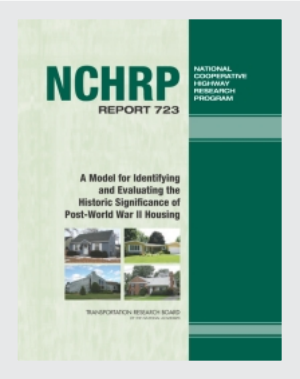

A Model for Identifying and Evaluating the Historic Significance of Post-World War II Housing

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

NCHRP REPORT 723

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

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Amy Squitieri and Emily Pettis served as the co-Project Directors and co-Principal Investigators. Other authors of this report are Christina Slattery and Christine Long of Mead & Hunt and Patti Kuhn, Debra McClane, and Sarah Groesbeck of Louis Berger. Others who contributed to the project include Dusty Nielsen, Shannon Dolan, Rick Mitchell, Sara Gredler, and Carol Roland of Mead & Hunt.

FOREWORD

By Lori L. Sundstrom
Senior Program Officer
Transportation Research Board

NCHRP Report 723: *A Model for Identifying and Evaluating the Historic Significance of Post-World War II Housing* provides state departments of transportation (DOTs) with a model for identifying and evaluating post-World War II (postwar) residences, a national historic context for this type of development, and guidance on developing project-specific historic contexts. This information will enable DOTs and the Federal Highway Administration (FHWA) to effectively and efficiently comply with Section 106 of the National Historic Preservation Act and Section 4(f) of the Department of Transportation Act, setting out a consistent and predictable approach for identifying and evaluating postwar residential resources, thereby reducing costs and ensuring timely project delivery.

This report should be of immediate use to DOT cultural preservation staff responsible for identifying and evaluating postwar residential development as part of the DOT's project delivery process. The report, which contains numerous illustrations and photographic examples of postwar housing, will also serve as an important reference document for cultural preservation professionals.

Vast numbers of postwar houses—located in every American city, town, suburb, and rural area—are either currently more than 50 years old or will soon become 50 years old, and are thus potentially eligible for listing in the National Register of Historic Places (National Register). Because of the passage of time, the number of potentially eligible houses will increase dramatically in the next decade, presenting a major challenge to DOT decision makers and preservation planners. The sheer number and ubiquitous nature of postwar houses, which number in the hundreds of thousands and are present in every state, presents an opportunity to develop a national framework for identifying and evaluating their eligibility for federal protection, thereby minimizing the potentially significant administrative burden for DOTs and State Historic Preservation Offices (SHPOs) that would be associated with conducting the National Register eligibility reviews of every transportation project with the potential to impact these houses.

Under NCHRP Project 08-77, Mead & Hunt, Inc. of Madison, Wisconsin was asked to develop a methodology for identifying and evaluating the National Register eligibility and non-eligibility of postwar single-family housing built between 1946 and 1975 that is or is not part of a planned or unplanned subdivision or neighborhood. They were also asked to develop a historic context for postwar development at the national level, and to field test the model historic context and evaluation methodology in Arlington County, Virginia; Arlington, Texas; and Madison, Wisconsin. The research report also contains a substantial bibliography, a model outline for a regional or local historic context, and the historic context developed for the Arlington County, Virginia, primary test location.

In addition to FHWA, state DOTs, and SHPOs, the results of this research should be of interest to the National Trust for Historic Preservation, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Offices.

CONTENTS

Note: Many of the photographs, figures, and tables in this report have been converted from color to grayscale for printing. The electronic version of the report (posted on the Web at www.trb.org) retains the color versions.

SUMMARY

A Model for Identifying and Evaluating the Historic Significance of Post-World War II Housing

By 1945, the housing backlog that began in the Great Depression and accelerated during the war years had left approximately 3,600,000 families without homes. To address this deficit, new housing starts reached a total of 1,023,000 in 1946, increasing more than threefold over the prior year.[1] As postwar residential construction continued, the number of new houses built in the period from 1946 to 1975 reached over 40 million.[2] Many such houses are now or will soon be more than 50 years old and may be eligible for listing in the National Register of Historic Places (National Register). Pursuant to Section 106 of the National Historic Preservation Act (Section 106), federal agencies must take into account the effects their projects may have on properties eligible for listing in the National Register. As a result, postwar residences are increasingly being considered as part of Section 106 compliance.

To address the challenges faced by cultural resource professionals and decision makers when confronted with this vast number of postwar residences, an effective methodology for survey and National Register evaluation is needed. The NCHRP of the National Academies funded the project to assist departments of transportation (DOTs), State Historic Preservation Offices (SHPOs), and the FHWA in effectively dealing with postwar resources and fulfilling associated compliance requirements under Section 106.

This research project focused on the achievement of the project's objective of developing a practical, consistent, efficient, and useful approach to the identification and evaluation of postwar resources that can be used within the framework of Section 106. The main components of this study include the following:

- Development of a methodology for identification and evaluation of the National Register eligibility and non-eligibility of single-family housing built between 1946 and 1975.
- Preparation of a national context to understand the development of postwar housing and to guide the evaluation of postwar residential types.
- The application and testing of the methodology and national context to three diverse geographic locations (Arlington County, Virginia; Arlington, Texas; and Madison, Wisconsin) to demonstrate its utility. The results of this application were used to refine the methodology for both survey and evaluation presented in this report. These results are not included within this report, but are available on the project website.

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[1] Joseph B. Mason, *History of Housing in the U.S. 1930-1980* (Houston, Tex.: Gulf Publishing Company, 1982), 45-47.

[2] U.S. Census data accessed at http://www.census.gov/const/startsan.pdf on 29 March 2011, and U.S. Census data from 1966 in Barry Checkoway, "Large Builders, Federal Housing Programmes, and Postwar Suburbanization," in *International Journal of Urban and Regional Research* 4, no. 1, March 1980, 23, and reprinted in *Critical Perspectives on Housing.*

The guidance for survey and evaluation builds upon the National Register Bulletin *Historic Residential Suburbs, Guidelines for Evaluation and Documentation for the National Register of Historic Places* to provide efficiencies in the survey and documentation of postwar single-family residences and address the challenges the ubiquity of vernacular homes of that era pose to the evaluation of their National Register eligibility. The most significant component of the survey methodology is a selective survey approach tailored for this resource type that focuses documentation and evaluation efforts on those resources that are more likely to meet National Register Criteria. The methodology recommends the review and documentation of these resources first as components of a potential historic district, since most postwar houses will not meet National Register Criteria individually. For individual resources, documentation and evaluation is limited to those examples of postwar forms and styles that stand out among similar properties. Collectively, this results in a streamlined approach that effectively deals with the large number of similar postwar resources.

The national historic context developed for this study is also a useful tool for state DOTs, SHPOs, the FHWA, cultural resource professionals, and others in understanding the themes and issues that relate to the development and construction of individual houses and postwar neighborhoods and subdivisions. Spanning the period from 1946 to 1975, the contextual information provides the larger national framework within which to place local residences and subdivisions or neighborhoods as they are evaluated on a project-by-project basis. The national historic context also serves as a guide for the development of local historic contexts by identifying themes to consider for local context development.

The survey and evaluation methodology is applicable to postwar residences nationally and provides the opportunity for consistency among state agencies needing to identify and evaluate individual properties and planned subdivisions and unplanned neighborhoods of the period. Use of this methodology by state DOTs will streamline the survey and evaluation process with consistent results across geographic areas. If necessary, the methodology can be tailored to meet individual state requirements while adhering to its overall intent to follow a practical and streamlined approach that recognizes the ubiquity and homogeneity of many postwar residential resources.

CHAPTER 1

Background

As soldiers returned home from World War II, started families, and settled into civilian life, a burgeoning demand for housing could finally be addressed and a residential building boom ensued. A significant rise in auto ownership to three out of every four families in the 1950s that occurred in conjunction with the rise of freeway development facilitated suburban growth away from the city centers.[3] Suburban expansion and home ownership continued in the 1960s and early 1970s, with 66 percent of the population owning their own homes in 1970, compared to only 55 percent in 1950.[4] The suburban environment that developed in the postwar period from 1946 to 1975 represents the fulfillment of the American dream of home ownership. A distinctive landscape emerged comprised of large-scale, self-contained subdivisions with single-family homes often aligned along curvilinear streets. Post-World War II (postwar) houses were also constructed on isolated lots, as infill within earlier neighborhoods, and in small cluster developments with lesser, overall visual impact.

Pursuant to Section 106 of the National Historic Preservation Act (Section 106), the FHWA and state DOTs must take into account the effects their projects may have on properties eligible for listing in the National Register of Historic Places (National Register). State Historic Preservation Offices (SHPOs) are responsible for commenting on eligibility recommendations and project effects. With many postwar houses and suburban developments now more than 50 years old, or coming of age soon, they may need to be considered for eligibility for listing in the National Register for the purposes of Section 106. The magnitude of postwar properties will increase dramatically in the next decade, presenting a major challenge to decision makers. This vast number of postwar residential resources requires an effective framework for determining National Register eligibility.

[3] Peter G. Rowe, *Making a Middle Landscape* (Cambridge, Mass.: The MIT Press, 1991), 5.
[4] Rowe, 5.

The objectives of the research project, as stated in the Statement of Work, are to:

1. Develop a methodology for identifying and evaluating the National Register eligibility and non-eligibility of:
   a. Postwar single-family housing built between 1946 and 1975 that is not part of a planned subdivision or unplanned neighborhood, and
   b. Postwar single-family housing developments built between 1946 and 1975 as a planned subdivision or unplanned neighborhood.
2. Develop a national historic context and a model historic context for a state or region that addresses these types of properties.
3. Apply and test the model historic context in a state or region to demonstrate its utility to state DOTs and SHPOs.

Although some state DOTs and SHPOs have begun to address postwar residential resources through historic context development and evaluation for individual projects, it was recognized that broader direction is needed to guide and support surveys and eligibility assessments. The model context and survey and evaluation methodology presented in this report provide a standard framework for cultural resource professionals to use to judiciously and efficiently evaluate postwar housing. This will result in a streamlined and consistent approach to context development, survey, and evaluation that will benefit future Section 106 compliance efforts. Adoption of the methodological approaches and defined standards presented herein will result in clearer decision making and agency agreement on the eligibility and non-eligibility of these resources.

The project team developed the recommendations in consultation with the research panel appointed by the NCHRP that provided valuable insight, greatly informing the study. The project team consists of cultural resource professionals from Mead & Hunt, Inc. (Mead & Hunt) and the Louis Berger Group, Inc.

CHAPTER 2

Research Approach

The project objective was to develop a historic context for postwar housing and a methodology for identifying and evaluating the National Register eligibility and non-eligibility of single-family postwar residences constructed between 1946 and 1975. This methodology is intended to provide DOTs and other agencies with a consistent approach to evaluating postwar single-family dwellings for Section 106 compliance. A further objective was to find and document efficiencies that could be applied to the survey and evaluation of the vast number of postwar residential resources that exist nationwide.

The focus of the project was placed on traditional and vernacular postwar housing rather than architect-designed houses and subdivisions, as traditional and vernacular properties are more pervasive and pose the greatest challenge to cultural resource professionals. The historic architectural significance of high-style postwar houses, such as those designed by well-known architects Clifford (Cliff) May and William Wurster, can be more easily recognized and available National Register guidance allows such properties to be readily evaluated. However, the ubiquity of vernacular postwar housing and absence of standard stylistic nomenclature or historic contexts provides significant challenges to the evaluation of National Register eligibility for both individual houses and districts.

A. Development of Project

The project included five phases that informed the final recommendations and built upon each other, including the following:

- Phase I—Literature review: The first phase involved the development of a bibliography of sources related to postwar residential development.
- Phase II—Survey and evaluation methodology: The second phase was the development of an outline for the national historic context and the draft methodology to address the identification, evaluation, documentation, and registration requirements for postwar residences.
- Phase III—Model context: The third phase included the development of two historic contexts: a national historic context and a model regional context.
- Phase IV—Test of methodology and model context: The fourth phase was the field test of the survey and evaluation methodology and application of the model context.
- Phase V—Final report: The final phase involved addressing panel comments, applying test results and assembling the bibliography, methodology, context, and survey and evaluation recommendations into the final report.

Key components of these five project phases are discussed in detail below as they apply to the development of this project and the final recommendations.

The context and survey and evaluation methodology were developed to conform to the requirements contained in the Code of Federal Regulations at 36 CFR Part 60 and relevant National Park Service (NPS) guidance, including the following:

- *How to Apply the National Register Criteria for Evaluation;*
- *Historic Residential Suburbs: Guidelines for Evaluation and Documentation for the National Register of Historic Places;*
- *Guidelines for Evaluating and Nominating Properties that Have Achieved Significance Within the Past 50 Years;*
- *How to Evaluate and Nominate Designed Historic Landscapes;*
- *How to Complete the National Register Registration Form;*
- *How to Complete the National Register Multiple Property Documentation Form; and*
- *Defining Boundaries for National Register Properties.*

During a crucial phase of the project, the methodology was tested in three demonstration areas to identify the practicality of its use in future day-to-day practice. In one primary demonstration area, the testing included preparation of a regional historic context and application of the survey and evaluation

methodology in the field. Three neighborhoods in Arlington County, Virginia, were selected as the primary demonstration area: Virginia Heights, Nauck, and East Falls Church. These locales exemplified the challenges faced during many DOT projects requiring surveys of postwar residences, including the following:

- Distribution of postwar housing within planned and unplanned neighborhoods;
- Proximity to major transportation corridors;
- Housing variations, including a variety of styles and sizes; and
- Social, ethnic, and economic diversity of the neighborhood.

Additional criteria used in the selection of the primary demonstration area included the availability of reference materials applicable to postwar housing in Arlington County and the cooperation of the state DOT and SHPOs.

In order to test the survey and evaluation methodology for its appropriateness nationwide, two secondary test areas in distinctly different parts of the country were selected: Madison, Wisconsin, and Arlington, Texas. Neighborhoods in these two areas were selected because they also contained many of the features described previously. The Madison, Wisconsin, test included the Marlborough Heights and Golf Green neighborhoods and a small cluster of postwar houses in an area of isolated rural development. The Arlington, Texas, test included the Northcrest Park and Fielder Place neighborhoods.

The application of the survey and evaluation methodology in three geographic areas helped the project team meet the project goal of final products that are broadly applicable to all regions of the country. Information learned from the application of the methodology to the demonstration areas was used to refine the approach and shape the final recommendations. It also provided valuable insight to the project team and panel on key refinements to the methodology that allowed for further streamlining and standardization of the approach.

B. Overview of Historic Context

The initial phases of the project focused on the development of a national historic context and a regional model context for the primary demonstration area. Extensive research was conducted to support the development of the contexts that focused on relevant themes to the postwar period, including government, community planning and development, transportation, social history, and architecture. Primary and secondary sources were supplemented with a review of previously prepared historic contexts, National Register Nominations and Multiple Property Documents (MPDs), and survey results from studies of postwar housing. Research materials were also informed by suggestions received from research panel members. See Appendix A for a bibliography outlining sources consulted.

Based on research and identified themes, a model context outline was prepared to guide development of the national historic context and the primary demonstration area model historic context. This outline can guide the future preparation of local or regional historic contexts. Cultural resource professionals may use the outline as a basis for developing project-specific historic contexts to assist in the evaluation of postwar resources in their particular project location. The model context outline is included in Appendix B of this document.

Following research and outline development, the national historic context was prepared. This context compiles information about resources that share a common theme and time period, in this case single-family residences built from 1946 to 1975. It provides the framework for understanding the social, economic, governmental, and political influences on the development of these resources nationally. The national context describes the overall development of housing during the postwar period and covers national trends that influenced postwar residential development. Popular architectural forms and styles of the period, including their character-defining features, are included in this national context. The national framework is expected to ease the process of future context development at a local or regional level by providing the major themes, trends, development patterns, and architectural styles and forms of this era. The national historic context is included in Chapter 4 of this document. A glossary of terms and list of abbreviations used in the context and throughout the report is included in Appendix C.

The historic context for the primary demonstration area of Arlington County, Virginia, serves as a model for the future development of a local or regional historic context that would be sufficient to guide identification and evaluation efforts at the level that is typically expected for a transportation improvement project. The model context developed for Arlington County, Virginia, is included in Appendix D. This model context presents the various types of developers active in the county, common methods of subdivision, and the architectural character of period resources.[5] The development and subsequent use of this context assisted the project team in recognizing areas of transition between different subdivisions, identifying housing forms and styles, and identifying alterations to individual postwar resources and neighborhoods. The model historic context greatly benefited the field survey by providing surveyors with detailed

[5] It should be noted that the Arlington County context covers a large geographic area that experienced significant growth and development during the postwar period. Therefore, this context is more detailed than would be expected for a typical project-specific context.

background on the development patterns that occurred in Arlington County during the study period. Professionals can use this model context as a guide for the future development of a local or regional historic context conducted for a DOT-sponsored compliance survey, keeping in mind that the geographic reach of the context should be appropriate for the resources that may be affected.

C. Survey Methodology and Field Test

A survey methodology was developed to provide guidance for the identification and evaluation of postwar residences and neighborhoods. Although the requirements for survey documentation standards vary from state to state, the methodology focuses on the appropriate and needed level of documentation for ubiquitous postwar residential resources and is tailored to address their specific eligibility evaluation. To develop the methodology, the project team reviewed relevant National Register Bulletins, National Register Nominations and MPDs, and a variety of previously completed postwar compliance and community survey reports (see bibliography for details). These sources were used to identify successful and efficient survey and evaluation approaches that became the basis for the recommended methodology.

The methodology addresses steps commonly completed in the efficient conduct of compliance surveys: preparation, identification, historic context development, evaluation, and documentation. It is intended to guide cultural resource professionals with survey of both individual postwar homes and districts of related resources. The project preparation step provides guidance for preliminary research, initial context development, and project coordination for compliance surveys. The identification step focuses on the reconnaissance survey and field review methods for individual residences, neighborhoods and subdivisions and the completion of survey documentation. The methodology focuses on a selective survey approach that includes the review of all properties in the field with documentation completed for those postwar residences and neighborhoods that have the most potential to be recommended eligible for the National Register. The historic context step addresses development of an appropriate historic context for use in evaluating National Register eligibility. The evaluation step discusses application of National Register Criteria to individual properties and potential historic districts and assessing integrity. Finally, the documentation step outlines survey reporting procedures to present historic context and evaluation results.

The methodology was applied to the reconnaissance-level field survey of three geographic areas, including the primary demonstration area of Arlington County, Virginia, and two additional test areas: Madison, Wisconsin, and Arlington, Texas. The results of the application of the methodology were generally favorable; however, some areas for improvement were identified. For example, the initial survey methodology resulted in the documentation of many individual resources that were similar in appearance and therefore did not result in a streamlined approach. In particular, the survey methodology led to the documentation of a large number of houses that retained sufficient integrity to warrant survey but were not distinguishable from one another and had no potential to be recommended eligible for listing in the National Register. The documentation of many similar resources did not assist in assessing their eligibility because it did not allow the survey team to distinguish between examples of a particular form or style. As a result, the survey methodology was refined to provide more stringent documentation criteria for individual resources. The method for documenting neighborhoods or groups of related resources was not changed as a result of this test. Another improvement to the survey methodology was the improved definition of forms and styles, including character-defining features and architectural elements for each. The final survey methodology is included in Chapter 3.

Through the utilization of the refined methodology, the survey team collected enough data during field survey efforts to make informed eligibility recommendations. Districts were considered and documented as a group of resources without the need for individual records for every building. Individual resources were selectively documented based on the application of the survey criteria, resulting in appropriate property records.

D. Evaluation Methodology and Results

The evaluation methodology follows the format of the National Register Bulletin *Historic Residential Suburbs, Guidelines for Evaluation and Documentation for the National Register of Historic Places (Historic Residential Suburbs)* and provides guidance for how to determine if individual properties and subdivisions or neighborhoods are eligible or not eligible for listing in the National Register.[6] The evaluation methodology includes case studies to illustrate the evaluation process, including examples of eligible and not eligible resources. The evaluation methodology is presented in Chapter 3.

For the primary demonstration area and the two test areas, individual properties and potential historic districts identified during the field survey efforts were evaluated for National Register eligibility using the developed evaluation methodology. The project team presented the survey and evaluation

[6] David Ames and Linda Flint McClelland, *Historic Residential Suburbs, Guidelines for Evaluation and Documentation for the National Register of Historic Places* (Washington, D.C.: National Park Service, 2002).

results to the state DOTs and SHPOs following each state's established reporting procedures. The DOTs and SHPOs provided feedback regarding the use of the methodology and the resulting eligibility recommendations. This input was considered and incorporated into the final recommendations.

Through the field test and feedback from the research panel, the survey team determined that the evaluation methodology provided an adequate framework for assessing eligibility. The team also noted that it is important to have a historic context in which to evaluate the significance of the resources. This observation was based on their experience in finding the developed historic context to be a valuable tool in the evaluation of the surveyed resources. The historic context for Arlington County, Virginia, assisted in the application of the evaluation methodology to surveyed resources and informed the eligibility recommendations. For the two additional test areas, the application of the evaluation methodology was more challenging because of limited available historic context information. Development of a historic context was not part of the project scope for these two secondary test areas, and its absence was notable. The trends and patterns of postwar development for these areas was not understood fully and, in both cases, a city-wide context would have allowed for a better understanding of the development patterns and comparative examples. This would have resulted in a stronger case for evaluation recommendations and more consistent results.

The documentation of the field survey and results of the application of the survey and evaluation methodology to the primary demonstration area and the additional test areas is available online at the NCHRP project website.

E. Conclusion

The testing in various geographical locations and response from panel members regarding the results confirmed the variability in current practices for survey and evaluation nationwide. Practices vary greatly from a selective survey approach that only documents properties that meet survey criteria, as recommended in this study, to the documentation of every building greater than 40 years old regardless of architectural or historical interest or integrity. Regardless, this study's recommended survey and evaluation methodology, presented in the following chapter, is applicable to postwar residences nationally. The methodology presented herein can be modified or tailored to meet individual state requirements while adhering to its overall intent to follow a practical and streamlined approach that recognizes the ubiquity and homogeneity of many postwar residential resources. As identified in this project, some states may not be initially comfortable with the selective survey approach and may request additional documentation. Suggestions regarding supplemental documentation are also outlined in Chapter 3.

CHAPTER 3

Guidance for Survey and Evaluation

A. Introduction

The survey and evaluation methodology for postwar single-family residences is intended to guide state and federal agencies needing to identify and evaluate individual properties, neighborhoods, and subdivisions built between 1946 and 1975. Use of this methodology by state DOTs provides for a streamlined and efficient survey and National Register eligibility evaluation process with consistent results across geographic areas. As many state DOTs and SHPOs have specific survey and evaluation requirements, this document should serve as a tool rather than a prescribed requirement, unless approved by the project sponsor.

Building upon the guidance of National Register Bulletin *Historic Residential Suburbs,* this methodology provides efficiencies in the survey and documentation of postwar single-family residences and addresses the challenges that the vast number of vernacular homes of the era pose to the evaluation of National Register eligibility of both individual houses and districts. In addition to being informed by this Bulletin, the survey and evaluation methodology adheres to the following:

- The requirements contained in the Code of Federal Regulations at 36 CFR Part 60
- Relevant NPS guidance, including:
  - *How to Apply the National Register Criteria for Evaluation,*
  - *Guidelines for Evaluating and Nominating Properties that Have Achieved Significance Within the Past Fifty Years,*
  - *How to Evaluate and Nominate Designed Historic Landscapes,*
  - *How to Complete the National Register Registration Form,*
  - *How to Complete the National Register Multiple Property Documentation Form,* and
  - *Defining Boundaries for National Register Properties.*

The NPS guidance recommends the following standard process: identification, evaluation, and documentation (which may include registration in the National Register if that is the intended result). Although development of a historic context is included within the identification and documentation steps within the NPS standard, it is presented as a separate step in this methodology, which is organized around the following five major steps to accomplish the survey and evaluation of postwar properties:

1. Project preparation—Including project scoping, preliminary research, initial context development, and project coordination.
2. Identification—Including guidelines for the survey of individual postwar residences, as well as neighborhoods and subdivisions and recording field survey data.
3. Historic context development—Addressing development of the historic context for use in evaluating National Register eligibility; focused research is often completed at this stage.
4. Evaluation—Including applying the National Register Criteria to individual properties and potential historic districts and assessing historic integrity.
5. Documentation—Including reporting procedures to present the historic context and survey and evaluation results.

Accepted practice for transportation compliance projects adds a preparation step at the front end of the methodology to coordinate with and address project sponsor needs; it also typically excludes registration as an end result. For efficiencies created by focused research and reporting, as well as practicalities of scheduling, historic context development for a compliance project usually occurs after the identification of properties in the field.

Although this methodology is intended for survey and evaluation of postwar resources for transportation-related projects, it may also be applied to other survey efforts addressing single-family residences from this era. It should be noted that subdivisions and neighborhoods may contain multiple-

family residences and non-residential properties, such as schools and churches, which should also be considered for survey and evaluation as components within the subdivision or neighborhood. The national historic context included in Chapter 4 will assist in understanding such properties; however this report as a whole, as well as the specific methodology, is directed toward postwar single-family residences.

B. Project Preparation

1. Identify Survey Requirements

Prior to commencing fieldwork efforts, it is important to review survey parameters and required survey documentation with the project sponsor. For the purpose of this document, the project sponsor is considered the lead agency responsible for fulfilling the obligation of compliance with Section 106 of the National Historic Preservation Act (the implementing regulations are contained in the Code of Federal Regulations at 36 CFR Part 800). For most transportation-related projects, the project sponsor will be the state DOT. The SHPO and/or FHWA may have oversight of the project depending on a state's delegation arrangements. Many DOTs and SHPOs have survey manuals that prescribe survey methodology and documentation standards and some may have specific guidance applicable to postwar resources. Accepted methodologies within a state and the needs and requirements of the project sponsor should be considered in determining how to apply the guidance provided in this document.

For example, DOTs and/or SHPOs may require surveyors to create or modify existing database records for surveyed properties or prepare inventory forms following a set format. Surveyors should work with the project sponsor to obtain the required inventory forms or database, confirm how the final survey data will ultimately be delivered, and understand the requirements for any supplemental materials, such as maps and photographs. Although the NPS offers digital photographic guidance, photograph requirements for survey projects still vary between states. Surveyors should coordinate with the project sponsor to determine digital photo standards, including image quality and size, and how to submit files. In some cases, black-and-white photographic prints may still be required, and coordination with the project sponsor should occur to identify a qualified film processor. Understanding these project sponsor survey requirements will allow surveyors to gather necessary and relevant data in the field.

2. Project Scoping

Prior to undertaking a survey of postwar residential properties, it is important to review the project area and gain an understanding of potential resources. It is also important to coordinate with the project sponsor to determine the Area of Potential Effects (APE), which will assist in defining the survey area.

Once the APE is established, it is important to review aerial and street maps, often available online, to orient and understand the overall spatial relationships of properties within the APE and the immediate area. This review will help to identify potential historic resources, groups of buildings, street and development patterns, and subdivisions or neighborhoods that may extend beyond the APE. The APE may be refined in the field, when considerations such as deep setbacks, viewsheds, topography, and the overall setting are taken into account. However, any refinements to the APE should be confirmed with the project sponsor.

3. Preliminary Research

Once project scoping is complete and before commencing field survey, it is important to conduct preliminary research. Having an understanding of the general history and development patterns of the survey area, as well as the historic and current boundaries of neighborhoods and subdivisions, is critical and will inform survey efforts. Research prior to fieldwork may also reveal potential National Register *Criterion A* associations, such as postwar industrial expansion that resulted in large-scale housing developments or groupings of prefabricated residences constructed in a community. Municipalities, universities, state and local libraries, and historical societies may have digitized information that is available online. Other sources of information may include the following:

- DOT project files, including survey reports for similar or comparison properties or survey areas.
- SHPO site files, including records for previously surveyed properties, historic contexts, maps, and photographs.
- Historic and current maps and aerial images of the survey area, which may be used to identify development patterns and subdivision dates. A comparison of historic and current aerial images can show changes in land use and infill development.
- Tax parcel information on the assessor's website, including construction dates, names of builders and/or developers, and plat maps, which may focus future research efforts.
- County and community histories and information on local neighborhood associations.
- Available Geographic Information Systems (GIS) data, which may provide a predictive tool for the field survey. For example, a review of available data may determine concentrations of modern infill development that may be eliminated from consideration for survey.

Preparing a research design can help set the objectives and goals for the survey. The research design may vary based on

the requirements of the project sponsor, but at a minimum, should include the following:

- Purpose and goals of the survey;
- Description of the APE and survey area;
- Summary of preliminary research results for the project area, with preliminary context statement including potential *Criterion A* associations;
- Identification of any previously surveyed and/or evaluated historic properties;
- Survey methodology, including documentation standards and deliverable requirements; and
- Project schedule.

Some states require the project sponsor to approve a research design. The results of the preliminary research, including the research design, serve as a basis for focused research that is completed after field survey efforts. See Section D for guidance regarding focused research efforts.

The following case study demonstrates how preliminary research and review of historic plat maps assisted with identification and subsequent evaluation of a postwar neighborhood of prefabricated homes in Mason, Michigan. The Northbrook Farms Subdivision, platted and developed by the Kessler Construction Company in 1959 and 1960, was identified during reconnaissance-level survey efforts for a transportation compliance project. Twelve homes were adjacent to the proposed transportation project and 38 extended beyond the APE. Review of historic neighborhood plat maps and targeted preliminary research indicated that the subdivision was originally planned to include 260 prefabricated Harnischfeger homes built in increments of 50 units, a shopping center, city park, and neighborhood swimming pool. However, only 50 of the homes were erected by Kessler, and the shopping center and other subdivision amenities were never executed. Although the existing homes retain many of their character-defining features, research efforts determined that the subdivision, as a whole, is not a significant representation of the community planning trends of the postwar period in the greater Lansing area, particularly because the subdivision was not fully executed as planned and infill development has occurred throughout the plat. Other planned neighborhoods in the area better represent this trend in postwar residential development. As a result, it is not eligible for listing in the National Register and intensive-level survey and evaluation were not necessary. Figure 1 shows one of the Harnischfeger homes in the subdivision.

Figure 1. A prefabricated Harnischfeger residence erected c.1960 in the Northbrook Farms Subdivision in Mason, Michigan (Mead & Hunt photograph).

C. Identification

The period between 1946 and 1975 was the most productive period in American history in terms of overall housing construction. Various architectural forms and styles were introduced and utilized in this period. In some cases the postwar house is defined by its form alone, and in other cases it is better described and classified by the style applied to the form. In this report, the term "form" refers to the overall house type as defined by its massing, layout, and shape, while the term "style" refers to the decorative elements and materials that are applied to exemplify a particular architectural style. House forms may or may not include stylistic details. The national historic context in Chapter 4 discusses architectural forms and styles and their character-defining features, and provides more detailed information regarding the forms and styles discussed in this methodology. These classifications inform the survey methodology as they help to identify postwar residences for field survey.

Reconnaissance-level survey, also referred to as a Phase I survey, records properties at a base-level without intensive-level research. The majority of data collected at the reconnaissance-level is from field review of property exteriors. Reconnaissance-level survey records properties that are representative of the period and provides a context for the overall types of resources in a community. Reconnaissance-level survey is not limited to properties that meet the National Register Criteria but should be informed by an understanding of these criteria. This section provides guidance for conducting a reconnaissance-level survey. Intensive-level survey, also referred to as Phase II Evaluation or a Determination of Eligibility, involves more in-depth review and research and typically results in a recommendation regarding the National Register eligibility of an individual property or grouping of related resources.[7] Section E provides guidance for evaluating National Register eligibility.

Two approaches are provided to streamline the reconnaissance survey process. The first approach consists of document-

[7] Although eligibility recommendations are often made by the surveyor, the eligibility decision is made by the project sponsor or lead federal agency.

ing concentrations of similar properties as a single group or potential district. This approach works best in an area that developed as a planned subdivision or within a neighborhood where homes were constructed during the postwar period and display similar forms, massing, and materials. The second approach is the selective survey of individual properties that are not part of a grouping and have the most potential to be eligible for the National Register. This methodology for individual properties allows for selective documentation of properties that meet a minimum threshold, which is based on the exterior appearance and retention of a degree of integrity and character-defining features. This selective approach works best in areas that did not develop as a single planned subdivision or neighborhood, including infill development in older neighborhoods, postwar neighborhoods with little or no architectural cohesion, and isolated rural postwar residences. Section C.1 provides the survey methodology for documenting neighborhoods and subdivisions. Section C.2 provides the survey methodology for documenting individual properties, as well as recommended approaches for documenting properties in the APE that do not meet the selective survey criteria where required by a project sponsor. It is important to confirm these methodologies with the project sponsor.

1. Survey Methodology for Subdivisions and Neighborhoods

To streamline the survey and documentation process, concentrations of similar properties identified during preliminary research efforts should be surveyed as a group rather than as individual resources since they are recommended to be evaluated collectively as a potential historic district.

Reviewing aerial photographs, plat maps, and tax parcel data gathered in the preliminary research phase will assist with the identification of these groupings and delineation of boundaries for survey. For example, review of a subdivision plat or aerial photograph may assist in determining if properties within the APE are located within a large planned development or unplanned neighborhood that experienced slow development. A review of the plats and aerial photographs may also help determine if a large portion of a subdivision was not developed as originally planned, modern development has occurred within the initial plat, or community resources of the postwar period, such as a park or public pool, are no longer extant. Understanding the extent of the original plat or neighborhood development patterns will assist in identifying if the field review will need to extend beyond those properties in the project APE to identify and document the full extent of the overall grouping, which may comprise a potential historic district.

a. Recording Field Survey Data

To complete a reconnaissance-level survey of a grouping of postwar homes, surveyors will need to document the overall characteristics of the subdivision or neighborhood, as well as representative examples of properties within the overall grouping. This methodology provides a way to classify and document the variety of architectural forms and styles present in a neighborhood or subdivision. The following options may be used to identify resources for classification purposes:

- Forms/styles—Classification by architectural style or form works well in areas where a variety of styles and forms are present. This allows for the documentation of representative examples of styles and forms along with providing general information related to the overall number and use of materials. The guidance in the selective survey approach for individual properties in Section C.2 may be used to assist in identifying examples of styles and forms that retain a degree of integrity as well as character-defining features, which would serve as representative examples within the grouping.
- Variations within forms/styles—In areas with a large number of homes representing a single form or style, variations within the form or style may allow for classifying resources. For example, in an area with a high concentration of two-story Colonial Revival homes, properties could be classified by exterior cladding materials, such as clapboard or brick veneer. In the case of similar Ranch homes, the roof form (side gable or hip) or exterior cladding could serve as a distinguishing factor. In this case, representative examples of these variations should be documented.
- Prefabricated models—In subdivisions or neighborhoods comprised of prefabricated homes, identification of the housing model allows for a way to classify these resources. For example, many prefabricated home companies produced a variety of floor plans and exteriors. In the case of Wisconsin-based Harnischfeger Homes, two standard models were available in a 1955 catalogue: the side gable model and the hip roof model.[8] Although both models allowed for variations in the interior floorplan, square footage, and exterior materials, the exterior roof forms are an easy way to classify these similar prefabricated homes for survey and documentation purposes.

During field survey efforts, surveyors will collect data to support evaluation and documentation efforts, which are outlined in Sections E and F of this chapter. At a minimum, the

[8] P & H Homes, Plans for Better Living . . . P&H Homes (Post Washington, Wis.: Harnischfeger, 1955).

following should be recorded in the field for a concentration of postwar residences, including subdivisions and neighborhoods that are being documented as a group:

- Overall architectural styles and forms, construction dates, materials, setbacks, and distinguishing features identified in the grouping; this could also include identification of representative examples of styles/forms and variations or models, as described herein.
- Circulation patterns, including streets and sidewalks.
- Green spaces, vegetation, and landscape features, or lack thereof.
- Associated resources, such as parks, pools, community buildings, schools, churches, and commercial areas, or lack thereof.
- Representative photographs of residential properties, streetscapes, and associated resources to convey styles and forms, setback, cohesion, landscapes, and other distinguishing elements.
- Preliminary recommendations for contributing and noncontributing status, which will assist in determining if a grouping may qualify as a historic district. This may be presented in a table format with additional information, including addresses and construction dates.
- Preliminary subdivision/neighborhood boundaries based on aerial photographs, plat maps, and field observations (see Section E.9 for more information regarding defining historic boundaries).

Due to the relatively recent construction dates of postwar residences, property owners may be familiar with the construction history of the neighborhood. Fieldwork may offer an opportunity to discuss the properties with owners (to confirm the construction dates); builders, architects, or developers; and associations with historic events or trends.

Within potential historic districts, surveyors may also elect to apply the selective survey methodology (described in more detail in Section C.2) to individual properties within the larger group, allowing for more detailed documentation of the most intact examples in the larger grouping. This combined approach would allow for documentation of the group and those individual properties that retain both integrity and character-defining features and may be considered for individual National Register eligibility.

b. Application of Methodology to Groupings

The following case studies show how concentrations of postwar homes within an unplanned neighborhood and a planned subdivision, which are located in the APE for a compliance project, should be surveyed and documented.

A postwar neighborhood in St. Louis Park, Minnesota, includes approximately 350 Minimal Traditional and Transitional Ranch homes constructed between 1945 and 1950. The neighborhood is comprised of several 1910s and 1920s plats that were not developed until the community experienced rapid growth beginning in 1945 due to its proximity to the city of Minneapolis. A large number of small-scale developers purchased lots and constructed modest homes, using similar forms and materials. Although not a planned subdivision, the neighborhood developed within a fairly short period on the traditional grid layout, with homes that display similar forms, massing, and setbacks. Lot sizes and layouts are similar throughout the neighborhood and it is not possible to differentiate between the plats in the field.

Approximately 100 homes are located immediately adjacent to a transportation corridor and within the project APE. Rather than conducting an individual survey of these 100 homes, surveyors should apply the methodology that allows for documentation of the overall neighborhood as a grouping. One record that documents the group should be prepared rather than individual records for the 100 resources in the APE. This streamlines documentation efforts and allows for evaluation of the group as a potential historic district.

Because two popular postwar forms are represented, the documentation should identify intact examples of these forms. In addition, variations within the Minimal Traditional form, such as different roof forms, are present. Figures 2, 3, and 4 depict the different forms identified in the APE. The representative examples of Minimal Traditional and Transitional Ranch homes should be discussed in more detail in the survey documentation, with photographs keyed to maps. In addition,

Figure 2. Intact c.1945 house in the postwar St. Louis Park, Minnesota, neighborhood. This residence represents the Minimal Traditional form with a side gable roof and prominent gable above the entrance. The house retains the original footprint, wood shingle siding, and double-hung windows (Mead & Hunt photograph).

Figure 3. Intact c.1945 house in the postwar St. Louis Park, Minnesota, neighborhood. This residence represents the Minimal Traditional form with a side gable roof. The house retains the original footprint, wide-lap wood siding, and double-hung windows (Mead & Hunt photograph).

surveyors should record data on the overall neighborhood for use in the evaluation and inclusion in the survey documentation, including the presence of schools, parks, or other amenities. Streetscape images showing the general setback, massing, and relation between the houses should be incorporated into the documentation (see Figure 5).

The Maenner South subdivision in Omaha, Nebraska, was developed by Theodore H. Maenner, a prominent developer, between 1953 and 1955. Figure 6 is the original subdivision plat filed in 1953. The 64 lots in the addition feature prefabricated Gunnison Homes (see Section G.3 in Chapter 4 for more information on Gunnison Homes). The homes display the same

Figure 4. Intact c.1950 house in the postwar St. Louis Park, Minnesota, neighborhood. This residence represents the Transitional Ranch form. The house retains the original footprint, wide-lap wood siding, and double-hung windows, which are partially obscured by modern storm windows (Mead & Hunt photograph).

Figure 5. Streetscape image showing a number of Minimal Traditional homes in a postwar neighborhood in St. Louis Park, Minnesota. This image should be incorporated into survey documentation to show the overall similarity of the resources massing, setback, and materials (Mead & Hunt photograph).

form and massing, but a number have experienced alterations, including additions, replacement siding, and altered fenestration, such as downsized and replacement windows.

Fifteen homes are located along 40th Street, adjacent to a highway improvement corridor and considered to be within the project APE. Rather than individual survey of these 15 homes in the APE, the survey methodology allows for documentation of the entire plat as a grouping, including those properties that extend beyond the APE. This eliminates individual documentation efforts and provides a single survey record and streamlines the effort to evaluate the grouping as a potential historic district.

As the homes are prefabricated rectangular side gable residences with minimal fenestration variations, no particular form or model stands out and documentation may be limited to those properties that retain the original massing and exterior materials. In this case, surveyors should select those homes that retain massing, siding materials, and fenestration for documentation. An example of one such house is depicted in Figure 7. These properties should be discussed in more detail in the survey documentation, with photographs keyed to maps. The documentation should also include a discussion of alterations within the district, including specific examples illustrated with images. In addition, surveyors should record data on the overall neighborhood, including schools or green spaces, for use in the evaluation and inclusion in the survey documentation. Streetscape images showing the general setback, massing, and relation between the houses should also be incorporated into the documentation (see Figure 8).

2. Selective Survey Methodology for Individual Properties

The selective survey methodology of individual postwar residences allows for a streamlined identification process by

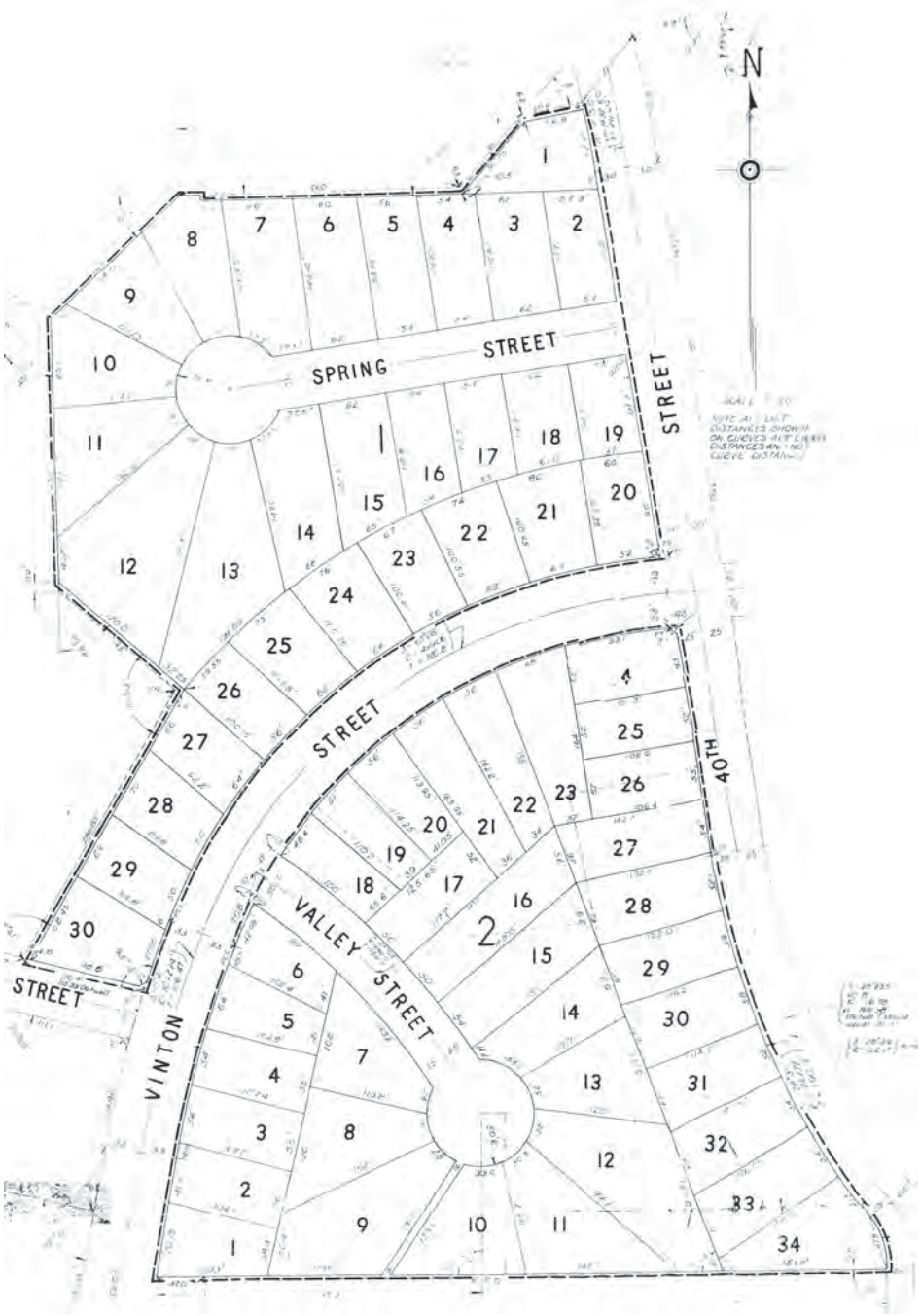

Figure 6. Maenner South Plat, filed by T. H. Maenner, Inc. in August 1953 and recorded by the City of Omaha, Nebraska, in September 1953 (available at http://webarc.co.douglas.ne.us/Plat-new/PLAT_00067987.pdf).

documenting only those examples of postwar residences that retain a degree of integrity and display character-defining features, thereby having the potential to be eligible for the National Register. This eliminates blanket survey of numerous resources that do not display historic integrity or characteristic features. As previously stated, this selective approach will work best for areas that did not develop as a single planned subdivision or unplanned neighborhood, such as infill development in older neighborhoods, postwar neighborhoods with little or no architectural cohesion, and isolated rural residences.

