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## Evaluation of the HUD Elder Cottage Housing Opportunity (ECHO) program

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# Evaluation of the HUD Elder Cottage Housing Opportunity (ECHO) Program

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U.S. Department of Housing and Urban Development  
Office of Policy Development and Research

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## **Disclaimer**

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## **Preface**

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# TABLE OF CONTENTS

List of Exhibits .....	vii
Figures .....	vii
Tables.....	vii
Executive Summary.....	ix
HUD ECHO Demonstration Program Overview.....	1
Announcement of the ECHO Demonstration Program .....	1
ECHO Demonstration Awards.....	1
Post Award Implementation.....	2
Study Approach.....	4
Background on ECHO Housing .....	5
International Perspective.....	5
ECHO Housing in the United States .....	7
Acceptance of ECHO Units .....	10
Summary.....	13
Review of Zoning and Land Use Issues .....	14
Introduction.....	14
Zoning Issues .....	15
Other Considerations.....	22
Policy Issues.....	24
Interviews with HUD Field Offices, Sponsors, Hosts and Residents and Physical Inspections and Assessments of the ECHO Units.....	27
Survey Procedure .....	27
ECHO Program Implementation.....	28
Perceptions of Residents and Caregivers (Hosts).....	48
Financial Viability .....	51
Base Unit Cost .....	51
Maintenance and Repair Costs.....	52

Relocation Costs .....	54
Comparison of Replacement and Maintenance Costs.....	54
Pro Forma Analysis .....	56
Possible Costs Reductions .....	57
Findings and Recommendations.....	59
Findings and Recommendations: Background/Land Use/Zoning.....	59
Findings and Recommendations: ECHO Demonstration Program.....	60
Appendix A. ECHO Unit Evaluation Templates (URS Corporation) .....	A-1
Appendix B. Interview Questions: HUD Field Office .....	B-1
Appendix C. Interview Questions: Sponsor .....	C-1
Appendix D. Interview Questions: Host.....	D-1
Appendix E. Interview Questions: Resident.....	E-1
References .....	R-1

**LIST OF EXHIBITS**

**Figures**

Figure 1. Number of Active ECHO Units by State..... 2

Figure 2. Projected Costs of New and Maintained ECHO Units with High Maintenance Budgets..... 54

Figure 3. Projected Costs of New and Maintained ECHO Units with Low and Moderate Maintenance Budgets ..... 55

**Tables**

Table 1. Property Description – Iowa..... 30

Table 2. Property Condition – Iowa ..... 31

Table 3. Property Description – Kansas ..... 34

Table 4. Property Condition – Kansas..... 35

Table 5. Property Description – Missouri..... 38

Table 6. Property Condition – Missouri ..... 39

Table 7. Property Description – New Jersey ..... 42

Table 8. Property Condition – New Jersey ..... 43

Table 9. Property Description – Tennessee ..... 46

Table 10. Property Condition – Tennessee..... 47

Table 11. Cost of New Echo Unit..... 52

Table 12. Estimated Maintenance Budgets ..... 53

Table 13. Ten Year Replacement Reserve ..... 54



## **EXECUTIVE SUMMARY**

With funding from the U.S. Department of Housing and Urban Development (HUD), the Center for Housing Research at Virginia Polytechnic Institute and State University (Virginia Tech) conducted an evaluation of the HUD Elder Cottage Housing Opportunity (ECHO) demonstration program. The evaluation consisted of a review of background information, a review of zoning and land-use issues, interviews with key groups, physical inspections of the ECHO units, a financial viability assessment, and findings and recommendations.

ECHO housing was introduced in the United States in the 1980s based on a program started in Australia in 1975. An ECHO unit is a small house in which an elderly person resides and which is placed near the home of a host (either relatives or close friends of the elderly person). The purpose of this arrangement is to make it convenient and efficient for the occupants of the host family dwelling to provide assistance to the elderly person residing in the smaller ECHO house.

Although ECHO housing provides a means for keeping an elderly resident close to family and friends and may delay or eliminate the necessity of institutional care, administering an ECHO housing program is difficult. Issues surrounding design, quality, maintenance, and oversight vary depending on location and the key groups involved. Problems arise when ECHO units are no longer needed due to death of the resident or other family problems. Relocating units is difficult in terms of where to move them and how to move them without damage. The costs of moving the units add considerably to the overall costs that vary depending on a variety of factors. In addition, zoning is often a barrier that limits ECHO housing to large lots and rural areas.

The HUD ECHO demonstration program was initiated in 1993. Initially the demonstration program allocated 80 units nationally to five participating states: Tennessee (20), New Jersey (20), Iowa (10), Kansas (20), and Missouri (10). At the time of the fieldwork conducted for this report, there were only 34 units in use: Tennessee (2), New Jersey (6), Iowa (10), Kansas (6), and Missouri (10). Four key groups are involved in the ECHO program: HUD field offices, sponsors, host families, and ECHO housing residents. The local HUD field office oversees the ECHO demonstration program and contracts with a sponsor to provide the units and manage the program.

While evaluation of the demonstration program revealed that each state had a unique set of experiences, there were also many common aspects. The benefits of the program cited by program participants were related to the daily-living support provided to the elderly resident by adjacent family members. The challenges of the program were related to poor unit design criteria, unclear responsibilities and lack of guidelines for key groups, high costs, zoning constraints, vacancy, and difficulty in moving units.

The challenges identified through researching the background of ECHO housing including zoning issues and examining the demonstration program will clearly need to be addressed before taking the program to a national scale. The evaluation of the HUD ECHO demonstration program resulted in the following recommendations.

1. Standardized unit designs need to be tested for performance. Units should be manufactured by companies that can assure unit quality, portability, and durability. Designs should fully incorporate Fair Housing Accessibility Guidelines and meet the accessibility needs of the targeted population. Design criteria also need to address various geographic and climatic conditions.
2. HUD should review internal procedures and sponsor's responsibilities to assure timely installation of units. Sponsors (or HUD field offices) need to have the required expertise to act as general contractors and to properly evaluate and address site problems. HUD should develop standard procedures for installing units, including insulation and access for repairing mechanical and electrical systems.
3. A national ECHO program should include detailed specifications for portability in the design of units, as well as detailed procedures for relocating units.
4. HUD should consult with the factory-built or modular/manufactured housing industry to identify and incorporate design specifications maximizing portability at the lowest possible cost. Optimum designs should be tested for cost and repair implications with repeated disassembly, transport, and reassembly. Based on a five-year relocation cycle, seven relocations would be required over a 40-year period.
5. An alternative, fixed-location option should be investigated where units are placed in a cluster located to facilitate care giving by relatives and an on-site caregiver.
6. Detailed guidelines and training for HUD field offices will be required to deal with the unique characteristics and challenges of the ECHO program.
7. Detailed specifications for sponsors should be developed, along with criteria for sponsor selection. Prospective sponsors should document their experience and expertise in all aspects of the ECHO program, including construction contracting, site evaluation, and property management.
8. Program materials should be developed to clearly communicate the responsibilities of residents and hosts. These materials should address land-lease, unit rent, income certification, maintenance, policies and procedures governing property improvements, relocation of the unit and restoration of the site. Host/caregiver support materials and resources should be developed and distributed.
9. Program specifications should address routine (monthly and annual) maintenance schedules and clarify the responsibilities of sponsors and hosts. Policies should clarify the authorization of property improvements provided by the host or tenant, as well as the financial liabilities and obligations of HUD and the sponsor.
10. Financial feasibility requires a capital subsidy covering the complete cost of construction and siting the unit. In addition, a rent subsidy, or equivalent capital subsidy, is needed to underwrite maintenance, relocation, and repair costs.



## **HUD ECHO DEMONSTRATION PROGRAM OVERVIEW**

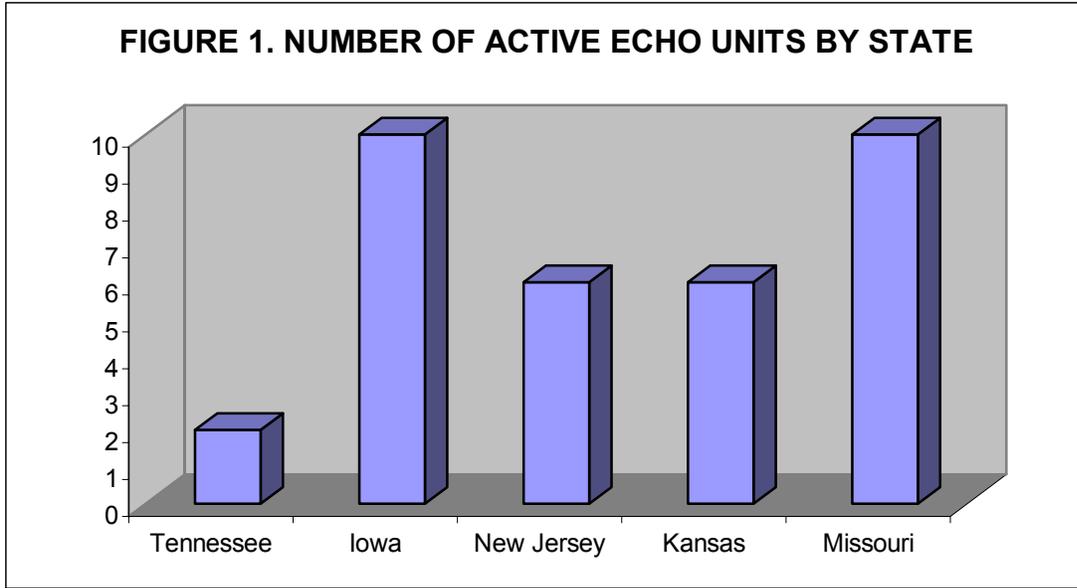
The HUD Elderly Cottage Housing Opportunity (ECHO) demonstration program provides an innovative housing option designed for elder persons as part of the capital advance program of the existing Section 202 HUD program. The ECHO concept is a variation of the original Australian “granny flat” prototype. It consists of placing a small house in which an elderly person can live (the “resident”) near an existing family dwelling in which reside relatives or close friends of the elderly person (the “host” family). The purpose of this arrangement is to make it convenient and efficient for the occupants of the host family dwelling to provide assistance to the elderly person residing in the smaller ECHO house.

### **Announcement of the ECHO Demonstration Program**

The ECHO demonstration program was announced in the August 1993 Federal Register Vol. 58, No. 165, Notice of Funds Available (NOFA). The NOFA provided detailed information on the ECHO program guidelines for the HUD field offices involved in the proposed program (HUD regions II, IV, and VII). The NOFA contained comprehensive directives for sponsors that addressed the application process, including filing deadlines, and the selection process, including selection criteria for the ECHO housing demonstration program. The NOFA addressed the uniqueness of the ECHO housing demonstration program as compared to other Section 202 programs. Durability of the housing unit, factors that influence sponsor success, and the degree to which those factors differ in the ECHO program from the traditional Section 202 program were noted. Potential sponsors and HUD field offices were cautioned to avoid “screening out flexible, innovative approaches by eligible but nontraditional Sponsors” in order to encourage creativity in formulating the sponsor plan to administer this unique demonstration program.

### **ECHO Demonstration Awards**

Applications for the ECHO demonstration were selected on a first-come, first-serve basis up to the HUD regional allocation of 40 units (subject to transfer of excess units from other regions). Applications from Tennessee, New Jersey, Iowa, Kansas, and Missouri were selected to participate in the ECHO housing demonstration program. The initial allocation of ECHO housing units to these states was as follows: Tennessee, 20 units (1993); New Jersey, 20 units (1994); Iowa, 10 units (1996); and Kansas, 20 units (1994). Information on exactly when the ECHO program was initiated in Missouri was not available; however, the program was originally funded for 10 units. At the time of this report, the distribution of active units was Tennessee, 2 units; New Jersey, 6 units; Iowa, 10 units; Kansas, 6 units; and Missouri, 10 units (see Figure 1).



### **Post Award Implementation**

Four groups are involved in the ECHO program as described in the NOFA: HUD field offices, sponsors (also referred to as owners), hosts (also referred to as host families), and residents. The NOFA guidelines define each of these groups and their respective responsibilities.

The HUD field offices were responsible for advising constituents of the availability of the program and supporting interested parties in completing the application process. In addition, HUD field offices were responsible for reviewing filings submitted by the selected sponsors as the program developed, and monitoring the progress of the program as a function of administering the appropriated funds.

Sponsors were responsible for completing the HUD application process for the grant, including a detailed plan for implementing the program in their area. The sponsor, once awarded the grant, was additionally responsible for selecting an appropriate design for the ECHO house; locating a manufacturer with the expertise required for constructing the house; advertising, researching, and selecting suitable host families and residents for the ECHO program; completing and filing required documentation of agreements between HUD, the host, and the resident; researching and approving appropriate site locations; securing the services of a qualified contractor to prepare the site; and monitoring the installation and occupancy of the ECHO houses. Once an ECHO house is occupied, sponsor responsibilities shift from real estate-related tasks to those more closely aligned with property management. The sponsor collects rent, maintains the structure, and relocates the house when the host no longer needs it.

The “host family” is defined as “the family that owns the single-family home site where the ECHO unit will be located.” The “single-family home” is defined as “an existing one-to four-family dwelling” (HUD, 1993). The host family is responsible for attending to the needs of the resident of the ECHO house. This is a loosely defined responsibility that is not formally monitored. The responsibilities involved are left to the host family and resident to determine.

One of the major responsibilities of the host is to sign a 40-year land lease with the sponsor for the ECHO housing site. A nominal fee (\$1/yr.) was suggested in the NOFA. The land lease is terminated when the host family no longer needs the ECHO unit.

The resident must meet the eligibility requirements of the program but does not have other responsibilities under the program. The resident’s eligibility for the ECHO housing demonstration program is based on need. The resident must be elderly (62 or older), have very low income (<50% of the area median family income), and a need for assistance that can feasibly be provided by the host family. Although other needs are referred to generally, the only stipulation of need clearly stated in the NOFA is close proximity between the homes of the host and the ECHO resident. Directives regarding verification of specific ECHO resident needs are not stated in the NOFA.

## **STUDY APPROACH**

The evaluation of the ECHO program included six elements:

1. Review of the background on ECHO housing.
2. Review of zoning and land use issues.
3. Interviews with HUD field offices, sponsors, hosts, and residents.
4. Physical inspections and assessments of the ECHO units.
5. Evaluation of the financial viability of ECHO housing under the Section 202 program.
6. Findings and Recommendations.

To identify the background literature on ECHO housing, researchers at Virginia Tech utilized several bibliographic databases and the World Wide Web as well as contacting key organizations (such as the American Association of Retired Persons). We used a similar approach in reviewing current zoning regulations affecting placement of ECHO-type housing.

In order to help identify both the challenges and successes of the ECHO demonstration program, as well as to understand the context of those challenges and successes, we developed questions for and conducted interviews with each of the four key groups (field offices, sponsors, hosts, and residents) involved in the demonstration (see Appendixes B-E). The interview questions were based on researcher expertise in the field of housing for the elderly and developed with attention to feasibility issues noted in the NOFA.

Virginia Tech subcontracted with URS Corporation for field assessments of the ECHO properties. To evaluate each property, URS Corporation designed a standard checklist. Field inspectors completed this checklist based on personal inspection of the property, information from the resident and/or host family, and information from local HUD representatives.

We assessed the financial viability of the ECHO program by estimating the capital grant required for the program to be operational. We calculated the required capital grant based on the costs, amortized over 40 years, for the initial unit, maintenance, replacement and repairs, relocation, and management and on revenues from rent subsidies under the Section 8 program.

The findings address program characteristics and constraints based on the evaluation of the pilot demonstration program. The recommendations provide suggestions for successfully operating the program including modifying and/or eliminating program elements.

## **BACKGROUND ON ECHO HOUSING\***

The ECHO concept is to place a small, temporary unit in the back or side yard of a home in order to enhance the care of an older family member. The idea, developed from an Australian model of housing for older adults called “granny flats,” was introduced in the United States in the early 1980s. The concept might take several forms, but most of the schemes depict a small self-contained modular house that would be brought to an existing home site and removed when it was no longer needed. The unit would be placed on a foundation and would incorporate the utilities of the host house. The unit could house an older parent at a child’s house, or it might house a family member at the house of an older person.

The term “granny flat” is still used to describe ECHO housing even in the United States. “Granny flat” and “ECHO” unit are usually used when referencing an accessory unit that will house an older person, but accessory units are not necessarily linked to habitation by an older person. Additionally an ECHO unit can be referred to as an “accessory unit” or “accessory dwelling unit.” The various names for accessory dwelling units such as second units, accessory cottages, cottage homes, garage apartments, garage-over units, carriage house, ancillary unit, mother-in-law apartment, homecare suites, garden suites, detached accessory dwellings (DADs) (CMHC, n.d.; Altus, and Mathews, 1999; Nelson and Bell, 2003; Pollak, 1994) among others, often confuse most people as to the actual nature of a true ECHO unit. An ECHO unit, or granny flat, can be considered a type of accessory dwelling unit and can be described as attached and unattached, stick-built and non-stick built modular housing and mobile homes. In this section, the term granny flat and ECHO unit / housing are used interchangeably when they refer to the separate unit placed on a lot with a single-family home that addresses the housing needs of older persons.

We provide some details on the ECHO housing concept in other countries. Programs in Australia, New Zealand, Canada, and Great Britain were reviewed in the early 1990s and reported some successes and problems that might be anticipated in the United States. The following section summarizes these reports and updates the findings when possible. This is followed by a review of ECHO housing in the United States.

### **International Perspective**

#### ***The Australian Model***

The Granny Flat program was introduced in Victoria, Australia in 1975 (Power, 1991). The program was originally managed by the government and intended for pensioners or low-income older adults. By 1977 a Private Funded Program was also developed for moderate-income households, but units still had to be owned by the Ministry of Housing. The units were built with panelized construction and placed on a foundation. By 1985, there were 18 models of houses using a diversity of materials and methods of construction. The Ministry of Housing worked with the clients and moved units across jurisdictions. A staff of ten managed the program, with three people responsible for inspections (Power, 1991). By 1990, 3000 units had been placed (Lazarowich, 1990). Lazarowich (1990) reported that the program had

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outpaced its organizational and administrative capacity and suggested a need for decentralization.

Power's (1991) review and Lazarowich's (1990) research reported several issues that needed to be addressed to improve the Granny Flat program. Power states that units stayed vacant for 10 to 12 months. Because new clients had to be arranged and sites had to be prepared, the Ministry had difficulty in removing units in a timely manner. Lazarowich indicated that the application and approval process was inefficient due to incomplete information and the permit and planning approval process taking a long time since local governments did not always fully cooperate. Storage sites were needed so that unused units could be removed from a property before being placed on a new lot. The large number of models also delayed consumers' decision-making about unit selection and the matching process was more difficult. A single model unit was developed in 1985. Power reported that the units themselves were difficult to dismantle and to re-erect and that many manufacturers had been dropped from the program because of poor quality. Costs had become high due to the unit cost, the transfer costs, and the need to remove asbestos in some of the older units. Finally, the length of tenancy had become an issue. Of the 249 units vacated in 1989, 131 had a tenancy of less than three years. Reasons for the short stay were due to death, sale of property, change in family structure, and conflicts between host families and occupants of the granny flats.

Australia's current policy for housing older adults is the Aged Care program (Commonwealth Department of Health and Ageing, 2002). The program attempts to provide care and assistance along a continuum of housing options. Community Care assists persons in staying in their own home and Residential Care includes nursing homes and low-level care residences. Other flexible services, day care, and support for caregivers are provided. The program is administered through the federal and state governments. In Victoria, the moveable unit (Granny Flat) is one of several possibilities for housing with care and is administered through the state Department of Human Services Housing Office (Victoria Department of Human Services, 2002).

### ***Granny Flats in Other Countries***

The Housing Corporation of New Zealand adopted the Granny Flat option in 1980. The original program funded local authorities to lease the housing units to persons over 60 with limited assets. Only 43 units were developed nationally with this format since there was confusion over responsibilities for implementing the program. In 1986 the Housing Corporation reviewed the process and centralized the program. By 1988, 239 units were built. Chalmers and Hall (1991) reported that the program had difficulty in supplying the units, since there was not a substantial factory-built housing industry in New Zealand. Because the program was still small-scale, the cost per unit was relatively high. With central government control of the program, codes and inspections could be uniform, but this was costly to the builder. Residents were satisfied and liked being close to family.

In Canada, granny flats are also called garden suites and portable living units for seniors (PLUS). Lazarowich (1991) reported on a feasibility study and a demonstration program that were undertaken to determine the potential market for this program. He determined that the

Australian concept was transferable to Canada and acceptable by 75% of rural elderly, 60% of urban elderly, 80% of rural host families, and 50% of urban host families. In 1987-88, garden suite demonstrations were held in 30 locations across Canada and visitors seemed very interested in the concept. A PLUS project in Waterloo, Ontario developed 12 units at market rents. The units were costly due to the limited number developed and the architectural detail desired to “avoid tarnishing the image of a good concept with a ‘cheap’ looking unit” (p. 33). Other demonstration programs were developed in Newfoundland and Alberta. The Canadian Mortgage and Housing Corporation (CMHC) continues to promote this housing (CMHC, n.d.).

