

Reconsidering the Definition of Highest and Best Use: The Case for a Post-Disaster Highest and Best Use

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INTRODUCTION

A NATURAL DISASTER CAN CREATE A TERRIBLE TOLL OF human misery from the loss of possessions, records and traces of identity, employment and, worse, human life. The job of picking up the pieces in the aftermath to create a habitable environment can be daunting when the necessities of life are badly damaged or even destroyed.

Real property damage can range from little to total, depending on many factors including location. Flooding often is accompanied by destruction of infrastructure involving utilities and sewage disposal. Underground lines may be unserviceable. Much of the destruction and its extent are not readily viewable. A large water surge with a storm such as Katrina brings environmental contamination, churned from the sediment. In addition, oil residue may be left on buildings when the water subsides.

Earthquakes, tsunamis, flooding, fires, strong winds, and volcanic eruptions create a special class of assignments and challenges for the appraiser whose task is to estimate value as part of the eventual cleanup and resettlement efforts. Problems arise immediately that will bring into question the valuation process of a normal market. Public records may be partially or totally destroyed, property lines and boundary markers may be gone or hidden, and the infrastructure may be damaged in a manner that makes usability questionable. Further, the likely suspension of a transaction market eliminates comparable sales, price trends and other market data needed for the valuation process.

The purpose of this article is to examine the typical procedure that a professional analyst uses to estimate highest and best use (HBU) and value for a property that

has been recently impacted by a natural disaster. It concentrates on the techniques used to determine the HBU of a site as though vacant (hereafter HBU-S), which could be argued to be the most important part of the estimate of value and property liability. One goal is to determine if the common procedures learned in education classes and supported by the U.S. Uniform Standards of Professional Appraisal Practice (USPAP) are applicable in this special type of situation.

The challenge faced by the analyst is not simply that of how to employ the concepts of evaluation. The typical concepts used, such as market value, may be legitimately questioned as the market conditions within the definitions may not exist. Extreme market phenomena with very special characteristics such as those resulting from disaster occur with sufficient frequency to suggest

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strongly that a new HBU definition and procedure be created and used. This article recommends that such a concept and procedure be developed and proposed as opposed to revising the traditional HBU methods to fit each discrete disaster instance.

Three questions will be answered here:

1. Is the typical HBU-S valuation process applicable in the market after a disaster?
2. What are the steps to follow in the estimation of HBU-S following a disaster?
3. Has a new paradigm emerged for this situation?

The current need for a post-disaster property value procedure is worldwide. Interestingly, the professional literature is almost void of any research on this topic. Brody, et.al¹, calculated property damages from 423 flood events in Texas using a dollar loss in the Consumer Price Index—a technique not recognized by the U.S. appraisal profession. Montz and Tobin² used multi-list listing and sold prices from before and after the flood to show a change in the market. Listing data is not allowed in common U.S. appraisal procedure. The sold prices may be used in a professional estimation of value only after each individual price has been scrutinized and adjusted through a formal valuation process. Montz and Tobin correctly conclude with a call for policies and programs to address spatial and temporal differences in property values caused by unusual events.

PROBLEMS IN CURRENT DEFINITIONS AND THE VALUATION PROCESS

Several problems exist with respect to current definitions of market value, the valuation approaches, HBU, and their application in a market after a disaster.

Contentious Discussion. An examination of the literature and interaction with specialists in this area generate the conclusion that opinions regarding changes are supported by strong emotions. One group argues that the current valuation process has produced accurate results in unique economic situations, and should not be altered without a considerable amount of further discussion and examination. Another group is quick to point out that the popular definition of market value and the procedures used to produce it are broken and need to be revised quickly. Until a trade group or government institution takes the initiative to resolve the issue, articles and journals, such as this one, will remain the necessary

outlet for an open discussion. Recommendations here are offered to further a discussion that will improve the analysis of real estate data:

- **Does Market Value Work?** A popular definition of the commonly used term “market value” is:

“The most probable price, as of a specific date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with buyer and seller each acting prudently, knowledgeably and for self-interest, and assuming that neither is under undue duress.”³

- **Proposed New Definition of HBU-S.** A newer discussion of value would need an updated definition of highest and best use found later in this article that is the following:

“A disaster highest and best use for the site (DHBUS) is an immediate use that is both just and fair to the owner or potential owner which results in the highest present value. Any reasonable and logical approach in estimating value may be to derive value directly from informed opinions. The three criteria of physically possible, legally permissible, and adequate effective demand should be used when possible.”

