



Office of Cerro Grande Fire Claims

Economic Study of the Los Alamos Post-Fire Residential Real Estate Market

Cerro Grande Fire

Final Report

March 28, 2001

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Executive Summary

The Federal Emergency Management Agency's Office of Cerro Grande Fire Claims asked PricewaterhouseCoopers to analyze the residential real estate market in the County of Los Alamos, New Mexico. The purpose of this analysis was to assess whether the value of residential property not physically damaged by the Cerro Grande Fire (the Fire) declined as a result of the Fire. Specifically, OCGFC asked PricewaterhouseCoopers to determine whether the Fire caused a decline in property values and, if so, which types of properties and which communities or neighborhoods were most affected. We used the following four methods to understand what effect, if any, the Fire had on Los Alamos County residential real estate values:

1. We examined descriptive statistics for sales prices, sales volumes, and price per square foot in Los Alamos County;
2. We performed a regression analysis to compare Los Alamos County's pre-Fire price trend to its post-Fire price trend;
3. We performed a regression analysis to compare Los Alamos County's post-Fire sales price trend to a community similar to Los Alamos, referred to as a comparable community; and
4. We examined specific post-Fire sales in the North Community and Western Area.

Our regression analysis was based on data from the Multiple Listing Service (MLS) for residential properties sold in Los Alamos County between January 1, 1996 and January 31, 2001. This analysis controlled for factors, such as age, size and location, that would be expected to influence the sales price of a residence. For single-family houses not physically damaged by the Fire we found the overall level of diminution attributable to the Cerro Grande Fire to be in the range of 3% to 11%. This result is statistically significant at the 95% level, the standard level of statistical confidence for accepting results of this kind. While the overall diminution is in the range of 3-11%, some properties have likely lost more than 11% in value, and other have likely lost less than 3% in value.

We also found evidence that was suggestive, but not conclusive, that this effect was greatest in the North Community and smallest in White Rock. For non-single-family residences, such as duplexes, quads, and townhouses, not physically damaged by the Fire, the overall average level of diminution did not appear to be significantly different, in a statistical sense, from zero, except in the Eastern Area, where a diminution in value appears to have taken place.

We believe the results presented in this report give a clear picture of the current state of Los Alamos County housing prices and the effects of the Fire on those prices. These results are historical in nature and should not be used for forecasting purposes. As the Los Alamos County housing market adjusts to the after-effects of the Fire, the response

of the market could change from that presented here. Also, additional data available in the future could shed new light on the behavior of the Los Alamos County housing market and could also change the results and conclusions in this report. As additional data become available, we recommend that further analyses be conducted.

This report dated March 28, 2001 presents our methodology, findings, and conclusions based on available data observed through January 31, 2001. PricewaterhouseCoopers did not perform an audit on the data used in these analyses and does not represent that the data are complete, consistent, or accurate. These analyses assume that the Multiple Listing Service data and other data obtained on the real estate market in Los Alamos accurately represent the activity in the Los Alamos County housing market for the period studied. Changes, corrections or additions to the MLS data or other data could materially change the results and conclusions presented in this report. This report contains case studies that include appraisals or other evaluations of property values that were made by individuals in the Los Alamos real estate community. PricewaterhouseCoopers does not represent that these appraisals or other evaluations are accurate, consistent, or obtained using standard or appropriate methodologies.

I. Introduction

The Cerro Grande Fire, which was contained on June 6, 2000, consumed nearly 43,000 acres, 37 million trees, and an estimated 230 residential structures (representing 400 ownership units) and 112 Los Alamos National Laboratory (LANL) structures. After the National Park Service accepted responsibility for the Fire, the United States Congress passed the Cerro Grande Fire Assistance Act (CGFAA), which appropriated \$455 million to compensate survivors of the Fire. The Act directed the Federal Emergency Management Agency (FEMA), through the Office of Cerro Grande Fire Claims (OCGFC), to administer the program.

In accordance with the Interim regulations, published August 28, 2000, the OCGFC must determine within 180 days of a claimant's Notice of Loss what, if any, compensation the federal government will provide. To date, we understand the OCGFC has received approximately 25 claims for realized or unrealized property value diminution from Los Alamos residents. Realized losses are those in which claimants have sold their property, and contend that the post-Fire sale price of their property was less than the pre-Fire market value, adjusted for local home value appreciation. Unrealized losses are those in which the claimant continues to own the property, but asserts that the Fire diminished the value of his property. To substantiate their claims, claimants have provided the OCGFC with the following types of support:

- o The post-Fire sales price was less than the list price;
- o The post-Fire sales price was less than a pre-Fire appraisal conducted before the Fire;
- o The post-Fire sales price was less than a retrospective pre-Fire appraisal; and
- o A post-Fire appraisal is less than a retrospective pre-Fire appraisal.

In response to the CGFAA and the Interim Regulations, the OCGFC asked PricewaterhouseCoopers to analyze the residential real estate market in the County of Los Alamos due to the extensive damage in that county. The purpose of this analysis is to assess whether the value of residential property that was not physically damaged by the Cerro Grande Fire declined as a result of the Fire and, if so, which communities and types of housing were most effected. We were not asked to predict what residential property values would do in the future. In addition, we were not asked to consider the Fire's impact on quality of life, except to the extent that it is reflected in post-Fire property values.

PricewaterhouseCoopers began this assignment on January 3, 2001. We issued a preliminary report on February 5, 2001, and presented our preliminary findings at a Town Hall Meeting in Los Alamos on February 7, 2001. Based on suggestions made by the public and additional time to analyze the data, we refined our analysis. This report, dated March 28, 2001 presents our methodology, findings, and conclusion based on available data observed through January 31, 2001.

II. Methodology

We took a three-step approach to understanding whether residential property values decreased after the Fire, and if so, the extent to which this decrease was the result of the Fire:

1. We developed an understanding of the local economy to identify whether any other external factors may have likely effected post-Fire housing prices.
2. We analyzed pre- and post-Fire sales for Los Alamos County in order to determine whether any property value decreases were evident.
3. We examined specific post-Fire sales in both the North Community and Western Area to understand whether properties had sold at a discount due to the Fire.

For purposes of our analysis and in accordance with the Appraisal Institute, we defined market value as the most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller, each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated,
2. Both parties are well informed or well advised, and each acting in what they consider their own best interest,
3. A reasonable time is allowed for exposure in the open market,
4. Payment is made in cash in United States dollars or in terms of financial arrangements comparable thereto, and
5. The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

In order to execute the three steps mentioned above, PricewaterhouseCoopers:

1. Developed an understanding of the CGFAA, its implementing regulations, and policies.
2. Developed an understanding of the Los Alamos County geographic area, including historic development patterns, types of residential housing structures, neighborhoods, damage caused by the Fire, and new housing developments.

3. Used Hippauf & Associates, Inc. to evaluate rental properties to understand whether short-term variations in rental market conditions might have an effect on residential real estate valuations.
4. Identified information needed for the analysis, including sales volume, average and median sales price, and average and median sales price per square foot.
5. Interviewed real estate professionals, including appraisers, real estate agents, bankers, planners, and developers, to understand the local real estate market.
6. Read economic studies and other reports to understand economic and other changes to the marketplace.
7. Interviewed and obtained 2000 and 2001 sales information from Dunning Appraisal for areas within the Los Alamos North Community and Western Area.
8. Obtained appraisal information from Kresson & Associates.
9. Joined the New Mexico Board of Realtors in order to obtain access to the New Mexico Multiple Listing Service data.
10. Analyzed market data from the New Mexico Multiple Listing Service for transactions occurring between January 1996 and January 2001.
11. Examined zoning and development standards to understand constraints placed on the residential real estate market.
12. Interviewed local building permit official to understand the residential repair and reconstruction period.
13. Conducted a door-to-door survey, limited based on time restraints, to ascertain public perceptions of issues that impact residential market values.
14. Examined the quality, terms, and conditions of specific residential sales in areas in closest proximity to the fire line.
15. Prepared a preliminary report dated February 5, 2001.
16. Prepared a presentation for a public meeting based on this preliminary report.
17. Presented preliminary findings and responded to questions at a public Town Hall Meeting in Los Alamos, held on February 7, 2001.
18. Obtained and reviewed the public transcript from the Town Hall Meeting.
19. Reviewed public comments from February 7, 2001 through February 14, 2001.

