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16. Abstract

Public transit professionals continue to seek methods that offer greater service opportunities, while not materially increasing the costs of service provision. One strategy is to construct bus transit centers which operate much like the airline hub and spoke concept. More frequent destinations can be made available with shorter patron wait times and minimal to no increase in the number of bus hours. Patrons tend to appreciate the convenience of a transfer occurring in a lighted facility, in addition to the increased level of bus service. In many cases, there is an anticipation of higher density residential near these areas. A number of the bus based centers may be close to single family neighborhoods. Residents might express concerns about the value of their property given the presence of a bus transit center near their home. Besides the bus transit centers that serve traditional local or express routes, a number of cities are planning bus rapid transit lines with stations that might lead nearby communities to ask similar questions about property values. This study assesses the effect of bus transit centers in Houston, Texas, on nearby single family residential property values.

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A Statistical Analysis of the Relationship Between Land Values and Freestanding Bus Facilities

Carol Abel Lewis, Ph.D.,

and

Gwendolyn C. Goodwin, MSCRP,

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Center for Transportation Training Center
Texas Southern University
3100 Cleburne Ave Houston, TX 77004
713-313-1925 (p) 713-313-1923 (f)

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ABSTRACT

Public transit professionals continue to seek methods that offer greater service opportunities, while not materially increasing the costs of service provision. One strategy is to construct bus transit centers which operate much like the airline hub and spoke concept. More frequent destinations can be made available with shorter patron wait times and minimal to no increase in the number of bus hours. Patrons tend to appreciate the convenience of a transfer occurring in a lighted facility, in addition to the increased level of bus service. In many cases, there is an anticipation of higher density residential near these areas. A number of the bus based centers may be close to single family neighborhoods. Residents might express concerns about the value of their property given the presence of a bus transit center near their home. Besides the bus transit centers that serve traditional local or express routes, a number of cities are planning bus rapid transit lines with stations that might lead nearby communities to ask similar questions about property values. This study assesses the effect of bus transit centers in Houston, Texas, on nearby single family residential property values.

EXECUTIVE SUMMARY

At various times, transit authorities hear complaints from neighborhood residents when searching for a new transit facility site. Often area residents feel that a transit facility will negatively impact their property values. In this study, five transit centers operating over 15 years in Houston, Texas, were examined.

Study results show that transit centers exert a negligible influence on property values. On a regional basis, the contribution was significant and positive, but reflected weak coefficient and z-values.

Because numerous factors impact land value (crime, quality of school districts, etc.), some fluctuation may be seen at the various distances from one transit centers to another transit center. Such a variance can be observed with the two mile assessment where the transit center influence is significant and slightly negative. Even in that circumstance, the distance to the transit center is the sixth in the list of nine z-values contributing to the explanation and has a fairly low coefficient. At the half mile parameter, the p-value was not significant, but showed a negative sign.

In light of these findings, it is noted that almost none of a property's value over the long run was affected by a nearby transit center. Property values are most likely to be influenced by improvements to the property and the neighborhood (represented in this model by the 1985 land value). That bodes well for the many communities considering bus based facilities to improve service or to use as a cornerstone for economic development.

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INTRODUCTION

The potential impact of a transit facility on land values is of interest to transit professionals, elected officials, and the public. Recent success with transit supportive development near rail stations has resulted in nearly every city seeking to improve neighborhoods proximate to stations by encouraging mixed land uses. It is expected that mixed use neighborhoods near a transit hub will increase convenience to patrons and encourage more efficient trip-making, ultimately increasing rail ridership and reducing the number of auto trips. Much is written about the effect of rail on adjacent property values and the synergy between the rail and development. Literature is less available on land values or other influences pertaining to bus transit facilities. Rail transit is appropriate for few locations relative to the number of locations that could sustain a bus facility.

