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Measuring the Impact of Eminent Domain Partial Takings: A Behavioral Approach

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This study uses a behavioral approach to measure the impact of a partial eminent domain land taking (which affects easement rights and causes proximity damage) on residential property values. Existing appraisal methods are not suited to handle this type of unique valuation impact determination, yet diminution must be determined by the courts to establish proper "just compensation". To accomplish the quantification of damages, an experimental design is implemented that allows the market to voice its opinion of valuation impact through a mechanism other than direct comparable sales. Moreover, this behavioral methodology can and should be used in a number of additional real estate valuation applications.

1.   Introduction

Eminent domain is the taking of private land by a public authority for the greater use of the community. Examples include the taking of land to build a park or school, run power lines, widen a highway or bridge, create a light-rail or bike trail corridor, and so forth. In return for condemning the private property, the taking authority (a.k.a., condemnor) is required to pay "just compensation" to the property owner. A theoretical discussion by Turnbull (2012) describes how the taking authority often condemns more width along a corridor than is necessary or cost-effective, an observation known as the Averch-Johnson (1962) effect as termed in Baumol and Klevorick (1970).

In an eminent domain taking for a rail-trail corridor (RTC), the required width of land is usually quite narrow. As such, the term "partial take" is used to describe that the taking authority does not need to condemn the entire property of the owner. Instead, only a strip of land is taken, leaving the remainder of the property encumbered by both an easement right and a resulting diminution in value – usually due to noise and/or view impaction.

When conducting a residential real estate appraisal, the most heavily relied upon method is the comparable sales approach. This method considers recent transactions (ideally within the last six months) of similar properties within close proximity to the subject property in order to estimate the value of the subject property. Recent actual sales are preferred since this is the best known way to obtain the opinion of value of market participants. But what if there is a lack of comparable sales observations? Moreover, in the event of a partial taking, even if comparable sales did exist, no past sale would be truly comparable to the partial taking involved with the eminent domain condemnation because never before has a slice of land in the neighborhood been taken and replaced with an easement right and further potential diminution in value due to proximity damage (excess noise, potential loss of privacy, and loss of view).In such situations where no comparable sales exist, it is possible to estimate the opinion of value from the market by using an alternate approach. The purpose of this study is to demonstrate the application of one such approach, known within the behavioral literature as experimental design, which is widely accepted in the natural sciences and should appropriately be utilized in a real estate setting as well. To demonstrate the experimental approach, this study considers a recent eminent domain partial taking that received considerable media attention. A behavioral methodological design is then implemented to show how just compensation should be determined.

2.   Literature Review

A number of studies have examined the impact of major infrastructural support systems on nearby property values[1]. Studies that specifically relate to railway systems typically find weak and/or inconsistent results, likely stemming from the fact that while it might be ideal to be near a light rail station, one does not want to be too close (Gatzlaff and Smith, 1993; Chen, Rufolo, and Dueker, 1997; Haider and Miller, 2000; Knaap, Ding, and Hopkins, 2001; Weinberger, 2001; Weinstein and Clower, 2003; McMillen and McDonald, 2004; and Hess and Almeida, 2007)[2]. Being too close means something different to every homeowner as does the negative externality associated with excessive proximity. Two of the most common negative externalities are view and noise. However, increased access to neighborhoods by criminals is also a factor as studied in Bowes and Ihlanfeldt (2001).

Debrezion, Pels, and Rietveld (2007) demonstrate the importance of differentiating between commuter railway stations and light versus heavy railway stations. Moreover, the authors discuss the mitigating impact of having nearby highways. One take away from all these studies is that the impact on home prices of such railway systems is situation specific. It is difficult to construct a study and then claim that the results will hold for all future railway projects. For this reason, it is important to treat each new project independently from those in the past. It should be noted that all of the above referenced studies examine the impact of railway systems being located near, but not on existing properties. Certainly none of them have examined the impact of easement rights taken by a condemning authority. As such, the results of such studies are only loosely related to the current investigation.

3.   Background

In 2004, plots of vacant land were sold as part of two new residential housing communities: Mission Estates and Bay Oaks Estates, in Sarasota County, FL. At that time, the Seminole Gulf/CSX railroad corridor was the weekly route taken by a non-passenger cargo train that ran through otherwise open woodlands that connected Sarasota, FL, to Venice, FL. Throughout the next few years, landowners began to build houses on these vacant lots, thus resulting in homes valued in the $300,000~$400,000 range.