In Great Britain, the granny flat concept was part of the Public Housing scheme and was associated with the concept of having older adults live with their children (Tinker, 1976; 1991). Instead of a separate unit on family land, multi-family units were arranged so that a small secondary unit for older adults was placed below, above, or beside the family unit. Under this scheme, older adults would move out of larger units they occupied in public housing, making these units available for others. Families and older persons received help from each other and older adults supported each other. If an older person was paired with a non-family household, there was not as much help or support. Overall, older adults and their families were satisfied with this arrangement, but the housing authorities reported problems when there was a death, since it was difficult to move the family out of their unit. The response was to move another older person into the smaller unit, but support between the two households was not evident. In effect, the approach only worked for the first occupant.

In summary, the ECHO experience in other countries has been similar in that the main benefits are the perceived interaction and support between the older person and their family. In all programs, problems arose when the units were no longer needed. Death and other family problems result in short tenancy and the need for turnover; however, responding to the need to relocate units has proved difficult. There were difficulties in physically moving some units without damage and in determining where to move units. Lazarowich (1991) presented the following recommendations based on summaries of these programs:

- Ownership of units should be by state-level government.
- Rental arrangements should be used to facilitate moving the units when no longer needed.
- Rent supplements should be used to assist low-income older adults.
- Similar unit designs should be used so that parts and repairs are standardized.
- Storage space for units not being used should be provided.

## **ECHO Housing in the United States**

### ***Background***

The Granny Flat concept was attractive in some parts of the United States soon after it was introduced in Australia. By 1981, Peter Dyas, Director of the Office of Aging in Lancaster

County, Pennsylvania, recognized the idea as consistent with the Amish practice of placing a *grossmutter* house on the family farm (Lane, 1981; Hare, 1982). He apparently was instrumental in encouraging Ed Guion of Coastal Colony Corporation to develop an “elder cottage” and in prompting Lancaster County to adopt zoning ordinances that would accommodate the option.

The American Association of Retired Persons (AARP) and the National Retired Teachers Association organized a conference on granny flats in 1981 that encouraged interest in the concept (Simons, 1981). News articles after this conference reported on Coastal Colony Corporation’s elder cottage development in Lancaster County, Pennsylvania (Byrnes, 1982; Lane, 1981; Lipman, 1984; “Granny Flats,” 1982). The HAUS company in California was also trying to develop a panelized system that would function as ECHO housing and had worked to get enabling legislation passed by the California legislature (“Backyard Cottages for Granny,” 1982).

There also seems to have been early interest in Maryland (Hare, 1982; Simons, 1981), Iowa, New York, and New Jersey (Hare, 1987, 1991; “Update on Granny Flats,” 1986). Frederick County, Maryland had adopted a zoning ordinance that would allow mobile homes to be used as ECHO units in rural areas and had placed 38 units between 1977 and 1988 (Hare, 1991). The Iowa Department of Elder Affairs and HCR Development produced an ECHO unit and had it displayed at seven sites to approximately 10,000 people. While they had many inquiries, the resources for the project were depleted and they were not able to follow up (Hare 1987). Orange County, New York also had a demonstration unit, but did not succeed in selling units (Hare, 1987). In Warren County, New Jersey, zoning was changed and a program was begun by the county to place the units. By 1991, three units had been placed (Hare, 1991).

While the ECHO concept is to place a unit on the family’s property, grouping of units to form communities for older persons has occurred. A cluster development was proposed in Lancaster County, Pennsylvania (Byrnes, 1982) and one was built in Austin, Texas (“A gentle echo,” 1988). The Robert Shaw ECHO village in Austin contains five cottages and a unit for a live-in manager.

Very little empirical research is available about the effectiveness of the ECHO concept in the United States. Much of the information cited in the 1980s about ECHO housing is explanatory and promotional. News articles and other consumer-directed publications reported on the concept and often gave testimonials about how the living arrangement had been effective for the older person and their family (Byrnes, 1982; Carlin & Mansberg, 1987; Hare, 1982; Horne & Baldwin, 1988; Lipman, 1984). Current web sites still give a brief explanation of ECHO housing along with many other housing alternatives for older adults, indicating the benefits and likely problems associated with ECHO housing (FirstGov for Seniors, n.d.; National Resource and Policy Center on Housing and Long Term Care, n.d), and a few provide information about manufacturers or an agency that provides ECHO housing (Kansas Department of Aging, n.d.; seniorresource.com, n.d.).

### ***Housing Needs of Older Adults***

In many academic and promotional articles, ECHO housing is presented as one of several community alternatives for older adults (Blank, 1988, Ehrlich, 1986; Horne & Baldwin, 1988; Sumichrast, Shafer, & Sumichrast, 1984). Other options include accessory apartments, shared housing, and group housing. All of these options are for frail elderly who need some assistance, but who are not in need of 24-hour medical supervision, which would be provided in a nursing home. The options are consistent with the development of housing based on Lawton and Nahemow's (1973) environmental press model and Kahana's (1974) person-environment congruence model. These models state that as a person becomes less competent the environment needs to become more supportive in order for the person to be comfortable and not overly stressed by the surroundings. A continuum of housing choices for older persons has been presented as a way to provide supportive environments suitable to the older person's needs. For an older person the home or apartment in the community would be the most stressful environment and the nursing home would be the most supportive. Housing specialists recognized that these two options were extreme and suggested community housing options would be somewhat supportive, since some care and assistance would be provided, but they would also allow for some degree of independence.

Much of the literature over the last 20 years has alluded to the idea that seniors greatly prefer aging in place without stating specific numbers of seniors that actually wanted that option (Hare, et al. 1983). Builders in the 1990s actually paid attention to this idea and found demand to be sizeable. Many seniors want to stay close to their families and prefer to not move to retirement developments far from relatives. A recent survey by the National Association of Home Builders indicated that for those builders surveyed nearly half their buyers purchased new homes to be closer to children, grandchildren, or other family. The same survey found that that nearly two-thirds of the builders reported that the majority of the seniors were choosing locations close to their previous home by relocating within the same community or the same state (NAHB, 2003). While the survey was of new homebuilders, the demand for aging-in-place or "aging-near-place" housing units is extraordinarily high. ECHO units could offer an attractive option for those who cannot afford to move to new single-family homes to be close to their family. AARP's housing surveys over the last decade also indicate that 4 out of 5 seniors do not want to move (Chapman and Howe, 2001).

The life needs of older adults are often measured by their ability to perform instrumental (IADLs) and basic activities of daily living (ADLs). IADLs include using the telephone, grocery shopping, transportation, managing money, light housework, and preparing meals. ADLs include dressing, bathing, toileting, transferring from a bed or chair, and walking. When difficulties are encountered in performing these activities, some assistance will be needed for the health and welfare of the older person and living autonomously is threatened (Golant, 1992). A supportive environment, such as an ECHO house with family care close by, could help an older person by providing companionship and assistance with many IADLs and some degree of ADLs. A chart by Lawton (1981) indicates that ECHO units should be expected to provide a mid-range of support for older adults, similar to congregate housing. Much of this support would be dependent upon the host family's interest and ability to provide supportive care-giving.

The elderly are not necessarily the occupants of accessory dwelling units (ADUs). Chapman and Howe (2001) reviewed 10 studies on the use of accessory housing by seniors. They found that only age-restricting ordinances increased the likelihood that seniors over the age of 65 were in newly built ADUs. In addition, the authors note:

Care-giving roles often change suddenly and unpredictably, making it more difficult to add an accessory unit as needs change. It is more sensible to add an accessory unit and change how it is used as family needs change. It should be noted, however, that a mobile version of an accessory unit, the Homecare Suite that can be quickly installed in a garage space, may be a viable alternative (Chapman and Howe, 2001).

The authors argue that over time ADUs will probably house many more seniors, including those units without age restrictions. Unexpected declines in health make quick alternatives for senior-appropriate housing units, such as ECHO or Homecare Suites, much more viable.

### ***Care-giving***

Family caregivers provide 80% of the care for persons needing help with activities of daily living (AARP Research, n.d.). In 1997 this care was valued at \$196 billion. Caring for an older family member has become a common feature for today's families. Such care is a significant alternative to the costly institutionalization of the old and frail (Conner, 2000). Families most often perform instrumental activities such as financial management, housekeeping, transportation, and lawn care. They also assist with expressive tasks, such as emotional support, and in cognitive tasks, such as medication and health care management.

Interviews and testimonials with hosts (families) and residents of ECHO housing often cite the benefits of the care-giving relationship. They speak of being able to keep an eye on the parent, offer transportation, and provide home maintenance (Carlin & Mansberg, 1987; Finger, n.d.). They also present the benefits that the parents offer to the family, such as providing childcare and a weekly meal. Golant (1992) raised several concerns about the practicality of the ECHO units for family care-giving. Care-giving is stressful and time-consuming and the separateness of the unit from the home may add to the stress of care activities. Caregivers in ECHO housing indicate the need to set limits on interactions and protect interpersonal relationships (Finger, n.d.). As an older person ages and more support is required, the family may find ECHO housing a difficult arrangement and an impediment to care (Golant, 1992).

### **Acceptance of ECHO units**

#### ***Consumer Interest***

AARP's 1992 survey indicated that 3% of the respondents purchased or rented a small, removable house on a relative's property and that 18% would be interested in the concept. Knowledge about and acceptance of ECHO housing by communities and consumers have been major concerns identified in discussions of this housing option. Earhart (1999) examined the attitudes of housing professionals (planners, real estate agents, builders, designers and architects, and mortgage lenders) toward eight different senior housing options, including ECHO units. Familiarity with ECHO units was the lowest among the eight living arrangements. Support of ECHO units was modest when compared to other options.

Hare (1987) suggests that health care providers should be educated about ECHO housing in order to promote it to older persons and their families when they need a housing alternative.

Consumer demand for ECHO housing has also been identified as a potential problem. AARP's survey (1987) of older adults in the late 1980s found that Afro-Americans, women 60-64, and residents of mobile homes were the most likely to accept ECHO housing. Tripple et al. (1990) surveyed pre-retirees 40 and older and found that the majority of respondents accepted ECHO housing in their neighborhoods, but did not want to use it themselves. The respondents accepting ECHO housing were women with lower socio-economic status and in fair health. In a study of awareness and acceptance of several housing options, Beamish and Johnson (1994) found that a sample of 452 Virginia homemakers had a low awareness of ECHO housing (18%), but a modest interest in evaluating the option (37%). Gonyea, Hudson, and Seltzer (1990) examined well elders' and vulnerable elders' housing preferences. Five groups of vulnerable elders were identified. Moving to a secondary unit on another person's property was one of the more acceptable housing alternatives. Economically secure renters and socially isolated elders were the most interested in this option.

### ***Construction***

The ECHO concept suggests that the units be of modular construction. This allows them to be built in a factory, comply with state building codes, and not be restricted from communities because they are manufactured housing. However, the AARP construction guidelines (Mace & Phillips, 1984) and review of zoning issues (Hedges, 1982) included manufactured housing construction of ECHO units as a possibility. Folts and Muir's (2002) review of senior housing programs noted that even modular construction of ECHO housing was a problem, since many people still believed them to be mobile homes.

Other recommended construction standards developed by Mace and Phillips (1984) include guidelines for accessibility of the units, as well as size, appearance, energy efficiency, safety, materials, site placement, ground anchor, attachment, utility hook-up, and removal and site restoration. Accessible units would include kitchens and baths that could be adapted for a person with a mobility disability, as well as covered entries with no thresholds. Ramps would be included to facilitate entry.

According to both the construction and zoning recommendations, ECHO units should be small (minimum 200 to 400 square feet depending on number of occupants), blend in with other dwellings in the neighborhood, be placed on a temporary timber foundation, be energy efficient and be adaptable for persons with disabilities. Folts and Muir (2002) believed that the units were too small to be acceptable to many older consumers and that the codes and construction standards in the United States caused the units to cost twice as much as the Australian models.

An alternative to traditional modular or mobile housing is the "Homecare Suite," an option tried mainly in Canada. These accessory units are designed to be installed temporarily in an attached garage. According to a recent evaluation of a Canadian pilot program, the units can be installed and removed in two days and do not require any permanent modification to the garage. These units attach to the existing home's electrical, plumbing, and waste disposal

system and come with their own heat pump HVAC system, water heater and insulation. As the authors note, Homecare Suites “avoid the zoning and lot-size issues faced by Elder Cottages” (Althus and Mathews, 1999). Homecare Suite units may be more acceptable than a detached ECHO unit to a wider range of communities and densities because of their lack of visibility, quick installation, and portability. A similar type of unit is available in the United States, available from the Mobile Care, Inc. of Lawrence, Kansas. This accessory apartment is also inserted into an attached garage, but it takes seven to ten days to install. The unit is available with or without a kitchen (Howe, 2001).

### ***Costs***

Reiger and Engel (1983) analyzed the projected cost of ECHO units by examining initial costs, carrying costs, and transfer costs for both ownership and rental options. They indicated that while the cost of the basic unit could be estimated, sales tax, delivery, site preparation, and installation costs could vary considerably among different localities and site conditions. The authors also anticipated that homeowners’ mortgages could require higher down payments, increased interest rates, and shorter maturity, since the unit performance was unknown. The ECHO units could be classified as personal property, requiring shorter-term personal loans. The lack of a re-sale market has discouraged some people from buying the units (Pynoos, 2000).

Lazarowich’s (1990) analysis of the Australian program included discussion of costs. He also states that many of the initial costs will vary depending on location and that these costs will be covered by the owner in the private program and by the Ministry of Housing in the rental program. The Ministry did not know what the unit maintenance costs were. The relocation costs had been large and were related to the turnover rate. To curb these costs the Ministry had required a minimum of a one-year occupancy. Of the total relocation costs, one-third was spent to dismantle the unit and two-thirds to re-erect it. The prototype unit being designed was to improve the relocation process and the Ministry planned to offer older units for sale. Lazarowich questioned if the program should require the units to be removed.

### ***Zoning***

Advocates of ECHO housing identify zoning as a critical problem to be overcome if the option is going to succeed (Hare, 1982, 1987, 1995). The difficulties in obtaining zoning changes, variance, or special permits are the legal obstacles that embody the community’s reaction to ECHO housing. The increased density caused by ECHO housing is a concern that many zoning laws seek to control (Reiger & Engel, 1983). Some localities have made zoning changes that would make it possible for ECHO housing to be placed in the community and some states, such as California, have passed enabling legislation so that communities could allow the units. Most of the regulations reviewed as part of this study indicated that ECHO housing can be built only in low-density areas and under specific site and design review. The modifications to zoning allowed ECHO units to be placed with a special use permit, rather than as a variance or a permitted use. Subsequent to a review to ensure the ECHO unit is located, designed, and operated in a manner that is in harmony with an area, a special use permit may be issued to allow for a unit to be placed in an area that normally restricts such units. AARP completed a legal analysis of zoning related to ECHO housing (Hedges, 1982) and released a report on zoning issues (Hare & Hollis, 1983). The report identified the

following topics as issues for zoning regulations to address: size of units, size of lot, location on lot, design for portability, occupancy, parking, compatibility with surroundings, and application procedures. Reiger and Engel (1983) considered similar issues.

Making sure that ECHO units are temporary is believed to be a requirement that will help make the housing more acceptable in the community (Hare, 1987; Hare & Hollis, 1983). However, removal and relocation of the units has been a problem in the Australian program and adds to the cost of the unit. From a program administration perspective, delays caused by the permit approval process seem to be an issue in the timely delivery of needed units (Hare, 1987; 1991). Being able to physically locate the unit on a suburban site is also believed to be an issue to the placement of units in some communities, since smaller lots simply do not have room for the units (Reiger & Engel, 1983). In Reiger and Engel's review, most ordinances that address ECHO units require lot sizes of an acre or more.

Given the importance of zoning and land use controls in the acceptance of ADUs, including ECHO units, contemporary zoning approaches are reviewed in a separate section following this background review.

## **Summary**

It appears that the ECHO housing concept has not been fully utilized throughout the United States, although it can be found in several localities in addition to the demonstration program. A few manufacturers continue to offer the product and the concept is presented to consumers looking for information about housing alternatives for older persons. ECHO housing seems to offer some of the benefits originally identified. It can provide a caring link between an older person and their family. It may delay or eliminate the necessity of institutional care. It may be one of the few alternatives to institutionalization available for low-income elderly, who cannot afford private assisted living or cannot maintain themselves in a completely independent living situation. Consumers are somewhat interested in the idea, but may not have made any effort to investigate the option.

Some of the problems that ECHO housing faces are significant. While the units can be built to meet the needs of older adults in an affordable manner, the problems and costs of moving them add considerably to the overall costs and difficulty in administering an ECHO housing program. The temporary nature of the placement leads many people to assume the units are HUD-code manufactured housing (mobile homes), and in some cases they are. Zoning may continue to be a barrier and limit ECHO housing to large lots and rural areas. Communities where zoning appears more flexible may be more interested in other types of accessory dwelling units, even ones that are permanently placed on the land.

Australia's and New Zealand's experience indicate that an effective organization is needed to manage the program. Enough staff needs to be available to promote the program, interview and process applicants, inspect properties and oversee their installation and transfer. They need to be able to operate on a local level, but also between jurisdictions.

## REVIEW OF ZONING AND LAND USE ISSUES\*

### Introduction

This section reviews and updates zoning and land use issues raised in some of the earliest and most cited literature on the topic, *Granny Flats: An Assessment of Economic and Land Use Issues* by Arthur J. Reiger and David Engel and *ECHO Housing: A Review of Zoning Issues and Other Considerations* by Patrick H. Hare and Linda E. Hollis. Remarkably, these publications, both published in 1983, still have relevancy because the zoning and other problems reported by the authors to get ECHO units built continue to plague the process in many parts of the country. ECHO housing as originally envisioned suffers from a lack of public knowledge and understanding as to the temporary nature of elder cottages.

Most jurisdictions do not understand the benefits that may arise from the temporary aspect of using ECHO units and strictly ban structures that are not permanent. In most communities, the resulting higher density (when accessory units are added) is viewed as a problem. Rural areas still tend to be the predominant receiving areas for any type of temporary structures including ECHO units. An exception is in “New Urban” communities – New Urbanism is based on the belief that a return to traditional neighborhood patterns is essential to restoring functional, sustainable communities – accessory units can be viewed as a positive way to provide more housing that is affordable (“Granny flats add flexibility and affordability,” 2001).

This section updates most of the zoning issues covered in the Hare and Hollis article. Current zoning practices and permitting practices discourage efforts to make using ECHO units a worthwhile effort, as they did at the time of the Reiger and Engel and Hare and Hollis documents. However, since these publications were written, there has been a growing use of ADU ordinances as a means of providing affordable housing in general and for targeting seniors. While there still has not been much experience specifically with ECHO housing, a significant number of ADUs have been built in the United States (ECHO units are a type of ADU). As of 1990, it was estimated that about 65,000 to 300,000 ADUs are built each year nationwide (Howe, 1990). Given the wider proliferation of ordinances adopted or revised in the decade since, the numbers may be higher.

Accessory apartments have become important additions to the affordable housing stock in many metropolitan areas that are experiencing high growth. The use of ECHO units may be easier to encourage in those areas. Most of the ordinances reviewed here from urban areas with fairly flexible provisions are from locations with high housing needs on either coast such as California, Washington State, and parts of North Carolina. It was difficult to find ADU ordinances in the middle of the country except in rural areas.

This section will look at the recent ADU experience and attempt to apply lessons learned for increasing the use ECHO units. As Hare and Hollis found, California is at the forefront of ADU and second unit (as ADUs are referred to there) legislation. Many of the examples in this section are drawn from town and county zoning codes in California. Many of the

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recommendations offered in the Hare and Hollis piece are still valid and are not repeated here. This section will update recommendations if the situation has changed since that time.

This analysis expands the Hare and Hollis piece by considering important topics such as third-party ownership and the market for used units that have not always been addressed adequately. This section reviews some of the few existing ECHO unit zoning ordinances in the context of the zoning issues discussed here. Because of the rarity of ECHO ordinances, this section will also focus on “relevant” ADU ordinances. Although this analysis is not a systematic or exhaustive survey of existing ADU or ECHO unit ordinances, the ordinances highlighted here contain some aspect in an existing ADU code that may assist other localities in making ECHO unit housing work in their jurisdictions. These ordinances were also selected because a few contain some extreme restrictions that a new ECHO unit zoning code might confront and have to address. The material here assumes that ECHO units will be one-story structures and thus the section does not cover details associated with two-story structures or over-the-garage structures unless the restriction raises an issue for one-story units.

Most of the ADU ordinances examined here allow for detached units unless otherwise noted. This distinction may be important because ordinances that allow detached units often do not have specific language excluding temporary structures. Although Hare and Hollis recommended an attached form of an ECHO unit for some parts of the United States, it seems more likely that fully detached, removable ECHO units will be more politically palatable. In addition, this section provides recommendations for making zoning codes “friendlier” for ECHO units. The section ends with some other policy considerations and arguments to address regulatory barriers to ECHO units.