The popular market value presumptions are not satisfied after a disaster. For example, “reasonable exposure” is the time immediately following the disaster as the owner is in need of immediate cash, has significant damage if not total loss of the property, and may have relevant insurance coverage issues that will require negotiation. A “competitive market” may not exist as the damage may be localized to the extent that comparable neighborhoods and locations may also have been seriously impacted. Further, the impacted owner may be exhibiting symptoms of stress that inhibit the individual’s ability to make rational decisions. In sum, not every presumption underlying the existing definition is satisfied.

Special attention should be given to the exact date of the HBU conclusion. Timing of the use and its relationship to the most likely user was recently identified as the main reasons necessary for a new HBU definition. The final recommended HBU is derived after the probable user has sufficient time to develop the intended use.⁴ This article argues that a disaster may change the market conditions

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so dramatically that long-run decisions are made in a shorter period of time than the time needed to implement short-run decisions.

The timing question is very similar to long-run versus short-run decisions taught commonly in a beginning economics course to illustrate profit-maximizing behavior in the analysis of variable and fixed costs. For example, in the short run of a firm, some factors of production that are variable in supply are added to other factors of fixed availability. The decision is to combine both in a manner that allows for profit maximization to occur. Time in a short-run decision is measured in production units as opposed to calendar time.

In the long run, all factors of production are either truly variable or presumed to be variable. For example, a firm may decide to abandon the business and exit the market, and both the production time and calendar time necessary to make this decision is much shorter than the timing of the short-run decision.

The same decision can be made for a disaster-impacted site. The owner or potential owner may decide to abandon the property and exit the location, which is a long-run decision as opposed to maintaining the past HBU and restoring the structure. The potential HBU will be altered dramatically should the owner make the important decision to abandon the site.

Further, the above market value concept presumes that an underlying competitive market exists from which comparable sales can be extracted, costs of building a replica are available or future income can be generated. After a disaster, none of these may be available. Decisions must be made in the current time frame as a long-term decision in calendar time does not exist for the current owner.

- **Vacant Site Valuation Process.** The valuation process emphasized in USPAP Standard Rules 1 presents an orderly procedure for the appraiser to estimate value. It begins with a Statement of the Problem and ends with the Reconciliation of the approaches to value and final Report. The content of the Report can be found in USPAP Standard Rules 2. This logical and orderly approach provides an outline, blueprint and common denominator for all estimates of value including all property types

The very first step contains a description of any extraordinary assumptions, hypothetical conditions or general

limiting conditions that may identify a situation that prevents the appraiser from estimating a value without qualifications. A site impacted by a disaster could conceivably require so many extraordinary assumptions that the appraiser may not be able to progress beyond the first step.

A good illustration is the impact of Katrina on the property in south Mississippi. A flood washes out and destroys infrastructure such as electricity, gas, water, and sewage. Damage is difficult to assess as it cannot be seen without extracting the utility in question and performing standard tests. What is the appropriate assumption or condition to be used without any knowledge of the infrastructure condition?

Also, environmental engineers state that the water surge deposited buried carcinogens on the rooftops and made the buildings and sites unsafe for human beings. Subsequent growth of mold also was rendered to be unsafe for human well-being.

In the aftermath of a disaster, the best solution could be to dig out the infrastructure to a depth of x feet, and haul away to an acceptable landfill all soil, pipes, wires, and structural items. The resulting holes would be filled with fresh and acceptable soil before the evaluation of a property's HBU.

- **Vacant Site Valuation Approaches.** There are six approaches that can be used to estimate the value of a vacant site.⁵ These approaches include: sales comparison, allocation, extraction, subdivision development, land residual, and ground rent capitalization. None of these is readily usable for the following reasons:
- **Sales comparison.** Sales of comparable properties must exist. The relevant market may be gone in its entirety. Further, a valid argument can be made that pre-disaster sales cannot be used to value post-value property. The reason is that the HBU has changed. The post-disaster damage may be so significant that the final valuation decision could be between a green space in the disaster area and a long-run HBU.
- **Allocation.** The ratio of the land price to the total price is useful only when sales have occurred. None exists after a disaster.
- **Extraction.** Land value can be extracted from the sale price of improved property using cost data only when sale prices are available.

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- **Subdivision development.** A sales comparison grid may be used to assemble a competitive price of lots only when comparable sales exist.
- **Land residual.** The building value and stabilized income are used to value the building, and the residual is attributed to the land only when the first two are available.
- **Ground rent capitalization.** Leased fee rent can be capitalized into an estimate of value when the market exists to produce market rent and a market-derived capitalization rate.