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[1]See Colwell and Foley (1979), Hamilton and Schwann (1995), Jaconetty (2001), and Des Rosiers (2002), Wolverton and Bottemiller (2003) for a review of the impact of power lines on residential property values.
[2]International studies that examine the impact of railways on residential property values include Lin and Hwang (2003), Celik and Yankaya (2006), and Pan and Zhang (2008).

In 2006, the National Trails System Act, which was enacted under the Federal Surface Transportation Board (STB), took a 12.43 mile portion of this railroad corridor under eminent domain and converted it into a multi-use public trail. The 100-foot corridor (50 feet of which extended onto the homeowner's property while the other 50 feet extended in the opposite direction off the owner's property) represents a new easement to allow public access to a multi-use trail, with the right to reactivate the RTC for future railroad usage. It is widely acknowledged that for the foreseeable future, the RTC is to be recreationally used, primary by cyclists, walkers, rollerbladers, and the like. If the RTC would ever revert back to being used as a railroad, the most likely candidate for its use would be a light-rail system which has become popular in a number of areas across the country. However, since the old railroad track had been removed and replaced with a 12-foot wide paved trail, creating a light-rail system did not appear to be in the immediate or even intermediate plans.

Figure 1 shows a view of one of the impacted communities. Panels A and B show the subject property from both a zoomed-out and zoomed-in view, respectively, while Panel C provides a drawing of the encumbered easement area affected by the partial taking. This 12-foot wide paved trail is to be maintained by the County Parks and Recreation Department which is important because part of the county's duties involve the removal of "invasive plant species," such as Brazilian pepper and Australian pine that grow wild along the edge of the RTC. In many places, the removal of such species means the removal of a natural sound and sight barrier between the RTC and a home, thus resulting in a claim of proximity damage.

In addition to view and noise concerns, porta-potties and trash cans are periodically placed along the RTC which means county vehicles must also drive down the trail to service these facilities. The current estimate of 250,000 annual trail users is expected to increase over the years as more people become accustom to using the trail and as additional trailheads come online. For example, the trail will soon be connected to a network of existing trails which also has approximately a quarter of a million current users.

Given that the two impacted communities involve new construction and no sales of completed residences, traditional appraisal methods such as the comparables sales method are inadequate for measuring the impact of a partial taking under eminent domain. As such, the purpose of this study is to use a behavioral approach, specifically experimental design, to arrive at an estimate of value impaction.

Figure 1   Google Earth Photos of a Sample Impacted Property

Panel A   Zoomed-out Image

Panel B   Zoomed-in Image
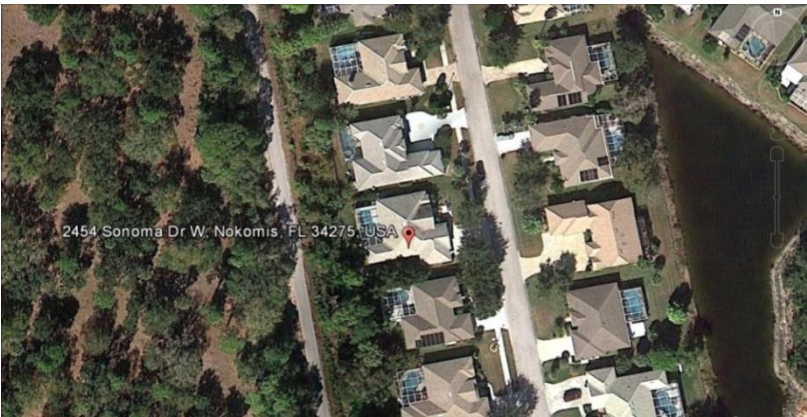
Panel C   Encumbered Easement Area Drawing

4.   Experimental Design

In the natural sciences, scientists use laboratories to control the physical environment. To establish a causal relationship between two variables, a scientist can alter the treatment (say, raising the temperature by just one degree) and see the impact that change has on the subject (say, the boiling point of water). Since only one variable has been changed (temperature) during the study, the resulting change in the subject (the water starts to boil) is solely attributed to the change in the treatment. By using this experimental design methodology, a scientist can determine the exact boiling point of water.