The selective survey approach requires all properties within the APE to be surveyed, or looked at, in the field. However,

Figure 7. Gunnison house in the Maenner South Addition in Omaha, Nebraska. As one of the most intact of the similar prefabricated c.1955 homes in this addition, it serves as a representative example for the survey documentation (Mead & Hunt photograph).

only those individual properties that meet the criteria outlined below are documented as a result of the survey effort. Properties that display significant exterior alterations may be excluded from documentation because they do not retain the historic integrity necessary to convey significance. Likewise, individual properties that do not possess character-defining features may be excluded from documentation because they do not have potential to be eligible for the National Register.

The survey criteria, outlined herein and organized by forms and styles, was developed by identifying the exterior character-defining features and architectural elements of common postwar residential forms and styles. Character-defining features are defined as prominent or distinctive aspects, qualities, or characteristics of an architectural style or form that contribute significantly to its physical character. Architectural elements are defined as decorative exterior features that are commonly applied to the styles and forms. With the exception of the Minimal Traditional, Cape Cod, and Transitional Ranch forms and prefabricated houses, in addition to character-defining features, a minimum number of architectural elements should be present for a resource to be surveyed. As a general rule, three architectural elements are recommended. It should be noted that the lists of architectural elements included in this methodology are not inclusive and additional elements may be identified during field survey efforts. Surveyors should adhere to this guidance but also exercise professional judgment during field survey efforts, so documentation is limited to intact and distinguishable examples of postwar style and forms. For example, surveyors may choose to document a Ranch house that does not display the recommended minimum number of three architectural elements if it stands out among other properties in the survey area. Likewise, a surveyor may elect not to document a Split-level house that displays several architectural elements if it also has several minor modifications that cumulatively diminish the historic integrity.

Figure 8. Modified Gunnison houses in the Maenner South Addition in Omaha, Nebraska. This streetscape documents the similar form and massing and setbacks within the addition (Mead & Hunt photograph).

Surveyors may not always be able to determine if exterior materials are original during reconnaissance-level field survey efforts and should rely on their professional judgment when selecting properties to document. Simulated stone, including Permastone, asbestos shingles, and aluminum siding may be original siding materials for the styles and forms. As a result, they may not detract from the historic integrity. Properties with replacement materials may be documented if they appear to be compatible with the historic fabric. In almost all cases, narrow-gauge modern vinyl siding is considered a non-compatible cladding material. A discussion of siding materials developed during the postwar period is included in Chapter 4.

The survey criteria are organized by the popular forms and styles of the postwar period. Properties should meet the following minimum survey criteria to be documented individually.

a. Minimal Traditional Form

The simplicity of the Minimal Traditional form is considered its primary character-defining feature. Therefore, large alterations to the footprint, such as additions that alter the front facade or modify the roofline, should be considered significant and disqualify the property from individual documentation. Because the Minimal Traditional form displays few architectural elements, it should retain original features, including siding, doors, and windows. It is important to note that simulated stone, asbestos shingle, and aluminum siding may be original cladding materials. Minimal Traditional homes typically do not have attached garages

Figure 9. Minimal Traditional house in Omaha, Nebraska, constructed c.1945, retains its original siding, massing, simple entrance, and windows, and thus meets the survey criteria (Mead & Hunt photograph).

or carports. If these are present, they should have minimal alterations. Figures 9 and 10 show examples of Minimal Traditional houses.

To merit individual documentation, a Minimal Traditional residence should:

- Retain original massing, and additions, if present, do not detract from the historic appearance;
- Retain original exterior siding materials, or materials appear original;
- Retain original doors and windows; and

Figure 10. Minimal Traditional house in Prince George's County, Maryland, constructed c.1945, with non-compatible vinyl siding, replacement windows, and a modified stoop. As a result, it does not meet the survey criteria (photograph courtesy of Anne Bruder, Maryland State Highway Administration).

Figure 11. Cape Cod house in Madison, Wisconsin, constructed c.1945, retains its original massing, siding, windows, and entrance, and thus meets the survey criteria (Mead & Hunt photograph).

- Retain original roofline (incompatible dormers and second story additions are not acceptable).

b. Cape Cod Form

As a subset of the Minimal Traditional Form, Cape Cod houses should meet the criteria outlined for that form. Figures 11 and 12 show examples of the Cape Cod form.

c. Transitional Ranch Form

The Transitional Ranch house shares the Minimal Traditional's compact floorplan but has an exterior appearance that

Figure 12. Cape Cod house in Fairfax County, Virginia, constructed c.1945, with exterior cladding altered to create a Tudor Revival appearance, replacement windows and door, and altered stoop. As a result, it does not meet the survey criteria (photograph courtesy of Anne Bruder, Maryland State Highway Administration).

Figure 13. Transitional Ranch house in Madison, Wisconsin, constructed in 1949, retains its original siding, windows, and entrance with a decorative support, and thus meets the survey criteria (Mead & Hunt photograph).

resembles the Ranch form, with one-story horizontal massing, a shallow roof pitch, and overhanging eaves. As with the Minimal Traditional form, the simplicity of the Transitional Ranch form is considered its primary character-defining feature. Therefore, large alterations to the footprint should be considered significant and disqualify the property from individual documentation. Because the Transitional Ranch form displays few architectural elements, it should retain the original features, including exterior siding, doors, and windows. Figures 13 and 14 show examples of the Transitional Ranch form.

To merit individual documentation, a Transitional Ranch residence should:

- Retain original exterior materials, or materials appear original (replacement siding limited to the side gable ends is acceptable; however, replacement siding on the facade or side elevations that is not compatible in material or appearance is considered unacceptable);
- Retain original massing, and additions, if present, do not detract from the historic appearance;
- Retain original doors and windows;
- Retain the original porch or entry stoop;
- Retain the original roofline; and
- Display minimal alterations to the garage or carport, if attached.

d. Ranch Form

The Ranch was the most popular architectural form constructed during the postwar period, and vast numbers exist in urban and suburban communities nationwide. Therefore, the Ranch house should retain character-defining features (as discussed in Section G.3 of Chapter 4), as well as architectural elements and a degree of historic integrity, to merit individual documentation. Figures 15 through 20 present examples of the Ranch form.

To merit individual documentation, a Ranch house should:

- Retain original exterior materials or have replacement materials that are compatible with the original materials (narrow-gauge vinyl siding is considered non-compatible due to the change in material and appearance);
- Retain original massing, and additions, if present, should not detract from the historic appearance;
- Retain original door and window openings;
- Have replacement windows, if present, with a similar sash configuration to the original windows;
- Retain original roofline and eave overhang;
- Display minimal alterations to the garage or carport, if attached;

Figure 14. Transitional Ranch house in St. Louis Park, Minnesota, constructed in 1953, does not meet the survey criteria due to the replacement vinyl siding and windows (Mead & Hunt photograph).

Figure 15. Ranch house in Omaha, Nebraska, constructed c.1955, retains multiple architectural elements, including accent brick veneer, prominent wide chimney, integrated planter, and wrought iron support, and thus meets the survey criteria (Mead & Hunt photograph).

Figure 16. Ranch house in Milwaukee, Wisconsin, constructed c.1960, retains multiple architectural elements, including accent wood shingle siding, prominent wide chimney, and corner windows, and thus meets the survey criteria (Mead & Hunt photograph).

Figure 17. Ranch house in Madison, Wisconsin, constructed in 1958, retains its original massing, siding, and window configuration but does not display three architectural elements and does not meet the survey criteria (Mead & Hunt photograph).

Figure 18. Ranch house in Grain Valley, Missouri, does not meet the survey criteria due to absence of architectural elements and altered attached garage that has been converted into living space (photograph courtesy of Toni Prawl, Missouri Department of Transportation).

Figure 19. Ranch house with Colonial Revival influences in Arlington, Texas, constructed c.1965, that does not meet the survey criteria due to the large second story addition that detracts from the historic appearance (Mead & Hunt photograph).

- Retain a minimum of three architectural elements, including, but not limited to:
  - Wide or prominent chimney;
  - Combination of siding materials or accent siding materials, such as brick or stone veneer or textured brickwork;
  - Large expanses of windows, corner windows, bands of windows (ribbon windows), or clerestory windows;
  - Integrated planters;
  - Wrought iron integrated into the entrance or facade ornamentation (a simple railing near the entrance is not considered an architectural feature);
  - Decorative porch/entry supports;
  - Exaggerated eave overhang or prominent roofline with "prowed" eaves, eave cutouts, or exposed beams;
  - Unaltered breezeway;
  - Patio (front patios are most visible during field survey; however, side and rear patios are common);

Figure 20. Ranch house in Arlington County, Virginia, constructed in 1959 that does not meet the survey criteria because the multi-light, "cottage-style" replacement windows are non-compatible. In addition, it does not display three architectural elements (Louis Berger photograph).

Figure 21. Raised Ranch house in Parkville, Missouri, displays only one original architectural element—the combination of board and batten and clapboard siding—and as a result does not meet the survey criteria (photograph courtesy of Toni Prawl, Missouri Department of Transportation).

- Colonnaded porch along the facade that recalls the "corredors" of nineteenth-century Californian and Mexican Ranch house antecedents;
- Integrated wingwalls; and
- Original applied stylistic features (i.e., Colonial Revival or Contemporary details).

e. Raised Ranch Form

To merit individual documentation, the Raised Ranch form should meet the criteria outlined for the Ranch form and retain an elevated or partially elevated basement story. Figures 21 and 22 show examples of the Raised Ranch form.

Figure 22. Raised Ranch house in Hennepin County, Minnesota, with non-compatible replacement wood siding and only two architectural elements: accent brick veneer and the prominent chimney. As a result, it does not meet the survey criteria (Mead & Hunt photograph).

f. Split-level and Split-foyer Form

The Split-level and Split-foyer are simple forms that were constructed in large numbers during the postwar period. Therefore, the Split-level or Split-foyer house should display character-defining features, as well as architectural elements and a degree of historic integrity, to merit individual documentation. Figures 23 through 26 show examples of these forms.

To merit individual documentation, a Split-level or Split-foyer residence should:

- Retain original exterior materials or have replacement materials that are compatible with the original materials (narrow-gauge vinyl siding is considered non-compatible due to the change in material and appearance);
- Retain original door and window openings;
- Have replacement windows (if present) with a similar sash configuration to the original windows;
- Retain original massing, and additions, if present, do not detract from the historic appearance;
- Retain original roofline and eave overhang;
- Have minimal alterations to the garage or carport, if attached;
- Retain a minimum of three architectural elements, including, but not limited to:
  - Wide or prominent chimney;
  - Combination of siding materials or accent siding materials, such as brick or stone veneer or textured brickwork;
  - Large expanses of windows, corner windows, bands of windows (ribbon windows), or clerestory windows;
  - Integrated planters;
  - Wrought iron integrated into the entrance or facade ornamentation (a simple railing near the entrance is not considered an architectural feature);

Figure 23. Split-level residence in Omaha, Nebraska, constructed c.1965, retains its original form, doors and windows, and displays multiple architectural elements, including accent stone veneer, wrought iron support, and prominent front entrance. As a result, it meets the survey criteria (Mead & Hunt photograph).

Figure 24. Split-level residence in Richmond Heights, Missouri, retains its original form, and displays multiple architectural elements, including accent board and batten siding, prominent chimney, and bands of windows. As a result, it meets the survey criteria (photograph courtesy of Toni Prawl, Missouri Department of Transportation).

Figure 25. Split-level house in Madison, Wisconsin, constructed in 1960, retains its original form but only two architectural elements: colonnaded porch along the facade and accent brick veneer. As a result, it does not meet the survey criteria (Mead & Hunt photograph).

Figure 26. Split-foyer house in Arlington County, Virginia, retains its original form but features only one architectural element: applied Colonial Revival details. As a result, it does not meet the survey criteria (Mead & Hunt photograph).

– Decorative porch/entry supports;
– Exaggerated eave overhang or prominent roofline with "prowed" eaves, eave cutouts, or exposed beams;
– Prominent front entrance that could include twin doors, transoms, decorative lighting, or an exaggerated height to depict multiple stories; and
– Original applied stylistic features (i.e., Colonial Revival or Contemporary details).

g. Colonial Revival Style

Postwar examples of the Colonial Revival style are common and should display character-defining features as well as architectural elements and a degree of historic integrity to be considered for individual documentation. For example, a large modern addition on the front facade would disqualify a property due to lack of historic integrity. Replacement materials are acceptable if they replicate the original siding materials and do not detract from distinguishing architectural elements. It is important to note that aluminum siding may be original. Figures 27 through 29 show examples of the Colonial Revival style.

To merit individual documentation, a Colonial Revival residence should:

- Retain original exterior materials or have replacement materials that are compatible with the original materials;
- Retain massing and symmetrical proportions;
- Retain original door and window openings, including sash configuration;
- Retain the original door surround;
- Retain the original roofline;

Figure 27. Colonial Revival in Arlington, Texas, constructed in 1967, retains its original materials and massing and displays multiple architectural elements, including a decorative door surround, projecting front gable, and compass vent. As a result, it meets the survey criteria (Mead & Hunt photograph).

Figure 28. Colonial Revival house in Arlington County, Virginia, does not meet the survey criteria because it has replacement siding and does not feature three architectural elements (Louis Berger photograph).

- Have minimal alterations to the garage or carport, if attached;
- Retain a minimum of three architectural elements, including, but not limited to:
  - Overhanging second story (referred to as a jetty or garrison);
  - Frieze or cornice boards;
  - Decorative door and window surrounds;
  - Pedimented or projecting front gable;
  - Compass (round) window or vent in the gable end;
  - Pent roof; and
  - Other decorative details, including quoins, jack or flat arches, cupolas.

Figure 29. Colonial Revival house in Arlington County, Virginia, has an altered front portico and modern side addition. As a result, it does not meet the survey criteria due to lack of historic integrity (Louis Berger photograph).

h. Georgian Revival Style

Postwar examples of the Georgian Revival style should display character-defining features as well as architectural elements and a degree of historic integrity to be considered for individual documentation. Similar to the Colonial Revival style, a large modern addition on the front facade would disqualify a property due to lack of historic integrity, and replacement materials are acceptable if they replicate the original siding materials and do not detract from distinguishing architectural elements. Figure 30 shows an example of this style.

To merit individual documentation, a Georgian Revival residence should:

- Retain original exterior materials or have replacement materials that are compatible with the original materials;
- Retain massing and symmetrical proportions;
- Retain original door and window openings, including sash configuration;
- Retain the original door surround;
- Retain the original roofline;
- Have minimal alterations to the garage or carport, if attached; and
- Retain a minimum of three architectural elements, including, but not limited to:
  - Decorative door and window surrounds, including sidelights;
  - Colonnaded porch or portico; and
  - Other decorative details, including pilasters, quoins, and pediments.

Figure 30. Georgian Revival house in Fairfax County, Virginia, retains the original materials and massing; displays multiple architectural elements, including a colonnaded portico, quoins, and door surround. As a result, it meets the survey criteria (photograph courtesy of Anne Bruder, Maryland State Highway Administration).

Figure 31. Storybook style house in Los Angeles, California, constructed c.1958, retains its massing and materials and displays multiple architectural elements, including sweeping gables, scalloped bargeboards, and diamond-pane windows. As a result, it meets the survey criteria (Mead & Hunt photograph).

i. Storybook Style

The Storybook style is most commonly applied to the Ranch form but may also be applied to other forms from the period. Figures 31 and 32 show examples of the Storybook style.

To merit individual documentation, a Storybook residence should retain its form, massing and materials and feature architectural elements of the style, including:

- Fanciful details;
- Scalloped or shaped bargeboards;
- Sweeping gables;
- Diamond-pane, decorative leaded, or stained glass windows;
- Decorative window trim and shutters; and
- Planter boxes or shelves below the windows.

Figure 32. Storybook style house in Omaha, Nebraska (locally referred to as a Chalet Ranch), constructed c.1950, that has sweeping gables and non-compatible replacement vinyl siding and windows. As a result, it does not meet the survey criteria due to the lack of historic integrity (Mead & Hunt photograph).

j. Spanish Colonial Revival Style

The Spanish Colonial Revival style, also referred to as the Spanish Contemporary or Spanish Eclectic style, was commonly applied to popular forms during the period. Figure 33 presents an example of the Spanish Colonial Revival style.

To merit individual documentation, a Spanish Colonial Revival residence should retain its form, massing, and materials as well as feature architectural elements of the style, including the following:

- Adobe, adobe-type brick, or stucco exterior cladding;
- Red tile or built-up roofs;
- Arched entrances and windows; and
- Decorative wrought iron details.

k. Asiatic Style

The Asiatic style is most commonly applied to the Ranch form, but may also be applied to other forms from the period, including the Split-level. Figure 34 shows an example of the Asiatic style.

To merit individual documentation, an Asiatic residence should retain its form, massing, and materials and feature architectural elements of the style, including the following:

- Exaggerated eaves or upturned corners and gable ends;
- Vertical wood latticework or Shoji decorative screenwork;
- Red or persimmon front entrances; and
- Asian-inspired exterior hardware.

l. Contemporary Style

Contemporary style residences should display character-defining features, as well as architectural elements and a degree

Figure 33. Spanish Colonial Revival house in Arlington, Texas, constructed in 1968, retains its form, massing, original cladding, arched porch and windows, and decorative wrought iron details. As a result, it meets the survey criteria (Mead & Hunt photograph).

Figure 34. Asiatic residence in Fullerton, California, constructed c.1963, retains its massing and materials and displays architectural elements of the style, including upturned vertical wood trim on the facade and latticework. As a result, it meets the survey criteria (photograph courtesy of Andrew Hope, Caltrans).

of historic integrity, to merit individual documentation. Figures 35 and 36 show examples of the Contemporary style.

To merit individual documentation, a Contemporary residence should:

- Retain original exterior materials or have replacement materials that are compatible with the original materials;
- Retain original door and window openings;
- Retain original massing, and additions, if present, do not detract from the historic appearance;
- Retain original roofline;
- Have minimal alterations to the garage or carport, if attached; and
- Retain a minimum of three architectural elements, including, but not limited to:
  - Wide or prominent chimney;
  - Combination of wood, brick, or stone cladding materials;

Figure 35. Contemporary house in Madison, Wisconsin, constructed in 1963, retains its original massing and window configuration and displays three architectural elements: combination of wood and brick siding, wrought iron ornamentation at the front entrance, and prominent roof cutout. As a result, it meets the survey criteria (Mead & Hunt photograph).

Figure 36. Contemporary house in Arlington, Texas, constructed in 1967, retains its original massing and displays three architectural elements: bands of vertical windows, wrought iron ornamentation on the facade, and Spanish Eclectic stylistic influences. As a result, it meets the survey criteria (Mead & Hunt photograph).

  - Large expanses of windows, bands of windows (ribbon windows), or clerestory windows;
  - Integrated planters;
  - Wrought iron integrated into the entrance or facade ornamentation (a simple railing near the entrance is not considered an architectural feature);
  - Decorative porch/entry supports; and
  - Exaggerated eave overhang or prominent roofline with "prowed" eaves, eave cutouts, or exposed beams.

m. Prefabricated Houses

Due to the simple nature of prefabricated housing units, it is generally recommended intact examples be considered for survey documentation. Any alterations to the footprint, such as additions, or replacement materials, including siding and windows, that are not consistent with the original materials should be considered significant alterations and disqualify the property from individual survey. Figures 37 and 38 show examples of prefabricated houses.

However, due to the relative rarity of Lustrons, they should be documented regardless of alterations. This is also the case with examples of other rare local or regional prefabricated houses. Figure 39 shows an example of an altered Lustron House that should be documented for survey.

To merit individual documentation, a prefabricated residence that is not rare should:

- Retain original exterior materials or have compatible replacement siding (narrow-gauge vinyl siding is considered non-compatible due to the change in material and appearance);
- Retain massing, without additions;
- Retain original door and window openings; and
- Retain original roofline.

Figure 37. Prefabricated U.S. Steel home in Omaha, Nebraska, constructed in 1955, retains its original footprint, windows, and cladding materials, and thus meets the survey criteria (Mead & Hunt photograph).

Figure 38. Prefabricated National Homes residence in Madison, Wisconsin, constructed c.1951, retains its massing and roofline, but is clad in non-compatible narrow-gauge vinyl siding. As a result, it does not meet the survey criteria (Mead & Hunt photograph).

Figure 39. Although this c.1950 Lustron house in Oshkosh, Wisconsin, has replacement casement windows and a large modern addition, it should be surveyed due to the limited number of Lustrons constructed nationwide (Mead & Hunt photograph).

3. Recording Field Survey Data

To support documentation efforts, surveyors will collect data for individual properties in the field that meet the survey criteria. At a minimum, the following should be recorded in the field for individual properties:

- Architectural form and/or style;
- Construction date, or approximate construction date;
- Exterior materials;
- Window type and configuration;
- Character-defining features and architectural elements, including those not clearly visible in the photographs;
- Alterations;
- Associated resources, such as garages or carports;
- Associated landscape features, such as retaining walls and fences; and
- Photographs of the property, its setting and landscape, and associated resources.

Due to the relatively recent construction date of postwar residences, property owners may be familiar with the construction history of their property or neighborhood. Fieldwork may offer an opportunity to discuss properties (and confirm the construction date) with the owners; the builder, architect, or developer; and associations with historic events or trends.

a. Additional Streamlined Approaches

In instances where the selective survey approach for individual properties is not accepted by the project sponsor, additional approaches may provide the necessary level of documentation while still streamlining the survey process. The following options are examples and cultural resource professionals and/or project sponsors may identify additional options.

Selective Survey and Supplemental List of Non-documented Properties. The selective survey documentation may be supplemented with a table or list of properties in the APE that did not meet the survey criteria and were not documented. Information on properties that were not documented could include the address, style or form, and a brief statement regarding the alterations or lack of character-defining and/or architectural features and why the property did not warrant documentation. Properties may be illustrated with photographs and keyed to a map. This approach may also be used to document modern properties within the APE that fall outside the postwar study period. Table 1 presents an example of this type of documentation, which could be incorporated into the survey report.

Single Record for Collection of Non-documented Properties. In cases where the majority of resources are

Table 1. Example: properties in APE that do not meet survey criteria.

Address	Form/Style	Brief description/ explanation	Date	Map code	Photo
123 Main Street	Minimal Traditional	Replacement vinyl siding, replacement windows, and altered entrance.	c.1945	1	
456 Main Street	Ranch	Replacement vinyl siding and replacement windows.	1954	2	
789 Main Street	Ranch	Does not display three architectural elements.	1958	3	

similar in size and scale but do not meet the selective survey criteria due to alterations or lack of character-defining features or architectural elements, they may be documented with a single record that includes a narrative statement regarding the overall number of resources, styles and forms represented, and alterations or lack of character-defining features and/or architectural elements. The record may be supplemented with representative photos or streetscapes.

Management Summary for Overall Survey Area. The selective survey documentation may be supplemented with a brief narrative that outlines why properties did not meet the survey criteria. It may be illustrated with representative photographs and statistics regarding the overall number of properties in the APE and number of properties that meet and do not meet the survey criteria.

D. Historic Context Development

After completion of fieldwork, more detailed research and analysis should be completed to develop a historic context for use in evaluating the National Register eligibility of individual properties and potential historic districts identified as groupings. The research will build upon the preliminary research efforts and field observations and should focus on the history and development of the community or region, especially within the project's survey area.

1. Guidelines for Research

In conducting project-specific research, repositories and resources that should be consulted may include:

- Collections of state and local libraries;
- Collections of the SHPO, including architect and property site files;
- Prior DOT compliance surveys and Certified Local Government surveys in the area and region;
- Local tax assessor records (often collected in a database that may be available online), which may provide information on dates of construction, dates of additions, builder names, subdivision plat maps, and information regarding local developers and deed restrictions;
- County or local government records, especially for GIS mapping and property data;
- City directories, which may provide information on the occupations of residents;
- Historic photographs and aerial images;
- U.S. Geological Survey (USGS) and Sanborn Fire Insurance Maps;
- Newspaper articles, including real estate advertisements for subdivisions and neighborhoods (newspapers from the recent past are often indexed to assist with focused research efforts);
- Clippings files at local libraries or historical societies, which are often organized by subject or theme;

Figure 40. Example of GIS-based map identifying construction dates in the Hill Farms Neighborhood in Madison, Wisconsin (prepared by Department of Planning and Community & Economic Development, Planning Division: June 28, 2010; courtesy of the City of Madison).

- Promotional materials for real estate developers and builders;
- Promotional materials for prefabricated home manufacturers, especially to identify building types, forms, models, original materials and character-defining features, and construction dates;
- Oral interviews with residents, if applicable; and
- National Register Nominations, especially historic district nominations and MPDs for the subject period.

Where available, GIS maps and data are informative tools that can facilitate development of the historic context. GIS analysis can indicate housing construction trends and development patterns, especially where it includes tax assessment records with construction dates (see Figure 40 for an example). Some municipalities may record the original construction date, as well as the dates of major alterations. These tools can help researchers identify development patterns over time, both geographically and descriptively; determine building construction and alteration dates; and identify "typical" features such as garages or carports, number of rooms, size of parcels, and average square footage. This information can be incorporated into the historic context and assist in the evaluation of individual properties and potential historic districts.

2. Guidelines for Developing Historic Contexts

It is important to develop an appropriate local or regional historic context to evaluate the significance of subdivisions and/or neighborhoods and individual resources when applying the National Register Criteria. The National Register defines a historic context as follows, explaining its purpose:

> An organizing structure for interpreting history that groups information about historic properties that share a common theme, common geographical area, and a common time period. The development of historic contexts is a foundation for decisions about the planning, identification, evaluation, registration, and treatment of historic properties, based upon comparative historic significance.[9]

Development of a context specific to the study area should be sufficient to guide identification and evaluation efforts to

[9] National Park Service, *How to Apply the National Register Criteria for Evaluation*, National Register Bulletin, 59.

a level typically expected for a DOT-sponsored compliance survey. The context should identify postwar residential development trends in the region and allow for them to be placed within the broader context of postwar development. Based on the extent of postwar development in the survey area, the context may illustrate local and regional influences, such as planning and zoning regulations; the work and influence of local architecture firms, builders, or plan services; and regional variations in building types and styles. Although this methodology focuses on residential properties, the context should recognize that postwar subdivisions and neighborhoods often include schools, churches, parks, and other resources that are integral components of the historic area. The written historic context is incorporated into the survey documentation and used to evaluate the significance of individual properties and potential historic districts in the evaluation phase as described herein.

The national context for postwar residential development (see Chapter 4) frames overall residential development during the postwar era, as well as the predominant architectural forms and styles. A model context outline, which follows the organization of the national context, is provided to guide the development of a location-specific historic context that would be expected for a transportation compliance project. This outline is included in Appendix B. The historic context developed for Arlington County, Virginia (the primary demonstration area used to test the survey and evaluation methodology for this project), may also serve as a guide for professionals who are developing a location-specific historic context. This context is included in Appendix D. Keep in mind the length and level of detail of the context should be informed by the geographic area, identified postwar themes, the scale of the project at hand, and the number and type of potential historic properties affected.

Approaches to the development of a historic context differ from state to state. Some agencies suggest or require that the historic context be developed prior to commencement of field survey activities. The *Historic Residential Suburbs* Bulletin also suggests that the historic context statement be developed prior to the survey efforts. It is important to understand the requirements of the project sponsor prior to commencing research and fieldwork activities and note that preliminary historic contexts should be refined following fieldwork as additional research and site observations can improve the document and enhance resource understanding. The efficiencies created by focused research and reporting, as well as practicalities of scheduling, can also dictate the timing of context development.

E. Evaluation

Upon completion of the field survey and historic context, documented properties should be evaluated to determine if they meet the National Register Criteria. This step is referred to by the NPS as an intensive-level survey, and in compliance projects as either a Phase II Evaluation or a Determination of Eligibility. It involves more in-depth field review and research and typically results in a recommendation regarding the National Register eligibility of an individual property or grouping of related resources as a potential historic district. To undertake this step, the following guidance provides for the evaluation of postwar residences, neighborhoods, and subdivisions under National Register *Criteria A* and *C*. These criteria are most likely to be applied to postwar properties.[10] The evaluation methodology is based on the following National Register Bulletins:

- *Historic Residential Suburbs: Guidelines for Evaluation and Documentation for the National Register of Historic Places;*
- *How to Apply the National Register Criteria of Evaluation;*
- *How to Complete the National Register Registration Form;* and
- *How to Complete the National Register Multiple Property Documentation Form.*

As outlined in the *Historic Residential Suburbs* Bulletin, defining significance under National Register *Criteria A* and *C:*

> requires a close analysis of information about the development and design of a particular historic neighborhood and an understanding of local, metropolitan, and national trends of suburbanization. The property is viewed in relationship to the broad patterns of suburbanization that shaped a community, state, or the nation and to determine whether the area under study meets one or more of the National Register Criteria for Evaluation.[11]

The same is true of individual properties. The historic context should support significance under one of the criteria for a property to be considered individually eligible for listing in the National Register. The particular guidance in this methodology is beneficial because it improves the understanding of the postwar period, which in turn informs evaluations and ultimately contributes to the achievement of consistent, objective results.

Specific guidance is not included for determining the period of significance for eligible properties since this process does not differ from that for properties that pre-date the postwar period. NPS guidance is outlined in the National Register Bulletin *How to Complete the National Register Registration Form.* As defined in the Bulletin, the period of significance is the "length of time when a property was associated with

[10] Evaluation under *Criterion B* is less dependent on the nuances of the postwar period because of the narrow requirements of this criterion that restrict it to a property that best illustrates a person's significant achievements. For the evaluation of properties that may qualify under *Criterion B*, please refer to the National Register Bulletin *How to Apply the National Register Criteria for Evaluation*.

[11] Ames and McClelland, 94.

important events, activities, or person, or attained the characteristics which qualify it for National Register listing."[12] The period of significance is called out as a "benchmark" against which resources should be compared to determine whether or not they contribute to a neighborhood's history and, thus, its integrity.

1. Evaluation Methodology: Historic Districts

The evaluation of a planned subdivision or neighborhood as a potential historic district builds upon the information collected during the field survey, research efforts, and development of the historic context. This information is analyzed against the National Register Criteria, resulting in an eligibility recommendation. If the district conveys significance under the National Register Criteria and retains historic integrity, it is considered eligible for listing in the National Register.

The evaluation requires that properties within the district be classified as contributing and noncontributing, which assists with the assessment of integrity. Buildings, structures, objects, and sites within a district are classified as contributing resources if they were built within the period of significance and possess historic integrity. Resources built or substantially altered after the period of significance are classified as noncontributing. To be considered as contributing, properties should generally retain their overall form and massing and not detract from the sense of time and place. See Section E.5. for more information on integrity.

To be considered eligible, the majority of properties in the district should retain a degree of integrity and be considered contributing. Coordination with the project sponsor is recommended to identify the level of documentation necessary to detail this status. In many cases, the documentation includes a listing of properties within the potential district by address along with their contributing or noncontributing status.

An eligibility statement should be prepared that articulates the evaluation process and eligibility recommendation; it is included in the overall survey documentation (see Section F). The eligibility statement for a district should include the following:

- National Register area of significance (e.g. *Criterion A: Community Planning and Development*);
- National Register level of significance: local, state, or national;
- Period of significance;
- Narrative statement of significance, including a historic context that conveys the importance of the district at the local or regional level, and discussion of comparison districts, if necessary;
- Narrative statement of integrity;
- List of properties and contributing or noncontributing status;
- Narrative description of historic boundary, including justification; and
- Map delineating historic district boundary.

2. Evaluation Methodology: Individual Properties

As with historic districts, the evaluation of an individual resource builds upon prior information from the field survey, research, and context development. This information is analyzed against the National Register Criteria and results in an eligibility recommendation. If the resource conveys significance under the National Register Criteria and retains historic integrity, it is considered eligible for listing in the National Register. See Section E.5 for more information on integrity.

An eligibility statement should be prepared that articulates the evaluation process and eligibility recommendation; it is included in the overall survey documentation (see Section F). The eligibility statement for an individual resource should include the following:

- National Register area of significance (e.g., *Criterion A: Community Planning and Development*);
- National Register level of significance: local, state, or national;
- Period of significance;
- Narrative statement of significance, including a historic context that conveys the importance of the resource at the local or regional level, and discussion of comparison properties, if necessary;
- Narrative statement of integrity;
- Narrative description of historic boundary, including justification; and
- Map delineating property boundary.

3. National Register *Criterion A*

As defined in the National Register Bulletin, *Criterion A* relates to the association with events or trends that have made a significant contribution to the broad historical patterns of the country, state, or region. There are many influences on national trends in housing, including government legislation and loan programs, social history, and community planning

[12] National Park Service, *How to Complete the National Register Registration Form*, National Register Bulletin, 42. It is important to note that for postwar properties the period of significance may extend beyond the National Register's 50-year guidance.

and development, that may relate to the development of a neighborhood, subdivision, or individual property during the postwar period.

In accordance with the *Historic Residential Suburbs in the United States, 1830-1960 Multiple Property Document (Historic Residential Suburbs MPD), Criterion A* applies when:[13]

- A neighborhood reflects an important trend in the development and growth of a locality or metropolitan area;
- A suburb represents an important event or association, such as the expansion of housing associated with wartime industries during World War II, or the racial integration of suburban neighborhoods in the 1950s;[14]
- A neighborhood is associated with the heritage of social, economic, racial, or ethnic groups important in history or a locality or metropolitan area; and
- A suburb is associated with a group of individuals, including merchants, industrialists, educators, and community leaders, important in the history and development of a locality or metropolitan area.

Although the *Historic Residential Suburbs MPD* only discusses the application of *Criterion A* to suburbs constructed through 1960, the same criteria can readily be applied to a more defined and expanded period of postwar housing development, from 1946 to 1975, for neighborhoods, subdivisions, and individual residences.

To be eligible for the National Register under *Criterion A,* a direct and significant association with one or more National Register areas of significance should be established for an individual residence or a grouping of residences (neighborhood or subdivision). Postwar housing is a significant national trend in housing; however, mere association with this time period is not sufficient to meet National Register Criteria. For example, the fact that a house or neighborhood is associated with the postwar period because it was constructed following World War II does not provide enough contextual information within which to evaluate its relative importance, even at the local level, or to demonstrate significance under *Criterion A.* The building or neighborhood should demonstrate a particular and significant aspect of the postwar housing themes as identified in the historic context to be eligible for the National Register. The historic context developed for an area will assist in identifying the history and important themes and events that may be associated with a neighborhood or individual residence.

In addition, the house or neighborhood should be differentiated from other similar examples. Not all postwar houses and neighborhoods can be significant examples of the response to housing needs following World War II. It should be understood and demonstrated that an individual residence or district is an important example representing the area of significance if there are similar properties or groups in the area. To identify relative importance among similar properties, refer to the historic context and consider whether the neighborhood or property is:

- One of the firsts of its type;
- A model that influenced other property development;
- A subdivision that introduced a new concept; and
- Distinctive from others and why.

A number of National Register areas of significance under *Criterion A,* as identified in the National Register Bulletins, may relate to residential postwar housing. Eligibility is derived from a demonstrated significance at the local, state, or national level, to one of the identified National Register areas of significance. It is common that more than one area of significance related to *Criterion A* may apply to a neighborhood. It is expected that neighborhoods or groups of houses are more likely than individual residences to be found eligible applying *Criterion A,* as groups of houses are more likely to demonstrate the areas of significance. Individual residences may be eligible under *Criterion A,* but it is often more challenging for a single property to demonstrate a trend or pattern of association. To be eligible, a property should demonstrate the area of significance and also retain sufficient integrity to represent the area of significance (see Section E.5 for further discussion on integrity).

Areas of significance most likely found to be applicable to postwar housing are outlined in the following sections, with specific examples of properties that have been listed in or determined eligible for the National Register. Additional areas that are less likely to apply are also identified.

a. Area of Significance: Community Planning and Development

Community Planning and Development is defined in the National Register Bulletins as "the design or development of the physical structure of communities."[15] It is further defined

[13] Linda Flint McClelland, David Ames, and Sarah Dillard Pope, *Historic Residential Suburbs in the United States 1830-1960*, National Register Multiple Property Document, F-58, F-59. The *Historic Residential Suburbs MPD* was developed in tandem with the *Historic Residential Suburbs* Bulletin. The MPD provides the framework for listing properties in the National Register.

[14] Note that the example of association with wartime industries during World War II pre-dates the study period for this report. However, housing associated with industries during the 1946 to 1975 study period may be significant applying *Criterion A*.

[15] National Park Service, *How to Complete the National Register Registration Form*, 40.

in the *Historic Residential Suburbs MPD* as an area of significance that:

> . . . recognizes the contribution a neighborhood makes to the historic growth and development of the city, for example, by providing much-needed housing to serve a local industry or by introducing a concept of community planning that influenced subsequent patterns of local or metropolitan development.[16]

The area of significance under *Criterion A* includes the influence of developers or municipalities on subdivision planning and land use, such as the developer's initiation of an important trend that led to the growth of a locality or suburban area. It should be noted that Community Planning and Development is also an area of significance under *Criterion C,* which "applies to areas reflecting important patterns of physical development, land division, or land use."[17] Under *Criterion C,* it is manifested more in the design aspect and physical layout of a development (see Section E.4).

Community Planning and Development as an area of significance is often interrelated with another area of significance: Social History. Both areas of significance relate to neighborhood planning principles that influence residential growth and human lifeways. These two areas of significance are most frequently applied to residential neighborhoods and subdivisions of the postwar period and cited in National Register Nominations.

When considering the application of *Criterion A: Community Planning and Development,* the following questions may assist in determining if a property possesses significance related to this theme:[18]

- Is the subdivision or residence important in the development of the community or region as an innovative or trendsetting response to community planning?
- Did an important local or metropolitan trend in subdivision development originate in the subdivision?
- Did a particular subdivision develop in response to housing shortages following World War II and introduce new planning ideas, or did it influence other developments or community planning?
- Was the subdivision associated with a particular industry during its development or was it associated with a significant local event?

The following National Register-listed and -eligible districts and individual properties demonstrate the application of *Criterion A: Community Planning and Development:*

Figure 41. Ranch and Split-level houses in the National Register-listed Collier Heights Historic District in Atlanta, Georgia (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

Collier Heights Historic District in Atlanta, Georgia. The Collier Heights Historic District (see Figures 41, 48, and 53) demonstrates significance in the area of Community Planning and Development for its neighborhood layout, including "all the prevailing suburban amenities including single-family Ranch and Split-level houses, large and informally landscaped lots, subdivisions with curvilinear streets and cul-de-sacs, nearby neighborhood services including schools, churches, and parks, and restrictions on through traffic and incompatible land uses."[19]

North Fellows Historic District in Ottumwa, Iowa. The North Fellows Historic District (see Figures 42 and 60) is eligible for listing in the National Register under *Criterion A* "as a good example of the residential building boom that occurred as World War II veterans returned to their communities, married, and started families."[20] The North Fellows Historic District was one of the first two developments in the city built following World War II.

Fairway Oaks-Greenview Historic District in Savannah, Georgia. The Fairway Oaks-Greenview Historic District (see Figures 43, 51, and 63) is listed in the National Register under *Criterion A* "as the first mid-20th century suburban residential development intended for middle-to-upper middle class white homeowners outside the Savannah city limits

[16] McClelland, Ames, and Pope, F-59.

[17] McClelland, Ames, and Pope, F-60.

[18] Some questions adapted from Dianna Litvak, *Post World War II Residential Development Abutting the US36 Highway Corridor, Addendum Report* (Colorado Department of Transportation, 2009), 29-30.

[19] Richard Cloues, Collier Heights Historic District National Register Nomination, 8-27. This district is significant in multiple areas of significance under *Criterion A: History* and under *Criterion C: Architecture.*

[20] Molly Myers Naumann, North Fellows Historic District National Register Nomination, 8-4. This district was identified as eligible in an intensive survey and a nomination was prepared; however, the nomination has not yet been accepted by the NPS. This district is also significant under *Criterion C: Architecture.*

Figure 42. Minimal Traditional houses in the North Fellows Historic District in Ottumwa, Iowa, constructed c.1945 (photograph courtesy of Molly Myers Naumann and the State Historic Preservation Office of the Iowa Department of Cultural Affairs).

Figure 43. Ranch and Split-level house in the Fairway Oaks-Greenview Historic District in Savannah, Georgia (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

featuring the new-to-Savannah curvilinear street layout with cul-de-sacs and irregularly shaped wooded lots."[21]

Virginia Heights Historic District in Arlington County, Virginia. The Virginia Heights Historic District (see Figure 44) is listed in the National Register under *Criterion A: Community Planning and Development* as "a planned neighborhood of affordable housing that was a direct response to the large number of returning veterans to the Washington, D.C., area after World War II."[22] The cohesive plan of four small subdivisions incorporated garden city planning ideals, such as interconnecting curvilinear streets and cul-de-sacs,

[21] Richard Cloues and Robert Ciuecevich, Fairway Oaks-Greenview Historic District National Register Nomination, 8-15. This district is also significant under *Criterion C: Architecture*.

[22] EHT Traceries, Inc., Virginia Heights Historic District National Register Nomination, 8-32. This district is also significant under *Criterion C: Architecture*.

Figure 44. House in the Virginia Heights Historic District in Arlington County, Virginia, that reflects the response to the demand for postwar housing in the Washington, D.C., area (Mead & Hunt photograph).

Figure 45. Claremont Historic District in Arlington County, Virginia. Although some of the homes have replacement siding and windows, as a collection, the district is able to convey significance as a planned neighborhood of affordable housing (Mead & Hunt photograph).

promoted by the Federal Housing Administration (FHA) in addition to house setbacks.

Claremont Historic District in Arlington County, Virginia. The Claremont Historic District (see Figure 45) is listed in the National Register under *Criterion A: Community Planning and Development* "as a planned neighborhood of affordable housing that was a direct response to the large number of returning veterans to the Washington, D.C., area after World War II."[23] Although the neighborhood planning follows many

[23] EHT Traceries, Inc., Claremont Historic District National Register Nomination, 8-104. This district is also significant under *Criterion C: Architecture*.

Figure 46. Postwar Ranch residences in the Indian Village Historic District in Fort Wayne, Indiana (photograph courtesy of Margaret E. Caviston, ARCH, Inc.).

Figure 47. Harold and Marion Ruth Residence in Billings, Montana, as it appeared c.1965 (photograph courtesy of Jon Axline, Montana Department of Transportation).

of the FHA standards, the exclusion of amenities, such as shopping centers and schools, demonstrates the housing shortage following World War II and efforts to keep up with demand.

Indian Village Historic District in Fort Wayne, Indiana. The Indian Village Historic District (see Figure 46) is listed in the National Register under *Criterion A: Community Planning and Development* "as a significant example of a revolutionary period in 20th century subdivision development that demonstrates the national policy shift to the support of home ownership for the middle class, the federal government's establishment of minimum standards for small homes, the emergence of construction techniques such as prefabrication and site fabrication, and the growth of the automobile suburb."[24] Although platting of the district began in the 1920s with some residential construction, the majority of homes in the district (95 percent) were built from 1945 to 1960.[25]

Harold and Marion Ruth Residence in Billings, Montana. The Ruth Residence (see Figure 47), constructed in 1956 and listed in the National Register under *Criterion A: Community Planning and Development,* is "representative of a process where people increasingly moved from the city into the suburbs and outlying areas around the city as economic prosperity and improved transportation allowed them to relocate to areas of their choosing."[26] This economic prosperity and the automobile allowed for an exodus to rural areas, and the Ruth Residence demonstrates this new trend in suburban development outside the traditional urban area in Montana.

b. Area of Significance: Social History

Social History is defined in the National Register Bulletin as "the history of efforts to promote the welfare of society; the history of society and the lifeways of its social groups."[27] It is further defined in the *Historic Residential Suburbs MPD* as an area of significance that "recognizes the contribution of a historic neighborhood to the improvement of living conditions through the introduction of an innovative type of housing or neighborhood planning principles, or the extension of the American dream of suburban life or home ownership to an increasing broad spectrum of Americans."[28] This area of significance may also demonstrate trends in choices of residential location and demographics. Residences developed to respond to changes in lifestyles and family needs following World War II may be eligible under Social History. As an area of significance, Social History often overlaps with another area of significance: Community Planning and Development (see above).