## **Zoning Issues**

### ***Size of Units***

Jurisdictions still limit the maximum size of an ADU and now often specify a minimum size as well. A range of 150 square feet (SF) per person (usually 300 SF for two people) as the low to a high of 1200 SF was observed (Township of Wellfleet, Massachusetts Zoning By-Laws; Santa Cruz County Second Unit Program). The most common maximum size is about 800 SF (Cobb and Dvorak, 2000). Other communities prescribe a formula where an ADU’s maximum size can only be a certain percentage of the main house’s total living area, usually on the order of 25 to 35%. Other areas such as Portland, Oregon have a combination of both depending on the location: higher density areas use a formula, lower density areas, within a designated “overlay zone” have no size restrictions. Some people will not qualify to build a second unit if their main house is too small or if they try to build the second unit larger than the main residence. To allow qualification for smaller houses, the City of Sebastopol, California increased an ADU’s maximum percentage of the main house’s total living area to 40% (Cobb and Dvorak, 2000). Regulations often restrict ADUs to one story and a maximum height of 15 feet, but many times these specifications are covered in building codes rather than in zoning laws.

### ***Lot Size/Coverage/Number of Units per Parcel***

Cobb (1997) reports that some communities with ADU ordinances discourage people from building by requiring a greater than minimum lot size for lots with an ADU. In Pleasanton, California, for instance, 80 to 85% of the city's housing units are on lots of 10,000 feet or less. The city's planning commission in 2000 tried to restrict second units (ADUs) to lots of 10,000 or more (Ciardelli, 2000). Some, but not all, ordinances spell out how many units are allowed on each parcel with most stating that only one unit is permitted (such as in the City of Santa Cruz, California). Fairfield, California states that no second units (ADUs) are allowed on lots with two or more dwellings or a lot with an existing guest house (City of Fairfield, California Zoning Code), assuring that only one ADU is permitted. In an effort to create as much affordable housing as possible, other areas will almost fill any parcel of land. Wellfleet, Massachusetts, will allow up to three affordable ADUs by special permit if the parcel of land is large enough to accommodate the units.

### ***Location on Lot/Placing***

Setbacks are a problem in urbanized areas. Setback requirements are often stricter in dense neighborhoods and more relaxed in rural areas. For instance, some ADU ordinances stipulate that the unit has to be behind the house and sometimes not seen from the front yard. Some ordinances, such as in Portland, Oregon, require six feet between the house and detached ADU (Bureau of Development Services, City of Portland, n.d.). Some setback requirements cause problems because the ordinance applies to all properties and can affect individual parcels adversely depending on the site's size. For instance, a new infill project in Durham, North Carolina found that the local law required that ADUs could not be within 15 feet of the property line. That had the effect of moving the ADU toward the middle of the lot, reducing the usable yard space (New Urban News, 2001). ADU or ECHO unit ordinances have to take the lots within each zone into consideration before drafting a one-size-fits-all approach to setbacks. This will be more crucial in areas that may not have standard lot sizes, or have large lots or have used cluster zoning or zero-lot lines.

### ***Occupancy***

Most zoning ordinances limit the number of people allowed to live in the ADU to two persons. This is particularly the case in age-restricted codes. Property owners many times are required to remain in the main house with the ADU allowing elderly relatives. Opponents argue that if the ordinance did not have these stricter provisions, it would encourage absentee owners to subdivide and sell their separate unit as a condominium or rent both units or to speculate on the property (Young, 1997). The City of San Carlos, California avoids this by requiring the property owner to enter into a restrictive covenant confirming that the owner will occupy one of the units (either the "main" house or the ADU) and that both units will not be rented simultaneously (City of San Carlos Second Dwelling Units Code). Other places allow for the elderly owner to live in the ADU and only allow relatives in the larger home. Some ordinances—particularly in desirable, high housing cost areas—have been changed to allow the owners to live in the ADU while using the main house for rental income from unrelated people.

Restricting the occupancy of ADUs by age and other characteristics has been seen as a way to make ADUs politically palatable to neighbors for a long time (Pollak, 1994). But a recent

California court case may change that. The unanimous court ruling was against a Santa Monica law that restricted second unit (ADU) occupancy to relatives and domestic employees. The ordinance was deemed to violate privacy and equal protection laws. The court went on to say that government may decide where second units (ADUs) are permitted, but may not regulate who can live in them (CP&DR, 2001). This ruling may seriously undermine the acceptance of ADUs in general.

Occupancy restrictions can also address how many unrelated persons can live together (Shifman, 1983; Pollak, 1994). Many states such as California, Illinois, Michigan, and New Jersey have ruled that limiting the number of unrelated persons living in a household is unconstitutional. These rulings could affect owners who wish to rent out either the ADU itself or their main residence. Younger owners who might be willing to take an ECHO unit on their property for additional income would also be adversely affected.

Some ordinances regulate which relatives are allowed in ADUs. In Montclair, New Jersey, for example, the ADU ordinance is entitled “Additional dwelling unit for parents” where the exact relationship to the owner is stipulated and must be certified yearly for the duration of use. It does not, however, detail what is to be done with the structure after the unit is no longer occupied or eligible to be occupied (Township of Montclair).

### ***Parking***

Hare and Hollis noted that parking should not necessarily be an issue in the placement of ECHO units. If the ADU is designated for senior or disabled housing, or if the seniors’ relatives are caring for them, or if the unit is part of the main residence, there is often no need for additional parking spaces. Other ADU ordinances spell out the need for at least one additional off-street parking space.

Parking can, however, become a critical issue for ADUs, particularly in areas with a shortage of on-street parking. Opponents often complain that increasing the number of residents adds to the traffic congestion of their neighborhood (Cram, 1999; Kennedy, 1992). Creating off-street parking may also eliminate one on-street parking space through the creation of a new or wider apron. A particularly burdensome aspect in some areas that have high congestion is that many ordinances do not allow an option for the parking space to be tandem or placed directly behind another space (See City of San Carlos, California Second Dwelling Units Ordinance). Model ordinances should allow for tandem and front yard parking or provide for exemptions to additional parking requirements on a case-by-case basis. Exemptions from parking requirements would be appropriate in areas served well by public transportation or for situations where the owner certifies annually or through deed restriction that the senior cannot or does not drive. San Carlos, California is particularly strict in this regard since they will not allow garage conversions without the owner providing alternative covered parking (City of San Carlos, California Second Dwelling Units Ordinance).

### ***Access to Unit***

Ordinances also spell out very strict requirements for access to detached dwelling units. The requirements stipulate direct access to the outdoors, sometimes requiring paths and ramps. The required space between units typically runs from 6 to 15 feet depending on the zone and

is an important source of open space for both units. Some jurisdictions have building and fire codes that require bedrooms in the main house to have at least one window for an emergency exit. If the lot is not big enough and the ADU blocks the bedroom window, the municipality may raise this as a concern and not permit the ADU unless the unit is redesigned (Cobb and Dvorak, 2000).

Attached townhouses or row houses also present problems of ingress and egress in dense areas. Access to side and rear portions of properties is not always available from the front of the building. The only access may be several units down from the owners' property, which happens frequently in older urban areas. An ADU ordinance should address this when applicable.

### ***Compatibility with Surroundings/Neighborhood Quality***

Accessory apartments often meet resistance because the neighbors do not like to have the neighborhood visually altered from its current appearance. ADU ordinances have overcome this by requiring that the new unit be architecturally similar to the main house and be of similar building quality (Cram, 1999). This presents a big challenge to ECHO units to look less like modular or mobile homes and more like stick built housing. Other communities believe that the temporary nature of ECHO units can make the house more compatible with the neighborhood (see below) because this allows the neighborhood to eventually return to its original state.

Another way neighborhood quality has been preserved while allowing ADUs is to limit the number of accessory dwellings of any kind in a particular neighborhood. The number of ADUs a neighborhood can receive is allocated usually over some specified period of time, annually or through a maximum number ever allowed in the neighborhood.

However, the number of ADUs built does not usually overrun any area so the limits placed on a particular neighborhood are often never reached, albeit with some rare exceptions (Kennedy, 1992). For instance, in 1997, *Williamette Week* noted that only 10 ADUs per year were built in Portland, Oregon (Young, 1997). Howe notes that in Hyde Park, New York, ADUs were originally restricted to the elderly but age restrictions were lifted to allow for affordable housing for all ages. Despite the right for all ages to build apartments, residents only applied for one or two permits per year (Howe, 2001). Mercer Island in Washington State has built nearly 150 ADUs since the ADU process was eased in 1994 (Max Bigby interview, 2003). The Town of Lexington, Massachusetts projects only 77 ADU units will be built over the course of the next 20 years in their comprehensive plan (Township of Lexington Massachusetts, 2002). The City of Santa Cruz, California, in the past, would allow anyone with a big enough lot to build an ADU resulting in nearly 30 units per year. The city has enacted a cap limiting the total number of permits to be issued annually to 65 (City of Santa Cruz, California). Limiting ADUs to temporary ECHO units should keep the number of units down to a comfortable level for most neighborhoods, particularly if they are designed well.

### ***Density***

A related issue to neighborhood compatibility is density. Controlling density by limiting ADUs has become an important argument used by urban neighborhoods against permitting or considering ADUs in their community (Kennedy, 1992). Some advocates claim that although ADUs increase density, they do so without making the street look overbuilt (New Urban News, 2001). Kennedy (1992) cites a study where neighbors did not notice a loss of open space when density increased because of ADUs. Kennedy suggests that once neighbors have experience with ADUs they eventually oppose them less.

Zoning ordinances, in an effort to exclude ADUs, sometimes include them in calculations of density. Many ADU ordinances already exclude ADUs from maximum density calculations in new developments as an incentive to build them, while some areas charge impact fees to discourage more density (New Urban News, 2001). Zoning regulations should allow for temporary density increases to accommodate these units either through a separate ADU or ECHO unit ordinance or through overlays. Alternatively, because ECHO units will not become part of the permanent housing stock, zoning ordinances should contain language to exempt them from any calculation of density in a neighborhood.

Urban densities will also present other problems for siting temporary structures. For instance new suburban development increasingly is developed at high densities that limit space available for placing any additional structures on properties. Parking is usually already in short supply in high-density apartment, townhouse, row house or dense single-family housing areas. When creating new ADU or ECHO unit ordinances in dense areas, a jurisdiction will have to account for differing lot sizes and better mass transit capacities. In the case of newer suburban densities, it may not be feasible to allow ADU housing unless it is built during the original construction period of the main house or over a detached garage structure.

### ***Locating ADU Districts/Permitted Use***

Neighborhood compatibility fears also influence where ADUs may be allowed within a community. According to a 1995 survey of 150 communities in British Columbia, Canada, a little over a quarter of the communities prohibited ADUs outright, only ten allowed them in single-family zones, and 41 communities permitted ADUs in one- and two-family zones and 46 towns allowed them only in two-family zones (BCMHRCS, 1995). In more urban or suburban areas, there may be only a limited portion of a town where placement is allowed.

Some areas have made it easier for owners to build ADUs. For instance, California's new state enabling law permits ADUs in every town with just an administrative process. In Nevada County, California, second dwelling units (ADUs) are allowed nearly "as of right" for senior citizens and disabled persons up to a limit of 30 units<sup>1</sup> in the county per year (County of Nevada, California Zoning Regulations, Senior Citizen Housing—Second Dwelling Units). ECHO units, as Reiger and Engel (1983) note, should probably always require some level of monitoring because it is not ever going to become a "permanent addition to the housing stock."

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<sup>1</sup> This is a total for all ADUs including those for seniors and the disabled.

### ***Applications, Permitting, Permitting Fees, Impact Fees***

There is a trend toward making the permitting and application process easier for ADUs. In the past, it was harder to get a permit to build an ADU than to build a single-family home and the building and zoning codes were often more onerous. Some areas are streamlining the application process for ADUs, particularly if the unit will house a senior. In some places, such as East King County, Washington, there is a 60-day turnaround time for approving applications (Max Bigby interview, 2003). More and more jurisdictions are eliminating the special permitting process for these units and many areas are converting ADU applications from a variance procedure to a much simpler permitting process. In addition, permitting fees are often lower for ADU applications and often lower still for seniors (Shifman, 1983; ARCH, n.d.).

There are some jurisdictions that are making it somewhat more expensive by charging impact fees on the additional ADU, not just in new development areas but on existing single-family homes. In Longmont, Colorado, the city can charge impact fees for ADUs because accessory units count as independent dwellings. For instance, in one development in Longmont, the impact fee for a new ADU is \$6,000 (New Urban News, 2001). This may not be as much of a problem for a temporary ECHO unit depending on how the city classifies the unit, but any new ordinance should eliminate impact fees to keep the unit as affordable as possible. Cobb and Dvorak (2000), in their model ADU ordinance, recommend that the total fees should not exceed 30% of the fees that are charged for single-family houses.

In the past, there have been experiments in zoning special “retirement housing” districts where elderly housing is permitted by right (Shifman, 1983). This idea has not caught on in any significant way but would alleviate several issues for ECHO unit housing. Neighborhoods zoned this way would expect senior housing of all different sorts and property values would already have this factored into equity gained in the future. The ‘as of right’ provision would streamline the permitting process to building code permits rather than the lengthy and sometimes arcane processes that special permitting or variances require. The downside is that concentrating seniors into one area may leave them less integrated in the larger community that could offer needed support and services.

California’s “second unit” bill has been radically altered to increase the number of allowable ADUs, mainly to combat the state’s affordable housing crisis. The bill, AB 1866, approved September 2002, allows the construction of second units (ADUs) without requiring public hearings. Homeowners who build a second unit will still be required to conform to local zoning ordinances but they will not be subject to collecting neighborhood comments through public hearings, where applications are often rejected. Applications will be handled through the appropriate municipal administration office and permits will be issued “over-the-counter” (Levin, 2003). The new state law also has streamlining provisions where applications must be processed within 120 days after receiving them (State of California AB 1866, 2002). Unfortunately, the unintended consequence of the new law may be stricter standards because a level of review is removed. The City of Burbank, for instance, is updating its code and is considering making stricter regulations to “mitigate the removal of discretionary review” (City of Burbank, 2003).

### ***Portability***

Notably, most of the ADU ordinances, while allowing for detached units, do not contain specific language that the unit has to be permanent within the zoning code. Others have specific language stipulating that the units must be temporary and can be a positive attribute. The Town of North East New York's ECHO ordinance states that it will "...permit [this] housing in a manner that protects property values and character of the neighborhoods by ensuring that the units are compatible with the neighborhood and are easily removable..." (As quoted in Pollak, 1994). In this case, as the language suggests, the temporary nature of an ECHO unit makes it more compatible with the neighborhood in this community.

Ordinances already exist that will permit ECHO housing easily without referring to the ADU as ECHO, although these places tend to be rural. For instance, for the unincorporated areas in the rural county of Nevada, California, the county's second unit (ADU) ordinance allows for mobile homes to be placed on any single-family parcel that is more than one acre in size but the unit is subject to the same standards as a conventional single-family home, state mobile home codes or HUD codes. Furthermore, senior citizens in particular are allowed to place recreational vehicles on their land as long as the vehicle conforms to the county's minimum standards, with a two-year renewable permit and a deed restriction that shows the owner is complying with all the zoning provisions. The owner must also maintain current DMV credentials (County of Nevada, California Zoning Regulations).

Temporary permitting of ADUs is a fairly common way to ensure that units will be removed at some point in the future and to enforce the zoning code on a periodic basis. One of the older ordinances to do this is Babylon, New York where temporary, renewable permits are issued for two years for ADUs as a measure to reduce the number of illegal accessory apartments. The law there uses the zoning code to terminate the use of the ADU upon the death of the owner-occupant or when the owner-occupant is no longer the owner-occupant (Code Town of Babylon, New York). Deed restrictions are another way to ensure that ADUs adhere to local standards and to preserve affordability and also to remove the unit from the stock. Greenwich, Connecticut has a provision that discusses removal of an accessory unit. The owner must submit proof of the removal of the second kitchen and restoration of the unit to the way it was before conversion. These documents are then recorded to release the restrictions on the deed that the ADU placed upon the parcel (Town of Greenwich, Connecticut).

Fort Kent, Maine, one of the rare ordinances referring to a temporary ECHO unit, uses a binding agreement, signed prior to the issuance of the building permit, to ensure that the ECHO unit will be temporary. The ordinance stipulates that the unit must be removed within 90 days of the end of occupancy or when no eligible person lives in the unit (Township of Fort Kent Zoning Ordinance). No requirements were outlined for temporary types of foundations that would be allowed in Fort Kent's code or any other code that allows for temporary structure. The town also did not require the owner to describe how the ECHO units were to be footed.

Hare and Hollis raise the issue of an ECHO unit's ability to withstand repeated moves. Although the existing ECHO codes do not refer to this specifically, each time it is placed the unit must still be able to conform to the local zoning and building codes. It would be useful for HUD to develop a rating system for how many times a particular model can withstand moving under a proper maintenance schedule. This would help develop a secondary market for the unit by giving guidelines for prospective buyers and help building inspectors in the new locality judge the ADU's condition.

### ***Rent***

Low rent or rental income is the main attraction of ADUs. One study on ADUs in Montgomery County, Maryland found that relatives charged \$140 less per month than market rate for the units. Many families often charge a small amount or nothing at all (Kennedy, 1992). Under a third-party arrangement, a non-profit or governmental agency has the luxury of charging little or no rent or availing itself of public money, such as Section 8.

Some zoning ordinances contain provisions, where only relatives are allowed to live in ADUs, which prohibit charging rent, such as in Montclair, New Jersey (Code of the Township of Montclair New Jersey). Santa Cruz County's code allows rent to be charged, but on a sliding scale (CP&DR, 2002). Wellfleet, Massachusetts allows maximum rents based on HUD's Fair Market Rental Guidelines (Wellfleet, Massachusetts Zoning By-Laws). Greenwich, Connecticut publishes a yearly maximum rent that may be charged (Town of Greenwich Zoning Land Use Code). These restrictions can obviously present a problem where the senior owners would benefit from renting either the ADU or the main dwelling for income purposes.

### **Other Considerations**

#### ***Tax Exemptions***

Property tax can be a significant obstacle to building any structure on a property since most improvements engender a tax increase that the host family must bear. Jurisdictions should consider a tax exemption for ECHO units when used for seniors or relatives. Massachusetts, for instance, allows municipalities to offer a \$500 yearly tax exemption for any improvements on a home that provides a home for anyone 60 years or older<sup>2</sup> (Finger, n.d.). The state requires the owner to certify their eligibility yearly.

Certification is a tool to create and preserve affordable housing, particularly in areas that have an influx of seasonal residents such as resort areas. Resort areas, such as Nantucket Island, have difficulty preserving affordable housing for permanent residents, let alone seniors. Nantucket's low-income year-round residents are required to file an application reaffirming their full-time residency and that of their tenants to keep their ADU on the property (Cape Cod Times, 2000; Kennedy, 1992).

If a third party owns the ADU (particularly if the group is non-profit), there is no tax issue. The property owner benefits because they do not absorb a new and large tax increase.

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<sup>2</sup> Commonwealth of Massachusetts General Law Chapter 59, Section 5 Clause 50.

Another way to reduce tax liability is to consider the ADU to be personal property, like an RV, and taxed when the unit is titled, like a car. Taxes become a burden to the owner under this classification only if the state taxes personal property yearly.

### ***Growth Boundaries and Restrictions***

Areas that limit growth can present an opportunity to encourage more ADUs and ECHO units. Indeed, jurisdictions that are well known for their growth boundaries, such as Portland, Oregon and the Seattle Metropolitan area, have already adopted ADU ordinances. These ordinances have been written to make it easier for the property owner to add an ADU to their property. In East Kings County, Washington, for instance, many of the 14 towns have streamlined their permitting process, reducing turnaround time for applications to 60 days and, in Bellevue, Washington's case, reducing fees to \$25 (ARCH, n.d.). Portland is unusual in that it offers two ADU zones, one for higher-density areas within their growth boundary and one for lower-density areas near the edge of the growth boundary. The restrictions are more onerous in the higher-density zone, probably reducing the total number of potential ADUs.

Cobb and Dvorak (2000) recommend, based on California's experience with legislation addressing housing shortages and growth pressures, that ADUs should be exempted from any local ordinances that limit residential growth, such as moratoria, caps, or quotas. Cobb and Dvorak note that because the units can be placed within the existing infrastructure of extant neighborhoods ADUs are not straining local capacity.

### ***Adequate Public Facilities Ordinances/Public Utility Capacity***

Some places have restrictions or moratoria on growth because of limitations on public utilities. Provincetown, Massachusetts has limitations on water and therefore restricts growth of any kind despite calls for allowing ADUs (Cape Cod Times, 2000). ADUs are a problem for Provincetown, and other areas, because the town's zoning code restricts total number of bedrooms on a parcel not the number of units (Perkins, n.d.). Flexible zoning codes and specific language to eliminate ADUs from bedroom calculations would ease this problem. The temporary nature of ECHO units would be appealing in areas that have moratoria or capacity problems because the city could be assured that any additional strain on capacity would not last long.

### ***NIMBYs, Transience and Property Values***

ADUs often cause "not-in-my-backyard" (NIMBY) backlash because of a perceived threat to property values. ECHO unit housing might even project the image of transience because of the temporary nature of the structures. Temporary structures could be perceived as even more of a threat to property values in areas that are prone to more transient, short-term residents that do not have much of a stake in the community, such as resort areas. Mendocino, California's Coastal Zoning Code prevents transience through requiring a deed restriction for second units (ADUs) stating that the unit will be used only "for non-transient habitation" (County of Mendocino Coastal Zoning Code).