In a real estate setting, a similar approach can be taken in an attempt to replicate the same level of control. That is, by holding everything else constant within the study, it is possible to change just one characteristic of the environment (the home with the RTC versus without the RTC) and attribute the difference in valuation between the two treatments as being due to the only variable that changed between the two settings (i.e., RTC)[3].

5.   Data Collection Instrument

The behaviorally-based experimental design instrument created for the current investigation is shown in Table 1[4]. In the literature, this approach is often referred to as "survey research" or "contingent valuation". Once the design flow was completed and internally tested, a sample of Florida residents predominantly located in Sarasota/Tampa/Ft. Myers were taken on a virtual home tour via the web and afterwards asked to provide an opinion of the value of the home. Opinions of value by residents from the MSA where the property was taken were targeted as they are the most likely future buyers of the impacted properties. Alternatively explained, the opinions of value of the nearby residents matter much more so than those who live in Helena, Montana, because a Montana resident is less likely to be a potential demander of residential real estate in Sarasota County, FL. This section provides a brief overview of the process.

To measure the estimated value of the home without the RTC, 1/3 of the participants were randomly assigned to this pool. Another 1/3 of the participants were randomly assigned to a second pool where the home tour was taken and at the end of which a short, purely legal description of the RTC

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[3] Studies that use experimental design in a real estate setting include Ikromov and Yavas (2012a,b), Seiler (2012), Seiler et al. (2012), Seiler, Lane, and Harrison (2012), Seiler, Madhavan, and Liechty (2012), Seiler et al. (2008), and Yavas, Miceli, and Sirmans (2001).The aforementioned studies represent more direct applications of experimental design to applied research problems than studies outlined in well cited works in economics such as Gneezy and Potters (1997) and Harrison and List (2004).

[4] Qualtrics software was chosen as the vehicle by which to represent the experiment to participants.

was provided to the participant[5]. After the tour, these participants were also asked to render an opinion of value. The final 1/3 of the sample was randomly assigned to a third treatment – a home tour followed by a more lengthy description of the RTC[6]. This third treatment provided not only a legal description of the RTC, but also included both positive homeowner opinions of the RTC as well as their articulated concerns[7]. Table 2 provides links to view the various home tours and (long and short) property descriptions.

Table 1   Data Collection Instrument

"We are conducting a study of the residential real estate market and would like you to participate by answering the following questions. All responses will remain ANONYMOUS and there are no right or wrong answers, but please take your time and answer each question as honestly and accurately as possible. The survey should take between 5-7 minutes to complete.

We will begin by providing you with a brief tour of a home located in Sarasota County, FL. Be sure to have your computer SPEAKERS ON as you will be given a security code at some point during the video that you must enter correctly in order to receive compensation.

State____ City ____ (from a drop down menu)

Please click on the link below to watch a brief home tour (X minutes and XX seconds), and then continue through the survey. Be sure to have your computer SPEAKERS ON as you will be given an audible security code at some point during the video.

--show each person only 1 of the 3 following home tours--

VIDEO 1: Home tour without RTC (Tour the home only)
VIDEO 2: Home tour with RTC (Tour the home with a short RTC description).
VIDEO 3: Home tour with RTC (Tour the home with a long RTC description).
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Please enter the code just spoken to you. If you did not hear the code, please make sure your SPEAKERS are ON and replay the video. _____

The average property value across the entire Bradenton/Sarasota, Florida area is $300,000. What is an accurate price for this home? $ _____

(Continued…)

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[5] See Appendix 1 for the verbiage used in the short, purely legal description of the RTC.

[6] See Appendix 2 for a more inclusive description of the RTC which includes a legal description, positive homeowner opinions, and articulated concerns from homeowners.

[7] In order to hold all else constant, it is necessary to use the same photos in each separate pool of the experimental design. To accomplish this ceteris paribus goal, Photoshop was used to remove the trail in experimental trials where the participant was first shown the home without the trail.

(Table 1 Continued)

Can you see yourself / family living in this home?

No, Not at all				Neutral				Yes, Absolutely
1	2	3	4	5	6	7	8	9

Why or why not?

_____

Please select the number "8" to answer this question.

1   2   3   4   5   6   7   8   9

(If shown Videos 2 or 3)
If the rail-trail corridor did not exist and the home backed up to undeveloped wilderness (as shown in the picture), by what percentage would you adjust the price of this home?

