

**Housing Conditions, Sustainability and Self Help**  
**in Rancho Vista and Redwood Informal Homestead Subdivisions**  
**in Central Texas.**

**A Final Report and Database for the Community Residents and for the  
Community Development Clinic of the UT Law School  
(Director Professor Heather Way JD)**

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Readers may be interested in reviewing a companion report “Urban Sustainability and Renewable Energy Applications for *Colonia*-Type Housing in the Southern US” copies of which are available on the Latin American Housing Network website [www.lahn.utexas.org](http://www.lahn.utexas.org) (see “Texas Colonias Studies” button on the website dashboard). Both reports were produced through a spring 2010 semester graduate class -- “Urban Sustainability and Renewable Energy Applications for *Colonia*-Type Housing in the Southern US”, and were supported by a 2009-10 grant from the Policy Research Institute to Professor Ward at the Lyndon B. Johnson School of Public Affairs, it was offered as part of the “Sustainable Cities” interdisciplinary doctoral program in the School of Architecture (Community & Regional Planning).

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## **Executive Summary**

This report results from a study undertaken by researchers at the LBJ School of Public Affairs and the Law School Community Development Clinic (CDC) at University of Texas at Austin. It arose in response to a request from the community leaders and residents of Rancho Vista and Redwood – two large low-income “informal homestead subdivisions” in Guadalupe County, central Texas. In order to help with the preparation of grant and other assistance proposals, the CDC proposed the creation of a detailed baseline profile of housing conditions in these two settlements. To that end, the LBJ School designed and implemented a (two-wave) mail and in-person household survey. Out of some 630 mails interviews that were sent out, a total of 93 households returned the self-addressed, pre-paid envelopes containing completed questionnaires, and a further 40 households participated in randomly selected face-to-face interviews. Two-thirds of the surveys were completed in English; 60% of survey respondents were female; 96% Hispanic.

As is usual in these IFHSs, most of the householders were owners, although twelve renter respondents fell into our sample. Since the mail-back survey was self-selecting, we tested for bias between the two types of survey and found small to modest differences between the two sample populations. Because they were self selecting, households who took the mail-back surveys appear to be slightly poorer within a uniformly low income population. It is also apparent that they were especially motivated to provide data about their housing conditions in the hope that they might benefit from downstream interventions. With one or two exceptions, minimal differences were observed between the two communities, and while data are presented for each settlement in almost all instances the data can be combined.

The data presented in the report were analyzed using SPSS and STATA software, and the actual databases (with all identifying information removed) are made publicly available in electronic format as part of the appendices to this report. These databases can be analyzed by anyone interested in having access to the original data, and are presented in EXCEL and SPSS formats.

### **Historical Development and Background (Chapter 2)**

Redwood and Rancho Vista each have over 300 lots and are located on the edge of Guadalupe County, several miles south-east of San Marcos, surrounded by agricultural land. The study area lies within a patchwork of similar subdivisions to be found in Caldwell, Hays, Bastrop, and Travis counties. Although the size and growth of the two subdivisions varies, most initial development and sales began by developers through Contract for Deed during the mid-1980s, with the most notable housing infill and consolidation occurring primarily in the mid to late 1990s and early 2000s. Satellite images of this cluster within the past five years indicate a drop in new lot occupation, accompanied by visible housing-structure improvements and additions. Indeed, a visual count of housing-units and lots shows that the total number of housing-units exceeds the total number of lots. This is to be expected where some internal subdivision and/or sharing

between kin has occurred. The drop in recent new lot occupancy and the rise in housing-structures observed may indicate declining affordability and limited mobility.

Surveyed areas are divided into two units for the purpose of comparative analysis. Rancho Vista, the largest single development within the clustered subdivisions, is separated from remaining smaller subdivisions (promoted by a variety of developers), referred to collectively as Redwood. Census 2000 data for Redwood CDP (Census Defined Place) shows that the population comprised primarily of young to middle-aged adults with elementary school-aged children and is almost exclusively Hispanic. Most homes are owner-occupied manufactured (mobile) homes. The larger median family/household sizes and a lower median number of rooms per dwelling compared with 2000 data from Guadalupe County overall, indicate greater levels of overcrowding, and comparisons also indicate notably higher levels of poverty than in the county and Central Texas at large. Declining property valuations, decreasing education levels, and increasing low-wage employment during the period between the 1990 and 2000, further support the possibility of declining mobility. Census data for 2010 will be important to evaluate how these trends have changed over the past ten years.