When considering the application of *Criterion A: Social History,* the following questions may assist in determining if a property possesses significance related to this theme:[29]

- Does the subdivision or neighborhood demonstrate the accomplishment of the American dream of homeownership for a distinct group of individuals?

[24] John Warner, Indian Village Historic District National Register Nomination, 8-17. This district is also significant under *Criterion C: Architecture*.

[25] Warner, 7-2 and 7-3.

[26] Jon Axline, Harold and Marion Ruth Residence National Register Nomination, 8-1. This house is also significant under *Criterion C: Architecture*.

[27] National Park Service, *How to Complete the National Register Registration Form*, 41.

[28] McClelland, Ames, and Pope, F-59.

[29] Questions adapted from Litvak, 29-30.

Figure 48. Hermann J. Russell Ranch house, constructed in 1963 and located in the National Register-listed Collier Heights Historic District in Atlanta, Georgia (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

- Does the subdivision have a model or housing type considered to be locally, regionally, or nationally innovative in improving living conditions?
- Was the neighborhood associated with important local events that have an important role in suburban growth and development?

The following National Register-listed and -eligible districts and individual properties demonstrate the application of *Criterion A: Social History:*

Collier Heights Historic District in Atlanta, Georgia. The Collier Heights Historic District in Atlanta (see Figures 41, 48, and 53) is also listed in the National Register under *Criterion A* in the Social History area of significance. Intertwined with the theme of Ethnic Heritage, the residential Collier Heights Historic District represents the area of Social History when "the way in which the newly emerging and economically empowered African American middle and upper-middle classes at mid-century developed their own version of the suburban 'American Dream'."[30] The nomination recognizes the uniqueness of the development of this residential subdivision.

Arapahoe Acres Historic District in Englewood, Colorado. Arapahoe Acres in Englewood, Colorado (see Figures 49 and 62), built from 1949 to 1957, is listed in the National Register under *Criterion A* "for its social history, displaying new patterns of residential development which emerged in response to the family housing needs of hundreds of thousands of military personnel resuming civilian life after the war."[31] The district also "reflects a new class egalitarianism which emerged

Figure 49. Postwar residences in the Arapahoe Acres Historic District in Englewood, Colorado (photograph courtesy of Diane Wray Tomasso).

Figure 50. Residence in Greenbelt Knoll Historic District in Philadelphia (photograph courtesy of the Pennsylvania State Historic Preservation Office).

in the post-war years, providing homes in a variety of sizes and purchase prices to produce a more diverse community for families of varying size and financial resources."[32] In addition, "as an alternative to traditional architectural styles and plans which dominated the post-war home buying market, Arapahoe Acres illustrates the nationwide struggle to successfully achieve full FHA/GI Bill funding for homes designed in modern styles, revealing the influence of the Federal government in suppressing modern residential design in post-war America."[33]

Greenbelt Knoll Historic District in Philadelphia, Pennsylvania. The Greenbelt Knoll Historic District (see Figure 50) is listed in the National Register under *Criterion A* "for association with the development of integrated housing in Philadelphia during the post-World War II period."[34] This

[30] Cloues, 8-27.

[31] Diane Wray Tomasso, Arapahoe Acres Historic District National Register Nomination, 8-27. This district is also significant under *Criterion C: Architecture.*

[32] Tomasso, 8-49.

[33] Tomasso, 8-49.

[34] Charles Fuller and Art Friedman, Greenbelt Knoll Historic District National Register Nomination, 8-7.

Figure 51. Early 1960s Ranch houses in the Fairway Oaks-Greenview Historic District in Savannah, Georgia (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

Figure 52. Bishop Family Lustron House in Glenville, New York, erected in 1949 (photograph courtesy of Kimberly Konrad Alvarez, Landmark Consulting LLC/ NYS Lustron Project Coordinator).

neighborhood was the second of a regional developer's integrated housing developments. It was one of a few successful housing developments to integrate working and middle classes and one of only eight mentioned in a 1960 national study on privately developed interracial housing.[35]

Fairway Oaks-Greenview Historic District in Savannah, Georgia. The Fairway Oaks-Greenview Historic District (see Figures 43, 51, and 63) is listed in the National Register under *Criterion A: Social History* for the Fairway Oaks Association, which was among the earliest non-profit neighborhood organizations to be founded in the city and the state. The association funded improvements within the subdivision, including a sewerage system, street paving, and a neighborhood park with a clubhouse.[36]

Bishop Family Lustron in Glenville, New York. The Bishop Family Lustron House in Glenville (see Figure 52) is listed in the National Register under *Criterion A: Social History* for its "direct linkage to the Town of Glenville's transition from farming community to thriving suburb in the post WWII period."[37] "The house is a reflection of the social attitudes and aspirations of the emerging middle class."[38] It is recognized as the best surviving Lustron in the Town of Glenville and one of the best preserved Lustrons in the state.

[35] The nomination states that it was not possible to identify all eight housing developments mentioned in the book. Eunice Grier and George Grier, *Privately Developed Inter-Racial Housing: An Analysis of Experience,* Report to the Commission on Race and Housing (Berkeley and Los Angeles: University of California Press, 1960). This district is also significant under *Criterion B: Significant Person* and *Criterion C: Architecture.*

[36] Cloues and Ciuecevich, 8-15.

[37] Daniel McEneny, Bishop Family Lustron House National Register Nomination, 8-1. This property is also significant under *Criterion C: Architecture.*

[38] McEneny, 8-4.

c. Area of Significance: Ethnic Heritage

Ethnic Heritage is defined in the National Register Bulletins as "the history of persons having a common ethnic or racial identity."[39] It is further defined in the *Historic Residential Suburbs MPD* as an area of significance that "recognizes the significant association of a historic neighborhood with a particular ethnic or racial group."[40] The significance may be seen in trends in racial, ethnic, or religious segregation through restrictive covenants, sales, or financing.

When considering the application of *Criterion A: Ethnic Heritage,* consider the following question to determine if a property possesses significance related to this theme:[41]

- Does the neighborhood, subdivision, or residence demonstrate an association with an ethnic group and demonstrate a response to segregation, restrictive covenants, or other issues with financing or home ownership?

The following sections discuss National Register-listed districts that demonstrate the application of *Criterion A: Ethnic Heritage.*

Collier Heights Historic District in Atlanta, Georgia. In the area of Ethnic Heritage, Collier Heights (see Figures 41, 48, and 53) "is a premier example of such a mid-20th century suburb built to meet the rising expectations of an emerging and economically empowered middle and upper-middle class of African Americans eager and able to fully participate in and benefit from new lifestyle opportunities in suburbia."[42] The

[39] National Park Service, *How to Complete the National Register Registration Form*, 40.

[40] McClelland, Ames, and Pope, F-59.

[41] Question adapted from Litvak, 29-30.

[42] Cloues, 8-27.

Figure 53. House in the Collier Heights Historic District in Atlanta, Georgia (photograph courtesy of Sandy Lawrence, Georgia Department of Transportation).

Figure 54. Bennett Avenue Historic District in Richmond Heights, Missouri. Although some of the homes display exterior alterations, as a whole the district is able to convey significance (photograph courtesy of Toni Prawl, Missouri Department of Transportation).

nomination recognizes the uniqueness of the development of this residential subdivision.

Bennett Avenue Historic District in Richmond Heights, Missouri. The Bennett Avenue Historic District (see Figure 54) is listed in the National Register under *Criterion A: Ethnic Heritage.* It contributes to St. Louis County's African American history as a neighborhood that "was established by and for African Americans during the 1940s-1960s as a modern suburban development. Today the neighborhood symbolizes the struggle for fair and equal housing in St. Louis County, Missouri—one that continued well into the twentieth century."[43]

[43] Ruth Keenoy and Joellen Gamp McDonald, Clayton Park Addition Historic District [Preferred Name-Bennett Avenue Historic District] National Register Nomination, 8-13.

d. Additional Areas of Significance

Other areas of significance may apply to postwar residential housing on a more limited basis. Again, the specific historic context must support significance in order for a property to be considered eligible for listing in the National Register. These areas include:

- **Transportation**—housing related to important advances in transportation.
- **Government**—housing related to government financing, adherence to government standards, or the institution of zoning by local governments.
- **Economics**—postwar building boom affected social history and economics.
- **Education or Medicine**—housing built to accommodate an educational institution or medical facilities.
- **Industry**—housing built to house workers or developed in response to a housing need caused by industry.
- **Natural Resources**—housing that relates to available water and relationship to prior land use (such as the conversion of a farm/ranch to a subdivision).

4. National Register *Criterion C*

As defined in the National Register Bulletins, *Criterion C* relates to the physical design or construction of a property. For a property or district to be considered eligible for the National Register under *Criterion C,* it must meet one of the following criteria:[44]

- Embody distinctive characteristics of a type, period, or method of construction;
- Represent the work of a master;
- Possess high artistic value; and
- Represent a significant and distinguishable entity whose components may lack individual distinction (historic districts).

As outlined in the National Register Bulletins, distinctive characteristics are the "physical features or traits that commonly recur in individual types, periods, or methods of construction. To be eligible, a property must clearly contain enough of those characteristics to be considered a true representative of a particular type, period, or method of construction."[45] It is not necessary for properties to represent high-style forms or the work of noted architects. Rather,

[44] National Park Service, *How to Apply the National Register Criteria for Evaluation*, 17.

[45] National Park Service, *How to Apply the National Register Criteria for Evaluation*, 18.

postwar properties may be eligible as intact examples of postwar architectural styles and forms if they meet the criteria and integrity requirements.

Criterion C is the most likely criterion to be applied to individual postwar residential resources and subdivisions. Although architect-designed and high-style examples of postwar residences may qualify as the work of a master or for high artistic value, the majority of traditional and vernacular postwar residential properties will be significant for embodying distinctive characteristics of a type, period, or method of construction. Groups of postwar properties that lack individual distinction yet represent a significant and distinguishable entity may be eligible as a historic district.

In accordance with the *Historic Residential Suburbs MPD, Criterion C* applies when:[46]

- A collection of residential architecture is an important example of a distinctive period of construction, method of construction, or the work of more notable architects.
- A suburb represents the principles of design important in the history of community planning and landscape architecture, or is the work of a master landscape architect, site planner, or design firm.
- A subdivision embodies high artistic values through its overall plan or the design of the entranceways, streets, homes, and community spaces.

Although the *Historic Residential Suburbs MPD* only discusses the application of *Criterion C* to suburbs constructed through 1960, the same criteria can readily be applied to a more defined and expanded period of housing from 1946 to 1975.

More than one area of significance may relate to individual properties or historic districts. For example, a subdivision that resulted from the collaborative efforts of real estate developers, architects, and landscape architects may have significance in the areas of Community Planning and Development, Architecture, and Landscape Architecture.[47] In addition, individual properties and historic districts may also meet National Register *Criterion A* areas of significance (see the *Criterion A* discussion in Section E.3).

Three National Register areas of significance under *Criterion C,* as identified in the National Register Bulletins, typically relate to residential postwar housing: Architecture, Community Planning and Development, and Landscape Architecture. Eligibility is derived from demonstrated significance at the local, state, or national level. To be eligible, a property must serve as an important example within the context and retain sufficient integrity to represent the area of significance (see Section E.5. for further discussion on integrity). Due to the ubiquity of postwar residential architecture, properties will typically be significant at the local level; however, some properties may also have significance at the state level.

Eligible properties should retain historic integrity, character-defining features, and architectural elements (as defined in Section G.3 of Chapter 4) that characterize the style or form. Not all intact postwar residences are significant either individually or collectively as examples of architectural forms and styles from the period. Conversely, within a specific geographic area, more than one postwar residence or district may be eligible for the same area of significance. It should be understood and demonstrated that an individual residence or district is an intact and distinguishable representation of the historic context and period of significance.

The three areas of significance most likely to be found to be applicable to postwar housing are outlined below, along with specific examples of properties that have been listed in or determined eligible for the National Register.

a. Area of Significance: Architecture

Architecture is defined in the National Register Bulletin as "the practical art of designing and constructing buildings and structures to serve human needs."[48] As an area of significance under *Criterion C,* Architecture applies "when significant qualities are embodied in the design, style, or method of construction of buildings and structures."[49]

To be individually eligible, postwar resources should embody a distinctive characteristic of a type, period, or method of construction. To demonstrate significance, individual properties should retain enough distinct characteristics to be considered a true representative of a particular type, period, or method of construction. Properties may be significant as an example of the popular architectural styles or forms from the postwar period if they display key character-defining features and if they are important within the context of the community or region (see Section G.3 in Chapter 4 for a discussion of architectural styles and forms). A comparison with similar postwar properties within the community is necessary to determine if the individual property is a distinguishable example of the type, period, or method of construction.

Early postwar properties that influenced residential architecture within a community or region and properties that represent the innovative use of designs or materials from this

[46] McClelland, Ames, and Pope, F-60. Although properties may meet *Criterion C* as the work of a master, the properties covered under this methodology are vernacular or traditional in nature and not designed by recognized architects.

[47] McClelland, Ames, and Pope, F-60.

[48] National Park Service, *How to Complete the National Register Registration Form*, 40.

[49] Ames and McClelland, 99.

period of residential development may also meet *Criterion C: Architecture.* To convey that a specific property influenced postwar residential architecture or represents an innovation in design or materials, a historic context should be developed and used to clearly link the property to such influences or innovations.

Several prefabricated housing companies experienced great success in the postwar era, with thousands of their homes erected across the country. Some of these companies relied on standardized construction materials (e.g., dimensional lumber) that were developed and widely accepted prior to the postwar period. The stressed-skin plywood construction methods utilized by Gunnison Homes and National Homes exemplify a standardized system employed in large numbers throughout the country both before and after World War II. As a result, an individual Gunnison Home or National Home residence is not an important example of prefabricated housing during the postwar period (see Figure 55). Other prefabricated companies were innovative, yet less proliferate with their standardization methods, and had only a limited number of homes produced. For example, the Lustron Corporation erected approximately 2,500 houses nationwide during the brief time the company was in operation. An intact Lustron may be significant for representing the relatively rare and innovative system of panelized prefabricated housing using steel framing and porcelain enamel coated steel panels employed by the company during the postwar era (see Figure 56). Individual examples of prefabricated housing from local or regional companies may also be considered significant within the local context. Likewise, an individual house that was used to test the development of a prefabricated housing system in the postwar period may represent innovations. Collections of prefabricated houses that are significant within their context should be considered as potential historic districts.

Figure 55. Prefabricated Gunnison Homes residence in Omaha, Nebraska, erected c.1955, that individually does not represent innovations in postwar residential prefabrication since the construction materials were already widely accepted (Mead & Hunt photograph).

Figure 56. Lustron House in Oshkosh, Wisconsin, erected c.1948 (Mead & Hunt photograph).

Collections of properties that represent "a significant and distinguishable entity whose components may lack individual distinction" may also meet *Criterion C: Architecture* as a historic district.[50] As is the case with an individual property, groups of properties must stand out amongst other examples within the community or region to be considered eligible. Due to the large number of postwar subdivisions and neighborhoods found in many communities nationwide, they should be compared with other subdivisions and neighborhoods to determine if they are important within the context of postwar residential architecture in the community or region. The historic context should identify local development patterns, which will provide guidance for determining significance under this criterion.

It is unlikely that vernacular or traditional postwar residences will meet *Criterion C: Architecture* as the work of a master or for possessing high artistic value. However, individual residences or subdivisions may have significance as the work of a noted architect who is significant or influential in the community or region. As outlined in the National Register Bulletin, to meet the *Criterion C* the property should reflect a particular phase or aspect of an architect's work or a particular idea in their theme or craft. Mere association with a recognized architect is not enough.[51] Research efforts and the historic context should identify if individual properties or subdivisions are associated with significant local architects and if the properties are important examples of their work.

[50] National Park Service, *How to Apply the National Register Criteria for Evaluation*, 17.

[51] National Park Service, *How to Apply the National Register Criteria for Evaluation*, 20.

Figure 57. Joseph and Mary Jane League House in Macon, Georgia, constructed in 1950 (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

The following sections discuss National Register-listed, -eligible, and -evaluated districts and individual properties that demonstrate the application of *Criterion C: Architecture.*

Lustron House in Oshkosh, Wisconsin. This Lustron house (see Figure 56) is eligible for listing in the National Register under *Criterion C: Architecture* as an intact example of this prefabricated house type, which represents significant innovations in prefabricated housing in the postwar era.[52] Erected c.1948, the house illustrates the distinctive features of the property type, including the enameled steel exterior panels, roof panels, "modern" windows, and recessed entrance.

Joseph and Mary Jane League House in Macon, Georgia. The Joseph and Mary Jane League House (see Figure 57) is listed in the National Register under *Criterion C: Architecture* as an early and exceptional example of a Contemporary style residence. Its low form, H-shaped footprint, zoned interior, open-space plan, building materials, and integration of indoor spaces with outdoor landscaping all reflect up-to-date Ranch-house design nationally and, along with a small group of similar houses in Atlanta, set precedents for mid-twentieth-century Ranch-house design in Georgia.[53] The house also has significance in this area as the work of an accomplished Georgia architect.

Russell and Jeanette Williams House in Oshkosh, Wisconsin. The Russell and Jeanette Williams House (see

Figure 58. Contemporary style Russell and Jeanette Williams House in Oshkosh, Wisconsin, constructed in 1955 (Mead & Hunt photograph).

Figure 59. Ranch dwellings in the Eastridge Historic District in Lincoln, Nebraska, constructed c.1953. Carports are located prominently on the front facades (Mead & Hunt photograph).

Figure 58) is eligible for listing in the National Register under *Criterion C: Architecture.*[54] Constructed in 1955, the house is an intact example of the Contemporary style and displays several distinguishing features that set it apart from other Contemporary homes in the community. These features include the low-pitched roof with a deep eave overhang and exposed beams, large picture windows that dominate the front facade, stone veneer accents, wide exterior chimney, and attached breezeway and garage.

Eastridge Historic District in Lincoln, Nebraska. The Eastridge Historic District (see Figure 59) is eligible for listing in the National Register under *Criterion C: Architecture.* The neighborhood includes a concentration of architect-designed residences known as "Trendhomes" that were developed based on studies of what local homeowners wanted in a modern home. This concentration of Ranch and Split-level homes reflects the innovations in residential architecture developed by Lincoln builders and architects to meet the needs of Lincoln residents in the years following World War II.[55]

[52] Mead & Hunt, Inc., *Historic Resources Survey, City of Oshkosh, Wisconsin* (Prepared for the City of Oshkosh, Wis., 2006), 33.

[53] Richard Cloues and Leslie N. Sharp, Joseph and Mary Jane League House National Register Nomination, 10. This house is also significant under *Criterion B: Significant Person* for its association within the context of Women's History in Georgia and *Criterion C: Architecture.*

[54] Mead & Hunt, Inc. *Historic Resources Survey, City of Oshkosh, Wisconsin*, 36.

[55] Mead & Hunt, Inc. *Survey Findings Report Eastridge Neighborhood, Lincoln, Nebraska* (Prepared for the City of Lincoln, Neb., 2006), 6.

Figure 60. Minimal Traditional houses in the North Fellows Historic District in Ottumwa, Iowa, constructed c.1945. Although some of the homes display exterior alterations, as a whole the district is able to convey significance (photograph courtesy of Molly Myers Naumann and the State Historic Preservation Office of the Iowa Department of Cultural Affairs).

North Fellows Historic District in Ottumwa, Iowa. The North Fellows Historic District (see Figures 42 and 60) is eligible for the National Register under *Criterion C: Architecture.* It is a collection of modest brick houses that typified the "minimum" house type developed and promoted by the FHA during the 1930s and into the postwar period. Overall, the homes retain a high degree of integrity and are eligible for representing a distinguishable entity whose components lack individual distinction. As stated in the National Register Nomination, "This 'minimum house' concept allowed millions of people to attain the American Dream of home ownership."[56]

Blackhawk Park Historic District, Madison, Wisconsin. The Blackhawk Park Historic District is eligible for listing in the National Register under *Criterion C: Architecture* as a good example of prefabricated homes erected during the postwar era (see Figure 61). The district contains a collection of 145 modest single-family homes produced by Wisconsin-based Harnischfeger Homes, Inc., and erected by a local developer between 1950 and 1951. They were intended to provide rental housing during a time of housing shortages in Madison, and the majority of units were occupied within months of construction completion. The district retains a high degree of integrity and all of the original homes remain as single-family dwellings.[57]

[56] Naumann, 8-4.

[57] Elizabeth Miller, *Blackhawk Park Historic District Determination of Eligibility*. Unpublished document prepared for Wisconsin Department of Transportation, 2010, n.p. Available at the Wisconsin Department of Transportation Environmental Services Section.

Figure 61. Harnischfeger house in the Blackhawk Park Historic District in Madison, Wisconsin, one of 145 prefabricated homes erected between 1950 and 1951 (Mead & Hunt photograph).

b. Area of Significance: Community Planning and Development

As previously discussed in the section on *Criterion A,* Community Planning and Development is defined in the National Register Bulletin as "the design or development of the physical structure of communities."[58] It is important to note that Community Planning and Development is also an area of significance under *Criterion C.* As outlined in the *Historic Residential Suburbs MPD,* Community Planning and Development may apply to residential historic suburbs under *Criterion C* that reflect "important patterns of physical development, land division, or land use."[59] Postwar properties that meet *Criterion C: Community Planning and Development* will likely be grouped within subdivisions and neighborhoods that are able to convey patterns of land use and development and are better evaluated as districts. It differs from *Criterion A,* which emphasizes the trends in development and subdivision planning, as opposed to the physical features.

When considering the application of *Criterion C: Community Planning and Development,* the following questions may assist in determining if a property or district possesses significance related to this theme.[60] Research and the historic context must be used to convey this significance and determine if other properties or districts better represent this theme.

- Does the subdivision, neighborhood, or residence convey historic design principles related to community development?

[58] National Park Service, *How to Complete the National Register Registration Form*, 40.

[59] McClelland, Ames, and Pope, F-60.

[60] Litvak, 30.

Figure 62. Contemporary style house with an integrated carport in the Arapahoe Acres Historic District in Englewood, Colorado (photograph courtesy of Diane Wray Tomasso).

Figure 63. Entrance sign at the Fairway Oaks-Greenview Historic District in Savannah, Georgia (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

- Does the subdivision or neighborhood plan reflect important advances, established principles, or popular trends in community planning?
- Did the subdivision, neighborhood, or residence win an award or receive recognition from professional, trade, architectural, or housing research organizations?
- Did the subdivision or neighborhood introduce patterns of subdivision design, housing, financing, or building practices that became influential in the local community or regional area?

The following listed National Register districts demonstrate the application of *Criterion C: Community Planning and Development:*

Arapahoe Acres Historic District in Englewood, Colorado. The Arapahoe Acres Historic District (see Figures 49 and 62) is listed in the National Register under *Criterion C: Community Planning and Development.* It is significant for "displaying important modern concepts in residential site development and neighborhood planning."[61] The subdivision layout broke from the established traditional grid pattern in the community and was designed to include curvilinear streets that followed the existing grade of the land. As a result, lots varied in size, and the individual homes were oriented for privacy and to take advantage of existing mountain views.

Fairway Oaks-Greenview Historic District in Savannah, Georgia. The Fairway Oaks-Greenview Historic District (see Figures 43, 51, and 63) is listed in the National Register under *Criterion C: Community Planning and Development.* It is one of the first Savannah subdivisions "to break with the traditional 'pre-war' mode of planning and to adopt all the elements of the FHA's preferred pattern of residential development."[62] As it was laid out in 1950, the neighborhood broke from the standard grid system with uniform lots to include a series of curvilinear streets and wooded lots of varying shapes and sizes.

c. Area of Significance: Landscape Architecture

Landscape Architecture is defined in the National Register Bulletins as "the practical art of designing or arranging the land for human use and enjoyment."[63] As described in the *Historic Residential Suburbs* Bulletin, it "applies when significant qualities are embodied in the overall design or plan of the suburb and the artistic design of landscape features such as paths, roadways, parks, and vegetation."[64] Neighborhoods and/or subdivisions may have significance for Landscape Architecture if they have special features that reflect design of the period, including tree plantings, street lighting, landscaped yards and open spaces, scenic vistas, roadways and entrances, or conservation of natural features. Although it is most likely that Landscape Architecture significance will apply to historic suburbs and districts, it may also apply to individual postwar residences that retain a designed landscape from the historic period.

Individual properties and subdivisions may also have significance for an association with a noted landscape architect

[61] Tomasso, 8-27. The district is also significant under *Criterion A* in the area of Social History and under *Criterion C* in the areas of Architecture and Landscape Architecture.

[62] Cloues and Ciuecevich, 17. The district is also significant under *Criterion A* in the area of Social History and under *Criterion C* in the areas of Architecture and Landscape Architecture.

[63] National Park Service, *How to Complete the National Register Registration Form*, 40.

[64] Ames and McClelland, 99.

who is significant or influential in the community or region. The property should reflect a particular phase or aspect of a landscape architect's work or a particular idea in their theme or craft. Mere association with a recognized landscape architect is not enough.[65] Research efforts and the historic context should identify if an individual property or subdivision is associated with a significant local landscape architect and if it best represents that architect's work.

The following section discusses a National Register-listed district that demonstrates the application of *Criterion C: Landscape Architecture.*

Arapahoe Acres Historic District in Englewood, Colorado. The Arapahoe Acres Historic District (see Figures 49 and 62) is listed in the National Register under *Criterion C: Landscape Architecture.* It is significant for "integrating the landscape and environment to create a neighborhood of remarkable visual continuity."[66] Rather than re-grading the lots within the subdivision, the landscape architect retained the existing grade and the "community was designed so that the landscape is integral to individual homes, joins multiple homes with shared landscape features, and unifies the 123 individually designed homes into a visually cohesive, park-like whole."[67]

5. Integrity Requirements

After determining if an individual property or historic district has significance under the National Register Criteria, it is necessary to assess whether the property or district retains sufficient historic integrity to be considered eligible for listing. The National Register Bulletin *How to Apply the National Register Criteria for Evaluation* defines historic integrity as "the ability of a property to convey its significance."[68] The evaluation of integrity can be a subjective judgment, but it should be grounded in an understanding of a property or district's physical features and how such features relate to significance as established through the historic context. The following guidance provides for the integrity evaluation of individual postwar residences and residential historic districts in a consistent manner.

a. Aspects of Integrity

Within the concept of integrity, the National Register Criteria recognize seven aspects or qualities that, in various combinations, define integrity. To retain historic integrity, a property should possess several, and usually most, of these aspects. Due to the ubiquity of postwar homes, a higher degree of integrity should be required for individual residences and historic districts to differentiate those resources that are able to convey significant historic associations or distinctive characteristics of a type, period, or method of construction. The seven aspects of integrity are the following:

1. Design—The combination of elements that create the form, plan, space, structure, and style of a property.
2. Materials—The physical elements that were used in the original design and construction.
3. Workmanship—The physical evidence of the crafts used in the construction of a property.
4. Location—The place where the historic property was constructed or the place where the historic event occurred.
5. Setting—The physical environment of a historic property.
6. Feeling—An expression of the aesthetic or historic sense of a particular period of time.
7. Association—The direct link between an important historic event or person and a historic property.

The following sections discuss in more detail the seven aspects of integrity as they apply to individual postwar residences and potential historic districts.

Design. Integrity of design is revealed through the combination of elements that create the form, plan, style, and spatial organization of a property or district. In a historic subdivision or neighborhood, the arrangement of houses, lots, yards, and streets comprise the design. Street plantings, parks, and other open spaces may be present as design features within a historic district. The *Historic Residential Suburbs* Bulletin notes a distinction between planned subdivisions and unplanned neighborhoods:

> Design may have resulted from conscious planning decisions set forth in the historic plat, project specifications, building contracts or deed restrictions, or it may be the result of the personal tastes and individual efforts of homeowners to shape their domestic environment.[69]

Changes to the size of housing lots and additions or alterations to individual houses can affect the integrity of design. Street pattern and land use changes can also alter the design

[65] National Park Service, *How to Apply the National Register Criteria for Evaluation*, 20.

[66] Tomasso, 8-27. As previously mentioned, the district is also significant under *Criterion A* in the area of Social History and under *Criterion C* in the areas of Architecture and Community Planning and Development.

[67] Tomasso, 8-50.

[68] National Park Service, *How to Apply the National Register Criteria for Evaluation*, 50.

[69] Ames and McClelland, 103.

of a historic subdivision or neighborhood. The extent of such changes, and their cumulative effects in the case of a district, needs to be weighed. For example, a subdivision that has experienced alterations to the original street patterns, subdivided lots, and infill development within the original green spaces no longer retains integrity of design.

Location. Location is the place where the historic property or district was constructed or the place where the historic event occurred. For a planned subdivision, integrity of location requires that the boundaries that historically defined the area remain intact. The size of lots and placement of streets and open space should also remain unchanged. In general, an individual residence that was relocated to a new site no longer retains integrity of location.

Workmanship and Materials. These two aspects of integrity recognize the physical elements used in the original design and construction, and the physical evidence of the crafts used in construction. Workmanship reflects the labor and craftsmanship skills of artisans. With the increasing standardization and industrialization of design and construction during the twentieth century, the use of crafts became rare and is unlikely to be a significant aspect of integrity for properties of the subject period. Construction materials vary from those that are man-made and used in buildings, roads, sidewalks, and fences to the natural vegetation planted in yards, terraces, and gardens. Workmanship can be evident in how materials have been used to create a landscaped setting, such as planters and pathways, or architectural elements.

Residential construction materials include those used for exterior walls, fenestration, roofs, and architectural elements. Cladding is the primary visible construction material and a distinctive feature of many postwar residences. It is also one of the most common exterior alterations to postwar houses. The original cladding materials used on many postwar homes, such as asbestos-based siding that was discovered to be unsafe, were commonly removed or encapsulated. Although installation of modern siding materials, such as horizontal vinyl, has less adverse effect when it visually approximates the house's original material and design, replacement of historic siding with modern materials greatly diminishes the integrity of materials. For example, an individual postwar residence that has had the original wide-lap clapboard replaced with narrow-gauge vinyl siding no longer retains integrity of materials. It is important to note that aluminum siding was developed and heavily promoted during the postwar period and may be original to the property. In this instance it should not be considered as a loss of integrity. Other non-compatible replacement siding materials may include replacement cedar siding, vinyl shingles, and modern stone veneer, such as lava rock, that is inconsistent with the historic appearance.

Figure 64. Minimal Traditional house, constructed in 1950, with wide-lap replacement vinyl siding that visually imitates original materials in the National Register-listed Virginia Heights Historic District in Arlington County, Virginia (Mead & Hunt photograph).

As outlined in the *Historic Residential Suburbs* Bulletin, houses may be considered contributing to a historic district "where new siding: (1) visually imitates the historic material; (2) has been thoughtfully applied without destroying and obscuring significant details; and (3) is not accompanied by other alterations that substantially or cumulatively affect the building's historic character."[70] However, in a historic district significant under *Criterion C: Architecture,* the majority of houses should retain the original exterior construction materials.[71]

For example, several Minimal Traditional homes within the National Register-listed Virginia Heights Historic District in Arlington County, Virginia, have replacement siding that replicates the original clapboard siding and original double-hung windows have been replaced with modern windows that retain the original size and configuration (see Figure 64). Although these properties do not meet the integrity requirements to be listed in the National Register as individual properties, they retain enough integrity to contribute to the overall historic district.

Setting, Feeling, and Association. These three aspects of integrity can often be reasonably assessed together. Setting refers to the physical environment of a property and the character of the place in which the property or district played its historical role. The aspect of feeling results from the presence of physical features that, taken together, convey the property's historic period of significance. A property or district retains integrity of association if it continues to convey the important

[70] Ames and McClelland, 106.
[71] Ames and McClelland, 104.

event or activity to an observer. Continued residential use can contribute to integrity of association. Historic subdivisions or neighborhoods often have a semi-rural character that is reflected through their combination of urban amenities, like streets and sidewalks, and natural features, including private yards and public parks. When present in a historic district, the retention of such a semi-rural character contributes to the integrity of setting, feeling, and association.

6. Relationship Between Area of Significance and Integrity

Different aspects of integrity affect the eligibility of a property or district in different ways, depending on how each relates to the property's significance. For example, since *Criterion A* relates to significance gained through historical associations, the integrity aspects of location, setting, feeling, and association weigh more heavily in evaluating a property or district. Generally, historical associations are absent when a property is moved from its original location. Integrity of design, workmanship, and materials are also important, but alterations that affect these aspects may not result in the same level of diminished integrity for structures found to be significant under *Criterion A*. Since *Criterion C* relates to the architectural significance of a property or district, the integrity aspects of design, workmanship, and materials are typically more important when evaluating a property or district under this criterion. These features allow a building to characterize its type, period, or method of construction. Location and setting may be important under *Criterion C* when the design responds to the immediate environment.

The presence of certain physical features may be more important than others depending on the reason for a property or district's significance. The *Historic Residential Suburbs MPD* notes the link between integrity and significance as follows:

> Where the general plan of development has importance, integrity should be present in the original boundaries, circulation patterns of streets and walkways, and the division of housing lots. Where architectural design is of great significance, integrity will depend heavily on the design, materials and workmanship of individual houses. Elements such as roadways, the arrangement of house lots, walls, plantings, walkways, parkland, ponds, statuary, and fountains may likewise contribute strongly to importance in landscape architecture.[72]

In general, the loss of important aspects of integrity would render an individual residence or district ineligible under *Criteria A* and *C*.

[72] McClelland, Ames and Pope, F-65.

7. Retention of Character-defining Features

An important part of establishing integrity is determining whether a property or district retains the essential physical features that are considered character-defining and enable it to convey its historic identity. Character-defining features of postwar residences are described in detail in the national historic context, included in Chapter 4. The process of establishing integrity involves the following steps: (1) defining the essential physical features related to significance, (2) determining if the features are retained and visible enough to convey significance, and (3) determining which aspects of integrity are important to the property's significance and if they are present. That is, the amount of change to a property or district (i.e., its loss of integrity) needs to be weighed against its historical significance in making eligibility recommendations. In general, a postwar house that possesses integrity would retain all its important aspects of integrity. For an individual property significant under *Criterion C: Architecture,* this should include original exterior materials, architectural elements, and massing; original configuration of doors and windows; and spatial relationships within its lot and to the street. A district significant under *Criterion C: Community Planning and Development* should retain its overall layout, landscape features, and circulation patterns, and include a collection of buildings that convey their original character.

8. Alterations

Alterations to a property or district are weighed against its character-defining features and significance to determine historic integrity. Using the period of significance as a benchmark for evaluating resources and historic districts, alterations introduced after the period of significance are generally considered to negatively impact historic integrity. For a property to retain physical integrity, its present appearance should closely resemble its appearance during the time the property derived its significance. For postwar residences, alterations to materials, scale, and massing are often observed. Note that not all alterations will result in a loss of historic integrity as explained through the lists and examples of alterations included herein. However, due to the large number of residences constructed during the postwar period, the integrity requirements for an individual property should be more stringent than for homes that pre-date this period of rapid residential expansion. In addition, the *Secretary of the Interior's Standards for Rehabilitation* may provide additional guidance when evaluating how alterations impact integrity.

Postwar houses, although often designed to be small and compact, have often been enlarged with garages, family rooms, porches, or additional bedrooms. Large-scale additions to houses that resulted in additional stories or substantially altered

footprints diminish historic integrity. Additions that are modest in size have less effect on integrity, especially if the alteration is not visible from the primary elevation or is made to a house that contributes to a historic district rather than one considered for individual significance.[73] For properties within potential historic districts, the *Historic Residential Suburbs* Bulletin recommends the following:

> When evaluating the extent to which the addition changes the dwelling's individual character and the character of the streetscape of which it is a part, it is important to consider the size, scale, and design of the addition as well as its placement on the house lot. Information such as original setback requirements, historic design guidelines, and deed restrictions may also be useful in assessing the effect of additions on historic integrity.[74]

When evaluating a historic district, the ultimate decision as to whether or not it retains sufficient integrity depends upon the district's overall condition and continued ability to convey significance. For historic districts, the presence of features from outside the period of significance or absence of features from within the period of significance are additional alterations to be considered. Alterations to the spatial organization of lots and neighborhoods, circulation elements and patterns, and landscape features can affect the integrity of a district.[75]

The following sections provide guidance on alterations to individual residences and potential historic districts. Surveyors should use professional judgment in evaluating each resource and district.

a. Individual Residences

Because they represent a property type with many similar examples in almost every community nationwide, postwar homes should be critically assessed for historic integrity. It is recommended that integrity requirements be strictly applied whereby a loss of the aspects of integrity that make the property significant may render an individual property ineligible.

Alterations That Do Not Compromise Integrity. Common alterations that typically do not result in diminished integrity for an individual residence include:

- Small-scale additions, such as modest porches, detached garages, or garages attached to the rear of the building;
- In-kind replacement of entrance doors and garage doors (see Figure 65);

Figure 65. Contemporary house in Omaha, Nebraska, constructed c.1960, with a modern garage door replaced in-kind; it retains enough integrity to be considered individually eligible under Criterion C: Architecture (Mead & Hunt photograph).

- Replacement windows that match the original size and configuration;
- Addition of features that are easily removed, such as shutters or awnings;
- Addition of ramps and decks, especially at the rear of the house; and
- Alteration of the original landscape, including plantings and trees, modern decks and patios located on the side or rear of the property, and playground equipment or swimming pools (see Figure 66).

It should be noted that several non-compromising alterations may have a cumulative effect and result in the loss of integrity. For example, a house with a small addition, modern garage door, and replacement windows is no longer able to convey its significance and is considered not eligible for list-

Figure 66. Contemporary house in Oshkosh, Wisconsin, constructed c.1956, with an altered door and landscape and modern pavers and plantings; it retains enough integrity to be considered individually eligible under Criterion C: Architecture (Mead & Hunt photograph).

[73] Ames and McClelland, 106.
[74] Ames and McClelland, 106.
[75] Ames and McClelland, 107.

Figure 67. Contemporary house in Oshkosh, Wisconsin, constructed c.1960, with cumulative alterations, including vinyl siding, and an altered patio; it is not considered individually eligible under Criterion C: Architecture (Mead & Hunt photograph).

ing in the National Register as an individual property (see Figure 67).

Alterations That Compromise Integrity. Common alterations causing the loss of integrity through diminishment of character-defining features and therefore significance of an individual residence include:

- Removal of house from original setting;
- Large-scale additions that substantially add to the mass of a historic house, including attached garages that are prominent on the front façade;
- Additions that alter the spatial relationship between the house and street;
- Installation of modern siding materials, such as vinyl;
- Alteration of window and door openings that are inconsistent with the original size and configuration;
- Reconfigured front entrances, including the addition of entrance vestibules and porches;
- Altered roof lines, including added dormers and second stories (see Figure 68);
- Loss of character-defining features, such as deep eave overhangs and exposed beams;
- Addition of incompatible architectural elements that detract from the original style or form, such as Colonial details on a Contemporary residence; and
- Enclosure of carports or incorporation of garages into interior living space (see Figure 69).

It is important to note that surveyors should use professional judgment and evaluate alterations, including unsympathetic additions, on a case-by-case basis. In some instances the alterations listed may not rule out a property for individual eligibility.

Figure 68. Ranch house in Arlington, Texas, constructed c.1965, with a modern shed dormer that alters the roofline and results in diminished integrity; it is considered not individually eligible (Mead & Hunt photograph).

Figure 69. Contemporary residence in Omaha, Nebraska, constructed in 1954, with a modern three-car garage that replaced the historic carport; this alteration compromises the integrity, and the property is considered not individually eligible (Mead & Hunt photograph).

b. Historic Districts

The *Historic Residential Suburbs* Bulletin describes the special considerations for assessing the historic integrity of a historic subdivision or neighborhood:

> Weighing overall integrity requires a knowledge of both the physical evolution of the overall district and the condition of its component elements, including the design and materials of houses, the character of streets, and spatial qualities of community parks and facilities. Those making evaluations should take into consideration the extent to which landscape characteristics remain intact or have been altered. They should also be prepared to assess the cumulative effect that multiple changes and alterations may have on a neighborhood's historic integrity.[76]

[76] Ames and McClelland, 101.

Figure 70. Although these 1950s Ranch houses in Lexington, Nebraska, have modified windows and garage entrances, they are considered contributing in a potential historic district (Mead & Hunt photograph).

A historic district should retain "the spatial organization, physical components, aspects of design, and historic associations that it acquired during its period of significance."[77] The period of significance is called out as a "benchmark" against which resources should be compared to determine whether or not they contribute to a neighborhood's history and, thus, its integrity.

Alterations introduced after the period of significance are generally considered to negatively impact historic integrity. As explained in the *Historic Residential Suburbs* Bulletin, alterations or additions made after the period of significance can affect a house's contributing status. Houses with modest additions that have little to no effect on the original design can still be classified as contributing. The size, scale, and design of the addition, as well as its placement on the lot, should be considered.[78] A residence with replacement vinyl siding may be considered contributing if no other alterations are present and it still conveys the original appearance. Cumulative alterations for an individual property will generally result in noncontributing status within a historic district. In general, at least half of the properties in a historic district should be considered contributing for the district to be considered eligible for the National Register.

Alterations That Do Not Compromise Integrity. Common alterations that typically do not result in diminished integrity in a historic district include:

- Exterior alterations to a small number of properties within the district, including siding and alterations of garages and carports (see Figures 70 and 71);
- Subdivision of a small number of lots within the district;
- A small amount of infill construction, especially if similar in scale;

[77] Ames and McClelland, 101.
[78] Ames and McClelland, 106.

Figure 71. Ranch house in National Register-eligible Eastridge Historic District in Lincoln, Nebraska, constructed c.1953; one of several homes with an altered garage that is considered contributing (Mead & Hunt photograph)

- Loss or relocation of a historic transportation system that supported the genesis of subdivision;
- Loss of original plant materials, especially where vegetation of a similar scale and visual effect has been retained;
- Maturation of trees that obscure original vistas;
- Loss of a small number of features within a historic district, which may include residences, ancillary buildings, roads, or parks;
- Maintenance of streets, paths, and sidewalks, including in-kind replacement of materials; and
- Small number of noncontributing properties.

As with individual residences, it should be noted that several non-compromising alterations may have a cumulative effect and result in the loss of integrity for a historic district. For example, a district with several residences that have exterior alterations, in addition to infill construction and loss of the original transportation system, may no longer convey its significance and would be considered not eligible for listing in the National Register.

Alterations That Compromise Integrity. Common alterations causing diminished integrity to a historic district include:

- Changes to the size of housing lots through division or consolidation outside the period of significance;
- Multiple infill properties that detract from the size and scale of buildings within a district (see Figure 72);
- Loss of entire sections of a planned neighborhood;
- Cumulative alterations and additions to a large number of houses (see Figure 73);
- Large number of noncontributing properties;
- Alteration to an internal road network or access roads resulting in changed circulation patterns;

Figure 72. Large infill house under construction in Arlington County, Virginia, that detracts from the size and scale of the 1950s Transitional Ranch neighborhood (Mead & Hunt photograph).

- Redesign of park landscape and circulation features; and
- Widespread changes to land use.

9. Defining Historic Boundaries

The National Register Bulletin *Defining Boundaries for National Register Properties* provides guidance for establishing historic boundaries for individual properties and historic districts. This Bulletin, along with specific guidance from the project sponsor or SHPO, should be referenced when defining historic boundaries for postwar resources. When establishing boundaries for postwar residential districts, it is important to note the following:

- The extent of the original subdivision or neighborhood plat(s) and associated additions and/or re-plats, which may assist in identifying boundaries;

Figure 73. Collection of c.1950 Minimal Traditional and Transitional Ranch homes in Madison, Wisconsin, with substantial alterations to the majority of properties, including non-compatible siding, replacement windows, and altered entrances and carports (Mead & Hunt photograph).

- Historic land use within the original subdivision or neighborhood, including schools, churches, commercial nodes, formal recreational areas, and green spaces;
- Concentrations of noncontributing properties, which may influence where the boundary is drawn;
- Fieldwork observations, including changes to the landscape, setting, and circulation patterns; and
- Defined perimeters (e.g., signs, fences, and other boundaries).

F. Documentation

In this final step, the survey results, historic context, and eligibility evaluation are incorporated into final survey documentation that meets the requirements of the project sponsor. These requirements should have been identified during the project preparation phase to inform the data collected during field survey and research efforts. Otherwise, missing data may need to be gathered at a late stage, creating inefficiencies and possible delays in submitting deliverables.

The survey documentation should provide clear and concise information regarding properties in the APE, including a National Register eligibility statement for properties that required evaluation due to their potential for eligibility. The final survey documentation should include a written report, inventory forms and/or database records for documented properties and neighborhoods/subdivisions, photographs, and maps. Coordination with the project sponsor is necessary to determine the preferred format for inventory forms or database records and confirm that single inventory forms or database records may be prepared for subdivisions or neighborhoods that were documented as a single grouping. Based on the requirements of the project sponsor, documentation may also include a database and/or GIS shapefiles and attributes.