The ABSENCE of the rail-trail corridor would result in…
    ❒ An increase in price by ___%
    ❒ Has no effect on price
    ❒ A decrease in price by ___%

(If shown Video 1)

        --show each person only 1 of the 2 following home tours--

VIDEO 4: Short RTC description – see Appendix 1
VIDEO 5: Long RTC description – see Appendix 2

Please click on the link below to watch a second brief video (X minutes and XX seconds), and then continue through the survey. Keep your computer SPEAKERS ON as you will be given an audible security code at some point during the video.

Please enter the code just spoken to you. If you did not hear the code, please make sure your SPEAKERS are ON and replay the video. _____

If the rail-trail corridor is adjacent to the backyard of the property (as shown in the picture), by what percentage would you adjust the price of this home?

The PRESENCE of the rail-trail corridor would result in…
    ❒ An increase in price by ___%
    ❒ Has no effect on price
    ❒ A decrease in price by ___%

(Continued…)

(Table 1 Continued)

(For all treatments) – Everyone sees the rest of the questions

Please share with us your thoughts about how and why a rail-trail corridor might impact the property value.

_____

Before taking this survey, were you already aware of the rail-trail project known as the Sarasota Legacy Trail? Yes _____ No _____

Please select the number "3" to answer this question.

         1   2   3   4   5   6   7   8   9

Do you live in either of the following 2 developments: (1) Mission Bay (Nokomis, FL) or (2) Bay Oaks Estates (Osprey, FL)?   Yes _____ No _____

Are you currently a homeowner?   Yes _____ No _____

What is your Zip Code: _____
Gender: Male _____   Female _____
What is your Age? _____
Current Marital Status: Single _____   Married _____

Ethnicity:

_____	Caucasian	_____	Asian
_____	African American	_____	Native American
_____	Hispanic	_____	Indian
		_____	Other _____

What is your total Net Worth? Net Worth is defined as total assets (stocks, bonds, price of your home, retirement accounts, etc.) minus total liabilities (outstanding mortgage balance, credit card debt, student loans, auto loans, etc.)

     _____   Less than -$400,000
     _____   -$400,000 to -$200,001
     _____   -$200,000 to $0
     _____ $1 to $200,000
     _____ $200,001 to $400,000
     _____ $400,001 to $600,000
     _____ $600,001 to $800,000
     _____ $800,001 to $1,000,000
     _____   Over $1,000,000"

Table 2   Video Links and General Information about the Videos

Qualtrics Question	Video Description	Dummy Name	Time	Audio Code	Youtube Links
Q2.1	Home Tour only	VJEYR	0:48	25	http://youtu.be/Ms1_-Wgh0cw
Q4.1	Short Description of RTC	WJUAT	0:34	42	http://youtu.be/RYLslsKK-HY
Q4.2	Long Description of RTC	XOHMT	1:52	37	http://youtu.be/6iaR3jwXLgo
Q2.3	Home Tour with Short Description of RTC	YNKAO	1:15	42	http://youtu.be/rCq_20qfGsY
Q2.2	Home Tour with Long Description of RTC	ZLRDF	2:32	37	http://youtu.be/sibaPZAidMg

The random assignment of participants to just one of the three distinct pools is done to prevent self-selection bias. It should be noted that up to this point in the process, participants have no idea about the purpose of the study. They are simply asked to take the home tour and answer a few questions afterwards. This is intentionally done to prevent potential bias from entering the analysis. After this first phase of the study was completed (as described above), participants who were randomly assigned to see the home tour without an RTC description next had the trail described to them. For consistency, half of this sub-sample was subsequently shown the short, purely legal description of the RTC, while the other half was shown the longer description of the RTC. By asking the participants to indicate the percentage change in the value of the home, this yielded a direct measure of the RTC impact.

6.   Data Preparation

Data were collected through a third party vendor, Paradigm Sample, LLC. This company has an existing network of people who stand ready to complete a wide array of tasks/jobs for a fee. By construction, 504 participants were paid for their time to participate in the data collection effort[8]. As it is so important that participants offer their full attention, every attempt is made to screen out those who are less than fully engaged. One basic screen is the inclusion of hidden page timers that exist throughout the entire data collection instrument. If, for example, the participant is asked to watch a 2 minute and 32 second video before advancing to the next question, but the hidden timer reveals that their screen was advanced before this period, then it is the case that they did not watch the entire video.