Bus related improvements are viable in far more locations and cities than is rail transit. Houston, Texas, is not unique in implementing bus transit centers near neighborhoods as a way to improve transit service or as a positive enhancement for a neighborhood. The land use preferred is generally a mix of commercial and higher density residential. Despite the favored higher density residential use, many of these neighborhoods may have single family homes near the commercial areas and the transit centers. Such is the case, in Houston, where transit centers were constructed near existing communities. A recent review of bus transit centers in Columbus, Ohio, showed that several are proximate to some single family neighborhoods. As the number of bus based fixed system elements increase, additional information about the effect of a bus based facility on nearby single family residential values is desirable. Houston provides a superb location for a case study examining the question of transit center impact on nearby single family home values due to its number of bus based centers and their service duration.

BACKGROUND

Houston's Metropolitan Transit Authority (METRO) of Harris County has 19 bus transit centers around the Houston area, a more extensive and older bus facility based system than in most other US cities. The first was Southeast Transit Center, built in 1987. The land was across the street from a fire damaged furniture store at an intersection with a fast food restaurant. Once METRO purchased the land, the furniture store was demolished and replaced with a video rental store and drug store. Twenty-one years later, the intersection is a thriving area of commerce with another drug store, diagonal from the first, a grocery store, bank, county office, shoe store and other retail. This type of renewal around Houston's transit centers is greatest at Southeast Transit Center, but other locations have also experienced varying levels of renaissance. METRO's implementation of transit centers has been solely for the purpose of bus service improvement and efficiency.

Other cities have recognized that a bus facility can garner benefits similar to rail and are incorporating transit supportive development goals into the decision making about bus transit facilities. An example is the Central Ohio Transit Authority in Columbus. Between the years of 1999 and 2005, the agency opened three transit centers designed for multiple retail and medical or community use, in addition to the transit function. Although the Houston surrounding development is serendipitous, Volinski (2004) suggests the most successful projects involve deliberate public and private partnerships (Belzer and Autler, 2002).

Transit centers are expected to increase ridership and improve nearby property values, benefitting developers and generating additional tax revenues (TRB, 2004). Zykofsky (1999) writes that residential and commercial properties within a quarter mile of transit facilities typically appreciate in value more rapidly than properties outside the vicinity of transit facilities. Most studies about land values near transit examine rail stations. Work conducted for Dallas Area Rapid Transit (DART) showed values around Mockingbird station increased as lofts, restaurants, office space and shops were built (Arrington and Boroski, 2004).

Bus transit supportive development may or may not mimic that for rail stations. Kupperman and Handy (2006) suggest that the potential for bus transit to support TOD may be lower in the US than in cities such as Curtiba, Adelaide and Ottawa. As bus systems are appropriate for lower volumes of riders than rail, it may also follow that less dense development could occur around these bus facilities resulting in proximate single family, as well as, multifamily residential.

This research examines whether single family housing values are affected by bus transit centers in Houston and can serve as a baseline for other communities considering a bus transit center or station proximate to single family neighborhoods.

METRO Houston's Transit Centers

Metro's concept of the transit center is to provide a convenient location for bus connections to occur. Patrons from various locations are able to access express trips or make other route-to-route transfers. Riders choose from a wider selection of destinations through greater transfer options. The smallest, Bellaire Transit Center, has four bus routes and four bus bays traveling through the location and the largest, Northwest Transit Center, has 17 bus routes and eight bus bays. One transit center, the Texas Medical Center Transit Center, also functions as a light rail station. Appendix A - Figure 1 shows the distribution of the transit centers throughout the region.

METHODOLOGY

In order to adequately allow for the settling of values over time and account for maturity, this work identified five of the earliest transit centers in the METRO system as the focus. These centers and their opening years are as follows:

Southeast Transit Center	1987
Magnolia Transit Center	1992
No. Shepherd Transit Center	1980
Bellaire Transit Center	1987
Kashmere Transit Center	1992

Property values are a complex interrelationship of several important indicators. The fact that access to roadways and rail transit contributes value is well documented. Johns et. al., (2009) examines the value - captured options of improved roadways based on the added value to the land. Price includes physical attributes including, but not limited to, the quality of location and patterns of land use. Legal influences, such as zoning, play a part as do social and economic variables (Gwartney, n.d). We include a number of these in the analysis, along with the proximity to the transit center, to determine the relative contribution of these variables.

