale Prices

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Dalton, GA</th>
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<th>Madison, WI</th>
<th>Mather, CA</th>
<th>Mesa, AZ</th>
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CONTINUED >
**Exhibit 4 (continued)**

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<th>Madison, WI</th>
<th>Mather, CA</th>
<th>Mesa, AZ</th>
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<td>39,436</td>
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<td>Adjusted R-squared</td>
<td>0.645</td>
<td>0.623</td>
<td>0.520</td>
<td>0.639</td>
<td>0.605</td>
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Notes: An additional year fixed effect (2019) was dropped from the analysis in three of the specifications, because of collinearity between year fixed effects and the “After” categorical fixed effect. High Variance Inflation Factor (VIF) scores for Mesa meant that the number of bedrooms variable was dropped for this model. (For the other areas, all VIF scores were below 10.)

This table regresses dollar market sale prices of residential (arm’s-length) home sales on various property and sale characteristics, as well as variables to identify PFAS proximate (Subject) hedonic effects. Sale outliers, as measured by an absolute standardized residual of greater than 1.96, are excluded from the analysis. Robust standard errors are included.

***, **, and * represent (two-tailed) significance at greater than a 1%, 5%, and 10% significance level, respectively.
Alternative Considerations: Narrowing the Control Area Boundary Cutoff

One additional consideration is the size of the Control Area; at 10 miles, the Control Area is quite large. A truly credible study would likely devolve the control area into separate components, each matched to distinct but comparable regions of the subject area. This is where an appraiser’s expertise comes into play—for the comparables to truly be apples-to-apples an appraiser needs to use their local market knowledge as well as knowledge regarding the boundaries of potential contamination. Delineating Subject Area boundaries for each of the subject areas in this way is beyond the scope of this article, but one potential way to alleviate concern about difference in property characteristic variation within the Control Area is to tighten the range of what is defined as control. To that end, the analysis was reconducted considering alternatives to the 10-mile radius cutoff previously used. The Control Area is defined as at first, being within 1.5 and 4.0 miles outside of the center point of the contamination. Then the models are reestimated and diminution (if any) is recorded. This process is then repeated, each time extending the definition of the Control Area boundary by one mile. This process is repeated iteratively, each time recording the result for each Subject Area, all the way up to the original 10-mile radius.

The results are presented in Exhibit 6, and they are generally consistent across different definitions of what it means to be considered “control”—in particular, Mather remains statistically significant and negative. Notably, Fairbanks has, under the log specification, a positive effect for the Subject Area sales, when using shorter cutoff regions, which provides indication that not only is there no effect as a result of the PFAS discovery, but that potentially other amenities immediately within the Subject Area make it a more highly valued location relative to its immediate surroundings. Dalton has a slightly similar effect, although it is not statistically significant. Overall, though, the alternative Control Area definitions do not change substantively the conclusions of the analysis, either for any one of the areas.

<table>
<thead>
<tr>
<th>Radius (Mi.)</th>
<th>Dalton, GA</th>
<th>Fairbanks, AK</th>
<th>Madison, WI</th>
<th>Mather, CA</th>
<th>Mesa, AZ</th>
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<td>1.75</td>
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<table>
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<th>Madison, WI</th>
<th>Mather, CA</th>
<th>Mesa, AZ</th>
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</thead>
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<tr>
<td>1.75</td>
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<td>-12,031.614****</td>
<td>-91,989.820****</td>
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</table>

***, **, and * represent (two-tailed) significance at greater than a 1%, 5%, and 10% significance level, respectively.
**Exhibit 6**  Regression Sensitivity Analysis—Reducing Control Area Distance Radii Boundaries

<table>
<thead>
<tr>
<th>Radius (Mi.)</th>
<th>Dalton, GA</th>
<th>Fairbanks, AK</th>
<th>Madison, WI</th>
<th>Mather, CA</th>
<th>Mesa, AZ</th>
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<td>0.645***</td>
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<td>0.098***</td>
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<td>[0.001]</td>
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<td>0.086***</td>
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**Subject After (No Log)**

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<th>Madison, WI</th>
<th>Mather, CA</th>
<th>Mesa, AZ</th>
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</table>

***, **, and * represent (two-tailed) significance at greater than a 1%, 5%, and 10% significance level, respectively.
individually, or overall. Again, the property effects associated with PFAS discovery in an area are highly individualized to the specific region and circumstances of that market, and any conclusion about effects on home values from PFAS in one real estate market are not a one-size-fits-all conclusion for another.

Conclusions

PFAS are of concern to many parties in the real estate process as well as government agencies. Despite this, little to no research has questioned whether public awareness of PFAS has any measurable effects on property value, and, if so, how much. The case study results reported here find that the answer to this question is nuanced. Property value effects depend on market conditions, location, property characteristics, or some combination thereof.

Sellers and brokers are required to disclose adverse material facts and generally required to disclose environmental problems or adverse environmental conditions, with some exceptions. The five states studied in this research have seller disclosure laws that include environmental contamination, even if such knowledge can be gleaned broadly from market awareness via the media. Given the increased media exposure and frequency and intensity of discussions in the United States over PFAS and PFOA, it is expected that disclosure rules for these chemicals would be included within requirements over general contamination disclosure.47

Real estate damage theory argues that with mandatory seller disclosure and informed market participants, decreases in demand for non-source properties may ensue, causing downward pressure on price. Even if the science remains inconclusive as to PFAS and direct causality to various diseases, community outrage may still prevail. Location has always been the value driver, but with exotic contaminants, perception and politics can defy the science and adversely affect real estate markets. However, an appraiser is cautioned to rely on market evidence—as measured by relevant sales transactions—on whether perceptions of risk drive any differences in real estate value. For a credible opinion of value, any analysis of market transactions must take place using generally accepted appraisal methodology.

For the market transactions studied in this research, there was little quantitative evidence to support the idea that public awareness of PFAS in a community causes widespread declines in property value. In areas where diminution was found, preexisting environmental conditions complicate the analysis, and caution should be exercised in interpreting results; effects may depend on considerations such as characterization and the actionable level of contamination, approved and financed remedial action plans, the real estate market, assumptions, or previously documented environmental disamenities in the area.

Variation in the empirical effects of PFAS on house prices serves as a useful reminder that no single uniform conclusion can be drawn when it comes to contamination and real estate values. The results of this study should not be generalized across geographies or stages in the remediation lifecycle. Instead, the real estate expert needs to consider the environmental and real estate facts and community awareness that are specific to each market. Analysis of these or other factors may influence how PFAS pollution within the assessment phase of the remediation lifecycle can impact sale prices, necessitating analysis of local sales data, whenever possible.

47. The Biden Administration has refocused on environmental concerns. Pending legislation calls for the EPA to move the compounds from the category of “Contaminants or Chemicals of Emerging Concern (CECs),” to designate the constituents as hazardous substances. With the establishment of the EPA Council on PFAS, a commitment for PFAS limits in wastewater discharges, a long list of proposed stand-alone legislation on both the federal and state levels, and announcements of targeted cleanups of contaminated groundwater and soils, there will be increased market awareness of PFAS, especially on a state level. See discussion at EPA, “PFAS Strategic Roadmap: EPA’s Commitments to Action 2021–2024,” https://bit.ly/3D3Wywq.
About the Authors

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SEE NEXT PAGE FOR APPENDIX >
Appendix  PFAS Case Study Areas

Figure 1  Dalton, Georgia
Figure 2 Fairbanks, Alaska
Appendix (continued)

Figure 3 Madison, Wisconsin
Appendix (continued)

Figure 4 Mather, California
Appendix (continued)

Figure 5  Mesa, Arizona

Sale Transactions
- Subject (1,584)
- Control (501,990)
**Additional Resources**
Suggested by the Y. T. and Louise Lee Lum Library

**Appraisal Institute**
- Lum Library [Login required]
  - Knowledge Base Information Files—Real estate damages
  - *Diminution Valuation Assignments: Enhance the Importance of Highest and Best Use* (Conference presentation, 2019)

**US Environmental Protection Agency**
- “PFAS Explained”
  https://www.epa.gov/pfas/pfas-explained
- “PFAS Resources, Data and Tools”
  https://www.epa.gov/pfas/pfas-resources-data-and-tools
- “US State Resources about PFAS”
  https://www.epa.gov/pfas/us-state-resources-about-pfas
The Total Excess Earnings Model Revisited—It’s Not Just for Going Concerns

by Franz H. Ross, MAI, and Larry Woodall

Abstract
A valuation assignment for a nonstabilized property with three property types, including a going concern, is a difficult assignment. The total excess earnings model (TEEM), however, can be a big part of the solution. Users of TEEM should recognize that the asset allocations will be better supported if TEEM is used mostly as a reconciliation tool, with the user of the model making just a few calculations. The nature of intangible assets (and especially the value of the assembled workforce) is a topic needing analysis, especially considering the challenges businesses have faced maintaining a workforce in the wake of the COVID-19 pandemic. This article analyzes the importance of the strength of the going concern occupant and proposes that a property with a credit tenant is superior to a similar property receiving similar rent from a non-credit tenant. Similarly, a property occupied by a strong and consistently profitable going concern is superior to one with a weaker going concern. While some appraisers will argue that the higher real estate value of a successful going concern is a use value (as many appraisers believe there to be only one possible fee simple value), a strong going concern must sell as a going concern (or as a sale leaseback) based upon the principle of highest and best use. The superiority of the stronger going concern logically is apparent in the value of the real estate, personal property, and intangible assets.†

Introduction

The Appraisal Journal's 2011 article “Using TEEM-Work to Extend Your Reach on the Real Estate/Business Value Continuum” examined excess earnings models, and in particular a version called the “total excess earnings model” (TEEM). The article presented TEEM as a tool needed in making asset allocations for complex going concerns, where the assets consist of real estate, personal property, and intangible assets/business value. A 1997 Appraisal Journal article by T. Alvin Mobley III also recommended use of an excess earnings model.2 Earlier, a 1953 article by George Schmutz demonstrated how to allocate the income to the various assets of a dairy farm.3 Schmutz did not invent the concept, however. The US Treasury Department introduced the concept of capitalized excess earnings to value intangible assets using the “Treasury Method” in 1920; this shows the 100-year longevity of the excess earnings method.