20. Requested information on post-Fire sales by owner in the Sunday, February 11, 2001 Los Alamos Monitor. Analyzed and incorporated information on post-Fire sales by owner.
21. Adjusted post-Fire residential sales to remove any properties identified by OCGFC for home replacement.
22. Based on comments, researched and conducted further analysis, including: evaluating pre- and post-Fire property appreciation in Los Alamos County, comparing Los Alamos County pre- and post-Fire sales price to comparable communities, and re-examining the demarcation line between zones one and two, noted in our preliminary report.
23. Incorporated, as applicable, comments from the community.
24. Obtained limited information on residential lot sales.
25. Prepared and submitted to FEMA this final report, dated March 28, 2001.

III. Findings

This section presents our findings as they relate to the local economy, pre- and post-Fire property values, and specific post-Fire sales in the North Community and Western Area of the City of Los Alamos.

A. Local Economy

The City of Los Alamos is situated on a series of mesas, located between the Rio Grande and the Jemez Mountains in north central New Mexico, approximately 100 miles northwest of Albuquerque and 40 miles west of Santa Fe¹. Founded in 1943 by the United States Government as a secure location for the development of the nation's weapons program, Los Alamos County is now home to approximately 18,000 residents, many of whom work for the Los Alamos National Laboratory. The City of Los Alamos is entirely contained by Los Alamos County.

Until 1958, all of the real estate in Los Alamos was owned and developed by the United States Government. In 1958, the Government began to allow limited private home ownership with the private development of Barranca Mesa. In 1965, the Government divested itself of the original "government-built" housing stock. Most of this original government housing is still in use today. Private commercial development did not begin in earnest until the early 1970s.

The Los Alamos real estate market is divided into six major areas. Table 1 highlights the predominant housing structures within each area of Los Alamos County.

Table 1: Los Alamos County Areas and Structure Types

Area	Predominant Type of Structures
Eastern Area	Single Family Residences, Commercial Buildings, Condominiums & Townhouses, Large Apartment Buildings
Western Area	Single Family Residences, Government Built Duplexes
North Community	Single Family Residences, Government Built Duplexes, Quads
Barranca Mesa	Single Family Residences
North Mesa	Single Family Residences
White Rock	Single Family Residences, Commercial, Large Apartment Buildings, Condominiums & Townhouses

With the exception of White Rock, all of these other areas are within the City of Los Alamos. White Rock, with an estimated population of 7,000 people, is approximately 15 miles outside of the City of Los Alamos but still within Los Alamos County.

¹ Los Alamos County comprises the cities of Los Alamos and White Rock. Together the population is approximately 18,000.

1. Areas Affected by the Fire

The Cerro Grande Fire destroyed 230 structures containing over 400 of approximately 8,000 housing units in Los Alamos, or approximately 5% of the existing housing stock. The areas that sustained the greatest damage were the Western Area and North Community of the City of Los Alamos, also including Quemazon and Ponderosa Estates. Within these areas the homes that burned were in close proximity to the perimeter of the forest. Table 2 provides a summary of the types of structures damaged and the location.

Table 2: Damaged Structures by Type and Location

Location	Single Family	Duplex	Quad	Unknown	Total
North Community	73	57	36	13	179
Western Area	38	4	0	3	45
Quemazon	5	0	0	0	5
Ponderosa Estates	1	0	0	0	1
Total	117	61	36	16	230

Source: Data provided by OCGFC staff.

As Table 2 indicates, the Fire destroyed the largest number of structures in the North Community, which included many low-cost rental units. The rental properties under construction before the Fire were quickly completed to supplement the number of rental units available at the time of the Fire. Additionally, OCGFC announced plans to provide temporary housing with the construction of up to 300 pre-fabricated homes.²

2. Demographic and Economic Information

The population of Los Alamos County has been fairly steady, remaining slightly above 18,000 for most of the past decade. The most often cited reason for the slow population growth is the limited amount of available housing. According to the 1999 US Census Bureau's estimate, approximately 65% of the Los Alamos County population is between the ages of 18 and 65 and 12% is over the age of 65.

The economy of Los Alamos is driven almost entirely by the operations of the Los Alamos National Laboratory. The University of California (UC) operates the LANL under a contract with the US Government. The LANL is the largest employer in Los Alamos County and, as a result, changes in its operations or budget can directly affect the economic condition of the community. Currently, the LANL employs approximately 10,880 people. This is down approximately 4% from a peak of 11,310 in fiscal year 2000. However, according to local officials, a large number of the reduced staff live outside of the Los Alamos area. Over the past five years the LANL's budget has

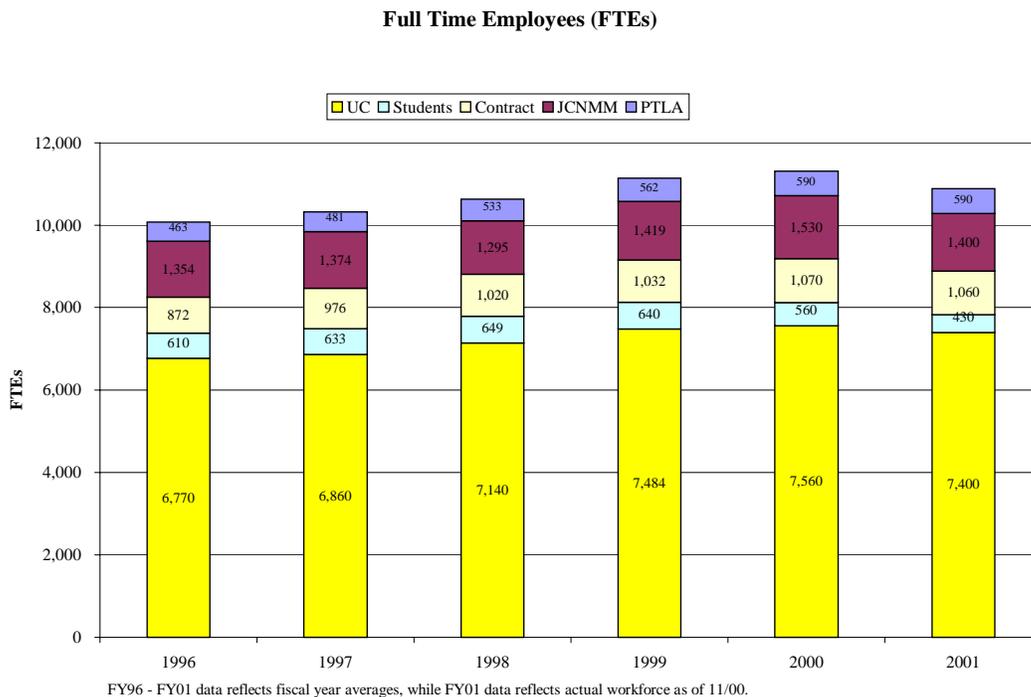
² Based on a lower than expected demand, only 114 temporary units were constructed and only 86 were ever occupied. As of January 2001, approximately 73 units are occupied.

increased from \$1 billion to \$1.33 billion. Average UC employee Lab salaries exceed \$75,000 and provide for the highest per capita income in the State of New Mexico, and one of the highest in the country. The typical UC employee has almost 12 years of service at the LANL.

We met with representatives of the LANL Budget Office to discuss the LANL's influence over the economy and understand what types of changes, if any, had occurred recently or are being planned for the future. Based on our conversations with local business owners and LANL personnel, we learned that during 1999 and 2000, the LANL initiated policies and programs that reportedly have affected the economy. The most notable change was a hiring freeze in fiscal year 2000. The following figure shows LANL's full-time workforce from Fiscal year 1996 through fiscal year 2001.

As Figure 1 illustrates, LANL employment reached its peak in fiscal year 2000 and has decreased approximately 4% in fiscal year 2001. According to local real estate agents, the hiring freeze has led to a softening of the market, especially in the upper-priced homes segment.