### **Socio-economic Profile, Housing Acquisition, and Dwelling Structures (Chapter 3)**

Corresponding quite closely to Census 2000 and satellite image information, the survey results indicate an average household size of 3.94 and a slightly higher average lot size of 4.29 persons. Roughly 14% of lots contain two housing units, and most of the persons in the second home are close-kin relations to the primary household dwelling (parents or adult siblings). The large majority (three-fourths) of households have one or two members in paid employment, and one-third reports a monthly household income of between \$2,000 and \$3,000, while 60% report their income at under \$2,000 underscoring the poor, and very poor, status of residents in these two communities. A general trend is that households with only one member, and those with six or more persons, are much likely to live in poverty than are smaller nuclear families. Between settlements there is little variation with regards to socio-economic profiles.

Few if no residents are found in higher paying professions such as in managerial, professional, engineering, technical, and upper-level office positions. Most **primary** household income earners work in *Construction & Extraction*, followed by persons that work in *Building & Grounds Cleaning & Maintenance*, *Production*, and *Sales* occupations. *Secondary* and *tertiary* household earners can also be found in *Office & Administrative Support*, *Food Preparation & Serving* and in *Healthcare Support* fields. A total of 105 of the 133 households surveyed listed at least one person with construction skills, which in later analysis were statistically found to be important in reducing the number of problems the home faces. The top five construction skills listed are in: 1) painting; 2) carpentry & framing; 3) brick & cement laying; 4) floor & tile laying; and 5) plumbing. Within the two communities there are also a handful of persons with electrical, air conditioning (AC) and roofing expertise.

Lot and housing acquisition and structure. Most households (61%) report living on their lot for 15 years or more, confirming our reading that by 1995 most communities were fairly well established. Nineteen per cent are relatively new arrivals during the past 10 years indicating a low to modest turnover of homeownership. Tax appraisal data show that lot sizes vary, with the

majority of lots in Redwood (62%) measuring between 0.34 and 0.505 acres while in Rancho Vista lot sizes are fairly uniform, with 84% measuring 0.574 acres. In Redwood, most lots (72%) are valued below \$17,000, lower than in Rancho Vista where 89% of lots values are \$17,000–\$18,000. The variations in lot size and value in Redwood result from the more diverse pattern of subdivisions, and variety of developers who were active in this neighborhood.

As to be expected in informal self-managed homestead subdivisions of this kind, mortgages play only a minor role in lot acquisition. Over 4/5 of respondents (82%) report purchasing land through payments to a seller (over several years). Over half of respondents (56%) report purchasing their lot from a company or land seller, while 31% report purchasing the lot from a former owner (probably a buy-out). Nearly all respondents (94%) hold deeds or are purchasing under contract for deed and, of the respondents still paying for their land, the majority (88%) possess a written contract. The prevalence of contract for deed in both communities, and the relatively small number of cases (10.5%) that have oral contracts, indicates the vulnerability and lack of protection. (Most of the oral contracts are renters.)

The average age of the primary dwelling unit (defined as the principal structure in which the household resides) is 22 years, emphasizing the likelihood of a high need for weatherization and home improvements in older units. The vast majority of survey respondents (91%) own or are purchasing their home, and taking into account only those that are still paying installments the data suggests that payments run to 30–45% of monthly household income. Two-fifths of respondents (42%) report purchasing their home from a manufactured home dealer, indicating the importance of such dealers in housing acquisition. One-quarter (26%) report purchasing their home from a former occupant, indicating that buy-outs of previous occupants or lot owners is also important.

Regarding the type of structure: 69% of dwelling units are manufactured trailer homes (although due to difficulties of definition some of these may be “modular” homes), and 14% are self-built. Between the two subdivisions Rancho Vista has a higher presence of self-built homes than Redwood, but otherwise there are little differences. Both communities appear to have a similar number of bedrooms (68% of units having 3-4 bedrooms). Two out of five respondents have extended or added to their primary housing unit, mainly for additional living (sleeping) space.

#### **Housing Services and Infrastructure Problems (Chapter 4)**

Housing Services and Supply of Utilities: Overall, there appears to be little difference between Rancho Vista and Redwood in terms of water supply, wastewater provision, and electricity. The only notable difference is in the method of garbage disposal.