In the years since publication of “Using TEEM-Work to Extend Your Reach,” there have been additions and refinements to the concepts, and an improved model is offered. One of the

† Note that portions of this article are at variance with the Appraisal Institute’s published body of knowledge, specifically the allocation of intangibles. Inclusion of reasonable but alternative perspectives is consistent with the mission of The Appraisal Journal as a forum for ideas. Readers are encouraged to consult The Appraisal of Real Estate, 17th edition, and form their own opinions.

total excess earnings model’s strengths is its flexibility. There is no single order for placing inputs into the model. The display for the model includes a column for each asset with three rows: the top row for value of the asset \((V)\), the second row for allocation of income \((I)\), and the third row for income divided by the value, also known as a capitalization rate \((R)\). The income allocations start with total earnings before interest, income taxes, depreciation, amortization, and net rent for the going concern \((GC)\) less a capital reserve, resulting in net EBITDAR,\(^4\) which is quite similar to net operating income \((NOI)\) used to capitalize various property types.

Revisiting TEEM is of interest to further develop allocation issues raised in the 2020 Appraisal Journal article “Perspectives on the Assembled Workforce in Real Property Valuation.”\(^5\) The current article acknowledges that some intangible assets—such as the assembled workforce—are not valued based on capitalized excess earnings, while goodwill is. The COVID-19 pandemic increased the value of the assembled workforce for viable businesses as the pandemic caused an unprecedented wave of layoffs. The unemployment rate subsequently improved, but an unintended consequence of the government’s stimulus support was difficulty for businesses to find enough staff to operate, despite wage increases—in some cases increases of 20% or more. The difficulty in keeping businesses fully staffed continued even as the pandemic receded.

While the value of the workforce has increased, the question remains as to what is its value. The discussion here proposes an estimation formula for use until a future source can provide market evidence of the assembled workforce’s value. In this way, the discussion is a counterpoint to that in “Perspectives on the Assembled Workforce in Real Property Valuation,” and it suggests a more moderate solution to the workforce value quandary.

**TEEM Case Study**

**Cash Flow Analysis of Marina with Multiple Property Types**

The example that follows is based upon a real appraisal problem. Numbers and aspects of the going concern have been changed for confidentiality. The property to be appraised consists of a marina with 110 slips located in a bay. There is a marina store with boat showroom, one service bay, and marina office. The 18,000-square-foot mixed-use building has restrooms and showers for the marina’s clients, limited showroom space within its 5,000 square feet of rentable building area, and 3,000 square feet of rentable office space on the first floor. There are 10 small apartments located on the 9,000-square-foot second floor. The property is currently not stabilized due to a transition in management. For this reason, a two-year cash flow analysis has been performed, with Year 2 representing stabilized income and expense. Both years’ net earnings before interest, taxes, depreciation, and amortization plus rent (net EBITDAR) are discounted at the 9.5\% discount rate for one year, with it being the end of Year 1 and forward looking as of day one of Year 2. Exhibit 1 shows the cash flow analysis for the marina with its showroom, offices, and apartments.

Note that in the cash flow analysis no selling expenses have been subtracted after capitalizing the Year 2 net EBITDAR, as this analysis is considered to represent a delayed direct capitalization. The 8.75\% capitalization rate and the 9.5\% discount rate were selected after reviewing data from surveys for apartments, office space, and marinas and giving appropriate weight to each property type. The inventory necessary to achieve the boat sales is also included in the going concern value.

With the Year 2 net EBITDAR forecast at $668,172, and the cash flow analysis concluding a value of $7,400,000 (including inventory), the calculated capitalization rate based on Year 2 net

\(^4\) For a discussion of EBITDAR, see Franz H. Ross and James K. Tellatin, “Asset Allocations: Are You Reconciling?” The Appraisal Journal (Summer 2015): 533–537. The Ross and Alessi article “Using TEEM-Work to Extend Your Reach” presents an example of an owner-occupied restaurant with allocations made to real estate, furniture, fixtures, and equipment \((FF&E)\), and intangible business value, with the sum of the assets being the total value of the going concern. Readers may want to review the example in “Using TEEM-Work to Extend Your Reach” before digesting the more complex case study for multiple property types that is presented here.

### Exhibit 1  Cash Flow Analysis for Marina with Showroom, Offices, and Apartments

<table>
<thead>
<tr>
<th></th>
<th>Pro Forma Marina, Apts, &amp; Office Year 1 ($ 000's)</th>
<th>Pro Forma Marina, Apts, &amp; Office Year 2 ($ 000's)</th>
<th>Appraisal Premise</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Slip &amp; Dock Income</td>
<td>273,408 8.7%</td>
<td>341,760 9.0%</td>
<td>Yr. 2: $3,200/ slip @ 88% occ. + $32K misc.</td>
</tr>
<tr>
<td>2. Boat Sales</td>
<td>2,550,000 81.1%</td>
<td>3,000,000 79.3%</td>
<td>Based on historical boat sales</td>
</tr>
<tr>
<td>3. Boat Service</td>
<td>129,600 4.1%</td>
<td>180,000 4.8%</td>
<td>Based on historical service income</td>
</tr>
<tr>
<td>4. Apartment Rent</td>
<td>150,144 4.8%</td>
<td>187,680 5.0%</td>
<td>Yr. 2: $1,700/ mo. for 10 units @ 92% occ.</td>
</tr>
<tr>
<td>5. Office Rent</td>
<td>40,656 1.3%</td>
<td>73,920 2.0%</td>
<td>Yr. 2: $28/ SF for 3,000 SF @ 88% occ.</td>
</tr>
<tr>
<td>6. Total Revenue</td>
<td>3,143,808 100%</td>
<td>3,783,360 100%</td>
<td>Sum of revenue lines</td>
</tr>
<tr>
<td>7. Cost of Goods Sold</td>
<td>2,123,400 67.54%</td>
<td>2,505,000 66.21%</td>
<td>82% of line 2 + 25% of line 3</td>
</tr>
<tr>
<td>8. Gross Profit</td>
<td>1,020,408 32.46%</td>
<td>1,278,360 33.79%</td>
<td>Subtraction</td>
</tr>
<tr>
<td>9. Operating Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Owner's Mgmt. Fee</td>
<td>94,314 3.0%</td>
<td>113,501 3.0%</td>
<td>Full-time owner comp. @ 3% of revenues</td>
</tr>
<tr>
<td>11. Salaries &amp; Wages</td>
<td>218,500 7.0%</td>
<td>230,000 6.1%</td>
<td>4 full-time, 5 part-time staff, w/ taxes</td>
</tr>
<tr>
<td>12. Property Taxes</td>
<td>50,000 1.6%</td>
<td>51,520 1.4%</td>
<td>Based on current assessment</td>
</tr>
<tr>
<td>13. Insurances</td>
<td>32,000 1.0%</td>
<td>32,640 0.9%</td>
<td>Based on historical</td>
</tr>
<tr>
<td>14. Advertising</td>
<td>12,000 0.4%</td>
<td>12,360 0.3%</td>
<td>Estimated necessary advertising</td>
</tr>
<tr>
<td>15. Credit Card Fees</td>
<td>31,438 1.0%</td>
<td>37,834 1.0%</td>
<td>Credit card fees @ 1.0% of sales</td>
</tr>
<tr>
<td>16. Utilities</td>
<td>42,000 1.3%</td>
<td>48,300 1.3%</td>
<td>Yr. 2 util. incr. 15% w/ greater occupancy</td>
</tr>
<tr>
<td>17. Repairs/Maint.</td>
<td>24,000 0.8%</td>
<td>25,200 0.7%</td>
<td>$2K mo. Yr. 1, w/ 5% incr. Yr. 2</td>
</tr>
<tr>
<td>18. Gen. &amp; Admin., Misc.</td>
<td>20,000 0.6%</td>
<td>21,000 0.6%</td>
<td>Broken out in detailed budget</td>
</tr>
<tr>
<td>19. Total Operating Exp.</td>
<td>524,252 16.7%</td>
<td>572,354 15.1%</td>
<td>Capital reserve at 1.0% of sales</td>
</tr>
<tr>
<td>20. EBITDAR</td>
<td>496,156 15.8%</td>
<td>706,006 18.7%</td>
<td></td>
</tr>
<tr>
<td>21. Capital Reserve</td>
<td>31,438 1.0%</td>
<td>37,834 1.0%</td>
<td></td>
</tr>
<tr>
<td>22. Net EBITDAR</td>
<td>464,718 14.8%</td>
<td>668,172 17.7%</td>
<td></td>
</tr>
</tbody>
</table>

A  Capitalization Rate  8.75%
B  Capitalized Value  $7,636,251
C  Cash Flow to Be Discounted  $464,718  $7,636,251
D  Discount Rate  9.50%  9.50%
E  Present Value Factor  0.9132  0.9132
F  PV of Cash Flow  $424,400  $6,973,746
G  "As Is" Value: $7,398,145
   Rounded: $7,400,000
EBITDAR is as follows: $668,172/$7,400,000 = 9.03%. Note that the impact of capitalizing in Year 2 adds 28 basis points to the 8.75% capitalization rate used to capitalize Year 2 net EBITDAR. TEEM will allocate the income and value to the three property types (and other assets) and will confirm that an appropriate overall capitalization rate and discount rate were selected. It is acknowledged that appraisal is an iterative process. TEEM is presented in the following discussion and then further explained and displayed in Exhibit 2.