At a minimum, the survey report should include the following sections:[79]

- Description of the APE;
- Description of the survey methodology;
- Historic context, illustrated with relevant historic and current photographs and maps;
- Summary of survey results, to include architectural descriptions, eligibility statements, and photographs;
- National Register eligibility statement(s)—if evaluations were conducted; this may be omitted if a report only covers reconnaissance-level survey;
- Bibliography; and

[79] The documentation should focus on the survey and evaluation; however, an effective recommendation under Section 106 may be incorporated into the report based on the requirements of the project sponsor.

- Map(s) of surveyed properties showing relation to project activities.

Inventory forms or equivalent database records for documented individual properties that met selective survey criteria should include the following:

- Property name;
- Location;
- Construction date;
- Architectural elements;
- Alterations;
- National Register eligibility recommendation;
- Photograph(s); and
- Tables or lists to supplement streamlined survey approach, if required by sponsor.

For groups of properties documented as a potential historic district, the following details should be discussed in the survey report and illustrated with representative photographs:

- Discussion of overall architectural styles and forms, construction dates, materials, setbacks, distinguishing features, and alterations;
- Circulation patterns;
- Green spaces and landscape features;
- Associated features, such as parks, schools, churches, and community buildings;
- Representative photographs; and
- Lists of properties with contributing or noncontributing status.

G. Conclusion

The survey and evaluation methodology provides guidance for how to determine if individual properties and subdivisions or neighborhoods of the postwar period are eligible or not eligible for listing in the National Register. It follows and builds upon the guidance of National Register Bulletin *Historic Residential Suburbs,* with supplemental guidance provided to address the challenges that the large number of vernacular homes of the postwar era poses to the evaluation of National Register eligibility of both individual houses and districts. This methodology is intended to offer a streamlined approach as well as consistency in regards to documentation standards and National Register eligibility recommendations. Use of this methodology by state DOTs provides for an efficient survey and evaluation process that can be expected to yield consistent results across geographic areas. As previously noted, many state DOTs and SHPOs have specific survey and evaluation requirements; therefore, this document should serve as guidance rather than a prescribed requirement, unless approved in advance by the project sponsor. The national historic context included in Chapter 4 provides the historic themes and framework for understanding such properties.

CHAPTER 4

National Historic Context

A. Introduction to Postwar Suburbanization

The post-World War II period was a boom for single-family residential construction, suburbanization, and the American dream of homeownership. More than 13 million homes were built across the country between 1945 and 1954. A comparison of housing starts before and after the war shows the dramatic increase of residential construction in the 1950s (see Table 2).[80] The largest increase in housing was in metropolitan areas, with the majority (80.6 percent) of new houses built in the suburbs while only 19.4 percent were in the central city.[81] Accompanying this was the increase in suburban population, which more than doubled between 1950 and 1970 from 36 to 74 million.[82] The legacy of the postwar housing boom continues to be reflected in the urban landscape more than 60 years later, as evidenced by the distinctive pattern of suburbs found nationwide. These suburbs are comprised of self-contained subdivisions with single-family homes constructed in small- to large-scale developments. Another phenomenon still visible today is the large number of isolated individual homes built on the edge of older communities or as infill within established neighborhoods.

This historic context tells the story of postwar housing across the United States, beginning with the end of World War II in 1946 and running through 1975. The historic context includes the evolution of new housing styles and forms, patterns of development, and influences on this era, as well as social and economic trends.

The prewar demand for suitable housing intensified at the end of World War II as housing construction had been constrained by the focus on war needs. In 1944 the National Housing Agency (NHA) estimated that for the first 10 years following the war, 12.6 million non-farm dwellings would be needed. The agency's report went on to state that "the great majority of these should be provided through new construction, the remainder through conversion of existing structures." [83] Housing legislation enacted by the federal government in the 1930s, which focused on stimulating the economy and encouraging home ownership, came of age and influenced residential housing in the postwar era. The government's efforts, largely seen through the work of the FHA, paved the way for many Americans to purchase their own home while providing incentives and reduced risk for developers.

The subdivisions and single-family homes that were built across the country between the late 1940s and early 1970s were influenced by standards developed by the FHA, as well as other commonly followed industry standards and local ordinances.[84] These standards, which generally favored new construction, addressed a variety of topics applicable to single-family homes, including street orientation and lot size, room layout, and overall form and style, to ensure that investments were financially sound. As a result, much of the postwar suburban landscape was standardized and repeated over and over outside large and small communities across the nation. As merchant builders became more prevalent and other smaller

[80] Michael Bennett, *When Dreams Came True* (Washington, D.C.: Brassey's Inc., 1996), 287.

[81] U.S. Census data in Checkoway, "Large Builders, Federal Housing Programmes, and Postwar Suburbanization" in *International Journal of Urban and Regional Research* 4, no. I (March 1980), 23.

[82] Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1985), 283.

[83] The NHA used an arbitrary 10-year period from January 1946 to December 1955 to estimate the need for housing. National Housing Agency, *National Housing Bulletin 1: Housing Needs a Preliminary Estimate* (Washington, D.C., November 1944), 5.

[84] Grace Milgram, *The City Expands: A Study of the Conversion of Land from Rural to Urban Land Use, Philadelphia 1945-62* (Philadelphia, PA: Institute for Environmental Studies, University of Pennsylvania, 1967), iii.

Table 2. New housing starts.

1930-39	2,734,000
1940-49	7,443,000
1950-59	15,068,000
1960-69	14,063,800
1970-75	10,385,800*

*Total for 1970 -79 = 17,675,800

Source: U.S. Census data accessed at http://www.census.gov/const/startsan.pdf on March 29, 2011, and U.S. Census data from 1966 in Barry Checkoway, "Large Builders, Federal Housing Programmes, and Postwar Suburbanization" in International Journal of Urban and Regional Research 4 , no. 1, March 23, 1980, and reprinted in Critical Perspectives on Housing.

scale regional builders increased their volume from a few houses a year to full subdivision development, similar housing in the form of standard models prevailed. Distinction and individual custom design became less common. Despite this similarity and homogeneity, distinct regional variations and interpretations of styles are evident in material choices, house form, and selection of details, as well as housing density, which was influenced by local demand and existing land constraints. Prefabrication and advances in construction materials, stimulated by the war, also influenced postwar residential housing construction.

Postwar suburban growth can be attributed to new prosperity, housing demand, government and private encouragement of home ownership, a shift in standards of living, and the readily available suburban land that was suitable for residential development. In addition, the growing automobile age and improved infrastructure, through new roads and the Interstate Highway System, contributed to suburban development further from cities' central cores by improving access to available land for development. It is this combination of social, economic, and political factors that shaped the development of the postwar residential suburbs, resulting in 60 percent of individuals owning their own single-family home by the 1960s.[85]

B. Transportation Trends

1. Automobile Age

One of the most pervasive reflections of postwar American prosperity was the dramatic increase in automobile ownership. The rapid construction of freeways, availability of cheap gasoline, and relative affordability of cars enabled the transformation of culture, demographics, and land use throughout the postwar period. Between 1940 and 1970 automobile registrations more than tripled from 27 million to almost 90 million. By 1970 the average car owner traveled 10,000 miles per year by automobile, thus ushering in a new lifestyle and the car culture.[86] The growth in automobile ownership and usage enabled people to commute to their workplace from a greater distance.

The rise in automobile ownership during the postwar era followed trends begun in the preceding decades. Vehicle operating costs decreased significantly during the first four decades of the twentieth century as gasoline costs declined and improvements in vehicle reliability and durability were made. For example, in 1925 the average automobile traveled 23 miles per service dollar, while in 1945 this number had increased to 112 miles. This was largely the result of improvements to rubber tires, whose service life increased from 5,000 miles to 25,000 miles during the same period. Overall service life of automobiles improved from 22,000 miles in 1925 to 81,000 miles in 1945.[87]

During the first half of the twentieth century the affordability of the automobile also improved greatly as Henry Ford's mass production techniques permeated the industry and led to a decline in prices. However, civilian car consumption came to a halt during World War II, when auto companies were largely converted to wartime production. General Motors (GM) had established a relationship with the War and Navy departments, and by the time of U.S. entry into World War II, GM already held more than $1.2 billion in defense contracts for the Allies. Beginning in 1940, Ford Motor Company manufactured Pratt and Whitney airplane engines for the U.S. Air Force, and beginning in 1942 Ford produced B-24 bombers in a plant at Willow Run, Michigan. Ford also became the leading producer of four-wheel-drive military trucks and jeeps, while Chrysler led production of military tanks during World

[85] Michael E. Stone, "Housing and the Dynamics of U.S. Capitalism," in *Critical Perspectives on Housing* edited by Rachel G. Bratt, Chester Hartman and Ann Meyerson (Philadelphia, PA: Temple University Press, 1986), 51.

[86] James Gilbert, *Another Chance: Postwar America, 1945-1968* (Philadelphia, Pa.: Temple University Press, 1981), 110, 112-113.

[87] Rowe, 183-184.

War II. On February 22, 1942, the manufacture of automobiles for civilian use ceased altogether; tires and gasoline were rationed for the remaining war years and a 35 mile-per-hour speed limit was imposed by the federal government. Between 1941 and 1944 vehicle miles of travel by American citizens decreased by 121 billion and highway expenditures and motor vehicle use tax receipts fell considerably. By the end of the war the American auto industry had manufactured 75 different essential military items, including engines, guns, and aircraft. With a total value of $29 billion, the auto industry comprised one-fifth of the nation's war production.[88]

The immediate postwar years witnessed a boom in automobile production to meet pent-up demand, as 100 million vehicles were produced in a mere 15 years. Not surprisingly, the proportion of cars to population changed quickly from a ratio of 1 car per 13 people (1:13) in 1920 to 1:4.8 in 1940 to 1:2.3 in 1970. Despite being a "seller's market," emerging automobile companies during the postwar era found it extremely difficult, if not impossible, to enter the industry. Rather, GM, Ford, and Chrysler formed Detroit's Big Three and accounted for 94 percent of the American automobile market by 1955.[89]

The American car's rise to prominence during the mid-twentieth century was the result of unparalleled production and technological achievements. The introduction of the Kettering engine, a V-8, overhead-valve engine, energized the industry and essentially started the postwar horsepower race. Automatic transmissions, power steering, power brakes, and air conditioning were also integrated into the postwar car. By the 1974 model year, nearly 90 percent of full-size cars featured these options.[90]

Postwar automobile design—low, sleek, and shiny—provided a level of comfort and power that brought motoring into a new era. Although the period's automobile styling reflected the aerodynamic qualities of World War II combat aircraft, by the 1960s the ever-growing and nonfunctional tail fins approached the outlandish. Overall, the futuristic aesthetic of the postwar automobile conveyed the 1950s concept of "cool." This image of "cool" cars, in turn, extended to the highway itself and its associated roadside culture of billboards, strip malls, drive-ins, and diners.[91]

The automobile transformed land use across the country as it contributed to the growth of a national freeway or expressway system, which people thought would alleviate vehicular congestion, particularly in urban areas. As the freeway system was designed and constructed, interchanges became critical to the pattern of suburban development. Interchange locations and access roads that paralleled the freeway lanes were carefully studied not only by transportation engineers but also by developers who often used these new roadway components as entrances to their housing projects or shopping centers. Shopping centers, freeway industries, motels, and residential developments grew along urban highways and interchanges. Visually arresting building forms and neon signs along heavily traveled routes were advertisements in themselves, made eye-catching to attract high-speed travelers who had only moments to grasp the message conveyed through iconography and advertising.[92]

With the growth of the national highway program, suburban and rural areas were made increasingly accessible, enabling and encouraging workers to live further away from their workplace. According to sociologist William Dobriner, the heart of the suburban pattern is the commuter, or someone who travels daily to a job in the city. Consequences of increased individual mobility, as a result of private auto ownership, included residential, commercial, and industrial migrations to the periphery of the city proper.[93]

2. Interstate Highway Program

Although construction of the National System of Interstate and Defense Highways did not begin until 1956, planning for the system largely occurred during World War II. The Federal-Aid Highway Act of 1944 authorized the designation of an Interstate Highway System, not to exceed 40,000 miles. The Interstate system was intended to connect principal metropolitan areas, cities, and industrial centers; serve national defense; and connect border points with routes of continental importance in Canada and Mexico. Transportation planners and government officials expected the system to carry 20 percent of the nation's traffic and connect 90 percent of cities with a population of 50,000 or more. The downfall of the 1944 Federal-Aid Highway Act, however, was that it did not provide funding for construction of the Interstate system, but only allowed for preliminary planning efforts.[94]

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[88] James J. Flink, *The Automobile Age* (Cambridge, Mass.: The MIT Press, 1988), 272-276.

[89] Flink, 277-279.

[90] Flink, 285-286; Rowe, 185.

[91] Alan Hess, *Googie Redux: Ultramodern Roadside Architecture* (San Francisco, Calif.: Chronicle Books, 2004), 134; Flink, 286; Gilbert, 113-114.

[92] Gilbert, 113.

[93] Ned Eichler, *The Merchant Builders* (Cambridge, MA.: The MIT Press, 1982), 11-12; Mason, 90-91; William M. Dobriner, *Class in Suburbia* (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1963), 16.

[94] Bruce E. Seely, *Building the American Highway System: Engineers as Policy Makers* (Philadelphia, PA: Temple University Press, 1987), 189-191; A. E. Johnson, ed., *Published on the Occasion of the Golden Anniversary of American Association of State Highway Officials: A Story of the Beginning, Purposes, Growth, Activities and Achievements of AASHO* (Washington, DC: The American Association of State Highway Officials, 1965), 153.

With minimal funding for constructing primary and secondary roads and urban highways, the Federal-Aid Highway Act of 1944 did not do enough to solve the nation's transportation problems. It did not anticipate Americans' postwar financial prosperity, which dramatically increased automobile ownership, highway usage, and commercial development. The unexpected increase in automobile usage created congestion in many urban areas and increased pressure on the overall transportation network.[95]

The Federal-Aid Highway Act of 1952 authorized the first funding for the Interstate Highway System; however, it was limited to $25 million a year for fiscal years 1954 and 1955. This was enough to fund planning efforts that had begun following the 1944 Act, but not enough to begin large-scale construction efforts.[96] After taking office in January 1953, President Dwight D. Eisenhower helped move the Interstate from planning to reality, marshalling a bill through Congress that provided federal money for primary, secondary, and urban roads. This included the first significant funding for Interstate highways of $175 million. Signing the bill into law as the Federal-Aid Highway Act on May 6, 1954, Eisenhower declared: "That gets us started, but we must do more."[97]

Congress spent the next 2 years negotiating the terms of a bill that would finally get large-scale construction of the Interstate system under way. The bill, codified as the Federal-Aid Highway Act of 1956, authorized the expenditure of $25 billion dollars over a 12-year period for construction of a "National System of Interstate and Defense Highways." The network would include 41,000 miles of new roads, built to "the highest standards" of safety and efficiency. The system would be funded by increases in federal gas, tire, and vehicle taxes. Revenues would be collected in a newly created Highway Trust Fund that would enable the government to complete the system on a "pay-as-you-go" basis. Each state would be responsible for completing sections of the system within its borders, with 90 percent of the funding provided by the federal government. Lawmakers passed the bill with only one dissenting vote and pledged that the entire network would be completed by 1972.[98]

The Interstate system was to be significantly different from the system of trunk highways that had preceded it. As an expressway system, the Interstate highways of the late 1950s were designed to provide fast and safe mass automobile transportation within, through, and between metropolitan areas. The objective of the expressway was to separate through traffic from cross traffic, which included turning vehicles, parked cars, and pedestrians. Expressways featured traffic capacities three or four times that of highways and city streets of the same width. Access to the Interstate system and urban expressway systems was available only at designated control points, and bridges or overpasses were required at most intersections to eliminate at-grade crossings and improve safety and traffic flow. Within cities, a spoked-wheel highway configuration was favored, which featured outer circumferential loops and connecting Interstate highways that were typically constructed a few blocks from the main downtown area, often in under-utilized, inner-city space. Highway planners favored such routes because property values and, hence, right-of-way costs were lower, and the new routes would help move traffic away from congested urban centers. In urban areas where dense construction and congestion of heavy automobile traffic could not be avoided, elevated or depressed roads were often constructed.

Although land acquisition for rural freeways presented a daunting problem to highway planners in both alignment and coordination, it was the construction of urban freeways that presented more difficult challenges. Rather than just engineering challenges, urban freeways garnered political debate and hindrances that sometimes brought construction of the system to a halt. The alignments for the Interstate routes through metropolitan areas had to be drawn through established neighborhoods and industrial areas, requiring acquisition of existing homes and businesses, and carving canyons that divided one part of the city from another. The new roadways had the potential to be visually jarring, and the thousands of vehicles anticipated to use the new routes each day could potentially generate a significant amount of noise. In an effort to combine social engineering with civil engineering, the Interstate Highway Act had stipulated that urban highways should, whenever possible, be routed through "blighted" areas. As Thomas H. MacDonald, chief of the Bureau of Public Roads, reported in 1944:

> Blighted areas in the large cities average 20 percent of the total area; but in that 20 percent is concentrated 33 percent of the city population; and that 33 percent of the population is responsible for 45 percent of the major crimes, for 60 percent of the juvenile delinquency, for 50 percent of the arrests, for 60 percent of the tuberculosis, for 50 percent of the disease, for 35 percent of the fires, for 45 percent of the city service costs with tax revenues on real estate of 6 percent. That is, in blighted areas, you have a spread between city costs and revenues from real estate of 39 percent.[99]

[95] Seely, 191.

[96] Federal Highway Administration, "The Dwight D. Eisenhower National System of Interstate and Defense Highways," Federal Highway Administration, http://www.fhwa.dot.gov/reports/routefinder (accessed 15 December 2009).

[97] Seely, 214-215; Tom Lewis, *Divided Highways: Building the Interstate Highways, Transforming American Life* (New York: Viking, 1997), 88.

[98] Lewis, 121.

[99] Thomas H. MacDonald, 28 April 1944, before the U.S. House Committee on Roads, as quoted in Richard F. Weingroff, "The Genie in the Bottle: The Interstate System and Urban Problems, 1939-1957," *Federal Highways Administration,* http://www.fha.dot.gov/infrastructure/rw00c.cfm (accessed 7 March 2011).

MacDonald envisioned that the urban Interstate Highway System would improve the metropolitan fabric by eliminating sub-standard housing and blight, while replacing it with federal redevelopment buildings. Ultimately, the urban renewal that occurred hand-in-hand with the construction of the urban freeway system contributed to the leveling of many close-knit neighborhoods and erection of high-rise towers in a failed attempt to meet the housing needs of the city's poor (see Section C.3). An inevitable result was continued segregation as many African Americans and other minorities relocated to public housing in the central city while whites moved to the suburbs, thus emphasizing the repeated accusation that the government was "building white men's roads through black men's homes."[100]

Completion of the Interstate system was generally delayed by politics, cost overruns, and the inevitable ebb and flow of federal funding. An early national goal was the completion of half of the system, or 21,000, miles by the end of 1964. However, this challenge was not met until February 1966 when 21,185 miles (or 52 percent) of the system was open to traffic and an additional 5,580 miles (7 percent) was under construction. In particular, the escalation of the Vietnam War in the late 1960s impeded Interstate highway progress. Although it did not bring about comparable labor and material shortages that had plagued highway planners during World War II and the Korean conflict, it did cause Congress to reduce the amount of federal-aid money available for Interstate construction in the late 1960s. Despite having an original completion date of 1972, the Federal-Aid Highway Act's expiration date was extended repeatedly. Nationally, the system approached completion in the mid-1970s, and by 1980, it was essentially complete, with some exceptions for more controversial urban links.[101]

3. Non-interstate Freeways and Improved Highways

While states across the nation were busy building segments of the entirely new Interstate system, many were also fulfilling a responsibility to modernize their state highways. In an effort to provide safe and adequate thoroughfares, in the postwar era many states began programs to upgrade portions of their state highway system to expressway standards. Efforts to modernize highways often incorporated many of the same controlled-access highway design principles that were being used for the Interstates. In many cases, efforts focused on alleviating traffic congestion between population centers and regional centers in the state. For example, in Minnesota a number of projects completed between 1956 and 1970 sought to smooth the flow of traffic in and between cities by transforming major trunk highway routes into expressways with features such as double-traffic lanes divided by medians, limited access, and grade separations.[102] Within Texas, similar efforts included upgrading U.S. and State Highways to expressway standards, including interregional multi-lane "superhighways" along U.S. Highway 81 and U.S. Highway 77, which were completed by 1961. Many of Texas' non-Interstate freeways of the postwar period, consistent with national trends, were projects completed in urban areas as part of urban expressway programs.[103] In some cases, these upgraded expressway routes were later designated as Interstate highways.

While expressway conversion was a prominent national trend during the postwar era, many states simultaneously embarked on less dramatic improvements to state highways and arterial roads, which also improved traffic flow and enabled suburban development. After years of delayed highway maintenance as a result of the war, many states used increased funding and material availability to repair neglected secondary systems to meet the requirements of increasingly heavy, high-speed, and high-volume traffic. Common modernization efforts included realigning roads to remove dangerous curves, broadening and smoothing roadways with new paving and shoulders, replacing inadequate bridges, and adding signalized at-grade intersections.

4. Urban Mass Transit

Urban mass transit, which refers to scheduled intra-city service on a fixed route in a shared vehicle, was an alternative means of transportation during the postwar period as it had been for the preceding century. Generally, World War II represented the peak of privately operated mass transit in the United States. With automobile manufacturers suspending production of automobiles during the war, Americans used mass transit in greater numbers. In 1946 the transit industry peaked with 23.4 billion riders; however, ridership decreased rapidly during the postwar years. With a boom in automobile production and ownership and growth in residential development further away from the city center, intra-city transportation routes proved inconvenient and inaccessible. Between 1950 and 1955, mass transit ridership dropped from 17.2 billion to 11.5 billion

[100] Weingroff, "The Genie in the Bottle: The Interstate System and Urban Problems, 1939-1957."

[101] Richard F. Weingroff, "The Greatest Decade 1956-1966: Part II—The Battle for Its Life," http://www.fhwa.dot.gov/infrastructure/50interstate2.cfm (accessed 9 April 2011).

[102] *Biennial Report of the Commissioner of Highways of Minnesota from July 1, 1956 to June 30, 1958* (State of Minnesota: [St. Paul, Minn.], 1958), 24; *Biennial Report of the Commissioner of Highways of Minnesota from July 1, 1958 to June 30, 1960* (State of Minnesota: [St. Paul, Minn], 1960), 40. The number of highway separations reported in the biennial reports likely includes those on both trunk highway and Interstate routes.

[103] Howard J. Erlichman, *Camino del Norte: How a Series of Watering Holes, Fords, and Dirt Trails Evolved into Interstate 35 in Texas* (College Station, Tex.: Texas A&M University Press, 2006), 207.

passengers, a decrease of 33 percent. By 1960 only 8.2 percent of Americans rode busses or streetcars to work, and only another 3.9 percent took rapid transit. Most notably about one-fourth of all intra-city service riders were located in New York City, where automobile ownership was less practical.[104]

With the decline in ridership, many privately owned companies abandoned streetcar lines and an increasing number of municipalities assumed mass transit responsibilities through publicly owned transit authorities. The federal government entered the mass transit industry when, beginning in 1961, small-scale experimental projects in numerous cities were federally funded. The passage of the Urban Mass Transportation Act of 1964 further increased the federal role as $375 million in aid was authorized for transit projects' capital costs. Municipalities were expected to match every two dollars of federal aid with one local dollar. By the mid-1970s transit ridership began rebounding from the postwar decline. Much of the recovery was related to renewed efforts for rail service. Beginning in the mid-1950s, cities including Cleveland and San Francisco began constructing short rapid transit lines along existing railroad and streetcar right-of-way. Additional planning efforts for rapid rail systems included programs in Atlanta, Miami, Baltimore, and Washington, D.C. Using billions of federal-aid dollars, these rail systems enabled people to travel from suburban developments to the city core during rush hour. As an example of the reversal in ridership trends, the percentage of people entering the Washington, D.C., area during the morning rush hour on mass transit increased from 27 percent in 1976 (the year the subway system known as the Metro opened) to 38 percent in 1996. Notably, this increase in ridership and development of mass transportation programs also coincided with the early 1970s energy crisis, which limited the availability and increased the cost of gasoline to power private automobiles.[105]

5. Conclusion

Without a doubt, the golden age of individual-oriented American transportation opportunities corresponded with the postwar period of 1945 through 1975 and coincided with the federal government's efforts to develop a national, interregional freeway system. The necessity of such a system was largely influenced by the contemporaneous rise in automobile popularity and the inevitable congestion that this created. In tandem, these two trends—highway construction and private automobile ownership—contributed to the growth of the suburbs, changes in land use patterns, and the architecture of roadside businesses and single-family dwellings. See Sections E and G for detailed information on residential development patterns and garages and carports.

C. Government Programs and Policies

Suburbanization and single-family housing development following World War II was aided and influenced by federal programs originally instituted during the Great Depression to address housing needs and employment. Programs of the FHA, instituted with the National Housing Act of 1934 (Act), transformed home financing and shaped residential and subdivision development patterns. At the end of World War II, the Veteran's Administration (VA) assisted veterans with mortgage support, while the Veterans' Emergency Housing Act assisted with prioritizing building materials and surplus factories and facilities toward residential housing construction. Together, the FHA and VA provided for government backed mortgages and loans that substantially increased the number of individuals that could become homeowners. While the FHA and VA programs may have had the most direct influence on postwar housing, additional government housing policies such as urban renewal and routine amendments to the housing act also played a role in the development of the postwar residential landscape.

1. The Legacy of the National Housing Act

Signed into law on June 27, 1934, the National Housing Act began a new chapter for American single-family housing and government involvement in the housing market. The objective of the Act was to make funds available for home repair and construction while providing jobs and improving the country's economic conditions resulting from the Great Depression. Longer range objectives were "to reform mortgage lending practices, to broaden opportunities for home ownership, and to raise housing standards."[106] It was these policies that influenced home ownership and residential development patterns well beyond the 1930s, especially during the housing boom following World War II.

At the time of enactment, only 44 percent of individuals owned their own home.[107] Home loans were typically short term (averaging 5-10 years) and required significant down payments (at least 30 percent).[108] The Act authorized the FHA

[104] Zachary Schrag, "Urban Mass Transit in the United States," *Economic History Encyclopedia,* edited by Robert Whaples http://eh.net/encyclopedia/article/schrag.mass.transit.us (accessed 7 April 2011).

[105] Schrag, n.p.

[106] United States Federal Housing Administration, *The FHA Story in Summary, 1934-1959* (Washington, D.C.: Federal Housing Administration, 1959), 4.

[107] Jackson, *Crabgrass Frontier: The Suburbanization of the United States,* 216.

[108] Kenneth T. Jackson, "Federal Subsidy and the Suburban Dream: The First Quarter-Century of Government Intervention in the Housing Market" in *Records of the Columbia Historical Society* Vol. 50 (1980): 427.

to insure long-term loans on private homes, thus encouraging lenders to invest in residential mortgages. Amendments to the Act both before and after 1945 continued to stimulate housing development and home ownership in the postwar period through modifications to the mortgage insurance program and creation of the Federal National Mortgage Association (Fannie Mae) that allowed for the buying and selling of mortgages. The FHA administered the private housing part of the program.[109]

a. Federal Housing Administration

Under the National Housing Act, the FHA provided federal insurance for privately financed mortgages for homes and housing developments.[110] The FHA did not provide loans directly, but did insure the mortgages provided by the private financial institutions if the investments were deemed to be economically sound. As a result, the lender's risk was reduced as they were protected against loss from default by a homeowner.

The FHA initially insured first mortgages up to 80 percent of the property value with a maximum mortgage amount of $16,000 for a single-family home. A 20 percent down payment was required with monthly payments amortized over 20 years. The amount the government insured increased to 90 percent in 1938 and 95 percent in 1948, allowing for lower down payments and extending the period of repayment to 25 and 30 years, respectively.[111] The FHA limited the interest rate that financial institutions could charge, keeping them at a relatively low level. As part of the program, the borrower was charged a mortgage insurance premium of between 0.5 percent and 1 percent of the original mortgage amount. Paid to the FHA, this premium allowed it to be a self-supporting government agency. These home financing reforms with fully amortized mortgages and low down payments opened the door for many to home ownership, and Congress increased the mortgage insurance authorization regularly in the 1950s to allow the FHA to keep up with the housing demand.[112]

The FHA appraised homes, or reviewed plans and specifications if the mortgage insurance was offered prior to construction, to ensure the loan resulted in a good investment and met the FHA minimum property standards. For new construction, the FHA would typically inspect the home three times to see that it was built according to the approved plans. Builders were also required to provide the home buyer with a warranty that the house would be built to conform to FHA standards.[113] Not all homes were eligible for an FHA mortgage. In some metropolitan areas, house prices were higher than the mortgage limit due to high land costs; therefore, this precluded the use of FHA insured mortgages for some homes.[114]

The FHA also insured bank loans to developers to purchase land, subdivide it, and construct houses. Subdivisions that conformed to the FHA standards ensured that individuals purchasing houses could also get FHA financing. Developers submitted plans to the FHA for review and compliance with its standards.[115] Some large-scale builders also had access to government credit and financial aids, including "production advances." One of the nation's largest developers, Levitt and Sons, received FHA commitments to finance 4,000 houses before it had even cleared the land.[116] With federal incentives, it was more profitable for the developer to subdivide the lots and build houses, rather than just dividing the lots, which had been more common in the pre-World War II era.[117]

Meeting FHA Standards. In order to receive mortgage insurance, individual homes and subdivisions needed to meet FHA standards. In the FHA's own words, these standards were put into place for two purposes: "to encourage improvement in housing standards and conditions" and "to provide assurance that the project with respect to which the mortgage is executed is economically sound."[118]

These standards, many of which were developed in the 1930s with the beginning of the program, continued to be applied into the postwar era with periodic revisions. Financial institutions often used the same standards for non-FHA insured projects. The core of the program was the criteria used in decisions to back a mortgage by rating the quality of the neighborhood. The criteria from the underwriter's manuals of the 1930s rated and weighted several factors, including: [119]

- Relative economic stability (weighted 40 percent);
- Protection from adverse influences (20 percent);

[109] Other National Housing Agency units included the Federal Home Loan Bank Administration and the Federal Public Housing Authority.
[110] In 1947 the FHA was made a constituent agency of the Housing and Home Finance Agency, and in 1965, it was made part of the Department of Housing and Urban Development.
[111] The increase to 90 percent in 1938 was under Title II of the National Housing Act. McClelland, Ames, and Pope, E-11.
[112] Mortgage insurance authorization was known to have increased in 1950, 1951, 1953, and 1954. Checkoway, 31.
[113] United States Federal Housing Administration, *FHA Home Owner's Guide* (Washington, D.C.: Federal Housing Administration, 1962), 2-3, 9.
[114] United States Federal Housing Administration, *Sixth Annual Report of the Federal Housing Administration* (Washington, D.C.: U.S. Government Printing Office, 1940), 123.
[115] Dolores Hayden, "Revisiting the Sitcom Suburbs," in *Land Lines* 13, no. 2 (March 2001) http://www.lincolninst.edu/pubs/253_Revisiting-the-Sitcom-Suburbs (accessed 13 December 2010).
[116] Checkoway, 27.
[117] Gwendolyn Wright, *Building the Dream: A Social History of Housing In America* (Cambridge, Mass: MIT Press, 1981), 248.
[118] United States Federal Housing Administration, *Circular No. 5 Subdivision Standards* (Washington, D.C.: September 1939), 1. Section 203 of the National Housing Act provides for the approval of a mortgage.
[119] Jackson, *Crabgrass Frontier: The Suburbanization of the United States,* 207.

- Adequacy of transportation (10 percent);
- Appeal (10 percent);
- Freedom from special hazards (5 percent);
- Adequacy of civic, social, and commercial centers (5 percent);
- Sufficiency of utilities and conveniences (5 percent); and
- Level of taxes and special assessments (5 percent).

One factor used to assess economic stability was the ranking of geographic areas. Neighborhoods that were identified as older, inharmonious, or too dense were deemed to be less desirable and economically unstable, which led to the practice of redlining or flagging these areas as not meeting standards. As a result, new homogenous suburban development was often rated as the more economically stable investment. Practices and policies such as redlining, assessment of neighborhoods, and the initial requirement that subdivisions have protective covenants resulted in racial and other forms of segregation in the form of FHA policies.[120] As a result of a Supreme Court ruling in 1948, the FHA announced in 1949 that as of February 15, 1950, it would not insure mortgages on properties subject to covenants, and in 1963 it called for an end to racial bias or discrimination in FHA or VA housing. [121] Subsequently, the 1968 Civil Rights Act eliminated discrimination in the sale of all housing (See Section D for further discussion of segregation).

The FHA published a number of technical bulletins and circulars that provided guidance on the standards for house construction and subdivision layout and lot development. Although many were published before 1945, the guidance and standards continued to reflect the FHA's accepted practice and were carried into the postwar period with periodic updates. The following FHA publication titles indicate the breadth of technical guidance provided for house construction, overall subdivision layout, and land development:

- Property Standards (1936, with overall standards and subsequent publications with minimum requirements by state);
- Principles of Planning Small Houses (1936, revised 1946);
- Planning Neighborhoods for Small Houses (1938);
- Planning Profitable Neighborhoods (1938, revised 1939);
- Subdivision Standards for the Insurance of Mortgages on Properties Located in Undeveloped Subdivisions (1938);
- Minimum Property Standards (1938, revised 1958); and
- Successful Subdivisions (1940).

The FHA outlined minimum standards to receive FHA assistance in addition to desirable standards that it encouraged. Even though the FHA loan insurance was frequently related to an individual house mortgage, the minimum subdivision standards had to be met "by all subdivisions submitted as suitable sites for homes financed under the Federal Housing Administration's Insured Mortgage Program."[122] The FHA worked with real estate developers and builders by providing technical advice and reviewing applications submitted for insurance of loans, even employing land-planning consultants.[123] A discussion of the specific guidance of the FHA standards for residences and subdivisions is discussed in Section E.

2. Veteran Housing Initiative

Just as housing to support the war industries was prioritized during the war, the federal government recognized housing for returning veterans as critically important. Passed in 1944, the Serviceman's Readjustment Act, known as the GI Bill, extended home mortgage insurance to veterans, substantially increasing home ownership opportunities for those returning from the war. The VA guaranteed housing loans and allowed veterans to borrow the entire price of a house without a down payment or mortgage insurance. Veterans within two years of leaving the armed services or two years after the end of the war, including women, were eligible.[124] Loans were approved following an appraisal by the VA, which often accepted FHA approval of plans and subdivisions.[125] The VA administered its program separately from the FHA; however, it closely followed FHA practices. The GI Bill allowed for loans to be split into two, with one insured by FHA and one by VA, with veterans borrowing both the loan and the down payment. This was popular during the first five years after the war, as nearly one-fifth of the loans insured were for second mortgages supplementing an FHA first mortgage.[126] In the case of dual loans, the property had to meet FHA standards.[127]

The success of the GI Bill is demonstrated in the percentage of houses that were built with VA mortgages immediately following the war, representing 40.5 percent and 42.8 percent of homes built in 1946 and 1947, respectively. As the number of years passed following the war, the use of the GI Bill VA mortgage declined, with only 26 percent of the homes built in 1950 using the program.[128]

[120] Checkoway, 33.
[121] Jackson, *Crabgrass Frontier: The Suburbanization of the United States,* 208.
[122] United States Federal Housing Administration, *Circular No. 5 Subdivision Standards,* 4.
[123] United States Federal Housing Administration, *Circular No. 5 Subdivision Standards,* 34-35.
[124] National Housing Agency, *The Facts About Homes for Veterans* (Washington, D.C.: National Housing Agency, 1945), 14.
[125] Eichler, 8.
[126] Thomas W. Hanchett, "Federal Incentives and the Growth of Local Planning, 1941-1948," *APA Journal* (Spring 1994), 202.
[127] National Housing Agency, *The Facts About Homes for Veterans,* 8-11.
[128] Michael Bennett, *When Dreams Came True* (Washington, D.C.: Brassey's Inc., 1996), 287.

3. Continuation of Federal Housing Policies

The FHA and VA mortgage programs had significant influence on housing loans and construction in the postwar period. Additional amendments to the Act, new housing acts, and other policies continued to pass, encouraging private housing development through financial incentives that impacted the housing industry through 1970. FHA and VA practices promoted new suburban development through programs that favored single-family new construction, while loans for repairs to an existing house were less attractive. In addition, the assessment of neighborhoods led to a bias for new suburbs.[129] The FHA also encouraged development of single-family homes in suburban and outlying areas through new mortgage programs and terms on loans in the 1950s, and amended its practices to provide incentives for larger three- and four-bedroom houses.[130]

Subsequent housing acts continued to liberalize mortgage insurance terms. The National Housing Act of 1954 increased mortgage amounts to $20,000, with the FHA insuring 90 percent on the first $9,000 and 75 percent of the appraised value for the remainder. The Act also provided 30-year loans up to $17,100 for servicemen.[131] In an effort to continue to stimulate housing, mortgage terms including down payments, maximum loan amounts, and loan length continued to be modified in the 1950s and 1960s through the adoption of subsequent housing act amendments. Some amendments targeted certain housing types or sectors. The National Housing and Urban Development Act of 1965 allowed for larger mortgages for low-priced homes in outlying areas and near military installations, while the Housing and Urban Development Act of 1968 provided assistance for low-income home buyers.[132]

Other incentives focused on the development of residential neighborhoods. For example, the Housing Act of 1948 encouraged the "use of cost-reduction techniques through large-scale modernized site construction of housing."[133] This amendment was attractive to developers of larger-scale subdivisions, and the FHA reported that about 2,000 homes were financed under this section until it was made inactive by the Housing Act of 1954.[134] Additionally, in 1950 the terms on loans for large-scale residential construction were liberalized, and in 1954 an allowance was made for mortgages for developments of single-family dwellings of at least 25 houses that would qualify for FHA mortgages.[135] In addition, the FHA authorized loans to facilitate the production of prefabricated houses or components in 1951, which was also attractive to the large-scale developers.[136]

Amendments to the Act and other government provisions also focused on urban renewal efforts through loans, grants, technical assistance, and special mortgage insurance in cities. These provisions provided tools for local governments, private enterprises, and the federal government to take measures to eliminate blight.[137] The Federal Housing Act of 1949 authorized $1 billion in loans and $500 million in capital grants for slum clearance and urban redevelopment over 5 years.[138] The authors of the 1949 Housing Act stated their objective was "the realization as soon as feasible of the goal of a decent home and a suitable living environment for every American family."[139] Five years later, the Housing Act of 1954 introduced the term "urban renewal" instead of urban redevelopment to refer to the restoration of decaying areas.[140] The 1968 Housing and Urban Development Act continued to provide funding for urban renewal efforts.[141] Some of the provisions of urban renewal focused on new construction, such as mortgage insurance assistance for special urban renewal areas and acquisition and clearing of blighted land for redevelopment. Many of the urban renewal provisions focused on rehabilitation of existing housing stock, project planning, and construction of public and rental housing.[142]

Additional government programs in the 1970s continued to focus on the country's housing needs. For example, at the tail end of the study period, the Housing and Community Development Act of 1974 was intended to continue the development of viable urban communities, including improved housing through programs and grants to communities, such as Community Development Block Grants.

4. Conclusion

The federal role in housing during the postwar period impacted housing location, design and layout, and led to an

[129] Jackson, *Crabgrass Frontier: The Suburbanization of the United States,* 206-207.

[130] Checkoway, 31-32.

[131] United States Senate, 84th Congress, 2nd Session, Report 1448, *Review of Federal Housing Programs* (Washington, D.C.: U.S. Government Printing Office, 1956), 109, 114.

[132] Mason, 134, 135.

[133] Ames and McClelland, 30.

[134] United States Federal Housing Administration, *The FHA Story in Summary, 1934-1959,* 17, 20.

[135] This was added in Section 611 of Title VI of the National Housing Act. United States Federal Housing Administration, *Administrative Rules and Regulations Under 611 of the National Housing Act* (Washington, D.C.: Federal Housing Administration, Revised April 1950), 1, 3; Checkoway, 31-32.

[136] Checkoway, 31-32.

[137] Housing and Home Finance Agency, *The Urban Renewal Program Fact Sheet* (Washington, D.C.: Housing and Home Finance Agency Urban Renewal Administration, 1964), 1.

[138] Checkoway, 31.

[139] Wright, 246.

[140] Mason, 65.

[141] Mason, 135.

[142] Housing and Home Finance Agency, *The Urban Renewal Program Fact Sheet,* 2-5.

increase in large-scale builders. The influence of the FHA mortgage insurance program is undeniable as one-quarter of all new housing starts between 1934 and 1970 involved an FHA mortgage.[143] By 1965 the FHA reported that it had written mortgage and loan insurance of more than $100 billion, covering 7.5 million homes.[144] The efforts of the FHA and other federal agencies and programs allowed home ownership to increase to 63 percent by 1972, up from 44 percent ownership in 1934. [145] The role of the FHA in financing homes continued well beyond the 1970s.

D. Social, Economic, and Cultural Trends

In the post-World War II era, America's social and economic history was defined by numerous and related overarching trends. Among these trends were economic prosperity with increasing incomes and personal financial health; shifting populations from the city center to suburbs and from the East Coast and Midwest to the South and West; increasing family sizes spurred on by the baby boom; racial desegregation resulting from the civil rights movement; rapid innovations in technology; and an increased sense of consumerism. Additionally, the postwar period was largely characterized by a tension between optimism in the economic health of the country and a continued persistent sense of anxiety and unease regarding the Cold War.[146] These broad trends are discussed herein.

1. Economic Conditions

After 16 years of depression and war, during which residential construction lay dormant, America emerged from World War II with a dire need for housing. In 1947, six million families were doubled up in homes with relatives or friends, while another 500,000 lived in Quonset huts or temporary quarters. As a result, housing the growing population became both a national priority and a means to stabilize the economy in the postwar era. For the first time in history, housing starts by month and year became an important economic indicator.[147]

Residential building and suburban growth established the construction industry as a major player in many communities and a significant force in regional and national economies. By the late 1960s, housing was considered a consumer good, or a commodity for purchase, available to many more consumers than in previous decades. With access to mortgages and financing, more families could purchase homes, as is witnessed by the large jump in homeownership rates. Accessible homeownership also resulted in an increased demand for related commodities, such as appliances, home furnishings, and automobiles, thus further stimulating the national economy.[148]

Between 1945 and 1950 new residential construction grew from one to 6 percent of the gross national product (GNP). The nation's building boom reached a record high in 1950 with the construction of 1,692,000 new single-family houses. Generally, building construction starts remained high, totaling more than one million per year until 1960, when starts dipped below one million for several years. During this time, construction leveled off at about 3 percent of GNP by the late 1960s, at which time residential land and buildings comprised nearly one-third of the country's total wealth. A second wave of increased building activity occurred between 1971 and 1973, when housing starts again topped one million. The period between 1945 and 1975 proved to be the most productive period in American history in terms of overall housing construction.[149]

The nation's financial health in the postwar years was marked by several factors. The anticipated postwar recession never occurred and non-farm employment increased immediately after the war. Employment redistributed across the country as the military and defense corporations turned jobs occupied by women during the war over to veterans. Many defense industries were converted to produce consumer goods, and the middle class expanded as the work force shifted from labor and blue collar jobs to service and professional employment during the period.[150]

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[143] Cynthia L. Girling and Kenneth I. Helphand, *Yard, Street, Park* (New York: John Wiley & Sons, Inc., 1996), 85.

[144] United States Federal Housing Administration, *Financing for Home Purchases and Home Improvements* (Washington, D.C.: Federal Housing Administration, 1965), 1.

[145] Jackson, *Crabgrass Frontier: The Suburbanization of the United States,* 216.

[146] Clare J. Richfield, *The Suburban Ranch House in Post-World War II America: A Site of Contrast in an Era of Unease, Uncertainty, and Instability* (Thesis, Barnard College, Department of History, Spring 2007), 2-3.

[147] Jackson, *Crabgrass Frontier: The Suburbanization of the United States,* 232-233; Elizabeth S. Wilson, M.E.P., *Postwar Modern Housing and a Geographic Information System Study of Scottsdale Subdivisions* ([Scottsdale, Ariz.], August 2002), 18.

[148] Lizabeth Cohen, "Citizens and Consumers in the Century of Mass Consumption," in Harvard Sitkoff, ed., *Perspectives on Modern America* (New York: Oxford University Press, 2001), 158.

[149] There is some debate over the accuracy of housing start statistics from 1945-1958. Prior to 1959, the Bureau of Labor Statistics kept records on housing starts based on permitting processes, which were not necessarily consistent across the country. As a result, David Siskind has argued that housing starts may have been underreported by approximately 25 percent between 1945 through 1958. Nonetheless, 1950 still represents the peak year of housing starts in the United States during the postwar period. David Siskind, "Housing Starts: Background and Derivation of Estimates, 1945-82," *Construction Review* (May/June 1982), 4-7; Jackson, *Crabgrass Frontier: The Suburbanization of the United States,* 232-233; Ames and McClelland, 65-66; Clifford Clark, *American Family Home, 1800-1960* (Chapel Hill, N.C.: University of North Carolina Press, 1986), 46; Wilson, 18-27.

