

Contributions of Real Estate Economics to Right-of-Way Acquisition and Valuation

by James A. Chalmers, Ph.D., CRE, Steven M. Pritulsky and Dan Sorrells

James Chalmers is a partner in the Phoenix office of Coopers & Lybrand. His areas of specialty include condemnation litigation, real estate economics, regional economics, environmental damage assessment and public policy relating to growth and development. He received his Ph.D. in economics from the University of Michigan.

Steven Pritulsky is a managing associate in the Phoenix office of Coopers & Lybrand. In addition to residential market analysis, he has provided consulting services for major mixed-use projects, master planned communities and commercial/industrial properties. He is a graduate of Northern Arizona University.

Daniel Sorrells is a senior associate in the Phoenix office of Coopers & Lybrand. He specializes in condemnation litigation as well as residential and commercial market analysis. A graduate of the University of Minnesota, Dan is a member of IRWA Chapter 28.

INTRODUCTION

The economic value of raw land ultimately depends on the use to which the land can be put, and the timing associated with that use. Once political and legal constraints are satisfied, highest and best use is the

projected use which yields the highest present value for the land. The present value will depend on the "development-ready" or "retail" value of the land in a given use, and the time period for which the land must be held before that value can be achieved. In the southwestern United

States at the present time, for example, the highest and best use of industrially zoned land is frequently for medium- to high-density residential purposes. This is because the long holding period for the industrial land eliminates the advantage it has in terms of a higher development-ready value.

The simple concepts of use and timing have not been given adequate attention as they relate to the acquisition of rights of way. In particular, they can play an important role in the determination of just compensation in condemnation proceedings, and they can provide a guide for planners in budgeting right-of-way costs. In the process of examining these applications, several other relevant issues will be examined including:

- valuing of project enhancements
- the relation of economic value and market value
- economic value as foundation evidence for the appraiser and
- definition of comparable sales

ECONOMIC VALUE

Real estate economists frequently work with land buyers, advising them on the worth of parcels of raw land. When determining the value of such land, there are two essential questions that must be answered — "what" and "when." Specifically:

- What use can be developed on the land?

DICK AVAZIAN
PRESIDENT

GENE SCHMALL
VICE PRESIDENT

RIGHT OF WAY ACQUISITION • SURVEYING •
TELEPHONE ENGINEERING • MINERALS LEASING •
ENVIRONMENTAL IMPACT STATEMENTS •

NFS

NATIONAL FIELD SERVICE CORP
NATIONAL BLDG., 162 ORANGE AVE.
SUFFERN, N.Y. 10901 914 368 1600

- When can the land be developed?

Answering the "what" question implies a specific land value at the time of development. The more intense the use, the higher the development-ready value. For instance, land appropriate for apartment development is worth more at time of development than land suitable for single

the less he can pay for the land because of the opportunity cost of tying up his capital.

Throughout the article, the term "economic value" refers to the value that results from the use/timing combination that maximizes the present value of a parcel subject to legal and physical development constraints. As mentioned before, a near-term resi-

metropolitan area, large market-ready parcels (that can be developed within two and one half years) appropriated for quality suburban development generally sell for about \$60,000 per acre. By comparison, similar parcels with a short-term hold (averaging five years from development) sell for approximately \$40,000, while parcels with a medium hold (10 years) generally sell for \$20,000 per acre. These different values, based on the average holding periods, imply that buyers are discounting from the market-ready value at a rate of between 8 and 12 percent annually.

Projected employment and population change establishes both the market viability of particular land uses and when those uses will be ready for development. There can be no development unless there is demand to support it. In essence, there will be no demand for a neighborhood shopping center unless there is a neighborhood to support it.

Estimating approximate development timing is not as difficult as it sounds. All market participants, in both private and public sectors, make working assumptions about the rate

Continued on Page 10

Land buyers routinely determine the value of raw land based on use discounted for the time to development.

family residential development, because more money can be generated by the apartment land use than by the single family residential land use. By the same logic, a parcel which would accommodate the development of a shopping center is more valuable than land appropriate for apartments, land appropriate for hotels is more valuable than land appropriate for shopping centers, and so on.

Answering the "when" question affects the present value of a parcel once its ultimate use is determined. The further into the future the land buyer must wait to develop the use,

dential opportunity may have a higher present value than a long-term commercial opportunity. If this is the case, the economic value is based on the discounted, development-ready residential value. The term "economic value" corresponds to the concept of "highest and best use" as commonly accepted by the appraisal profession. It makes explicit the analysis that must be carried out to determine highest and best use.