**TEEM Analysis Steps for Marina Example**

**Inputs for Going Concern with Inventory.** With the inputs for the going concern with inventory as shown in Exhibit 1, the Year 2 pro forma net EBITDAR of $668,172 is divided by the concluded value for the cash flow analysis, which is $7,400,000. The capitalization rate is 9.03%. It is important to recognize that this is categorized as a going concern because of the marina, but it is otherwise not a going concern property, with the office space and apartments adding two non-going concern property types.

**Boat and Service Department Inventory.** Based on historical performance and research of other marinas, the inventory should turn over every 120 days or three times per year. The cost of boats sold in Year 2 is 82% of $3,000,000 in boat sales, or $2,460,000. The estimated cost of parts used in the service department is 25% of $180,000 service income, or $45,000. The summed cost of goods sold, $2,505,000, is multiplied by 33.3%, representing the 120-day turnover, resulting in inventory of $830,000 (rounded). Interest rates charged by floor plan lenders are currently low, in the range of 2.5%. There is judged to be greater risk than indicated by the interest rate. A pre-

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**Exhibit 2 Total Excess Earnings Model: Marina Case Study**

<table>
<thead>
<tr>
<th></th>
<th>Real Estate: 10 Apartments</th>
<th>Real Estate: 3,000 SF Office</th>
<th>Real Estate: Marina &amp; Showroom</th>
<th>Real Estate: All</th>
<th>FF&amp;E</th>
<th>Intangible Assets</th>
<th>Total Permanent Assets of GC</th>
<th>Boat Inventory</th>
<th>Going Concern with Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appraised Value</strong></td>
<td>$2,320,000</td>
<td>$480,000</td>
<td>$2,930,000</td>
<td>$5,730,000</td>
<td>$170,000</td>
<td>$670,000</td>
<td>$6,570,000</td>
<td>$830,000</td>
<td>$7,400,000</td>
</tr>
<tr>
<td><strong>Net EBITDAR</strong></td>
<td>$121,992</td>
<td>$40,656</td>
<td>$312,482</td>
<td>$475,130</td>
<td>$25,842</td>
<td>$134,000</td>
<td>$634,972</td>
<td>$33,200</td>
<td>$668,172</td>
</tr>
<tr>
<td><strong>Capitalization Rate</strong></td>
<td>5.25%</td>
<td>8.50%</td>
<td>10.66%</td>
<td>8.29%</td>
<td>15.20%</td>
<td>20.00%</td>
<td>9.66%</td>
<td>4.00%</td>
<td>9.03%</td>
</tr>
<tr>
<td><strong>Sales Comparison Indicated</strong></td>
<td>$232,000</td>
<td>$160</td>
<td>$26,636</td>
<td>$52,091</td>
<td>$1,545</td>
<td>$6,091</td>
<td>$59,727</td>
<td>$7,545</td>
<td>$67,273</td>
</tr>
<tr>
<td><strong>Unit of Comparison</strong></td>
<td>Value per Apartment</td>
<td>Value per SF</td>
<td>Value per Slip</td>
<td>Value per Slip</td>
<td>Value per Slip</td>
<td>Value per Slip</td>
<td>Value per Slip</td>
<td>Value per Slip</td>
<td>Value per Slip</td>
</tr>
</tbody>
</table>
mium is added, with an adopted inventory capitalization rate of 4%. Multiplying the inventory value by the inventory capitalization rate ($830,000 \times 4\%) results in an income allocation for the inventory of $33,200.

**Total Permanent Assets of the Going Concern.**
The inventory value of $830,000 is subtracted from the going concern value inclusive of inventory, and the result of $6,570,000 is the value of the permanent assets. Sales of such going concerns can be inclusive or exclusive of inventory. (Both occur in arm’s-length marina sales.) The income allocation to the inventory, $33,200, is next subtracted from the Year 2 net EBITDAR, making the remaining net EBITDAR for the permanent assets $634,972. The capitalization rate for the permanent assets is found by dividing the income by the value and is 9.66%.

**FF&E.** While there may be a nominal amount of FF&E in the marina property’s office building, the entire allocation for FF&E is attributed to the marina. The value of the FF&E was found using balance sheet data for equipment costs and includes three boats in a rental fleet. Depreciation is estimated at rates slightly lower than used for accounting depreciation. The concluded FF&E cost approach value is $170,000. Due to the lesser durability of FF&E compared to real estate, its income is calculated based upon a relatively short ten-year life, with monthly loan payments on a fully amortized $170,000 loan over ten years at 9% interest. The monthly payment is $2,153.49 and the annual debt service is $25,842, which is the income for the FF&E. Dividing the income by the $170,000 value results in a capitalization rate of 15.2%.

**Intangible Assets.** Generally, a small office and apartment building are not considered to include intangible assets, and that conclusion is made here. The presence of three property types within the same property, however, could create an intangible. If an intangible exists for the synergies of having the three property types together, it would be a modest asset. A small part of the intangibles could be allocated to the workforce necessary to operate the office space and apartments; this too would be a very small intangible. For simplicity, this analysis will assume the intangible assets are all attributed to the marina and boat dealership. Marinas that sell boats have a greater business component than marinas that only rent slips. There should be, and is, intangible value at the subject. In particular, the intangibles at the subject consist of four assets: (1) assembled workforce, (2) name/brand and website, (3) franchise/dealership agreement, and (4) customer list/goodwill (the true residual intangible).

The total intangibles are the residual in this model, and value is found by subtracting the real estate and FF&E values from the value of the permanent assets, which is $6,570,000. The real estate inputs are presented in detail in the discussion that follows. A cost approach was done for the entire property as described, and the resulting value for the total real estate (with three property types) is $5,730,000. Subtracting the real estate and FF&E values from $6,570,000 results in an intangible assets value of $670,000.

Next, a capitalization rate is selected for the intangibles. Reasonable calculations put the FF&E capitalization rate at 15.2%. Typically, a 500- to 1,000-basis point premium above the FF&E rate is applicable for the intangible assets. Most intangible assets either cannot be sold separately or seldom are sold separately, and the reduced marketability aspect of these assets naturally results in a capitalization rate premium over more-marketable assets such as FF&E. Furthermore, intangible asset capitalization rates can be extracted from sales of businesses in DealStats and other business valuation databases. Such databases generally indicate intangible asset, net EBITDAR–based capitalization rates of 15% to 40% (a very wide range). Real estate–related (e.g., waterfront) businesses should be near the low end of the range. A 20% capitalization rate is therefore selected. The residual income (also known as excess earnings) is found by multiplying the already concluded $670,000 value by the 20% capitalization rate. The excess earnings are therefore $134,000.

**Total Real Estate Value.** The real estate, on two acres, includes 110 slips and dock space, an 18,000-square-foot building with the marina

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6. DealStats, known as Pratt’s Stats for many years, is owned by Business Valuation Resources, https://www.bvresources.com. DealStats includes financials on acquired companies in both the private and public sectors.
showroom, a service bay, and 3,000-square-foot office space on the first floor. The second floor has 10 apartments. The cost approach was used to value the slips, the multiple-use commercial building, and other site improvements. Entrepreneurial incentive was estimated at a relatively high 15%, but the substantial intangible asset value still present is evidence that 15% is supportable for entrepreneurial incentive. The cost approach concludes a value for the land, building, and site improvements of $5,730,000 after depreciation.

The income attributed to the real estate is calculated by the model. The permanent assets are generating income of $634,972, and the charge for the intangibles’ income is $134,000 and for the FF&E is $25,842. The real estate income is found via subtraction and is $475,130. The capitalization rate is found by dividing the income by the value, and the resulting overall real estate capitalization rate is 8.29%.

Real Estate Allocation to Apartments. The Year 2 monthly market rent for 10 apartments is concluded to be $1,700 per unit per month. Effective rent is concluded to be $187,680 after 8% vacancy. It is difficult to allocate expenses between the three property types since the property is operated as a single business. It is estimated that the apartments’ NOI (or net EBITDAR) margin will be relatively high. A 65% net EBITDAR ratio is estimated, resulting in income to be capitalized of $121,992. Based on multifamily capitalization rates for the local market, and considering the strengths and weaknesses of the subject, a capitalization rate of 5.25% is selected (recognizing that this rate is approximately 25 basis points higher as a Year 2 capitalization rate). Dividing the income of $121,992 by the 5.25% capitalization rate results in an allocated value for the apartments of $2,320,000 (rounded).

Real Estate Allocation to Office Space. The 3,000-square-foot office space is analyzed in a similar way as the apartments. Year 2 market rent of $28 per square foot is concluded, with 12% vacancy, resulting in an effective rent of $73,920. A lower NOI margin (or net EBITDAR margin) is forecast compared to the apartments, at 55%. The resulting office space income is $40,656. After reviewing office capitalization rates, a rate of 8.5% was concluded (recognizing this rate is approximately 25 basis points higher than it would be for a Year 1 rate). The concluded office space value is found by capitalizing $40,656 at 8.5%, which is $480,000 (rounded).

Real Estate Allocation to Marina. A cost approach was done for the entire property, and allocations within that cost approach were made for the cost of 110 slips and infrastructure, paving, and a 5,000-square-foot retail/warehouse space with showers and toilets. The concluded value was $2,930,000 out of the total real estate value of $5,730,000. Note that the cost approach was not done separately for the apartments and offices, so as not to give too much weight to a single approach.

The marina income is also the residual real estate income, also found via subtraction, and is $312,482. The capitalization rate is calculated as $312,482 divided by $2,930,000, which is 10.66%. Based on previous assignments’ marina capitalization rates (generally based on real estate allocations), this is a reasonable real estate capitalization rate for a full-service marina.

Sales Comparison Indicated Marinas are difficult to value via sales comparison because of the different components of individual marinas. Some marinas have only slip rentals. Other marinas also have boat storage, boat dealerships, and service departments. Still others have significant restaurants as a part of the business. In the case example, there is a boat dealership and small service department, plus 10 apartments and 3,000-square-foot office space. A traditional sales comparison analysis dividing the total value by the 110 slips is misleading. The value of the total going concern of $7,400,000 (including inventory) is $67,273 per slip or $59,727 per slip for the total permanent assets. These per-slip values exceed all of the comparable sales. TEEM’s indicated per-unit prices solve this problem.