Some communities, such as Key West, have even taken to licensing temporary housing. The city bans the renting of a house for a month or less if your home is not licensed for that purpose (Cape Cod Times, 2000). Supporters of the ordinance claim that rentals of this sort are disruptive to neighbors. If a community licenses temporary housing, the zoning ordinance must define the difference between temporary and transient.

Opponents argue that allowing elder-specific housing, such as ECHO unit housing, might result in lower property standards because the housing might not be usable in the future (Shifman, 1983). Cobb (1997) recommends several ways to approach ADU permit compliance using both permanent and temporary permits that should allay neighbor concerns and ease owners' and bankers' fears about how long a unit can stay in use. These suggestions could easily be applied to ECHO unit ordinances. He suggests:

- Issuing permanent ADU/ECHO unit permits, but owners must file periodic written statements of compliance.
- Issue permanent ADU/ECHO unit permit but hold hearings if a complaint is filed.
- Issue temporary ADU/ECHO unit permits and suspend review if no complaint is filed.
- Issue temporary ADU/ECHO unit permits requiring periodic review and inspection (Cobb, 1997).

## **Policy Issues**

### ***Smart Growth***

Advocates for Smart Growth encourage new infill housing in the close-in suburbs. Older suburban homes often have larger lots that can receive ADUs, unlike new housing that is often built at higher densities. Close-in suburbs also have transitioned from being bedroom communities to providing more mature and sophisticated services. Services often include a multitude of senior services, including transportation and health services. Many mature suburbs are also graying because residents do not want to move far from their existing communities (see below). The National Association of Home Builders (NAHB) recently released Survey on Senior Housing found that nearly 50% of builders surveyed were building new senior housing in "Close-in Suburbs" (NAHB, 2003). The market for new housing to keep the elderly in place or near family members has been, and continues to be, robust in close-in suburbs.

According to the literature, many seniors in these communities are "over-housed" with unused bedrooms and large lots that they either cannot or do not want to maintain (Cram, 1999; Shifman, 1983). These over-housed seniors are good candidates for ECHO unit housing. Temporary housing in this case offers many benefits: it would fit well on these large lots; it would offer the owner additional income if they wanted to rent the main home; and the property would be restored to its original density when the ECHO unit is removed.

Shifman (1983) noted that there is potential for senior housing to be placed on vacant parcels of land that are inappropriate for industrial or commercial use. She advocates building permanent structures but the land could just as easily accommodate temporary ECHO units. Municipalities that have extensive land banks might find this a productive use for odd-shaped parcels or as a stopgap before a different use is found. Alternatively, community land trusts could own the land to reduce land costs over a longer period of time.

There have been calls from Smart Growth and senior housing advocates to make zoning more flexible or to ease some regulations to allow for more infill housing such as ADUs. Cary, North Carolina has been the focus of much recent Smart Growth literature because the town has revisited their ADU code that only allowed for attached ADUs (USEPA, n.d.; Smart Growth Network, 2002; USHUD, 2003; Arigoni, 2001). The area has experienced rapid growth and needed to increase the amount of affordable housing in the city. The city council recently passed an ordinance on May 22, 2003 easing the current ordinance to allow detached ADUs. This ordinance will go into effect on July 1, 2003 (interview Shawn McNamara, 2003). Another example of easing ADU restrictions can be found in Asheville, North Carolina, where ADUs are allowed in every residential district (Town of Cary, 1999).

### ***New Urbanism and Traditional Urban Design***

New Urbanists typically encourage the building of new accessory apartments as part of Traditional Urban Design (TND) tenets. TND advocates the use of alleys as they were before the Post-World War II suburbs as the loading zone for cars, services and even for ADUs. According to *New Urban News*, the use of many ADUs in some developments makes “the alley thrive as a civic location” and contributes to defensible space (New Urban News, 2001). It is conceivable that New Urbanist Developments could allow certain areas to receive ECHO units.

### ***Changing Hands: Third-Party Ownership and the Market for Used Units***

Pollak (1994) recommended that in order to enhance community acceptance for ECHO units, they should be restricted to temporary use by the elderly. Also, in order to ensure the temporary nature of the structure, she suggests that some third party own the ECHO unit rather than the property owner. The third party should be some public, quasi-public or non-profit organization or agency. A government can serve as the owner/landlord of the unit, such as the State of Victoria in Australia that owns and operates “granny flats” (Pynoos, 1999). She further notes that this allows the municipality to handle the ECHO units administratively and to avoid having to create or revise many zoning regulations covering familial relations, age limitations and temporary restrictions. The municipality can also administratively enforce maintenance, something that is harder to put into a zoning ordinance.

Third parties can also ease the tax burden on the owner because the improvements are not permanent. Third parties could also assume the costs of siting and relocation. Non-profit groups, such as community land trusts, might offer a solution by owning the land while units are temporarily in place. One housing non-profit in Virginia (see below) has classified ECHO units as personal property, similar in concept to a car or recreational vehicle, and the property is taxed at those rates rather than as real estate.

Demand for ECHO units is low at this point partly because of zoning and, because people do not know about the option, there are few new or used units available. New units are built to custom standards ordered by the owner and have to comply with local zoning ordinances. As such, there is no nationwide manufacturer or builder of a specific “ECHO” unit.

Manufactured home producers are willing to make customized units for those asking, but still there is no large-scale manufacture of an “ECHO” unit. According to Howard Evergreen, director of Fluvanna Housing Foundation in Palmyra, Virginia, the ECHO units he uses have been built by Nationwide Homes, a large industrialized housing producer (Howard Evergreen, interview, 2003). But the lack of a national standard inhibits the development of a wider market.

### **Case Study in Third-Party Ownership: Fluvanna/Louisa Housing Foundation**

In the rural county of Fluvanna, Virginia, the Fluvanna/Louisa Housing Foundation, a 501(c)3 non-profit, operates their own version of an ECHO housing program. The Foundation owns four units that are 14 by 38 feet and built by Nationwide Homes, a large industrialized housing producer. Nationwide Homes calls these custom-made units the “Alpha House,” which cost about \$22,000 to purchase or \$30,000-\$34,000 installed. The units are built on temporary pressure-treated timber foundations. The carrying cost of the units is about \$400 per month for the Foundation. Howard Evergreen, the Executive Director, estimates that it takes about three to four years for the unit to be cost effective per placement. The units cost about \$5,000-\$6,000 to move and the units have been moved about three times.

In order to have the host property owner avoid bearing the cost of additional property taxes, the units have been classified as personal property. In Virginia, that means a yearly assessment that is about 50% higher than local property taxes that must be borne by the Foundation.

The units are rented to low-income, handicapped elderly. The units are rented for zero to \$50 per month depending on income. The program uses Federal HOME money to cover most of its expenses. The program is so successful that demand exceeds the admittedly small supply. The last time a unit was vacant, the Foundation had to hold a raffle to choose the next tenant.

## **INTERVIEWS WITH HUD FIELD OFFICES, SPONSORS, HOSTS AND RESIDENTS AND PHYSICAL INSPECTIONS AND ASSESSMENTS OF THE ECHO UNITS\***

After the review of background information, an important element of the evaluation process was to prepare interview questions and physical inspection criteria. Following the development of the survey questions and physical assessment checklists, we contacted the key groups (HUD field offices, sponsors, hosts, and residents) at each of the five ECHO program locations and arranged for interviews and physical field assessments of the properties.

### **Survey Procedure**

#### ***Interviews***

We developed questions for field offices, sponsors, hosts, and residents (questions are presented in Appendixes B through E). Over a several month period, we carried out interviews with HUD field offices, ECHO housing sponsors, host families, and residents. An interviewer from Virginia Tech conducted on-site interviews when possible, using telephone interviews as an alternative. The interviewer conducted both the HUD and sponsor interviews on-site in Tennessee, New Jersey, Kansas, and Iowa. The interviewer conducted the HUD and sponsor interviews for Missouri by telephone.

We contacted sponsors in each state and asked them to assist in providing the interviewer with contact information for each ECHO host and resident in their state. We also asked them to make arrangements for the interviewer to visit hosts and residents considered appropriate by the sponsor for face-to-face interviews during a specified one-or two-day period of time. On-site interviews included 2 residents and 1 host in New Jersey, 2 residents and 3 hosts in Kansas, and 10 residents and 10 hosts in Iowa. On-site interviews with hosts and residents lasted from fifteen minutes to three hours.

The interviewer conducted the remaining host and resident interviews by telephone, including all host and resident interviews in Tennessee (two residents and one host) and Missouri (seven residents and seven hosts). Telephone interviews for hosts and residents involved two steps. Because the telephone interviews took approximately one hour to conduct, one shorter call was made initially to introduce the interviewer, describe the research, and arrange an appointment for the interview at a convenient time for the participant.

For interviews with HUD field officers, sponsors, hosts, or residents, whether on-site or by telephone, the interviewer took notes and recorded the interviews in order to review for accuracy. The interviewer asked for consent to record the interviews, and recordings were made only after the person being interviewed granted permission.

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\*Lead author: Jeannette Steeves. Property inspections conducted URS Corp.

### ***Physical Field Assessments***

Virginia Tech subcontracted with URS Corporation for physical field assessments of the ECHO properties. URS field inspectors conducted site visits at 46 ECHO properties in 5 states (Kansas, Missouri, Tennessee, New Jersey, and Iowa). Virginia Tech provided URS with contact names, telephone numbers, and addresses of the local HUD offices and of ECHO residents in these five locations. To evaluate each property, URS designed a standard checklist. Field inspectors completed this checklist based on personal inspection of the property, information from the resident and/or host family, and information from local HUD representatives. Inspectors from URS Corporation physically examined each of the ECHO properties and completed a detailed record of the unit's location, features, and condition (checklist used is presented in Appendix A).

The checklist consisted of three parts: property summary, physical description, and property condition data. The property summary captured general property and inspection information such as dwelling unit features, utility services, dwelling unit modifications, flood plain status, handicap accessibility, and any special or unusual conditions. The property physical description provided site and dwelling unit descriptive information based on field observations by the inspector. Building materials used to construct the various systems and an inventory of interior finishes and appliances were also recorded in this part. The property condition data assessed the condition of each property system or component as "good," "fair," or "poor" or a combination and noted any need for repair. In addition to completing a checklist for each ECHO property, in some cases the URS inspectors documented additional personal observations and took photographs of the sites.

### ***Analysis***

After each interview, the interviewer wrote up and summarized the individual responses. Later, we grouped and descriptively summarized the interview results by state. We entered the field assessment information into a spreadsheet and analyzed by state using *Statistical Package for the Social Sciences (SPSS)* software. For each state, we combined the descriptive summaries of the HUD field office, sponsor, host, and resident interviews with the computerized tallies of the physical field assessments to provide a comprehensive perspective of the HUD ECHO housing demonstration program as described in the following section.

## **ECHO Program Implementation**

The five states participating in the ECHO housing demonstration program varied in how they implemented the program. These variations reflect differences in the philosophy and performance of each of the four groups, particularly HUD field offices and the local sponsors.

### ***Iowa***

#### **◆ *Interview Participants***

Iowa HUD field office: The Iowa HUD field office interview was conducted at the HUD office in Des Moines, Iowa on October 25, 2002. Participants were the Director of Housing, the Project Manager, and the interviewer. The interview took approximately two hours. The

Director of Housing was in the Des Moines office when the ECHO demonstration program was initiated in 1996; the Project Manager was not available. Both HUD officials referred to the ECHO housing demonstration program as operating according to “standard procedure” of the Section 202 programs. Many of the responses to interview questions reflected a strong relationship with and reliance on the sponsor, South Central Iowa Development Corporation (SCIDC)/Home-In-Stead.

Iowa ECHO sponsor: The Iowa ECHO sponsor is South Central Iowa Development Corporation (SCIDC), operating under the name “Home-In-Stead.” The Director of SCIDC/Home-In-Stead was interviewed at the SCIDC/Home-In-Stead office in Osceola, Iowa on October 25<sup>th</sup>. The interview lasted two hours.

SCIDC/Home-In-Stead is a non-profit with 31 years of experience exclusively in housing, including new construction, rehabilitation and land development, operating in the three poorest counties in Iowa. The director uses a “hands-on” management style to monitor activity in the ECHO program. HUD officials felt that this has been a key component of the success of the Iowa ECHO program. Efficient development of the ECHO program included securing consulting services from acknowledged experts in the ECHO housing field and a board of directors with strong real estate and development experience.

Iowa Hosts and Unit Residents: Ten hosts and ten ECHO unit residents were interviewed in their homes during a three day period from October 25<sup>th</sup> through October 27<sup>th</sup>. The sponsor escorted the interviewer to the ECHO unit locations. Each interview required approximately one hour. During some of the interviews with residents, the host was present. Residents’ ages ranged from sixty-two to eighty-three. All the residents were women; nine were mothers of the host(s), and one was a sister. Seven of the hosts were daughters, two were sons, and one was a sister.

◆ ***ECHO Units***

During the design and construction phase of development, a consulting firm, Leo, Inc., was contracted to direct project development including unit design. Leo Inc. had previously completed an ECHO project in Missouri. The Iowa ECHO units were manufactured in Nebraska by a modular manufacturing firm. Cost for initial placement of the ECHO unit was \$80,000.00 for construction and installation.

Iowa Property Summary: URS Corporation inspected a total of 10 ECHO properties in Iowa. All the Iowa ECHO units are single story, prefabricated units, 24 feet by 24 feet in size. The lot sizes where the units are sited range from 4,000 to 180,000 square feet, with a mean of 25,098 square feet (0.6 acre). All the Iowa units are occupied. No units are located in areas designated within a flood plain. All Iowa units have public water and all but two have public sewer. Only one unit has underground wiring with the remaining having overhead electrical wiring service.

Few modifications have been made to the Iowa units (not including handicap accessibility modifications). One unit has added a deck, a canopy, and a carport. Many units are modified

for handicap accessibility. Grab bars are standard in all units and all but one unit has added a wheelchair ramp. One unit has added support bars surrounding the toilet.

Iowa Property Physical Description:

<b>Table 1: Property Description - Iowa</b>				
Item			Present (yes)	
Structure	Wood framing		10	
	Exterior wall: vinyl siding		10	
	Sloped roof with soffit overhang		10	
	Composition shingle roof		10	
	Gutter and downspout		10	
	Accessible attic		10	
	Attic venting		0	
Door / Window	Door	Metal	9	
		Wood	1	
	Windows	Metal	9	
		Wood	1	
		Insulated glass	10	
Sliding glass door		0		
Steps / Walkways / Parking	Exterior steps	Concrete	0	
		Wood	10	
	Parking surface	Other / None	0	
		Gravel	10	
		Asphalt	0	
	Walkway	Asphalt	0	
		Concrete	1	
		Other / None	9	
Steps	Pre-cast slab	9		
Basement			0	
Foundation	16 pressure treated wood piers set in concrete with 18-inch accessible crawl spaces.		10	
	Crawl space access		10	
	Foundation skirting		10	
Interior	Flooring	Carpet & sheet vinyl	10	
	Walls	Gypsum wallboard	10	
	Kitchen	Refrigerator		10
		Oven		10
		Electric range		10
		Exhaust fan		10
		Microwave oven		10
		Garbage disposal		10
		Dishwasher		0
	Other appliances (one or more)		9	
	Bathroom	Wood cabinets		10
		Wood cabinets		10
		Shower		10
		Bathtub		9
	Clothes washer and dryer -electric			10
Cable and telephone connections			10	
<b>Total Units Inspected = 10</b>				

Iowa Property Condition Data: Inspectors gave an overall rating of “good” on most conditions relating to the exterior, the mechanical and plumbing systems, the interior, and the site. Inspectors reported problems for only six of ten units, as follows:

<b>Table 2: Property Condition – Iowa</b>				
Item		Fair	Poor	Needs immediate repair
Exterior	Exterior phone wires exposed		1	1 poor
	Downspouts and gutters	2	1	1 poor
	Foundation skirting	1		1 fair
	Site drainage system	1		
	Parking area	1		
	Exterior caulking	1		
	Windows and doors	4		1 fair
Interior	Carpet	7		
	Vinyl flooring	1		
	Refrigerator	1		1 fair
Other	Plumbing fixtures	1		
<b>Total Units Inspected = 10</b>				

◆ **Management**

The sponsor, SCIDC/Home-In-Stead, has managed the Iowa ECHO housing demonstration program since inception. Clustering the program in only three counties has contributed to the efficient management of the service area. The program is in good financial shape in part because of the amount of contract rents permitted by HUD (\$552/month) and because of the efficient management of funds by SCIDC/Home-In-Stead.

The sponsor relocates units as a routine part of the program. Relocation of units costs \$17,000 to \$19,000. The relocation process requires 90 days. The sponsor has moved eight units: one unit has been moved three times, one unit moved twice, and three units moved once. Five units have not been moved. There were no reports of problems in the relocation process.

The URS inspector reports:

“The Iowa program seems to be working out well and could easily expand. There are several reasons for this: 1) Loral Hullinger, Director of SCIDC/Home-In-Stead, knows the HUD requirements and figured out a two-part modular design that easily installs and can be moved efficiently and re-set for the next customer. 2) Everyone in the program knows how to contact him and he is responsive in making maintenance and repair visits. 3) The administrative details are kept up and everyone knows how much they will be paying each month for the rest of the year. 4) Everyone knows that HUD, through SCIDC/Home-In-Stead, will step in and remove the unit when the person moves out or passes away.”

◆ **Program Concerns**

Interviews with the HUD field office and sponsor indicated few problems in the Iowa ECHO program. There were, however, concerns that should be addressed if the program is

continued. An initial problem noted by both the HUD field officers and the sponsor involved the lease language – the language currently protects HUD, but is not beneficial to the host family that is required to sign the lease. Zoning is a problem in Iowa, as it is in most ECHO programs, in that it dictates placement of the housing units in rural areas. The sponsor recommended collaborations with community development personnel and state agencies dealing with aging to ameliorate this problematic issue, opening up the program to a wider range of location options. Another issue the sponsor recommends re-visiting is the time allowed for residents to be away from their ECHO house due to injury or illness before their qualification as an ECHO occupant is compromised.

The HUD field office acknowledged the unique nature of the ECHO program noting that it is relatively expensive as compared to other Section 202 programs, while simultaneously acknowledging that ECHO provides so much “more than just housing.” They report that recipients of ECHO houses and their families comment consistently that the program has brought enhanced safety, security, and piece of mind to their lives.

### ***Kansas***

#### **◆ *Interview Participants***

Kansas HUD field office: The Kansas HUD field office interview was conducted on October 24<sup>th</sup> at the HUD office in Kansas City, Missouri. Attendants at the interview were the Supervisory Project Manager, two interns, and the interviewer. The Supervisory Project Manager was involved with the initiation of the ECHO housing demonstration program in Kansas and provided first hand information. The interns observed and did not participate in the interview. The interview lasted approximately one hour.

The Kansas HUD field office participation in the ECHO housing demonstration program began in 1994 with a teleconference workshop with the HUD office appraiser, the HUD chief architect, the initial sponsor (Randy Speaker/Community Housing Authority of Kansas), the manufacturer selected to produce the ECHO houses (Steve Menke), and “others.” Although interest and enthusiasm were high initially, implementation and administration suffered due to changes in sponsorship. The sponsor’s responsibilities were not addressed clearly and many of the initial and current problems originated during the early uncertain administration of the ECHO program.

Steve Menke, a manufacturer of accessory apartments, undertook design and production of the ECHO houses. The manufacturer promoted the ECHO house to prospective hosts and residents and in many cases was mistaken for the sponsor of the ECHO program. The manufacturer simultaneously represented and promoted an accessory apartment product, which apparently confused some prospective hosts and residents about their responsibilities under the ECHO program. Interviews also suggested problems in compliance with varying town building codes or soil conditions and specific site foundation requirements.

Kansas ECHO sponsor: There has not been a consistent sponsor for the ECHO program in Kansas for some time. The Kansas HUD field office has spent a lot of time trying to cover sponsor responsibilities while searching for an appropriate permanent sponsor. The field office eventually contracted a property management firm (Yarco Professional Property

Management, which manages other Section 202 properties) to manage the ECHO program. A phone interview, followed by an e-mail questionnaire with the Yarco representative responsible for the ECHO program, was conducted on April 11, 2002. The representative indicated that their responsibilities were limited to collecting rent and responding to urgent situations. She commented that she did not know much about the ECHO program. She reported that the ECHO service area was Kansas City only and was aware of only three units currently placed and in use.

Kansas Hosts and Unit Residents: Interviews were completed with five hosts and five residents of the ECHO houses in Kansas, representing six ECHO units. Of these six units, a host from one house and a resident from another house were not available. All of the residents interviewed were women; four were mothers of host daughters (relationship not known for the other). Residents' ages ranged from 70 to 89. All of the five hosts interviewed were females and one was the sister-in-law of a former resident who had vacated the ECHO house more than a year before the interview. The ECHO house was still on the property. Contact information was provided by the Kansas HUD field office for an additional twelve ECHO houses. However, the phone numbers provided were not working numbers and no contact was made. A discrepancy in the information provided by the HUD field office left one ECHO unit unidentified.

◆ *ECHO Units*

Because the sponsor did not monitor the design and construction of the units, they are not in compliance with HUD design and construction regulations. The units are not of standard design or size and were not well designed for disassembly, transport and reassembly. This resulted in a product that, although serviceable to hosts and residents, was difficult and costly to relocate. No information is available on the costs of the initial units.