In addition to letting the video run its full length, the participant is required to enter an auditory security code that is spoken during the video. Answering correctly ensures that they not only had their speakers on, but were also paying attention. Failure to correctly answer the question results in not being paid and their responses being jettisoned from the analysis.

At two different points in the data collection instrument, participants are asked to answer dummy questions. That is, they needed to simply enter the number "3" for a given question and "8" for the other. While this simple hurdle is meant to catch the most egregious of participants, a more advanced screening criterion involves the matching of place of origin as indicated by the participant from using a drop down menu of state and city (asked at the beginning of the process) which is cross-referenced against the zip code

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[8] Paradigm uses a proprietary screening technique to ensure the sample profile requested by the researcher matches those actually collected. It is not known to the researcher how many potential participants were invited to participate in the experiment. It is only known how many completed it. Paradigm was then paid $4 per valid participant response.

entered at the end of the study. Given the inability to backtrack through the screens, the likelihood that the participant remembers a falsely selected city early in the process and then takes the time to learn the valid zip code within that city seems low.

In addition to all these metrics, it is possible to increase the likelihood of achieving a clean sample simply by utilizing participants from these established pools since examiners provide performance feedback to the data provider after every study. It is in the mutual best interests of all parties involved to take the study seriously as valid participants are needed by the data provider to ensure examiners will pay to use the participant pool; it is in the best interest of the participant to act responsibly because a poor feedback report to the data provider will result in permanent banning of the participant from future opportunities to participate; and of course, it is in the best interest of the examiner as the quality of the results is predicated on the quality of the inputs.

7.   Results

Table 3 provides the sample size and mean values for each of the four variants of the methodological design: (1) a home tour only, later followed by a short description of the RTC [N=78], (2) a home tour only, later followed by a long description of the RTC [N=67], (3) a home tour coupled with a short description of the RTC [N=139], and finally (4) a home tour coupled with a long description of the RTC [N=146]. Moreover, the data are segmented into three categories. Panel A shows the results from the full sample after completing the screening process as described in the previous section. Panel B reveals the results when the full sample is restricted to only current homeowners. It can be argued that homeowner opinion of impacted value might be more insightful than a person who is merely renting. As such, Panel C further restricts the dataset by reporting the results for a sample of current homeowners and those who had not previously heard of the RTC. The reason to check the effect of excluding those who have heard about the RTC is because the additional information they have received related to the RTC cannot be directly controlled for in the study.

The absolute value of the numbers in the table represents the percentage discount caused by the location of the RTC next to the subject property. Alternatively stated, the negative numbers in the two Home Tour Only columns reflect that participants believe the value of the subject property is lowered with the presence of the RTC. The positive numbers in the rightmost columns reflect that participants believe the value of the subject property would be increased with the absence of the RTC. No matter the level of restrictiveness placed on the data, the results are extremely consistent across all three panels.

Table 3   Summary of Impact Estimates

This table provides the sample size and mean values for each of the four variants of the study's design: (1) a home tour only, later followed by a short description of the RTC, (2) a home tour only, later followed by a long description of the RTC, (3) a home tour coupled with a short description of the RTC, and finally (4) a home tour coupled with a long description of the RTC. Moreover, the data are segmented into three categories: (A) the full sample, (B) a sample of only current homeowners, and (C) a sample of current homeowners and those who had not previously heard of the RTC. The absolute value of the numbers in the table represents the percentage discount caused by the location of the RTC next to the subject property. Within each panel, *No Restriction* refers to a lack of boundaries placed on the participant's opinion of value impact. *Sign (<=)* refers to a restriction in that the participant indicated no effect or a negative impact of the RTC on the subject property. *Sign (<)* refers to a restriction in that the participant indicated a negative impact of the RTC on the subject property.

| | Home Tour Only | | | | Home Tour & Short Description | | Home Tour & Long Description | |
| | Short Description | | Long Description | | | | | |
Variable	N	Mean	N	Mean	N	Mean	N	Mean
Panel A: Full Sample								
No Restriction								
Remove RTC					139	9.86%	146	12.47%
Add RTC	78	-14.88%	67	-13.72%				
Sign (<=)								
Remove RTC					128	11.62%	141	13.34%
Add RTC	69	-20.04%	61	-16.30%				
Sign (<)								
Remove RTC					68	21.88%	96	19.59%
Add RTC	55	-25.15%	49	-20.29%				