In the model, the apartments’ $2,320,000 value calculates as $232,000 per apartment, while the office space value calculates as $160 per square foot for 3,000 square feet. The marina real estate value calculates as $26,636 per slip for 110 slips (comparables are not available for real-estate-only slip prices). The apartment and office allocations can be supported by local sales of

those property types. The appraiser might decide to give great weight to these indicated values per unit and make modifications to capitalization rates or income to change the value per apartment or per square foot.

Another way to view the values is to show the indicated per-slip value (and indicated capitalization rates) for the going concern while excluding the apartments and office space. TEEM is presented again in Exhibit 3 showing this analysis. In this model with only marina assets, the per-slip values are more meaningful, with the value per slip at $34,273 for the permanent assets and at $41,818 per slip inclusive of inventory. These are reasonable per-slip values based on sales on file.

**Analysis of Intangible Assets in the Literature**

Schmutz’s article, “Valuation of Intangible Property,” does not reference the components of intangibles and simply viewed the intangibles as “residual by nature.”

Mobley in “Defining and Allocating Going-Concern Value Components” references The Dictionary of Real Estate Appraisal, third edition, definition of business value, which included (as a partial list) an assembled workforce, working capital, trade names, franchises, leases, and operating agreements. He allocates value to the identifiable assets and then clearly identifies goodwill as the residual asset, valued by capitalizing excess earnings. The article “Using TEEM-Work to Extend Your Reach” does not cover the different types of intangible assets. Similarly, “Asset Allocations: Are You Reconciling?” only briefly describes types of intangible assets.

Merriman’s article, “Perspectives on the Assembled Workforce,” focuses on the value of the assembled workforce, noting the “Rushmore Approach” does not include this as an intangible asset. That article presents a case study of a prison and concludes an NOI (after allocating to

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FF&E) of $119,527, which is capitalized at 11% to a value of $1,100,000 (rounded). The article's model then allocates $1,071,458 to the value of the assembled workforce, including $789,495 to the “opportunity cost to the developer,” and $281,963 to the “opportunity cost to capital.” These allocations leave a value of $28,542 (rounded in the computation to $100,000) to be split between other intangible assets and the real estate. The article notes that “not all assembled workforces may warrant a return on investment.”

The article does not conclude that $1,000,000 should be allocated to the assembled workforce, with just $100,000 to all other intangibles and the real estate, although that is what its example appears to suggest. This article suggests that imputing a return on labor and adding an “opportunity cost to capital” results in a double count of the workforce asset. Since “Perspectives on the Assembled Workforce” does not provide a workable alternative to the 91% of value allocation (not including FF&E) to the assembled workforce, it is important to provide one here. The article wisely points out that direct labor cost plus payroll taxes and benefits do not represent all of the costs of maintaining the workforce. Ongoing recruiting, hiring, training, and efficiency losses must also be accounted for, and some employment necessitates other costs such as screening, testing, advertising, and hiring bonuses. The marina case study in the current article estimates these additional costs in calculating the value of the assembled workforce as an asset to be identified within intangible assets. It is not necessarily recommended to go to this granular level of asset allocations for moderate-sized going concern appraisals, but this additional analysis is provided here for discussion purposes.

**Value of the Assembled Workforce.** There is no evidence that the value of the workforce involves a return on labor cost as suggested in “Perspectives on the Assembled Workforce.” As previously noted, imputing a return on labor and adding an opportunity cost to capital results in a double count of the workforce asset. The value of the assembled workforce is concluded here to be the marginal cost a business would pay in recruiting, advertising, training, and other costs in assembling the complete workforce. If the total staff had to be replaced over a relatively short

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14. The “opportunity cost of capital” might be more appropriately considered as a “cost to cure” in the event of a loss of staff.
period, the loss in efficiency and other expenses would be a significant percentage of the annual payroll cost. Data on what this percentage should be is not available; lacking market data, we are forced to estimate this cost.

In “Perspectives on the Assembled Workforce,” the opportunity cost to capital was based on 5% of six months’ cost, which is a 16% allocation to the workforce of the total going concern for a labor-intensive prison in that article’s case study. In other situations, such as the marina case study here, the assembled workforce might be allocated 20% to even 40% of the annual payroll cost. Use of 40% of annual cost in the current case study resulted in less than 2% of the total assets of the marina being allocated to the workforce. Economies of scale are indicated here as driving the wide variations in the percentage of payroll cost. Total payroll cost is $230,000 (including payroll taxes) in the marina example, making the workforce value $92,000, rounded to $90,000.

Valuation of Other Intangible Assets. With total intangible assets of $670,000 approximating 10% of total permanent assets, there is no concern that the real estate value is overstated, as there is room for more residual intangible assets after allocating to the assembled workforce. The franchise/dealership agreement with a major boat manufacturer is an important asset but difficult to quantify, as it is presumably mutually beneficial for the franchise to continue. The estimated allocation to franchise income is 5% of boat sales gross profit. With $3,000,000 in boat sales at an 18% margin, gross sales profit is $540,000. Taking 5% of this income ($27,000) and capitalizing at the concluded intangibles rate of 20% results in a franchise value of $135,000. The subject’s business name, brand, and website are considered to be one asset, and this asset is considered to have value similar to the franchise, making its value also $135,000. The “true” residual is the goodwill value. The customer list could potentially be allocated separately but is included here with goodwill. This true residual is found by subtracting the values of the three identified intangible assets (totaling $360,000) from total intangibles of $670,000. The resulting value of goodwill and the customer list is $310,000. So, the residual income of the residual income is the remaining $62,000; dividing this income by $310,000 results in a capitalization rate of 20%. The intangible asset allocations are considered reasonable, though it is acknowledged that another appraisal might have allocated more to the franchise and perhaps less to goodwill.

Conclusions Regarding Asset Allocations

Presence of Intangible Assets
Intangible assets generally have been viewed as the residual value, and assets such as goodwill are residual assets. Yet, the value of the assembled workforce is an intangible asset present in all going concerns (but not failing businesses) that have a complete or near-complete workforce. In the past—when all it took was a help-wanted sign to cure staffing deficiencies—the assembled workforce had negligible value. Now that staffing is costlier to cure, it has more significant value but that does not mean the total value of businesses has increased. Allocating increased value to the assembled workforce in some cases involves subtracting part of the value from other assets (tangible and intangible). Most other intangibles are either directly or indirectly tied to the profitability of the business, and if the value of the going concern falls, virtually all of the intangible assets (excluding the assembled workforce) take a hit.

Businesses can have negative goodwill, an asset similar in some respects to external obsolescence in real estate. If a business has negative goodwill to any significant degree, the business is not likely to pass the threshold of being a going concern, as defined by the accounting profession.

Real Estate Value
The cost approach is often the best way to conclude the real estate allocation, but there are cases where it suggests values that are too low or too high. Increasing the rent in the model is a way to increase the real estate allocation, with net rent capitalized at a market capitalization rate. Market-derived net rent as a percentage of sales or net EBITDA/AR may result in a significantly higher real estate value than the cost approach. An allocation to real estate based

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16. However, the cost approach should be avoided for property types in oversupply, such as golf clubs, as the indicated development cost is likely to be too high (even with zero entrepreneurial incentive), with the deduction for external obsolescence determined by the income approach.
upon the cost approach may be a significantly lower value than an allocation based upon a reasonable rent as a percentage of sales or net EBITDAR. Consequently, sales comparisons should also be checked. With asset allocations, there may be more than one right answer.

**Sellers Determine Asking Prices.** Sellers often determine asking asset allocations, which gives sellers some pricing power, though they must find a buyer willing to pay at or near their asking price. Since real estate capitalization rates are lower than FF&E and intangible asset capitalization rates, and since banks prefer to lend on real estate, sellers who allocate higher portions of the value to real estate will tend to achieve higher sale prices. A cost approach using zero entrepreneurial incentive and one that uses 20% may both be defensible (particularly if the lower real estate value also has a higher intangibles value). If there is still intangible value remaining after assigning entrepreneurial incentive at 20%, there is a good chance the 20% is supportable. If there is no intangible asset value after assigning as little as 5% to entrepreneurial incentive, then the entrepreneurial incentive is probably overstated.

**Going Concern Price Is the Main Price Buyers and Sellers Care About.** Applying as much value as possible to the real estate is logical because banks like to finance real estate and because real estate capitalization rates are lower than other rates. Still, many transactions minimize the real estate value while maximizing intangibles, as sellers want to avoid tax on recaptured past years’ depreciation expenses. There are various motivations that tend to skew asset allocations. But generally, buyers want the lowest total price while sellers want the highest total price, making the going concern price a better test of value than any of the asset allocations.

**Appraisers Must Communicate.** A transaction where a business appraiser appraises the business and a real estate appraiser appraises the real estate can result in a misleading report unless the two appraisers communicate and allocate the income generated by the going concern in a complementary way. If the business and real estate appraisals each conclude $75,000 of income for their assigned assets to be appraised for a business generating $100,000 of net EBITDAR, the result will be a double count of cash flow and overvaluation. For example, consider a convenience store where both appraisers perform a cost approach (called the asset approach by business valuators) and the real estate appraiser considers the underground gas tanks to be attached to the real estate and the business appraiser considers the tanks to be FF&E, resulting in an asset double count via the cost approach. Unfortunately, the US Small Business Administration (SBA) fails to warn or require reconciliation on this issue in its standard operating procedures.\(^{17}\)

**Does Strength of Very Profitable Going Concern Impact Value of Real Estate Compared to Weaker, Barely Profitable Going Concern?** It is recognized that many in the appraisal profession consider the value of the fee simple interest to be unaffected by the strength of the going concern occupying the property. This article argues that the appraiser needs to analyze the strength (and creditworthiness) of the going concern in a way similar to analysis of a tenancy in a leased fee appraisal.