Kansas Property Summary: URS Corporation inspected a total of 15 ECHO properties in Kansas. Only 6 of the 15 Kansas units were occupied (several hosts told the URS inspectors they wanted the ECHO units removed from their property). All ECHO units are single story. Eight units are prefabricated units, 24 feet by 24 feet in size. Seven units are a combination of site-built and prefabrication and vary in size (20'x28', 20'x24', or 20'x30'). The lot sizes where the units are placed range from 1,600 to 90,000 square feet, with a mean size of 20,980 square feet. All of the units are new units at their present site [never been relocated]. Eight units are located in areas designated as not within a flood plain (no information on the other seven units). All but one unit has public water and 10 units have public sewer. One unit has underground wiring with the remaining having overhead electrical wiring service.

A number of modifications were made to the Kansas units during or after installation. Thirteen units have added a deck, two have added a porch, and two have added a room (one was identified as a laundry room and the resident added a washer and dryer). Four units have made modifications to the floor plan. Other modifications include adding storm doors and a covered breezeway. Many units were modified for handicap accessibility. Grab bars are standard in all units and all but one unit have added a wheelchair ramp. Every unit has a roll-in shower for wheel chair access.

Kansas Property Physical Description:

<b>Table 3: Property Description – Kansas</b>			
Item		Present (yes)	
Structure	Wood framing	15	
	Exterior wall: vinyl siding	15	
	Sloped roof with soffit overhang	15	
	Composition shingle roof	15	
	Gutter and downspout	15	
	Accessible attic	9	
	Attic venting	15	
Door / Window	Door: Metal	15	
	Windows	Metal	15
		Vinyl clad	7
		Insulated glass	15
	Sliding glass door	0	
Steps / Walkways / Parking	Exterior steps	Concrete	1
		Wood	14
	Parking surface	Other / None	2
		Gravel	12
		Asphalt	1
	Walkway	Asphalt	1
		Concrete	1
		Other / None	13
Steps	Pre-cast slab	7	
Basement		0	
Foundation	Masonry piers	15	
	Poured concrete with 4-inch crawl space	Crawl space access	1
		Foundation skirting	9
Interior	Flooring	Carpet & sheet vinyl	15
	Walls	Gypsum wallboard	15
Kitchen	Refrigerator	15	
	Oven	15	
	Electric range	14	
	Exhaust fan	15	
	Microwave oven	7	
	Garbage disposal	8	
	Dishwasher	0	
	Other appliances (one or more)	9	
	Wood cabinets	15	
	Bathroom	Wood cabinets	15
Shower		15	
Bathtub		0	
	Clothes washer and dryer	1 <sup>(1)</sup>	
	Cable and telephone connections	15	
<b>Total Units Inspected = 15</b>			

(1) Installed by the resident after adding a laundry room.

Kansas Property Condition Data: Inspectors gave an overall rating of “good” on most conditions relating to the exterior, the mechanical and plumbing systems, the interior, and the site. Inspectors reported problems for 9 of 15 units, as shown in Table 4:

Item		Fair	Poor	Needs immediate repair
Exterior	Downspout & Gutter	3		2 fair
	Roof	3		1 fair
	Foundation skirting	5		
	Site Drainage System	1		
	Walk or Decking	1		
	Exterior Walls	1		
Interior	Carpet	9		
	Bath accessories	1		
	Interior walls	1		
	Fuse / Circuit Breaker	1		
Other	Split system HVAC	2		
	Plumbing fixtures	1		1 good
	Electric resistance heat	2		2 fair
<b>Total Units Inspected = 15</b>				

The ECHO units in Kansas are best defined as stick-built with some prefabricated modules. There are no center-of joint connection points to allow for simple assembly or disassembly. Residents indicated that the quality and performance of contractors who worked on the housing was poor.

Besides the inability to move units, the following problems were noted:

- Houses face into the path of storms, but have no storm doors and deficient water seals.
- Water heaters are concealed within walls, are difficult to service, and are undersized.
- Houses have insufficient crawl spaces resulting in plumbing connections that are inaccessible.
- Crawl spaces are not skirted resulting in pipes which frequently freeze.

◆ **Management**

The management company, Yarco, does not appear to be responsive to resident and host concerns. Yarco collects rents, but relatives of the residents commonly complete maintenance and repairs. Eight units were vacant, some for two or more years. Since moving units is so difficult, neither HUD nor the management company has responded to hosts' requests to have the units moved. The Kansas HUD field office estimates that the cost to move a unit is \$26,000. Several host families would be agreeable to purchasing the units, but would not be able to pay very much. There are no apparent efforts to identify alternative potential residents or sites.

◆ **Program Concerns**

The prominent concerns of the Kansas HUD field office involve the selection of an appropriate sponsor. The lack of a sponsor in Kansas has led to many problems in

implementing the ECHO program. The Supervisory Project Manager also expressed concern with the initial NOFA and handbook information describing administration and expectations of the ECHO program at all levels (HUD, sponsor, host and resident). The HUD field office recommended a more significant level of field office participation, including acknowledgment of the ECHO program for “the innovation that it is” as opposed to the standard Section 202 product. They also noted that a dedicated HUD staff with appropriate expertise and strong management skills was needed to administer the ECHO program.

## ***Missouri***

### **◆ *Interview Participants***

Missouri HUD field office: The Missouri HUD field office Director of Housing was interviewed by phone on April 7. The interview took forty-five minutes to complete. The Director of Housing was not an employee of the Missouri HUD field office when the ECHO program began; however, he had access to all existing records and was well versed in the development and current status of the ECHO program in Missouri.

Missouri ECHO Sponsor: A telephone interview was conducted with the two co-directors of the sponsor of record for the Missouri ECHO housing demonstration program, DELMO. The co-directors, an elderly retired professor and his wife, have been active in non-profit work for fifty-five years, but their organization is modest and they lacked the expertise to address HUD requirements efficiently. DELMO is a non-profit organization promoting economic development in southeastern Missouri since the 1940s. The scope of their services is diverse, but does not include experience with HUD or the Section 202 program. DELMO used the consulting services of Leo, Inc.; the consulting firm was not, however, able to offset the limited experience and organizational capacity of DELMO. A series of miscommunications between DELMO and the Missouri HUD field office led to missing information, non-existent replacement accounts, and serious delinquencies of required document filings. Deviation by the sponsor from HUD protocols jeopardized the future of the local ECHO program before the Missouri HUD field office fully grasped the gravity of the problem and interceded. In February of 2003 the Missouri HUD field office intervened and placed the management of the ECHO houses with a professional property management firm (not identified). Current management is addressing maintenance and capital improvement issues.

Missouri Hosts and Unit Residents: Seven host and 10 resident interviews were conducted by phone at the convenience of the interviewees. Each interview took approximately one hour to conduct. Five of the residents, ranging in age from 71 to 91, were mothers of host family members (four daughters and one son). One resident was the father of a host daughter, and one resident was a close friend of the host. Three residents had no host.

### **◆ *ECHO Units***

According to the Missouri HUD field office, the design and construction parameters used for the Missouri ECHO program were based on the Australian prototype adjusted to meet HUD manufactured housing construction requirements. The units are shop-built with modular design and wood framing.

Missouri Property Summary: URS Corporation inspected a total of 10 ECHO properties in Missouri. All of the Missouri units are occupied. All ECHO units are modular, shop-built, single story, doublewide units. (No information was provided on size of units or size of sites.) Four units were relocated from another site and all other units are original to the present site. All units are located in areas designated as within a 100-year flood plain. All the units have public water and public sewer. Each of the ECHO units has overhead electrical wiring service.

Some modifications were made to the Missouri units during or after installation. All of the units have added a deck and porch, and one has added a canopy. Many units were modified for handicap accessibility. One unit was modified for wheelchair accessibility, six units have added a wheelchair ramp, and eight units have added a grab bar.

Missouri Property Physical Description:

Item		Present (yes)	
Structure	Wood framing with exterior vinyl siding	10	
	Sloped roof with soffit overhang & composition shingle roof	10	
	Gutter and downspout	10	
	Accessible attic	7	
	Attic venting	10	
Door / Window	Door:	Metal	10
		Wood	0
	Windows	Vinyl clad metal	10
		Wood	0
		Mix of single pane and insulated glass	10
	Sliding glass door		0
Steps / Walkways / Parking	Exterior steps	Concrete	0
		Wood	10 <sup>(1)</sup>
	Parking surface	Other / None	1
		Gravel	8
		Concrete	1
	Walkway	Asphalt	0
		Concrete	1
		Unpaved / None	9
	Steps	Pre-cast slab	1
Basement		0	
Foundation	Masonry piers (some identified as continuous block) with crawl space	10	
		Crawl space access	4
		Foundation skirting	10
Interior	Flooring	Carpet &/or sheet vinyl &/or vinyl tile	10 <sup>(2)</sup>
	Walls	Gypsum wallboard	10
	Kitchen	Refrigerator	10
		Oven	10
		Electric range	10
		Exhaust fan	10
		Microwave oven	5
		Garbage disposal	10
		Dishwasher	0
		Other appliances (one or more)	6
	Bathroom	Wood cabinets	10
		Wood cabinets	10
		Shower	10
		Bathtub	10
		Clothes washer and dryer –electric	10
	<b>Total Units Inspected = 10</b>		

<sup>(1)</sup> Four have concrete pads at the base.

<sup>(2)</sup> All ten have carpet. Nine have a combination of carpet, sheet vinyl, and vinyl tile. One has no sheet vinyl or vinyl tile.

Missouri Property Condition Data: Inspectors gave an overall rating of “good” on most conditions relating to the exterior, the mechanical and plumbing systems, the interior, and the site; inspectors reported some problems for 5 of the 10 units as follows:

<b>Table 6: Property Condition - Missouri</b>				
Item		Fair	Poor	Needs immediate repair
Exterior	Downspout & Gutter		1	
	Foundation	2		
	Foundation skirting	2		
	Paved parking area	2		
	Site Drainage System		1	1 good; 1 poor
	Walkway	1		1 good
	Roof	3		
	Pier foundation	1		
	Utility system hookup			1 good
Interior	Carpet	3	3	2 fair; 3 poor
	Vinyl flooring	3		
	Counters and cabinets	4		1 fair
	Interior door	1		1 fair
	Electric range	1		1 fair
Other	AC units	1		1 good
<b>Total Units Inspected = 10</b>				

Inspectors reported that the quality of the ECHO units in Missouri is in good general condition but in need of routine maintenance and minor repairs. Unit quality is diminishing due to lack of attention to maintenance and/or substandard construction. Continued delays in addressing repairs will lead to accelerated deterioration. Design criteria failed to consider geographic conditions, such as location in 100-year flood plain and small earthquakes. At least one unit is sited so that it is now experiencing severe site drainage problems.

◆ **Management**

Interviews with the HUD field office and the sponsor of record indicated that a low priority was placed on property management tasks, including rent collection, maintenance, and financial accountability. The sponsor could not provide details about program operations. The HUD field office recently hired a management firm and is satisfied with the firm’s performance; however, hosts and residents indicated the management company was slow to respond to requests for repairs. An account was not set up for repairs and capital improvements early in the demonstration program, resulting in delays in addressing routine maintenance issues.

Very little information was provided about the sponsor’s current management of the units. Experience with relocation of the four units that have been moved could not be documented, but the HUD field office reported that professional movers are now handling relocation appropriately.

◆ *Program Concerns*

The Missouri HUD field office recommends careful consideration of geographical issues in the design of the ECHO units, including soil conditions and drainage. The office also recommended the use of more durable building materials and practices in construction. The durability of the units was considered questionable and the HUD officer feared that the sponsor will be required to invest additional funds in the structures in the future. Although the Missouri HUD field office is optimistic about the future of the ECHO housing demonstration program, they estimate the useful life of a Missouri ECHO house to be no more than 20 years.

The most problematic issue encountered by the Missouri HUD field office was sponsor performance. Recommendations to address this situation include clarifying program parameters and expectations in the NOFA. Close and rigorous evaluation of sponsor characteristics and previous performance is also advised.

*New Jersey*

◆ *Interview Participants*

New Jersey HUD field office: The HUD field office interview with the Supervisory Project Manager was conducted on September 25, 2002 in the New Jersey HUD field office. The Supervisory Project Manager was not involved in the ECHO housing demonstration program when it was initiated and referred many of the questions to Norwescap (the sponsor) or the HUD field office architect.

New Jersey ECHO Sponsor: Norwescap is the sponsor organization in New Jersey. The Norwescap ECHO project manager was interviewed on September 25, 2002 at Norwescap headquarters in Newark, New Jersey. The interview required an hour to complete. Norwescap is a diversified organization administering programs to the community that deal with a wide variety of needs including childcare, food bank and housing. Despite the size and scope of the Norwescap organization, only two people, the ECHO project manager and a maintenance person, appeared to be involved in the ECHO program.

The design and construction of the ECHO housing units was governed by HUD standards (Architectural 4460.1) and proceeded smoothly. A consulting company, Planners Diversified, was hired to complete the initial applications for the program. The consultants involved in the program reported directly to the HUD field officers. The HUD field office architect became very involved in the program and established a good rapport with Norwescap. Ed Guion, an independent ECHO housing producer, served as an informal consultant to the New Jersey ECHO program. Richards Building Contractors, another firm with experience in designing and building ECHO housing, provided the design of the ECHO unit. The Director of the Office of Aging of Warren County, New Jersey was also consulted in the program process.

New Jersey Hosts and Unit Residents: Ten ECHO houses are considered “active” by the HUD field office and Norwescap. Contact information was available for seven hosts and residents. All the residents were mothers, ranging in age from sixty-six to eighty-eight. Five hosts, who had been caring for their mothers for two to three years in the ECHO house, and

five residents, were contacted. Two hosts and residents were unavailable to be interviewed. The interviewer was escorted to two ECHO locations by a member of the sponsor's staff.

◆ *ECHO Units*

New Jersey Property Summary: URS Corporation inspected a total of nine ECHO properties in New Jersey, three of which were unoccupied. All ECHO units are prefabricated, single-story, doublewide units. The ECHO units are all 24 by 26 feet in area. One unit was relocated from another site, and all other units are the original units at their present site. All units are located in areas outside of flood plains. Only two of the New Jersey units have public water and only three have public sewer. Five of the ECHO units have underground electrical wiring service with the remainder having overhead electrical wiring service.

A few modifications were made to the New Jersey units during or after installation. A deck was added to three of the units and a canopy was added to one unit. Many units were modified for handicap accessibility. Two units were modified for wheelchair accessibility, four units added a wheelchair ramp, and six units added a grab bar. Counters and cabinets were modified for handicap accessibility in three units.

New Jersey Property Physical Description:

<b>Table 7: Property Description – New Jersey</b>				
Item		Present (yes)		
Structure	Wood framing with exterior vinyl siding		9 <sup>(1)</sup>	
	Sloped roof with soffit overhang		7	
	Sloped roof in more than one direction		2	
	Composition shingle roof		9	
	Gutter and downspout		9	
	Accessible attic		7	
	Attic venting		7	
Door / Window	Door:	Wood	7	
		Other	2	
	Windows	Vinyl clad wood	7	
		Other	2	
		Insulated glass	7	
		Single pane glass	2	
	Sliding glass door	0		
Steps / Walkways / Parking	Exterior steps	Wood	8	
		Other	1	
	Parking surface	Other / None	2	
		Gravel	4	
		Asphalt	3	
	Walkway	Unpaved	2	
		None	7	
		Steps	Pre-cast slab	1
Basement			0	
Foundation	Foundations are either wood piers consisting of 6 by 6 inch treated posts or concrete block with crawl space		9	
		Crawl space access	9	
		Foundation skirting	2	
Interior	Flooring	Carpet & sheet vinyl & vinyl tile	9 <sup>(2)</sup>	
	Walls	Gypsum wallboard	9	
	Kitchen	Refrigerator		9
		Oven		9
		Electric range		9
		Exhaust fan		9
		Microwave oven		2
		Garbage disposal		0
		Dishwasher		3
		Other appliances (one or more)		7
	Bathroom	Wood cabinets		9
		Wood cabinets		9
		Shower		9
		Bathtub		0
		Clothes washer - electric		6
	Clothes dryer -electric		3	
<b>Total Units Inspected = 9</b>				

(1) Wood shingle siding used on one unit to match the main residence and to adhere to zoning requirements

(3) One had hard-wood floors instead of carpeting in living room and bedroom

New Jersey Property Condition Data: Inspectors rated the condition of units in New Jersey as mostly “good” for the exterior, the mechanical and plumbing systems, the interior, and the site.

<b>Table 8: Property Condition – New Jersey</b>				
Item		Fair	Poor	Needs immediate repair
Exterior	Walkway	3		
	Porch, decks	1		1 fair
Interior	Electric range	1		
	Bath accessories	1		1 fair
<b>Total Units Inspected = 9</b>				

Inspectors reported that the units they inspected are in good condition, well maintained and no immediate repairs were noted other than minor routine maintenances issues typical of rental housing. Several units were modified from the original by the residents in the following ways: addition of windows, air conditioners, access ramps, ceiling fans, and kitchen appliances; cabinet adjustments; shower stall modifications; and siding variations on one unit.

◆ **Management**

Norwescap has been the manager of the ECHO units since the program inception. Hosts and tenants reported that the sponsor has not been responsive to requests for repairs and they have been completing repairs on their own. Norwescap does collect the rent but may be behind on rent re-certification.

The HUD field office reports that the relocation of units is more costly than originally anticipated, but no information is available about the number of relocations. Average cost for moving a unit was \$71,855 (\$24,893 to move the unit, \$15,762 to ready the unit for moving, \$25,300 to place the unit on site, and \$5,900 to renovate and repair). Residents and hosts report unit installation taking from five to eighteen months to complete. The frustration and anxiety connected with this experience was described by one host as a “nightmare.” One host family is concerned that their house could have been damaged by the way the water was connected between the host house and the ECHO unit.

Interviews suggested significant gaps between the release of funds to the sponsor and the sponsor’s payments to the builder. Other problems involve the sponsor’s lack of response to HUD field office requests for self-certification of funds expended. Further, while 20 ECHO units were to be built in New Jersey, more than half the funds allocated have been spent on the 10 houses that have been built. There is concern by both the HUD field office and Norwescap that the remaining funds will not be adequate to complete the sponsor’s obligations under the program.

◆ ***Program Concerns***

The Supervisory Project Manager's perception of the initial information provided in the ECHO handbook was that it was not useful and required a lot of interpretation to address problematic issues when they arose. The most insightful Norwescap comment referenced the unique nature of the ECHO program, and the need to address it as the "innovation that it is" as opposed to a typical Section 202 program. As noted above, the HUD field office is concerned about the financial status of the New Jersey ECHO program. The interview with the sponsor did not allay those concerns.

***Tennessee***

◆ ***Interview Participants***

Tennessee HUD field office: HUD field office and sponsor interviews took place on August 22, 2002. The HUD field office interview was held at the Knoxville, Tennessee HUD office. The Director of the Multifamily Program Center, the Multifamily Appraiser, the Multifamily Housing Representative, and the Loan Specialist participated in the interview. This interview lasted for three hours and reflected the perspectives of the four participants. All of the HUD officers who participated in the interview were employed at the field office when the ECHO housing demonstration program was implemented, but none were involved in the ECHO program at that time and no one was familiar with the NOFA.

Tennessee ECHO Sponsor: The sponsor interview took place at the offices of the sponsor organization, East Tennessee Human Resource Agency, Inc. (ETHRA) in Knoxville, Tennessee. ETHRA is a large organization serving a 16-county area. The two people directly involved with the ECHO housing demonstration program (the ETHRA Executive Director and the Administrator of Planning and Development) were interviewed. The interview lasted approximately one hour.

The Tennessee HUD field officers experience with the ECHO program began in 1995. The Tennessee field office was notified that an ECHO housing demonstration program grant had been awarded to ETHRA and that the field office was given the task of administering the grant. The design requirements for the Tennessee ECHO housing units were given to the sponsor by the HUD field office in the ECHO handbook. Field officers noted that the design requirements were brief and addressed portability, compliance with Section 202 requirements, total square footage, and specified one bedroom and one bath.

Tennessee Hosts and Unit Residents: Telephone interviews were conducted with two residents and one host. Both residents were mothers, and the host was a daughter. Both residents were 81 years old.

◆ ***ECHO Units***

ETHRA, the sponsor, consulted with mobile home dealers in order to comply with the portability requirement for the ECHO units design. The design for the units was made available for bid and the lowest bidder was a Huntsville, Alabama company, SK International. The cost of the ECHO unit was \$34, 000. There is confusion regarding exactly how many houses are currently active in the Tennessee ECHO program. ETHRA confirmed that SK International delivered seven housing units. Two units are currently occupied (the

sponsor was not able to arrange on-site visits), three are in storage and have never been placed on a host site (the sponsor took the interviewer to see these units), and two units were unaccounted for by the sponsor.

Tennessee Property Summary: Only two ECHO units in Tennessee were inspected, both of which were occupied. Both units are prefabricated, single story, single-wide units (although wider than standard mobile homes at 16 feet by 40 feet). No site size was provided. Both units are the original units at their present site. Both units are located outside of any designated flood plain. One of the Tennessee units has public water and the other has a well. Both units have a septic system. Neither of the units has underground electrical wiring.

A few modifications were made to the Tennessee units during or after installation. Decks and porches were added to both of the units. Both units were modified for handicap accessibility. One unit was modified for wheelchair accessibility and both units added a wheelchair ramp and grab bar.