Both communities get their supply of water primarily from a piped-in source: 92% do so. Roughly 18% report a problem with their water supply and, of these, hard water or deposits in the water (calcium or rust) are the most often mentioned. Almost all households (98%) rely on some sort of septic tank (mainly professionally installed). Overall, 44% report serious problems with their septic tanks, involving clogs, back-ups of sewage, capacity issues, and leaks. It appears likely that many of these problems are related to the fact that in 60% of cases the septic systems are more than 15 years old, and almost half (49%) are more than 20 years old.

Problems also arise since these septic tanks are designed to be professionally (vacuum) pumped periodically, but many households fail to do so because of the cost.

Most residents (62%) make exclusive use of electrical power; others (1/3) have electric power that they supplement with propane tanks. Most people do not have problems with their electricity, but of those that do (19 persons), the most common complaint relates to cost. About 88% of households have electric water heaters, making this the primary source of hot water in both communities, and a further source of complaints about high electricity costs since electric water heaters consume more energy and are more expensive to run than gas heaters.

Multiple options are adopted to provide air-cooling in the homes. Almost half of households (49%) count on at least one partial air conditioner (AC) unit to cool their homes, and 9% more supplement their central (full) AC with a partial AC unit. Half of the homes with partial ACs have more than two partial units (usually window-based in bedrooms) and considering the small average size of many homes this high number is notable. Given the many complaints about high energy bills, and about it being insufferably hot during the summer, the real story is probably that many homes are not capturing cool airflow efficiently. Overall, one-third (34%) of those surveyed report a problem with their air-cooling source, mainly related to having a broken or no AC, or that an AC system requires repair. In addition, many homes have fan units.

Twenty-two percent of the respondents have a formal garbage collection service, while around one third have a semi-formal arrangement with an individual contractor. No less than 42% either drop off their garbage elsewhere, or burn it. There are statistically significant differences between communities for how they dispose of their garbage: residents of Redwood have more access to formal garbage service and are more likely to drop off their garbage themselves or burn it, while those in Rancho Vista are twice as likely to use the semi-formal contractors.

Housing Problems. Housing problem areas and the severity of these problems are to be the focus of possible grant proposals for weatherization and home improvements on behalf of the two communities, as well as for potential future funding for “green” technologies and housing upgrades and rehabilitation. These latter improvements can also be tied to self-building new homes, and to DIY self-help improvements.

The survey enquired about 24 dimensions of possible housing problems. Ratings of these 24 housing dimensions from all surveys (N=133) was based on an ordinal scale that indexed responses to the housing characteristics as a “severe” or “occasional” problem. Findings show that the top problem area for residents (72%) is that *doors do not close properly*, followed by that their dwelling unit is *too hot during the summer* (69%), *too cold during the winter* (64%) and *poorly insulated* (62%). It appears that multiple benefits can be achieved through a combination of potentially cost effective home improvements in these areas. Other key problems as rated by households include *pest infestation*, *septic tanks*, *bathroom venting*, *roof leaks*, *flooring*, *kitchen venting*, *foundation*, *windows closing properly*, and *electrical wiring*. Of the 24 dimensions, *front door steps* receive the fewest number of problem counts but, even here, 37% say that the steps to their front doors are an issue of concern. Subgroup comparisons show little variation between residents of Rancho Vista and Redwood in the problems reported. Households that answered the mail survey were more prone to report problems than those surveyed face-to-face, a

difference that was statistically significant. This not completely surprising since we would expect those most concerned about their housing conditions and in need of assistance, to be more likely to respond in the mail surveys (which were self-selecting).

Residents were also asked an open-ended question to list (up to) five most severe problems that they confronted. Our hypothesis is that householders will prioritize major structural or infrastructure problem areas since these are the ones that if fixed, will most improve their living situation. The results confirm this: the topmost severe condition listed is that of *septic tank problems*, followed by *roof leaks*, *poor insulation*, and *too hot in summer*. Put another way, residents rank septic tanks as the number one issue they would like to have corrected. Both Rancho Vista and Redwood residents list analogous severe problems.

To further measure home problems, households were grouped into four categories (quartiles) to differentiate their overall housing condition with the following distribution showing that 42% of homes have major housing problems in the two settlements.

Category 1: 18.3% of households with **extensive and serious housing problems**.

Category 2. 23.7% of households with **substantial housing problems**.

Category 3. 21.4% of households with **largely modest housing problems**.

Category 4. 36.6% of households with **relatively few housing problems**.