It would be difficult to argue against the concept of a property with a credit tenant paying market rent being worth more than a similar property with a similar rent and lease term but a non-credit tenant. This article suggests that the strength of the occupant matters, whether the occupant is a tenant or part of a going concern (with fee simple property rights). The example that follows violates a principle claimed by some appraisers that there can be only one fee simple market value for a property. While good appraisers will disagree with the argument from the next example, we have been unable to find any explicit conflict with the teachings of the Appraisal Institute.

Suppose there are two fee simple appraisals of two restaurants of similar age and size in the same market. One restaurant is a very successful restaurant; it is also a credit tenant, and it buys out the landlord. The lease had ten years remaining at market rent and a 5.5% capitalization rate in a recent appraisal. The average market-extracted capitalization rate for non-credit tenants is 9%. The other restaurant is a recently purchased...

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17. At press time, the most recent SBA standard operating procedure is SOP 50 10 6, “SBA Lender and Development Company Loan Programs,” effective October 1, 2020, https://bit.ly/SBA_SOP.
The Total Excess Earnings Model Revisited—It’s Not Just for Going Concerns

start-up restaurant that is owned by a sole proprietor of average means. When performing the income approach (and utilizing TEEM for the real estate allocations) for these two fee simple appraisals, both are assigned the same market rent. But do both real estate allocations get the 9% average non-credit tenant capitalization rate? Or does the former credit tenant get a 7% real estate capitalization rate because the next day that owner could find a buyer for a sale leaseback at a 5.5% rate? (Not only are credit tenant capitalization rates much lower, but marketability is much greater than for other properties.) The start-up has no ability to refinance or to interest an investor in a sale leaseback. Because of its financial inferiority as a start-up going concern, this property gets a 150-basis-point premium over the average real estate capitalization rate at 10.5%. The 7% and 10.5% capitalization rates for the two properties seem more reasonable than assigning 9% capitalization rates to both simply because both are fee simple appraisals. The strength of the occupant impacts value.

The real estate value is greater when vacancy is low or zero. When a successful going concern (such as a restaurant, car dealership, or funeral home) occupies a property, long-term vacancy is likely to be zero. When a tenant is more likely to vacate—whether during a lease or at the conclusion of a medium-term lease—there are potential costs to the property owner from vacancy, improvements, and commissions. A business that may be forced to move by a landlord at lease end faces moving costs, improvement costs, and business interruption losses, impacting the leasehold value negatively. Weaker going concerns will also have greater vacancy. The low vacancy of a successful going concern can be reflected either in the income allocation to the real estate or in the selected real estate capitalization rate. Either way, the successful going concern is superior to most other properties in this respect.

Typically, little or no value is given to the leasehold improvements since a new occupant will have little use for these user-specific real estate improvements (under the premise of so-called dark store theory). But these improvements are necessary for the going concern to generate its income, and going concerns are valued including all assets necessary for continued operations. A strong and successful going concern is likely to remain at the current location for the long term, and therefore the leasehold improvements (that are attached to the real estate) have value for such going concerns while often not so in medium-term lease situations or in weaker going concerns. Furthermore, the FF&E value is greater if it is not moved. Some FF&E will be damaged when it is moved, and some FF&E is acquired specifically to fit into a specific location. If the business moves, the FF&E is worth something less, making FF&E in a successful owner-occupied property more valuable.

Business value will be greater where there is greater potential for the business to have a long life. If the business moves, the business value will likely be impaired. Logically, a weaker going concern has a higher capitalization rate and less business value as well.

When the business owner also owns the real estate, the going concern brings with it greater flexibility in the management of cash flow and in decision making, such as making a physical change to the real estate to improve functionality for the business. This greater flexibility is attractive to buyers of going concerns, and naturally should be reflected in prices paid.

The above reasons will support a higher value for a successful, owner-occupied going concern compared to a weaker going concern, or a similar leased property with a non-credit tenant (and with the income and value split between landlord and tenant). This article suggests that a strong and successful going concern is similar in some respects to the leased fee property with a credit tenant, as both situations have strong occupants, which entail less vacancy than other leased fee or fee simple occupancies. Such strong going concerns also have the potential for greater growth to the real estate income, with market-derived rent calculated as a percentage of sales or EBITDAR having good potential to increase.

Final Thoughts on TEEM

The example presented in this article shows how to allocate the income of multiple property types that are operated together. The concept here is not new, as it is no different than allocating income to land and to improvements separately (the land residual method), which is often performed.

Some entries into TEEM are difficult to derive. The best way to complete TEEM is to use the best data available to conclude the most reliable asset values, income allocations, and rates. The most difficult entries can become residual numbers that are calculated by the model, adding to its simplicity as well as accuracy.
As shown here, TEEM incorporates high reliance on the cost approach (used for the total real estate and FF&E allocations), while many of the other entries are income based. But as demonstrated in Exhibit 3, “Sales Comparison Indicated” (row 4) is a powerful addition to the model, as it allows weight (potentially substantial weight) to be given to a sales comparison analysis. For example, if reliable market comparables show that the subject’s office space is unlikely to be worth more than $150 per square foot, adjustments can be made to the income or capitalization rate so that the value comes in at or below $150 per square foot. The model becomes a reconciliation of all three approaches to value, adding to its power.

The original excess earnings model was designed over 100 years ago to conclude the value of the intangible assets as a residual. It is best to not make the model calculate other asset values as residuals. Real estate in particular should be valued via at least one approach and possibly as many as three approaches to value. It can be preferable in some cases to use more than one approach for the FF&E valuation. Both the sales comparison and cost approaches might be used. The more the model is used for reconciliation purposes and the less it is used to make actual calculations, the more effective the model is in supporting asset allocations, whether involving multiple property types or components of a going concern, or both, as demonstrated in this article’s example.

It has been argued by some that a value premium for the fee simple interest of successful going concerns is not applicable (compared to the fee simple interest of a weaker going concern or a weaker leased fee interest). Use of TEEM makes it evident that the going concern value for a strong and successful going concern is the highest and best use value, which is synonymous with market value. The real estate that is part of a successful going concern can generally only sell as part of a going concern (or via a sale leaseback involving that going concern). Why close a successful restaurant and sell it for a lower alternative fee simple value? To do so violates the principle of highest and best use.

This article uses TEEM as a model to allocate within the asset class of intangibles. Although this analysis is seldom performed, it has become necessary due to the increasing importance of the assembled workforce as an asset of going concerns. While goodwill and brand value are based on residual value, the assembled workforce is not, making it important to separately estimate its value. There is little available market data to guide appraisers, and it is recognized that we are in the early stages of fully understanding the nature and value of the various types of intangible assets.

### About the Authors

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**Additional Resources**

Suggested by the Y. T. and Louise Lee Lum Library

**American Bar Association**
- *Business Valuation: A Primer for the Legal Profession*
- *The Intangible Assets Handbook*
- “Young Lawyer Focus: Enterprise Value as Distinct from Equity Value”
  https://bit.ly/3hPpoH1

**Appraisal Institute**
- **Education**
  *Fundamentals of Separating Real Property, Personal Property, and Intangible Business Assets*
- **Going Concern Forum, Valuation Issues in Appraising Realty and Non-Realty Components**
  http://www.appraisalinstitute.org/assets/1/7/GoingConcern_Presentation_8_17_2011.pdf
- **Lum Library, External Resources, Resource Links [Login required]**
  Knowledge Base Bibliographies—Business Valuation
- **Professional Practice—Value of Going Concern [Login required]**
- **Publications**

**Business Valuation Resources—News & Research**
https://www.bvresources.com/products/news-and-research

**Small Business Administration—Resource Library**
https://www.sba.gov/partners/sbics/resource-library

**Willamette Management: Conference Presentations, Webinars, and Professional Journal Articles—Going Concern**
http://willamette.com/resources_presentations.html
Introduction

This article explores unique issues that can present challenges and affect a land valuation. The challenges discussed here include contaminated sites, situations when the highest and best use is not the current use, excess land versus surplus land, plottage value, development rights or entitlements, tax increment financing (TIF) districts, and ecological land.

Contaminated Sites

The valuation of contaminated properties typically involves specialized terms, definitions, and techniques. The following terms are from Advisory Opinion 9 of the Uniform Standards of Professional Appraisal Practice (USPAP).

Environmental Risk: The additional or incremental risk of investing in, financing, buying and/or owning property attributable to its environmental condition. This risk is derived from perceived uncertainties concerning:
1) the nature and extent of the contamination;
2) estimates of future remediation costs and their timing;
3) potential for changes in regulatory requirements;
4) liabilities for cleanup (buyer, seller, third party);
5) potential for off-site impacts; and
6) other environmental risk factors, as may be relevant.

Impaired Value: The market value of the property being appraised with full consideration of the effects of its environmental condition and the presence of environmental contamination on, adjacent to, or proximate to the property. Conceptually, this could be considered the “as-is” value of a contaminated property.

Remediation Cost: The cost to cleanup (or remediate) a contaminated property to the appropriate regulatory standards. These costs can be for the cleanup of on-site contamination as well as mitigation of off-site impacts due to migrating contamination.

Remediation Lifecycle: A cycle consisting of three stages of cleanup of a contaminated site: before remediation or cleanup; during remediation; and after remediation. A contaminated property’s remediation lifecycle stage is an important determinant of the risk associated with environmental contamination. Environmental risk can be expected to vary with the remediation lifecycle stage of the property.

Source, Non-source, Adjacent and Proximate Sites: Source sites are the sites on which contamination is, or has been, generated. Non-source sites are sites onto which contamination, generated from a source site, has migrated. An adjacent site is not contaminated, but shares a common property line with a source site. Proximate sites are not contaminated and not adjacent to a source site, but are in close proximity to the source site.