Tennessee Property Physical Description:

<b>Table 9: Property Description – Tennessee</b>			
Item		Present (yes)	
Structure	Wood and steel framing with exterior vinyl siding		2
	Sloped roof		2
	Soffit overhang		1
	Composition shingle roof		2
	Gutter and downspout		2
	Accessible attic		0
	Attic venting		2
Door / Window	Door:	Vinyl clad wood	2
		Metal	0
	Windows	Vinyl clad metal	0
		Vinyl clad wood	2
		Insulated glass	0
		Single pane glass	2
	Sliding glass door	0	
Steps / Walkways / Parking	Exterior steps	Wood and concrete	1
		Wood	1
	Parking surface	Other / None	0
		Gravel	2
		Asphalt	0
	Walkway	Asphalt	0
		Concrete	0
		Unpaved / None	2
Steps	Pre-cast slab	0	
Basement		0	
Foundation	Foundations are masonry piers with crawl space		2
		Crawl space access	0
		Foundation skirting	2
Interior	Flooring	Carpet & sheet vinyl & vinyl tile	2
	Walls	Wood paneling	2
	Kitchen	Refrigerator	2
		Oven	2
		Electric range	2
		Exhaust fan	2
		Microwave oven	2
		Garbage disposal	0
		Dishwasher	0
	Other appliances (one or more)	0	
	Bathroom	Shower	2
		Bathtub	2
		Clothes washer - electric	1
		Clothes dryer -electric	1
<b>Total Units Inspected = 2</b>			

Tennessee Property Condition Data: Inspectors reported most conditions as “good” relating to the exterior, the mechanical and plumbing systems, the interior, and the site in Tennessee. Problems were reported in only one unit.

Related to the interior of the unit, inspectors reported the carpet condition as poor and in need of immediate replacement. In addition, the vinyl flooring is in fair condition, and the kitchen counters and cabinets are in fair condition.

Item		Fair	Poor	Needs immediate repair
Exterior	HVAC	1		1 fair
	Foundation skirting	1		
Interior	Carpet		1	1 poor
	Vinyl flooring	1		
	Counters and cabinets	1		
<b>Total Units Inspected = 2</b>				

Inspectors reported units as in “good” general condition and in need of routine maintenance and minor repairs. Construction quality is similar to mobile homes, meaning lighter framing, and finishes less resistant to abuse. Problems identified were: kitchen counter services with burn marks, worn vinyl flooring and carpeting, leaking weather seals around doors, and faulty air conditioning. Inspectors reported that attention should be given to the selection of higher quality equipment and to providing routine maintenance.

◆ **Management**

ETHRA’s comments about property management reflect difficulty with efficiently attending to the two active ECHO housing units in their sixteen county service area. The HUD field office assumes that ETHRA either is covering maintenance expenses “out of pocket” or are not attending to them. One host interview indicated that although ETHRA was responsive to a request for repairs from the host, the repair has been ineffective. Rent that is collected by the sponsor is estimated by the HUD field office to range between 0 and 30% of the resident’s adjusted gross income. The HUD field office is perplexed that ETHRA has not requested monthly rent subsidy payments from HUD.

ETHRA was unable to locate suitable host families and residents for the housing units that were being delivered to them in part due to changes in staffing. ETHRA also associated their lack of success in placing ECHO housing with appropriate host and residents to delays in obtaining HUD approval of prospects. The HUD field office indicated that prospects were not being qualified appropriately. No ECHO houses have been relocated in Tennessee.

◆ **Program Concerns**

Initial problems surfaced in the HUD field office when the program was given to them to administer without notification or training. HUD field officers were not aware (at the time of the awarding of the grant in 1995) of the 1993 NOFA announcing the ECHO housing demonstration program and noted that training about the program was not available to them.

Site preparation was a primary concern of the HUD field office. Geographic conditions required difficult and costly measures to position the units in a way that allowed for practical use by the host and resident, proper drainage, and efficient water supply.

The most problematic issue for ETHRA was locating hosts and residents for the ECHO housing demonstration program. ETHRA reported numerous hours meeting with prospects, and completing and submitting paperwork to HUD, only to have their efforts thwarted by a variety of setbacks. These ranged from host family instability to the death of the prospective resident before approval from HUD was received.

The Tennessee HUD field office seems to have had difficulty in distinguishing the ECHO housing program from the traditional Section 202 program and focused on the difficulty of managing the ECHO program. The field office recommended reconfiguring the ECHO program to absolve the HUD field office of responsibility beyond the distribution of funds for the purchase of the manufactured home, i.e. to give the hosts the house and let them be responsible for its installation and maintenance.

### **Perceptions of Residents and Caregivers (Hosts)**

Hosts and residents at each demonstration site were pleased overall to have their ECHO units. All felt that the program had improved the quality of their lives. Residents' health was fair, and some were very active, but cognitive functioning was mixed. Hosts assisted residents with activities of daily living, transportation and providing a sense of security.

Residents of ECHO housing units have been receiving care for between two and six years in their current locations. Some caregivers reported that they have been providing care for their family member for a much longer period of time; one stated that she had been caring for her sister "all her life."

Some of the prominent issues for the hosts and residents include: the process of obtaining the ECHO house, overall relationships with the sponsor, responses to maintenance requests, and following HUD requirements. The following state summaries explain these issues and elaborate on some issues that are unique to each state.

#### ***Iowa***

Participants in the Iowa ECHO housing demonstration program did not report any problems with obtaining their homes. They report that the sponsor was helpful in describing the program to them and assisting them in completing required paperwork. Residents and host families have a good understanding of their responsibilities as well as those delegated to SCIDC/Home-In-Stead. This has contributed to the smooth operation of the program. The most consistent concern of residents and hosts involved the long wait required to receive an ECHO house. Their recommendations involve expanding the program, simplifying the paperwork, and making houses available more rapidly.

The Iowa ECHO program—a clear success story in the eyes of those interviewed—includes residents who are happy with their homes, host families that are grateful for the opportunity

to provide the attention and care their family member needs, contractors and sub-contractors (primarily involved in maintenance and relocation tasks) who are performing productive work, and a board of directors that is proud of the important service and product Home-In-Steid is providing for the community.

### ***Kansas***

Hosts and residents in Kansas did not report any problems in obtaining their ECHO houses. Most hosts had a limited but accurate understanding of the ECHO program and their relationship to the sponsor. However, most of the residents did not have a good working knowledge of the ECHO program. Host families, rather than the sponsor, often were providing maintenance of the ECHO units. Residents and host(s) families expressed some concern that the program may be in jeopardy. Their concerns centered on confusion that resulted from administrative inconsistencies due to sponsor changes. Some had heard rumors that HUD had “gone bankrupt.” Some residents said they had been offered the option of purchasing their ECHO house from the sponsor. One resident told of getting phone calls from the property management company threatening to “throw her out into the street in the middle of the night” if she did not agree to settle an on-going contract dispute with the current property management company.

Host and resident interviews indicate that they have complied with HUD requirements. Several ECHO houses in Kansas have been vacated and HUD apparently has been notified, but has failed to remove the ECHO units from the hosts’ properties. Hosts and residents speculated that this is because the design of the houses renders them impossible to relocate. This situation has created problems for at least one host who considers himself “stuck” and unable to sell his property until HUD removes the ECHO unit from the property.

Hosts recommended closer monitoring of the design and manufacturing process, and providing criteria for identifying cohesive families, as well as family support/teaching on coping mechanisms and care-giving strategies. Residents would like to see changes in the program design that would eliminate the re-certification process, provide more funding and guidelines for sponsors, and locate program administration closer to ECHO house sites.

### ***Missouri***

Missouri hosts and residents were concerned primarily with the time it takes to acquire an ECHO unit and the time and energy required to have maintenance issues addressed. They reported making major repairs themselves rather than wait for a response to their request for help from the sponsor.

They have reservations about their relationship with DELMO, but comments indicate recent improvement. Hosts have a vague, but basically accurate, understanding of their responsibilities as host and the residents’ qualifications as occupants of the ECHO house.

The Missouri ECHO housing demonstration program is not in compliance with HUD requirements regarding the existence of an adjacent host for each ECHO unit. There was no host for three of the seven residents contacted, and in one case the ECHO unit was the only house on the property.

### *New Jersey*

Hosts and residents in New Jersey reported difficulty in obtaining their ECHO units. It was their understanding that regulatory issues and disputes between the sponsor and the manufacturer of the houses were responsible for these delays.

The perceptions of the hosts and residents of their respective responsibilities in the ECHO program, as well as those of the sponsor, are accurate but minimal. Hosts and residents indicated little interaction with the sponsor. Hosts and residents indicated they do not depend on the sponsor for general maintenance of the ECHO units, and in some cases have been instructed by the sponsor to “take care of whatever you can.”

The most problematic issue for hosts and residents is associated with the long waiting period to get an ECHO unit, and long and frustrating delays in the installation process (5 to 18 months). However, even taking into consideration all the time and energy invested, and difficulties experienced in obtaining the ECHO unit, residents and hosts spoke glowingly of their experience of having an ECHO unit. There is no question that each recipient of an ECHO house and their families feel that they have benefited greatly from their participation in the New Jersey ECHO housing demonstration program.

### *Tennessee*

Hosts and residents did not report any problems obtaining an ECHO unit in Tennessee. However, hosts and residents reported only infrequent contact with the sponsor, usually involving needed repairs. Both parties appear to be satisfied with their relationship with the sponsor. Host and resident comments are generally positive, with the exception of one resident’s dissatisfaction with the heating system in her house. She reported (and the host collaborated) that it had never worked properly, and although the sponsor had been attentive to her requests for repair, the problem persists. The limited contact noted above may be related to some inconsistencies in the understanding of resident and host responsibilities. One resident was unaware of any resident requirements. One of the hosts thought that she was to be paid by ETHRA for caring for her mother, and one host stated that they had never signed “anything,” implying that the required ground lease was not completed. Another host expressed concern about the installation of a septic tank, power pole, and water meter that were required to accommodate the ECHO house. The host expected the expenses incurred would be reimbursed to her after installation, but were not.

Although it has been a struggle, the combined efforts of the HUD field office and ETHRA have resulted in a small, but positively perceived program according to the participants in the program. The Tennessee ECHO housing demonstration program consists of contented hosts and residents of the ECHO houses.

## FINANCIAL VIABILITY\*

The financial viability of a full-scale ECHO program depends heavily on several factors. The cost of providing and operating an ECHO unit is a function of the initial cost of construction, the cost of placing the unit at a specific site, the cost of on-going maintenance, the cost of periodically replacing materials and systems that have a useful life shorter than the intended use of the ECHO unit, and the cost of periodically relocating the unit. These costs can vary by region and climate, as well as by interdependencies between initial cost, maintenance cost and replacement cost. Costs also can be affected by site-specific characteristics, such as slope, soil conditions, drainage and flooding. Simply put, costs will be less under the following physical conditions:

- Relatively flat land.
- Easy access to the rear of the property.
- Stable soils.
- Good drainage with limited exposure to flooding.
- Short distances between first and subsequent site locations.

### Base Unit Cost

Higher front-end quality and better design (both associated with higher initial costs) can reduce operating and maintenance costs. Higher quality, however, cannot be achieved without design and production controls. For example, our estimate of the current cost for constructing a basic (576 SF) ECHO unit is \$17,280 (Table 11), based on appropriate economies of scale and quality control associated with industrialized production. This base cost of a new ECHO unit was estimated from various sources such as the 2003 edition of “Building Construction Cost Data” by R. S. Means Company and modular housing industry websites, e.g. [www.toolbase.org](http://www.toolbase.org), and [www.nhi.org](http://www.nhi.org). Most likely, this cost could be achieved only with a significant level of production through a limited number of industrialized builders.

Locating and installing the unit is estimated to cost another \$5,000 approximately (exclusive of shipping costs). Our estimated cost of an installed unit (about \$22,300), however, is well below the costs reported in the demonstration program, which ranged between \$34,000 and \$80,000. In addition to the higher costs associated with purchasing a small number of “custom-built” units, the higher costs in the demonstration program likely reflect significantly higher costs in site preparation and installation, as well as shipping costs that are not included in our estimate.

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\*Lead author: C. Theodore Koebel, Ph.D. Cost estimates provided by URS Corp.

Dwelling	576	SF	\$30.00	\$17,280
Foundation	576	SF	\$5.00	\$2,880
Utility connections	576	LS	\$2.00	\$1,152
Miscellaneous	1	LS	\$1,000.00	\$1,000
Total Cost				\$22,312

Source: URS  
 SF = square feet  
 LS = lump sum

A higher cost for the base unit could be easily justified if it clearly reduced costs for maintenance, repair and relocation costs. These costs can easily exceed the cost of new construction. It is imperative to do everything possible during construction to minimize future maintenance and relocation costs. A moderate increase in the first cost can forestall the need for repairs. We recommend that a full-scale ECHO program contract for units from a limited number of manufacturers, with strong assurances of quality control and reduced cost for maintenance, repair, and relocation.

**Maintenance and Repair Costs**

We estimated three different schedules for maintenance. The highest level of maintenance provided four hours per month of labor for the first five years and eight hours per month for the next five years, along with a modest cost for materials. This results in an annual maintenance cost per unit of approximately \$2,500 during the first five years and \$5,000 thereafter (in current dollars). Our second estimate cuts the maintenance in half (two hours per month for the first five years and four hours per month thereafter): \$1,300/unit/year initially and \$2,800/unit/year after year five. We have also estimated an extremely low maintenance budget of less than \$500/unit/year for the first five years and \$1,400/unit/year thereafter. A summary of estimated maintenance budgets is shown in Table 12.

The high-maintenance budget assumes a two-person team consisting of a carpenter foreman and a helper would visit the units once a month, inspect the dwelling, and perform a limited amount of upkeep. The lowest budget assumes an average of four maintenance trips per year during the first five years and six visits thereafter. Although it would be more cost effective if the maintenance could be left to the host or resident, most elderly residents and many host families have neither the knowledge nor ability to perform maintenance other than general housekeeping.

The maintenance experience during the demonstration ranged from very poor to good. However, the maintenance experience in the demonstration program was complicated by lack of sponsor attention, confusion over responsibility for maintenance, distance between units, and the difficulty of servicing only a few units.

<b>Table 12. Estimated Maintenance Budgets</b>				
<b>High Level Maintenance Estimate</b>				
<b>DESCRIPTION</b>	<b>QTY</b>	<b>UNIT</b>	<b>INIT COST</b>	<b>EXTENDED COST</b>
<b>Annual Maintenance Cost First Five Years</b>				
Monthly inspection and maintenance visit				
Carpenter Foremen	2	MH	\$52.00	\$104
Carpenter Helper	2	MH	\$40.00	\$80
Materials	1	LS	\$20.00	\$20
<b>Total Monthly Cost</b>				<b>\$204</b>
<b>Total Annual Cost</b>				<b>\$2,448</b>
<b>Annual Maintenance Cost Six+ Years</b>				
Monthly inspection and maintenance visit				
Carpenter Foremen	4	MH	\$52.00	\$208
Carpenter Helper	4	MH	\$40.00	\$160
Materials (including appliances)	1	LS	\$50.00	\$50
<b>Total Monthly Cost</b>				<b>\$418</b>
<b>Total Annual Cost</b>				<b>\$5,016</b>
<b>Moderate and Low Level Maintenance Estimate</b>				
<b>DESCRIPTION</b>	<b>QTY</b>	<b>UNIT</b>	<b>INIT COST</b>	<b>EXTENDED COST</b>
<b>Annual Maintenance Cost First Five Years</b>				
Monthly inspection and maintenance visit				
Carpenter Foremen	1	MH	\$52.00	\$52
Carpenter Helper	1	MH	\$40.00	\$40
Materials	1	LS	\$20.00	\$20
<b>Total Monthly Cost</b>				<b>\$112</b> w/4 visits
<b>Total Annual Cost</b>				<b>\$1,344</b> <b>\$448</b>
<b>Annual Maintenance Cost Six+ Years</b>				
Monthly inspection and maintenance visit				
Carpenter Foremen	2	MH	\$52.00	\$104
Carpenter Helper	2	MH	\$40.00	\$80
Materials (including appliances)	1	LS	\$50.00	\$50
<b>Total Monthly Cost</b>				<b>\$234</b> w/6 visits
<b>Total Annual Cost</b>				<b>\$2,808</b> <b>\$1,404</b>

Source: URS

MH= man hour

In addition to routine maintenance, materials and building systems (e.g. shingles and hot water heaters) have to be replaced periodically based on their expected useful life. These periodic costs are increased due to the impact of relocation on the structure, when the unit has to be disassembled, transported, possibly stored, and relocated on a new site. In Table 13, we estimate a 10-year replacement expense of \$10,456 (in current dollars), providing for improvements or replacement in roofing, flooring, painting, and bathroom and kitchen fixtures and appliances.

Roofing replacement	576	SF	\$1	\$576
Flooring replacement	576	SF	\$5	\$2,880
Painting	1	LS	\$1,000	\$1,000
Miscellaneous carpentry	40	MH	\$50	\$2,000
Bathroom rehabilitation	1	LS	\$1,500	\$1,500
Kitchen rehabilitation	1	LS	\$2,500	\$2,500
<b>Total Cost</b>				<b>\$10,456</b>

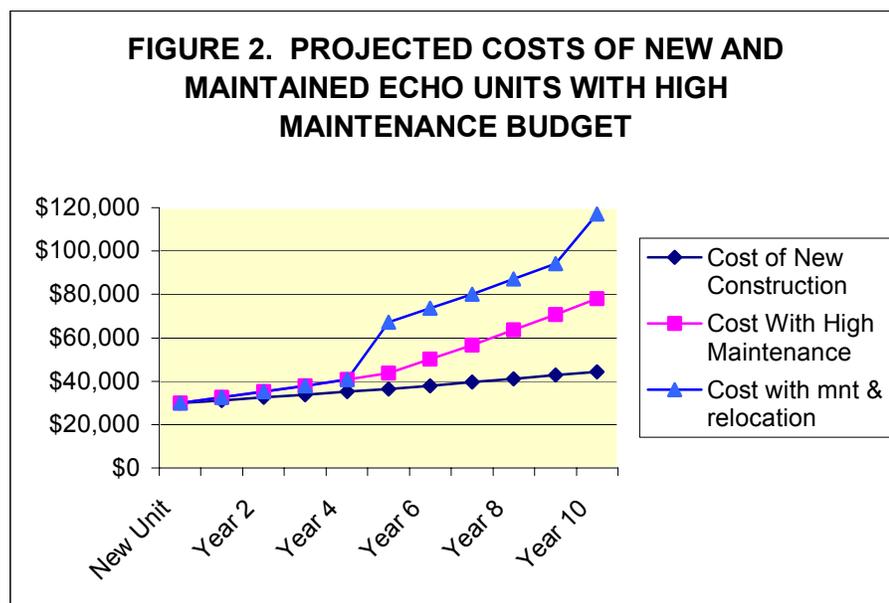
Source: URS

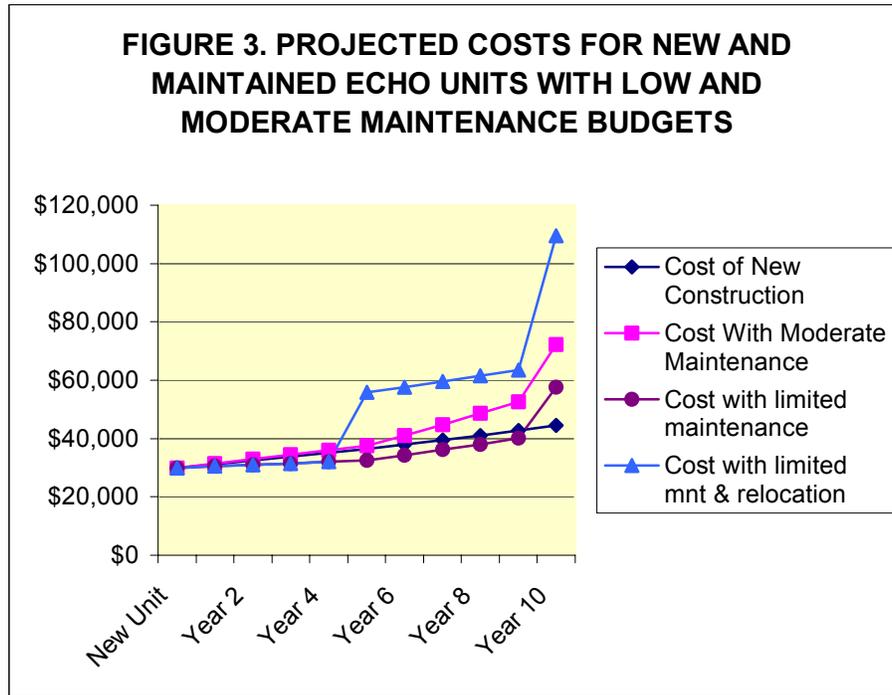
### Relocation Costs

The remaining major expense incurred in an ECHO program is relocation. The average moving cost based on available data from the demonstration program is approximately \$20,000, exclusive of New Jersey. This is highly subject to variation related to distance, site preparation cost, ease of disassembly and reassembly, damage to the unit during relocation, and restoration of the site being vacated. New Jersey, for example, reported an average relocation cost of \$72,000. Even allowing for double counting of some costs in New Jersey, our estimate of \$20,000 for total relocation costs is clearly conservative. The timing of relocation is difficult to predict, but a five-year relocation average is probably the maximum to be expected given the target population for ECHO units.