Figure 1: Total LANL Workforce Fiscal Year 1996 to Fiscal Year 2001

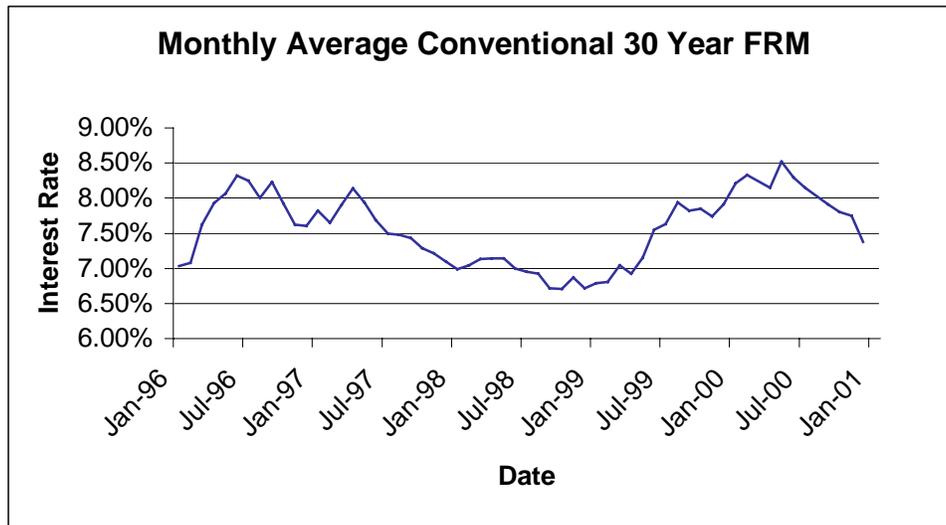


3. Interest Rates

The real estate markets respond to changes in mortgage interest rates. The Federal Reserve Bank began raising interest rates in early 1999 in an effort to slow the economy. Mortgage rates peaked in early summer 2000, and have since declined. As of January

2001, the Federal Reserve Bank has begun to aggressively cut interest rates. The following chart displays monthly changes in fixed rate mortgages (FRMs) since July 1996. As Figure 2 shows, mortgage rates have currently declined to levels near their five-year low.

Figure 2: Monthly Mortgage Rates



4. Conclusion

Based on the economic and demographic trends examined, we did not identify any significant external factors that would significantly affect post-Fire property values. Population remains steady, unemployment is low, the LANL staffing level is relatively constant, and interest rates have varied from their mean over the last five years by less than 1 percentage point. Since no significant external factors were evident, we have assumed, for purposes of this analysis, that any significant post-Fire diminution in residential property values was a result of the Fire.

B. Pre- and Post-Fire Property Values

We used four separate methods to understand what effect, if any, the Fire had on Los Alamos County residential real estate values.

1. Examined descriptive statistics for sales prices, sales volumes, and price per square foot in the Los Alamos County.
2. Performed a regression analysis to compare Los Alamos County's pre-Fire sales price trend to its post-Fire trend.
3. Performed a regression analysis to compare Los Alamos County's post-Fire sales price trend to a community similar to Los Alamos, referred to as a comparable community.
4. Examined specific post-Fire sales in the North Community and Western Area.

1. Descriptive Statistics

For all three methods we used the same data, which we obtained from the New Mexico Multiple Listing Service (MLS), for the period January 1996 through January 2001. The State of New Mexico does not require property owners to disclose the sales price of their property. Consequently, we were unable to identify all pre- and post-Fire residential properties sold. As a result, we relied on the MLS data. According to the National Association of Realtors, approximately 75% of all property sales involve a Realtor®. Assuming this average holds true for Los Alamos County, the MLS data would capture the majority of pre- and post-Fire sales and serve as an adequate sample of the post-Fire property sales through January 31, 2001. Table 3 summarizes the data observations used by year in the diminution analyses³.

Table 3: Number of Annual Residential Property Sales

Structure Type	1996	1997	1998	1999	2000	Total
Single Family	194	211	244	205	176	1,030
Duplex	16	36	26	26	19	123
Quad⁴	64	53	64	57	45	283
Total	274	300	334	288	240	1,436

Source: New Mexico Multiple Listing Service

Based on a visual inspection, most of the MLS records appeared to be complete. Since our unit of analysis was the average square foot price we removed 58 observations where the square footage of the property in question appeared to be assigned a missing value code in the MLS listing.⁵ As the following table indicates, we identified 1,436 data

³ This report contains additional MLS data observations not included in the Preliminary Report.

⁴ The quad category contains quads, condominiums, and townhouses.

⁵ We interpreted a value of 8888 as indicative of missing square feet information in the MLS data. We also removed one observation with a negative value for the square feet information.

observations within the MLS data from 1996 through 2000. On average the MLS data reports 250-300 annual sales. Based on these 1,436 observations, we identified 1,254 pre-Fire sales and 182 post-Fire sales.⁶ Table 4 displays counts of these observations categorized by structure type.

Table 4: Number of Pre- and Post-Fire Sales by Type of Structure

Structure Type	Sales Pre-Fire 01/01/96 - 05/10/00	Sales Post-Fire 05/11/00 - 01/31/01	Total
Single Family	893	137	1,030
Duplex	109	14	123
Quad	252	31	283
Total	1,254	182	1,436

Source: As reported in the Multiple Listing Service data provided to PricewaterhouseCoopers.

Table 5 shows the average square foot price per type of structure for these observations.

Table 5: Average Annual Price per Square Foot by Type of Structure

Structure Type	1996	1997	1998	1999	2000
Single Family	\$97	\$106	\$120	\$130	\$132
Duplex	\$77	\$86	\$97	\$104	\$118
Quad	\$115	\$86	\$97	\$108	\$111
Total	\$100	\$100	\$114	\$123	\$127

The use of the average square foot price as the standard unit for our analysis allows us to compare residential properties of varying sizes to one another. In absolute terms the data in Table 5 shows that property values are growing considerably slower from 1999 to 2000, relative to previous years, with the exception of duplexes. Table 6 shows the annual change in percentage terms for square foot prices per type of structure. Median square foot measures comparable to those shown in Table 5 and Table 6 may be found in Appendix A.

⁶ The regression analysis data set removed additional observations due to other data limitations such as missing property age, resulting in 1419 observations, 180 of which were for post-Fire sales.

Table 6: Average Annual Change in Price per Square Foot by Type of Structure

Type	1996	1997	1998	1999	2000
Single Family	n/a	8.89%	13.77%	8.30%	1.20%
Duplex	n/a	12.34%	13.04%	6.88%	13.21%
Quad	n/a	-25.27%	12.05%	11.61%	2.73%
Total	n/a	-0.26%	14.04%	8.33%	2.68%

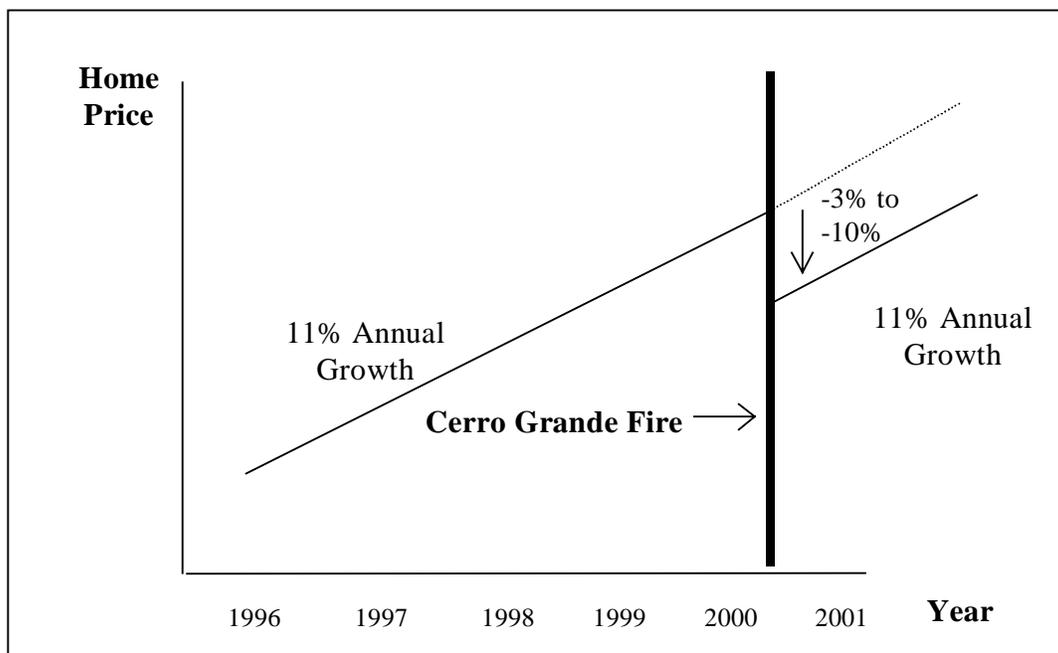
Source: New Mexico Multiple Listing Service

2. Housing Price Trend Analysis

These descriptive statistics presented above do not control for expected growth in the housing market, nor do they control for factors that could affect price per square foot, such as the community location and age of the structure. In the following section we present the results of a regression model analysis that allowed us to control for these factors and to obtain a more precise estimate of the impact of the Cerro Grande Fire.