All commonly known and used techniques to estimate land value suffer from the same deficiency in the destruction of a marketplace and comparables.

- **Exposure of the Property.** The definition of market value above includes the phrase "...after reasonable exposure in a competitive market..." Exposure may be harmful to the owner as it allows speculators to enter. A more just and equitable response might be to estimate value at the time of the disaster, or a very short time thereafter.
- **Effective date of value.** The day of inspection and the subsequent date on the inspection report, should be dated: (a) post-disaster; and, (b) should follow one another in a timely fashion. Presuming that the "market" in the above market value definition refers to what the appraiser sees on the day of inspection, little justification exists to date the inspection before the disaster.

One exception can exist: in a court proceeding in which the judge wants to "make the owner whole" through a just compensation claim. The appraiser may need to estimate a loss in value which necessitates calculating the difference between a value pre-disaster and one post-disaster.

- **Maximum Potential Use and Timing.** HBU-S estimates the maximum potential use of the property and, further, the owner must prove that this use is very likely to occur. Developing this conclusion will create an immediate need to evaluate the basic demand assumptions that underlie the HBU.

NEED FOR DEMAND AND EFFECTIVE DEMAND

An underemphasized presumption that underlies an HBU-S conclusion is the demand for the product and resulting income stream produced by the site. A demand

schedule relies on assumptions including consumer tastes, preferences, expectations of price changes, population and population changes, and level of income. All of these are held constant for the actual relationship between quantity and price to be measured. Thus, a specific quantity is demanded at a specific market price, given these consumer characteristics are held constant. All consumers have unlimited tastes and preferences, and typically exhibit unlimited levels of desires and wants. All of these are reflected in the measurement of the demand schedule and curve.

Effective demand occurs when the consumer has a sufficient level of disposable income to actually purchase the product demanded. In addition, a strong likelihood exists that the potential use will actually occur. The ideal demand schedule for the economist to estimate is the goods and services that consumers are able to afford relative to their income bracket.

The appraisal HBU concept used today presumes that the use has effective demand. Physical, legal and financial criteria for an existing structure assume that the building, or some form of it, is standing. The question is whether the existing use will be maintained because effective demand exists for the same or a similar structure. If the effective demand is higher for another structure, the maximally productive criterion will cause the new structure to outbid the existing use and result in a HBU decision to recommend another building. This criterion must be the winner in the marketplace as a result of the excess surplus productivity that it generates. The new or potential owner will find the resources to bring the property onto the market because of its potential income.⁶

Apply this premise to the flooded and destroyed real estate market of New Orleans after Katrina. The impacted residential properties have a demand by the current owners to be restored, but many owners do not possess the necessary income to translate their tastes and preferences into effective demand. Thus, the property remains in its current condition. Potential new owners will not spend the necessary capital to restore these sites to their old HBU of single-family residences because they do not see the surplus productivity in restoring the current use or developing it into a new use. Thus, a property sits in an abandoned condition, which means that potential owners have made a long-run decision.

HBU-S applies the same procedure except that an existing structure no longer exists, and the use may be changed to

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something new if the maximally productive criteria generates a surplus value immediately. Unfortunately, it has not.

Another example is an earthquake in downtown Los Angeles, which causes substantial property damage to income-producing property but is followed by timely construction that replaces the destroyed property. The property owners or potential owners have sufficient income to develop the area given the desirable location and inevitable potential income it will produce. The HBU-S conclusion is to replace the previous use with similar use including a restored existing structure or construction of a new one.

HBU-S relies on the presumption of effective demand by the owner or potential owner. The maximum use will only happen if the owner or potential owner has the income to become a catalyst for property replacement and demonstrates a strong motivation to make it happen.

- **Application of four HBU criteria.** The typical criteria of physically possible, legally permissible, economically feasible, and maximally productive may not be applicable in part or in whole. For example, an earthquake damages the infrastructure and casts significant doubt on the reliability of the utilities. Drinking water may be produced from a faucet, but needs to be tested. Sewage disposal may be destroyed. Underground utility lines may be unreliable. The starting point of physically possible and legally permissible may not be applicable at all.

What happens to need for demand and effective demand in a disaster situation? Comparable sales do not exist, a functioning market is gone, timing must be short to avoid speculation, effective demand by the owner(s) or potential owner(s) may not exist, and the typically used criteria for evaluating the HBU-S are not in force. If these four criteria are not applicable, the six typical procedures for estimating land value are unavailable as an estimating tool. The conclusion is that a new concept of use is needed with new estimating tools.