This material originally appeared as Chapter 16 of Land Valuation: Real Solutions to Complex Issues (Chicago: Appraisal Institute, 2022).
Unimpaired Value. The market value of a contaminated property developed under the hypothetical condition that the property is not contaminated.  

The value of a site, once remediated, does not necessarily equal the unimpaired value of that site because the site may still suffer from stigma or other lingering issues to which the market is responding. 

According to Advisory Opinion 9 of USPAP, the relevant property characteristics may include, but are not limited to:
1) whether the contamination discharge was accidental or permitted;
2) the status of the property with respect to regulatory compliance requirements;
3) the remediation lifecycle stage (before, during or after cleanup) of the property as of the appraisal date;
4) the contamination constituents (petroleum hydrocarbons, chlorinated solvents, etc.);
5) the contamination conveyance (air, groundwater, soil, etc.);
6) whether the property is a source, non-source, adjacent or proximate site;
7) the cost and timing of any site remediation plans;
8) liabilities and potential liabilities for site cleanup;
9) potential limitations on the use of the property due to the contamination and its remediation; and
10) potential or actual off-site impacts due to contaminant migration (for source sites).

The appraiser should consider the impact on value that results from the following three effects:

- **Cost effects**, which include but are not limited to clean-up or remediation costs, monitoring costs, legal costs, additional operating expenses, additional financing costs, and the like.

- **Risk effects**, which involve the extent to which the contamination may be defined and readily quantifiable, difficult to readily quantify, or unknown and undefined. A risk allowance or adjustment would need to be made and would increase for each scenario in the same order as listed. These risk effects are reflected in the stigma that is sometimes associated with contaminated sites by market participants and users.

- **Use effects**, which involve limitations on the utility of a site due to contamination or remediation. Use effects may or may not limit the highest and best use of the site. For example, the highest and best use may be limited if a deed restriction or covenant is imposed. On the other hand, subsurface contamination may be capped with few, if any, limitations on highest and best use. If there are limitations, the impacts could affect the maximal productivity of the site and hence its value.

In summary, the value of a contaminated site is affected by cost effects, risk effects, and use effects. Therefore, the valuation of contaminated

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sites is a serious issue that requires a high level of competence. The issues may not be readily apparent to either the market participants or an appraiser who lacks competency. With respect to feasibility, the remediation costs and who pays them in relation to the unimpaired value is a significant consideration.

Some government websites include information regarding the sale of contaminated sites. An appraiser could investigate the nature of the contamination, the buyer’s or seller’s estimate to cure or remediate the contamination, and possibly the amount that would have been paid if the land was not contaminated.

Valuation Methodologies for a Known Contaminated Site
The value of a contaminated site can be determined by deducting the diminution in value caused by the contamination from the unimpaired value of the site. The first step of this process is to value the site “as if clean” (hypothetical condition). The second step is to deduct the estimated costs of cleanup and allowance for use effects and risk effects (which are collectively known as “diminution costs”). This equals the value “as contaminated.” Issues regarding contaminated sites are discussed in Examples 1–5.

Example 1: The Feasibility of Known Remediation Costs Needs to Be Analyzed
The market indicates that a parcel will be worth $1,000,000 after it undergoes remediation to remove contaminated soil. The remediation is estimated to take 12 months at a cost of $900,000. Market research indicates that investors require a 13% rate of return to remediate parcels impacted by contamination. Based on this information, is the remediation economically feasible?

In this case, remediation would not be economically feasible. The present value of $1,000,000 is approximately $885,000 when discounted at 13%. Because the cost of remediation is greater than the value, it does not make economic sense to remediate the site. However, regulatory issues may require compliance. Some appraisers would say that the land value is –$15,000. Others might say it has no value with a $15,000 liability. On the other hand, suppose a grant that reimburses 50% of the remediation costs is available. In this case, the current market value of the parcel in its “as is” condition is greater than the cost to cure. The remediation is now feasible. The indicated value is $435,000 ($885,000 – $450,000).

Example 2: The Cost of Groundwater Remediation Is Secured by a “Deep Pocket” Corporate Indemnification
In this case, the cost of remediation to cure groundwater contamination from underground storage tanks (USTs) is known and is the responsibility of a prior owner (e.g., a major oil company) to fund and clean up. There may be little or no impact on value, especially if the remediation work is to be completed in the near future. However, it may be more difficult to obtain financing, given that some lenders will not lend on contaminated property notwithstanding these circumstances.

Example 3: Remediation Has Been Completed and a “No Further Action” (NFA) Letter Has Been Issued by the Appropriate Regulatory Agency
In this case, there may be no impact on value except for the possible capitalized cost of ongoing monitoring and provided the market is not concerned with new regulatory requirements prompting withdrawal of the NFA letter.

Example 4: Residual Contaminants Still Exist in the Subsurface, but the Site Has Been Capped and a Restrictive Covenant Has Been Recorded on the Site
In this case, the residual contaminants are likely to impact marketability and result in stigma (the fear of potential future liability and cleanup costs). Capping the site and restrictive covenant may limit the highest and best use and require future monitoring and maintenance costs.

Example 5: Contaminants Affect the Subject Site and Have Migrated to Adjoining Site(s)
In this case, the previous owner or user who caused the problem is not able to indemnify. The cleanup costs are unknown but suspected to exceed the site’s “as if clean” value. In this case, the value of the site could be negative (or $0 with a liability) if the estimated costs of cleanup exceed the value as if clean.
Situations When the Highest and Best Use Is Not the Current Use

Highest and best use is not necessarily always a current use. Highest and best use can be a future use, such that a future use value would need to be discounted to present value dollars.

Example 6: Highest and Best Use Is Not the Current Use

The appraiser is valuing a parcel of land for which the highest and best use is either agricultural use or residential development. Application of the best unit of comparison supports residential development on the subject site as the highest and best use. However, market analysis found that a residential building moratorium, which resulted in an undersupply, was recently lifted and a large amount of supply is being brought to market. Absorption after the lifted moratorium is estimated to be 400 units per year and is expected to remain stable. One hundred units are currently available. Recent land sales add another 1,910 units. Under these circumstances, approximately five years of supply are on the market (2,010 units / 400 units per year = 5 years).

In forecasting the property’s capture, the appraiser concludes that the existing competition is superior and that it would be absorbed prior to the development of the subject property.

Suppose that land values are projected to increase by 3% annually despite the moratorium. The appraiser further projects that development of the subject property will not occur for five years. A 14% discount rate is deemed appropriate for risk and holding costs during the interim.

The subject property will be worth 3% more per year, compounded, when it is ready for development in five years. However, the present value of the future value would have to be determined using the 14% discount rate. If the present value for residential development is less than the present value for continued agricultural use, then the highest and best use is continued agricultural use. However, there may be a point in time when the value for residential development exceeds continued agricultural use, in which case the agricultural use is an interim use pending future residential development. The highest and best use conclusion should also state the timing for the use and the market participants.

When the highest and best use of vacant, unused land is to hold it as an interim use for future development, the land is regarded as speculative land. Such land would not be purchased by a current user—i.e., a developer who intends to develop the site today for the future highest and best use. Speculative land markets can be among the most volatile and often involve buyers and sellers who are less than fully informed.

Excess Land vs. Surplus Land

Both excess land and surplus land refer to land that is part of an existing ownership but is not needed to support the highest and best use of the property as improved. Surplus land is additional land that allows for future expansion of the existing improvements but cannot be developed separately and does not have a separate highest and best use; it is associated with an improved site that has not been developed to its maximum productivity according to its highest and best use as if vacant. For an improved site, excess land is land that is not needed to serve or support the existing improvements. For a vacant site or a site considered as if vacant, excess land is the land not needed to accommodate the site’s primary highest and best use. Such land may be separated from the larger site and have its own highest and best use, or it may allow for the future expansion of the existing or anticipated improvement. The following examples discuss how an appraiser should determine whether land should be considered excess land or surplus land.

Example 7: Surplus Land

A retail building has 10,000 square feet of surplus land that is paved for overflow parking. The surplus land cannot be parceled off and sold separately, and it is not economically feasible to expand or replace the building. Although land sells for $15 per square foot in the vicinity, the building owner is able to earn an extra net rent of $2,400 during the month of September, when the city rents the spaces as overflow parking for its annual Harvest Festival. Overall capitalization rates in the market range around 8.00%.

If the land cannot be sold or used as part of an expanded building, it does not contribute $150,000 to the value of the property (10,000 sq. ft. x $15 per sq. ft.). The owner can earn $2,400 per year after expenses from the surplus land. Capitalizing this amount at 8.00% equals $30,000. The value of the surplus land is based on the income being forecasted to be earned over a long period of time or the capitalization reflecting that the income is not earned. Otherwise, it would be more appropriate to discount the earned income at an appropriate yield rate.
Example 8: Excess Land vs. Surplus Land
An appraiser has been asked to appraise a 91.83-acre parcel that has been improved with a 1,900-sq.-ft. frame house with three bedrooms and 1½ bathrooms. The property is also improved with an older barn that is nearing the end of its economic life and a relatively new equipment shed of pole (post and beam or post-frame) construction that can house a farm tractor and implements. The current zoning ordinance is the only law controlling the subdivision of land in this location. The ordinance requires that a parcel have a minimum size of 7.0 acres and a minimum of 300 feet of frontage along a public roadway. The ordinance also requires each subdivided lot to have a well drilled on it (generating a minimum of five gallons of potable water per minute) as well as soils testing to determine that both a primary and a secondary location exist for the construction of an on-site sewage disposal system. An examination of market data demonstrates that a typical rural residential buyer in this market area desires a site with 7 to 15 acres. For the purposes of this example, assume that a property must have at least 50 tillable acres in order for the agriculture to be financially feasible. Refer to the sketch shown in Figure 16.1.