(Continued…)

(Table 3 Continued)

| | Home Tour Only | | | | Home Tour & Short Description | | Home Tour & Long Description | |
| | Short Description | | Long Description | | | | | |
Variable	N	Mean	N	Mean	N	Mean	N	Mean
Panel B: Only Current Homeowners								
No Restriction								
Remove RTC					117	11.03%	115	14.18%
Add RTC	62	-17.58%	57	-13.05%				
Sign (<=)								
Remove RTC					108	12.67%	112	14.79%
Add RTC	57	-21.32%	52	-15.65%				
Sign (<)								
Remove RTC					62	22.06%	80	20.70%
Add RTC	46	-26.41%	44	-18.50%				
Panel C: Current Homeowners and those who have not heard of the RTC before now								
No Restriction								
Remove RTC					101	11.59%	103	15.35%
Add RTC	57	-17.02%	48	-13.10%				
Sign (<=)								
Remove RTC					93	13.31%	102	15.60%
Add RTC	52	-21.06%	44	-15.43%				
Sign (<)								
Remove RTC					55	22.51%	76	20.93%
Add RTC	41	-26.71%	38	-17.87%				

Within each panel, *No Restriction* refers to a lack of boundaries placed on the participant's opinion of value impact. That is, all participant opinions are included whether they claim a positive, neutral, or negative relationship between the impact of the RTC and value. *Sign (<=)* refers to a restriction that the participant had indicated as having no effect at all or that they reported a negative impact of the RTC on the subject property. Finally, *Sign (<)* refers to a further restriction where only participants who included a negative impact of the RTC on property value are included. Mathematically, these progressively restrictive variable conditions result in a greater measured impact of the RTC effect on property values.

Reconciliation

With several estimates for value impact identified, the next step to estimate the impact of the RTC is to reconcile the different measures to arrive at both a reasonable range of values as well as a point estimate. This approach was adopted as it is also a prescribed step for an appraiser to follow when conducting an appraisal. Table 4 reports the reconciliation statement. Both simple and weighted averages are provided where the weights represent the number of observations in each category. Value estimates are extremely similar under either system. The result is a reasonable range of value impact between 13.3% and 21.9% with a point estimate of 16.9%.

8.   Conclusions

Attorneys who represent both the property owner and condemnor hire expert testifying witnesses who regularly disagree on the net valuation impact of an eminent domain partial taking. Setting aside the clear economic incentive for each party to arrive at substantially different values, one explanation for the disparate estimation of valuation is that by using traditional appraisal methods, there is really no way to have a high degree of confidence in the estimate. To obtain a better estimate of true market value impact, the utilization of a behaviorally-based approach used in the natural sciences is proposed. Alternatively stated, through the implementation of a controlled experiment, one is able to truly isolate the impact of reduced easement rights and proximity damage on residential real estate values.

While every condemnation is unique and should be valued as such, this behavioral methodology is now established as a standard for estimating value as a supplement or input to traditional appraisal methods. A partial taking of personal property through the invoking of eminent domain offers one such opportunity to expand the tool belt of appraisers.

Table 4   Reconciliation Statement

This table reveals the calculations necessary to arrive at a point estimate of the impact of the RTC on property value. Both simple and weighted averages are calculated where the weights represent the number of participants in each cell.

| Variable | Home Tour Only | | | | Home Tour & Short Description | | Home Tour & Long Description | | Weighted | Simple |
| | Short Description | | Long Description | | | | | | | |
	N	Mean	N	Mean	N	Mean	N	Mean	Mean	
No Restriction										
Full Sample	78	14.88%	67	13.72%	139	9.86%	146	12.47%	12.26%	12.73%
Homeowners	62	17.58%	57	13.05%	117	11.03%	115	14.18%	13.55%	13.96%
Not heard of RTC	57	17.02%	48	13.10%	101	11.59%	103	15.35%	14.08%	14.27%
Sign (<=)										
Full Sample	69	20.04%	61	16.30%	128	11.62%	141	13.34%	14.40%	15.33%
Homeowners	57	21.32%	52	15.65%	108	12.67%	112	14.79%	15.36%	16.11%
Not heard of RTC	52	21.06%	44	15.43%	93	13.31%	102	15.60%	15.82%	16.35%
Sign (<)										
Full Sample	55	25.15%	49	20.29%	68	21.88%	96	19.59%	21.44%	21.73%
Homeowners	46	26.41%	44	18.50%	62	22.06%	80	20.70%	21.78%	21.92%
Not heard of RTC	41	26.71%	38	17.87%	55	22.51%	76	20.93%	21.92%	22.01%
									21.71%	**21.88%**
Global Figures									**16.73%**	**17.15%**
Point Estimate Opinion of Value Impacted by RTC									**16.94%**	