DETRIMENTAL CONDITIONS AND STIGMATIZED PROPERTIES

The professional literature contains a number of references that discuss proper appraisal procedures to estimate value when a property has been subject to detrimental conditions, stigma, environmental contamination, and monumental damage. All will be considered here as

attempts to label and describe accurately similar situations where property has been subject to a negative market condition.

USPAP Guidance. The guidance provided by Advisory Opinion A0-9 gives emphasis to extraordinary assumptions and hypothetical conditions.⁷ The former occurs when the appraiser uses a report by another, such as an engineer, to assess the quantity and quality of the damage. The extent and use of this information must be described in the final report.

The second is used when the estimate of value is completed assuming that a negatively impacted property has not been damaged. This estimate is used as a baseline to determine damages. Typically, two estimates of value are produced including an impacted and non-impacted estimate, and this hypothetical condition is used for the impacted estimate.

Interestingly, AO-9 states that the estimate of value usually involves the two estimates mentioned above. However, it says further that "...the appraiser must recognize that the value of an interest in impacted ...real estate may not be measurable simply by deducting the remediation of compliance cost estimate from the opinion of value as if affected..."

Detrimental Conditions. Detrimental conditions range from temporary conditions, market perceptions, construction defects, environmental contamination, and geotechnical issues.⁸ One approach is to classify the property damage into one of ten categories where each has distinct attributes ranging from no detrimental condition to insurable condition. Each class has a recommended analytical procedure. Essentially, the analysis is an estimate of the damages caused by the negative condition.

Stigma. A stigma is a remaining negative impact on value that is real or perceived after cleanup costs.⁹ A classification system can be used with three basic categories: high risk and high stigma; low risk and low stigma; and changing risk and changing stigma. One approach to value is to estimate damages and subtract this estimate from the non-impacted value.

Further, a stigmatized property may have a loss in value because of public perception without a change to the physical structure.¹⁰ The estimation of value represents the difference between the non-impacted and the impacted values.

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An underlying presumption in both is that the property still exists in some form, and effective demand probably exists to remodel, repair or rebuild. In contrast, disaster-impacted property may be gone or so damaged that the debris needs to be removed, leaving little or no improvements. In addition, the appraiser is not sure if effective demand exists at a sufficient level to cause reconstruction and development to be feasible. The same observation can be made in that a loss in value presumes that the property still exists, has value and exhibits effective demand.

The non-impacted value minus loss from damages, and the before-value minus the after-value approaches both presume that a non-impacted value is relevant in comparison to an impacted market that may have a completely different HBU. Also, the first method estimates damages, probably as a percentage, which are extremely difficult to estimate in a disaster situation.

This article recommends a new HBU valuation definition and estimating procedure that attempts to overcome these deficiencies. The technique attempts to estimate value directly, using informed opinions.

A NEW CONCEPT: DISASTER HIGHEST AND BEST USE

A new concept is needed for properties affected by disaster for reasons outlined above. Current comparable sales data may not exist due to the destruction of the current market. Second is the lack of a knowledgeable seller who is duress free and able to expose the property to the market for a reasonable time. Third, partial or complete elimination of infrastructure will open the door to a complete change in the potential HBU. Four, the valuation task is not a reduction in value by subtracting the value post-disaster from the value pre-disaster. Five, time is critical to avoid speculation that could take advantage of traumatized owners. This point alone means that the typical definition of market value is not applicable.

One reason that a new definition of HBU must be offered¹¹ is that the currently used concept implies that the use must occur at the current time. The use could be now or at a probable future, and the intended user(s) must be adequately supported. The new definition includes the timing in the application of the typical four criteria that could recommend a use at a future date as opposed to the current time.

This article suggests that the welfare of the owner and the community is best served when the use recommendation occurs within a short time of the disaster. Typical proce-

dures will not work. Most probable use will be extremely difficult to evaluate. Data is nonexistent. Speculation will occur as time elapses and cash-rich investors begin to contact cash-poor owners.

New Concept. A Disaster Highest and Best Use for a vacant site (DHBUS) is proposed here to solve and relieve the deficiencies described above with the typical HBU-S concept. Further, a procedure is offered to estimate the value of a site post-disaster.

The beginning point is to start with a type of use and resulting value that is needed and build a workable concept and definition. Thus,

PROPOSED DEFINITION: DHBUS is an immediate use that is both just and fair to the owner or potential owner, which results in the highest present value. Any reasonable and logical approach to estimate value may be used that estimates value directly from informed opinions. The three criteria of physically possible, legally permissible and adequate effective demand should be used when possible.