The housing price trend analysis incorporates the assumption that the Cerro Grande Fire caused a one-time diminution of property values, after which property values resumed growing at the pre-Fire rate, but from a lower basis. Figure 3 illustrates the process described by the model and our estimated results.

Figure 3: Housing Price Trend Analysis – Los Alamos, New Mexico



The housing price trend analysis assumes there is a geometric rate of growth that has remained constant before and after the Fire. Therefore, this analysis makes the assumption that the future is identical to the past.⁷ This geometric growth rate is estimated together with other quantities that control for features a property might have that could affect housing prices. We estimated two models, one for single-family properties and one for non-single-family properties, using regression analysis, a standard statistical technique. Detailed mathematical results are found in Appendix B and C.

To summarize the results, we find that there has been a statistically significant and negative effect of the Cerro Grande Fire on the price of single-family house prices in Los Alamos County not physically damaged by the Fire. The overall countywide diminution for single-family residences appears to be within a 3-10% range. We do not observe a statistically significant diminution in property values for non-single-family residences, except for the Eastern Area, where there appears to have been some diminution in value post-Fire.⁸

3. Comparable Community Analysis

The housing price trend analysis assumes that the past is a good predictor of the future. While this is a sound statistical approach for forecasting outcomes in the near term, it does not take into account post-Fire changes in the economy that could push Los Alamos County housing prices higher or lower. Such changes could include changes in wages for highly skilled workers such as those employed at LANL, or changes in Department of Energy programs that increase or decrease the number of such workers in the community.

In order to capture the potential effects of changes in other external factors, we performed a comparable community analysis. A comparable community analysis involves creating a property value baseline using a community or group of communities comparable to the one being studied. We then use regression analysis to estimate the effects of the same factors that drove the results in the trend analysis, while using growth in house prices in the comparable communities to control for expected house price changes.

The first step in the comparable community analysis is the identification of communities that are similar to Los Alamos. We based our search on two criteria; (1) a selected community must be remote enough to have a reasonably small local economy, and (2) there must be a large Department of Energy installation in the community that is the largest employer, or a large employer with few competitors.

We identified Department of Energy facilities similar to the Los Alamos National Laboratory. We selected Oak Ridge National Laboratory in Anderson County, Tennessee and Hanford Site/Pacific Northwest National Laboratory in Richland,

⁷ It is theoretically possible to estimate different growth rates for housing prices pre- and post-Fire. At present there is not enough post-Fire data to estimate these differing growth rates. Future analyses should attempt to ascertain whether the Fire has resulted in changes to the rate of growth in Los Alamos County.

⁸ The average level of diminution in the Eastern area cannot be determined with sufficient precision to give an economically meaningful range of potential values.

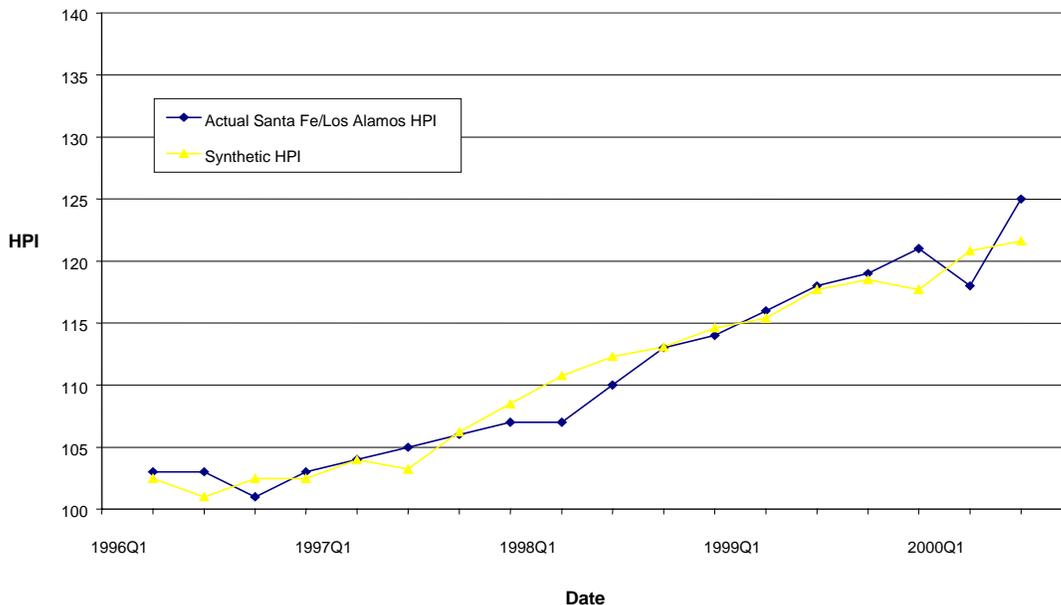
Washington as most comparable to Los Alamos. Both of these sites contain large Department of Energy facilities that employ a substantial percentage of the local residents and both are found in relatively remote locations.

We then obtained information for changes in housing prices over time for the Metropolitan Statistical Areas (MSAs) containing Oak Ridge and Hanford. Like Los Alamos County, which is located in the Santa Fe MSA, Oak Ridge and Hanford are located in smaller MSAs due to their relatively remote locations. Oak Ridge is located in the Knoxville, Tennessee MSA, while Hanford is located in the Richland, Washington MSA. We obtained housing price indices (HPIs) for these MSAs from the Office of Federal Housing Enterprise Oversight (OFHEO). OFHEO creates quarterly housing price indices for 328 MSAs, including Knoxville and Richland.

Housing price indices are similar to the more familiar Consumer Price Index (CPI), which is one measure of the rate of inflation. While the CPI takes into account a large basket of consumer goods, an HPI only measures changes in the price of housing. Using the HPIs for the Knoxville MSA and the Richland MSA, we created a synthetic index by taking the simple average of these indices every quarter. As a check, we examined the correlation between percentage increases in this synthetic index and percentage increases in the index for the Santa Fe/Los Alamos MSA. As Figure 4 indicates, we found that changes in the synthetic index were highly correlated with changes in the index for Santa Fe/Los Alamos. The diagram below illustrates this correlation.

Based on this initial finding we concluded that it was appropriate to use percentage changes in our synthetic comparable community index to proxy for percentage changes in housing prices in Los Alamos County.

Figure 4: Santa Fe/Los Alamos House Price Index versus Synthetic Price Index



As we found in the housing price trend model, the comparable community model finds a negative impact on housing prices in Los Alamos County. The overall countywide effect appears to be within the 4-11% range. We do not observe a statistically significant diminution in property values for non-single-family residences, except for the Eastern Area, where there appears to have been some diminution in value post-Fire.⁹

5. Summary of Trend and Comparable Community Analysis

Comparing the results of the comparable community analysis with the results of the housing price trend analysis reveals no inconsistencies between these approaches. We believe, given the high explanatory power of both the price trend and comparable community models, that we have successfully explained factors that influence housing prices in Los Alamos County, including factors capturing diminutions in property values in the months immediately following the Fire.¹⁰

We believe the results presented here present a clear picture of the current state of Los Alamos County housing prices and the effects of the Fire on these prices. However, future analyses could potentially improve on the fit of the model by including other variables that might be correlated with housing prices. These variables could include lot size, which upon visual inspection did not appear to be complete or accurate in the data we received from the MLS. Clean lot size data could capture another factor that could be important in the valuation of residential properties, especially in the case of single-family homes. Also, more post-Fire data could allow for an investigation of changes in long-run growth trends after the Fire.

C. Case Studies

In addition to analyzing the descriptive statistics, the housing price trend model, and the comparable community model, we met with local real estate professionals to examine specific post-Fire property sales. We focused our attention on the North Community and Western Area of the City of Los Alamos due to their close proximity to the Fire and the perception among residents that property diminution was greatest in those areas. This perception was gained from a survey conducted by PricewaterhouseCoopers. Appendix D summarizes the survey results.

⁹ The average level of diminution in the Eastern area cannot be determined with sufficient precision to give an economically meaningful range of potential values.

¹⁰ While the Fire was a disaster that caused visible and lasting damage to Los Alamos County, other events that took place contemporaneously with the Fire complicate identifying the effects of the disaster on housing prices. Specifically, about the same time as the Fire struck, the Los Alamos National Laboratory was conducting a high-profile security investigation. The results of this investigation reportedly led to increased security, a decline in the morale of some of the staff, and the reported decision on the part of a small number of LANL workers to leave the community. A statistical model cannot determine the extent to which these or other similar events contributed to the diminution observed after the Fire.