Land buyers routinely determine the value of raw land based on use discounted for the time to development. This is reflected in the market as well. For instance, in the Phoenix

RIGHT OF WAY TRACKING

Management Reporting

Document Control

PC BASED COMPUTER SOLUTIONS

*Self-Paced ROW TRACKING Demo
Just \$12.95 s/h*

**On-Site Design
Installation
Training**

Universal Field Services, Inc.
MIS Division
5350 E. 46th Street - Suite 120
Tulsa, OK 74135
918-627-3655 FAX 627-3599

*Come See Us In
Sacramento*

Offering:

- * Complete Needs Analysis
- * Software & Hardware Design
- * Integration of Existing Systems
- * Document & Data Input Service
- * Operations Analysis
- * Network Design & Installation
- * Fifteen Years In ROW

Contributions of Real Estate...

Continued from Page 9

and direction of growth. For example, the Maricopa Association of Governments projects that the Phoenix metropolitan area will increase by approximately 700,000 people between 1990 and 2000. Population growth is likely to occur in areas that can be most easily developed, and that have quick and easy accessibility to employment cores. Figure 1 illustrates the Maricopa Association of Governments' projection of how the additional 700,000 people anticipated in the Phoenix metropolitan area will be distributed over the next 10 years. Substantial growth is expected to occur in the metro area's southeast quadrant which is a major employment area, and in the west where there is plentiful and cheap land that

will be accessible via newly constructed freeways.

The economic value of this land along the periphery of development can then be determined based on considerations of use and timing, and this is in fact how purchase decisions are analyzed by our investor/developer clients. This same analysis has important implications for the planning and acquisition of public rights of way. In the *before* condition, the highest and best use is first determined based on a thorough analysis of supply and demand conditions. Issues such as location, accessibility and visibility are also considered. Next, the time until development is determined based on analysis of anticipated population and/or employ-

ment growth. The market-ready value is then discounted for the required hold until development, yielding the economic value in the *before* condition.

To determine the economic value in the *after* condition, the proposed improvement is added. This may change the use or the timing. Generally, transportation improvements either intensify the use or accelerate when that use is demanded by the market. The same analysis of "what" and "when" is then performed again, which yields the economic value in the *after* condition.

The difference between the economic values in the *before* and *after* conditions provides a measure of enhancement due to the transportation improvement. For example, a 20-acre parcel of land in a freeway alignment may have a highest and best use in the *before* condition for apartments. But demand for those apartments will not materialize for five years from the date of the take, resulting in an economic value of \$80,000 per acre. In the *after* condition, the highest and best use for the same parcel may still be for apartments. But now the time until the site is development-ready may be shortened to two years, resulting in an economic value for the land of \$100,000 per acre. The value of the land has been enhanced by \$20,000 per acre because the freeway has accelerated the timing of the development.

ECONOMIC VALUE AND MARKET VALUE

It is important to recognize that market value can fluctuate either above or below economic value. Most of us have had first-hand experience with market values that made no economic sense in terms of use and timing. In these cases, speculative elements have entered the market and created value expectations which

Continued on Page 12



For Complete
Right-of-Way Services
Contact:

**Ford,
Bacon
& Davis
Sealants,
Inc.**

Land Department
P. O. Box 1988
Monroe, LA 71210
(318) 387-9600

REGIONAL OFFICES
Located Throughout
The United States

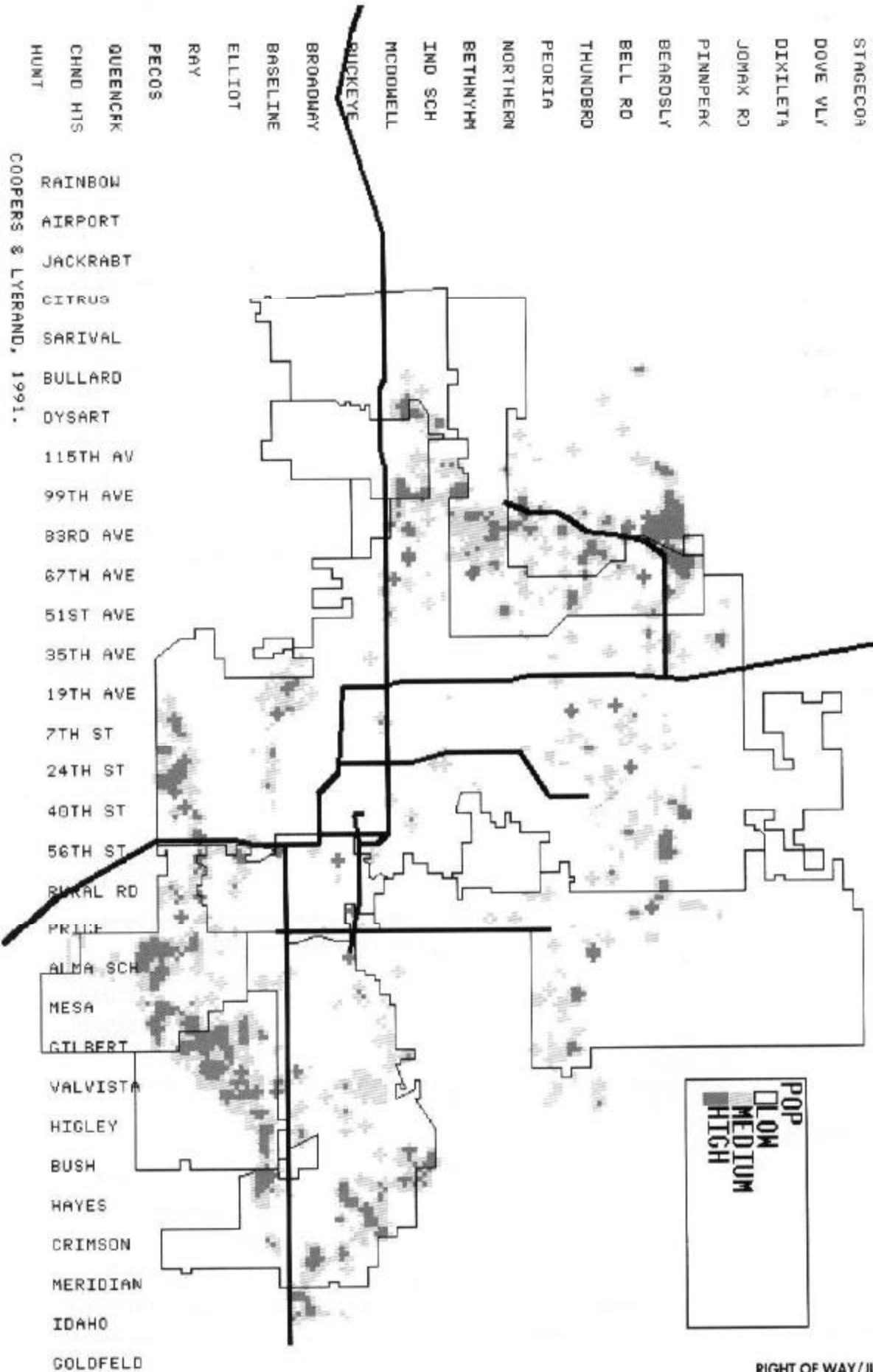
RIGHT OF WAY SPECIALISTS FOR OVER 60 YEARS

**Ford, Bacon & Davis Sealants,
Inc. offers total capabilities to
the pipeline, electrical,
transportation and
communication industries,
including:**

- Highly Qualified Personnel
- Engineering & Design
- Project Management
- Estimating & Specifications
- Testing & Rehabilitation
- Environmental, Permitting, Surveying & Mapping
- Route Studies
- Damage Claim Settlements
- Computerized Reporting Systems
- Right-of-Way Acquisition
- Inspection
- Consulting Services
- Expert Witness Testimony
- Relocation Assistance
- Appraisal and Review

FIGURE 1 METROPOLITAN PHOENIX POPULATION GROWTH 1990-2000

Projected population growth is not expected to occur evenly throughout the Phoenix metropolitan area. Most of the change is projected along the periphery of the developed area, concentrated in areas that can easily be developed and that have quick and easy accessibility to employment cores.



COOPERS & LYERAND, 1991.

Contributions of Real Estate...

Continued from Page 10

can not be achieved in the market. On the other hand, there are cases where a buyer is successful in the market buying at a price below economic value. The buyer will, of course, always buy at the lowest price possible. Economic value simply sets the limit that the buyer should not exceed.

If appraisal were a science and market value a known value that everyone agreed upon, right-of-way acquisition and the determination of just compensation would be a much simpler and less contentious task. However, appraisal is not an exact science, and market value can be a very elusive concept. For that reason, the concept of economic value has considerable relevance to both condemnation litigation and the budgeting for right-of-way acquisition.