Finally, an ordered logit model was generated using the housing quartiles as an index and dependent variable to estimate the factors that help explain housing conditions. In general, the **number of housing problems is estimated to rise** as the house structure ages, when the household reports problems with their septic tank and source of air cooling, and where the household has a member with health issues or disabilities. On the other hand, the **number of housing problems is estimated to decline** as the value of the home increases and if the household has a member with construction experience. The three variables that appear to most influence the number of housing problems are: 1) where a household has no member with construction experience; 2) where the house reports septic system problems; and 3) where one or more members of the households have chronic health problems.

We posit, therefore, that a home that has someone with some type of construction experience is more likely to be able to fix the problem or make an improvement compared to those households that have no such skills. With regards to air cooling, many consequent problems are associated with poor air quality and, thus, a home with poor central air flow is more likely to experience additional housing problems. Similarly, if the home contains persons with severe health problems or disabilities, they are less likely to have the physical resources to deal with dilapidating dwelling conditions.

### **Planned Improvements, Recycling and Health Issues (Chapter 5)**

Ninety-eight of the residents (75%) have plans for their house within the next two years: most indicate that they plan to make general improvements of some form or other; one in four (26%) respondents indicate that they have plans for building a house, alongside other improvements, extensions/additions, and/or even installing a mobile home. A further 19% plan on adding on or

extending to their current dwelling unit, with or without any other improvements but without building another house; while a few plan on doing no more than maybe fixing their yard (4.3%).

Many (40%) residents recycle: most commonly aluminum cans. Few residents compost (only 13%) despite the high percentage of our study population that report disposing of their garbage themselves (either by dropping it off, or burning). Most our survey participants (82%) have not heard about sustainability issues beyond that of recycling. The majority of residents own pets – dogs mostly.

Health Problems and Disabilities and their Relation to the Dwelling Unit. More than half of the surveyed population (57%) indicate that they have at least one member of their household with some sort of severe or chronic health problem or disability. The most frequently reported health problem among respondents is *diabetes* (29% of the households have at least one member with diabetes). There are several other health problems that affect at least one member in about 15% of the households: *poor physical mobility, asthma/respiratory problems, and migraines/headaches.*

Correlating with how health problems are affected by housing situations, the condition cited by residents as most often as contributing to illness and poor health is **poor indoor air quality**. This includes mold, noxious odors, humidity, dust, and poor air circulation. This response is especially notable given the growing body of research that links health outcomes such as asthma and lung cancer to the quality of indoor home environments. We find a strong relationship between negative health outcomes, and the condition of the physical house. For instance, cases that report having a member of their household affected by asthma are more likely to list mold, poor air quality, humidity and condensation, poor venting from the kitchen or bathroom or toilet, or drafts from doors as problems.

## **Conclusion and Policy Implications (Chapter 6)**

In the final chapter of this report we offer an overview of the range of possible actions that might be undertaken in light of the survey and analysis of Rancho Vista and Redwood. We emphasize, however, that these are only way-makers to possible future actions, and we offer no prioritization of actions: rather this must be undertaken by the residents themselves.

The first section of the chapter provides an inventory of the types of funding available to subsidize sustainability and home improvement expenditures at the federal, state and private utility levels. These include: USDA Direct Housing Loans; Home Repair Loan and Grant Program; Mutual Self-Help Housing Program; Housing Preservation Grants; Multi-Family Housing Grants; Weatherization Assistance Program; Energy-Efficient Mortgages Program; Residential Energy Subsidies and Tax Credits; PACE Financing: Property Assessed Clean Energy (PACE); Sales Tax Incentives, and Local Utility Incentive Programs.



## Principal Housing Priorities & Actions

- a) Property Titles and Lot and New Housing Acquisition and Sales.
  - Most households have acquired their homes through Contract for Deed. Residents in central Texas would benefit from conversion to Warranty Deeds that would give greater protection.
  - There is a major need for financing support – lower cost loans and small scale credits – for lot purchase, housing improvements, and infrastructural investment. For many of the upgrades and improvements to take place, financial underpinning will be critical.
  
- b) Infrastructure
  - The most salient infrastructural problem that emerges from our analysis is that of the poor quality and operation of most septic tanks. Two actions appear to be warranted. First, funding is urgently required to systematically replace defective septic tanks; second, regular periodic vacuum pumping is required on all existing and newly installed septic tanks.
  - Garbage collection is privately managed, but we found interesting lower cost “informal” services operated by local entrepreneurs which many use, and which seem to work reasonably well. As part of a more generalized campaign to raise public awareness of housing and community sustainability, promotion of safe (covered container) composting systems could take advantage of biodegradable materials that are currently burned or dumped, and offer compost that can be used in the yard.
  