Data Sources

Data were obtained from the metropolitan planning organization, Houston-Galveston Area Council (H-GAC), on the valuations of single family residences by the Harris County Assessor's District (HCAD). Additional data were obtained from H-GAC on streets, arterials and freeways (from the Starmap system). ArcGIS was used to display the data and to conduct overlay operations (e.g., within 100 feet of an arterial). Distance calculations were conducted using the coordinates of the HCAD/H-GAC parcel layer. The review of land value was completed for the entire Harris County, which serves as a foundation for comparison, and for residences within two miles and within a half mile of identified transit centers.

Variables

The dependent variable was the 2007 market valuation (Cval07_000). This was measured in units of $1000 (e.g., 345.123 = $345,123). The independent variables were as follows:

- The market valuation for 1985 in current (2007) dollars (in $1000 units). This would capture any characteristics of the house that are not evident from the HCAD record (e.g., neighborhood, condition of the house, landscaping, etc). The value of the home in 1985 provides historical base point (Cval85_000).
- The total space of the parcel per 1000 square feet (Parcel1000).
- Other built-up structures on the parcel per 1000 square feet (Othr1000SQ) are typically garages, sheds, and patios.
- A dummy variable is included indicating whether the unit had been remodeled since 1985 (remod_8507). There was no information on what was done for the remodeling, consequently, the variable is measured as a dummy ('Yes' = 1; 'No'=0).
- A dummy variable is included indicating whether the parcel was within 100 feet of a major arterial (Artrl100ft).
- A dummy variable is included indicating whether the parcel was within 200 feet of a freeway segment (Fwy_200ft)
- The distance of the parcel from downtown in miles (dist_dowt). This should capture the distance decay function in land values that are usually observed in metropolitan areas.
- The distance of the parcel to the nearest transit center (dist_close).

The approach was to first establish a baseline model of 2007 single family residence housing values. The first eight variables in the list above were fitted to the 2007 housing valuations. The variables were all significantly related to the dependent variable and were relatively independent (i.e., a high tolerance). There was some multicolinearity between distance to downtown and several of the other variables (e.g., a negative correlation between closeness to downtown and size of parcel). In this county wide assessment, the transit center variable shows as postitively significant, but with a fairly low z-value Appendix A - Table 1).

Model Used
When using a dependent variable that is highly skewed, the best model to use is a Poisson with an over-dispersion correction and a negative binomial (Cameron and Trivedi, 1998). Consequently, one should not estimate the model using an Ordinary Least Squares (OLS) regression. There are four types of bias that will be produced by an OLS model using count data – data that is skewed and in which the minimum value is 0:

1. The constant term could be negative (which is an impossibility with data that has a zero minimum);
2. The OLS model assumes a constant variance of the error term, which will typically not be true with skewed data where the variance will typically increase with the predicted values;
3. The sum of the predicted values will not equal the sum of the input values; and
4. The OLS estimator will typically underestimate units (parcels) with high values and will overestimate units with low values.

There are various types of Poisson-based regression that can be used for over-dispersed skewed data, the most common being a Poisson with an over-dispersion correction and a negative binomial (Cameron and Trivedi, 1998). Cameron and Trivedi show that these two models give equivalent results. Anselin (2004) has an excellent discussion of this issue. The particular routine used was from the CrimeStat program (Levine, 2004). This package has a Poisson regression routine that allows an over-dispersion correction to be applied. It also has a backward-elimination stepwise regression function for estimating an efficient model and tolerance tests for evaluating multicolinearity. The idea is to have independent variables that are not correlated with each other (i.e., no multicolinearity) yet, are all significantly correlated with the dependent variable.