Scenario 1:
The property owner is an active farmer who has completed all of the previously described requirements and recorded a plat similar to the sketch shown in Figure 16.1. The lots can be transferred to a third party at any time the property owner elects. The current owner platted the lots as a defensive technique against fluctuating commodity prices for corn and soybeans, which are the primary crops grown on the land. The property owner is currently farming the entire property. In the past year, the price of the commodities has dropped, causing the owner to lose money on farming operations and have a need to recapitalize. Demand for similar lots in this
market area is high, with a shortage of lots available for sale. The typical exposure time for similar lots is 90 to 120 days. According to the local MLS, there is currently a 6-month supply of lots available, with few lots being offered for sale by owner (FSBO). Rural residential lots are currently selling for a price per acre that is approximately three times the price per acre for agricultural land.

The highest and best use of the property as though vacant and as improved is to continue the agricultural use for Lots 1 and 5 and to sell Lots 2, 3, and 4 to third-party buyers for use as rural residential building sites. The sale of the lots is maximally productive due to strong demand and a sale price per acre that is substantially higher than the agricultural land value. Lots 2, 3, and 4 have a separate highest and best use; as a result, they represent excess land and should be valued separately.

Scenario 2:
The plan shown in Scenario 1 is simply a concept plan; in other words, it is a sketch on a piece of paper given to the appraiser by the property owner. A survey has not been prepared, soils testing has not been done to determine if suitable locations exist for on-site septic systems, and wells have not been drilled to determine if there is water of sufficient quantity and quality to support residential dwellings on the proposed lots. Additionally, the market demand for similar lots is currently very low in this market area, and there is a four-year supply of lots available for purchase in the local MLS with additional but unquantified FSBO lot inventory. Commodities prices are currently high enough to allow agricultural operations to be financially feasible.

The highest and best use of the 91.83-acre property as though vacant is agricultural use. The highest and best use of the 91.83-acre property as improved is also agricultural use. The property contains surplus land because 50 tillable acres are necessary for financially feasible agricultural operations, the necessary steps to allow for subdivision development have not been completed by the current owner, and there is a lack of market demand for rural residential lots.

Scenario 3:
All of the lots other than Lot 5 have been sold to third parties, and the appraisal is limited to Lot 5 only. A residence that meets the requirements of a typical buyer for this type of property was recently constructed on Lot 5. Farming operations have ceased since the demand (and thus the prices) for corn and soybeans (which were previously grown on the site) have dropped below a value that allows farming to be financially feasible.

Based on the information provided, the highest and best use of Lot 5 as though vacant is a residential building site, and the highest and best use as improved is a rural residence. Lot 5 contains surplus land in this example because it has more than the market-expected 7 to 15 acres for a rural residential building site, but it cannot be further subdivided.

### Plottage Value

Plottage value is the increment of value that often occurs when two or more sites are combined to produce greater utility, resulting in a higher productivity or income than could be obtained from the individual smaller sites. This term is generally used to describe circumstances in which larger sites are more valuable per square foot than smaller ones. Examples include the assembly of several land parcels for a regional mall or the acquisition of access rights for a landlocked parcel. Comparable land sales that involve plottage or the potential for it may require a negative adjustment for conditions of sale, or larger sites may be worth less per square foot or per acre than smaller ones. This adjustment could be labeled as “negative plottage,” “economies of scale,” or “diminished marketing ability.” It is inappropriate to conclude that the highest and best use of a site is assembly with a property owned by another if the assembly is not reasonably probable.

### Example 9: Plottage Value

A city’s downtown area is subdivided into rectangular blocks, each consisting of 10 lots measuring 50 ft. by 100 ft. Most lots are individually owned and improved with older, two-story buildings. The buildings are legal nonconforming uses because they were developed before on-site parking regulations were imposed. The interior properties typically sell for $250,000 and the corner parcels typically sell for $300,000 to small retailers or small office users. One block had been assembled into a single ownership over the years and recently sold to a developer for $3,750,000, or $75 per square foot. The developer demolished the improvements and built a successful office tower. Other comparables support this decision.

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sale price, and fundamental demand analysis suggests that the market can support another office tower.

A developer has been quietly acquiring the properties in Block C, and now only one property remains. This remaining property is an improved lot in the middle of the block’s north side. Without the remaining lot, no plottage is achieved. Refer to Figure 16.2 for a map of the subject property.

If demolition equals salvage and no discount is indicated for a bulk sale of nine lots, what is the value of this remaining property?

Based on the comparable sales and ignoring the adjoining nine lots, the value of the subject property is $250,000.

The “quiet” developer’s nine lots are worth $2,450,000 [(4 × $300,000) + (5 × $250,000)], less a discount for bulk sale, which is zero in this case (for the sake of simplicity). However, if the developer can acquire the tenth lot, the block becomes worth $3,750,000. This indicates that the value of the tenth lot to the developer is $1,300,000 ($3,750,000 – $2,450,000).

Assuming that it is reasonably probable, clearly the highest and best use is to join the subject property to the nine-lot ownership. But what would the market value be?

Market value is based on conventional economic theory, which predicts a unique market-driven price at the point where supply equals demand in a competitive market. Even in a monopoly (in which there is only one seller) or a monopsony (in which there is only one buyer), a unique price is predictable. But as soon as the market consists of only one seller and one buyer, which is known as a bilateral monopoly, economic theory can no longer predict a unique price and hence there is no market value. Bilateral monopoly theory predicts a minimum sale price and a maximum sale price but no unique price; it suggests that any observed transaction price depends not on supply or demand but on the negotiating or bargaining skills of the buyer and the seller.

In this case, the subject property would sell for at least $250,000 and at most $1,300,000. If the owner of the subject property plays hardball, he or she might be able to extract all or nearly all of the $1,300,000 value increment from the developer. If the developer plays hardball, he or she might convince the seller to sell for only slightly more than $250,000. Or the developer and the seller might agree to split the enhancement. Of course, if the seller lacks full information, that means his or her negotiating position is weakened.

Some appraisers would likely argue that the $250,000 conclusion is the market value and $1,300,000 is the plottage value but not the market value. They would reason that $250,000 is the value to a broad number of buyers, whereas $1,300,000 is the value to only one buyer and hence not a “market” value. In such a situation, a large number of buyers would be willing to pay more than $250,000 for the right to be able to negotiate with the quiet developer. Valuing the property at $250,000 neglects to place a value on that property right.

Some appraisers might argue that $1,300,000 is the investment value, since that is the most the quiet developer is willing to pay. However, this would be an inappropriate interpretation of the term; any owner of the nine lots would be willing to pay up to $1,300,000, not just the “quiet” developer in this case.

It would probably be appropriate for the appraiser who is required to develop an opinion of the market value of this property as a point estimate to report three values:

• $250,000, which is the minimum, stand-alone value
• $1,300,000, which is the maximum plottage value, which reflects the contributory value of this parcel to the whole
• An amount somewhere in between in which a buyer and seller share the $1,050,000 enhancement, based on the appraiser’s estimate of the negotiating skills of the two parties and employing the expected value technique

It would probably be misleading to report only one value without at least prominently explaining the opposing point of view. It would also be misleading to refer to the

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**Figure 16.2 Subject Property**

[Diagram showing a map of the subject property with labels for A to H and N.]
midpoint amount as the “market value,” since it would not be generated by market forces but only by two individuals, and any other two individuals with different negotiation skills would generate a different sale price.

**Development Rights or Entitlements**

**Land Development Rights**

A development right, also called an entitlement in some areas, is the right to build on, over, or beneath a property, subject to the government’s right of police power, i.e., local zoning and building codes. The right to development is fundamental to private property in the United States and was reaffirmed in the 1987 *Nallan v. California Coastal Commission* decision.

In some areas, appropriate zoning is relatively easy to secure or is all that is needed to improve a parcel of land. In other areas, development approvals are necessary in addition to appropriate zoning, can be costly, time-consuming, and risky to acquire, and may result in a development plan that is less than what the zoning code permits. In these areas, two physically identical parcels of land can have significantly different values.

Development rights may or may not be transferable. A transferable development right (TDR) is “a development right that cannot be used by the landowner, or that the owner chooses not to use, but can be conveyed to landowners in another location or leased for a period of years to then revert back to the original owner; TDRs are said to be transferred from a landowner in a sending district to the use of a landowner in a receiving district.” Examples 10 and 11 describe scenarios involving the sales of TDRs.

**Example 10: Transferable Development Rights**

A jurisdiction includes land designated as an agricultural reserve that carries rural density transfer zoning. This zoning gives strong preferences to agriculture, forestry, and other open space uses. Density in the agricultural reserve is limited to one house per 25 acres, with a minimum one-acre lot size. Properties in the agricultural reserve have transferable development rights at the rate of one TDR per five acres. These TDRs can be sold to developers who want to use them to construct houses in designated TDR-receiving areas at a greater density than what would otherwise be allowed.

**Example 11: Transferable Development Rights**

A site allows 1,000,000 square feet of office space. The site is already developed with 600,000 square feet. In some jurisdictions the extra 400,000 square feet of development rights can be sold and developed in a different location. This concept is commonplace in urban locations.

The use of development rights on land often carries requirements (i.e., mitigations) with it, including items such as the following:

- The replacement of delicate ecosystems on another parcel of land when the ecosystems are disturbed by development
- Replacement of the topsoil or reseeding the surface of a strip mine upon the completion of mining operations
- Purchase of the land for the water rights necessary to annex a land parcel to an urban area

These requirements are a common occurrence. In some cases, these items are restrictions on the property rights conveyed. In other cases, they might be defined as conditions of sale.

**Air Rights**

Air rights are another form of development rights, not unlike land development rights. Air rights involve the right to undisturbed use and control of designated air space above a specific land area within stated elevations. Examples of situations that involve air rights include developments built above public streets and buildings constructed above historic properties. Estimating the value of air rights can be straightforward and done with a comparison of sales of other air rights, but the necessary data is often hard to find. In theory, the value of the air rights would be the value of the development rights less the additional cost (present or ongoing) to develop. In many cases, the first step would be to deal with the development rights.