### Comparison of Replacement and Maintenance Costs

Figures 2 and 3 show costs for new and maintained ECHO units extrapolated over 10 years.





The financial feasibility of maintaining and relocating ECHO units depends in part on the cost of a new unit. Figures 2 and 3 begin with an initial cost of \$30,000 for a base unit. In addition to the cost of a new ECHO unit, Figure 2 shows the cost of an existing ECHO unit with maintenance and repair at the high maintenance budget, and with relocation added to costs. All costs are inflated at a 4% annual rate.

Because the initial cost of the ECHO unit is a sunk cost, it continues to make sense to maintain and repair the unit up to the point when the annual incremental value of maintenance and repair expenditures approximates or exceeds the cost of replacing the unit. The net present value (in year 10) of high budget maintenance and repair expenditures between years 10 and 14 is \$48,633, whereas the net present value of buying and maintaining a new unit over the same time period is \$54,459. At year 10, it makes sense to continue to maintain an existing unit rather than replace it. This continues to be the case through to year 30. Based on replacement cost versus maintenance and repair costs, the latter would be financially justified (assuming that the maintenance and repair expenditures preserve the unit at a satisfactory quality level).

The impact of relocation costs is very apparent in Figures 2 and 3, resulting in sharp increases in costs at each five-year interval. The combination of five-year relocation costs and ten-year repair costs is a virtually insurmountable hurdle in the financial viability of ECHO housing. At year 10, the net present value of relocation, maintenance and repair costs

for years 10 through 14 is \$76,000, which is 40% above the cost of buying and maintaining a new unit over the same period.

If annual maintenance costs are lowered to the moderate level (with no upward adjustment in 10-year repair costs), maintenance, repair and relocation are still not financially feasible compared to replacement. The net present value of replacing an existing unit with a new unit at year 10 and moderate maintenance in years 10 through 14 is \$48,132, whereas the relocation and maintenance of an existing unit has a net present value of \$60,896. And even if maintenance costs could be decreased to the very low level, the present value of replacement and maintenance still is lower than the present value of relocation and maintenance (\$43,415 versus \$51,288).

The relative cost of relocation and maintenance versus replacement depends heavily on the cost of the replacement unit. Relocation with moderate maintenance is only slightly less costly than replacement if the base cost for a new unit increases to \$40,000 (and maintenance remains the same). A replacement cost exceeding \$50,000 is required to make relocation cost effective under the high maintenance budget. To some extent this justifies purchasing an initially higher cost unit, particularly if maintenance and relocation costs could be reduced due to the higher quality. But a higher base cost for an ECHO unit would require a larger up-front capital subsidy.

### **Pro Forma Analysis**

Comparing relocation costs with replacement costs provides a comparative perspective on financial feasibility, but does not address the overall costs associated with operating an ECHO program. Instead of looking at the relative cost of new versus relocated units, a pro forma analysis examines the total costs of operating an ECHO program and estimates the amount of income (or subsidy) required to cover those costs.

In addition to the costs for the base unit, installation, maintenance, repair, and relocation, the pro forma analysis considers administrative costs, operating expenses, and maintenance expenses (e.g. insurance and property taxes). Based on costs reported for Section 202 properties by the Institute of Real Estate Management, we allocated 20% of potential rent (using the national average fair market rent for a one-bedroom unit) for administrative, insurance, and property tax costs. Maintenance costs were set equal to the moderate level reported above (\$1,344/unit for the first five years and \$2,808 thereafter). The replacement reserve for repairs was calculated to provide 10-year replacement at a current value of \$10,456/unit. Reserves for relocating the unit and restoring the previous site were based on a five-year relocation cycle at a current value of \$20,000.

The pro forma analysis can be used to estimate the monthly income required to cover the anticipated costs or a combination of capital subsidy and monthly income. Income initially was estimated based on the fair market rent for a one-bedroom unit (\$353) and vacancy adjustments of 20% in the first year and 50% every fifth year. Full occupancy is assumed for intervening years.

Based on these assumptions, the program would operate at a negative cash flow (i.e., a deficit) each year even without any debt service. In order to maintain the required reserves, maintain the units, and administer the program at a break-even level, a capital subsidy of approximately \$200,000/unit would be required in year one in addition to the base unit cost (assumed to be \$30,000/unit). This also assumes that the units would receive Section 8 subsidies at the fair market rent of \$353 or the tenants could afford this level of rent payment.

In lieu of the additional capital subsidy, rental income would have to increase to \$883/unit/month, 2.5 times the fair market rent level for a one-bedroom unit, in order for the program to be financially stable. Given the “lumpiness” of repair and relocation expenditures, sponsors could face negative cash flows in those years that would be offset by positive cash flows in other years.

### **Possible Cost Reductions**

As stressed earlier, a higher cost for the base unit can be readily justified if it results in lower maintenance and relocation costs. The demonstration project did not test design parameters related to either maintenance or relocation. HUD should consider field tests to determine the cost of relocation and the impact of relocation on repair costs (estimated for 5- and 10-year repairs) utilizing units produced by national or regional industrialized housing firms. The field test could be conducted at one or more locations to thoroughly document the costs and impacts of relocation. Unless lower cost parameters for relocation and repair are thoroughly documented, we recommend the cost parameters used above.

The impact of relocation costs on the financial viability of an ECHO program cannot be over emphasized. A 25% reduction in relocation costs would reduce the required rent to \$756/unit/month (from \$831), a 10% reduction. A 25% reduction in the 10-year repair cost produces only a modest reduction (less than 5%) in the required rent. If a better-designed unit produces both a 25% reduction in relocation costs and a 25% reduction in 10-year repair costs, the combined impact could reduce the required rent to \$728. This is still substantially above the fair market rent for a one-bedroom unit (\$353). It bears noting again that this level of income (or an equivalent capital subsidy) is required in addition to the capital grant covering the cost of the base unit.

A longer period of occupancy would also reduce relocation costs, but exceeding a five-year average occupancy is unlikely given the age and frail condition of the target population. Expanding the program to non-elderly disabled persons could potentially increase occupancy. This would also provide states and localities a potentially useful tool in responding to the Supreme Court’s Olmstead decision mandating appropriate non-institutional housing alternatives for persons with disabilities. Development of a fixed-location option that clusters units and provides an on-site manager should be explored.

The costs for ECHO housing are, of course, much less than most alternative housing arrangements for elderly and disabled persons who need some assistance from a caregiver. Assisted living and related options typically cost \$3,000 to \$5,000 per month.



## **FINDINGS AND RECOMMENDATIONS**

The ECHO demonstration program allocated 80 units nationally to five participating states: Tennessee (20), New Jersey (20), Iowa (10), Kansas (20), and Missouri (10). At the time of the fieldwork conducted for this report, there were only 34 units in use: Tennessee (2), New Jersey (6), Iowa (10), Kansas (6), and Missouri (10). The program began operating between 1993 and 1996.

### **Findings and Recommendations: Background / Land Use / Zoning**

The concept for ECHO housing (also referred to as “granny flats” or “accessory units”) was introduced in the United States in the 1980s based on a program started in Australia in 1975. Although the Australian program had placed 3000 units by 1990, it encountered problems in unit quality and costs associated with dismantling and relocating the units; variations in unit quality across manufacturers; transfer costs; and long periods of vacancy when units needed to be relocated. Transfer of the ECHO concept to other countries has encountered similar problems as well as similar benefits. The problems typically were high costs, vacancy, and difficulty in moving units. The benefits reported were related to the daily-living support provided to elderly parents by adjacent family members.

In addition to the ECHO demonstration program administered by HUD in the United States, several local programs have been conducted independently of the demonstration. We were unable to find any documentation of the results of these programs, but anecdotal reports have generally been favorable. However, community acceptance of accessory dwelling units, such as ECHO units, has been restrained by zoning codes and concerns about subsequent use. The portability of units might make ECHO units more acceptable, but portability increases program costs. In addition, many communities ban structures that are not permanent. For the most part, ECHO housing finds much greater acceptance in rural areas than in urban areas, where the program has made few inroads.

Several urban communities, particularly those in high-growth and high-cost metropolitan areas, recently have passed accessory dwelling unit ordinances to promote affordable housing. Whether concerns about housing affordability and Smart Growth will result in greater community acceptance of ECHO and other accessory units is unclear. Despite increased interest in enabling affordable housing, ECHO and other accessory dwelling units encounter numerous restrictions that limit their use. These include restrictions related to the size of units; lot size, parcel coverage, and units per parcel; placement on the lot; occupancy restrictions; parking; access; neighborhood compatibility; density; fees and permits; and renting.

Production of ECHO units remains problematic. There has not been sufficient demand or community acceptance to encourage larger industrialized housing producers to add an ECHO unit to their product line. Low volume and custom building result in higher costs.

In order to enhance production of ECHO units, it would be useful to develop a national building standard for ECHO units that would conform to most local zoning codes and to

develop a pool of builders/manufacturers to produce them. This may be feasible even on a statewide basis, like California, where there is strong support for alleviating an affordable housing shortage and recent changes in the state law that eliminate public hearings for special or conditional use permits. Although the HUD code for manufactured housing could potentially be used to provide a national code for ECHO units, this would further expose ECHO units to zoning restrictions on “mobile” homes.

### **Findings and Recommendations: ECHO Demonstration Program**

The experience under the ECHO demonstration program reflects these constraints, as well as problems associated with operating a small, pilot program. The challenges identified in the demonstration program will need to be clearly addressed before taking the program to a national scale.

Low volume and lack of a proven design resulted in relative high per unit costs and significant variation in quality of the units. All but a few of ECHO units in the demonstration program have been located in rural communities. Most locations have experienced delays in initial occupancy and extended vacancies between occupants. Significant costs are incurred in relocating units. Some units have not been removed after the intended occupant vacated the unit. The extent of the sponsor’s responsibility for restoring sites when units are relocated has not been clear.

#### ***Construction***

The initial construction quality of the ECHO units varies significantly. In Iowa, the units were designed for easy installation and portability and have generally functioned well. In Kansas, the units are not of standard design or size and were not well designed for disassembly, transport and reassembly. Consequently, several vacant units need to be removed from the hosts’ properties. In addition, water heaters are concealed within walls, are difficult to service, and are undersized. In Missouri, units will soon require re-roofing; some units have electrical problems; and drywall is cracking in walls and ceilings. At several demonstration sites, the use of single pane windows, inadequate skirting and un-insulated crawl spaces suggests a low level of attention to energy efficiency and to preventive maintenance. A higher cost for the base unit can be readily justified if it results in reduced costs for maintenance, relocation and repair.

- 1. Standardized unit designs need to be tested for performance. Units should be manufactured by companies that can assure unit quality, portability, and durability. Designs should fully incorporate Fair Housing Accessibility Guidelines and meet the accessibility needs of the targeted population. Design criteria also need to address various geographic and climatic conditions.***

#### ***Installation***

Several problems related to installing units were encountered. The cycle time (or process from start to end) for installation can be very long. Delays related to local permitting and approvals can be anticipated and will remain difficult to correct. However, delays related to

HUD procedures and approvals should be limited. In addition, problems in siting units and connecting units to utilities should be addressed.

- 2. HUD should review internal procedures and sponsor's responsibilities to assure timely installation of units. Sponsors (or HUD field offices) need to have the required expertise to act as general contractors and to properly evaluate and address site problems. HUD should develop standard procedures for installing units, including insulation and access for repairing mechanical and electrical systems.***

### ***Relocation***

Units need to be designed and constructed to reduce the cost of relocation and relocation-related damages to the unit. The frequency and cost of relocation contribute significantly to the expense of the program.

- 3. A national ECHO program should include detailed specifications for portability in the design of units, as well as detailed procedures for relocating units.***
- 4. HUD should consult with the factory-built or modular/manufactured housing industry to identify and incorporate design specifications maximizing portability at the lowest possible cost. Optimum designs should be tested for cost and repair implications with repeated disassembly, transport, and reassembly. Based on a five-year relocation cycle, seven relocations would be required over a 40-year period.***
- 5. An alternative, fixed-location option should be investigated where units are placed in a cluster located to facilitate care-giving by relatives and an on-site manager/caregiver.***

### ***HUD Field Offices***

A full-scale ECHO program will have to establish its own identity within HUD. Field offices should be included in the review and selection of sponsors. Field office personnel will need training in order to monitor performance and to provide technical assistance to sponsors.

- 6. Detailed guidelines and training for HUD field offices will be required to deal with the unique characteristics and challenges of the ECHO program.***

### ***Sponsors***

Sponsors vary significantly in their capacity to operate the program. The Iowa program, which appears to operate at a higher level than others, benefited from the previous real estate experience of the sponsor. In addition, the modular unit used in Iowa was designed for easy installation and portability. The sponsor's director serves as a personal champion for the program. In many ways, the Iowa program represents the fulfillment of the program's potential.

Elsewhere, sponsors have had more serious problems. HUD has transferred management responsibility for two programs to property management firms. The challenges of managing an ECHO program are substantial. Sponsors have a wide range of responsibilities covering

social, fiscal, maintenance, and construction tasks. The skills required of sponsors include social work, communications, construction contracting, site evaluation, property management, and maintenance. For most sponsors, one or two people are responsible for the ECHO program, but few people have the talent to address all of these areas well.

Very few organizations can manage small, scattered properties effectively or efficiently, particularly within a complicated program. Community resistance and the inherent challenges of managing an ECHO program suggest that achieving greater economies of scale will remain difficult.

- 7. Detailed specifications for sponsors should be developed, along with criteria for sponsor selection. Prospective sponsors should document their experience and expertise in all aspects of the ECHO program, including construction contracting, site evaluation, and property management.***

#### ***Residents and Caregiver Hosts***

Despite the numerous challenges and frustrations encountered in the demonstration program, hosts and residents at each demonstration site were pleased overall to have their ECHO units. Full-scale operation will require program materials that clearly communicate the responsibilities of residents and hosts.

- 8. Program materials should be developed to clearly communicate the responsibilities of residents and hosts. These materials should address the land-lease, unit rent, income certification, maintenance, policies and procedures governing property improvements, relocation of the unit and restoration of the site. Host/ caregiver support materials and resources should be developed and distributed.***

#### ***Maintenance and Repair***

Too many units were classified in “fair” rather than “good” condition due to lack of maintenance. Significant deterioration of unit quality can be anticipated without on-going maintenance and repairs.

- 9. Program specifications should address routine (monthly and annual) maintenance schedules and clarify the responsibilities of sponsors and hosts. Policies should clarify the authorization of property improvements performed by the host or tenant, as well as the financial liabilities and obligations of HUD and the sponsor.***

#### ***Financial Feasibility***

The full cost of purchasing and siting the units will have to be covered by a capital subsidy. An additional capital subsidy of approximately \$200,000/unit and a fair market rent of \$353/month, or a fair market rent of \$883/month without the additional capital subsidy, would be required for sponsors to break even in operating the program. Sponsors could still face periodic negative cash flows that would be offset by periodic positive flows, requiring detailed management of reserve accounts.

***10. Financial feasibility requires a capital subsidy covering the complete cost of construction and siting the unit. In addition, a rent subsidy, or equivalent capital subsidy, is needed to underwrite maintenance, relocation, and repair costs.***



**APPENDIX A. ECHO Unit Evaluation Templates (URS Corporation)**

# Property Summary

## HUD ECHO Housing Demonstration Program

### URS / VT Field Assessment Data

Task Order: R-2002-R-0039

Homeowner:	_____	Phone #:	_____
Site Address:	_____	City, State Zip	_____
HUD Representative:	_____	Phone #:	_____
URS Inspector:	_____	Phone #:	_____
GPS Coordinates:	_____ Lat. _____ Long.	Year Constructed:	_____ Age: _____

**1. Indicate the dwelling unit features. Check all conditions that may apply.**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Single wide unit  | <input type="checkbox"/> Original installation                      | <input type="checkbox"/> Modular unit         |
| <input type="checkbox"/> Double wide unit  | <input type="checkbox"/> Unit has been moved from another site      | <input type="checkbox"/> Built on-site        |
| <input type="checkbox"/> Single story unit | <input type="checkbox"/> Unit has wheels attached to under carriage | <input type="checkbox"/> Combination of above |
| <input type="checkbox"/> Two story unit    | <input type="checkbox"/> Other: _____                               |   |

**2. Documentation provided and reviewed:**

- |  |                              |
|--|------------------------------|
| <input type="checkbox"/> Original construction drawings provided | Building code: _____         |
| <input type="checkbox"/> Site survey                             | Site size: _____             |
| <input type="checkbox"/> Tax assessment                          | Dwelling unit size: _____    |
| <input type="checkbox"/> HUD documentation                       | Zoning classification: _____ |
| <input type="checkbox"/> Renovation costs                        |                              |

**3. Utility services:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Public water provided  | <input type="checkbox"/> Public sewer provided  | <input type="checkbox"/> Electrical service overhead    |
| <input type="checkbox"/> Well water provided    | <input type="checkbox"/> Septic system provided | <input type="checkbox"/> Electrical service underground |
| <input type="checkbox"/> Separate pump provided | <input type="checkbox"/> Other _____            | <input type="checkbox"/> Electrical metered separately  |

**4. Dwelling unit modifications during or after original installation:**

- |                                       |                                       |   |
|---------------------------------------|---------------------------------------|---|
| <input type="checkbox"/> None         | <input type="checkbox"/> Room added   | <input type="checkbox"/> Floorplan layout modified - walls, windows, etc. |
| <input type="checkbox"/> Porch added  | <input type="checkbox"/> Deck added   | <input type="checkbox"/> Unit was relocated on site                       |
| <input type="checkbox"/> Canopy added | <input type="checkbox"/> Other: _____ |   |

**5. Flood Plain Status:**

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> 100 year flood plain                     | <input type="checkbox"/> 500 year flood plain | <input type="checkbox"/> Not within flood plain |
| <input type="checkbox"/> Flood plain information was not provided |   |   |

**6. Handicap Accessibility:**

- |  |   |  |   |
|--|---|--|---|
| <input type="checkbox"/> Modifications observed for wheelchair accessibility | <input type="checkbox"/> Ramp added       | <input type="checkbox"/> Door modified                         | <input type="checkbox"/> Cabinets lowered |
| <input type="checkbox"/> Other modifications for accessibility               | Type of disability: _____                 |  |   |
| <input type="checkbox"/> Grab bars added                                     | <input type="checkbox"/> Counters lowered | <input type="checkbox"/> Accessible appliances installed _____ |   |

**7. Special Conditions or Homeowner Modifications:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Property Physical Description**

In each category check all conditions that apply, then circle the predominant material, if applicable.

**1. Parking and walkway surfaces are:**

- Asphalt parking       Concrete parking       Gravel parking       Unpaved parking       Not applicable
- Asphalt walkways       Concrete walkways       Unpaved walkways       Other \_\_\_\_\_       Not applicable

**2. Foundations consist of:**

- Masonry piers       Wood timber piers       Solid masonry walls       Treated wood       Concrete
- Other : \_\_\_\_\_       Slab on grade       Basement       Crawl Space

**3. Structure consists of:**

- Wood frame       Steel / Metal framing       Combination wood / steel framing       Unable to determine
- Other : \_\_\_\_\_

**4. Exterior walls finish consists of:**

- Vinyl       Aluminum       Masonite / hardboard       Wood slat / shingle
- Wood panels (T1-11, plywood, etc.)       Stucco / EIFS       Other : \_\_\_\_\_

**5. Roof system elements consists of:**

- Flat surface       Sloped surface       Gutters       Downspouts       Fabric conopy
- Attic space       Attic with ventilation       Has soffit overhang       Attic is accessible via ceiling

**6. Roof system type consists of:**

- Composition shingles       Built-up system       Single ply membrane       Metal (standing seam, sheet, corrugated, etc.)
- Gravel surfaced       Typical penetrations       Roof warranty not provided but specified as 25 year shingles
- Other : \_\_\_\_\_

**7. Windows and doors consists of:**

- Wood units       Metal units       Vinyl clad wood       Vinly       Sliding patio doors
- Single pane glass       Insulated glass       Other : \_\_\_\_\_

**8. Exterior stairs / steps consists of:**

- Wood frame       Steel / Metal framing       Combination wood / steel framing       Concrete
- Treated wood       Other : \_\_\_\_\_       Not applicable

**9. Interior floor finishes consists of:**

- Carpet       Vinyl tile       Sheet vinyl       Wood       Ceramic tile
- Other : \_\_\_\_\_

**10. Interior wall finishes consists of:**

- Gypsum board       Wood paneling       Ceramic tile       Vinyl       Masonry / stucco
- Other : \_\_\_\_\_

**11. Kitchen appliances consist of:**

- Refrigerator       Not applicable
- Range / Electric       Not applicable
- Range / Gas       Not applicable
- Dishwasher       Not applicable
- Disposal       Not applicable
- Oven       Not applicable
- Microwave       Not applicable
- Exhaust fan       Not applicable
- Other : Ceiling fan \_\_\_\_\_

**Kitchen / bathrooms cabinets consist of:**

- Wood product cabinets       Not applicable
- Metal cabinets       Not applicable
- Plastic laminate surfaces

**Bathroom fixtures consist of: (note size of tub/shower)**

- Tub with shower       Not applicable
- Tub only \_\_\_\_\_       Not applicable
- Shower only \_\_\_\_\_       Not applicable
- Other : \_\_\_\_\_

**12. Other features:** \_\_\_\_\_

**Property Condition Data: Site Elements**

**Site Plan:** Indicate ECHO unit in relation to house. Show site access, North arrow, utility connections and constructed additions. Provide overall unit dimensions.