[150] Wilson, 18-19.

Table 3. Percent of total population living in central cities and suburbs.

Location	1940	1950	1960	1970
Central City	32.5	32.8	32.3	31.4
Suburbs	15.3	23.3	30.9	37.6
Rural	52.2	43.9	36.8	31.0

Source: U.S. Bureau of the Census

Postwar economic affluence in savings and income was influenced by the nearly full employment levels and relief from wartime spending constraints. During the wartime years, imposed rationing and the unavailability of many consumer goods caused Americans to save like never before. By the end of World War II, Americans held more than $81 million in war bonds and bank accounts. As a result of employment and savings, disposable income nearly doubled between 1940 and 1945. Of the more than six million families living with family or friends or in temporary housing in 1947, at least half had enough savings, income, and desire to occupy their own homes. Median family income grew from $3,800 in 1949 to $5,700 in 1959, an increase of about 50 percent. As American citizens enjoyed a rise in assets and wealth, lending institutions experience increased assets. Banks and savings and loan associations began providing mortgage and commercial loans that yielded between four and 6 percent interest, a considerable increase over the two-percent yields of wartime government bonds.[151]

Despite small recessions in 1957 and 1961, there was an overall 23 percent rise in real household income between 1950 and 1970. Median household income doubled during these two decades, translating into increased consumer consumption, especially in the housing market. With mortgages readily available to veterans and nonveterans alike (as discussed in Section C), American investment in real estate grew. By 1965 national mortgage debt as a proportion of disposable income rose to 54 percent.[152]

Although the population generally shifted out of the central city, economic activity in the country's 25 largest metropolitan areas grew significantly and rapidly during the postwar years. Employment increased in manufacturing by 16 percent, in trade by 21 percent, and in the service sector by 53 percent. However, this job growth was more visible in the suburbs than in the central core. Central cities lost 7 percent of jobs in the manufacturing and trade sectors, while only increasing service employment by 32 percent between 1948 and 1963. The suburbs witnessed much greater growth; employment increased in manufacturing by 61 percent, in trade by 122 percent, and in service sectors by 135 percent. While the central cities of the 25 largest metropolitan areas lost approximately 300,000 jobs, employment increased by almost 4 million in their suburban counterparts. By 1970 suburban America housed more manufacturing jobs than central cities since commercial and industrial developments used available and inexpensive land outside of the city limits.[153]

2. Demographic Trends

a. Shifting Populations

America was a predominately urban society in the twentieth century and prior to World War II, but the postwar years would transform the American landscape. During the 1950s and 1960s the country witnessed a migration of predominately white Americans out of the city and into low-density suburbs. As illustrated in Table 3, the nation witnessed a dramatic increase in suburban population between 1940 and 1970, with the percentage of suburban residents surpassing rural residents between 1960 and 1970. Although postwar housing is often found in suburban clusters, additional development occurred across the country as houses were erected as infill in older neighborhoods and as cities re-platted earlier plats to accommodate the new lower-density housing preferences. As stated in the U.S. Department of Labor's 1958 study, *New Housing and its Materials: 1940-1956,* the postwar preference for detached single-family homes led to the pattern of suburbanization and led to a shift in zoning regulations within the city to promote lower density residential development.[154]

With an increasing suburban population, numerous cities saw a population shift; in Baltimore, the urban population relative to suburban population fell from 67.6 percent in 1950 to 43.7 percent in 1970. In Detroit the shift was even more marked, from 61.3 percent in 1950 to 36 percent in 1970. The population shift can be explained by the dispersion of jobs, housing, and shopping to the suburbs, enabled by a growing

[151] Wilson, 21; James Andrew Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970* (PhD Dissertation, Columbian College of Arts and Sciences, George Washington University, 2005), 50.

[152] Wilson, 23.

[153] Gilbert, 102-103.

[154] Kathryn Murphy, *New Housing and its Materials: 1940-1956* (Washington, D.C.: U.S. Department of Labor, Bureau of Labor Statistics, 1958), 2.

road and highway network (see Section B). As a result, the tax base of the metropolitan region shifted, affecting available public services and the demography of the city and suburbs.[155]

Not surprisingly, the movement of business out of the cities stimulated the suburban housing market and contributed to the postwar housing boom. Between 1940 and 1970 the percentage of Americans owning homes increased by 30 percent. While American suburbs witnessed prosperity and increasing wealth, the economy of central cities faltered. By 1967 the median income of city dwellers measured nearly $2,000 less than suburbanites.[156]

In addition to the shift from city to suburb, the country also witnessed a population shift from the East Coast and Midwest to the South and West Coast. Between 1940 and 1970, the western United States grew twice as fast as the Northeast. The South also grew faster than either the Northeast or North Central regions of the country, reflecting the decline of manufacturing in the East and Midwest. At the end of each decade, the U.S. Census Bureau calculates the mean center of population, which refers to a geographic point in the United States. Historically, the mean center of population reflected the movement of the nation's population westward and southward. Between 1900 and 2000 the mean center of the country's population shifted 324 miles west and 101 miles south. Notably, the southward movement of the population occurred primarily during the second half of the century.

Within the postwar period, California featured a particularly rapid population rise. As the fifth most populous state in 1940, California rose to be the second most populous by 1950 and the first most populous by 1963. Other states that witnessed acute growth during the postwar period include Arizona, Florida, Washington, and Texas. Although their total populations were less than California's, Arizona and Florida witnessed more rapid relative growth during the 1940s through 1960s. Arizona's population increased 50 percent between 1940 and 1950, nearly 74 percent between 1950 and 1960, and 36 percent between 1960 and 1970. Similarly, Florida's population increased 46 percent between 1940 and 1950, nearly 79 percent between 1950 and 1960, and 37 percent between 1960 and 1970. As with growth in the rest of the country, much of the new south and western population resided in suburbs.[157]

b. Family Size

Perhaps one of the most important demographic trends affecting the development of postwar housing, particularly the size, scale, and layout of the house, was family size, which was also influenced by age, marriage rates, and fertility. In general, sociological studies of postwar suburbs found trends that included higher fertility rates, lower median age, higher percentages of married couples, higher percentages of primary families, lower percentages of separated couples, and lower percentages of women in the workforce than in cities.[158] As previously mentioned, the postwar era witnessed a continued increase in marriage and birth rates, a demographic trend that began during the war years. With the return of nine million veterans after the war's end, both marriage and birth rates reached an immediate postwar record. Between 1944 and 1948, the United States had the second highest marriage rate of any country in the world. Almost 70 percent of males and 67 percent of females over the age of 15 were married in 1950.[159] The number of marriages peaked at 4.3 million in 1957. Moreover, 94 percent of women between the ages of 35 and 39 were married and had been married at younger ages and with a lower rate of divorce than any earlier decade. Optimism, the improved economy, and high employment encouraged families to have more children. Thus, a consequence of the marriage boom and recovering economy was the 18-year baby boom, which affected demographics and the housing market considerably. The birthrate rose from 2.2 births per woman in the 1930s to 3.51 by the end of the 1950s, while the population grew by nine million in the 1940s and surged to 29 million in the 1950s. During these two decades, the U.S. population increased 33 percent.[160]

The postwar family was typically characterized as "the veteran, his young wife, and their prospective children."[161] In 1950 the average age of the suburban household was 31, and the suburbs typically featured many young children and few elderly, single, widowed, or divorced adults. Although many women held jobs after the war, as of 1950 only 9 percent of suburban women worked compared to 27 percent of the overall population. Women were encouraged by popular culture to view domesticity as life's most rewarding goal. Although predicating a stereotype, popular magazines of the period, including *Good Housekeeping, Ladies Home Journal,* and *Better Homes & Gardens,* popularized a woman's domestic role with features on cooking tips, cleaning advice, and stories that stressed the rewards of female sacrifice.[162]

Although the popular image of women during the immediate postwar period involved the housewife, entry of women into the workforce defined the latter half of the postwar era. In 1930, 22 percent of women held jobs, and by 1970 this num-

[155] Gilbert, 102-103.
[156] Gilbert, 105.
[157] Gilbert, 108-109; Frank Hobbs and Nicole Stoops, U.S. Census Bureau, Census 2000 Special Reports, Series CENSR-4, *Demographic Trends in the Twentieth Century* (Washington, D.C.: U.S. Government Printing Office, 2002), 16, A-1.
[158] Dobriner, 19.
[159] Gilbert, 57-58.
[160] Clark, 205-206.
[161] Dolores Hayden, *Redesigning the American Dream: Gender, Housing, and Family Life* 2nd edition (New York: W.W. Norton & Co., 2002), 41.
[162] Wright, 256; Gilbert, 63-64.

ber had grown to 43 percent. The majority of the increase was the entry of married women into the workforce, and one of the largest increases in women's employment occurred during the decade of the 1950s.[163]

The modern home, which was influenced by demographic and economic trends, emphasized relaxation, children, and enjoyment. Not only did the individual house reflect these influences, but the planned environment of new communities did as well. With an adequate allotment of space for parks or even an elementary school, and the inclusion of cul-de-sacs that resulted in privacy and slower-moving traffic, the design of subdivisions created a family-friendly environment, well suited to children and individual privacy.[164] Additional information on subdivision layouts and features is included in Section E.

c. Segregation, the Civil Rights Movement, and Racial Desegregation

In the immediate postwar years, segregation was ingrained in the policies of the FHA, the agency that guided much of the housing expansion during the period. In an effort to ensure neighborhood homogeneity, stability, and character, the FHA encouraged developers to consider their market based on income and race. The agency often demonstrated a bias against racial and ethnic minorities when it refused to underwrite houses in areas where minorities were concentrated, a practice known as "redlining." However, there were certainly exceptions to this trend, such as African American developer Walter Aiken in Atlanta, Georgia, who was able to receive FHA loan guarantees for his Fairview Terrace development. Nonetheless, by the late 1950s only 2 percent of new homes underwritten by the FHA were occupied by minority populations.[165] As late as 1963 residential developers in Northern Virginia, including Levitt & Sons and Edward R. Carr, continued to refuse home sales to African Americans. These actions resulted in public demonstrations, protests, and sit-ins that came to characterize the civil rights movement.[166]

Within postwar suburbs, the FHA encouraged the use of restrictive covenants to regulate land use and enforce homogeneity. Until the 1948 Supreme Court decision in *Shelly v. Kramer,* the court system enforced restrictive covenants, a practice that continued informally across the country even after that date. Although restrictive covenants could no longer be listed in deeds, homogeneity and conformance was still achieved by choosing to whom houses would be sold. Tension continued to rise as newly middle-class African Americans who could afford suburban homes were prohibited from home ownership because of their race by informal covenants or restrictions from the sale of homes. Even while the economic boom of the postwar period increased the standard of living, awareness of class and racial disparity became acutely visible.[167] As previously discussed, the FHA attempted to address issues of racial discrimination with an announcement that as of February 15, 1950, it would no longer insure mortgages on properties subject to covenants. The FHA also followed this with a 1963 call for the end to racial bias or discrimination in the sale of all housing.[168]

It was not until 1954 and the case of *Brown v. Board of Education of Topeka, Kansas,* where the Supreme Court declared segregation in public education to be unconstitutional, that the civil rights movement gained ground, ushering forth a period of desegregation in all aspects of public life. This well-known court case overturned the "separate but equal" mandate of *Plessy v. Ferguson,* an 1896 court case that legally supported discrimination and segregation in all aspects of life, such that facilities were not required to be racially integrated as long as they were equal. In response and in an effort to eliminate acts of racial discrimination against African Americans and other disadvantaged groups, private citizens adopted a strategy of civil disobedience and resistance. The best known was the yearlong bus boycott (1955-1956) in Montgomery, Alabama, following Rosa Park's incarceration for refusing to give her seat to a white passenger. Another prominent act of civil disobedience was the 1960 Greensboro sit-in, during which four black students from the North Carolina Agricultural and Technical State University staged a sit-in at a Woolworth's lunch counter because they had been denied service. Nonviolent marches also provided a viable means for advancing the civil rights movement, as was the case of the Selma-to-Montgomery marches in Alabama (1965) and the March on Washington for Jobs and Freedom (1963), best remembered for Martin Luther King, Jr.'s "I Have a Dream" speech.

Generally, the civil rights movement is considered to have lasted between 1954 and 1968. In addition to the 1954 *Brown v. Board of Education* court case, other critical legislation that addressed discrimination included the following:

- The Civil Rights Act of 1964, which banned discrimination in employment practices and public accommodations;
- The Voting Rights Act of 1965, which restored voting rights to African Americans; and
- The Civil Rights Act of 1968, which banned discrimination in the sale or rental of housing.

[163] Gilbert, 68.

[164] Clark, 216; Girling and Helphand, 90-92.

[165] Andrew Wiese, *Places of Their Own: African American Suburbanization in the Twentieth Century* (Chicago: The University of Chicago Press, 2004), 101.

[166] "8 Pickets Are Jailed at Belair," *The Washington Post, Times Herald,* 15 September 1963, B-1; "Housing Project Bed-In Is Staged," *The Sun,* 11 August 1963, B-46; "Housing in D.C. Area Picketed," *The Sun,* 19 August 1963, 30.

[167] Richfield, 26-28.

[168] Wright, 247; Gilbert, 106; Richfield, 26.

Much attention has been given to the racial distribution of both suburbs and the central city in the postwar period; sociological studies since 1970 have made careful use of census data to analyze racial distribution and trends. In particular, between 1930 and 1970, the color composition of cities changed dramatically, with the proportion of whites living in the city falling steadily and the proportion of non-whites in central cities increasing considerably. Of the cities within the 12 largest standard metropolitan statistical areas (SMSA), as identified in 1970, the non-white population more than doubled between 1930 and 1970.[169] Meanwhile, the white population in the central cities decreased by almost half and increased steadily within the suburban rings of the SMSAs. By 1970 whites were twice as likely to live in suburban rings as were non-whites. In real numbers, the 12 largest SMSAs lost more than 4.5 million white central city residents between 1950 and 1970, while the central cities gained nearly 4 million non-white residents. However, population increases for both white and non-white populations were visible in the suburban rings, and while the growth rates were similar from 1950 to 1970, the absolute numbers depicted the non-white increase as being significantly lower than the white increase.[170]

Explanations for the different rates of racial suburbanization are difficult and incomplete. However, housing and employment segregation certainly filtered the flow of population from cities to suburbs. Houses in the suburbs were typically more expensive than housing in cities, and income levels may provide one factor in this racial distribution trend. Additionally, employment for semi-skilled or unskilled workers was still more readily available in the central cities during the postwar period, particularly with the growing number of service employment opportunities at hotels and restaurants near central business districts. Regional differences also played a role in the severity of racial distribution, as segregation was a stronger force in the South and industrial Midwest than it was in the West or Northeast.[171]

3. Consumerism and Technology

Postwar America was also greatly influenced by a rise in technology and renewed consumerism. During the preceding 16 years of depression and war, consumption was generally hindered and suspended, particularly by the restriction of production of consumer goods during World War II. With unparalleled cash in hand and consumer desires, which were the result of pent-up demand, increasing wages, and available consumer credit, Americans were eager to purchase and indulge. Americans responded to technical innovations and aggressive mass-marketing techniques with an intense desire for the new or novel consumer good. This was especially seen in the home through the integration of electric and gas-powered appliances in kitchens and basements, and incorporation of a garage or carport for the new family automobile. With innovations occurring quickly and regularly, a cycle of purchase and replacement became evident in the postwar years as homeowners continuously upgraded their technological goods, from cars to televisions.[172]

Between 1955 and 1973 American scientists and workers developed more than half of the world's significant inventions of the era. These inventions formed new industries. In particular, the communications industry defined the postwar era, characterized by the transmission, storage, and manipulation of information. Televisions and computers symbolized the ability to distribute and store information. Following World War II, the technology of transmitting pictures improved rapidly. Early production included 6,000 receivers in 1945, but within only 5 years this number increased dramatically; seven million televisions were produced in 1950, and high production rates continued until the late 1960s. In a single generation, 99 percent of American homes acquired a television, a technology that was well suited for the new postwar family room (also referred to as a recreation room).[173]

The impact of computers was also significant in the postwar era, particularly as it influenced industry and commerce, which in turn influenced suburban growth. International Business Machines (IBM) and other companies worked during the war on code-breaking machines, and the federal government continued to provide the impetus for the computer industry in the postwar period. By 1966 the government had 2,500 computers in use (representing an increase from the government's three machines, which had been used to compute the 1950 census returns) and more than 30,000 computers were being used in all facets of industry and commerce. By the end of the postwar period, the transformation of technology, organization of work, and corporate consolidation resulted in a new economic order. Automated machines enhanced, and in some cases replaced, human labor.[174]

Around the country, new suburban growth and subdivision development occurred as a result of corporate expansion,

[169] The 12 largest SMSAs as of 1970 included: New York; Los Angeles-Long Beach; Chicago; Philadelphia; Detroit; San Francisco-Oakland; Boston; Pittsburgh; St. Louis; Washington, D.C.; Cleveland; and Baltimore.

[170] Leo F. Schnore, Carolyn D. Andre, and Harry Sharp, "Black Suburbanization, 1930-1970," in *The Changing Face of the Suburbs,* ed. Barry Schwartz (Chicago: The University of Chicago Press, 1976), 69-94.

[171] Schnore, Andre, and Sharp, 69-94.

[172] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 49-53.

[173] Gilbert, 164; James Andrew Jacobs, "Social and Spatial Changes in the Postwar Family Room," *Perspectives in Vernacular Architecture* 13 (2006), 73.

[174] Gilbert, 160-165.

increased production, and technological improvements. For example, the city of Arlington, Texas, witnessed unparalleled growth in the 1950s when GM located a Buick-Oldsmobile-Pontiac plant on the eastern edge of town. Employing 2,000 workers by 1953 and 3,000 workers by 1955, GM contributed greatly to the city's residential growth, and Arlington's population increased 482 percent between 1950 and 1960.[175] Similarly, Rochester, Minnesota, witnessed an immediate increase in home-building permits following IBM's announcement of locating a manufacturing facility on the city's northwest edge in 1956. Between 1956 and 1957 building permit applications nearly doubled from 261 to 501, and by 1958 the company employed 1,500 people, thus significantly affecting the local economy and real estate market.[176]

By the 1960s the pronounced cycle of the purchase and replacement of technological goods, such as appliances and automobiles, was extended to real estate and the "trading up" of homes. At this point, many consumers owned homes but found themselves with considerable discretionary income. This inevitably led to seeking a larger home with even more amenities and conveniences, such as better appliances in larger kitchens and larger utility rooms and separate rooms to accommodate televisions. As more and more Americans became homeowners, the house itself became an important symbol of economic status. As a sign of its owner's economic status, trading up to larger and more amenity-filled residences was an unsurprising result of economic prosperity and built-up wealth in the latter part of the postwar period.[177]

4. Conclusion

The trends discussed within this section, including economic prosperity, rising discretionary incomes, shifting populations, increasing family sizes, racial desegregation, technological innovations, and growing consumerism, affected the climate of postwar residential home building. Additionally, these trends influenced the design of subdivisions and the postwar house, as it became necessary to accommodate larger and younger families and an increased number of consumer goods, from automobiles to electric and gas-powered appliances. The following sections address the design and layout of the postwar landscape and house in more detail.

[175] Komatsu Architecture, et. al, *Final Arlington Historic Resources Survey Update,* Prepared for City of Arlington, Texas City Community Services Office, September 2007, 7-10.

[176] "IBM – A Vibrant Force in Rochester," *RochesterMN.com,* http://www.rochestermn.com/ibma/vibrant/force/in/Rochester/story-21.html (accessed 30 March 2011).

[177] Jacobs, *"You Can't Dream Yourself a House": The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 98, 101; Hobbs and Stoops, 124.

Figure 74. This Westport, Wisconsin, c.1960 subdivision is similar to those constructed nationally in the postwar era, with modest residences set back along curvilinear streets (photograph courtesy of the Wisconsin Historical Society, Image ID: 66696).

E. Planning and Development

Postwar residential development re-shaped American cities and nearby environs. The increased demand for housing and improved transportation networks allowed for residential development to extend beyond the central city to areas that had previously been raw land. This section discusses postwar development patterns and the individuals, builders, and manufacturers responsible for the unprecedented boom in residential construction that followed World War II.

1. Development Patterns

The majority of postwar residential development occurred in new residential subdivisions on the periphery of established communities. One of the biggest factors that contributed to the postwar development boom was the ready availability of land. Thousands of developments sprang up with similar houses, setbacks, and curvilinear streets on former agricultural or dormant land (see Figure 74). These subdivisions ranged from small clusters of houses to entire suburban communities with thousands of homes and a commercial center, school, church, and parks. Land further away from the city was less expensive and easier for developers to shape. In addition, Americans wanted to live away from town; they did not mind commutes to work or shopping centers. As a result, new suburbs built up of multiple subdivisions came to characterize the era. One example of this trend of suburban expansion can be seen in Philadelphia, where 5,200 acres of rural land well outside of the city center was converted to urban use between 1945 and 1962, with more than 75 percent for residential use.[178]

In 1950 *Popular Mechanics* published a book titled *Your Home and How to Build It Yourself* that weighed the pros and

[178] Milgram, iii.

cons of building a home in established neighborhoods and new residential developments. Within established prewar neighborhoods, it was suggested that new or "infill" construction could result in reduced resale value since the house may not conform to the existing homes in the neighborhood. However, the benefits of building in an existing neighborhood included established schools, churches, and playgrounds, as well as utilities and sidewalks that had already been installed and paid for. The book also stressed that although new developments and neighborhoods typically offered larger lots at lower prices, needed sidewalks and utilities could result in additional fees and assessments on the property. Prospective home builders were advised to consider availability of and access to schools, churches, transportation, police and fire protection, and existing residences when deciding where to build a home.[179]

Postwar residential development was not limited to newly established subdivisions. Both individuals and builders constructed homes on empty lots within established plats in communities. The infill development occurred on lots that were empty prior to and during the war, as well as secondary lots associated with a prewar house that were now offered for development. The result of infill construction that occurred during the postwar era was neighborhoods with a mix of architectural styles, sizes, ages, and setbacks.

Cities throughout the country had subdivisions platted within city limits during the 1920s and 1930s that remained undeveloped at the end of World War II. In an effort to encourage development in these areas, both the FHA and National Association of Home Builders (NAHB) provided guidance for upgrading these established subdivisions.[180] Developers were encouraged to purchase available land, vacate the previous plat (when possible), and develop a modern layout based on the accepted standards of the period. Any existing homes constructed during the initial period of development were to be incorporated into the new plat, often with new plantings or landscape enhancements to improve their appearance.[181]

Although the majority of residential development in the postwar era occurred in platted subdivisions in suburban areas, some individuals and builders constructed homes on land in relatively undeveloped, rural areas (see Figure 75). In some cases, individuals purchased small tracts of land directly from farmers and worked with a builder to construct a non-farm residence. In other cases developers purchased land for residential development from farmers and established suburban-type subdivisions of varying sizes in traditionally rural settings. The result was typically a small cluster of homes arranged in a linear configuration that lacked the amenities of larger, planned subdivisions, such as parks, cul-de-sacs, or community buildings.

Figure 75. Postwar house in a rural southeast Georgia setting (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

Transformation of farm land to suburban development was often influenced by increased ex-urban land values and taxes, which made it difficult to dedicate land to existing farms and expensive to expand farm operations. As a result, farmers were able to make more money by selling agricultural land than farming it.[182] This put pressure on landowners and proved attractive to developers where available land was well situated in proximity to urban centers. With continued residential development on the outskirts of communities, many of the postwar homes and subdivisions that were in once rural settings are now surrounded by additional development and no longer reflect their original "isolated" setting.

For example, a collection of c.1965 homes on the outskirts of Madison, Wisconsin, represents isolated postwar residential development in a rural area (see Figure 76). This linear collection of six Ranch houses features similar sizes, massing, and setbacks. Lots are slightly wider than in a typical planned development and the area lacks sidewalk, curb and gutter, or decorative plantings. Based on real estate advertisements placed in the local newspaper, it appears the homes were constructed by developers who then sold them to individuals, rather than by a farmer for family members. At the time of construction, little non-agricultural development had occurred in the area. However, with the continued growth of Madison and the surrounding communities, additional resi-

[179] Allan Carpenter and Norman Guess, ed., *How to Plan, Build, and Pay for Your Own Home* (Chicago: Popular Mechanics Press, 1950), 11-13.

[180] National Housing Agency, *Housing Needs, A Preliminary Estimate (National Housing Bulletin 1)* (Washington, D.C.: National Housing Agency, November 1944), 37.

[181] National Housing Agency, *Housing Needs, A Preliminary Estimate (National Housing Bulletin 1),* 37; The National Association of Home Builders, *Home Builders Manual for Land Development, Second Revised Edition* (Washington, D.C.: The National Association of Home Builders, February 1958), 207.

[182] Milgram, 17.

Figure 76. Raised Ranch house on outskirts of Madison, Wisconsin, constructed c.1965 as part of an isolated collection of postwar residences in a rural area (Mead & Hunt photograph).

dences were constructed from the 1970s through the present and a modern subdivision is encroaching on this collection.

Postwar residences were also added to active farms during this period. These homes often replaced the original farmhouse on the property, or were constructed as a secondary house for additional generations who lived and worked on the farm (see Figure 77).

a. Influence of Ordinances, Codes, and Covenants

During the postwar era, zoning laws and covenants were viewed by many, including the FHA, as enhancing the appeal of new residential developments. While zoning laws and ordinances are enforceable policies established by local governments or authorities, covenants are contractual obligations that are tied to the property itself and recorded in the deed. In the 1938 publication *Planning Profitable Neighborhoods,* the FHA argued that it was "essential for every residential neighborhood to be protected against adverse influences which may occur through undesirable land uses." The FHA stated

Figure 77. Postwar c.1960 Ranch house added to an early twentieth-century farmstead in rural Dawson County, Nebraska (Mead & Hunt photograph).

that the best means of protection were zoning regulations and covenants, claiming "regulation of lot sizes, location of structures and their design, and prohibition of nuisances are good business of both buyer and seller."[183]

During the postwar era, subdivision developers were often working within a system of established local zoning and subdivision regulations that required minimum design or engineering standards during the layout and development process. In established communities, zoning regulations could influence lot size, street layout and design, and the incorporation of parks and sidewalks. In areas outside communities, including rural areas, there was often a lack of local regulation regarding residential development. Because local regulations meant increased control and homogeneity, the FHA advised developers to work in areas with established zoning regulations.[184] According to the Community Builders' Council of the Urban Land Institute (ULI), the most common zoning regulations included: local approval of the subdivision plat and grading plan; local approval of planned infrastructure within the development, including sidewalks, paved streets, sewers, and utility lines; and the utilization of standard subdivision design requirements, including the relation to the existing street system, street width and alignment, alleys, easements, block dimensions, lot dimensions, and open spaces.[185]

In 1938 the FHA recommended that developers include the following eight protective covenants in new residential developments, which were intended to create a uniform neighborhood appearance and homogenous character:[186]

- Regulation of land use,
- Placement of buildings using side yard and setback regulations,
- Prohibition of subdivided lots,
- Prohibition of multiple dwellings per lot,
- Design control through approval of qualified committees,
- Prohibition of nuisances and temporary dwellings,
- Prohibition of occupancy of properties by inharmonious racial group, and
- Appropriate provisions for enforcement.

These restrictions were to be recorded within the plat and last a minimum of 25 years. By 1940 the FHA added two additional suggested covenants: limitation of permitted improvement

[183] United States Federal Housing Administration, *Planning Profitable Neighborhoods,* 6.
[184] Hanchett, 201.
[185] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (Washington, D.C.: Urban Land Institute, 1948 [revised]), 28-29.
[186] United States Federal Housing Administration, *Planning Profitable Neighborhoods,* 34.

costs and dwelling floor areas and reservations of public utility easements. According to the FHA, these covenants would result in neighborhoods with a "harmonious variety" of homes on wide lots with similar setbacks and maintained yards, which would be more appealing to potential homebuyers and safeguard against decreasing property values.[187]

The ULI also provided recommendations for similar covenants. Its 1948 *Community Builders' Handbook* recommended the following provisions be considered: control of land use, including residential type and design; architectural control of structures, including walls and fences and house colors; prohibition or placement of utility buildings, such as sheds; and prohibition of nuisances, such as signs.[188] In an effort to assure adequate front yards, they also suggested that minimum building setbacks be included in protective covenants. They went on to state that these setback requirements would result in better relationships among property owners.[189]

As suggested by the FHA, some developers chose to include restrictive covenants based on race and religion. Restrictive covenants excluding home ownership to African Americans, Mexicans, Asians, and Jews were frequently used in residential subdivisions as early as the 1920s and continued during the early postwar period.[190] As previously discussed, as a result of the 1948 Supreme Court ruling outlawing the enforcement of restrictive covenants, the FHA announced that as of February 15, 1950, it would no longer insure mortgages on real estate in protected neighborhoods (see Section C.1). However, FHA officials continued to accept unwritten agreements based on race or religion until the passage of the Civil Rights Act in 1968.[191]

2. Subdivision Development

A number of parties were involved in the process of subdivision development, from the builders and developers who established the site to the agencies who influenced legislation. Advertising was an important means of achieving the goals of each party, allowing them to promote themselves, their developments, and the concept of home ownership and the American dream.

a. Developers and Builders

> The subdivider of a parcel of land does very much more than sell real estate by a bargain concerning the buyer and the seller alone. The results of his activities are in truth indelibly impressed upon the physical pattern of the community at large . . .
>
> — Harold W. Lautner of the Public Administration Service[192]

Although some homeowners took it upon themselves to construct a new residence, builders and developers were responsible for the majority of suburban development. The role of developers and builders changed in the postwar era due to the substantial demand for housing and the resulting large-scale development that occurred. In previous decades, the roles were clearly defined. Developers, also known as subdividers, were responsible for the development of the land and the infrastructure. They typically purchased large areas of land, platted lots, constructed streets, and installed sewer systems. They then sold the lots to builders who constructed homes for sale, or individuals who contracted with a builder to construct their own home. However, this pattern changed after World War II, when government financing programs made residential development more lucrative and developers realized they could increase profits by constructing the homes themselves.[193]

The postwar building boom greatly impacted the building profession. According to data published by the U.S. Bureau of Labor Statistics for 1938, in the largest cities, the typical builder constructed no more than four single-family residences each year and only a few builders had the capacity to construct as many as 10 houses a year. This small amount of construction was partially the result of low housing demand during the Depression, as many families were not able to afford the required down payments and mortgage costs associated with a new home. When an individual did decide to construct a new house, the owner typically retained a builder to construct a house under contract. As a result, little speculative residential construction was completed during this period.[194]

However, this began to change with the creation of the FHA in 1934 and programs that made securing a mortgage easier. These programs (discussed in Section C.1), combined with the increased demand for homes, resulted in a dramatic increase in the number of home builders. Some builders who took advantage of these programs were operating prior to the war and others had been involved in defense construction,

[187] United States Federal Housing Administration, *Successful Subdivisions,* 9, 28.
[188] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 90.
[189] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 59.
[190] Wright, 212.
[191] Antero Pietila, *Not in My Neighborhood, How Bigotry Shaped a Great American City* (Chicago: Ivan R. Dee, 2010), 107; Wright, 248.
[192] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (Washington, D.C.: Urban Land Institute, 1954), 38.
[193] Wright, 248; Ames and McClelland, 26.
[194] Marc A. Weiss, *The Rise of the Community Builders* (New York: Columbia University Press, 1987), 38.

which positioned them to take advantage of opportunities during the postwar residential construction boom.

Although the average home builder continued the prewar trend of constructing only a few homes each year, a small number of builders were responsible for a large percentage of the homes constructed annually. Between 1938 and 1955 the number of builders responsible for five or more houses rose from 14 percent to 27 percent.[195] In 1949, 4 percent of all builders and developers were responsible for 45 percent of new residential construction.[196] By 1959 it was estimated that 1 percent of builders were responsible for one-third of the new houses built, and the top 10 percent of builders were responsible for two-thirds of the houses built.[197] These builders became known as "merchant builders"; they are discussed in more detail below.

Those builders responsible for a large number of homes often employed mass production techniques to the construction process. Similar to workers on a manufacturing assembly line, carpenters, plumbers, painters, and other tradesmen completed the same task continuously, moving from one house to another. To make the supply process more efficient, some builders maintained large material inventories, prefabricated their own components off site prior to delivery, and utilized precut lumber. This eliminated downtime as workers waited for supplies to be delivered, cut, or assembled.[198] See Section F for more information on standardization of materials.

In an effort to develop and perfect the mass production of houses and reduce construction costs, many builders limited the number of models and exterior variations available to prospective buyers, simplified the design, and eliminated extra features, including basements. In addition, they aligned interior load-bearing walls, standardized window and door sizes, and grouped plumbing together.[199] Along with the standardization of materials, this resulted in large numbers of similar residences constructed in the postwar era.

Smaller Developers and Builders. Although a small number of developers and builders were responsible for the large subdivisions, smaller scale developers and builders constructed a large number of homes across the country. They were responsible for individual infill or isolated residences, as well as subdivisions ranging from a half-dozen to several dozen homes. This large number of small-scale local builders was influenced by local housing needs, availability of land for development, and available materials. As a result, there is not a single process or pattern that defines development at this level. However, the speculative building process was common across the country. Developers and builders constructed homes for unknown but anticipated clients. Known as "spec homes," these homes were often based on popular prototypes in the area. Based on the abilities of the developer or builder, spec homes could be limited to single infill residences in already developed plats, or small clusters of homes or subdivisions.

Because it was often difficult to obtain financing for the purchase of land, smaller developers and builders had a difficult time securing the necessary funds to purchase enough property for a large subdivision. Additionally, financing was also required to cover the actual construction costs. As a result, most large subdivisions were developed by a small number of builders with financing capacity. Small-scale developers and builders often found it easier to work under contract with an individual or family who were responsible for obtaining the financing for the effort, or construct a limited number of homes annually that required minimal financial outlays.[200] Phased development was also common for small-scale builders and developers, with subsequent adjacent additions underway as financing and buyer demand allowed.

When the small-scale builders and developers were working near each other or phasing their developments, the end result was similar to that of a large-scale developer or builder—large numbers of similar postwar homes with little or no break between the plats.

Merchant Builders. The small number of builders who were able to respond to the postwar housing need and construct large numbers of homes quickly became known as merchant builders. The term "merchant builder" referred to builders who completed the entire development and construction process. Merchant builders acquired large tracts of land, designed and installed streets and infrastructure, designed and built houses, and sold the finished houses as part of a new community. These builders dominated the postwar housing industry by building large numbers of homes at a fast rate "and achieving economies of scale not previously seen in housing construction."[201] According to economist and real estate researcher Sherman Maisel, "These are the new giants in an industry populated by pygmies. Here, at the very peak of their house building pyramid, are the leaders of construction who are not content merely to build houses. They construct communities."[202] Although the term "operative builder" is sometimes used interchangeably with "merchant builder," by definition operative builders controlled the entire

[195] Burnham Kelly, *Design and the Production of Houses* (New York: McGraw-Hill Book Company, Inc., 1959), 9.
[196] Weiss, 161.
[197] Kelly, 9.
[198] Checkoway, 24-25.
[199] Eichler, 68.
[200] Milgram, 19-22.
[201] Andrew Hope, "Evaluating the Significance of San Larenzo Village, a Mid-20th Century Suburban Community." *CRM Journal* Summer 2005, 52.
[202] Checkoway, 29.

Figure 78. Eichler-built house in Orange County, California, c.1958 (photograph courtesy of Andrew Hope, Caltrans).

operation from land acquisition through construction but phased their home building as money became available.[203] Their developments were often smaller than those of merchant builders due to the phased construction and lack of community facilities.

Merchant builders' developments far exceeded the scale of pre-war subdivisions, and in some cases, they were larger than entire communities. In addition to constructing houses, some builders planned for entire communities with amenities that would draw families to the developments, including schools, churches, libraries, and parks.[204] These builders were sometimes referred to as "Community Builders." Most major cities and urban areas had at least one active merchant builder during the postwar period. Some of the most noted were William Levitt of New York; Dave Bohannon and Joseph Eichler in California (see Figure 78); Edward Ryan in western Pennsylvania; John Mowbray in the Baltimore area; Waverly Taylor in the Washington, D.C. area; Irvin Bleitz in the Chicago area; and Del Web in the Phoenix area.[205]

Levitt and Sons is perhaps one of the best known merchant builders of the era. William Levitt, president of Levitt and Sons, was considered one of the nation's largest developers in 1950. That year, the company produced one 4-room house every 16 minutes.[206] Prior to the war, the company constructed homes for affluent families on Long Island. After the war, Levitt purchased 1,400 acres of Long Island farmland and began developing "Levittown," which when complete had 17,000 homes. A subsequent Levittown was developed in lower Bucks County, Pennsylvania, on the outskirts of Philadelphia, which had experienced postwar housing shortages.[207] See Section F.2 for more information on Levitt.

Many merchant builders faced a decline in the 1960s. Levitt and Sons faced increased competition and had difficulty finding large tracts of land at competitive rates or areas with a demand for a large numbers of houses. In the case of Eichler Homes, the company had a limited market due to the type of modern home they constructed, and the cost of materials increased significantly. The company fell into bankruptcy when its diversification efforts failed. Some merchant builders, however, were successful in the 1960s and 1970s and went public or merged with other companies.[208] Kaufman & Broad, Inc., of Los Angeles, was one of the largest publicly held building companies in the 1960s and had 42 widely distributed major housing developments underway in 1969.[209]

b. National Association of Home Builders

Established in 1942, the NAHB originated out of the National Association of Real Estate Boards (NAREB). At the time of organization, the NAHB was concerned with providing defense housing during the war effort. As the demand for housing grew in the postwar era, the association focused on promoting the housing industry through large builders and new subdivisions. The NAHB had a powerful lobbying group and supported the FHA and VA programs that likewise promoted residential construction.[210] The NAHB was responsible for the development of large-scale marketing efforts. Together with local Home Builders' Associations, it established National Home Week in 1948 and the "Parade of Homes" event in the 1950s as a feature of National Home Week. See Section E.3 for more information on National Home Week and the Parade of Homes.

The NAHB also worked to improve the house building industry, holding conferences and exhibits to promote new products in the industry and conducting surveys of members to identify trends and inform areas of improvement. In 1964 the NAHB established a research center to test new building methods and materials. That same year it instituted a "Registered Builder" program to counter the negative image of home builders that had developed by this time, when the overall population was scrutinizing industry in general, including the housing industry.[211] This image of builders was highlighted in the November 1964 edition of *House & Home* magazine, which stated "it's time for homebuilders to face an unfortunate fact: despite enormous improvement in the design and quality

[203] Ames and McClelland, 26.
[204] Andrew Hope, 54-55.
[205] Jacobs, *"You Can't Dream Yourself a House": The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 68; Checkoway, 29.
[206] Wright, 252.
[207] Checkoway, 26, 29.
[208] Eichler, 116-117.
[209] Mason, 101.
[210] Checkoway, 34-35.
[211] Jacobs, *"You Can't Dream Yourself a House": The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 67-68; "History Timeline," *NAHB The Voice of the Housing Industry,* http://www.nahb.org/NAHB_History/historytimeline.html (accessed 11 March 2011).

of housing, too many people still see builders as irresponsible exploiters of the consumer's need for shelter."[212]

c. Real Estate Companies

Local and regional real estate companies were actively involved in the postwar housing boom, working directly with individuals interested in purchasing a home and builders who were constructing homes speculatively. Some real estate companies served as brokers in the early stages of development, aiding in the sale of undeveloped land to investors, developers, or builders. Upon construction completion, real estate companies often worked with builders to sell finished homes at a flat fee or commission rate. If real estate companies were involved in the initial land sale and the sale of the completed house, they stood to earn two commissions. Real estate brokers could also help prospective home buyers secure mortgages, further increasing their role and profit in the development process. However, merchant builders and other builders who were responsible for the development of entire subdivisions often acted as their own real estate firms. They had experienced sales representatives on staff and relied on advertising and model homes to attract attention and win home sales.[213]

Much like the NAHB, the NAREB was concerned with how federal legislation impacted the real estate industry. During the 1930s, the NAREB was influential in lobbying for housing acts and during the following decades they maintained a standing committee on federal legislation. Together, the NAHB and NAREB exerted a considerable amount of political pressure on Congress, focusing on facilitating the construction of new single-family suburban homes. Programs implemented by FHA and VA assisted their efforts and reduced risk.[214]

3. Advertising Trends

Advertising through various media, including television, radio, and print, was critical to increasing residential sales across the country (see Figure 79). The popular press, particularly domestic-related magazines, devoted considerable attention to the program of affordable residential design during the 1940s and 1950s. Magazines such as *Good Housekeeping, House Beautiful, Sunset,* and *Better Homes & Gardens* featured work from prominent architects and builders. For instance, Ranch houses designed by California architect Cliff May were featured prominently in print and were also often built for public viewing as model houses, completely furnished and landscaped (see Section G for more information on Cliff May).[215] *Popular Mechanics* also issued build-it-yourself guides for Ranch homes, including both exterior and corresponding interior components, as well as tips for prospective home builders. With details on cabinetry and even furniture, *Popular Mechanics* provided the general public with step-by-step instructions for modern homebuilding and landscaping.

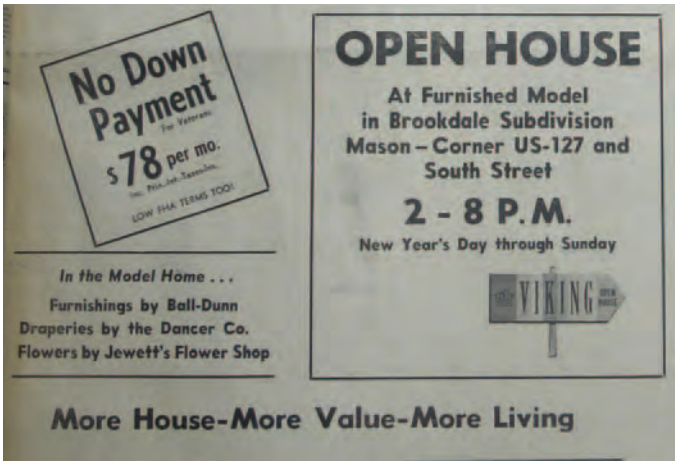

Figure 79. Advertisement for the Brookdale Subdivision in Mason, Michigan (Ingham County News 1 January 1959).

By promoting home designs with lavishly illustrated articles showing Contemporary interior designs in use by families, these magazine articles stimulated the reader's desire for a modern home with up-to-date appliances and furniture. By using well-staged photographs, these publications helped the reader, usually a woman, imagine her family living in a similar type of home. As such, the popular press contributed to postwar residential development and construction by framing the "wants" and "needs" of the postwar family.

The use of model homes to promote new subdivisions was a marketing technique with roots in the Great Depression. However, its function as a sales tool shifted during the postwar years as the model home became the home builder's storefront, with well-executed interior design and decorating proving critical to the model's success. In some cases, construction of the model home started before the overall plat map was recorded. Fully furnished models were an essential marketing tool by the early 1950s, and the homebuilding industry acknowledged that "good decorating hides shortcomings, makes small rooms look bigger, and any room look better."[216] It was common for builders to work with local appliance and

[212] Quote referenced in Jacobs, *"You Can't Dream Yourself a House": The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 68.

[213] Weiss, 39-40.

[214] The NAREB eventually became the National Association of Realtors. Checkoway, 34-35; Wright, 2.

[215] David Bricker, "Ranch Houses Are Not All the Same," *Preserving the Recent Past 2,* 2-119.

[216] Quote referenced in Jacobs, *"You Can't Dream Yourself a House": The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 83.

department stores to stage a model home to make it more appealing to prospective homebuyers. A furnished model house encouraged prospective home buyers to envision themselves living in the home, complete with novel appliances and sleek modern furniture, all the while encouraging domestic consumption.[217] In addition to the model home, builders often had sales displays at the construction site for those interested families who were watching the construction process.[218]

Furthering builders' efforts to use model homes as a selling tool was the evolution of National Home Week, a festival sponsored by the NAHB and its affiliated local Home Builders' Associations. Occurring across the country, this annual event was not only an advertising opportunity but a means for home builders to educate consumers on new technologies in construction and the "latest and best in living convenience and comfort."[219] The week-long event included local media campaigns, advertising opportunities for local builders, informative programs, contests, ceremonies, and opportunities for public participation. By the late 1950s, more than 150 communities throughout the country celebrated National Home Week during the month of September. Many used special newspaper sections and photographs to promote the event, while others sought additional promotion by commissioning television spots and establishing partnerships with appliance and utility companies. See Figure 80 for an example of a newspaper promotion.[220]

Based on the success of the program, the NAHB developed the "Parade of Homes" event as a concurrent or consecutive feature of National Home Week in the 1950s. Local organizers selected a site or a street in an existing development, and local builders, upon paying an entry fee, received a lot on which to construct a house that showcased their ability and style. Visitors then paid admission to see the collection of homes. Parade events proved to be valuable promotional opportunities for small builders, many of whom did not have the budgets to construct large subdivisions or wage advertising campaigns. A successful parade house allowed them to attract and secure clients. The Parade of Homes events became extremely popular, and in some areas, they replaced the National Home Week events.[221]

Figure 80. Promotional photograph of the collection of homes included in the 1955 Madison, Wisconsin, Parade of Homes as featured in the Wisconsin State Journal (photograph courtesy of the Wisconsin Historical Society, Image ID: 4717).