- c) Housing Problems. While considerable housing diversity exists across the two neighborhoods, the modal house type is that of manufactured homes – singlewide and doublewide trailers. Dwellings vary greatly in quality and adequacy and fall into one of four categories of housing problems (see above). The primary areas of concern are:
  - Septic tank problems (already mentioned above)
  - Roofs leaking
  - Unstable foundations and footings
  - Poor and dangerous electrics
  - Poor insulation and a gamut of associated problems (doors & windows don't close properly)
  - And poor ventilation and inadequate cooling (especially) and heating.

The widespread presence of construction skills is an important human resource in these two communities which offers considerable potential for self help and mutual aid assistance, and for local job creation.

There seems little doubt that many of the chronic health conditions that residents identified are related to, or aggravated by, the poor housing conditions. This is particularly likely in the case of the diseases and illness that are directly related to poor air quality.

d) Priorities for Housing Improvement versus Housing Replacement. These data relating to levels of housing problem are likely to be important when considering the nature of housing improvement interventions that should be undertaken.

- Category 1 & Category 2 households will benefit substantially from interventions to improve the dwelling unit. However, it seems probable that the costs of intervention will greatly outweigh the benefits (unless the interventions are low cost and ameliorative), and will be un-economic. In such cases where major structural improvements are required to the older and most dilapidated properties, it will probably be desirable to start over, bringing in new(er) housing units, or by promoting new self-help home construction. Certain interventions in these lots can be undertaken without prejudice to decisions about the house structure itself: for example septic tank replacement, yard improvements, etc
- Category 3 (especially) and Category 4 housing units present the best prospects for actions to best opportunities for maximum and longer term benefits to accrue from home improvement and weatherization programs. However, the prioritization about the types of programs to be promoted, and the targeting of households to be affected, must be a decision for the residents themselves.

e) Housing Sustainability and Planned Improvements

- Knowledge about sustainability and sustainable housing practices was fairly limited. However, there are good preconditions in the two neighborhoods to suggest that an ongoing community education and information program about the opportunities for incorporating sustainability into future home improvement programs and home building is both warranted, and likely to gain traction. A number of action items are proposed, and are identified in a companion report -- Urban Sustainability and Renewable Energy Applications for *Colonia*-Type Housing in the Southern US.”
- Large yards are often underutilized “dead spaces”, and offer a major opportunity to engage in sustainable practices that will make the outdoors more attractive and more usable. Tree and shrub planning tied to spot watering, itself linked to rainwater harvesting or reuse of gray water, would do much to provide shade and sites for recreation.

### Next Steps

The main purpose of this survey was to better understand housing conditions and housing processes in these two low income informal homestead subdivisions, with a view to identifying possible housing actions and opportunities for home improvement. Now the community will need to make some tough choices. Most notable here will be the choice between those

dwellings and households that will benefit from major investment and improvement, and those that won't. The latter are likely to be the oldest and most dilapidated residences, where apart from modest "band-aid" type improvements (resetting doors to exclude draughts, making electricity sockets safe, covering exposed windows with aluminum foil, etc.), any major investment in these dwellings is likely to be uneconomic. Better, in these cases to start over, looking towards newer and higher-standard manufactured housing to replace the old. Sponsored self-help and self build should also be on the agenda, whether as new stand alone homes or as extensions. Those cases where investment and improvements will achieve notable gains and benefits are likely to be more economic and viable.

But how can policy-making and grant-seeking meet the legitimate needs of both groups, ensuring that everyone has an opportunity to participate in some of the benefits and supports that the communities are able to secure? Here we return to the idea of yard-wide versus strictly dwelling structure centered improvements. This report has identified the urgent need for new septic tanks and for improved septic tank usage. In addition we have underscored the very real benefits that will accrue from better yard and garden management: clean-up, composting, rainwater harvesting and spot irrigation, tree planting, etc. Investment in the yard can prove **highly economic**. New septic tanks and the other actions complement the home and do not restrict or impede future home replacement. Nor do new septic systems or yard improvements result in any appreciable loss of the original investment when homes are replaced. Yard investments and improvements offer positive advantages to those residents whose housing structures are less viable in the medium to long term, and pave the way for home replacement in the future. It is also likely to add value to the property, even though the actual dwelling value is flat or in decline. While the benefits of these yard-centered actions will also apply to those residents whose homes are targeted for significant improvement and upgrading, the adoption of yard-centered upgrading will at least ensure that everyone, potentially, can benefit, and that no-one needs to be left out.

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