The algorithm for estimating the Poisson regression is based on maximum likelihood. Essentially, a likelihood (probability) function is maximized by iteratively adjusting the coefficients of the independent parameters. Because the parameters are fitted iteratively, one cannot use R-square as a criterion for evaluating models (Miaou, 1996). Instead, one uses the Likelihood Ratio and the AIC (Akaike Information Criterion) and the SC (Schwartz Criterion) tests (Anselin, 2004; Cameron and Trivedi, 1998). Models can be compared on the Likelihood Ratio, but one variable at a time. The Likelihood Ratio compares the log-likelihood function for the model with a log-liklihood function for just the intercept. If it is significant, this means the parameters in the model significantly add to the predictability of the model. To compare models, the AIC or SC criteria was used. These adjust for the number of variables in the equation. The tests should be one variable at a time. For example, a three variable model is run and the AIC for it is compared to the AIC from just two of the variables. If the AIC is lower in the first model, it means the added variable has significantly improved the prediction over the two-variable model.

DISCUSSION

The analysis is reported for two, although three geographic areas were used – county wide, two miles from the transit center and a half mile from the transit center. For the Harris County wide model, the AIC and SC values are almost the same with and without the transit center (29672702 without the transit center and 29446006 with the transit center included) indicating the land value prediction is not materially improved when adding the transit center variable (Appendix A - Table 1 and Table 2). A similar response is observed when scaling down to the -half mile parameter with AIC values of 268915 and 268855 and SC values of 268965 and 268910 without and with the transit centers, respectively (Appendix A - Table 4 and Table 5).

To compare different variables, one should look at both the size of the coefficient (a higher positive or a lower negative is stronger) and the z-test of the coefficient. If there is substantial variability in the effect of a variable, it will have a lower z-value. For example, in the Harris County wide model, the coefficient of the 1985 valuation is lower than the square footage of other space (e.g., garages) but is more consistent. Consequently, the z-value is much higher for the former than the latter. Or another example, the square footage of other space appears to be more important than the total square footage of the parcel; the main value of the parcel is already captured by the living space. Having additional land only slightly increases valuation according to HCAD data as compared to making other improvements to that land.

The Baseline – Strongest Predictors County Wide

Model runs, with and without the transit center's proximity, showed the strongest predictors of residential land value for the county are whether the home has been remodeled or improved since 1985. The total size only moderately contributes to the variance in values. The remodeling and improvement variables also show high positive z-values compared to the other variables. The remaining variables are of lesser importance but, of note, are the proximity to a freeway and being closer to downtown serve to decrease a home's value in this regional assessment. Several strong, expensive suburbs may be contributing to that phenomenon.

Once the baseline run without the transit center was established, a new variable was added which was the distance to the nearest transit center. Thus, the model tests whether distance to one of the identified transit centers can explain any of the variances associated with 2007 market values independent of the baseline variables. The effect of this variable showed a fairly minor contribution, but in a positive direction.

Strongest Predictors at Two miles from the Transit Center

The model run assessing residents two miles from the transit center included distance as one of the independent variables. At the two mile distance, the strongest variables were the 1985 valuation (if homes were valued highly in 1985, they tend to be valued highly in 2007) and improvement to the living space. Distance to downtown also provided a positive, but lesser contribution; closer is associated with higher land values, all other things being equal. Interestingly, at this distance the parcel size is negatively associated with value, although the coefficients and z-values are fairly low. Similarly, the distance to the transit center shows 1) living space (the more, the higher the valuation, of course); and 2) whether the home was remodeled since 1985. The other variables are secondary variables that help increase or decrease the value of the home.

Once this baseline model was established, a new variable was added which was the distance to the nearest transit center. Thus, the model tests whether distance to the nearest transit center can explain any of the variances associated with 2007 market values independent of the baseline variables. The effect of this variable was minor.

Strongest Predictors at a Half Mile

Community residents will be most interested in the influences in the land value responses nearest the transit centers. Assessment of single family residential units within a half mile of the transit center encompasses those persons who would likely be in the notification areas for the public involvement processes about existing or proposed transit centers. The model in Appendix A - Table 4 was run with and without strongest predictor (other square footage - garages, patios) which has both a high coefficient and z-value. Other contributing factors include the distance to downtown and the value in 1985, which reflect more moderate coefficients, but higher z-values. Accessibility variables describing proximity to highways and roadways exerted a weak negative influence. A subsequent model run adding the transit center variable to assess its effect shows a p-value with no significance, although the coefficient has a slight negative value (Appendix A - Table 5).