Parade of Homes events were held throughout the country, including Sacramento, California; Salt Lake City, Utah; Dallas and Houston, Texas; Madison, Wisconsin; South Bend, Indiana; Denver, Colorado; Knoxville, Tennessee; Seattle, Washington; Columbus, Ohio (see Figure 81); and the Washington, D.C., metro area. The 1954 Utah Parade of Homes, sponsored by the Utah Home Builders Association, even included a house giveaway. The three-bedroom home, valued at $18,000, was the combined effort of members of the local Utah Builders Association. The one-story brick, Contemporary style house featured three bedrooms, a combined living room and kitchen space, two-car carport, adequate storage, sheltered patio, and sweeping views of the Great Salt Valley.[222]

Newspaper advertising was vital to the success of both model and non-model home showings and local promotional events, such as the Parade of Homes. As the primary means of advertising houses and developments, newspapers across the country witnessed a print layout change in their home and classified sections. Advertisements grew larger to accommodate information on both individual homes and subdivision characteristics and features.[223] The following full-page advertisement for the Snyder Subdivision in the

[217] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 81-86.

[218] Eichler, 64.

[219] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 87.

[220] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 88.

[221] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 87-91.

[222] Utah Home Builders Association, "America's Most Beautiful Parade of Homes, Souvenir Booklet" ([Salt Lake City, Utah]: Utah Home Builders Association), 1954, http://www.flickr.com/photos/rightintwomcm/4018279708/in/set-72157622476127301/ (accessed 25 March 2011).

[223] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 79-81.

Figure 81. Split-level home in Worthington Hills, Ohio, the location of the 1966 Parade of Homes event for the Columbus-Central Ohio area (Mead & Hunt photograph).

Lansing suburb of Mason, Michigan, is an example of this marketing method:

> an area planned for a lifetime of pleasant living . . . Katheryn street, located in the heart of the subdivision will have concrete curb and gutter, sidewalk and blacktopped surfacing. The area will be completely graded and a sturdy shade tree will be planted on every lot . . . Mason's newest development is conveniently located on the west side near shopping areas. It's only 10 miles from Lansing. Commuting to the capital city takes only minutes on the new divided highway near the subdivision.[224]

This typical advertisement, while touting the advantages and ease of suburban living, also included an open house notice for a three-bedroom Ranch house, complete with automatic appliances and picture windows (see Figure 82).

In addition to local efforts to promote and advertise housing and development in newspapers and on the ground, the national popular press proved essential to the country's movement to postwar suburbia. An example of the nuanced ability of architects and builders to promote a discrete set of house plans to millions of Americans seeking individualized homes is the "Home for All America," a lengthy advertisement published in *Better Homes & Gardens* in 1954. Designed by architect Robert A. Little & Associates of Cleveland, Ohio, the Ranch house plan set was promoted as "A house to please and serve many people in many parts of the country. A house for a New England town, a bustling Midwestern suburb, a Gulf Coast retreat, a Panhandle ranch, an established neighborhood in a city of any size." With 1,400 ft^2, three bedrooms, living-dining space, a semi-open kitchen, separate activity space, two bathrooms, outdoor living space, a workshop, and storage, the plans for the Home for All America also included an optional basement to add utility space and a recreation

Figure 82. Advertisement for Snyder Subdivision in Mason, Michigan (Ingham County News 19 January 1956).

room. Responding to improved house planning and zoning and taking advantage of modern construction and materials, the Home for All America was a modular system with many variations, including roof shape and the placement of the carport or garage. The 16-page advertisement featured numerous images and photographs, none more evocative of the era's advertising trends than the photographs of the housewife working in the kitchen, setting the dining table with a view towards the living room, and ironing clothes while watching her children through the large picture window. Advertising photographs such as this perpetuated the popular theme of domesticity and reinforced gender roles, with women in a kitchen or utility room complete with modern conveniences and appliances that surely eased homemaking responsibilities.[225]

Advertisements for low-cost prefabricated home designs also intensified during the early 1950s. These standardized houses, an answer to the acute postwar housing need, were promoted through advertisements taken out by the fabricators. For instance, U.S. Steel Homes, which acquired Gunnison Homes in 1944, published numerous one-page advertisements in women's magazines during the postwar period. Their "Bride's House of 1955" epitomizes advertising

[224] Advertisement, "Snyder Subdivision," *Ingham County News,* 19 January 1956.

[225] John Normile and Jim Riggs, "The Home For All America," *Better Homes & Gardens,* September 1954, 57-73.

Figure 83. Levitt-constructed Rancher and Cape Cod models in Belair, Prince George's County, Maryland (photograph courtesy of Anne Bruder, Maryland State Highway Administration).

trends geared towards the housewife, while also taking into account the various stages of family life. The advertisement, which also noted that the house was featured in *House Beautiful's* "Guide for the Bride—Summer Issue," reads:

> If you're about to be married, you'll like it because it's priced low . . . If you are married and now raising children, you'll like this home because it gives your whole family space to eat, play, and sleep in comfort . . . If you're a grandparent now and all your own children have grown up and left, you'll like this home for its step-saving convenience and for the very little care it requires inside and out.[226]

Other manufacturers of prefabricated homes, including Lustron and National Homes, established similar advertising techniques.

In addition to advertisements published in the popular press, home builders created informational pamphlets to promote their developing subdivisions. Levitt and Sons, Inc., probably the best known home builder in the postwar period, issued numerous promotional pamphlets. Their "Belair at Bowie Maryland" pamphlet from 1961 is a typical example of this type of advertisement. The pamphlet introduced the subdivision as a whole, with particular consideration given to the five different housing types being shown (the Country Clubber, three- and four-bedroom Colonials, the Rancher, and Cape Cod); the lot size; and location of churches, community facilities, shopping centers, schools, and recreational clubs (see Figure 83 for examples of these houses). Well illustrated with photographs of each type of house and couples interacting with the house, the pamphlet emphasized the zoned spaces for domestic activities and leisure; modern appliances, such as the electric range, automatic oven, dishwasher, and garbage disposal; and Levitt's experience with building neighborhoods.[227]

The Strauss Brothers Company of Lincoln, Nebraska, publicized its Eastridge subdivision with a series of informational pamphlets on the company's "Trendhome" designs. Their initial publication promotes the concept of home ownership, the benefits of the Eastridge neighborhood, the three available floorplans, and a comprehensive listing of the features that set these homes apart, as well as versatile arrangements and extra features, such as screen fences, planters, landscaping, patios, and outdoor fireplaces. The pamphlet also stressed the quality that went into design and construction.[228] A subsequent publication from c.1956 includes much of the same information on the features, as well as newly introduced floorplans and photographs of the newly established neighborhood that highlight the community pool, pedestrian-friendly sidewalks, and nearby schools, churches, and shopping centers (see Figure 84).[229] Strauss Brothers also used newspaper advertisements and model homes to promote its Eastridge subdivision.

An alternative type of advertisement used during the postwar period was the home book publication, which compiled plans and illustrations of homes designed by prominent architects as inspiration for the aspiring homeowner. The *Pacific Northwest Book of Homes for 1947* is but one example of this advertisement method. Containing 65 plans, including 50 small home plans, this lavishly illustrated home book identifies plans well suited for life in the Pacific Northwest, with particular attention given to climate, topography, and materials. These varied plans by regional architects include both luxury and small homes, houses for corner lots and interior lots, the integration of indoor and outdoor living space, and the provision of modern electric and gas-powered conveniences. One plan even establishes itself in three construction phases to grow and expand with the family and its income.[230]

4. Subdivision Location, Design, and Features

Suburban communities nationwide were influenced by guidelines set forth by the FHA, ULI, and NAHB during the postwar era. The guidelines were typically more restrictive than local zoning ordinances and commonly used in the 1940s through 1960s, with modifications for local requirements.

[226] Advertisement, "The Bride's House of 1955," *Ladies Home Journal,* 1955.

[227] Levitt & Sons, Incorporated, "Belair at Bowie Maryland" ([Bowie, Md.]: Levitt & Sons, 1961).

[228] Strauss Brothers, *There's a New Trend in Lincoln* ([Lincoln, Neb.]: Strauss Brothers, [1954]), n.p.

[229] Strauss Brothers, *Eastridge, A Great Place to Live* ([Lincoln, Neb.]: Strauss Brothers, [1957]), n.p.

[230] Francis W. Brown, ed. *Pacific Northwest Book of Homes for 1947,* (San Francisco, Calif.: Home Book Publishers, 1947).

Figure 84. Page from 1957 Eastridge promotional booklet highlighting the benefits of the neighborhood, including sidewalks (Strauss Brothers, Eastridge, A Great Place to Live).

Together these guidelines and ordinances, which were comparable nationwide, resulted in similar subdivision appearances.[231] With the exception of regional topography, vegetation, and building materials, the curvilinear streets, lot sizes, setbacks, and circulation patterns, and building forms did not differ much regardless of location.

a. Location, Plat, and Layout

In 1938, prior to the postwar building boom, the FHA published *Planning Profitable Neighborhoods.* This book provided suggestions for layout and design that contrasted greatly from the "typical tract configuration," commonly used in the 1920s and 1930s. In the tract configuration, houses were sited toward the center and front third of a rectangular lot on a rectangular block, with an average lot size of 50 to 55 ft wide by 100 to 120 ft deep. The house placement divided the lot into the front and back yard and created a uniform setback along the street.[232] This traditional development pattern changed with the introduction of FHA guidelines that provided developers with advice on planning new subdivisions, which were directed toward achieving more marketable and interesting communities and better managed mortgage risks.

The FHA encouraged developers to work with the existing topography, avoid dead-end streets, utilize long blocks with adequate crosswalks, and create lots that made the best use of the space and fit the topography. These early designs moved away from the traditional grid street patterns and included curvilinear streets and cul-de-sacs. Suggestions included avoiding deep lots and sharp angles, allowing adequate width, and planning lots to face desirable areas, such as parks or natural spaces. By following these guidelines, developers could maximize the number of lots within their subdivision, thereby increasing their profits.[233] Although many developers utilized these new configurations, others elected to utilize the traditional grid pattern throughout the postwar era.

The 1940 FHA publication *Successful Subdivisions* built on the 1938 guidance for planning subdivisions and included many of the same guiding principles. Among the suggestions were selecting a convenient location near transportation

[231] Girling and Helphand, 82.

[232] Rowe, 92. Although this was the average lot size, dimensions varied due to topography, regional and developer preferences, and availability of land for development.

[233] United States Federal Housing Administration, *Planning Profitable Neighborhoods,* 4-6, 14-17.

corridors and schools; creating ample lots that preserve natural landscape features; providing adequate streets and sidewalks; limiting through traffic; and including shopping centers and parks. To illustrate its guidance, the FHA provided before and after drawings of subdivision layouts that highlighted such issues as laying out economical street systems, conforming to the natural topography, and incorporating natural features and park land.[234]

Much of this early FHA guidance was adopted by ULI and promoted in its *Community Builders Handbook* publications during the postwar era. A series of published handbooks included information on site development and selection and land use for both single- and multiple-family residential developments. According to the ULI, site design was equal to or greater than building design in importance. To realize the full potential of the site, developers were urged to consider the organization of open spaces, building and structure arrangement, circulation patterns, light, air, noise, prevailing winds, vistas, privacy, ease of operating and maintenance, and lot and block size when developing a site plan.[235] ULI also urged developers to consider the following when developing lot lines within a subdivision: usable yard space in the front and rear, adequate drainage away from the house, minimum grading, and the ability to retain existing trees and vegetation.[236] Although developers were encouraged to maintain natural landscape features, much of the landscape was removed or altered through fill and grading to best utilize overall space and maximize the amount of buildable lots. Names like "forest," "meadow," and "hills," which described the original landscape but not necessarily its developed state, were often incorporated into the plat name.[237]

The ULI also identified several factors to be considered when identifying a suitable location for subdivision and residential development sites. It suggested that the location be within walking distance to a transit system or places of employment, or 30 minutes by car to places of employment. It also suggested that fire and police protection, snow clearing, and trash collection play a role in the selection of sites by developers.[238] Airports, railroad tracks, cemeteries, low-income industrial and commercial areas, poorly subdivided residential areas, and areas prone to flooding were to be avoided.[239]

The NAHB provided recommendations to developers and builders in its publication *Home Builders Manual for Land Development.* Similar to FHA and ULI, the guidance related to efficient residential development, including layout of lots, streets, driveways, and utilities; incorporation of existing landscape features; and siting of schools, churches, parks, and parking lots. The NAHB also advised builders to research and understand the need for housing units and the size and styles of houses that would sell in particular areas.[240]

In addition to layout and proximity to amenities, it was viewed as important to offer a range of price points and dwelling types within a single subdivision. This stabilized values and provided greater options for families at different stages, with different needs regarding house size. John Mowbray, a Baltimore area builder involved in the ULI's Community Builders' Council, warned against having houses in a single price range within a subdivision and suggested the use of architectural design features to transition between price ranges within the plat. However, houses facing each other should reflect the same general price, class, and quality. Although a variety of floorplans and forms were recommended, the ULI advised against placing rental housing within the same areas as single-family, owner-occupied homes.[241]

b. Inclusion of Amenities

In addition to providing guidance regarding subdivision design, the ULI recommended that subdivision developers evaluate the needs of potential residents to determine which amenities would be utilized and worth including in the initial planning stages. To develop a complete neighborhood, the ULI recommended that developers and builders reserve central locations for parks, schools, churches, and shopping centers.[242]

Landscaped neighborhood parks and natural preserves were among the most common amenities within planned developments. The FHA subdivision guidance allowed for retaining natural areas and including parks and open spaces. In 1948 the ULI offered guidance for community parks and playgrounds. As a rule, playgrounds were to be centrally located so that children would not need to walk more than one-half-mile, and sizes were based on the subdivision population, ranging from 3.25 acres for a population of 2,000 to 6 acres for a population of 5,000. For a complete recreational area, developers were advised to include the following: an area for preschoolers, play equipment for older children, open space, surfaced athletic courts, ball fields, an area for small games, shelter with toilet facilities, wading pool, and an area for board games.[243]

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[234] United States Federal Housing Administration, *Successful Subdivisions,* 12-27.

[235] Urban Land Institute, *The Homes Association Handbook, Technical Bulletin 50* (Washington, D.C.: Urban Land Institute, 1966), 144.

[236] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 55-56.

[237] Girling and Helphand, 83.

[238] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 5-7, 25-26.

[239] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 17.

[240] The National Association of Home Builders, *Home Builders Manual for Land Development, Revised Edition* (Washington, D.C.: The National Association of Home Builders, January 1953), 10-11.

[241] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 43.

[242] Urban Land Institute, 167.

[243] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 76.

When including parks and natural areas, developers were also advised to consider the overall maintenance costs associated with these spaces. For example, the irrigation costs to maintain grassy lawns were to be considered in arid climates. In addition, the extent and ease of seasonal maintenance required was a consideration.[244]

The amount of public open space in residential developments was also influenced by local ordinances and existing master plans. In some cases the amount of open space was determined based on straight percentages or housing density. Isolated or rural developments outside established communities often did not have requirements for including amenities within a plat.

Some developers elected to include private recreation centers as a way to enhance a neighborhood and offer savings to the homeowner since they then would not need to pay for recreational amenities within the home or yard.[245] For example, community recreation centers and swimming pools offered residents an area to host parties and recreate for a nominal fee. In the case of the Eastridge subdivision in Lincoln, Nebraska, the developers included a private swimming pool for homeowners.[246] However, it does not appear that this was a common practice during the postwar period.

In an attempt to attract young families with children, it was common for developers and builders to set aside parcels of land in larger developments and subdivisions for the creation of schools. To create a feasible site, they were urged to consult with the local school board and consider pedestrian access from all points within the subdivision, as well as its proximity to transportation corridors in areas where bussing would occur. In 1948 the ULI provided minimum size recommendations for schools: five acres for elementary schools and 10 acres for high schools.[247] By 1954 recommendations for school sites had increased, with five acres allocated for each 500 students and an additional acre for each additional 100 students, and up to 35 acres for high schools.[248]

Although churches were a popular addition to the subdivision, builders and developers were advised against placing them in residential areas due to the volume of associated automobile traffic and parking concerns among residents. In 1954 the Community Builders' Council of the ULI recommended allocating a minimum of 3 to 5 acres for church development.[249] As a result, suburban churches are often located on the periphery of a development along a transportation thoroughfare. The church located within the Dillon's Fairacres addition in Omaha, Nebraska, is one such example. When Robert W. Dillon platted the addition between 1953 and 1955, he left a large parcel on the north end, fronting a major street, for construction of a church (see Figure 85).

Figure 85. Luther Memorial Evangelical Lutheran Church constructed 1955-1956 in the Dillon's Fairacres Addition in Omaha, Nebraska (Mead & Hunt photograph).

The FHA and ULI guidelines identified shopping centers as a community asset. In *Planning Profitable Neighborhoods,* the FHA advised that such commercial areas be located within convenient and safe walking distances and offer adequate off-street parking and delivery access. It also advised that commercial areas be located along major thoroughfares rather than along secondary residential streets.[250] However, shopping centers in higher income neighborhoods were less critical since residents with automobiles were willing to travel outside their neighborhood to shop.[251]

5. Utilities and Infrastructure

Adequate infrastructure was a selling point for new homebuyers and a contributing factor in the overall success of a subdivision. Not only did the utilities need the capacity to handle the potential subdivision, but they had to accommodate future development within the subdivision and the expected development along the periphery as a result of the new neighborhood.[252]

Streets and sidewalks were the most visible of the subdivision infrastructure elements and important considerations for

[244] American Society of Planning Officials, "Public Open Space in Subdivisions," Information Report No. 46 (Chicago: American Society of Planning Officials, January 1953), n.p.; Urban Land Institute, 160.

[245] Urban Land Institute, 143.

[246] Strauss Brothers, *Eastridge, A Great Place to Live,* n.p. The Eastridge swimming pool is now open to the public.

[247] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 73.

[248] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1954), 89.

[249] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 73; Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1954), 89.

[250] United States Federal Housing Administration, *Planning Profitable Neighborhoods, 12.*

[251] Girling and Helphand, 88.

[252] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 15-16.

builders during the development process. The FHA, ULI, and other groups provided guidance for how to incorporate these vehicular and pedestrian networks into the overall design. Along with site condition, available water, sewer, electricity, natural gas, and public transportation were factors that developers had to consider during the site selection process. The FHA also urged developers to utilize public water supplies and sewers whenever possible, rather than including individual wells and septic systems within the subdivision design.[253]

a. Streets

To accommodate the automobile within the subdivision and make sure it did not dominate the public spaces, the ULI recommended that developers limit vehicle access points, provide narrow secondary streets, and utilize traffic calming measures, such as speed bumps on minor streets.[254] This built on previous guidance from the FHA, which was included in the 1938 publication *Planning Profitable Neighborhoods* and *Planning Neighborhoods for Small Houses* and the 1940 publication *Successful Subdivisions.* Although the FHA did not provide specific guidance for street widths, it provided optimal cross-sections for 30- and 50-ft right-of-way widths, including paved surfaces, parking areas, terraces, and sidewalks.[255] The FHA also suggested that developers plan subdivisions with street patterns that follow the natural contours of the land, discourage heavy through traffic, allow for the extension of major streets into adjacent areas, intersect major thoroughfares at right angles, and avoid dead-end streets.[256]

Within subdivisions, both the ULI and FHA urged developers to consider preparing street plans during the development process. Major streets were to conform to the master street plan for the adjacent or surrounding community but avoid the traditional gridiron street patterns. In some cases, this required that primary streets within a subdivision meet the width of outside streets. Although street planning was to discourage through traffic, planners were also urged to consider emergency vehicle access in the design process.[257]

In 1948 the ULI recommended that minor residential streets not exceed 26 ft from face-of-curb to face-of-curb, allowing for two lanes of on-street parking and one lane of moving traffic. This width also provided adequate turning radii at intersections and driveways. The ULI recommended that major streets be 33 to 34 ft from face-of-curb to face-of-curb. These wider streets were discouraged throughout the subdivision as they were seen as inviting higher speeds and increasing initial paving and future maintenance costs. However, local standards for street width often dictated the developers' plans.[258]

Although the FHA promoted the use of cul-de-sacs in residential developments, the ULI offered guidance for limited use. They were not recommended for streets longer than 500 ft and turning radii guidance was provided. In addition, developers were warned from including too many cul-de-sacs and dead-end streets as they increased sewer and drainage problems and complicated refuse pick-up and emergency vehicle access. Loop streets, which featured the curvilinear design of the cul-de-sac but connected with adjacent streets on either end, were seen as advantageous because they allow for privacy and discourage through traffic while avoiding potential drainage issues and the difficulty of turning vehicles around.[259]

b. Sidewalks

> Sidewalks, like babies and cars, are here to stay. In mass-produced subdivisions – the dominant form of city building – they are an adjunct of a mode of life. The trends that make sidewalks desirable or necessary now show no signs of declining in the future . . . [260]

Sidewalks were seen as an important amenity in residential subdivisions as they were viewed as a popular place for children to play and allowed families safe pedestrian travel between homes, schools, churches, and recreational areas. The need for sidewalks in residential subdivisions and developments was based on several variables, which are described below, as well as city and local ordinances. In the majority of new residential developments, the developer was responsible for the construction of sidewalks; however, this was often passed on to homeowners through lot and construction costs.

In 1948 the ULI recommended that sidewalks be placed on at least one side of the street within residential developments. In areas with major streets that served as approaches to schools, shopping centers, bus stops, and other focal points, the ULI recommended sidewalks on both sides of the street.[261] The American Society of Planning Officials (ASPO) provided the following guidelines regarding when sidewalks

[253] United States Federal Housing Administration, *Planning Profitable Neighborhoods,* 4-6.
[254] Urban Land Institute, 173.
[255] United States Federal Housing Administration, *Planning Neighborhoods for Small Houses,* 13.
[256] United States Federal Housing Administration, *Planning Profitable Neighborhoods,* 8-11; United States Federal Housing Administration, *Successful Subdivisions,* 13-18.
[257] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 62.
[258] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 62.
[259] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 69.
[260] American Society of Planning Officials, "Sidewalks in the Suburbs," Information Report No. 95 (Chicago: American Society of Planning Officials, February 1957), 18.
[261] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 64.

were not needed: if lots are large enough that children will not play in the street—typically 100 ft of frontage or more, and lots are large and spread out far enough from each other and amenities to discourage walking. Subdivisions that met these criteria were considered "open," "residential estates," or "country home" developments.[262]

By 1957 design standards were in place for sidewalks, with the American Public Works Association's *Sidewalks and Curbs* considered to be the standard manual. In residential developments sidewalks were recommended to be a minimum width of 4 ft. The width was based on the standard dimension of an adult male from elbow to elbow (1 ft, 8 inches) allowing for 2, 2-ft travel lanes. However, in residential developments with large numbers of families, baby strollers, and children riding bicycles in sidewalks, 4 ft was considered too narrow.[263] Wider sidewalks were also recommended for areas with commercial development or multi-family housing units, such as apartment buildings and row houses.

Sidewalk placement was suggested to be at least 3 ft from the back edge of the curb and at least 7 ft if trees were planned for the terrace. The advantages outlined for this minimum setback included a space for snow to be deposited when clearing the roadway and sidewalk, a reduced "splash" zone from passing vehicles, safe distance between pedestrians and passing vehicles, and ample space for fire hydrants, street signs, and utility poles. In addition, the terrace was seen as a safety mechanism, as children were less likely to ride wheeled toys across the grassy space and into the street.[264]

Rolled curbs, with a rounded edge, were preferred by developers due to a reduced cost over straight curbs and gutters. Rolled curbs also eliminated the need for driveway cuts, curbs, and aprons. However, straight curbs provided a more definite boundary between the road and parking lanes and the adjacent sidewalk and terrace, making sidewalks safer for pedestrians and children.[265]

Although the ULI and other agencies recommended that sidewalks be included in the initial subdivision or plat design, they are often lacking in postwar subdivisions across the county. Municipalities often had their own requirements regarding the inclusion of sidewalks and terraces. In some areas, sidewalks were required on only one side of the street or not required at all (see Figures 86 to 88).[266] For example, postwar developments identified in Madison, Wisconsin; Arlington, Texas; Columbus, Ohio; and throughout Georgia do not have sidewalks.

Figure 86. Residential neighborhood in Ottumwa, Iowa, developed beginning in 1945, with sidewalks on both sides of the street (photograph courtesy of Molly Myers Naumann and the State Historic Preservation Office of the Iowa Department of Cultural Affairs).

Figure 87. Waynewood Subdivision in Fairfax County, Virginia, developed in the early 1960s with sidewalks on one side of the street (photograph courtesy of Anne Bruder, Maryland State Highway Administration).

Figure 88. Postwar Golf Green Subdivision in Madison, Wisconsin, platted in 1954-1955, without sidewalks on either side of the curvilinear street (Mead & Hunt photograph).

[262] American Society of Planning Officials, "Sidewalks in the Suburbs," 4.
[263] American Society of Planning Officials, "Sidewalks in the Suburbs," 10.
[264] American Society of Planning Officials, "Sidewalks in the Suburbs," 14.
[265] American Society of Planning Officials, "Sidewalks in the Suburbs," 12.
[266] Due to the lack of requirements during the initial period of development, some subdivisions with existing sidewalks may have been retrofitted during modern road improvement projects.

c. Entrances and Perimeters

In the postwar era, subdivision entrances and perimeters often incorporated distinctive fences, gates, and signage. Fences or plantings along the perimeter defined the plat or neighborhood, added privacy to outer lots, and also decreased the audible noise from adjacent streets. When used in conjunction with a gate, the fences or plantings also provided a sense of increased security or affluence. Signs with the name of the subdivision or neighborhood were used throughout the county and may have been a way for developers to lend identity to similar-looking residential developments. Signs range from simple markers along the periphery (see Figure 89) to elaborate structures that reflect the architectural styles or namesakes of the subdivision or neighborhood (see Figures 90 and 91).

d. Plantings

Although much of the plantings in residential subdivisions were the responsibility of the homeowner, developers and builders were responsible for the overall landscape of the development and installing plantings in public, open space that fit with the overall neighborhood character. The ULI provided developers with guidance for plantings within residential subdivisions. Shrubs were recommended only for areas where erosion control and screening were necessary. Hedges were suggested for strategic locations, including boundaries; however, varieties that maintained an acceptable appearance and required little pruning were preferred. Vines were considered to reduce noise and glare and were acceptable for use on masonry walls.[267] See Section G.5 for more on residential plantings.

Planting trees in terraces or boulevards, the space between the road and sidewalk, and along streets in areas without sidewalks was seen as standard practice for developers. To accommodate trees, the ULI suggested a terrace width of 8 ft since lesser widths could prove too narrow for proper tree growth, and the roots

Figure 89. Simple sign along the perimeter of the c.1950 Interlachen Park neighborhood in Hopkins, Minnesota (Mead & Hunt photograph).

Figure 90. Sign at the entrance to the early 1960s Amberwood subdivision in north DeKalb County, Georgia (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

Figure 91. Decorative signage at the entrance to the c.1960 Eastridge subdivision in El Paso, Texas (Mead & Hunt photograph).

[267] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 79-80.

could cause sidewalk heaving. If the streets were too narrow to accommodate tree plantings on each side, the south or west side was preferred as those sides provided the most opportunity for shading the walk and yards. The use of flowering trees was recommended for neighborhoods with higher price points. Varieties such as cherry, flowering crab, and dogwood could entice visitors during flowering season, thereby attracting potential homebuyers.[268]

6. Conclusion

Developers were willing to accept the FHA and ULI standards and guidelines, including the inclusion of neighborhood amenities, because compliance improved their possibility of home sales. It also meant that potential homebuyers had a higher probability of securing an FHA loan, contributing to a greater chance of selling homes in a development. [269] Adherence to these FHA guidelines for planning and development resulted in very similar subdivision appearances across the country. See Section C for more information on FHA programs and policies.

F. Postwar Building Materials and Construction Techniques

1. Advances in Materials

Advances in materials technology and availability of new building materials played a significant role in the structure and appearance of residential architecture in the postwar era. Many materials, such as steel, were rationed during the war as the construction industry ground to a halt. However, new and non-traditional materials that were often heralded as maintenance free, fireproof, and energy efficient emerged during the war years and found new uses in postwar residential architecture. Research into new materials technology as a means to stimulate housing production found political support in the 1946 Veterans' Emergency Housing Act, which provided federal subsidies for producers of new materials. Supported by federal funding, materials that were experimented with during the Great Depression and the war years were applied to the residential housing market after the war. Some of the more prominent new home-building materials included stressed-skin plywood panels and steel frame wall panels. As an example of the federal government's investment in new home-building techniques and materials, the Lustron Corporation received $22.5 million in government loans in the late 1940s.[270]

Material innovations and new materials, including aluminum, steel, concrete block, simulated stone, fiberboard, plywood, glass block, fiberglass, and plastics, were all used for residential construction during the subject period. They are discussed in detail in this section, which is organized by material type.[271] Established materials, such as asbestos shingle siding and stucco, continued to be used during the postwar period but are not addressed in this section. In addition to descriptions of materials and their technological histories, the range of material uses is considered, from structural systems to exterior cladding, insulation, and decorative details. In particular, the postwar period witnessed considerable experimentation and innovation with structural systems, as wood and steel panel construction provided an alternative to the historic pre-cut lumber and balloon framing techniques. Construction techniques, including standardization and prefabrication, are addressed in a separate section that looks at the phenomenon of mass production.

a. Metals

Aluminum. Although aluminum was used as an interior building material as early as 1892 in Chicago, it gained widespread popularity in the early and mid-twentieth century as a lightweight material that could be easily fabricated and erected. The A.O. Smith Corporation Research and Engineering Building (1930) in Milwaukee, Wisconsin, was one of the first American buildings to be clad in aluminum; sheet aluminum faced the walls, cornices, and parapets. With the advent of the Great Depression, aluminum's use for architectural purposes declined. However, the aircraft industry reinvigorated the aluminum industry during World War II, conducting research on aluminum alloys and requiring aluminum for wartime aircraft. Fabrication technologies improved considerably as a result of this improved knowledge. Aluminum was produced at a high level during the war, resulting in a considerable stockpile and a plethora of large manufacturing facilities, and yet by 1952 aluminum production surpassed wartime levels.[272]

During the postwar period, aluminum became a critical component of the glass and metal curtain wall system of commercial construction. The possibilities of an all-aluminum curtain wall were also demonstrated by the Aluminum Company of America (ALCOA) Building of 1953, which featured prefabricated panels of sheet aluminum. In 1957 ALCOA partnered with architect Charles Goodman to develop their line of Carefree Homes (see Figures 92 and 93). Reflecting the popular Ranch form, the innovative design utilized ALCOA-produced

[268] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 70, 78.
[269] Girling and Helphand, 89.
[270] Wright, 244.
[271] Innovations in interior materials and features is not covered in this study.
[272] Stephen J. Kelley, "Aluminum," *Twentieth Century Building Materials: History and Conservation,* ed. Thomas C. Jester (New York: McGraw Hill, 1995), 47-49

Figure 92. ALCOA Care-free House in Lincoln, Massachusetts, with a white anodized standing seam roof, purple anodized corrugated wall panels, and anodized yellow door cladding (photograph courtesy of John A. Burns, FAIA).

Figure 93. Detail of ALCOA Care-free House in Lincoln, Massachusetts (photograph courtesy of John A. Burns, FAIA).

aluminum exterior panels and roof materials, as well as innovative interior features that reduced maintenance, making the homes "care free." The production cast was higher than anticipated and only 24 were constructed nationwide.[273]

Small-scale sheet aluminum houses were also developed by two prefabricated home companies: National Homes of Chicago and Reliance Homes of Philadelphia. National Homes fabricated aluminum houses at the factory and delivered the home in two sections to be joined on site. Reliance Homes used corrugated aluminum panels that were shipped to the house site in seven sections and featured flat roofs.[274]

Within the residential building market, aluminum also emerged as a popular material, used for doors, windows, and siding. Frank Hoess of Hammond, Indiana, is often credited as the father of aluminum siding with his 1937 invention of an aluminum siding configuration that imitated the more traditional wood clapboard appearance. However, his 1939 patent for a locking joint was perhaps his greatest invention. A small flap at the top of each panel of metal siding locked with a flange on the bottom of the panel above it, creating a waterproof seal. Successfully marketed to the American public as a weather-proof, fireproof, and vermin-proof wall cladding that did not need painting, aluminum clapboard siding was used on more than three million homes by 1960 (see Figure 94).[275]

Figure 94. Three c.1945 Minimal Traditional residences in St. Cloud, Minnesota, with aluminum siding (Mead & Hunt photograph).

In 1946 Hoess entered into a distribution deal with Metal Building Products of Detroit, which sold his patented designs, including unpainted, 4-, 6-, and 8-inch-wide clapboard-style panels. By the end of 1946 several housing projects featured aluminum siding, including a 31-unit development near Pittsburgh. This subdivision was reportedly the first in America to exclusively feature aluminum siding. Nonetheless, due to increasing competition, Metal Building Products was out of business by the end of 1948. Perhaps the most successful aluminum siding producer of the postwar era was Reynolds Metal of Richmond, Virginia, which leased an aluminum sheet-rolling mill from the federal government after the war in an effort to alleviate the housing shortage. In 1946 the company released plans for a Cape Cod-style residence with an aluminum frame, sheet aluminum interior and exterior, a cement insulation system that would make the house rigid, and wide-lap aluminum siding. Although Reynolds abandoned efforts to market this factory-built house, the company did continue efforts to apply aluminum to the residential housing market. By August 1946 the company featured a full line of aluminum materials, including siding and roof shingles.[276]

[273] Robert T. Englert, Alcoa Care-free Home National Register Nomination, 8-2 - 8-6.

[274] Jennifer Sale Crane, "Postwar Prefabricated Homes in the Washington, D.C. Suburbs," Unpublished paper presented at the Vernacular Architecture Forum Conference, May 2010, 12.

[275] Kelley, 49; John Lauber, "And It Never Needs Painting: The Development of Residential Aluminum Siding," *APT Bulletin* 31, no. 2/3 (2000), 17-19.

[276] Lauber, 19-21. Reynolds Group Holdings is still in operation; it was acquired by ALCOA in 2000.

The key product in the Reynolds Metals building material line was the clapboard-style siding with an 8-inch exposure. The siding came in either a plain or embossed (weatherboard) surface and was marketed as weather-proof and low maintenance. Reynolds Metals pursued an aggressive advertising campaign in both trade publications and the popular press. Full-color advertisements in the *Saturday Evening Post* occurred with regularity and persuaded the American homeowner to consider this novel product's beauty and convenience. Within 18 months (by 1947) Reynolds Metals estimated that its production of aluminum was enough to side and roof 141,113 five-room homes.[277]

Like Reynolds Metals, Kaiser Aluminum and Chemical Company of Washington State acquired federally owned aluminum plants in an effort to support the increased pace of new home construction. Kaiser's signature product was 7-inch-wide aluminum siding with a curved face, which was purportedly so strong that it would not need intermediate sheathing when attached to the house's studs. Kaiser's marketing methods included the use of model homes in California and a national network of jobbers who would sell the product wholesale from their warehouses to local contractors.[278]

One of the most innovative developments in aluminum siding during the postwar years was the development of baked enamel siding, marketed in a variety of colors. In 1947 Jerome Kaufman of Akron, Ohio, teamed up with chemists from Sherwin-Williams to develop a factory-applied coating system with a life-span of 10 to 15 years. His company, Alside Incorporated, began selling pre-painted siding in the spring of 1948. Advertisements presented this product, which came in white, cream, or gray, as "permanent, fireproof, lightweight, coldproof, heatproof, termiteproof, and waterproof." The success of Kaufman's enterprise was immediate, and within several months, Reynolds and Kaiser also offered factory-painted aluminum siding.[279]

Among the other companies that distributed aluminum siding was Sears, Roebuck & Company, whose 1949 product was akin to Reynolds' aluminum weatherboard siding. By 1954 Sears offered factory-painted green, white, gray, and buff aluminum clapboards as the "newest thing in siding for homes."[280] Despite the early success of the aluminum industry in the aftermath of World War II, the Korean War quickly curtailed aluminum production for the civilian market in 1950 as the National Production Authority (NPA) leveled constraints on the use of aluminum.[281]

As the housing crisis ended in the mid-1950s and the pace of new construction slowed, the residential aluminum siding industry responded by promoting the material for home improvement projects. The industry did see a renewed interest in using the material for new construction in 1959 when National Homes and ALCOA developed a prefabricated house sided with clapboard-style aluminum (see Section G.3 for more information on National Homes). With siding offered in white, green, gray, yellow, or beige, ALCOA used an aggressive advertising campaign to gain considerable market share in the residential market. By the end of the postwar period, many small fabricators of aluminum siding fell to the name recognition of larger producers.[282] Nonetheless, aluminum proved an important material in the residential postwar housing market, and its use as durable wall cladding continues today.

Steel. Steel was a prominent architectural and engineering material prior to World War II. However, the development of high-strength weathering steel impacted the material's usage during the postwar years. Weathering steel is a low-carbon steel alloy that develops a thin, protective brown patina when exposed to outdoor conditions. This patina differs in chemical composition and appearance from rust that commonly develops on most steel types. Corrosion-resistant, low-alloy steels were first developed by U.S. Steel Company in 1929. Four years later, U.S. Steel introduced a low-alloy, high-tensile product line that included Cor-Ten A and Cor-Ten B. Initially, U.S. Steel promoted this product for railroad equipment; however, the architectural industry quickly adopted this product for its purpose. Structural shapes including I-beams, channel beams, sheets, plates, ledges, columns, and light standards could be fabricated of weathering steel and installed by welding or bolting. The first unpainted weathering steel building in the United States was Eero Saarinen and Associates' Deere Company Administrative Center (1958) in Moline, Illinois.[283]

Postwar architectural steel usage is perhaps most often linked to the history of prefabricated housing and the "steel house." As a result of developments in the steel industry during the Depression era and World War II, in both steel composition and manufacturing processes, "all steel" was seen as a symbol of progress. Improvements in machine fabrication led to improved design and lowered cost. In particular, metal

[277] Lauber, 21.

[278] Lauber, 22. Kaiser Aluminum and Chemical Company is now headquartered in Foothill Ranch, California, but was founded in Washington state in 1946.

[279] Lauber, 22-23. Alside, Inc. is now a subsidiary of Associated Materials, Inc. Headquartered in Cuyahoga Falls, Ohio, the company specializes in vinyl siding, windows, doors, and fencing.

[280] Holly Hope, "The Thrill of a New Home Without the Cost: The Evolution of Residential Siding Materials in Arkansas," http://www.arkansaspreservation.com/historic-properties/national-register/siding_materials.asp (accessed 3 March 2011), 36.

[281] Holly Hope, 36-37.

[282] Holly Hope, 36-38.

[283] John C. Scott and Carolyn L. Searls, "Weathering Steel," *Twentieth-Century Building Materials: History and Conservation,* ed. Thomas C. Jester (New York: McGraw Hill, 1995), 73-77.

panel systems were a popular, if somewhat limited, prefabricated house system during the period. Although steel supplies were tight immediately following World War II, the federal government would soon allocate its surplus to alleviate housing needs. Companies including the Lustron Corporation, a division of the Chicago Vitreous Enamel Products Company with a plant in Columbus, Ohio, and the William H. Harman Corporation of Philadelphia used steel panels to develop prefabricated housing systems. The Lustron Corporation's material innovations are discussed herein. Another lesser known example of repurposed steel was the Harman Corporation's riveted steel panel Ranch home designed by architect Oscar Stonorov. However, in 1946, only seven of a planned 105-unit subdivision in Arlington County, Virginia, were ever constructed, and only one model home was built in an unrealized College Park, Maryland, subdivision.[284]

Porcelain Enamel. German and Austrian engineers first developed the process of enameling metal sheets in the mid-nineteenth century. Porcelain enamel was durable and easy to clean, so it is not surprising that the manufacturers of appliances and bathroom and kitchen fixtures adopted this material. Within the United States, metal enameling was accomplished on an industrial scale by the turn of the twentieth century. Before sheets of low-carbon steel were available in the early twentieth century, manufacturers used iron as the base metal for the enameling process. However, during World War II, a breakthrough allowed lower heat to be used for the process, which, in turn, allowed manufacturers to use lighter-gauge metal. This resulted in lower, more affordable prices for the panels.[285]

One of the leading manufacturers of porcelain enamel was the Chicago Vitreous Enamel Products Company, which produced tank armor during World War II. During the war years, the company hired engineer and inventor Carl Strandlund to retool and run the production plant for the war effort. Strandlund's production plant innovations resulted in dramatically increased production with decreased production time. He also developed an architectural panel at the end of the war, which featured "a novel and improved construction with an arrangement of interlocking and sealing adjacent porcelain enamel panels, units, or adjoining connecting parts of the exterior or interior walls of a building or structure of any type or design" (see Figure 95).[286] This panel would become the critical component of the well-known Lustron house, a prefabricated porcelain enamel house.

In 1947 Strandlund established the Lustron Corporation and was granted the first of several multi-million dollar loans from the Reconstruction Finance Corporation (RFC), through the Veterans' Emergency Housing Act, to begin production. Within the former warplane manufacturing plant in Columbus, Ohio, the Lustron Corporation began producing demonstration houses, of which 100 were erected in almost every major city in the Midwest and eastern United States by April 1949. Lustron houses were sold through a network of dealers, and at its peak the Lustron Corporation had 230 dealers in 35 states. Despite Strandlund's optimism, the Lustron Corporation ultimately declared bankruptcy in 1950 as production levels proved lower than originally predicted, building inspectors balked at the new structural system, and the U.S. Senate banking subcommittee investigated RFC loans and recalled the Lustron Corporation's loan. More than 60 years later, as many as 2,000 of these homes survive across the country. Lustron homes are discussed in more detail in Section G.3.[287]

Figure 95. Porcelain enamel coated steel panels on a c.1950 Madison, Wisconsin, Lustron home (Mead & Hunt photograph).

b. Masonry

Concrete. Like the metals discussed in the previous section, concrete was a well-established building material before World War II. However, its use for precast concrete blocks or concrete masonry units (CMUs) was expanded upon during the 1940s and 1950s as a means to quickly construct lower cost housing. Concrete could be poured into molds and hardened into strong, rigid sections of nearly any size and configuration. As such, it provided great flexibility for prefabricated housing during World War II and the postwar era.

Hollow concrete blocks were first manufactured in the early twentieth century after Harmon S. Palmer invented the cast iron block machine. The popularity of the concrete block grew

[284] Crane, 11-12.

[285] "Lustron History," *Lustron Preservation,* http://www.lustronpreservation.org/meet-the-lustrons/lustron-history (accessed 10 March 2011).

[286] "Lustron History," n.p.

[287] "Lustron History," n.p.

tremendously during the first two decades of the twentieth century. As portland cement became more available, block manufacturers organized to create standard block sizes, and the industry began to use testing to improve the material's reliability and durability. Trade organizations also began to promote concrete block usage in magazines, catalogues, and books. Usage of the material grew consistently except for a short decline during the Depression, and by 1951, 1.6 billion concrete blocks were being produced in the United States.[288]

One of the primary innovations in concrete block manufacturing was the introduction of lightweight aggregates to address the heaviness of the product. The results were products such as cinder blocks; Haydite, which incorporated shale; Pottsco (later Celocrete), which incorporated furnace slag treated with water; and Waylite, which introduced a slag expanded with steam.[289] By 1943 precast CMUs were used in more than 10 percent of the nation's new homes per year. The material continued to be used as a structural system and wall material during the postwar period, particularly for lower cost home building.[290]

During the 1950s and 1960s perforated precast concrete block units became a popular feature of American architecture. Used for both interiors and exteriors in postwar architecture, screen blocks were inexpensive, durable, stylish, and adaptable to many uses. As an architectural screen, decorative pierced concrete blocks could obscure fenestration and walls while adding a stylistic touch to otherwise undecorated modern structures. They also saw frequent use as privacy fencing within the larger postwar subdivision landscape (see Figures 96 and 97).[291]

Architects Frank Lloyd Wright and his son Lloyd Wright were among the first to experiment with pierced concrete walls. In their mid-1920s textile-block houses, the Wrights filled pierced blocks with glass to add windows within the houses' exterior walls. Despite their early efforts, it was not until the 1950s that perforated concrete blocks enjoyed widespread popularity. The architect perhaps most responsible for the material's rise to popular consciousness was Edward Durrell Stone. Stone used his signature concrete block grille in the noteworthy 1956 American Institute of Architects (AIA) award-winning Stuart Company headquarters in Pasadena, California, and the American embassy in New Delhi, India. Stone's frequent use of concrete grilles on widely publicized high-style buildings resulted

Figure 96. Concrete screen providing increased privacy at the rear patio of this c.1966, Worthington Hills, Ohio, Ranch house (Mead & Hunt photograph).