We analyzed each sale individually for its conditions of sale and the quality and condition of the structure's improvements. Additionally, we compared each sale to similar properties sold in areas of Los Alamos presumed to be less affected by the Fire. We also solicited opinions from local real estate professionals as to whether each individual sale had been sold at a discount. If a discount was evident, we investigated the discounted sale to determine whether other extenuating circumstances, besides the Fire, accounted for the discount.

Based on a case study examination of 51 post-Fire sales in the North Community, Western Area, and Ponderosa Estates, we learned that approximately 12% of the properties were sold at a discount, ranging from 5-39%. The sale exhibiting the 39% discount was based on other extenuating circumstances and thus removed from the range. Removing this sale results in a range of discounts of 5-14%. The range of these individual discounts is supported by the descriptive statistics and econometric models presented in this report. It must be noted, however, that areas initially presumed to be less- or unaffected by the Fire were later found to have experienced some level of diminution, based on the trend and comparable community regression models. Thus, the general absence of discounting in North Community and Western Area properties, relative to the rest of the community, has to be interpreted as an indication that the effects of the fire were felt throughout the community rather than just selectively affecting those areas closest to the fire.

IV. Conclusion

PricewaterhouseCoopers began this assignment on January 3, 2001. We issued a preliminary report on February 5, 2001 and presented our preliminary findings at a Town Hall Meeting in Los Alamos on February 7, 2001. Based on public suggestions and additional time made available to us to analyze the data, we refined our analysis. Specifically, we developed a regression model of property values using trend analysis of historical data for residential real estate prices in Los Alamos County. We also developed a second regression model incorporating a comparable community approach.

Based on both of these approaches, as well as a case-by-case examination of specific post-fire sales, we conclude that single-family residences in Los Alamos County sold between May 10, 2000 and January 31, 2001 experienced a diminution in value in the range of 3% to 11%. On average, there appeared to be no diminution in value for non-single-family properties, including quads, duplexes, condos, and townhouses, except in the Eastern Area of the City of Los Alamos where some diminution appears to have taken place.¹¹

This report dated March 28, 2001 presents our methodology, findings, and conclusions based on available data observed through January 31, 2001. PricewaterhouseCoopers did not perform an audit on the data used in these analyses and does not represent that the data are complete, consistent, or accurate. These analyses assume that the Multiple Listing Service data and other data obtained on the real estate market in Los Alamos accurately represent the activity in the Los Alamos County housing market for the period studied. Changes, corrections or additions to the MLS data or other data could materially change the results and conclusions presented in this report. This report contains case studies that include appraisals or other evaluations of property values that were made by individuals in the Los Alamos real estate community. PricewaterhouseCoopers does not represent that these appraisals or other evaluations are accurate, consistent, or obtained using standard or appropriate methodologies.

¹¹ See footnote 8.

Appendix A: Median Sales Price per Square Foot Analysis

Median Annual Square Foot Sales Price per Structure Type					
Residential Structure Type	Year				
	1996	1997	1998	1999	2000
Single Family	\$ 97	\$ 105	\$ 120	\$ 129	\$ 133
Duplex	\$ 77	\$ 86	\$ 96	\$ 108	\$ 116
Quad	\$ 96	\$ 85	\$ 90	\$ 103	\$ 104
Total	\$ 96	\$ 100	\$ 113	\$ 123	\$ 128

Source: New Mexico Multiple Listing Service

Average Annual Change in Median Square Foot Sales Price per Structure Type					
Residential Structure Type	Year				
	1996	1997	1998	1999	2000
Single Family		8.25%	14.29%	7.50%	3.10%
Duplex		12.42%	11.05%	13.09%	7.41%
Quad		-11.46%	5.29%	15.08%	0.97%
Total		4.71%	13.00%	8.85%	4.07%

Source: New Mexico Multiple Listing Service

Appendix B: Trend Analysis Regression Results

Single Family Trend Results

Variable Description	Single Family					
	Community Interactions			No Community Interactions		
	Coefficient Estimate	Lower Bound	Upper Bound	Coefficient Estimate	Lower Bound	Upper Bound
Constant Term	6.49	6.20	6.77	6.50	6.22	6.78
Los Alamos Market Trend Growth	0.02	0.02	0.03	0.02	0.02	0.03
Natural Log of Comparable Community HPI	--	--	--	--	--	--
Natural Log of Square Footage of Home	0.77	0.74	0.80	0.77	0.74	0.80
Duplex instead of Quad	--	--	--	--	--	--
Newly constructed residence, or residence of 0 to 5 years in age	0.20	0.16	0.25	0.20	0.16	0.25
Residence 6 to 10 years in age	0.16	0.11	0.21	0.16	0.11	0.21
Residence 11 to 20 years in age	0.08	0.05	0.11	0.08	0.05	0.11
Residence 21 to 30 years in age	0.06	0.03	0.09	0.06	0.03	0.09
Residence within North Community	-0.17	-0.21	-0.12	-0.17	-0.21	-0.12
Residence within North Mesa	-0.14	-0.17	-0.10	-0.13	-0.16	-0.09
Residence within Western Area	-0.20	-0.25	-0.16	-0.19	-0.24	-0.15
Residence within Eastern Area	-0.15	-0.19	-0.10	-0.14	-0.18	-0.10
Residence within White Rock	-0.16	-0.19	-0.13	-0.15	-0.18	-0.12
Residence within North Community, post-fire	-0.03	-0.17	0.12	--	--	--
Residence within North Mesa, post-fire	0.06	-0.03	0.14	--	--	--
Residence within Western Area, post-fire	0.08	-0.02	0.18	--	--	--
Residence within Eastern Area, post-fire	0.07	-0.05	0.18	--	--	--
Residence within White Rock, post-fire	0.08	0.01	0.16	--	--	--
Residence post-fire	-0.13	-0.20	-0.06	-0.07	-0.11	-0.03
Monthly Mortgage Interest Rate	-0.03	-0.05	-0.01	-0.03	-0.05	-0.01
Dependent Variable is Natural Log of Sale Price						

Appendix B: Trend Analysis Regression Results

Duplex and Quad Trend Results

Variable Description	Duplex and Quad					
	Community Interactions			No Community Interactions		
	Coefficient Estimate	Lower Bound	Upper Bound	Coefficient Estimate	Lower Bound	Upper Bound
Constant Term	4.73	4.22	5.24	4.79	4.28	5.30
Los Alamos Market Trend Growth	0.02	0.01	0.02	0.02	0.01	0.02
Natural Log of Comparable Community HPI	--	--	--	--	--	--
Natural Log of Square Footage of Home	0.93	0.88	0.98	0.92	0.87	0.97
Duplex instead of Quad	0.14	0.09	0.19	0.15	0.10	0.20
Newly constructed residence, or residence of 0 to 5 years in age	0.67	0.59	0.76	0.67	0.59	0.75
Residence 6 to 10 years in age	0.15	0.06	0.24	0.16	0.07	0.25
Residence 11 to 20 years in age	0.15	0.07	0.23	0.14	0.06	0.22
Residence 21 to 30 years in age	0.05	-0.03	0.13	0.03	-0.05	0.11
Residence within North Community	0.06	-0.22	0.35	0.07	-0.22	0.36
Residence within North Mesa	--	--	--	--	--	--
Residence within Western Area	0.21	-0.08	0.50	0.22	-0.08	0.51
Residence within Eastern Area	0.18	-0.12	0.47	0.17	-0.13	0.47
Residence within White Rock	0.13	-0.17	0.42	0.15	-0.15	0.45
Residence within North Community, post-fire	0.01	-0.14	0.16	--	--	--
Residence within North Mesa, post-fire	--	--	--	--	--	--
Residence within Western Area, post-fire	0.03	-0.17	0.22	--	--	--
Residence within Eastern Area, post-fire	-0.15	-0.30	-0.01	--	--	--
Residence within White Rock, post-fire	--	--	--	--	--	--
Residence post-fire	0.09	-0.05	0.22	0.03	-0.03	0.09
Monthly Mortgage Interest Rate	-0.02	-0.05	0.02	-0.02	-0.05	0.01
Dependent Variable is Natural Log of Sale Price						