References

Averch, H. and Johnson L.L. (1962). Behavior of the Firm under Regulatory Constraint, *American Economic Review*, 52, 5, 1052-1069.

Baumol, W.J. and Klevorick A.K. (1970). Input Choices and the Rate of Return Regulation: An Overview of the Discussion, *Bell Journal of Economics*, 1, 2, 169-190.

Bowes, D. and Ihlanfeldt K. (2001). Identifying the Impacts of Rail Transit Stations on Residential Property Values, *Journal of Urban Economics*, 50, 1-25.

Celik, H. and Yankaya U. (2006). The Impact of Rail Transit Investment on the Residential Property Values in Developing Countries: The Case of Izmir Subway, Turkey, *Property Management*, 24, 4, 369-382.

Chen, H., Rufolo A., and Dueker K.. (1997). Measuring the Impact of Light Rail Systems on Single Family Home Values: A Hedonic Approach with GIS Application, Discussion Paper 97-3, Centre for Urban Studies.

Colwell, P. F. and Foley K.W. (1979). Electric Transmission Lines and the Selling Price of Residential Property, *Appraisal Journal*, 47, 4, 490-499.

Debrezion, G., Pels E. and Rietveld P.. (2007). The Impact of Railway Stations on Residential and Commercial Property Value: A Meta-Analysis, *Journal of Real Estate Finance and Economic*, 35, 161-180.

Des Rosiers, F. (2002). Power Lines, Visual Encumbrances, and House Values, *Journal of Real Estate Research*, 23, 3, 275-301.

Gatzlaff, D. and Smith M. (1993). The Impact of the Miami Metrorail on the Value of Residences near Station Locations, *Land Economics*, 69, 1, 54-66.

Gneezy, U. and Potters J. (1997). An Experiment on Risk Taking and Evaluation Periods, *Quarterly Journal of Economics*, 112, 2, 631-645.

Haider, M. and Miller E.. (2000). Effects of Transportation Infrastructure and Locations on Residential Real Estate Values: Application of Spatial Autoregressive Techniques, *Transportation Research Record*, 1722, Paper no.00-0641.

Hamilton, S.W. and Schwann G.M.. (1995). Do High Voltage Electric Transmission Lines Affect Property Values?, *Land Economics*, 71, 4, 436-444.

Harrison, G. and List J. (2004). Field Experiments, *Journal of Economic Literature*, 42, 4, 1009-1055.

Hess, D. and Almeida T. (2007). Impact of Proximity to Light Rail Rapid Transit on Station-area Property Values in Buffalo, New-York, *Urban Studies*, 44, 5, 1041-1068.

Ikromov, N. and Yavas A. (2012). Cash Flow Volatility, Prices a Price Volatility: An Experimental Study, *Journal of Real Finance and Economics*, 44, 203-229.

Ikromov, N. and Yavas A. (2012). Asset Characteristics and Boom and Bust Periods: An Experimental Study, *Real Estate Economics*, 40, 3, 603-636.

Jaconetty, T.A. (2001). Do You Want Your Children Playing Under Those Things?: The Continuing Controversy About High Voltage Electromagnetic Fields, Human Health, and Real Property Values, A*ssessment Journal*, 68, 3, 23-30.

Knaap, G., Ding C. and Hopkins L. (2001). Do Plans Matter?: The Effects of Light Rail Plans on Land Values in Station Areas, *Journal of Planning Education and Research*, 21, 1, 32-39.

Lin, J. and Hwang C. (2003). Analysis of Property Prices Before and After the Opening of the Taipei Subway System, *Annals of Regional Science*, 38, 687-704.