This concept includes: (a) fair and just compensation; (b) timing of use; and (c) selection of a logical valuation approach that includes the direct examination of value opinions and motivations of the current owner and potential owners. Similar to the new definition offered recently,¹² it emphasizes timing as a critical factor, although it is different in that the new definition strongly suggests that the relevant period is the time immediately following the disaster.

Valuation Approach: Contingent Value (CV). The special situation with a special definition of highest and best use calls for a new valuation approach. The recommendation here is a combination of the survey technique used in determining the impact from the perceived adverse perception of a stigma, and the technique used to estimate contingent valuation.

Surveys in the current literature are among informed parties to extract a loss in value. The procedure recommended here is to use the survey to solicit opinions, and, even offers, of current value. The questionnaire relies on the basic presumption in a real estate transaction that the negotiation between the seller and potential buyers is a modified auction process. The seller announces a selling price, the buyer counters with an

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offer price, and the discussion continues until a final closed-sale price is reached.

The content and structure of a survey must be constructed carefully to show the casual connection between the source of stigmatization and the responses of buyers.¹¹ The survey in this article goes further in that it attempts to estimate dollar value. It asks direct questions aimed at uncovering current value as opposed to losses.

Contingent Valuation. Contingent Valuation (CV) has been used to ask direct questions of a respondent on the dollar amount placed on non-market goods and services. CV has been used extensively to value damages from environmental contamination. Essentially a survey technique, it has been supported as an additional value tool¹² and criticized as inaccurate.¹⁵ CV is a closely related approach that has been used for the same purpose with a questionnaire that asks the respondent to evaluate trade-offs so that a pattern may be determined and used to evaluate the loss in value.¹⁶

This article relies on the recommendation in an earlier study¹⁷ that survey techniques are a valuable contribution to the valuation process. Further, it uses CV techniques by asking the respondent to provide a direct opinion on the value of the site as is.

Preliminary Condition. In the aftermath of a natural disaster, the appraiser will follow the following process:

1. Determine that the underlying conditions for the traditional use of MV and HBU are not met and the new D-HBU is applicable. The three criteria to be used are the following:

Existing market: The existing transaction market has been significantly destroyed, if not eliminated. Sales comparisons are not available.

Timing: The relevant timing of the estimate of HBU and value is the present time, or a very short period following the disaster.

Effective Demand: Effective demand is present. This is a stronger concept than simple demand, which means that the owner or potential owners must possess the necessary income and motivation to implement the current or different HBU.

If these criteria are satisfied, the appraiser may adopt the new definition of D-HBU and apply the valuation approach.

2. **Implement the CV Approach.** The CV approach is a different version of a conjoint estimation that asks for a direct estimation of value. It is similar in that it is based on willingness-to-pay and involves a panel of experts. It is a survey of knowledgeable and interested parties questioned to uncover the opinion of each on value. The resulting estimate of value is generated from the results. The market is knowledgeable local individuals as opposed to closed sales.

Criticisms and Limitations. A list of survey shortcomings in studies attempting to measure the impact of contamination includes the following:¹⁸

- Lack of information available to survey respondents;
- Use of uninformed intermediaries to offer advice prior to completion;
- Inadequate consideration of factors supporting a respondent's response;
- Consideration of only the buying side;
- Dynamic nature of markets can be ignored.

Further, special criteria that should be satisfied in the construction of the questionnaire include the following:¹⁷

- Scope of study needs to be focused on the specific property;
- Willingness-to-pay should be the emphasis;
- Two independent groups should be used with a variable such as distance to differentiate the groups;
- Responses should be monotonic, transitive and stable;
- Respondents should not be biased;
- Questions should not be leading;
- Pretesting of questions is needed;
- A control group should be part of the statistical analysis;
- Sample size should be sufficient for adequate statistical analysis.

The appraiser must be able to justify the use of the D-HBU method. Data must be presented to illustrate that the traditional market value, and HBU criteria are not applicable.

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3. **Develop the Questionnaire.** Once the justification exists to adopt the D-HBU definition, the CV questionnaire must be developed. The suggested essential questions are shown in Figure 1. Other questions can be added as needed to assure that the survey instrument obtains the best estimates possible.

Figure 1

Post-Disaster Value: Vacant Site

You have been selected to participate in a very needed and critical survey to offer an **opinion of value on a vacant site impacted by a disaster!**

This property is not subject to common and typical procedures to estimate value. We need your opinion.