Figure 97. Concrete screen at the front entrance of a c.1964 Ranch house in Sacramento, California (photograph courtesy of Andrew Hope, Caltrans).

in increased popularity of perforated concrete block for more modest, vernacular buildings. The material was frequently used for detailing store fronts, partitioning offices, fencing parking lots, and constructing half-walls (such as fences or at entryways) for many single-family residences.[292]

In the mid-1950s, 17 of California's largest block manufacturers combined into Quality Block Producers. They initiated market studies and publicity campaigns in an effort to appeal to both prospective home buyers and existing homeowners looking for a way to renovate or brighten their house. Quality Block Producers' marketing efforts cleverly associated the concrete screen block with Californian lifestyle and the "Populuxe" style. Concrete screen blocks were intensely popular during the postwar period, but by the late 1960s, the material was becoming passé.[293]

Simulated Stone. Simulated stone products of the postwar period can be understood as an extension of previous

[288] Pamela H. Simpson, Harry J. Hunderman, and Deborah Slaton, "Concrete Block," *Twentieth Century Building Materials,* ed. Thomas C. Jester (New York: McGraw Hill, 1995), 80-83.
[289] Simpson, Hunderman, and Slaton, 82-83.
[290] Alfred Bruce and Harold Sandbank, *A History of Prefabrication* (Raritan, N.J.: John B. Pierce Foundation, Housing Research Division, September 1945), 40.
[291] Anthony Rubano, "The Grille is Gone: The Rise and Fall of Screen Block," *Preserving the Recent Past 2,* 109-117.
[292] Rubano, 110-111.
[293] Rubano, 111-114.

Figure 98. Simulated stone on facade of a c.1945 Minimal Traditional house in Lansing, Michigan (Mead & Hunt photograph).

efforts to imitate masonry. From late-nineteenth-century cast stone to early-twentieth-century rock-faced concrete block, numerous efforts had been made to simulate stone. However, the products of the Depression era and postwar period, which were comprised of a variety of materials including cement, minerals, epoxy, and fiber glass, provided a more flexible product. Using an established technology, simulated stone products were popular in many styles and forms of postwar residential construction, particularly as a facade treatment. Typically manufactured on site and applied as a facing material, these products were marketed for both new construction and home renovation projects as an easy way to update a building's exterior (see Figure 98).[294]

One of the best known of the proprietary simulated stone products is Perma-Stone, produced by the Perma-Stone Company of Columbus, Ohio, which is often considered the "originator of moulded stone wall-facing."[295] A cementitious product, Perma-Stone was marketed and sold through trained dealers by 1929. The company provided molds and materials, including portland cement, aggregate, crushed quartz, mineral colors, and metallic hardeners, to dealers across the country who installed the product. The success of Perma-Stone led to the growth of competing companies and innovations in simulated stone products. Formstone, a product of the Lasting Products Company in Baltimore, was first available in 1937. The on-site manufacture and application of Formstone was done by registered contractors who were trained by the company. Another competitor was the Rostone Company of Lafayette, Indiana. Made of pressurized shale, alkaline earths, quarry waste (lime), and water, Rostone was first used on the Wieboldt-Rostone House for the Century of Progress Exhibition of 1933. While concrete was the most frequently used base material for simulated stone in the postwar period, fiber reinforced plastic panels became an available alternative by 1960. For instance, the product Terox was "moulded in dies cast from selected quarry stone" and colored with pigments to imitate stone.[296]

Simulated stone could be manufactured off site or mixed on site and then applied to existing houses or used for new construction. These products capitalized on the signifying power of stone as a product of wealth and stability, and were marketed to middle-class America as an inexpensive material and way to enjoy the prominence of stone. Like aluminum, simulated stone companies advertised their product as maintenance free, fireproof, and energy efficient, thus appealing to buyers looking for an inexpensive product for their new home or their modernizing renovation project. Perma-Stone, Formstone, and Rostone saw their popularity peak in the 1950s and decline by the 1980s as mass-produced aluminum and vinyl siding overtook the market.[297]

c. Wood

Fiberboard. Fiberboard is a sheet building material comprised of wood fiber and/or other vegetable fiber. It can be manufactured in numerous densities and thicknesses and has been used historically for insulation, sheathing, and finishing of both interiors and exteriors. There are three categories of fiberboard: insulation board, medium density fiberboard, and hardboard. Fiberboard was often laminated. Both mechanically produced and chemically processed fiberboards were treated with adhesives to prevent termite damage and fungal growth. Additional materials, such as rosin, turpentine, asbestos, and asphalt, could be incorporated into the processing to improve tensile strength or resistance to water, fire, and vermin. The greater density of hardboard was accomplished by applying increased pressure and higher temperatures during processing. As a building product, fiberboard is best known by its trade names, including Masonite, Homasote, American Wallboard, Beaver Board, Cornell Board, Feltex, Fir-tex, Insulite, Nu-Wood, Upson Board, and others.[298]

Although fiberboard was first patented in the United States in 1858, housing shortages in the 1930s and during World War II provided the impetus for continued development of insulation and wallboard materials. Prior to World War II, the Homasote Company of Trenton, New Jersey, developed

[294] Ann Milkovich McKee, "Stonewalling America: Simulated Stone Products," *CRM* No. 8, 1995, 30-33.
[295] McKee, 30.
[296] Holly Hope, 44-45; McKee, 30-31.
[297] McKee, 30-33.
[298] Carol S. Gould, Kimberly A. Konrad, Kathleen Catalano Milley, and Rebecca Gallagher, "Fiberboard," *Twentieth Century Building Materials,* ed. Thomas C. Jester (New York: McGraw Hill, 1995), 120-122.

specific products for prefabricated housing. In particular, their products and structural system enabled the quick erection of wartime homes needed to serve the defense industry, including 977 homes constructed in 73 days in Vallejo, California, and 54 houses erected each day for a community of 5,000 single-family homes in Norfolk, Virginia.

The fiberboard industry responded to the postwar housing crisis by developing rapid production and finishing techniques in order to mass produce insulation boards. Some of the techniques included applying paints, lacquers, plastics, and metals to improve boards for interior and exterior finishing. By 1957 more than 600 patents existed for fiberboard-related products, ranging from architectural products to furniture. Emphasizing fiberboard's ability to lower home-building costs, a *Time Magazine* article from 1958 recognized the innovations behind a Masonite product featuring wall sections with built-in insulation. The product also included an exterior hardboard surface with an interior plastic-coated surface, soundproof ceilings in composition sections, and an exterior paint by Du Pont with a 20-year lifetime.[299] The fiberboard industry witnessed increased competition from plywood and particleboard companies beginning in the 1960s.[300]

Plywood. Assembled of hardwood or softwood veneers bonded by an adhesive, plywood is recognized for its resistance to splitting, ability to be molded into curves, high strength-to-weight ratio, and stability. As such, it was well suited for architectural purposes, both structural and decorative. First patented in 1865, plywood panels were most frequently used for furniture, door panels, sewing machine covers, and pin planks in pianos during the late nineteenth century. It was not until World War I, when testing was done to develop plywood for airplane construction that the plywood industry began to develop more rapidly. The growth of plywood as a structural material was inherently linked to the quality of adhesive used to glue the veneers. In the 1930s experiments and testing improved upon the properties of incorporated adhesives in order to offer water resistance. Other important manufacturing advances occurred during World War II, including the development of electronic heating devices that could cure plywood adhesives at lower temperatures without changing the moisture content of the panels, and the development of the bag molding process that enabled molding plywood into curves. The greatest growth in the industry was seen after World War II; between 1939 and 1947 the total output of plywood increased 380 percent, and the number of plywood manufacturers increased to 150 (from 50 in 1932).[301]

Stressed-skin plywood is a type of structural plywood that is formed with plywood sandwiched with layers of insulating or finishing materials and glued under pressure to a thin-ribbed frame to create a load-bearing unit. Foster Gunnison's prefabricated housing company, located in New Albany, Indiana, was an industry leader in the production of stressed-skin plywood panels. The Gunnison Housing Corporation was the first to use a moving production line for the manufacture of stressed-skin plywood panels. The panels were 4 ft wide and one-story tall with preinstalled doors and windows. Gunnison's efforts to build prefabricated homes of plywood panels began during the Depression and World War II eras, and at the peak of the war, his factory produced 600 homes per month for war housing projects. Gunnison Housing Corporation was purchased by U.S. Steel in 1944, and the company continued to manufacture stressed-skin plywood panel system houses for their postwar prefabricated housing line (see Section G.3 for more on Gunnison Homes).[302] Another fabricator of stressed-skin plywood prefabricated homes was TechBuilt Homes of Boston. TechBuilt's system featured 4-ft wide stressed-skin plywood panels attached to a wood framing system.[303]

Although efforts were made to use plywood in prefabricated houses, it was more widely used for sheathing and subflooring. Factory-prefinished plywood panels were first introduced by the U.S. Plywood Corporation in the mid-1940s as Plankweld, and were used frequently through the 1950s. The panels were coated with a color compound and sealed with either lacquer or a clear synthetic coating. Striated panels were also produced for exterior sheathing under the name Weldtex, which featured V-grooves.[304] Plywood served as a lower cost substitute for traditional wood siding in the postwar years, with Texture 1-11 (frequently referred to as T 1-11) as one of the best known examples.

d. Glass

Glass Block. Hollow glass block was first brought to the commercial market by Structural Glass Corporation in 1929 just before the stock market crash. As a result of the Great Depression, two major glass manufacturers, Owens Bottle Company and Illinois Glass Company, merged into Owens-Illinois of Toledo, Ohio. In 1932 the company produced the first Owens-Illinois glass block, a machine-pressed, soda-lime glass unit sealed with flat glass plates. This product was prominently featured at Chicago's 1933 Century of Progress Fair in the Owens-Illinois Company's glass block building. The company continued to innovate during the Depression years to improve the strength and cost of the product. Competition

[299] "Housing: More for Less," *Time Magazine,* 27 October 1958.
[300] Gould, Konrad, Milley, and Gallagher, 121-124; Bruce and Sandbank, 59.
[301] Thomas C. Jester, "Plywood," *Twentieth Century Building Materials,* ed. Thomas C. Jester (New York: McGraw Hill, 1995), 132-134.
[302] Crane, 9-10; Bruce and Sandbank, 64.
[303] Crane, 10-11.
[304] Jester, 135.

Figure 99. Raised Ranch house in Cozad, Nebraska, constructed c.1955, with curved glass block windows near the entrance and at the basement level (Mead & Hunt photograph).

also quickly developed from New York's Corning Glass Works, which developed the Pyrex construction block in 1935. Corning Glass Works and Pittsburgh Plate Glass merged to manufacture Pyrex blocks under the Pittsburgh-Corning Company name, and featured the block in their Manhattan headquarters building.[305]

Glass block was quickly adopted for residential use as manufacturers and architects developed applications for the home. Common uses included framing plate glass windows, rounding off building corners, constructing entire end walls of glass block, and combinations of glass block and steel casements for operating windows (see Figure 99). Resistant to mold, mildew, and grease, glass block also saw increased use in bathrooms and kitchens. Although glass block was used during the postwar period for residential construction, its heyday was in the 1930s. Nonetheless, Owens-Illinois and Pittsburgh-Corning continued to develop new glass block products in the 1950s, including the ceramic-faced and blue-tinted glass block (Owens-Illinois) and the redevelopment of rectangular glass blocks (Pittsburgh-Corning).[306]

Fiberglass. The development of fiberglass insulation for residential construction was the result of innovation during the Depression and World War II eras. In 1932 Dale Kleist, a scientist with Owens-Illinois, a leader in developing and marketing new glass products, began experimenting with methods to melt glass rods. During his experiment, he unexpectedly produced a fine glass fiber. Predicting that this product could have many uses, Owens-Illinois and Corning Glass Works, the country's premier manufacturers of glass products, formed a joint venture in 1935. By 1937 the partnership had developed numerous new products, including the first continuous filament fibers. The following year, the Owens-Corning Fiberglass Company was incorporated to manufacture glass-fiber products for residential construction and industry and to develop related technologies. World War II provided the well-timed arena for developing these new technologies, including manufactured insulation and fireproof materials for naval ships and aircraft. After the war ended, Owens-Corning Fiberglass' business boomed as it converted from wartime production. In particular, the company expanded into new home construction with its new process for manufacturing building insulation and its distribution of Kaylo fiberglass pipes. Highlighting its signature insulation product, Owens-Corning launched its "Comfort Conditioned Home" marketing campaign in 1957 to promote fiberglass insulation in homes across the country. The company continued to dominate the market for fiberglass home insulation throughout the postwar period.[307]

Another use of fiberglass during the postwar period was for home improvement projects. The Glasteel Company of California is one company that promoted fiberglass panels for use as garage doors, carports, fences, pool enclosures, patio and porch roofs, balcony railings and dividers, greenhouses, room partitions, folding doors and screens, window awnings and canopies, and luminous ceilings. Marketed as easy to work with, shatter proof, weather resistant, and durable, the Glasteel Company's products included translucent panels in a variety of configurations, including corrugated, twin rib, flat, shiplap, and alternating curves. The products were also available in a number of colors such as tan, green, yellow, turquoise, mint, white, coral, and clear. Within their illustrated advertisements, the Glasteel Company provided instructions to the home improvement enthusiast for constructing fencing, patio, carport or porch roofs, greenhouses, and awnings of fiberglass panels.[308]

Glass Panes. One of the defining features of postwar residential architecture is the incorporation of elevated and broad expanses of glass panes, particularly in picture windows, casement windows, and sliding glass windows and doors. One of the most innovative window manufacturers of the period was the Andersen Corporation of Bayport, Minnesota. Although the company got its start in the 1900s

[305] Elizabeth A. Patterson and Neal A. Vogel, "The Architecture of Glass Block," *Old-House Journal,* January-February 2001, 221-226.
[306] Patterson and Vogel, 221-226.
[307] "Owens Corning Corporation: Company History," *Funding Universe,* http://www.fundinguniverse.com/company-histories/Owens-Corning-Corporation-Company-History.html (accessed 10 March 2011).
[308] Glasteel, Inc., "A Guide for Building with Glasteel Fiberglass Panels" (El Monte, Calif.: Glasteel, Inc., [1957]).

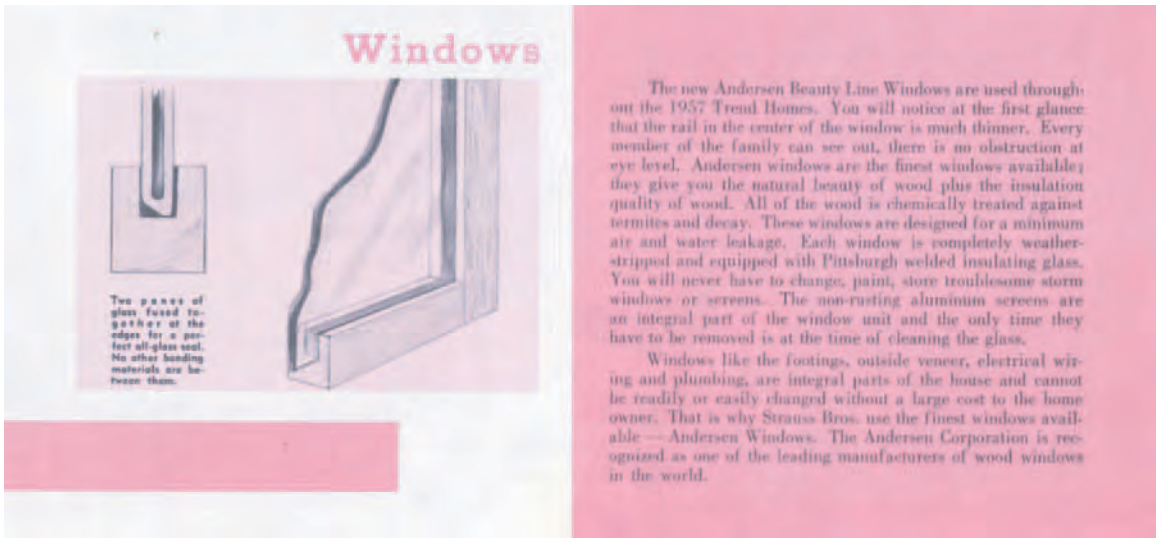

Figure 100. Details regarding Andersen Beauty Line windows from Strauss Brother's 1957 promotional booklet.

with the development of a mass-produced window frame, its innovations during the Great Depression and World War II contributed greatly to the period's architecture. After initiating standard window sizes across the industry, the Andersen Corporation began developing the first prefabricated window unit in 1932. As a result, a finished window could be installed in a matter of minutes. During World War II, the corporation converted to making gun cases and ammunition boxes. To speed up production, the Andersen Corporation developed high-speed machines to cut the parts quickly and to spray-paint and mark parts before assembly. After the war, the company transferred its machinery and production techniques back to window manufacturing. New postwar concepts in window design developed by the Andersen Corporation included a "Pressure Seal" window, which eliminated pulley-and-weight systems; a gliding window; a picture window flanked by casements, which was advertised as a "Window Wall"; and a new awning window called "Flexivent" (see Figure 100).[309]

Using marketing techniques, such as Andersen Corporation's Home Planner's Scrap Book during World War II, companies played on consumer frustration that building materials were unavailable. Manufacturers, including Andersen, sold scrapbooks for consumers to save ideas for future construction, essentially serving as a dream book for home planners. To promote Andersen Corporation's product, the scrapbook included a section on "Window Beauty Ideas." By the end of the war, more than 350,000 copies of the scrapbook had been sold, and not surprisingly the advertising techniques succeeded as Andersen saw its market share grow considerably during the postwar period. In particular, its growth in the 1950s was fueled by the development of the Flexivent awning window in 1952, which featured welded insulating glass that effectively eliminated the need for conventional storm windows. The Flexivent window was originally available in nine sizes, and a follow-up Flexiview picture window was introduced in 1954 (see Figure 101). By 1958 the Andersen Corporation offered Flexivent windows in 15 sizes and picture windows in three sizes. Within 2 years of releasing the Flexivent awning window in 1952, the Andersen Corporation's market share doubled, and by 1963 more than 10 million Flexivent windows had been manufactured and sold. During the 1960s the company introduced the gliding door and Perma-shield system, which featured a low-maintenance vinyl cladding to protect wood sashes from exposure to the elements. According to

Figure 101. Grouping of 12 Flexivent windows on the rear elevation of a c.1953 Ranch home in Lincoln, Nebraska (Mead & Hunt photograph).

[309] "Andersen Corporation," *Funding Universe,* http://www.fundinguniverse.com/company-histories/Andersen-Corporation-Company-History.html (accessed 10 March 2011); Clark, 194-196.

the company, this vinyl-clad window was its most important innovation, and became an industry standard.[310]

e. Plastics

As with many of the materials previously discussed, innovations in plastics occurred during the Depression and World War II eras as manufacturers looked for cheaper and more durable building materials. Exhibitions at Chicago's 1933 Century of Progress and the 1939 New York World's Fair demonstrated many of these new products, including plastics. As a result of these innovations, plastics became a common material in the postwar home, particularly in interior furnishings and built-ins. For example, Formica, which was invented in 1913 as an insulating material, was improved upon and adopted as a popular counter-top surface in the postwar home. Clear Lucite was often used in custom furniture in the 1950s, and Bakelite was re-designed and marketed in bright new colors during the period for use as drawer knobs, light bulb sockets, handles, radios, and jewelry.[311]

Fiber Reinforced Plastics. Fiber reinforced plastics (FRPs) can be comprised of a variety of polymers, including acrylics, vinyls, polyolefins, phenolics, and polyesters, in combination with reinforcing fibers such as asbestos, carbon fibers, and glass fibers. For building applications, glass fibers with polyester resins are the most typical combination and are often referred to as fiberglass. Because glass fibers were not manufactured until the late 1930s by Owens-Corning, FRPs were not used frequently until World War II. Between 1941 and 1942 the introduction of cold low-pressure molding resin polyesters and allyl diglycol carbonate, a low-pressure laminating resin, transformed the industry and enabled the use of glass fibers for reinforcements. Within 2 years, Winner Manufacturing was fabricating FRP boats, and the war continued to spur interest and development of this new material. Following World War II, the material proved well suited for the building industry.

Corrugated fiber reinforced translucent sheets were the dominant form of the material in the building industry and were introduced in the late 1940s. By the mid-1960s the two major FRP products were Sanpan panels, manufactured by Panel Structures of East Orange, New Jersey, and Kalwall panels, manufactured by Kalwall Corporation of Manchester, New Hampshire. During the postwar years, the development of FRPs focused on the material's plasticity and moldability, as well as its adaptability to structural applications using sandwiched construction techniques. FRP was also developed as a wall cladding for buildings with steel or concrete structural frames, roofing trim, gutters and flashing, corrugated sheeting, roof lights, and plastic forms for concrete. Moreover, FRP was often used on interior walls to create a sanitary wall surface in moisture-prone and hard-to-clean areas such as kitchens and bathrooms.[312]

Vinyl Siding. Vinyl siding was first introduced as wall cladding in the late 1950s to early 1960s by a manufacturing plant in Columbus, Ohio.[313] Manufactured primarily with polyvinyl chloride (PVC), vinyl siding's properties include impact resistance, rigidity, and strength. Vinyl siding was initially plagued by manufacturing difficulties that resulted in an inconsistent product. However, by the early 1970s the manufacturing process had evolved to improve the product's speed of production, impact resistance, and range of pre-applied colors. The manufacturing process is accomplished by co-extrusion, whereby two layers of PVC are laid down in a continuous extrusion process. The top layer includes approximately 10 percent titanium dioxide, which is a pigment providing resistance to UV light breakdown. The substrate layer typically features 15 percent calcium carbonate, which balances the titanium dioxide during the manufacturing process. The weight of vinyl siding is predominately PVC resin (80 percent), with the remaining 20 percent composed of ingredients that establish color, opacity, gloss, impact resistance, flexibility, and durability. Although vinyl siding was introduced primarily as a remodeling wall cladding material, its use grew steadily over the next decades, and it is now the most commonly used siding product in the United States, as it surpassed aluminum siding in the early 1980s.[314]

2. Mass Production, Standardization, and Prefabrication

Although the prefabricated, mass-produced house is often associated with the post-World War II period, its history is heavily routed in the Depression era, which gave rise to many new material and technological innovations as a way to lower the cost of housing.[315] For instance, U.S. Steel, American Rolling

[310] "Andersen Corporation"; Clark, 196; Andersen Windows and Doors, "Product Features and History," http://www.andersenwindows.com/homeowner/pdfs/History.pdf (accessed 10 March 2011).

[311] Shirley Maxwell and James C. Massey, "From Dark Times to Dream Houses," *Old-House Journal* (September-October 1999), 187.

[312] Anthony J. T. Walker, "Fiber Reinforced Plastic," *Twentieth Century Building Materials,* ed. Thomas C. Jester (New York: McGraw Hill, 1995), 142-146.

[313] The name of the independent manufacturing plant is unknown.

[314] Vinyl Siding Institute, "History," *American Vinyl Siding Institute,* http://www.vinylsiding.org/aboutsiding/history/index.asp (accessed 10 March 2011); "Brief History of Aluminum and Vinyl Siding," *House Home Repair,* http://www.househomerepair.com (accessed 1 April 2011).

[315] Prefabrication, particularly in the sense of pre-cut and ready-built homes, did exist as early as the nineteenth century; however, it was not until the Depression and World War II eras that efforts to prefabricate housing resulted in a wholesale modernization of the home-building industry.

Mills, and Republic Steel used housing subsidiaries to develop steel housing suitable for prefabrication; the Harnischfeger Corporation, a Milwaukee machinery manufacturer, applied its manufacturing processes to attempt mass-produced housing; and plywood companies sought new ways to use their product (see Section G.3 for more information on the Harnischfeger Corporation). Despite their innovations, none of these companies, or the many others tackling the problem of prefabricated housing and new materials, achieved great production volumes prior to World War II.[316]

In addition to corporate development, several noncommercial foundations experimented with prefabricated housing prior to World War II. The Albert Farwell Bemis Foundation, established at the Massachusetts Institute of Technology in 1938, continued the work of Albert Bemis of Bemis Industries, who experimented with structural materials and construction methods throughout the 1920s and 1930s. Even prior to a growing national interest in prefabrication, Bemis Industries experimented with steel, gypsum blocks, precast gypsum slabs for walls, and composition board and steel panels for houses. Bemis Industries also advocated the development of modular systems for home building in order to simplify construction by using standard repetitive members.[317] The John B. Pierce Foundation of New York City also contributed greatly to the early prefabrication movement during the 1920s and 1930s. The foundation, endowed by John B. Pierce, Vice President of the American Radiator Company, was chartered to promote scientific and technical improvements in heating, ventilation, and sanitation. The Foundation also expanded its work to promote economic uses of building materials to provide a home at the lowest cost possible. In addition to materials, the Pierce Foundation also studied the most efficient floor plans for low-cost housing. Completing a review of work by other agencies, the Foundation concluded in the early 1940s that a single-story, 24-ft by 28-ft house would become standard in prefabrication.[318]

The federal government was also involved with the movement to develop materials and systems for prefabricated housing. In particular, the Bureau of Standards in the Department of Commerce undertook tests of structural methods, materials, equipment, and prefabricators to establish universal standards throughout the industry. Additionally, the Forest Products Laboratory of the U.S. Department of Agriculture's Forest Service, located in Madison, Wisconsin, continued its research and development and testing of wood, especially plywood, as applied to prefabrication methods.[319]

Through its purchase of prefabricated dwellings for war workers, the federal government helped push the prefabricated movement from a period of experimentation to mass production. In the immediate postwar years, the U.S. government continued its involvement with the housing and prefabrication industries in an effort to alleviate the country's acute housing shortage. The 1946 Veterans' Emergency Housing Act included federal funding and material allocations for prefabricated housing companies. Moreover, the Truman administration appointed Wilson Wyatt to be Federal Housing Expediter; his mandate was to solve the postwar housing crisis. Wyatt promised to stimulate construction by providing subsidies for producers of factory-built homes and new materials. With the 1946 Veterans' Emergency Housing Act and the RFC's federal loans for the erection of large prefabricated housing plants, Wyatt paved the way for increased numbers of prefabricated home companies. By 1947 nearly 100 prefabrication companies were operating across the country, and in the same year, the prefabricated home companies Kaiser Community Homes of Los Angeles, California, and National Homes of Lafayette, Indiana, constructed 2,500 houses. Subsequent legislation in the 1950s, including Congress' 1951 authorization of loans to facilitate prefabricated home production, bolstered the industry. Prefabricated home construction peaked in the mid-1950s, comprising nearly 10 percent of total American housing production at its height.[320]

The factory-built or prefabricated home represented America's industrial power and mass production capabilities. Innovators, manufacturers, and developers such as Foster Gunnison (of Gunnison Homes) and William Levitt aspired to large-scale mass production and standardization after the model of Henry Ford. Through economies of scale, mass production provided lower cost housing while also eliminating the inefficiencies of on-site home building.[321] William Levitt of Levitt and Sons, in particular, exemplifies trends in large-scale home building.

Using his experience building low-cost housing for government defense developments during World War II, Levitt began to experiment with standardization, mass production, and large-scale home building. In 1947 Levitt purchased 1,400 acres of farmland in Long Island, New York, and began to develop the first of several Levittowns. Within a year he was erecting more than 35 houses per day and 150 houses per week by using an assembly line technique. By 1950 Levitt's crews could erect a house every 16 minutes. His home construction system began with the delivery of packaged materials at 100-ft intervals in the development, followed by the excavation of rectangular foundations in which heating pipes were installed. Afterward, each home site became an assembly line of sorts, as crew members, materials, and machines

[316] Bruce and Sandbank, 6-9.
[317] Bruce and Sandbank, 10-11.
[318] Bruce and Sandbank, 11-12.
[319] Bruce and Sandbank, 13-14.
[320] Crane, 3-4; Lauber, 17-19; Checkoway, 31-32; Maxwell and Massey, "From Dark Times to Dream Houses," 187.
[321] Crane, 1-2.

moved past each home site in teams, each team repeatedly performing one of 26 operations. Each part of the house was pre-assembled, prefabricated, or precut to specification in the factory and then assembled on site.

Not only did Levitt incorporate assembly line production, he used vertical organization to help standardize the process and reduce costs. Levitt's own company supplied the lumber, which was cut from his timber using his equipment to the exact specifications and sizes required for the house. Nails and concrete blocks were manufactured at a Levitt-owned factory. Materials that were not produced by Levitt were delivered directly from manufacturers in order to eliminate the middle-man and inevitable cost mark-ups. By reducing charges and acting as his own supplier, Levitt eliminated the potentially costly distribution web.[322]

In addition to large builders such as Levitt and Sons, who perfected the methods for on-site mass production, a number of prefabricated housing companies changed the residential landscape. Immediately following the war, numerous companies produced and marketed steel or aluminum prefabricated houses; however, wood, in general, was the preferred housing material for both prefabricated and conventional methods. Changes in technology and manufacturing led to the adoption of the panelized method of construction during the postwar period, a contrast from the preferred pre-cut lumber construction method of twentieth century catalogue homes. The panelized method involved large, factory-constructed, wall-height panels that would be joined on-site with nails or patented joinery methods. By the early 1950s, these panels were typically made of stressed-skin plywood.[323]

Between 1945 and 1960 more than 800,000 prefabricated homes were erected across the country, particularly on suburban lots in the upper Midwest. The states of Indiana, Illinois, and Ohio were the center of the prefabricated home industry and home to companies such as Lustron, Gunnison, and U.S. Steel. The home designs of specific prefabricated manufacturers are discussed in Section G.3. Although prefabricated housing, standardization techniques, and mass production did not, on their own, solve the postwar housing crisis, they were significant trends in home building during the period. With government support, prefabricated home companies and material fabricators utilizing standardization methods developed into solid businesses serving customers across the country.[324]

3. Conclusion

The proliferation of new and innovative building materials during the postwar period, resulting from experimentation during the Great Depression and World War II, greatly impacted the design, construction, appearance, and marketing of the postwar house. Coupled with these new materials was the invigoration of prefabrication and mass production techniques to meet the increased postwar demand for housing. In addition to the materials discussed, a number of already established cladding materials continued to be used during the post-World War II period, including asbestos, shingle siding, and stucco. Exterior cladding and regional differences in material usages are addressed herein as the postwar home is discussed in greater detail.

G. Architecture, Site, and Landscape

The majority of homes constructed during the 1940s through 1970s displayed the popular architectural forms and styles of the period, resulting in a similar appearance regardless of their location. This uniformity was a result of close adherence to FHA guidelines by local and regional builders, the ready availability of standardized building materials, and the influence of plan books and nationally distributed magazines that promoted the architectural styles of the era. As a result, with the exception of regional variations in materials and setting, Minimal Traditional, Ranch, and Split-level homes built across the country looked alike (see Figures 102 and 103).

The form and layout of popular homes of the postwar era were greatly influenced by the concept of livability. The early FHA small houses were praised for their livability, and these compact homes became the basis for the architectural styles and forms that evolved during the following decades. The Ranch house, which came to dominate the postwar era, best represented this concept of livability with its open and casual floorplan and incorporation of outdoor living spaces.

Figure 102. Ranch house in Westminster, Colorado, with a hip roof, partial brick veneer, recessed entrance with decorative wrought iron details, and decorative shutters (photograph courtesy of Dianna Litvak, Colorado Department of Transportation).

[322] Checkoway, 26-27.
[323] Crane, 4-5.
[324] Crane, 1; Wright, 245-246.

Figure 103. Ranch house in Upper Arlington, Ohio, constructed c.1955, with a hip roof, brick veneer, recessed entrance with decorative wrought iron details, and decorative shutters (Mead & Hunt photograph).

Figure 104. Minimal Traditional house in Madison, Wisconsin, constructed c.1945, with Colonial Revival details, including the decorative pendants and compass window (Mead & Hunt photograph).

1. Residential Design Characteristics

As the FHA influenced the design of suburbs, it also greatly influenced standard residential designs of the period. In the 1936 edition of *Principles of Planning Small Houses,* the FHA provided minimum requirements related to the design and construction of homes.[325] The small house, defined as having no more than six rooms, was an attempt to minimize the cost of a single-family home and create a livable space that met the needs of the family. In reducing the size of the house, many features of pre-Depression era homes were eliminated, such as fireplaces; room size and storage areas were reduced; room functions were combined; and, in some cases, basements were eliminated.[326]

During the early 1920s, when the American economy was recovering from World War I, the FHA developed guidelines for small houses that continued to influence residential construction in the postwar era and were revised periodically. During the postwar era, the FHA relied on these minimum standards as developers and builders constructed large numbers of low-cost homes to meet the increased housing demand.

The 1936 edition of *Principles of Planning Small Houses* included five house types that offered "a range in comfort of living" with slightly increased sizes.[327] The exterior designs of these homes were conventional in appearance and mimicked "traditional" architecture, including a simpler form of the Colonial Revival style that had been popular in the previous decades, often referred to as Minimal Traditional. However, the interiors were newly modern as they incorporated updated kitchen and bath designs as well as modern plumbing and electrical systems. The concept of the traditional exterior and modern interior was promoted in *Good Housekeeping* in 1945: "We believe a house can be completely modern in plan and equipment but still retain the friendliness and charm of traditional design."[328]

The five house types in the FHA's 1936 publication began with the most basic and scaled up in small increments. House A, which became known as the "FHA minimum house," was a one-story, two-bedroom, 534-square-ft house. Its average cost was estimated at $1,200 to $1,500 depending on the exterior treatments, which could include wood siding or shingles, brick, stucco, or stone. The FHA advised that the house should be set on a concrete slab on grade rather than a basement, which would increase costs. House B had a slightly larger floorplan, with 624 ft^2 of living space. It was similar to House A, but the living room and kitchen were separated. FHA sketches included both a gable roof and hip roof version. Houses C and D were similar to House B: both had two bedrooms, but they were located on the second story along with the bathroom. House D included an optional detached garage, connected to the house by a covered walkway. The largest type, House E, featured three second story bedrooms. The exterior designs included in the publication for all five types feature classically inspired entrances, which were an attempt "to demonstrate that houses of this sort may be attractively designed without excessive ornamentation" (see Figure 104).[329]

Across the U.S., companies and builders developed plans for the "small house" during the 1940s and 1950s, following the requirements set forth by the FHA. To make up for the compact size and small space, the following factors were taken

[325] Ames and McClelland, 61.

[326] United States Department of Labor, *New Housing and Its Materials, 1940-56,* Bulletin No. 1231 (Washington, D.C.: U.S. Government Printing Office, 1958), 3.

[327] Ames and McClelland, 61.

[328] As quoted in Jacobs, "*You Can't Dream Yourself a House": The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 130.

[329] United States Federal Housing Administration, *Principles of Planning Small Houses* (Washington, D.C.: Federal Housing Administration, 1936), 24-33; Ames and McClelland, 62.

Table 4. Average house sizes by year.

Year	Average square footage
1940	1,177
1950	983
1954	1,140
1955	1,170
1956	1,230
1970	1,400
1975	1,645

Source: United States Department of Labor, New Housing and Its Materials, 1940-56, 27; U.S. Census Bureau, http://www.census.gov/const/C25Ann/sftotalmedavgsqft.pdf (accessed 4 April 2011).

into consideration: minimizing the use of interior partitions to increase the room size; adding the appearance of height through the use of floor-length windows, skylights, and open ceilings; minimizing hall space by incorporating it into other rooms; utilizing built-ins and storage walls; grouping rooms by function; isolating the private "quiet" areas of home; and planning the circulation and zoning to include adequate receiving space at the main entrance.[330]

The FHA house types could be placed on lots as narrow as 35 ft, although 40 ft was the preferred minimum width. The 1936 version of *Principles of Planning Small Houses* included an illustrated layout for a two-story house with a detached garage on a lot measuring 50 ft wide by 100 ft long. Both the FHA and ULI advised developers to consider lot conditions, vistas, sunlight, and prevailing breezes when siting homes. The kitchen was to be protected from the afternoon sun, if possible, and the living room and bedrooms were to have sunlight during part of the day. Garage placement was recommended to be near the front of the yard and attached to the house by a shared wall or covered walkway. This placement provided maximum space in the backyard and shortened the driveway, thereby reducing the cost.[331]

During the postwar baby boom, as the birth rate increased and average family size grew, the small size of a typical house was perceived as a limitation, and the demand for a larger house emerged. The Ranch house, with its increased square footage and more bedrooms and baths, was seen as an answer for growing families in a time of economic prosperity.[332] The massing of the Ranch expanded to create a one-story rambling floorplan occupying the larger suburban lots that were predominant in the 1950s and 1960s. The Ranch form and other modern and spacious styles of housing quickly came to dominate postwar architecture beginning in the mid-1950s.

The transition away from the small, or Minimal Traditional, house led to an increase in house sizes as measured by square footage. In 1940 the average detached single-family house was 1,177 ft^2 with five rooms. By 1950 the average size had decreased to 983 ft^2. A significant spike in home construction in 1950, as compared to 1940, may have affected the average size.[333] Beginning in the mid-1950s, the average size began an upward trajectory (see Table 4). With this increased square footage came an increased number of bedrooms and bathrooms. In 1950 only 34 percent of homes had three bedrooms; however, this number had increased to 70 percent by 1956.[334]

The design of postwar homes specifically responded to the needs of the young family. Although Ranch houses of the 1950s featured less square footage than the average 1920s house, their one-story layout was well suited to women who envisioned fewer trips up and down stairs and were attracted by the advertised modern conveniences.[335] Also key to the postwar home design was an open floor plan based on zoned planning that granted the housewife the visibility required to watch her children play in the living room from her perch in the kitchen or dining area. Similarly, large picture windows and sliding glass doors provided both visual and physical access to the backyard and the patios that became outdoor extensions of indoor living space.

[330] Norman Cherner, *Fabricating Houses From Component Parts* (New York: Reinhold Publishing Corporation, 1957), 17-18.

[331] United States Federal Housing Administration, *Principles of Planning Small Houses* (1936), 34-35; Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1954), 101.

[332] California Department of Transportation, *Tract Housing in California, 1945-1973: A Context for National Register Evaluation* (Sacramento, Calif.: California Department of Transportation, 2011), 71. By the mid-1960s the average house was 1,500 ft^2 or 50 percent larger than the average house constructed in the late 1940s and early 1950s.

[333] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 151, 183.

[334] United States Department of Labor, *New Housing and Its Materials, 1940-56,* 3.

[335] Wright, 251.

Although the public areas of the house featured minimal walls and openness, bedrooms in the postwar house were enclosed in the traditional fashion and discretely separated from the family area of the house. Split-level houses, in particular, segregated function by putting bedrooms on a different half-level up or down from the recreation room. The parents' bedroom was often isolated from the children's area. In separating children from parents in both bedrooms and recreational rooms, the postwar house became the "first child-oriented architecture in American history."[336]

In developing the ideal home for the modern family, some builders surveyed potential home buyers and young families to identify the features they felt were important in residential design. The majority of new home buyers wanted a new house rather than an older home or apartment, with a modern floor plan and appliances, large windows or patio doors, and an outdoor patio area.[337] The Strauss Brothers of Lincoln, Nebraska, used the survey approach when developing the Eastridge subdivision in Lincoln. The builders worked with the University of Nebraska at Lincoln to survey modern families on the features they were looking for in a home. Their design team then incorporated these ideas into a limited number of models and floorplans, which the builder then marketed. Known as Trendhomes, they featured open floor plans, modern kitchens, attached carports and garages, and patios.[338]

The one-story house came to dominate the postwar era. The compact yet open floorplan was ideal for young families with children and couples with grown children who wanted a retirement home. There were several one-story floorplans available to meet the needs of homebuyers, including the FHA small house models, the modern Ranch form, and Contemporary styles with sprawling floorplans. A small percentage of homes constructed during the period contained one-and-one-half or two stories. The Minimal Traditional and Cape Cod styles often had an additional half story that contained bedrooms, or were left unfinished at the time of construction completion for the home buyer to finish at a later date. The two-story floorplan was more popular in the Colonial Revival and Split-level homes of the period. As a result of the increased living space, two-story homes were typically more expensive than their single-story counterparts and were usually purchased by families in higher income brackets. Multi-story homes were more popular in New England and the Mid-Atlantic, representing 34 percent of the homes constructed in 1953. However, that same year they represented less than 2 percent of the homes constructed in the southern United States.[339] This popularity in the east may be due in part to the predominance and lingering influence of the more traditional Colonial Revival style.

One of the more noticeable changes to residential design in the postwar era is the removal of the front porch. Homebuyers still wanted porches, but they preferred them at the back where they had increased privacy. As a result, the traditional porch shifted from its prominent location on the front to the rear of the house, where it became the patio.[340] Builders were agreeable to eliminating the porch because they were an added construction expense. The popular Cape Cod, Ranch, and Split-level homes of the postwar era did not lend themselves to porch additions and most "outdoor living" improvements were completed on the patio.[341] See Section G.5. for more information on patios.

a. Material Use

Although similar styles and forms were popular throughout the country, regional variations influenced exterior materials, as certain construction, siding, and roofing materials were more common in particular areas of the country. Nationally, wood had been the predominant exterior treatment during the early postwar period; 35 to 45 percent of conventional houses featured wood siding in 1950.[342] Asbestos shingle was also common between 1940 and 1950, partly due to the scarcity of lumber during wartime rationing. However, brick veneer became more popular than wood by 1956, with stucco ranking as the second most popular material and wood as the third. Brick houses were popular in the South and North Central regions, as well as the Mid-Atlantic, and wood was more common in the Northeast. Regional variations also include stucco, which was predominant in the South and Southwest, especially California. In addition to being an inexpensive building material, stucco-on-frame construction was considered to be earthquake resistant. As discussed in Section F, aluminum siding also gained popularity in the postwar era and is often an original exterior siding material on postwar homes.[343]

[336] Wright, 254-255; Clark, 212; Shirley Maxwell and James C. Massey, "Postwar Houses and the Cape Cods and Split-levels of the 1940s," *Old-House Journal* (July-August 1992), 58.

[337] Wright, 253-254.

[338] Strauss Brothers, *There's a New Trend in Lincoln,* n.p.

[339] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 169-170.

[340] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 88.

[341] Michael Dolan, *The American Porch, An Informal History of an Informal Place* (Guilford, Conn.: The Lyons Press, 2002), 231-234.

[342] Carpenter and Guess, 96.

[343] Murphy, 12-13. The Field Bill, passed by the California legislature in 1933, required that construction be designed to resist seismic disturbances. Under the bill, brick and other veneer construction was permitted only if it conformed to strict standards.

Figure 105. Awning-style windows grouped to form a picture window on a Jekyll Island, Georgia, Ranch house (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

In 1940, nine out of 10 windows featured wood window frames, with steel windows accounting for the second most popular window frame material. By 1950 wood was still the most dominate material, accounting for 69 percent of windows, but steel accounted for 22 percent of windows, and aluminum represented 5 percent. By 1955 wood was still the most popular choice at 57 percent, but aluminum accounted for 24 percent and steel had dropped to 16 percent. Also during this period, an increased number of window types became available. Double-hung and casement remained the two most popular styles, followed by horizontal slide, picture, awning, and jalousie windows (see Figure 105). The postwar trend toward aluminum is witnessed by the use of the horizontal slide, awning, and jalousie varieties.[344]

Asphalt shingles were the most common roof material nationwide. However, wood shingles and built-up roofs accounted for a large number of homes in the West, and tile roofs were also more common where they fit with the Spanish Colonial-influenced architectural styles. The built-up roof was best suited for flat or low-pitched roofs, which were more common in areas with mild winters; however, built-up roofs were used in the Midwest. The Eastridge subdivision in Lincoln, Nebraska, utilized built-up roofs for the majority of homes, comprised of four layers of roofing felt sandwiched between asphalt and covered in crushed white rock to reflect the sun.[345]

b. Interior

The homes of the early twentieth century, including previous versions of the Colonial Revival style, distinguished between the public or communal areas and the private areas, specifically the bedrooms. The layout, referred to as two-zone, was designed for more formal use without much consideration for informal family recreation. The FHA small house and other homes constructed in the early postwar era, including the Minimal Traditional form and Colonial Revival style, maintained a similar distinction between zones, with the bedrooms grouped together at the rear or on the second story (see Figure 106).[346]

This standard interior layout changed with the introduction of the Ranch house, which utilized a three-zone layout that provided for private areas and informal and formal living areas (see Figure 107). The bedroom area did not change much from its architectural predecessors and was removed from the public areas by a hallway. The more public rooms, including the living room, were located at the front of the house, with the less formal rooms situated at the rear, adjacent to the backyard and rear patio, which served as an extension of the interior living space. The attached garage, which became a common feature in the postwar era, was seen as an extension of the informal living area, along with the outdoor yard and patio.[347] See Section G.5 for more information on patios.