ECONOMIC VALUE APPLICATIONS IN CONDEMNATION LITIGATION

It is not uncommon in condemnation litigation for contradictory evidence on market comparable sales to be presented to a jury. The condemning side may be low, and the property owner side may be high. The contradictions only serve to confuse

the jury, who may be uninformed about real estate values. Not knowing which set of comparable sales to believe, the jury may throw up its hands and split the difference.

The confusion can be greatly reduced if use and development timing of the condemned land are determined in the before condition. Once the highest and best use in the before condition is determined, the effects of the proposed project can then be gauged on use, timing or both.

This provides very valuable evidence of what a knowledgeable buyer would be willing to pay in both the before and after conditions. It also provides use and timing criteria for choosing appropriate before and after comparable sales. If there is good economic evidence that, for example, highest and best use in the before condition is apartments with a five-year hold, while in the after condition apartments are the highest and best use with a two-year hold, market comparable sales can be selected appropriately.

The economic value analysis provides solid foundation evidence for appraisal opinions, but is by no

means a substitute for them. The goal in using economic value in condemnation litigation is to mold the jury's perception of market forces, establish highest and best use based on market forces, provide a complete and well-reasoned context from which appraisers can form their opinion of market value, and provide a standard of comparability to be applied to market transactions. From this basis, a jury will be able to decide what is truly just compensation for the property owner.

ECONOMIC VALUE APPLICATIONS TO RIGHT-OF-WAY ACQUISITION PLANNING

Right-of-way acquisition planning can be greatly aided by considering economic value for land in transportation alignments when preparing budgeting and acquisition strategies. Right-of-way acquisition cost overruns can be a serious economic and political problem, particularly for states, counties and cities with significant transportation improvement programs underway. The budget for a transportation improvement, such as a new freeway, a commuter railway, an airport, etc., can be quickly



**Right-of-Way Services Since 1971
for**

**Pipeline Co.'s, Electric & Gas Utilities
Telecommunications D.O.T.'s, Municipalities**

- Full R/W and Land Acquisition Service
- Appraisals, Reviews and Agency Permits
- Photogrammetric Survey and Mapping
- Recreation Areas Employee Payroll Service
- Complete Pre-job Cost Evaluations
- Leasing for Exploration, Production or Storage

**Service Resources Corporation
404-261-5811**

2970 Peachtree Rd., N.W., Suite 310 • Atlanta, Georgia 30305
Branch Offices: St. Petersburg, Florida • Charlotte, North Carolina

Inquiries Welcome From Qualified, Available Agents. Send Resume or Call (404) 261-5811

devoured because the original acquisition budget is not well-planned or reasoned, or because project enhanced values are confused in the acquisition process with before project values.


A well-planned acquisition strategy involving pre-condemnation economic value analysis must place great emphasis on before project valuation. Economic value analysis is very important here. It determines the land uses and their timing in the absence of the project. This analysis provides appraisers with a complete and well-reasoned basis for their selection of before comparable sales and for their value opinions. It also helps clarify values in proposed transportation corridors, allows rea-

sonable acquisition budgets to be set, and identifies unjustified speculation.

Economic value analysis can also be the starting point for right-of-way acquisition negotiations. Offers for rights of way can be much easier to defend when based on economic value. And overstated or understated land use and value claims can be reasonably judged by analyzing projected land uses as well as when those uses are likely to be demanded by the marketplace.

SUMMARY

Once we understand the highest and best use and development timing of land, we have a reasonable perspective from which to determine its value.

In most situations, more weight should be given to land's highest and best use and development timing in the condemnation appraisal process, because the market forces that determine its highest and best use and timing directly influence its value. If there are highly comparable sales to draw value conclusions, then naturally these market transactions should take precedence. But if the market transactions are either inconclusive or non-existent, then more weight needs to be placed on economic value conclusions, because this is how buyers make decisions in the market. 

A COMMITMENT TO EXCELLENCE

Integrated Right of Way and Land Services

Wilbanks & Associates, Inc. has been providing quality right of way and land services since 1974. We maintain the expertise and resources to meet your project needs anywhere in the country.

*Route & site selection
Negotiation & acquisition
Title research
Engineering services
Appraisals
Damage claim settlement
Relocation Assistance
Specialized services*

Serving Pipeline, Highway, Energy, Communications, and Utilities Industry



Wilbanks & Associates, Inc.

1860 Lincoln Street, Suite 800
Denver, Colorado 80295
303/832-4039
1-800/832-4039
Fax 303/832-4115