The property is commonly known as _____

OPINIONS

In your opinion as of (date) _____

What is the fair and equitable selling price of this site vacant as is? \$ _____

If known, what was the likely value of this site vacant PRIOR to the disaster? \$ _____

What is the potential and most likely use of the vacant site in six months? _____ use

How far from this property do you reside? _____ miles

Comments? _____

Have you inspected this site? Yes No

What qualifies you to offer an opinion? _____ qualifications

Additional comments?

Survey Characteristics. The survey and questionnaire should contain a number of the recommended qualities:²⁰

- Willingness-to-pay is the basis of the questions, and they are asked directly;
- Reliability is supported by the selection of the respondents. The appraiser is free to select knowledgeable participants, and must be prepared to justify

the qualifications of those asked. Should the appraisal reside in a disaster-prone area and assignments are likely, or should the appraiser specialize in this area, a list of potential respondents can be assembled in advance. Further, the CV questionnaire(s) could be developed in advance in preparation for eventual use;

- Bias is minimized in the selection of the respondents;
- Leading questions are minimized as the instrument is kept short and the questions direct;
- Owners of disaster properties are part of the respondent list that receives a number of opinions from the buying and selling side;
- Use of a control group is achieved by selecting respondents who live in an area that is not impacted;
- Pretesting of the questions is accomplished by the appraisal staff. Those offices located in a disaster zone can arrange a panel and pretest questions in advance.

Competency is satisfied as the questions provide for a direct dollar response. The qualifications to analyze the values are not prohibitive. The time-consuming task is to prepare the questionnaires and arrange the panel of respondents.

1. Estimate the Value. It is recommended that a minimum of 10 direct estimates from the survey be used. This means that it may need to be mailed to thirty potential respondents. Using the minimum number, a second recommended procedure here is to re-verify the value. This involves contacting each of the 10 respondents by phone, and relaying the central tendency values with a question such as the following:

“The CV survey produced an estimate equal to \$x on ____ date. Do you agree?”

A final estimate is derived from the responses.

RECENT APPLICATIONS OF SURVEY TECHNIQUES TO ESTIMATE VALUE

Two recent studies on the usefulness and accuracy of survey techniques to estimate values conclude that the results are inaccurate.²¹ The first reports used CV in four locations to estimate adverse impacts from environmental contamination. The conclusion was that this technique produces estimates of actual prices and values that are unreliable predictors. The most significant reasons were the following:

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- Survey forms do not supply a sufficient range of information;
- Market participants rely on other professionals for opinions during the negotiations, which are not available.
- Survey forms do not address all of the neighborhoods that participants trade off to make decisions;
- Participants may represent one side of transaction only;
- Survey results do not include the dynamics of the negotiation process.

The second study involved the construction of a survey to uncover potential damages from a perceived stigma attached to a landfill. The survey results did not attempt to estimate the actual loss in value, which was demonstrated by other appraisal techniques such as paired sales. The study concluded that a link existed between the negative impact on the landfill and the decline of desirability of housing and property in the area.

Although both studies are important to the construction and use of an accurate CV survey, both have differences when compared to the disaster assignment. First, they are primarily attempting to estimate a loss in value to existing property. In a disaster, the impacted value may have a complete loss in the use of any structure. Also, the marketplace may have been destroyed so that comparable sales have been eliminated.

These studies represent an important component in the development of a better CV survey instrument. They do not negate the reasons for using this survey approach in a special disaster situation.

POTENTIAL CRITICISMS OF THE USE OF D-HBU

Possible criticisms to the new D-HBU and the CV survey approach to value could be the following:

- **The current definition of market value has served us well.** If it ain't broke, don't fix it.
- **Typical appraiser is not qualified.** Competency can be acquired under USPAP. Appraisers who want to take disaster assignments can satisfy this requirement;
- **Current HBU definition is adequate as a natural disaster is only a special case.** This article suggests that too many presumptions inherent to market value and HBU are violated. A new definition and valuation approach that constitute a new paradigm are

needed to make the valuation process clearer and straightforward;

- **The immediate HBU estimate is too quick and minimizes the importance of a longer time period.** The nature of the situation is different and warrants a shorter time period. Further, speculators will enter this market, which will distort the potential value estimate;
- **Pre-disaster comparables should be used.** The pre-impact market value exists in a different market than the current disaster value. Comparison of the two HBU values is not an acceptable comparison;
- **Post-disaster sites can be compared to sites in other comparable areas that have not been impacted.** One of the first rules in selecting properties for the sales grid that are not located in similar areas is to prove that the two locations are impacted by the same market forces of supply and demand. That comparison is impossible to justify;
- **Loss in value in the form of damages should still be used.** This procedure fails in the second step when the appraiser must estimate the "unimpaired (after) value;"
- **This new D-HBU and CV approach should not be used without further discussion to insure understanding.** This statement is definitely true. Additional discussion and revision of the wording is needed prior to the adoption of a new concept.