When air rights are held by someone, there may also be separate surface rights. For example,
a building might have retail outlets on the surface that are owned separately from the offices and condominiums that have been built overhead. As another example, a highway department may have the right to build a road on the surface of land (the surface rights), while a developer has the right to construct an office building above the road (the air rights).

**Subsurface Rights**

Subsurface rights are another form of development rights. Subsurface rights are the rights to the use and profits of the underground portion of a designated property. Subsurface rights usually refer to the rights to extract coal, minerals, oil, gas, or other hydrocarbon substances as designated in the grant. Subsurface rights may include a right of way over designated portions of the surface. An example of below-ground development rights is a parking facility underground with an office building above, with the parking being owned separately from the office building and the underground utility easements for fiber-optic cables and mining rights.

Air, surface, and subsurface rights are not significantly different from leasehold/leased fee considerations. They might be much more difficult to calculate, but the division of a land parcel into air, surface, and subsurface components is nothing more than a division of property rights.

**Tax Increment Financing Districts**

A district within which an improvement project is planned is usually established as an area in size that is much larger than the area of the project. Anticipated tax revenue increases are leveraged to help finance the project costs. A base tax value is established when the tax increment financing (TIF) is created, and tax revenues calculated on that base tax value continue to flow to normal taxing bodies.

The tax revenues above the base tax amount (tax increment) flow to the TIF authority to pay project expenses. When the TIF expires (typically in 5 to 25 years), all tax revenues return to the normal taxing bodies. See Figure 16.3 for a timeline illustrating how tax increment financing works.

TIFs commingle public (taxing district) and private (developer) funds. TIFs are only created if an increase in tax revenue is expected because of the development beyond that which is generated by the existing use or non-use. Since TIF revenues typically result in a subsidy to a private developer, most governing authorities require that the area to be redeveloped be “blighted,” in that it would not recover if not for the subsidized redevelopment. In other words, redevelopment would not attract private investment without government intervention.

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As part of the TIF planning process, a feasibility study is often performed to ensure that tax revenues are not being inappropriately redirected to an area that would experience revitalization without public assistance. A comparison of the internal rate of return with and without the TIF revenue is a common method of performing this analysis.

**Example 12: Tax Increment Financing**

A project involves the purchase and development of land in a blighted retail district that has been in the declining stage of the neighborhood lifecycle for many years. After a thorough market analysis, the following conclusions are reached:

- The project will have a five-year holding period and then be sold.
- The property has a current market value of $4,000,000, and development costs are estimated at $8,000,000.
- The present value of the future tax revenue increases from all sources is estimated at $4,250,000, of which 80% is available to the developer.
- The terminal capitalization rate is estimated to be 6%, with a selling expense of 4%.
- Conversations with local developers indicate that a project such as this would require at least a 10% internal rate of return (IRR) to attract private investment.

The projected net operating income for the developed project is summarized in Table 16.1.

<table>
<thead>
<tr>
<th>Table 16.1 Projected Net Operating Income</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual Cash Flows</strong></td>
</tr>
<tr>
<td><strong>Year 1</strong></td>
</tr>
<tr>
<td>Income</td>
</tr>
<tr>
<td><strong>Potential gross rental income</strong></td>
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<td><strong>Less vacancy rate</strong></td>
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<td>10%</td>
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<tr>
<td>Expenses</td>
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<tr>
<td><strong>Management fee</strong></td>
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<tr>
<td><strong>All other expenses</strong></td>
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<td><strong>Total expenses</strong></td>
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<td>$144,000</td>
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<tr>
<td><strong>Year 2</strong></td>
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<tr>
<td>Income</td>
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<tr>
<td>$824,000</td>
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<tr>
<td><strong>Less vacancy rate</strong></td>
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<td><strong>Total expenses</strong></td>
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<td><strong>Year 3</strong></td>
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<td>Income</td>
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<tr>
<td><strong>Effective gross income</strong></td>
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<tr>
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<tr>
<td>Expenses</td>
</tr>
<tr>
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<td><strong>Total expenses</strong></td>
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<td><strong>Year 6</strong></td>
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<td>Income</td>
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<td><strong>Effective gross income</strong></td>
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<tr>
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<tr>
<td>Expenses</td>
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<td><strong>Management fee</strong></td>
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<td>$33,387</td>
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return is insufficient to adequately attract and compensate investors for the time and risk.

If the amount of TIF revenues being allocated to the project by the governing authority were $8,000,000, then the IRR of 32.61% is triple the amount that would be needed to attract private investment.

**Ecological Land**

An ecological site is a distinctive type of land that differs from other types of land in its ability to nurture a characteristic natural plant or animal community. An ecological site supports a native plant or animal community typified by an association of species that differs from that of other ecological sites in terms of the type or proportion of species or in terms of total production. From the appraiser’s perspective, the key is understanding that an ecological site is unique unto itself.

Appraisers who specialize in appraising ecological sites have acquired a high degree of experience and knowledge in order to develop credible opinions of value. They should develop the necessary data for analysis that cannot be found via traditional sources. However, while this topic is worthy of mentioning, it is beyond the scope of this article.

**About the Author**

Gary S. DeWeese, MAI, is the founder of RE Strategic Solutions, a real estate consulting firm. His practice focuses on complex and unusual assignments, including public-private development, long-term ground leases, acquisition due diligence, major lease negotiation, mediation, arbitration, and litigation support. He is the former assistant treasurer—real estate and director of real estate investment of the University of California’s pension and endowment funds (one of the largest institutional investors in the United States), where he was the senior management executive responsible for both publicly traded and private direct real estate investments and head of the corporate real estate group. DeWeese has an MBA from the University of California, Berkeley, where he has also guest lectured. He is a member of and an instructor for the Appraisal Institute, for whom he also has written a number of seminars and served on course development and review teams. He has also authored numerous articles for *The Appraisal Journal* and other publications and spoken at conferences worldwide. Contact: garydeweese@comcast.net

**Additional Resources**

Suggested by the Y. T. and Louise Lee Lum Library

**Appraisal Institute**

- **Education**
  - [General Appraiser Site Valuation and Cost Approach](#)
  - [Residential Site Valuation and Cost Approach](#)

- **Lum Library, Knowledge Base [Login required]**
  - Information files—Land and site
  - Information files—Value

- **Publications**
  - *The Appraisal of Real Estate*, fifteenth edition
From Our Readers

“The Appraiser’s Role in Calculating Casualty Loss Deductions from Natural Disasters”

To the Editor

In researching guidance on appraisal disaster work, I came across The Appraisal Journal article “The Appraiser’s Role in Calculating Casualty Loss Deductions from Natural Disasters” (Winter 2014) by James K. Smith, PhD, JD, and Barbara Lougee, PhD. I found this article to be misleading.

In that article, the authors reference the Internal Revenue Code 170 definition of qualified appraiser related to charitable deductions and appear to create a bias towards appraisers with an Appraisal Institute designation. However, the relevant code is IRS Publication 547, which does not state the appraiser attributes mentioned in the article. Publication 547 on casualties, disasters, and theft states, “Several factors are important in evaluating the accuracy of an appraisal, including the following: The appraiser’s familiarity with your property before and after the casualty or theft, the appraiser’s knowledge of sales of comparable property in the area, the appraiser’s knowledge of conditions in the area of the casualty, and the appraiser’s method of appraisal.”

I think it is in the interest of appraisal professionals to publish accurate facts relevant to casualties, disasters, and theft, not information listed in the Internal Revenue Code for charitable deduction purposes.

Ashley Kaneta
Denver, Colorado

Authors’ Response

We appreciate Ms. Kaneta’s comments on our use of the term “qualified appraiser” in The Appraisal Journal article “The Appraiser’s Role in Calculating Casualty Loss Deductions from Natural Disasters.” The relevant part of the article that she is objecting to states as follows:

It is important for the appraiser selected to aid in the calculation of the casualty loss to be both qualified and competent. The IRC defines a “qualified appraiser” as an individual who: (1) has earned a recognized appraisal designation from a recognized professional organization, (2) regularly performs appraisals for compensation, and (3) can demonstrate verifiable education and experience in valuing the type of property for which the appraisal is being performed. An example of a recognized appraisal designation “is a designation similar to the Member of the Appraisal Institute (MAI).” IRS regulations also state that taxpayers should use a “compe-
tent appraiser” to determine the decline in FMV caused by the casualty. In determining the competency of an appraiser, the IRS lists several factors to consider, such as the appraiser’s: (1) knowledge of conditions in the area, (2) familiarity with the property before and after the casualty, (3) knowledge of sales of comparable property in the area, and (4) method of appraisal.

We point out in the article that “it is important” for an appraiser to be “both qualified and competent.” We are not saying that it is required for the appraiser to be “qualified,” but it certainly is important. The language we use in the article that defines a “qualified appraiser” is taken directly from the Internal Revenue Code and IRS Regulations, which are both considered to be primary sources of law (i.e., IRC 170(f)(11)(E)(ii) and (iii) and Reg. § 1.170A-17(b)(2)(iii)). Ms. Kaneta mentions an IRS Publication that is not considered a primary source of law. Further, the factors mentioned in the IRS Publication (e.g., the appraiser’s familiarity with the property before and after the casualty or theft, etc.) are mentioned in our article and are only used for “evaluating the accuracy of an appraisal.” Internal Revenue Code sections and IRS Regulations take preference over an IRS Publication.

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Editor’s Note

Readers are reminded that the information in articles in The Appraisal Journal constitutes a snapshot in time and is not legal advice. Readers should consult current relevant statutes, regulations, advisory opinions, and court cases for the most complete, up-to-date information.

3. Reg. § 1.165-7(b)(2).
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