McMillen, D. and McDonald J. (2004). Reaction of House Prices to a New Rapid Transit Line: Chicago's Midway Line, 1983-1999, *Real Estate Economics*, 32, 3, 463-486.

Pan, H. and Zhang H. (2008). Rail Transit Impacts on Land Use: Evidence from Shanghai, China, *Transportation Research Board: Journal of the Transportation Research Board*, 2048: 16-25.

Seiler, M. (2012).The Effect of Perceived Lender Characteristics and Market Conditions on Strategic Mortgage Defaults, *Journal of Real Estate Finance and Economics*, forthcoming.

Seiler, M., Lane M. and Harrison D. (2012). Mimetic Herding Behavior and the Decision to Strategically Default, *Journal of Real Estate Finance and Economics*, 40, S1, 199-233.

Seiler, M., Madhavan P. and Liechty M. (2012). Toward an Understanding of Real Estate Homebuyer Internet Search Behavior: An Application of Ocular Tracking Technology, *Journal of Real Estate Research*, 34, 2, 211-241.

Seiler, M., Seiler V., Lane M. and Harrison D. (2012). Fear, Shame, and Guilt: Economic and Behavioral Motivations for Strategic Default, *Real Estate Economics*, 40, 4, forthcoming.

Seiler, M., Seiler V., Traub S. and Harrison D. (2008). Regret Aversion and False Reference Points in Residential Real Estate, *Journal of Real Estate Research*, 30, 4, 461-474.

Turnbull, G. (2012). Delegating Eminent Domain Powers to Private Firms: Land Use and Efficiency Implications, *Journal of Real Estate Finance and Economics*, 45, 2, 305-325.

Weinberger, R. (2001). Light Rail Proximity: Benefit of Detriment in the Case of Santa Clara County, California?,*Transportation Research Record: Journal of the Transportation Research Board*, 1747, 104-113.

Weinstein, B. and Clower T. (2003). *DART Light Rail's Effect on Taxable Property Valuations and Transit-Oriented Development*,Centre for Economic Development and Research, University of North Texas.

Wolverton, M.L. and Bottemiller S.C. (2003). Further Analysis of Transmission Line Impact on Residential Property Values, *Appraisal Journal*, 71, 3, 244-252.

Yavas, A., Miceli T. and Sirmans C. (2001). An Experimental Analysis of the Impact of Intermediaries on the Outcome of Bargaining Games, *Real Estate Economics*, 29, 2, 251-276.

Appendix 1   Short RTC Description

There is a 100-foot wide public rail-trail corridor located along the western boundary of this property with 50 feet of the rail-trail corridor located across the backyard of this property (as shown in the picture). This rail-trail corridor is presently being used by more than 250,000 people annually for public recreation such as hikers, bikers, skateboarders, rollerbladers, etc. And, a railroad line or light-rail line may be built across this part of the backyard in the future.

Appendix 2   Long RTC Description

A government authority has taken 50 feet off the back of the property and on it created a 12-foot wide asphalt-paved trail that runs along the back side of the new property line (for miles in each direction) as shown in the picture. This trail is currently meant to be used recreationally by non-motorists such as walkers, bikers, skateboarders, rollerbladers, etc. And, in the future a railroad line or light-rail line may be built across this land.

Homeowners whose property is immediately adjacent to the rail-trail corridor report the following:

1. Homeowners in the neighborhood have expressed that the more than 250,000 current annual users of this trail cause a loss of privacy. In addition to hearing the conversations of passers-by (and them overhearing conversations of the homeowners), bikers often honk or yell to alert walkers that they are "passing on the left." Noise has also increased as government trucks must periodically drive down the trail to collect trash, drain the porta potties, and provide other types of regular maintenance.

2. For some homes, there is a layer of vegetation that lies between the home and the rail-trail corridor. The existing vegetation includes "invasive species" which may be removed without the homeowner's approval. Homeowners are concerned that the removal of such vegetation will result in a further visual loss of privacy as well.

3. Several homeowners have reported users of the trail trespassing on their property. And while reports of theft and vandalism cannot be definitively attributed to trail users, many homeowners feel the openness of the vegetation grants unwanted trail-users access to their properties.

In sum, while most of the homeowners like the recreational trail and even use it themselves, they do not like the impact that having the rail-trail corridor immediately adjacent to their property has had on their views, privacy and noise.