ADDITIONAL PROFESSIONAL OPINIONS

To assure that a new HBU definition and valuation approach would be justified, a non-random, non-scientific survey was conducted among a select group of appraisers. The group included both practitioners and academics. Each held a professional appraisal designation, and was selected on the basis of background, expertise and experience. It is worthwhile to ponder their responses.²²

Each was asked one question:

What is the HBU of a vacant site that has been impacted by a natural disaster?

Selected excerpts follow:

Response 1: "This relates to the issues I dealt with on properties around the World Trade Center in New York City. It was catastrophic, although not natural. The issue is the effect to which the site's potential for use is elimi-

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nated or deferred. Both situations measure the difference between the best green space and the probable use as the measure of loss.

“The HBU model is reversed. Instead of using the physical, legal and other attributes to identify profitable use, the elements are used as constraints to eliminate uses that are not probable. A major issue can be the infrastructure constraints for current uses such as utilities that restrict use based on capacity and needs.

“Consideration of uses is highly dependent on situs or level of related land use in the impacted area. What uses are interdependent? Does this vary from prior relationships? What are the opportunity costs related to changes?”

Response 2: “Much of the analysis would depend on the type of disaster and whether damage can be mitigated through the construction process. Stigma would be an important consideration.”

Response 3: “The HBU is so likely to change that the appraiser needs to be open to a wide range of changes. The valuation may increase if the surrounding area was destroyed, making assemblage feasible. Of course, it could be lowered if the whole area were to be abandoned.

“The appraiser must speculate that new zoning or restrictions on development would be put in place to prevent future disaster problems. In that case, the long-term use would be consistent with the most probable of the legally permissible uses while the short-term use may be a currently permissible use.”

Response 4: “We find that a contaminated event impacts the physical uses in a number of ways.... Of those uses which may be physically possible, some are restricted because of complex legal considerations. Of the uses that are both physically and legally possible, some are not feasible financially because of differential costs of remediation.

“Part of the maximally productive criteria is to examine the marginal cost of remediation versus the marginal benefits for different property types. For example, the marginal cost for residential remediation, over and above industrial, makes the residential use non-feasible, but the industrial is still possible. Both uses are feasible, and the marginal cost compared to marginal benefit changes can reorder the final choices.”

Response 5: “My only direct experience was with the 1989 San Francisco earthquake. It did not change the HBU of any sites. The appraiser would need to consider the local zoning codes as they would not be suspended in a disaster.

“In land situations when there is no indicated economically feasible use, I could see rewriting the zoning and planning codes as an opportunity to achieve the best use since there would be no vested interests to fight for the status quo.

“My opinion in answer to the question is that an altered HBU definition may be the best solution, not only in natural disasters, but in other cases where there is no viable market. This project will lead to a better understanding of the sales approach and the appropriate methodology to use in the absence of relevant sales data.”

Response 6: “Any influence on HBU would depend on the nature of the disaster. It (HBU) includes not just the use, but the user and the timing of the use. An event such as Katrina would change the supply and demand relationships that would influence the financial feasibility. The appropriate use might be to hold until the market recovers.”

OTHER TYPES OF VALUE:

MOST FITTING USE AND MOST PROBABLE USE

Highest and best use includes the maximizing goals of the community and the wealth-maximizing goals of the individual.²³ The analysis selects one point that is the single highest value derived from the intersection between the community needs and the financial and economic possibilities over a long-term period.

A practical, more operational, concept called “most fitting use” (MFU) was offered by Graaskamp to guide longer-use analysis:

MFU is the use that is the optimal reconciliation of effective consumer demand, costs of production, and the fiscal and environmental impact on third parties within physical capacities of the land. Reconciliation involves financial impact analysis on “who pays” and “who benefits.”²⁴

MFU is more than simple semantics. It relies on different criteria, uses satisfaction as opposed to maximization and permits the appraiser to consider a range of uses as opposed to only one point.²⁵

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Another concept, “most probable use” (MPU), presented by Kinnard, is a shorter-period HBU definition to better explain land use decisions made by individuals:

Most probable use is something less than the most fitting use, depending on the topical constraints imposed by current political factors, state of real estate technology, and short-term solvency pressures on consumer, producer, or public agency.²⁶

Graaskamp’s MFU is viewed as a feasibility fit that found the best choice after all alternative uses were evaluated.