Appendix C: Comparable Community Analysis Regression Results

Single-Family HPI Results

Variable Description	Single Family					
	Community Interactions			No Community Interactions		
	Coefficient Estimate	Lower Bound	Upper Bound	Coefficient Estimate	Lower Bound	Upper Bound
Constant Term	-3.00	-3.93	-2.08	-2.94	-3.87	-2.02
Los Alamos Market Trend Growth	--	--	--	--	--	--
Natural Log of Comparable Community HPI	2.03	1.85	2.21	2.02	1.85	2.20
Natural Log of Square Footage of Home	0.78	0.75	0.81	0.78	0.75	0.81
Duplex instead of Quad	--	--	--	--	--	--
Newly constructed residence, or residence of 0 to 5 years in age	0.20	0.16	0.24	0.20	0.16	0.24
Residence 6 to 10 years in age	0.15	0.10	0.20	0.15	0.10	0.20
Residence 11 to 20 years in age	0.07	0.04	0.10	0.07	0.04	0.10
Residence 21 to 30 years in age	0.06	0.03	0.08	0.06	0.03	0.08
Residence within North Community	-0.17	-0.21	-0.12	-0.17	-0.21	-0.12
Residence within North Mesa	-0.14	-0.17	-0.10	-0.13	-0.16	-0.09
Residence within Western Area	-0.20	-0.25	-0.16	-0.19	-0.23	-0.15
Residence within Eastern Area	-0.15	-0.19	-0.10	-0.14	-0.18	-0.10
Residence within White Rock	-0.16	-0.19	-0.13	-0.15	-0.18	-0.12
Residence within North Community, post-fire	-0.03	-0.17	0.12	--	--	--
Residence within North Mesa, post-fire	0.06	-0.03	0.15	--	--	--
Residence within Western Area, post-fire	0.08	-0.03	0.18	--	--	--
Residence within Eastern Area, post-fire	0.07	-0.04	0.18	--	--	--
Residence within White Rock, post-fire	0.09	0.01	0.16	--	--	--
Residence post-fire	-0.14	-0.21	-0.07	-0.08	-0.12	-0.04
Monthly Mortgage Interest Rate	-0.01	-0.03	0.01	-0.01	-0.03	0.01
Dependent Variable is Natural Log of Sale Price						

Appendix C: Comparable Community Analysis Regression Results

Duplex and Quad HPI Results

Variable Description	Duplex and Quad					
	Community Interactions			No Community Interactions		
	Coefficient Estimate	Lower Bound	Upper Bound	Coefficient Estimate	Lower Bound	Upper Bound
Constant Term	-2.34	-3.83	-0.85	-2.29	-3.79	-0.78
Los Alamos Market Trend Growth	--	--	--	--	--	--
Natural Log of Comparable Community HPI	1.51	1.23	1.80	1.52	1.23	1.80
Natural Log of Square Footage of Home	0.93	0.88	0.98	0.92	0.88	0.97
Duplex instead of Quad	0.14	0.10	0.19	0.15	0.10	0.20
Newly constructed residence, or residence of 0 to 5 years in age	0.66	0.58	0.74	0.66	0.58	0.74
Residence 6 to 10 years in age	0.16	0.07	0.24	0.16	0.07	0.25
Residence 11 to 20 years in age	0.15	0.08	0.23	0.15	0.07	0.22
Residence 21 to 30 years in age	0.05	-0.03	0.13	0.03	-0.05	0.11
Residence within North Community	0.03	-0.26	0.31	0.03	-0.26	0.32
Residence within North Mesa	--	--	--	--	--	--
Residence within Western Area	0.18	-0.11	0.47	0.18	-0.11	0.48
Residence within Eastern Area	0.14	-0.15	0.43	0.13	-0.16	0.43
Residence within White Rock	0.09	-0.20	0.39	0.11	-0.18	0.41
Residence within North Community, post-fire	0.00	-0.14	0.15	--	--	--
Residence within North Mesa, post-fire	--	--	--	--	--	--
Residence within Western Area, post-fire	0.02	-0.18	0.21	--	--	--
Residence within Eastern Area, post-fire	-0.15	-0.30	-0.01	--	--	--
Residence within White Rock, post-fire	--	--	--	--	--	--
Residence post-fire	0.07	-0.07	0.20	0.00	-0.06	0.07
Monthly Mortgage Interest Rate	0.00	-0.03	0.04	0.00	-0.03	0.03
Dependent Variable is Natural Log of Sale Price						

Appendix D: Public Perception Surveys

A. Research & Polling Inc. Survey

Los Alamos County contracted Polling & Research Inc. to survey the individuals who lost their homes in the fire. The survey was published in December 2000. Of the survey respondents:

- o 81% owned the home in which they were living at the time of the fire
- o 52% had lived in their homes for more than 10 years

Of those who owned their homes:

- o 54% reported that they would rebuild on the same site
- o 10% reported that they would move outside of Los Alamos County
- o 6% planned to buy an existing house in Los Alamos
- o 30% cited other plans or had not decided

Of those planning to rebuild:

- o 65% plan to build a different type of structure
- o 35% plan to build the same type of structure

The survey revealed that about a third of the owners believed that they would move into permanent housing within the first year. Approximately 43% believed that it would take two years to complete the process.

In terms of renters in the survey, 64% lived in quads, while 31% lived in duplexes at the time of the fire. The majority of renters (79%) reported that they planned to stay in Los Alamos. A large proportion (43%) reported that they want to move back to the same neighborhood. Even after the fire, the majority of renters (57%) expressed the desire to purchase a home in Los Alamos within the next two years.

B. PricewaterhouseCoopers Survey of Areas of the City of Los Alamos

PricewaterhouseCoopers surveyed citizens within the County of Los Alamos to assess the opinions and attitudes regarding the Cerro Grande Fire's impact on property values. We surveyed residents in the six areas of the community, including White Rock.

Three-quarters of the surveys were conducted in North Community and Western Area, the areas that experienced extreme fire damage¹². The remaining surveys were distributed evenly throughout the other areas of Los Alamos.

¹² The sample size was 65 residences.

Table 1 summarizes responses to questions regarding general information and attitudes about the fire:

Table 1: PricewaterhouseCoopers Survey: General Information and Attitudes

Questions	Yes	No	Don't Know	Number of Years			
				< 10	10 - 25	26 - 50	> 50
How long have you lived in Los Alamos?				31%	26%	36%	7%
Do you own your home?	89%	11%					
Were you living at this address at the time of the fire?	89%	11%					
In the aftermath of the fire, do you feel that your daily routine was disrupted?	80%	20%					
Does your daily routine continue to be disrupted?	15%	85%					
Did the fire damage your residence?	49%	51%					
Did you lose any trees or other vegetation on your property?	24%	76%					
Did you lose any personal property?	16%	84%					
Did you seriously consider moving out of Los Alamos because of the fire?	15%	85%					
If you were just now moving to Los Alamos, would you consider moving into one of the areas where a large number of homes were lost?	40%	42%	18%				
Do you follow the real estate market?	49%	51%					
Would you recommend buying or renting a home adjacent to the forest?	56%	16%	28%				
Do you believe the forest will recover from the fire?	85%	6%	9%				
How long do you think it will take for the forest to recover from the fire?			13%	7%	27%	18%	35%

Table 2 summarizes responses to questions regarding the fire’s impact on property values:

Table 2: Perceptions of Impacts on Property Values

Questions	Yes	No	Don't Know	Decreased	Increased	About the Same
Do you believe the amount for which you could sell your home currently has decreased, increased or stayed about the same since the fire?			16%	42%	6%	36%
Do you believe the values of homes in your immediate neighborhood have decreased, increased or stayed about the same since the fire?			16%	40%	4%	40%
Has the view from your home changed as a result of the fire?	56%	44%				
If yes, do you believe the change in view negatively impacts your property value?	65%	35%				
Do you think the risk to your neighborhood from wildfires has decreased, increased or stayed about the same since the fire?			7%	56%	2%	35%
Do you think the risk to your neighborhood from floods, mudslides or other natural occurrences (other than wildfires) has decreased, increased or stayed about the same since the fire?			7%		38%	55%
Do you believe the values of existing homes in areas where numerous homes were lost decreased, increased or stayed about the same since the fire?			38%	44%		18%
In the North Community?			24%	58%		18%
In the Western Area?			20%	51%	2%	27%
In the Eastern Area?			20%	18%	2%	60%
In the North Mesa area?			16%	24%	4%	56%
In the Barranca Mesa area?			16%	20%	6%	58%
In Ponderosa Estates?			20%	44%	2%	34%
In Quemazon?			20%	60%	2%	18%
In White Rock?			16%	11%		73%

Appendix E: Case Studies

In addition to analyzing the descriptive statistics, the housing price trend model, and the comparable community model, we met with local real estate professionals to examine specific post-Fire property sales. We focused our attention on the North Community and Western Area of the City of Los Alamos due to their close proximity to the Fire and the perception among residents that property diminution was greatest in those areas. This perception was gained from a survey conducted by PricewaterhouseCoopers. Appendix D summarizes the survey results.