Homeowner: \_\_\_\_\_  
 Site Address: \_\_\_\_\_  
 HUD Representative: \_\_\_\_\_  
 URS Inspector: \_\_\_\_\_

INSERT SITE PLAN

A	Site Features
Describe any unusual site issues:	

B	Site Condition & Replacements	Condition	Requires Immediate Repair / Replacement	Comments	CAF Footnotes	Photo Reference
1.	Pavement - Parking area	Good - Fair - Poor	Yes - <input checked="" type="radio"/> No			
2.	Sidewalk, Walkways, Decks, Stairs	Good - Fair - Poor	Yes - <input checked="" type="radio"/> No			
3.	Site Drainage System	Good - Fair - Poor	Yes - <input checked="" type="radio"/> No			
4.	Utility System Hookups	Good - Fair - Poor	Yes - <input checked="" type="radio"/> No			
5.	Retaining Walls	Good - Fair - Poor	Yes - <input checked="" type="radio"/> No			
6.	Other: _____	Good - Fair - Poor	Yes - No			
7.	Other: _____	Good - Fair - Poor	Yes - No			

**Property Condition Data: Unit Structure and Exterior**

Homeowner: \_\_\_\_\_  
 Site Address: \_\_\_\_\_  
 HUD Representative: \_\_\_\_\_  
 URS Inspector: \_\_\_\_\_

Percentage of window to exterior wall area in SF: \_\_\_\_\_  
 Exterior wall materials consists of: \_\_\_\_\_  
 Evidence of structural settlement: Yes  No  Settlement type repairs evident: Yes  No   
 Roof materials consists of: \_\_\_\_\_

C	Foundation System	NA	Condition	Requires Immediate Repair / Replacement	Comments
1.	Foundation Repairs - General		Good - Fair - Poor	Yes - No	
2.	Pier Foundation		Good - Fair - Poor	Yes - <input checked="" type="radio"/> No	
3.	Foundation Skirting		Good - Fair - Poor	Yes - <input checked="" type="radio"/> No	
4.	Other: _____		Good - Fair - Poor	Yes - No	
5.	Other: _____		Good - Fair - Poor	Yes - No	

EUL	AGE	RUL	CAF Footnotes	Photo Reference

D	Building Systems	NA	Condition	Requires Immediate Repair / Replacement	Comments	EUL	AGE	RUL	CAF Footnotes	Photo Reference
1.	Roof Repairs - General		Good - Fair - Poor	Yes - No						
2.	Roof Replacement		Good - Fair - Poor	Yes - No						
3.	Gutters and Downspouts		Good - Fair - Poor	Yes - No						
4.	Exterior Walls - Vinyl siding		Good - Fair - Poor	Yes - No						
5.	Exterior Walls - Caulk and Paint		Good - Fair - Poor	Yes - No						
6.	Doors & Windows - Repair		Good - Fair - Poor	Yes - No						
7.	Doors & Windows - Replacement		Good - Fair - Poor	Yes - No						
8.	Other: _____		Good - Fair - Poor	Yes - No						
9.	Other: _____		Good - Fair - Poor	Yes - No						
10.	Other: _____		Good - Fair - Poor	Yes - No						

**Property Condition Data: Mechanical - Electrical - Plumbing**

Homeowner: \_\_\_\_\_

Site Address: \_\_\_\_\_

HUD Representative: \_\_\_\_\_

URS Inspector: \_\_\_\_\_

Floor Plan: Show room layout, electrical panel, meters, water and sewer hookups.



**System Adequacy:**

Yes - No Water pressure is adequate \_\_\_\_\_

Yes - No Electrical service size is adequate \_\_\_\_\_

Yes - No Heating / Cooling equipment is adequate \_\_\_\_\_

Yes - No Sewage waste system is adequate \_\_\_\_\_

E	MEP Systems	NA	Condition	Requires Immediate Repair / Replacement	Comments	EUL	AGE	RUL	CAF Footnotes	Photo Reference
1.	Through-the-wall : AC Units		Good - Fair - Poor	Yes - No						
2.	Split System : HVAC Unit		Good - Fair - Poor	Yes - No						
3.	Electric Resistance Heat System		Good - Fair - Poor	Yes - No						
4.	Fuse / Circuit Breaker Panel		Good - Fair - Poor	Yes - No						
5.	Electrical Service Entry Size		Good - Fair - Poor	Yes - No						
6.	Water Heater (Gas - Electric - Oil fired)		Good - Fair - Poor	Yes - No						
7.	Water Supply Piping		Good - Fair - Poor	Yes - No						
8.	Fixtures: Sink, Tub, Toilet		Good - Fair - Poor	Yes - No						
9.	Other: _____		Good - Fair - Poor	Yes - No						
10.	Other: _____		Good - Fair - Poor	Yes - No						
11.	Other: _____		Good - Fair - Poor	Yes - No				0		

**Property Condition Data: Unit Interior**

Homeowner: \_\_\_\_\_  
 Site Address: \_\_\_\_\_  
 HUD Representative: \_\_\_\_\_  
 URS Inspector: \_\_\_\_\_

- No Water pressure is adequate  
 - No Electrical service size is adequate  
 - No Heating / Cooling equipment is adequate

F	Appliances & Finish Systems	NA	Condition	Requires Immediate Repair / Replacement	Comments	EUL	AGE	RUL	CAF Footnotes	Photo Reference
1.	Refrigerator		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
2.	Range		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
3.	Dishwasher		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
4.	Counters and Cabinets		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
5.	Vinyl Floors		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
6.	Carpeted Floors		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
7.	Wood Floors		Good - Fair - Poor	Yes - No						
8.	Ceramic Tiled Surfaces		Good - Fair - Poor	Yes - No						
9.	Interior Doors		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
10.	Bathroom Accessories		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
11.	Light Fixtures		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
12.	Wall and Ceiling Surfaces		<input checked="" type="radio"/> Good - Fair - Poor	Yes - <input checked="" type="radio"/> No						
13.	Other: _____		Good - Fair - Poor	Yes - No						
14.	Other: _____		Good - Fair - Poor	Yes - No						

**Conditional Rating Definitions:**

Good - New or like new condition  
 Fair - Condition shows indication of normal wear with replacement likely within the next five years  
 Poor - Condition is a life / safety concern or a deficiency that if left not corrected will cause further damage to building component or system

\*\* Immediate Repairs and Replacements should be footnoted with a footnote and photograph reference.

**Legend:**

CAF = Condition Adjustment Factor  
 EUL = Expected Useful Life  
 AGE = Actual age of component  
 RUL = Remaining Expected Useful Life

## **APPENDIX B. Interview Questions: HUD Field Offices**

## HUD Field Office Interview

Participants:

Topic: Process/Post-Award start-up communications

1. I'd like to ask you about the initial process for getting this program started once you were "notified" that you had a sponsor.
2. Were you involved at the time (y/n)?
3. (If person was not involved but is the only one now available). Can you answer questions about the early process based on what you've learned from others who were involved?
4. Once the selection of the sponsor was announced, did the field office review program requirements and regulations with the sponsor?
5. Do you think the initial regulations were clear? Were they adequate for guiding the sponsor? What problems did you detect at this stage of the process?
6. What are the responsibilities of the HUD office with regard to the sponsors?
7. What would you recommend to improve the post-award/start up communication area of the ECHO housing demonstration program?

### Design and Production of Units

1. I'd like to discuss the initial design and production of the units that are being used.
2. Was HUD involved with the sponsor in making design and production decisions?
3. What regulations applied to the design of the units? (see above) Were there any problems with these design regulations?
4. What regulations applied to the construction of units? Were there any problems with these regulations?
5. How were design and construction requirements communicated to the sponsor?
6. Were the design and construction regulations useful?
7. How was the builder selected?

8. What construction specifications were communicated to the builder?  
(refer question to sponsor)
9. Were there any problems with the design of units?
10. Were there any problems with the construction of the units?  
particular site.
11. What would you recommend to improve the design and production of the units of the  
ECHO housing demonstration program?

#### Inspection and acceptance of units

1. Who was responsible for confirming the quality of the delivered unit?
2. Did the field office inspect the units?
3. If not, did HUD provide any technical assistance to the sponsor in evaluating units?
4. (If a consultant was used) Did the consultant report to HUD or to the sponsor?
5. Did the consultant handle the task well?
6. What would you recommend to improve the inspection and acceptance procedures of  
the ECHO housing demonstration program?

#### Approval of clients

1. Who is responsible for approving occupants?
2. Does the sponsor do an annual income certification?
3. Are there any formal requirements or obligations of the host family?
4. Does the sponsor certify the performance of the host family?
5. Have there been any problems in client selection or in the leasing process?
6. How has the sponsor dealt with these problems?

#### Tenant selection

1. What would you recommend to improve tenant selection and lease management?

### Payments of the Units

1. What was the process for paying the builder for the units produced?
2. Was each unit treated as a separate payment or were all the units treated as one payment?
3. Did units have to be placed on an approved site prior to final payment?
4. Were there any problems with the payment process?
5. What would you recommend to improve the payment process?

### Spreadsheet

#### Placement and relocation of units

1. Does HUD provide any technical assistance on the placement or relocation of units?
2. Are there any HUD guidelines for placement or is this left to local government?
3. Are there any problems with the site guidelines for placing units?
4. Are there any other site problems with placing unit?
5. How has the sponsor dealt with these problems?
6. What would you recommend to improve site selection and preparation?
7. How is the mover selected? Are there any builder guidelines for moving units?
8. How are the moving guidelines communicated to the mover?
9. Are there any problems with selecting movers or the guidelines for moving units?
10. Are there any other problems with moving units?
11. How has the sponsor dealt with these problems?
12. What would you recommend to improve relocation of the units? Moving guidelines communicated to the mover?
13. Are there any problems with selecting movers or the guidelines for moving units?

14. Are there any other problems with moving units?
15. How has the sponsor dealt with these problems?
16. What would you recommend to improve relocation of the units?

#### Service Area

1. What is the service area for the ECHO program here?
2. Are there any problems with the service area that impact the operation of the program, such as drainage, solid, steep terrain, or other physical characteristics of the geography that might negatively impact the program?
3. How has the sponsor dealt with these problems?
4. What would you recommend to improve the program in regard to physical characteristics of the service area?
5. What would you recommend to improve the program in regard to local regulatory approval?

#### Consultants

1. Did the sponsor use a consultant to help them implement the ECHO program?  
If so, what was the role of the consultant?
2. What were the main benefits of using a consultant?
3. Have there been any problems with using a consultant?
4. How has the sponsor dealt with these problems?

#### Sponsor Characteristics

1. Did the sponsor have any prior experience with 202 housing programs?
2. Did the sponsor have prior experience in producing or managing housing?
3. Did the sponsor have other real estate experience?
4. Did the size, experience or training of the sponsor's staff present any problems or advantages in implementing the program?
5. How would you describe the management capacity of the sponsor?

6. How would you describe the sponsor's technical capacity in home building?
7. What about property management?
8. What recommendations would you make regarding sponsor characteristics?

#### Maintenance and Capital Improvements

1. How has the sponsor handled maintenance of the ECHO units?
2. Does the sponsor do periodic inspections?
3. Does the sponsor provide any maintenance services?
4. Does the sponsor use in-house maintenance staff or contract with someone else?
5. How is maintenance budgeted?
6. Have there been any problems with routine maintenance of the units?
7. How has the sponsor dealt with these problems?
8. What would you recommend to improve the maintenance of the units?
9. Does the sponsor have a replacement reserve for capital improvements?
10. Is this reserve adequate to offset deterioration of the units?
11. Have any building components or mechanicals needed replacing before its normal useful life?
12. What contributed to the need to replace this earlier than normal?
13. How has the sponsor dealt with these problems?
14. What would you estimate to be the remaining life expectancy of these ECHO units?
15. How old are the units now?
16. Just to make sure, this would make the overall useful life of these units \_\_\_\_\_.  
(current age + remaining life) years
17. What would you recommend to improve the useful life of the units?

If this program were to be offered again nationally, what would you recommit to improve the overall performance?

Is there anything that I have not asked about that you'd like to tell me about this program?



## **APPENDIX C. Interview Questions?: Sponsors**

## ECHO Sponsor Interview

Participants:

Sponsor -

### Sponsor Description

1. Describe your organization
2. How long have you been in business?
3. Describe the scope of your services (other than the ECHO demonstration program)
4. What is your service area? (State, town, etc.)
5. Did you have any experience with operating a HUD program prior to the ECHO housing program? If so, please explain.

### ECHO housing demonstration program application process

Tell me about your board of directors.

Now I'd like to hear about the initial design and construction of the units.

Financial Issues

Consultants

Placement and Relocation

Regulations

What would you recommend to improve the issue of regulatory compliance in the ECHO housing demonstration program?

Collaborations

What would you recommend regarding collaborations to improve performance of the ECHO housing demonstration program?

Current activity

If this program were to be offered again nationally, what would you recommend to improve the overall performance?

## **APPENDIX D. Interview Questions: Hosts**

## Host/Caregiver Interview Questions

Caregiver: \_\_\_\_\_

Resident: \_\_\_\_\_

Age: \_\_\_\_\_

Relationship between resident and caregiver: \_\_\_\_\_

Thank you for agreeing to participate in this interview. I will be asking you several questions about your experience in hosting an ECHO unit.

1. Tell me about \_\_\_\_\_ (the person living in the ECHO housing unit located on their property).

Probes:

Typical day

Physical abilities

Mental/cognitive ability/alertness

Care giving activities/responsibilities

Length of care giving to date

Quality of interpersonal relationship/Get along well?

- 2a. Tell me how you learned about the ECHO program.

Probe:

How first involved

Interaction with sponsor/others

Qualifications for host

Qualifications for resident

- 2b. Were there any problems with placing the ECHO unit on your land?

Probe:

Who involved

Problems with water sewer

Problems with the terrain

3a. What about repairs? Has there been a need for any repairs on the ECHO unit?

Probe:

What were they?

3b. How have the repairs been taken care of?

Probe:

Sponsor responsibilities

Host responsibilities

Inspections

4. Based on your experience, how long do you expect the ECHO unit will last?

5a. Are there any features of the ECHO unit that have made it easier or more difficult for \_\_\_\_\_ to function independently?

5b. Are there any features of the ECHO unit that have made your job as caregiver easier or more difficult?

Probe:

Room layout

Kitchen

Bathroom

Lighting

Materials

Location on site

5c. Can you think of ways the existing features could be improved or any features that could be added?

6. Tell me about your connection and communication with \_\_\_\_\_ (sponsor).

Probe:

During initial process

Since the unit has been occupied

7a. Have you had contact with any of the following agencies since you were involved in the ECHO program? What did they do?

	Yes	No	Role
HUD	___	___	_____
Social Services	___	___	_____
Contractors	___	___	_____
Others?	___	___	_____

7b. How did you worked with them.

Now I'd like to talk about your experience with the ECHO unit and Program

8. Was the ECHO unit what you expected it to be?

9. What do you expect to happen when the unit is no longer needed by \_\_\_\_\_ (resident).

10. How satisfied have you been with the ECHO program?

11a. What impact do you think living in the ECHO unit has had on the quality of life for \_\_\_\_\_ (the resident)?

11b. For you?

12. Would you recommend this program to others looking for a way to care for and support an older relative or other person?

13. What do you think could be done to improve the experience of future participants, and in the ECHO program itself?

14. Is there anything else you would like to tell me about the ECHO unit or program that I have not asked you about?

## **APPENDIX E. Interview Questions: Residents**

## Resident Interview Questions

Resident: \_\_\_\_\_

Caregiver: \_\_\_\_\_

Relationship of Resident to Caregiver: \_\_\_\_\_

Thank you for agreeing to participate in this interview. I will be asking you several questions about your experience living in an ECHO unit.

1. Tell me about \_\_\_\_\_ (the person living in the ECHO housing host house.

Probes:

Relation

Quality of interpersonal relationship

2. Tell me about your health.

Probe:

Chronic illness

Mobility

Mental/Cognitive ability

3. What activities do you participate in?

Probe:

Drive

Housework

Prepare food

Bathe yourself

4. Tell me how you learned about the ECHO program.

Probe:

How first involved

Interaction with sponsor/others

Qualifications for host

Qualifications for resident

5a. What about repairs? Has there been a need for any repairs on the ECHO unit?

5b. What were they?

Probe:

Sponsor responsibilities

Host responsibilities

Inspections

5c. How have the repairs been taken care of?

6. Based on your experience, how long do you expect the unit to last?

7a. Are there any features of the ECHO unit that have made it easier or more difficult for you to function independently?

Probe:

Room layout

Kitchen

Bathroom

Lighting

Materials

Location on site

7b. Can you think of ways the existing features could be improved or any features that could be added?

8. Tell me about your connection and communication with \_\_\_\_\_ (sponsor).

Probe:

During initial process

Since you occupied the unit

9a. Have you had contact with any of the following agencies since you were involved in the ECHO program? What did they do?

	Yes	No	Role
HUD	___	___	_____
Social Services	___	___	_____
Contractors	___	___	_____
Others?	___	___	_____

9b. How did you worked with them.

Now I'd like to talk about your experience with the ECHO unit and Program

10. Was the ECHO unit what you expected it to be?

11. How satisfied have you been with the ECHO program?

12a. What impact do you think living in the ECHO unit has had on your quality of life?

12b. For the host/caregiver?

13. Would you recommend this program to improve the experience of future participants, and in the ECHO program itself?

14. What do you think could be done to improve the ECHO program and process?

15. Is there anything else you would like to tell me about the ECHO unit or program that I have not asked you about?

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## **Zoning Ordinances and Laws**

Code, Town of Babylon, NY. v. 68 Updated 4/15/03 Part 11 General Legislation, Chapter 153 Multiple Dwellings, Article II, Accessory Apartments in One-Family Dwellings [Adopted 6-20-1995 as L.L. No. 14-1995]

State of California Assembly Bill 1866. Chapter 1062, amending Sections 65583.1, 65852.2, and 65915 of the Government Coded. Approved by Governor, September 29, 2002. Filed with Secretary of State, September 29, 2002.

City of Fairfield, California, Zoning Code Chapter 25 Sections 25.20.4.11 Second Dwelling Units.

The Zoning Ordinance of the Town of Fort Kent, Maine. Section 7.3 Elder Cottage Housing Opportunity (ECHO) Units.

Town of Greenwich, Connecticut. Zoning Code Land Use Subsection 6-99 Accessory Housing, Conversion to Accessory Housing, Effective date 6/10/94.

City of Livermore, California. Ordinance Amending the Livermore Planning and Zoning Code as Amended, of the City of Livermore, by Amending Section 3-10-020 Relating to Secondary Dwelling Units. Livermore Planning and Zoning Code Text Amendment #03-324. Draft ordinance prepared April 9, 2003 Approved by City Council on May 5, 2003 as final.

Code of the Township of Montclair, New Jersey. V11 Updated 12-5-2002, Part II General Legislation, Chapter 347 Zoning, Article II General Use Regulations and Conditional Uses. SS. 347-8. Additional dwelling unit for parents. [Amended 7-29-1980 by Ord. No. 80-44]

Model Agricultural Zoning Ordinance, Lancaster County Pennsylvania. Article IV A-Agricultural District Section 402.2 Uses permitted by Special Exception

Commonwealth of Massachusetts General Law Chapter 59, Section 5 Clause 50.

Mercer Island, Washington State. Zoning Code, Section 19.02.030 Accessory Dwelling Units.

County of Mendocino Division II of Title 20—Coastal Zoning Code Chapter 20.458 Second Residential Units, subsections 20.458.005, 20.458.010, 20.458.015, 20.458.020.

County of Nevada, California Zoning Regulations. UDC-II Section L-II 3.19 Senior Citizen and Disabled Housing-Second Dwelling Units, Revised 5/08/01.

Portland, Oregon Zoning Code Chapter 33.205 Accessory Dwelling Units and Alternative Design Density Overlay Zone, Section 33.405.040

Princeton Township, New Jersey. Department of Zoning. Division 3 Miscellaneous Regulations Subdivision 1. Occupancy of Single-family and Semi-Detached Houses. Section 10B-274. Flats.

City of San Carlos, California Ordinance Amending The San Carlos Municipal Code Second Dwelling Units—Chapter 18.114.020 Second Dwelling Units.  
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City of Santa Cruz, California. Santa Cruz Municipal Code, Accessory Units 24.16.100. Ordinance 2002-25 ss1 (part) 2002: ord. 94-31 ss.1 (part) (1994).

City of Santa Rosa, Zoning Code Article 6- Second Dwelling Unit, Draft ordinance. Not yet adopted. Accessed from [www.abag.ca.gov/planning/housingneeds/secondunits.htm](http://www.abag.ca.gov/planning/housingneeds/secondunits.htm) on 5/26/2003.

Wellfleet, Massachusetts. Zoning By-Laws, Section VI, General Regulations, Section 6.21 Affordable Accessory Dwelling Units.