MPU lies within the longer-period analysis of MFU, and represents the most likely uses of the property by remaining within the constraints that are specific to the property. It relates the characteristics of the property to specific appraisal methods, such as the four typical criteria used to reach a HBU decision.

Different Criteria. Nine criteria can be used to delineate the differences among HBU, MFU, and MPU.²⁷

Decision Criteria	maximizing vs. sacrificing
State	static or dynamic
Risk	certainty vs. uncertainty
Time	long -term vs. short- term
Perspective	macro vs. micro
Orientation	policy vs. market
Nature	normative vs. pragmatic
Application	portfolio vs. individual
Logic	deductive vs. inductive

New D-HBU. Using this set of criteria to evaluate the new D-HBU, characteristics of both MFU and MPU are included. For example, the application is most likely individual, but can certainly become a portfolio decision depending on the extent of the impact. The nature probably is pragmatic, but could have elements of normative relative to the situation. The timing of the decision has been stated earlier to be mainly short-run to avoid speculation but, again, could become longer relative to the circumstances. This analysis illustrates that a new paradigm is needed with a new definition as elements of HBU, MFU and MPU are all involved.

OPINIONS FROM THE U.S. APPRAISAL FOUNDATION

The U.S. Appraisal Foundation recently issued Proposed Guide Note 10 to give appraisers guidance in developing an opinion of market value in the aftermath of a disaster. Several selected points from this Guide Note are considered here:²⁸

Any appraisal problem must be approached using recognized appraisal methodology...regardless of whether market conditions are their most chaotic. This article is recommending that a new concept of HBU and a new appraisal technique—contingent valuation to estimate value directly—be created. These are needed because the typical appraisal methodology is not applicable due to an absence of market data.

Effective purchasing power might be impacted by changes in lending policies and practices in the area in response to the disaster.

Effective purchasing power of the current and potential owner will have a major impact on the eventual user of the property.

The appraiser must be especially mindful of issues relating to the date of value. Timing of the HBU decision is a major consideration. The new HBU definition recommended here gives emphasis to a shorter-period concept to mitigate speculation.

The difficulty in these retrospective valuations (prior to the disaster) is that the appraiser cannot obtain firsthand information about the characteristics of the property that are relevant to the assignment as of the date of value.

The new D-HBU uses the same rationale to recommend that a new valuation technique is needed that relies on post-impact information only.

Is “market value” the right question?

No, it is not the right question, as many of the criteria upon which market value is based are not satisfied. The new D-HBU recommends a “fair and just” value.

Is the appraiser competent with respect to: (1) property type; (2) market; (3) geographical area; and, (4) analytical method?

All of these points are relevant. One purpose of this article is to provide better tools for the appraiser to use in this special assignment.

As has been illustrated, the Guide Note includes relevant and important points. It does not, however, address the “how to” procedure that is needed in the current marketplace.

SUMMARY AND RECOMMENDATION

A void exists in the professional literature for the estimation of post-disaster real property value. Orderly

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economic development uses an insurance value for determining insurance liability claims, transaction prices for sellers and buyers, and financing. This follows the USPAP process that is formalized in the U.S. as a common denominator, and recommends several new concepts and procedures to be used in a global post-disaster market. The result should contribute significantly to orderly real estate development.

Three questions have been answered. First, the typical criteria that drive the market value definition, HBU decision and vacant site valuation approaches are not satisfied in a situation where a disaster has impacted the marketplace. A new definition of HBU suggested here, labeled a “disaster HBU,” is warranted and merits further discussion.

Second, the appraiser can adopt the new definition and approach to value under conditions in which the marketplace has been essentially destroyed. The burden of proof lies with the analyst.

The new valuation tool recommended is a version of contingent valuation that directly asks the respondent to value the property as opposed to a tool that is used to assess damages. Although the recent literature has contained several studies that have criticized its accuracy, a well-crafted survey document may not yet be within the appraiser’s toolkit.

Third, the weight of the discussion above and the selected opinions of informed individuals lean in the direction of a new paradigm. This very special market situation occurs with sufficient frequency to call for attention.

An important recommendation is that the new D-HBU be subject to further discussion, scrutiny and word-smithing in an appropriate and public context to produce the ideal semantics and procedure.

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