Based on a review of the location of the destroyed homes, we developed a zone concept, where Zone 1 was in close proximity to the fire line and Zone 2 was further away. This zone concept created a North Community Zone 1 and 2 and a Western Area Zone 1 and 2, as depicted in the Preliminary Report, dated February 5, 2001. No other communities, besides Ponderosa Estates and Quemazon, were included in the zones.

We analyzed each sale individually for its conditions of sale and the quality and condition of the structure's improvements. Additionally, we compared each sale to similar properties sold in areas of Los Alamos presumed to be less affected by the Fire. We also solicited opinions from local real estate professionals as to whether each individual sale had been sold at a discount. If a discount was evident, we investigated the discounted sale to determine whether other extenuating circumstances, besides the Fire, accounted for the discount.

A. North Community Case Study

In the post-Fire period a total of 26 sales were identified in the North Community. Of the 26 sales, nine were located within the previously defined Zone 1, while the remaining 17 sales were in Zone 2. Each sale was evaluated based upon comparable market transaction data obtained from Dunning Appraisal and local real estate agents.

1. North Community: Zone 1 Post-Fire Sales

The nine post-Fire sales located in Zone 1 included duplexes, single family residences and quads. Purchase prices per square foot ranged between \$86 to \$135. The following table identifies these transactions, followed by a summary discussion of each sale.

Table 1: Post-Fire Sales in North Community, Zone 1

Sale #	Type	Square Footage	Bed/Bath	Days on Market	Sales Price	Price per Square Foot	Discounted
1	Duplex	1,274	4/3	55	\$172,000	\$135	No
2	Duplex	1,245	3/1	398	\$130,000	\$104	Yes – 5%
3	Single	2,093	3/2	28	\$276,500	\$132	No
4	Single	3,337	4/3	287	\$255,000	\$76	Yes – 39%
5	Quad	1,038	3/1	35	\$95,000	\$92	No
6	Quad	1,348	2/1	98	\$115,500	\$86	No
7	Duplex	1,141	2/1	n/a	\$138,500	\$121	Yes – 14%
8	Quad	1,038	3/1	n/a	\$90,000	\$87	Yes – 5%
9	Quad	1,166	3/1	n/a	\$105,000	\$90	No

Note: "n/a" means not available.

Sale 1 is a duplex with a double car garage. It has four bedrooms and three baths. It was reportedly in good condition, having been recently upgraded – including new windows. This sale was \$19 per square foot above the median price for duplexes sold in the North Community since the Fire. According to real estate professionals familiar with the transaction, the purchase price did not reflect a discount.

Sale 2 is a duplex with three bedrooms and one bath. It was reportedly in good condition. The property was originally listed (pre-Fire) for \$155,000, and had been on the market for over a year. The recorded sales price was \$143,500, however, the buyer was given special incentives in the way of closing costs and financing – reducing the effective sales price to \$130,000. This sale was \$9 per square foot lower than the median for duplexes sold in the North Community post-Fire. According to real estate professionals familiar with the transaction, the property was adjacent to a total burn area, and as a result, it

made it more difficult to show. These real estate professionals believe that the final sale price would have been 5% to 10% higher had it not been for the Fire.

Sale 3 is a single-family residence with an addition and a large double garage. It has three bedrooms and two baths. It was reportedly in good condition. This sale was \$8 per square foot above the median for singles sold in the North Community since the Fire. The buyers had lost their previous house in the Fire. According to real estate professionals familiar with the transaction, the purchase price did not reflect a discount.

Sale 4 was a custom single-family residence on a large lot and the only house left standing within a burned area of the North Community. It had been on the market for over 280 days when it sold. It was originally priced at \$369,900, but had received little consideration. The seller accepted an offer of \$255,000. This sale was \$48 per square foot or 39% below the median for singles sold in the North Community since the Fire. According to real estate professionals familiar with the transaction, the purchase price should have been \$30,000 to \$35,000 higher, although most of the difference was attributed to the house design and its aggressive pricing.

Sale 5 is located in the middle of the area hardest hit by the Fire in the North Community. It is an interior unit in a quad and had three bedrooms and one bath. The owner of an adjacent unit purchased this property. According to real estate professionals familiar with the transaction, there were three offers at the time the deal was made. This property sold for the median price per square foot in the North Community and did not reflect a discount due to the Fire.

Sale 6 is an end unit, with an addition, in a quad building. It has two bedrooms and one bath. The unit included an addition in which an owner could build a ground-floor bathroom. This sale was \$5 per square foot below the median price for quads sold in the North Community since the Fire. According to real estate professionals knowledgeable with the transaction, the purchase price did not reflect a discount.

Sale 7 is a duplex, which has been upgraded and includes a garage. There are two bedrooms and one bath. The Fire came within eight feet of the rear of this building, and burned several other houses on the same street. According to the seller, the property had appraised for \$138 per square foot, just prior to the Fire. Based upon the appraised value, this property sold for a 14% discount.¹³

Sale 8 is an end unit in a quad, located in an area of the North Community where about one-half of the homes burned. It has three bedrooms and one bath. This unit was sold by its owner rather than with the assistance of a real estate professional. According to real estate professionals familiar with the transaction, the purchase price reflected a slight discount of approximately 5%.

¹³ For purposes of disclosure, the seller of this property was an appraiser who provided data and other assistance to PricewaterhouseCoopers.

Sale 9 is an end unit quad with three bedrooms and one bath. This home was also sold by its owner rather than with professional real estate assistance. According to real estate professionals knowledgeable about the transaction, the purchase price did not reflect a discount due to the Fire.

Based upon these nine sales, there is evidence that some properties in Zone 1 of the North Community have sold for a discount post-Fire. Five of the nine sales reportedly did not sell for a discount. The range of indicated discounts for the other four sales was 5% to 39%. The upper end of the range is based upon a transaction that was influenced by other considerations, in addition to proximity to the Fire. Excluding it, the indicated range of discounts of affected properties was 0% to 14%.

2. North Community: Zone 2 Post-Fire Sales

The 17 sales in Zone 2 consisted of duplexes, single family residences and quads. Purchase prices on a per square foot basis ranged between \$67 and \$158.

Table 2: Post-Fire Sales in North Community, Zone 2

Sale #	Type	Square Footage	Bed/Bath	Days on Market	Sales Price	Price per Square Foot	Discounted
10	Duplex	893	2/1	102	\$127,500	\$143	No
11	Duplex	1,443	3/1	55	\$157,000	\$109	No
12	Duplex	893	2/1	149	\$127,000	\$142	No
13	Duplex	1,315	4/1	84	\$153,500	\$117	No
14	Duplex	2,540	5/2	37	\$269,500	\$106	No
15	Duplex	1,715	2/2	116	\$138,500	\$81	No
16	Single	1,687	3/2	27	\$210,000	\$124	No
17	Single	1,171	3/2	66	\$185,000	\$158	No
18	Single	2,922	6/3	186	\$195,000	\$67	No
19	Single	1,644	3/2	44	\$249,500	\$152	No
20	Single	1,992	4/2	34	\$267,500	\$134	No
21	Quad	1,038	3/1	136	\$89,000	\$86	No
22	Quad	1,086	3/1.5	83	\$106,900	\$98	No
23	Quad	1,038	3/1	44	\$96,000	\$92	No
24	Quad	1,602	4/2	85	\$137,000	\$86	No
25	Quad	1,492	4/1.5	n/a	\$128,000	\$86	No
26	Quad	1,166	2/1	n/a	\$105,000	\$90	No

A similar analysis of that performed on Zone 1 sales was conducted on sales in Zone 2. We reviewed each sale with local real estate professionals. Of the 17 sales, real estate professionals reported that only Sale 12 appeared to be discounted. This sale was a full

duplex that had been converted to a single. Based upon conversations with local real estate professionals, residential properties sold in North Community, Zone 2, between May 10, 2000 and January 31, 2001, do not appear to have been sold at a discount.

B. Western Area Case Study

In the post-Fire period, a total of 24 sales were identified in the Western Area. Of the 24 sales, four were located within Zone 1 and the remaining 20 sales were identified as being in Zone 2.

1. Western Area: Zone 1 Post-Fire Sales

The four post-Fire sales in Zone 1 include a duplex and three single-family residences. Purchase prices on a per square foot basis ranged between \$110 and \$153 per square foot. Table 3 identifies these transactions, followed by a summary discussion. Details of each transaction were discussed with local real estate agents, appraisers and other parties involved in the transactions.