SUMMARY

Neighborhood residents often expect that construction of a transit facility will exert a negative impact on their residential property values. This study of five transit centers in Houston, Texas, that have been in operation 15 years or more shows that the transit centers have a negligible influence on property values (Appendix A - Table 6). On a regional basis that contribution was significant and positive, but reflected weak coefficient and z-values. There are many other unique influences at the local level that can impact land value (crime, quality of school districts, etc.), so some fluctuation may be seen in various distances from one transit center to another transit center. Such a variance can be observed with the two mile assessment, where the transit center influence is significant and slightly negative. Even in that circumstance, the distance to the transit center is the sixth in the list of nine z-values contributing to the explanation and has a fairly low coefficient. At the half mile parameter, the p-value was not significant, but showed a negative sign. Professionals can communicate that according to this research; almost none of a property's value over the long run was affected by a nearby transit center. Property values are most likely to be influenced by improvements to the property and the neighborhood (represented in this model by the 1985 land value). That bodes well for the many communities considering bus based facilities to improve service or to use as a cornerstone for economic development.

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APPENDIX A

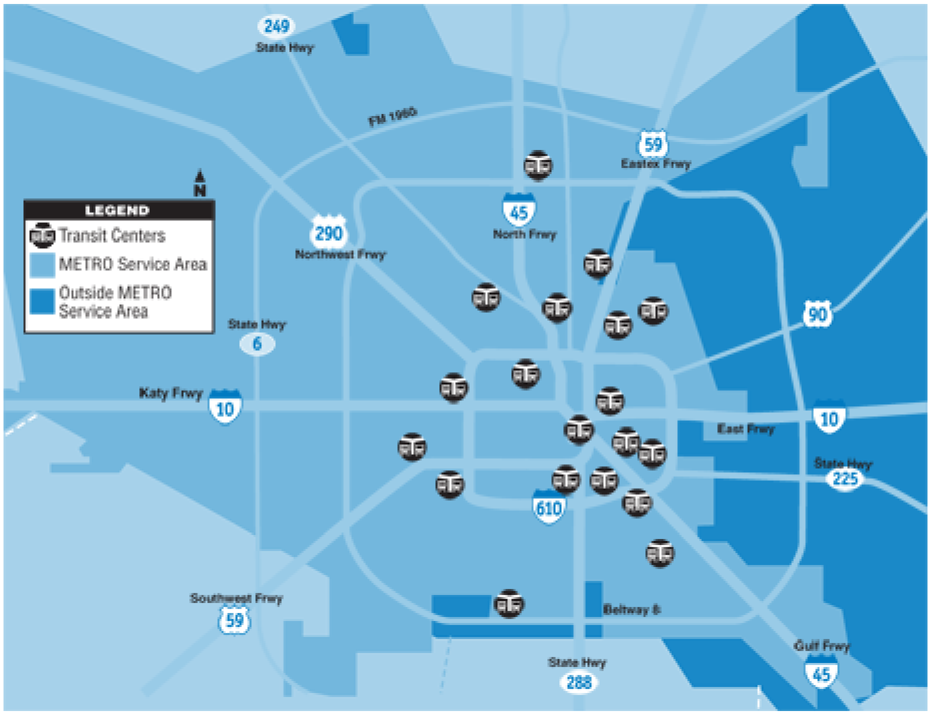

FIGURE 1 Metropolitan Transit Authority of Harris County Transit Center Locations
http://www.ridemetro.org

TABLE 1 Poisson Model Run Harris County Residential Values (with Transit Center)

Predictor	DF	Coefficient	Stand Error	Pseudo-Tolerance	z-value	p-value
CONSTANT	1	4.691701	0.001710	.	2743.823516	0.001
CVAL85_000	1	0.000040	0.000000	0.780567	92.159949	0.001
IMP1000SQF	1	0.320026	0.000479	0.661512	668.071041	0.001
PARCEL1000	1	0.000197	0.000007	0.979950	27.140333	0.001
OTHR1000SQ	1	0.035354	0.001586	0.791415	22.290415	0.001
REMOD_8507	1	0.443515	0.001811	0.934866	244.885328	0.001
ARTRL100FT	1	0.040023	0.002020	0.991336	19.815825	0.001
FWY_200FT	1	-0.196019	0.002427	0.994065	-80.755633	0.001
DIST_DOWNT	1	-0.048659	0.000352	0.116058	-138.096955	0.001
DIST_CLOSE	1	0.026789	0.000455	0.119552	58.930712	0.001

Log Likelihood:	-14836342.064538
Likelihood ratio(LR):	40713192.164017
P-value of LR:	0.0001
AIC:	29672702.129076
SC:	29672803.693960

TABLE 2 Poisson Model Run Harris County Wide Model Run (without Transit Center)

Pseudo-Predictor	DF	Coefficient	Stand Error	Tolerance	z-value	p-value
CONSTANT	1	4.691701	0.001710	.	2743.823516	0.001
CVAL85_000	1	0.000040	0.000000	0.780567	92.159949	0.001
IMP1000SQF	1	0.320026	0.000479	0.661512	668.071041	0.001
PARCEL1000	1	0.000197	0.000007	0.979950	27.140333	0.001
OTHR1000SQ	1	0.035354	0.001586	0.791415	22.290415	0.001
REMOD_8507	1	0.443515	0.001811	0.934866	244.885328	0.001
ARTRL100FT	1	0.040023	0.002020	0.991336	19.815825	0.001
FWY_200FT	1	-0.196019	0.002427	0.994065	-80.755633	0.001
DIST_DOWNT	1	-0.048659	0.000352	0.116058	-138.096955	0.001
DIST_CLOSE	1	0.026789	0.000455	0.119552	58.930712	0.001

Log Likelihood:	-14722993.052802
Likelihood ratio(LR):	40939890.187488
P-value of LR:	0.0001
AIC:	29446006.105604
SC:	29446118.955476

TABLE 3 Poisson Model Run Transit Center Within 2 Miles (with Transit Center)

Predictor	DF	Coefficient	Stand Error	Pseudo-Tolerance	z-value	p-value
CONSTANT	1	3.867467	0.011489	.	336.637835	0.001
CVAL85_000	1	0.003764	0.000032	0.540200	116.113568	0.001
IMP1000SQF	1	0.395382	0.002372	0.529545	166.652970	0.001
PARCEL1000	1	-0.019059	0.000431	0.944968	-44.269388	0.001
OTHR1000SQ	1	0.023269	0.007474	0.654710	3.113143	0.010
REMOD_8507	1	0.074793	0.007679	0.946483	9.739918	0.001
ARTRL100FT	1	-0.165349	0.009517	0.990259	-17.374791	0.001
FWY_200FT	1	0.030256	0.019920	0.995736	1.518887	n.s.
DIST_DOWNT	1	0.034564	0.001327	0.876862	26.045255	0.001
DIST_CLOSE	1	-0.074856	0.005545	0.982572	-13.500704	0.001

Log Likelihood:	-1318124.169560
Likelihood ratio(LR):	6603846.962358
P-value of LR:	0.0001
AIC:	2636268.339119
SC:	2636357.702280

TABLE 4 Poisson Model Run Transit Center Within ½ Mile (Without Transit Center)

Predictor	DF	Coefficient	Stand Error	Pseudo Tolerance	z-value	p-value
CONSTANT	1	2.877802	0.042259		68.099734	0.001
CVAL85_000	1	0.004708	0.000130	0.613452	36.330232	0.001
PARCEL1000	1	-0.005733	0.001135	0.786359	-5.048744	0.001
OTHR1000SQ	1	0.888865	0.023731	0.742178	37.455927	0.001
REMOD_8507	1	-0.100882	0.032888	0.973920	-3.067414	0.010
ARTRL100FT	1	-0.245872	0.039795	0.976503	-6.178535	0.001
FWY_200FT	1	-0.436401	0.103642	0.985291	-4.210648	0.001
DIST_DOWNT	1	0.263328	0.006264	0.861765	42.037919	0.001