Table 3: Post-Fire Sales in Western Area, Zone 1

Sale #	Type	Square Footage	Bed/Bath	Days on Market	Sales Price	Price per Square Foot	Discounted
27	Duplex	916	1/1	60	\$122,000	\$133	No
28	Single	1,568	4/2	99	\$245,000	\$156	Yes – 5%
29	Single	964	2/1	25	\$125,000	\$130	No
30	Single	2,188	3/2	209	\$240,000	\$110	Yes – 12%

Sale 27 is a small, upgraded duplex with a carport. It is close to the LANL and is located on the canyon in an area where the Fire caused significant damage. However, the nearest burnt structure was several houses away. This sale was \$20 per square foot above the median price for duplexes sold in the Western Area since the Fire. According to real estate professionals familiar with the transaction, the purchase price did not reflect a discount.

Sale 28 is a single that was damaged in the Fire, but not destroyed. It is in the perimeter area that was heavily forested. After the Fire, the house was completely remodeled. This house sold for \$32 above the median price of singles in the Western Area. This residence was purchased by a buyer whose home was destroyed in the Fire. According to real estate professionals knowledgeable about the transaction, the sales price may have been slightly below what it could have sold for, if not for the Fire (with all of the post-Fire upgrades included). The consensus was that at most it sold for a 5% discount.

Sale 29 is a small single-family residence. It has two bedrooms and one bath. The house reportedly was in fair condition at the time of the sale, and needed a number of repairs. This house sold for \$6 per square foot above the median price in the Western Area post-Fire. According to real estate professionals familiar with the transaction, the sales price was not discounted.

Sale 30 is a modified single-family residence, located across the street from several destroyed homes. It has a second-story addition and several upgrades. This house was on the market for over 200 days before it was sold. It was originally listed for \$315,000 or \$144 per square foot, and reportedly received little interest. After the Fire, the price was reduced to \$290,000 or \$133 per square foot. After a few weeks, the price was again reduced to \$249,500 or \$114 per square foot and quickly received an offer.

According to real estate professionals familiar with this transaction, the original listing price was too high. The property had been on the market for about 100 days at the time of the Fire, and had not received an acceptable offer. The property sold for \$14 below the median price for singles in the Western Area post-Fire. It was also observed that just prior to the Fire, a nearby four-bedroom house of approximately 2,500 square feet sold for \$119 per square foot. Using the median price per square foot as a benchmark, the implied discount for this property is approximately 12%. Similarly, the list price suggests a maximum discount of 24%.

Based upon the observed sales, the Fire does appear to have impacted property values in Zone 1 of the Western Area. Two of the four observed properties reportedly did not sell for a discount. The range of indicated discounts for the two observed properties selling at a reduced price was between 5% to 24%. The range is likely somewhat narrower, given the length of time Sale 30 was on the market.

2. Western Area: Zone 2 Post-Fire Sales

The 20 sales in Western Area Zone 2 consist of duplexes and single family residences. Purchase prices on a per square foot basis ranged between \$97 and \$155.

Table 4: Post-Fire Sales in Western Area, Zone 2

Sale #	Type	Square Footage	Bed/Bath	Days on Market	Sales Price	Price per Square Foot	Discounted
32	Duplex	3,000	5/4	9	\$305,000	\$102	No
33	Duplex	1,112	2/1	71	\$127,000	\$114	No
34	Duplex	1,026	2/1	50	\$142,000	\$138	No
35	Duplex	1,379	3/1	99	\$169,500	\$123	No
36	Duplex	907	2/1	90	\$128,000	\$141	No
37	Single	2,015	3/2	48	\$312,000	\$155	No
38	Single	1,218	3/2	147	\$162,500	\$133	No
39	Single	1,317	3/1	35	\$182,000	\$138	No
40	Single	720	2/1	85	\$107,000	\$149	No
41	Single	722	2/1	39	\$96,000	\$133	No
43	Single	1,964	3/2	67	\$225,000	\$115	No
43	Single	880	2/1	43	\$119,500	\$136	No
44	Single	707	2/1	51	\$98,500	\$139	No
45	Single	2,332	4/2	141	\$240,000	\$103	No
46	Single	2,150	3/2	145	\$208,000	\$97	No
47	Single	1,832	3/2	144	\$200,000	\$109	No
48	Single	720	2/1	21	\$105,000	\$146	No
49	Single	2,191	4/2	57	\$300,000	\$137	No
50	Duplex	1,015	2/1	N/A	\$130,000	\$128	No
51	Single	2,852	6/3	N/A	\$300,000	\$105	No

As with the properties in Zone 1 of the Western Area, we reviewed every sale. The residences in Zone 2 of the Western Area represent some of the oldest properties in the Los Alamos area. As a result, the houses have been upgraded to differing levels, which is reflected in the sales price. While there is some variance among the prices, there is no evidence of price discounts that are attributable to the Fire. Based upon our analysis of these sales, as well as conversations with local real estate professionals, it does not appear that post-Fire properties in Zone 2 of the Western Area sold for a discount between May 10, 2000 and January 31, 2001.

C. Ponderosa Estates Case Study

In the post-Fire period only one sale was identified in Ponderosa Estates. This sale was located in Zone 1. The sale was evaluated based upon data gathered from the Multiple Listing Service, local real estate agents and appraisers.

Table 5: Post-Fire Sales in Ponderosa Estates

Sale #	Type	Square Footage	Bed/Bath	Days on Market	Sales Price	Price per Square Foot	Discounted
N/A	Single	3,600	5/4	183	\$425,000	\$118	Yes – 10%

This sale was for a fairly new single-family residence, located on a perimeter street in an area threatened by the Fire. It was reported that the seller had accepted a job out of state and was forced to sell. Based upon terms of the sale and conversations with local real estate professionals, this sale reportedly sold at a considerable discount. However, the impact due to the Fire is confounded due to the motivations of the seller. Knowledgeable parties are divided regarding whether any of the loss is attributable to the Fire. The consensus is that the discount does not exceed 10%.

D. Summary of Case Studies

Based on a case study examination of 51 post-Fire sales in the North Community, Western Area, and Ponderosa Estates, we learned that approximately 12% of the properties were sold at a discount, ranging from 5-39%. The sale exhibiting the 39% discount was based on other extenuating circumstances and thus removed from the range. Removing this sale results in a range of discounts of 5-14%. The range of these individual discounts is supported by the descriptive statistics and econometric models presented in this report. It must be noted, however, that areas initially presumed to be less- or unaffected by the Fire were later found to have experienced some level of diminution, based on the trend and comparable community regression models. Thus, the general absence of discounting in North Community and Western Area properties, relative to the rest of the community, has to be interpreted as an indication that the effects of the fire were felt throughout the community rather than just selectively affecting those areas closest to the fire.

Appendix F: Residential Lot Sales

Sale #	Closing Date	Sold Price
1	09/24/1996	\$80,000
2	11/06/1996	\$85,000
3	11/27/1996	\$39,500
4	03/10/1997	\$130,000
5	03/21/1997	\$80,000
6	06/13/1997	\$93,000
7	09/30/1997	\$97,500
8	12/31/1997	\$85,000
9	03/27/1998	\$157,000
10	05/22/1998	\$47,000
11	05/28/1998	\$95,500
12	10/30/1998	\$60,000
13	11/06/1998	\$55,000
14	11/30/1998	\$60,000
15	01/22/1999	\$85,000
16	06/11/1999	\$130,000
17	09/15/1999	\$155,000
18	09/15/1999	\$145,000
19	09/15/1999	\$140,000
20	09/15/1999	\$150,000
21	09/15/1999	\$165,000
22	09/15/1999	\$145,000
23	09/15/1999	\$145,000
24	09/15/1999	\$125,000
25	09/15/1999	\$125,000
26	09/15/1999	\$125,000
27	09/15/1999	\$125,000
28	09/15/1999	\$85,000
29	09/15/1999	\$125,000
30	09/15/1999	\$130,000
31	09/15/1999	\$130,000
32	09/15/1999	\$125,000
33	09/15/1999	\$125,000
34	09/15/1999	\$125,000
35	09/15/1999	\$140,000
36	09/15/1999	\$88,000
37	09/15/1999	\$125,000
38	07/19/2000	\$75,000
39	08/09/2000	\$100,000
40	08/31/2000	\$110,000
41	09/29/2000	\$205,000
42	11/15/2000	\$195,000
43	01/16/2001	\$115,000

Note: Due to limited information on pre- and post-Fire vacant lot sales, we were unable to determine a diminution rate or range for vacant lots.