Log Likelihood:	134449.74
Likelihood ratio(LR):	582047.4512
P-value of LR:	0.0001
AIC:	268915.4971
SC:	268965.4665

TABLE 5 Poisson Model Run Transit Center within ½ mile (with Transit Center)

Predictor	DF	Coefficient	Stand Error	Pseudo Tolerance	z-value	p-value
CONSTANT	1	2.906473	0.051740		56.175076	0.001
CVAL85_000	1	0.004711	0.000130	0.611884	36.324931	0.001
PARCEL1000	1	-0.005616	0.001142	0.785562	-4.919109	0.001
OTHR1000SQ	1	0.887421	0.023783	0.741538	37.312674	0.001
REMOD_8507	1	-0.102444	0.032941	0.973904	-3.109937	0.010
ARTRL100FT	1	-0.246414	0.039805	0.974462	-6.190572	0.001
FWY_200FT	1	-0.428339	0.104019	0.975038	-4.117911	0.001
DIST_DOWNT	1	0.263876	0.006296	0.858593	41.911911	0.001
DIST_CLOSE	1	-0.090604	0.094418	0.978044	-0.959610	n.s.
Log Likelihood:		-134418.400000				
Likelihood ratio(LR):		582110.166000				
P-value of LR:		0.0001				
AIC:		268854.783000				
SC:		268910.998000				

TABLE 6 Summary of Predictors for Single Family Residential Land Values Proximate to Transit Centers

Geographic Parameter	**Strongest Predictor z-value; coefficient***	**Value of Transit Center Variable z-value; coefficient***
Harris County Wide (with transit center)	668.07; .3200 Improvements to Property	58; .0268 Minor, but positive
Two Mile (with transit center)	166.65; .3954 Improvements to Property	-13.5007; -.0749 Minor, but negative
½ Mile (with transit center)	.41.91; .2639 Distance to Downtown	Not significant at -.09

* Values Rounded

Poisson Model Run Transit Center within ½ mile (without Transit Center)

Predictor	DF	Coefficient	Stand Error	Pseudo Tolerance	z-value	p-value
CONSTANT	1	2.877802	0.042259		68.099734	0.001
CVAL85_000	1	0.004708	0.000130	0.613452	36.330232	0.001
PARCEL1000	1	-0.005733	0.001135	0.786359	-5.048744	0.001
OTHR1000SQ	1	0.888865	0.023731	0.742178	37.455927	0.001
REMOD_8507	1	-0.100882	0.032888	0.973920	-3.067414	0.010
ARTRL100FT	1	-0.245872	0.039795	0.976503	-6.178535	0.001
FWY_200FT	1	-0.436401	0.103642	0.985291	-4.210648	0.001
DIST_DOWNT	1	0.263328	0.006264	0.861765	42.037919	0.001

Log Likelihood: 134449.74
Likelihood ratio(LR): 582047.4512
P-value of LR: 0.0001
AIC: 268915.4971
SC: 268965.4665

Poisson Model Run Transit Center within ½ mile (with Transit Center)

Predictor	DF	Coefficient	Stand Error	Pseudo Tolerance	z-value	p-value
CONSTANT	1	2.906473	0.051740		56.175076	0.001
CVAL85_000	1	0.004711	0.000130	0.611884	36.324931	0.001
PARCEL1000	1	-0.005616	0.001142	0.785562	-4.919109	0.001
OTHR1000SQ	1	0.887421	0.023783	0.741538	37.312674	0.001
REMOD_8507	1	-0.102444	0.032941	0.973904	-3.109937	0.010
ARTRL100FT	1	-0.246414	0.039805	0.974462	-6.190572	0.001
FWY_200FT	1	-0.428339	0.104019	0.975038	-4.117911	0.001
DIST_DOWNT	1	0.263876	0.006296	0.858593	41.911911	0.001
DIST_DOWNT	1	-0.090604	0.094418	0.978044	-0.959610	n.s.

Log Likelihood: -134418.400000
Likelihood ratio(LR): 582110.166000
P-value of LR: 0.0001
AIC: 268854.783000
SC: 268910.998000