The number of rooms in the postwar house decreased with the open planning concept, which resulted in reducing the number of interior walls to allow rooms to serve multiple functions and small homes to feel more spacious. According to *Good Housekeeping* magazine, this practice of multi-purposing rooms was attributed to "keeping with our new-found love for easy, casual living."[348] The formal entry way was often eliminated in an attempt to add more living space to the floorplan, and in many cases, the living room became the primary point of entrance. Decorative shelving, planters, or interior screens provided a separation between the entrance and the overall living space.[349]

A great deal of thought went into the design and layout of postwar kitchens, believed to be the most important factor in the sale of a house. With the kitchen more than any other room, women were able to influence the purchase of a home. An efficient layout, ample light, and modern amenities and appliances, such as dishwashers and garbage disposals, were critical (see Figure 108).[350] Overall, the planning and design took into consideration the three main kitchen activities: food storage and preparation, cooking and serving, and cleaning and dish

[344] Murphy, 6, 29.
[345] Murphy, 6; Strauss Brothers, *Eastridge, A Great Place to Live,* n.p.
[346] Rowe, 87.
[347] Rowe, 89.
[348] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 152.
[349] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 158.
[350] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 130-135.

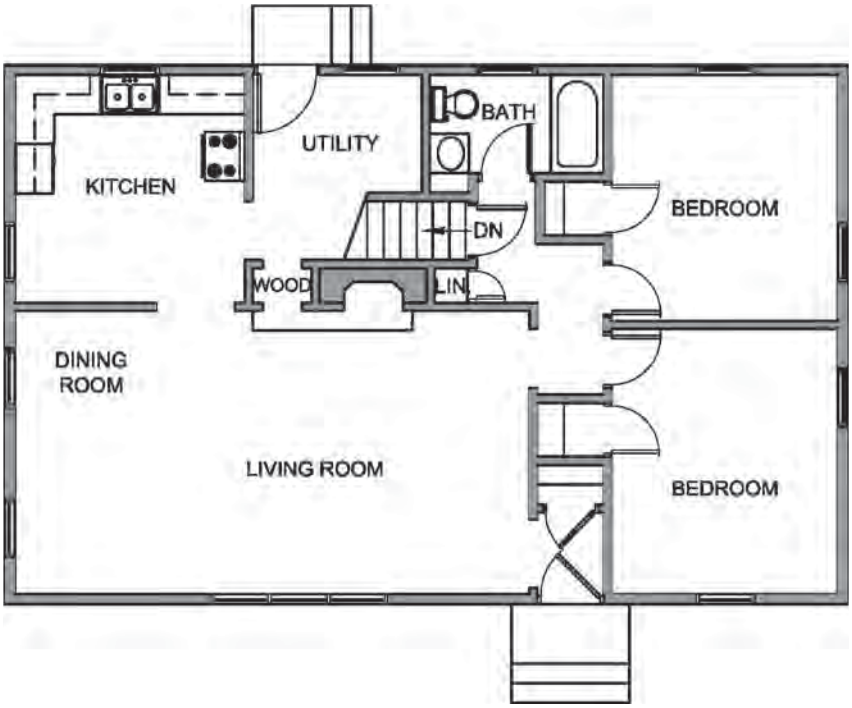

Figure 106. Typical Minimal Traditional floorplan, not to scale (Mead & Hunt).

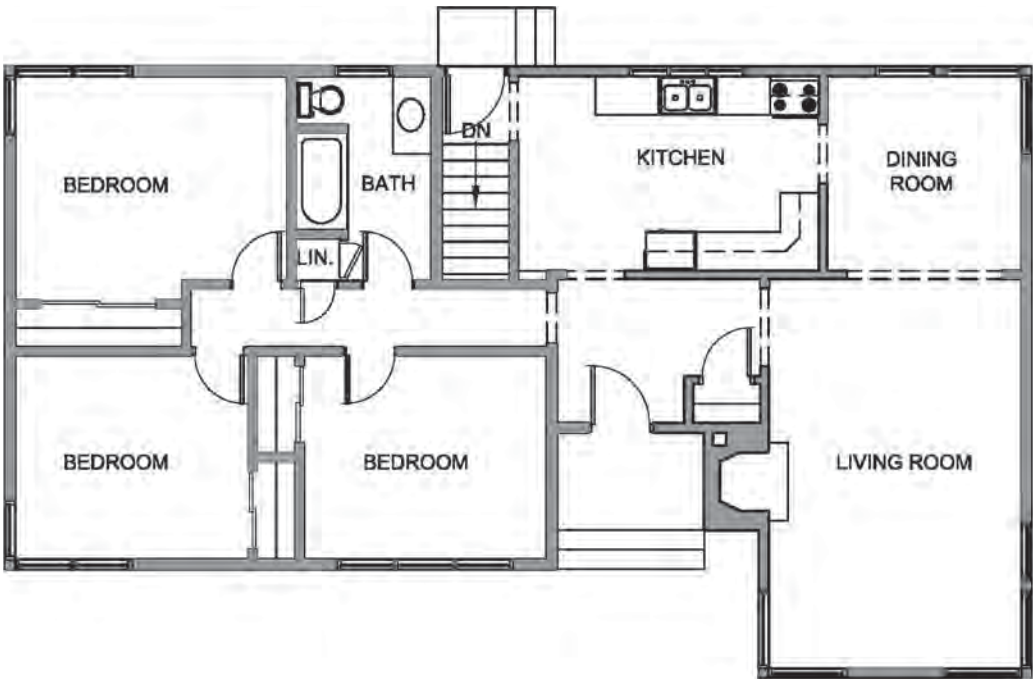

Figure 107. Typical Ranch floorplan, not to scale (Mead & Hunt).

Figure 108. A Wisconsin homemaker poses in her c.1950 kitchen with modern conveniences, including a wall-mounted oven and television (photograph courtesy of the Wisconsin Historical Society, Image ID: 8406).

storage. Although floorplans differed, the layout of components was important. It was understood that storage and counter space were essential, the sink should be placed between the refrigerator and the range, the refrigerator and pantry should be near the exterior door for easier unloading, and the range should be nearer to the dining room for easier serving.[351]

The formal dining room, a staple of the prewar house, was displaced in some postwar homes. The open planning concept and the general desire of housewives to feel less isolated in the kitchen often resulted in a combined living-kitchen space that included space for a dining table and chairs.[352] One reason for the decline in dining rooms was the reevaluation of interior rooms and their usage in relation to allocating building costs. As dining rooms were used less frequently with the more casual approach to day-to-day living, they were deemed unnecessary by many builders and home buyers.[353] Where the dining room was still in keeping with the open planning concept, it was no longer a formal space and served other functions, such as a secondary living room.

The postwar bathroom was also a modern selling point in a home. A 1950 article in *House & Garden* magazine stated "there is more to a new bathroom than a tub, toilet, and lavatory just as there is more to the kitchen than the range, refrigerator, and sink."[354] Although it was still typically the smallest room in the house, several postwar innovations were expected to become standard, including in-wall hampers, fluorescent lighting, vanities with storage, heat lamps, and towel warmers. The concept of a second bath or powder room also gained popularity in the postwar period. Compartmentalized baths were promoted as a way to add additional private bath space without the added expense of an additional room. Compartmentalized bath options included dressing rooms or toilets and showers separated from the sink and vanity. To increase capacity, double sinks and powder rooms were also recommended.[355]

Perhaps one of the most popular interior spaces to come out of the postwar era is the family room, which is still a popular feature in twenty-first-century homes. Also known as the recreation (or "rec") room, den, or game room, the family room developed as middle-class families embraced the relaxed home atmosphere and family togetherness. Introduced in the 1950s, it became standard by the mid-1960s; an NAHB poll found that 70 percent of homes constructed in 1965 included a family room (or rec room).[356] In the 1950s, during its early period of use and "experimentation," the family room's relation to other established living areas varied from house to house. The early family rooms were multi-functional and served as a catch-all for family leisure and work activities. However, its function changed by the 1960s to focus more on leisure, and its location in the home became standardized. It moved from its early position next to the formal living room to a third zone of the house that was more isolated, typically separated from the living room by the kitchen or located in the basement.[357] When discussing the difference between the family room and living room in a 1964 study, a woman from Boston, Massachusetts, mentioned that she liked "an active family room, and that is where the TV is" as compared to a quiet living room for reading, knitting, and drinks.[358]

The utility room also developed during the postwar era, although it was more popular in areas without basements. It was often located adjacent to the kitchen so that it could be plumbed without adding significantly to overall plumbing costs. It housed the automatic clothes washing machine

[351] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 140-141.

[352] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 202-204.

[353] Kate Ellen Rogers, *The Modern House, U.S.A. Its Design and Decoration* (New York: Harper & Brothers, 1962), 147.

[354] As quoted in Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 143.

[355] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 144-145.

[356] Jacobs, "Social and Spatial Changes in the Postwar Family Room," 70.

[357] Jacobs, "Social and Spatial Changes in the Postwar Family Room," 71-78.

[358] Gilbert, 164; Jacobs, "Social and Spatial Change in the Postwar Family Room," 73.

and dryer, furnace, and water heater. In some cases it had an exterior entrance open to the backyard, allowing the room to function as a mud room as well.[359]

The need for basements was debated during the postwar period, with the largest "detraction" being the increased costs resulting from excavation, building materials and labor. The concrete floor slab on grade was less expensive because it required less construction time and eliminated the possibility of weather delays when the ground could not be dugout. Some estimates reduced the cost of a home by 10 percent through the elimination of the basement. The introduction of the utility room on the main floor lessened the need for basement space. Basement proponents argued that the space was the most cost-effective way to expand the house and was an ideal location for a family room, workshop, or integrated garage. Although banks and marketing advisors warned builders that floor slabs on grade would not be popular, they sold quickly in most areas.[360] Regional differences in climate and geography also affected the use of basements, which were popular in the Midwest, where an insulated sub-level helped warm the living space above, and rare in the South and on the West Coast.

Interior layout evolved with the architectural styles and forms in the 1960s and the rise of zoned spaces as exemplified by the Split-level's popularity; however, some things remained consistent. The bedroom configuration remained very much the same, with a "suite" or grouping of rooms around a hallway. The average number of bathrooms also increased in the postwar house.[361]

Home layout continued to evolve into the 1970s as a result of the reduced number of children as the baby boom subsided and changing roles of family members, including the increased number of women working outside the home.

During this period the change in the master bedroom was the most noticeable. The room, also referred to as a suite, evolved into a much larger space that included increased ceiling heights and specialized windows, private patios or decks, and spacious closets. Separate bathrooms were a popular feature, and in some cases, the bathrooms included customized tubs, whirlpools, and showers. The size of the master suite also grew in comparison to other bedrooms in the postwar house.[362]

2. Use of Plan Services and Architects

During the postwar construction boom, individuals who wanted to construct a house outside a planned subdivision had the option of using an already prepared plan or hiring an architect to develop plans. They would then work with the architect and contractor during the actual construction process. In much the same way, developers and builders could rely on stock plans or hire an architect. Although the FHA provided minimum design standards and examples of acceptable floorplans, they did not intend to create stock plans for general use. Rather, they encouraged builders to retain an architect to develop plans that were appropriate for the specific location and climate.[363] *Popular Mechanics* magazine and other publications of the period also urged prospective home builders to work with a professional architect and experienced contractor to complete the job.[364]

Although the use of architects was highly encouraged, it appears that only a small number of homes were built with architect-designed plans. According to FHA estimates, no more than 5 to 10 percent of privately built, single-family homes were designed or supervised by architects in 1949. However, it appears that their role increased in the 1950s. At that time, a survey of NAHB members revealed that 27 percent had hired a registered architect for a fee while 46 percent had hired a design professional. Only 7.2 percent of builders had an architect on staff, and 6 percent used a plan service.[365]

Few merchant builders retained architects to draw up plans. Rather, they typically relied on draftsmen or building designers whose role in the process was to get the builder's concepts into a form suitable for bidding and construction. These designers were often familiar with the FHA requirements, site conditions, and local codes.[366] If builders did not have in-house draftsmen or designers, they could purchase plans from a plan service or consult plan books, often written by architects.[367] Edward Hawkins is an example of a merchant builder who completed design work for his Arapahoe Acres subdivision in Englewood, Colorado. Although architect Eugene Sternberg was responsible for approximately 20 homes in the subdivision, Hawkins completed the majority of the design work himself and was eventually aided by an architect.[368]

The influence of architects can be seen in a range of generally upscale residential subdivisions. Noted architect Charles Goodman worked with different builders in the Washington, D.C., area to design Contemporary style homes for several

[359] Wright, 255.

[360] Jacobs, "*You Can't Dream Yourself a House": The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 163-164; Eichler 67-68.

[361] Rowe, 89-90.

[362] Rowe, 91.

[363] United States Federal Housing Administration, *Principles of Planning Small Houses* (1936), 2.

[364] Carpenter and Guess, 57-59.

[365] Christopher T. Martin, *Tract-House Modern: A Study of Housing Design and Consumption in the Washington Suburbs, 1946-1960* (PhD Dissertation, Columbian College of Arts and Sciences, George Washington University, 2000), 113.

[366] Eichler, 86.

[367] Martin, 112.

[368] Tomasso, 7-2.

subdivisions during the 1950s and 1960s (see Figure 109).[369] Eichler Homes was one of the few merchant builders to use architects on a regular basis. Between 1950 and 1974, Joseph Eichler partnered with some of the most progressive and well respected architects and architectural firms to build more than 11,000 modernist Eichler Homes (see Figure 110). His architectural partners included Anshen and Allen, A. Quincy Jones, Claude Oakland, and Raphael Soriano.[370] Other merchant builders who relied on architects include the Strauss Brothers of Lincoln, Nebraska, who retained the local firm of John and George Unthank, Architects, to develop a series of residential designs for their Eastridge subdivision in the mid-1950s (see Figure 111).[371]

In 1949 the NAHB and the AIA formed a joint committee to encourage collaboration between architects and builders. It came to be referred to as the AIA Committee on the Home-Building Industry. Their goal was to "promote utilization of architectural services by merchant builders, and to collaborate with associations in the home-building field."[372] One of the first activities was a national design competition, co-sponsored by the NAHB and *Architectural Forum* magazine, with additional support from supply manufacturers. The purpose of the competition was to "bring better design to the small house, including better use of space and materials." Entrants were to design a three-bedroom house no larger than 1,000 ft^2 that met FHA and VA requirements and conformed to a 60-by-100-ft lot. Winning plans were published in national builder magazines, including *American Builder, Practical Builder,* and *Builder.*[373]

Although the AIA Committee on the Home-Building Industry worked to foster collaboration efforts, progress nationwide was slow. In 1956 *House & Home* magazine reported that there were less than 100 architectural firms working directly with speculative builders. Those architects that were working with builders tended to be modernists who were relatively young when they began the collaborative efforts. This disparity between younger modernists and older established architects may have been related to finances, as builders preferred to work with less experienced architects with lower fees than more experienced architects with higher fees.[374]

Figure 109. Goodman-designed Contemporary style house in the Rock Creek Woods Subdivision in Montgomery County, Maryland, that was developed between 1958 and 1961 (Mead & Hunt photograph).

Figure 110. Eichler-built house in Orange County, California, c.1958 (photograph courtesy of Andrew Hope, Caltrans).

Figure 111. Details regarding project architects in the c.1954 Eastridge promotional booklet (Strauss Brothers, There's a New Trend in Lincoln).

[369] A number of subdivisions with Goodman homes have been listed in or identified as eligible for listing in the National Register of Historic Places, including Hammond Wood, Rock Creek Woods, and Hollin Hills.
[370] Eichler, 86; Martin, 138; California Department of Transportation, 114-115.
[371] Strauss Brothers, *There's a New Trend in Lincoln,* n.p.
[372] Martin, 123-124.
[373] Martin, 126.
[374] Martin, 137-138.

3. Popular Architectural Styles and Forms of the Period

A variety of architectural forms and styles were utilized for residential construction in the postwar era. In some cases the house is defined by its form alone and in other cases it is better described and classified by the style applied to the form. In this report the term "form" refers to the overall house type as defined by its massing, layout, and shape, while the term "style" refers to the decorative details and materials that are applied to exemplify a particular architectural style. Popular forms of the postwar era include Minimal Traditional, Ranch, Split-level, and others. These forms may or may not include the application of stylistic details. Styles applied to various postwar houses include Colonial Revival and Contemporary styles that were applied to one or more of the defined postwar forms.

This section discusses the origin and character-defining features of popular architectural forms followed by a discussion of the origin of architectural styles and related features as applied to houses during the period. In general, the discussion of forms and styles addresses postwar residences and influences at the national level. Well-known regional variations are presented; however, many more local and regional variations could be defined as preferences in forms, styles, and building materials varied from one part of the country to another. Prefabricated housing from the period is also presented with an overview of nationally known prefabricators and the characteristics of their house forms.

a. Postwar Architectural Forms

Minimal Traditional Form. The Minimal Traditional form was developed in the years of the Great Depression and early 1940s as a low-cost alternative to the larger and decorative house of the 1920s that often displayed influences of the Period Revival style. In the 1940s the FHA developed a standardized compact plan for a small, single-family house that embodied the major elements of the Minimal Traditional form. As a result, it is sometimes referred to as an FHA house. It is also referred to as the Postwar Minimal, Minimal Modern, Cottage-Style, and "GI house," due to its popularity in the immediate aftermath of World War II. Its affordability made it the ideal form to meet the postwar housing demand; it was a frequent choice of large tract developers and was constructed in large numbers throughout the country.

By eliminating ornamentation and historical reference, the Minimal Traditional reduced the small house of the earlier twentieth century to its most basic massing. The salient characteristics of this house form are its small size, rarely exceeding 1,000 ft^2, and lack of exterior ornamentation or stylistic treatment. According to the FHA publication *Principles of Planning Small Houses,* "simplicity of exterior design gives the small house the appearance of maximum size."[375] Minimal Traditional houses are generally one or one-and-one-half stories, with a rectangular or L-shape plan, asymmetrical fenestration, and a small inset entrance. If present, the upper story was often left unfinished for future expansion by the homeowner. Windows are typically wood or steel frame, double-hung or casement varieties, and front facades often feature a picture window. Roofs are moderately pitched, generally gable or hip in form, with shallow eaves that are tight to the gable walls. Exterior cladding includes clapboard, board and batten, and shingle siding, although steel siding is found on later examples of the style. Brick was less common as it was a more expensive building material, but may have been used on the facade or as an accent. Garages are generally detached, although some examples include a garage or carport at the side elevation.

Figure 112. Minimal Traditional house in Madison, Wisconsin, constructed c.1945, with wood siding, compact one-story plan, minimal eave overhang, inset entrance, attached one-car garage, and modest Colonial Revival details, including gable end returns and cornice boards (Mead & Hunt photograph).

Regional variations include the use of stucco cladding, common in the Southwest and California, sometimes in conjunction with wood or brick veneer. Structural concrete block was also used in the western part of the country. Minimal Traditional houses may also feature limited applied architectural styling, such as Colonial Revival treatments. Figures 112 to 114 present examples of the Minimal Traditional form.

The character-defining features of the Minimal Traditional form include:

- Rectangular or L-shape plan;
- Compact size;
- One or one-and-one-half stories;

[375] United States Federal Housing Administration, *Principles of Planning Small Houses* (1936), 37.

Figure 113. Minimal Traditional house in Gothenburg, Nebraska, constructed c.1945, with a compact one-story plan, asbestos shingle siding, double-hung windows, and simple portico (Mead & Hunt photograph).

- Low to moderate gable or hip roof with shallow eaves;
- Lack of exterior ornamentation;
- Picture, double-hung, and casement windows; and
- Small inset entrance or exterior stoop.

Cape Cod Form. The most common variation within the Minimal Traditional form is the Cape Cod house, built by the thousands by merchant builders, such as Levitt and Sons. In the postwar period, the Cape Cod house was conceived as a loose adaptation of the original Massachusetts vernacular cottages of the eighteenth century and the historicist Period Revival Cape Cod of the 1920s and 1930s. Stripped of detail, the mass-produced, postwar Cape Cod relied on its massing and organization, rather than decorative detail or craftsmanship, to convey its architectural form.

Figure 114. Minimal Traditional house in Lakewood, California, constructed c.1950, with side gable roof, stucco and vertical wood siding, inset entrance, minimal eave overhang, and attached one-car garage (photograph courtesy of Andrew Hope, Caltrans).

Rectangular in plan and boxy in appearance, the Cape Cod house is generally a one-and-one-half-story building with a steeply pitched side gable roof. Much like the Minimal Traditional form, the second story was frequently left as an unfinished space so that the house could be expanded later. A centrally placed main entrance with a stoop is flanked by symmetrically arranged windows on the front facade. Windows are typically wood, six-over-six or eight-over-eight, double-hung sash, although other configurations were also used. The front slope of the gable roof is often punctuated with symmetrically arranged dormers. Cladding is typically wood shingle or clapboard, although brick versions were constructed. If present, garages are detached and often connected to the house by a covered walkway rather than attached to the house itself, or attached as a later addition.

The term Cape Cod is loosely applied to one-and-one-half-story homes during the postwar period, regardless of the architectural features.[376] The form was very popular in the Northeast, Midwest, and Tidewater regions, and appears less frequently in the western U.S.[377] Like the Minimal Traditional house form described above, Cape Cod houses may also be found with limited applied architectural styling, such as Colonial Revival treatments. Figures 115 to 118 present Cape Cod examples.

Character-defining features of the form include:

- Rectangular plan and one-and-one-half-story massing;
- Symmetrical façade;
- Side gable roof with dormers; and
- Double-hung windows.

Two-story Massed Form. This architectural form features a second story and a rectangular plan that is more than one-room deep. Some postwar versions of this form exhibit exaggerated horizontal massing with the rectangular house form extended by the addition of an attached one-story sunroom or garage on the side elevation. However, detached garages are also common, especially with early examples of the form. During the postwar period, this spatial organization was most frequently seen in association with the Colonial Revival architectural style (discussed in more detail herein). While the postwar Colonial Revival style utilized the rectangular plan, two-story massing, symmetrical fenestration, and side gable orientation of its predecessors, the Two-story Massed form is a more informal interpretation when compared to the Colonial Revival style of the early twentieth century. Figures 119 and 120 present examples of the Two-story Massed form.

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[376] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 171.

[377] California Department of Transportation, 68-70.

Figure 115. Cape Cod house in Arlington County, Virginia, constructed c.1950, with one-and-one-half-story massing, side gable roof with twin dormers, stone veneer, and sun porch (Mead & Hunt photograph).

Figure 116. Cape Cod houses in Arlington County, Virginia, constructed c.1950, with one-and-one-half-story massing, symmetrical facades, central entrances with pedimented stoops, and steeply pitched side gable roofs with dormers and double-hung windows (Mead & Hunt photograph).

Figure 117. Cape Cod house in Fairfax County, Virginia, with one-and-one-half-story massing, side gable roof with twin dormers, and canted front picture window (photograph courtesy of Anne Bruder, Maryland State Highway Administration).

Figure 118. Cape Cod house in Prince George's County, Maryland, with one-and-one-half-story massing, side gable roof, and double-hung windows. The house was constructed by Levitt and Sons in the Belair Subdivision in the early 1960s (photograph courtesy of Anne Bruder, Maryland State Highway Administration).

Figure 119. Two-story Massed house in Arlington, County, Virginia, featuring a rectangular plan, two-story massing, and side gable roof (Mead & Hunt photograph).

Figure 120. Two-story Massed house in Madison, Wisconsin, constructed in 1959, featuring a rectangular plan, two-story massing, and side gable roof (Mead & Hunt photograph).

Character-defining features of the Two-story Massed form include:

- Rectangular plan and two-story massing and
- Side gable or hip roof.

Transitional Ranch Form. The Transitional Ranch, as its name implies, is the intermediate house form between the postwar Minimal Traditional house and the fully established Ranch house of the mid-1950s. It was also referred to as the Compact Ranch, Tract Ranch, and Linear Ranch house. Due to its small size, it was inexpensive and built in large numbers throughout the country.

The Transitional Ranch house generally shares the compact floor plan and spatial organization of the Minimal Traditional house. However, in external appearance it displays the one-story, horizontal massing of the Ranch form, with a shallow roof pitch and overhanging eaves. Picture, double-hung, and casement window openings are asymmetrically arranged. Although corner windows are popular, they are not universal. Main entrances are generally simple with a small recessed porch or stoop. Attached garages and carports are common, as are detached garages. Similar to other popular forms of the period, clapboard, stone and brick veneer, and stucco were popular cladding materials. Figures 121 to 123 present examples of the Transitional Ranch.

Character-defining features of this subtype include:

- One-story horizontal massing;
- Compact size;
- Asymmetrical fenestration;
- Low-pitched roof with wide eave overhang;
- Picture, double-hung, and casement windows;
- Combination of siding materials; and
- Attached carport or garage.

Ranch Form. The Ranch form represented a new concept of simplicity for an unpretentious postwar American single family, living a more casual and relaxed lifestyle. The underlying aesthetic fit with the "rise in informality" and "sense of optimism" that were predominant attitudes in the 1950s.[378] The Ranch form quickly replaced previous forms and styles, and by 1950 it had become the most popular housing type of the postwar era, accounting for nine out of 10 new homes built.[379] Although it was widely utilized across the country, regional stylistic variations can be attributed to climate, available building materials, and local preference.

Figure 121. Transitional Ranch in San Lorenzo, California, with compact massing, integrated garage, and recessed entrance. The house was constructed by merchant builder Dave Bohannon c.1950 (photograph courtesy of Andrew Hope, Caltrans).

Figure 122. Transitional Ranch in St. Louis Park, Minnesota, constructed c.1950, with compact massing, corner windows, low-pitched roof with a wide eave overhang, and attached garage at the rear (Mead & Hunt photograph).

Figure 123. Transitional Ranch homes in Minneapolis, Minnesota, constructed c.1950, exhibiting horizontal massing, compact floor plans, and picture windows and accent veneer on the facades (Mead & Hunt photograph).

[378] Rowe, 99.

[379] Witold Rybczynski, "The Ranch House Anomaly" *Slate Magazine* 17 April 2007 http://www.slate.com/id/2163970/ (accessed 18 March 2011).

Figure 124. Cliff May-designed house in La Mesa, California, constructed in 1953 (photograph courtesy of Andrew Hope, Caltrans).

Also referred to as a Rambler or California Ranch, the Ranch form had its origins on the west coast in the 1930s work of California architects. It was loosely based on the low, rambling courtyards of Spanish Colonial Ranch houses found in California and modified by influences borrowed from the Craftsman and Prairie styles. California native Cliff May is generally regarded as the founder of the Ranch form. Inspired by the traditional U-shaped hacienda, May designed a one-story Ranch house in 1931 that displayed Spanish Colonial Revival architectural details and incorporated a garage into the primary facade. Between 1931 and 1937, May constructed more than 50 similar designs and went on to refine and expand these models in the following decade. May's work, along with other architects of the period, brought attention to the Ranch form, and it quickly became popular across the country.[380] Figure 124 shows a May-designed house.

The Ranch form segregates domestic functions into architecturally separate areas or "zones," with the private bedrooms and bathroom separated from the public living room and kitchen. This zoned floor plan contributes to the exterior appearance of the Ranch form as elongated and rambling. The public zones of the house—the kitchen and living room—are also integrated with the outdoors, generally through the use of large windows and sliding glass doors, and the "intermediate" spaces of patios or courtyards. This outdoor emphasis is further heightened by the incorporation of built-in planter boxes on both front facades and rear elevations.

Ranch houses are one-story with a strong horizontal emphasis and long eave wall elevation that is often oriented to the street. Roofs are low-pitched gable or hip forms with wide eave overhangs. Decorative cutouts may be included in the eave overhang. The fenestration is asymmetrical and a variety of window types are employed, including double-hung, casement, awning, jalousie, and fixed, with wood, steel, and aluminum frames and corner windows common. Picture windows often dominate the facade and, in some cases, several awning-style windows are grouped to form one large window expanse. For increased privacy and easier furniture placement, bedrooms often feature bands of rectangular ribbon awning-style windows located on the upper part of the wall. Common cladding materials include clapboard, board and batten, brick and stone veneer, faux stone veneer, and aluminum and steel siding. It is common for multiple siding materials to be used on a single house, often with a veneer treatment used to accent the facade. Front entrances are often recessed and enhanced with built-in planter boxes and decorative wrought iron or wood supports. Colonnaded porches that extend across the facade are common and recall the "corredors" of nineteenth-century Californian and Mexican Ranch house antecedents. Concrete screens may be used to define areas of the property or create privacy near the entrance or patio. Prominent brick or stone slab-like chimneys are common. Garages or carports are generally attached and a prominent part of the front facade, sometimes projecting into the driveway. Figures 125 to 130 present examples of the Ranch form.

The character-defining features of the Ranch form include:

- One-story horizontal massing;
- Low-pitched roof with deep eave overhangs or a prominent roofline with "prowed" eaves, roof cutouts, or exposed beams;
- Asymmetrical fenestration and large expanses of windows, picture windows, corner windows, bands of windows, or clerestory windows;
- Combination of siding materials, including accent veneer;
- Wide or prominent chimneys;
- Planters and patios, often with sliding glass doors;
- Colonnaded porches along the façade;
- Wrought iron or wood accents;
- Integrated wingwalls; and
- Attached garages, carports, and breezeways.

The Ranch form evolved into several subtypes (discussed herein) with regional stylistic variations, but all share the fundamental characteristic features of low horizontal massing, asymmetrical arrangements of doors and windows, and attached garages or carports. A variety of architectural styles may be applied to the Ranch form, including Storybook, Modern, Asiatic, Colonial Revival, and Spanish Colonial

[380] California Department of Transportation, 71-73; New South Associates, *The Ranch House in Georgia, Guidelines for Evaluation* (Prepared for the Georgia Department of Transportation, 2010), 10-11. Like the California Bungalow, which influenced its design and aesthetic, the Ranch house is found in both custom-designed versions and the mass-produced examples that predominate in urban areas and subdivisions. The custom-designed examples are often distinguished by their larger size and placement on large lots.

Figure 125. Ranch house in Omaha, Nebraska, constructed c.1955, with horizontal massing, hip roof, clapboard and stone veneer, picture and double-hung windows, and attached breezeway and garage (Mead & Hunt photograph).

Figure 128. Ranch house in El Paso, Texas, constructed c.1960, with horizontal massing, hip roof, picture windows, glass block windows at the entrance, minimal wrought iron details, and carport (Mead & Hunt photograph).

Figure 126. Ranch house in Sparta, Wisconsin, constructed c.1960, with horizontal massing, hip roof, stone veneer, casement windows, wrought iron supports at the entrance, prominent chimney, and attached garage. It is oriented diagonally on a large urban lot (Mead & Hunt photograph).

Figure 129. Ranch house in Richmond Heights, Missouri, with horizontal massing, hip roof, integrated stone planters, prominent stone chimney, and wrought iron supports at the entrance (photograph courtesy of Toni Prawl, Missouri Department of Transportation).

Figure 127. Ranch house in Milwaukee, Wisconsin, constructed c.1960, with horizontal massing, gable roof, stone veneer, accent wood shingles, picture and ribbon windows, prominent chimney, and wrought iron supports at the entrance (Mead & Hunt photograph).

Figure 130. Ranch house in De Kalb County, Georgia, constructed c.1955, with horizontal massing, hip roof, accent stone veneer, breezeway, and concrete screening at the carport (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

Revival. The various evolutions and subtypes of the Ranch form are discussed in the following sections.

Raised Ranch Form. The Raised Ranch is a typical Ranch form with an elevated or partially elevated basement story. The exposed portion of the basement could be on the front or side, allowing for an integrated garage. In other cases the rear elevation was exposed, allowing for a walk-out basement patio or recreational area. The main floor may include a balcony or deck. The form lent itself to areas with hilly topography and is found more frequently in the Northeast, Midwest, and Rocky Mountain states where basements are common. The house type is less frequently found in California and the Southwest, where slab foundations are more common.

The interior space of the Raised Ranch utilizes the same interior zoning principles as other examples of the Ranch form with the bedrooms and baths segregated from the public spaces. However, the family living functions are typically placed on one level. The character-defining features of the Raised Ranch are similar to those of the Ranch house, with the exception of the partially exposed basement and elevated main entrance, typically accessed by stairs from the front walk or driveway. Figures 131 to 133 show examples of the Raised Ranch form.

Additional character-defining features of this subtype include:

- Partially exposed basement level; and
- Integrated garage and/or patio at basement level.

Split-level and Split-foyer Form. Although the general Split-level concept was introduced prior to World War II, the architectural form did not gain popularity until the mid-1950s. At that time, it became one of the most common house forms nationwide. In a 1957 *Washington Post* article, the Split-level was described as "typically American as baseball . . . from its handsome exterior to its neat and smartly designed interior [this] is the house that America wants—plus built-in modish good looks and real comfort for living in the American way."[381]

Along with its close cousin the Split-foyer, the Split-level was an extension and refinement of the Ranch house's pioneering segregation of public and private space into "zones" or separate wings. Unlike the Raised Ranch, which includes basement-level living space, the Split-level separates private and public living spaces from each other with the family room and garage located at the lowest level; kitchen, dining, and living areas on the mid-level; and the more private

[381] As quoted in Jacobs, "*You Can't Dream Yourself a House": The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 185-186.

Figure 131. Raised Ranch in Madison, Wisconsin, constructed c.1960, with a partially exposed basement, integrated garage, picture window, overhanging eaves, wide chimney, and accent brick veneer (Mead & Hunt photograph).

Figure 132. Raised Ranch in Omaha, Nebraska, constructed c.1955, with a partially exposed basement, integrated garage, picture and double-hung windows, overhanging eaves, and wrought iron details at the entrance (Mead & Hunt photograph).

Figure 133. Raised Ranch house in Richmond Heights, Missouri, with the exposed basement at the side elevation, accent stone veneer, and planters (photograph courtesy of Toni Prawl, Missouri Department of Transportation).

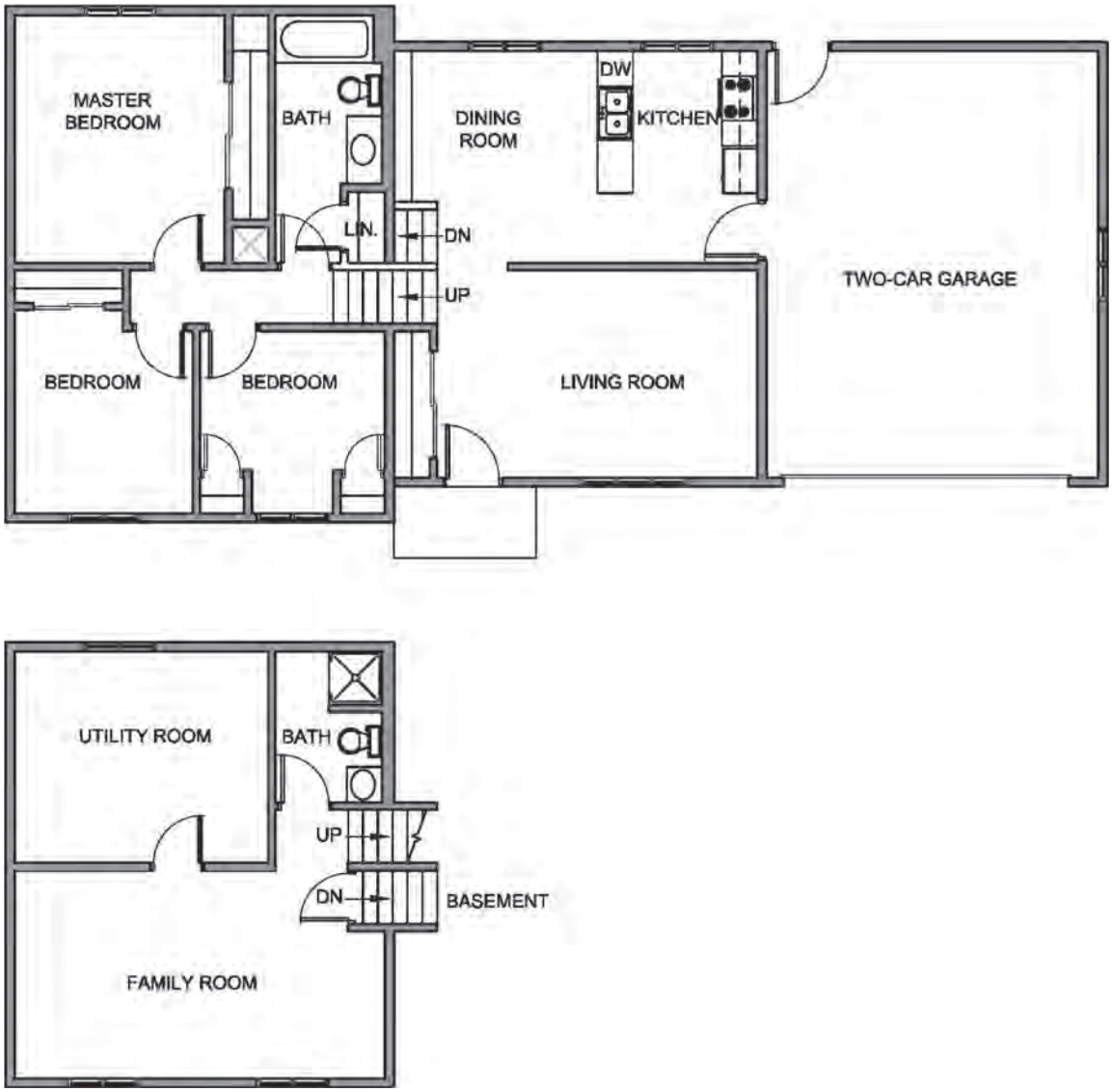

Figure 134. Typical Split-level floorplan, not to scale (Mead & Hunt).

bedrooms and baths on the upper level (see Figure 134). The massing is often a two-story unit connected to a one-story section at mid-height. As a result, the term Tri-level is also used to describe the form.

The varying height of the Split-level architectural form often resulted in separate roofs for each section of the house, which ranged from one to two stories. Roofs are usually hip or gable, or a combination of the two, with wide eave overhangs. Windows are similar to those in Ranch houses, with double-hung, casement, and picture windows commonly used. Cladding materials, including clapboard, stone and brick veneer, and steel and aluminum siding, are often combined to provide visual interest. Garages are commonly attached and integrated into the lower level. As with the Ranch form, the Split-level form often features applied architectural treatments, including Colonial Revival, Spanish Colonial Revival, and Contemporary stylistic features. Figures 136 to 138 present examples of the Split-level form.

In the Split-foyer version, a central mid-level entry exhibits a split stair, with one staircase going to an upper level and one to a lower level, thus creating three separate levels on the interior: the entry level and two levels with living space (see Figure 135). Due to the less complex massing, the Split-foyer version often has a single roofline. With the exception of the roofline, the form is almost identical to the Split-level and it displays similar windows, cladding materials, integrated garages, and architectural treatments. The term Bi-level is also used to describe the form. Figures 139 and 140 present examples of the Split-foyer form.

The Split-level and Split-foyer forms produced a house with more square footage, more bedrooms and bathrooms, and a more spacious appearance due to its sloped ceilings.

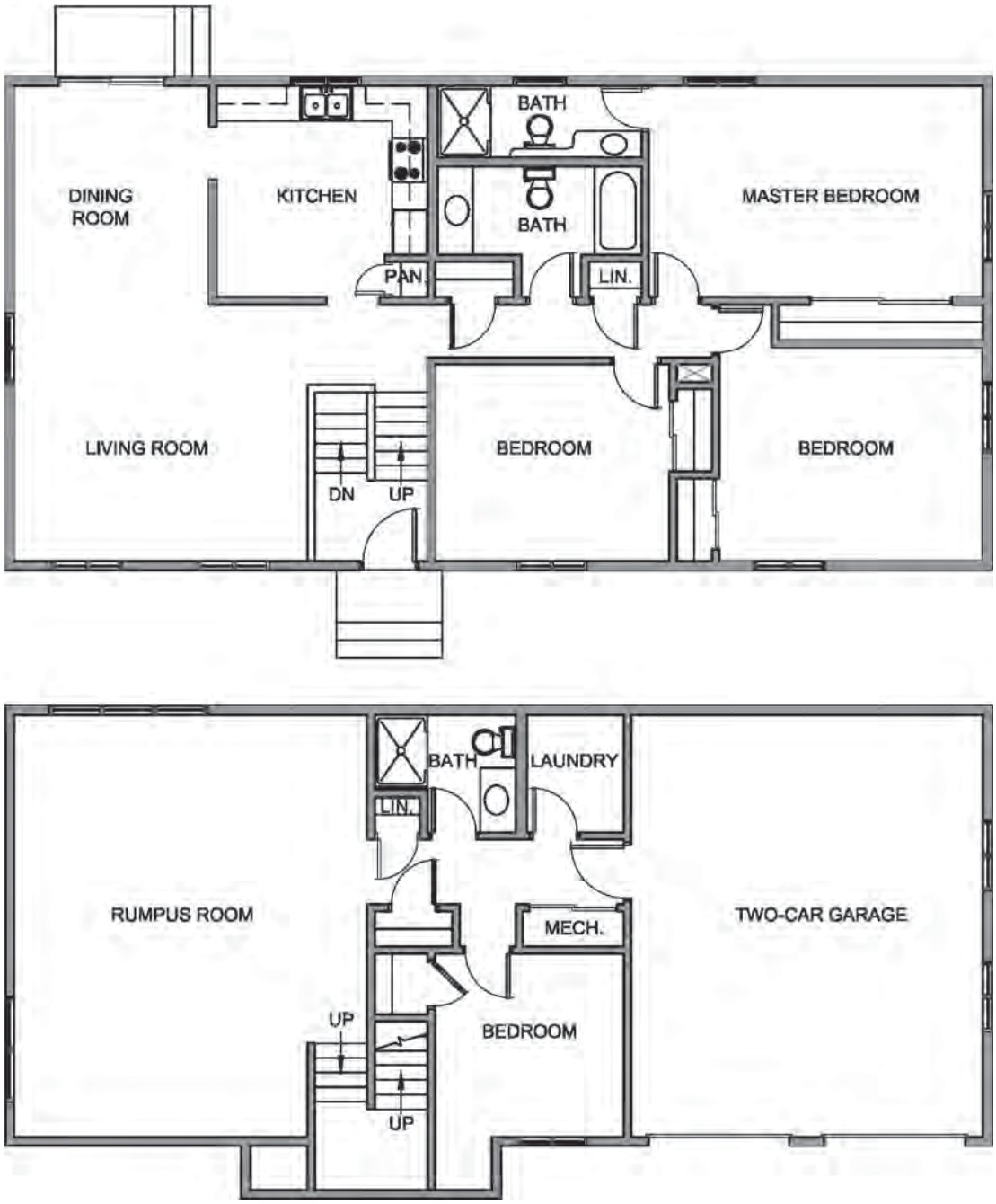

Figure 135. Typical Split-foyer floorplan, not to scale (Mead & Hunt).

However, the multi-floor plan resulted in more compact massing than the Ranch, and the forms were more economical as land for development was increasing in cost.[382] Much like the Raised Ranch form, they were ideally suited for uneven and sloping building sites. Split-levels and Split-foyers gained popularity in the Northeast and Midwest in the mid-1950s and were widely distributed. They were less accepted in the Southwest and West. The architectural form began to fall out of favor nationally as the two-story form returned to favor for larger homes.

Character-defining features of the Split-level and Split-foyer forms include the following:

- A combination of one- and two-story wings (Split-level only);
- Varied roof height, corresponding to differing interior levels (Split-level only);

[382] Jacobs, "*You Can't Dream Yourself a House": The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 187, 192.

Figure 136. Split-level house in San Diego, California, constructed c.1968, with clearly zoned wings on different levels opening off the centrally located entry, casement windows, and an integrated garage (photograph courtesy of Andrew Hope, Caltrans).

Figure 137. Split-level house in Hennepin County, Minnesota, constructed c.1965, with an elevated entry, integrated garage, slab chimney, and multi-light picture window (Mead & Hunt photograph).

Figure 138. Split-level house in Baltimore County, Maryland, with an elevated entry, brick veneer, and picture window (photograph courtesy of Anne Bruder, Maryland State Highway Administration).

Figure 139. Split-foyer house in Arlington County, Virginia, constructed in 1964, with a central exaggerated-height entrance and two levels of living space (Mead & Hunt photograph).

- Integrated garage;
- Low-pitched roof with deep eave overhangs or a prominent roofline with "prowed" eaves, roof cutouts, or exposed beams;
- Large expanses of windows, corner windows, bands of windows, or clerestory windows;
- Combination of siding materials, including accent veneer;
- Wide or prominent chimneys;
- Prominent front entrances that may include twin doors, transoms, decorative lighting, or an exaggerated height;
- Planters; and
- Wrought iron or wood accents.

b. Postwar Architectural Styles

Colonial Revival Style. In the postwar period the Colonial Revival style was one of the most widespread residential

Figure 140. Split-foyer house in Omaha, Nebraska, constructed c.1965, with a central exaggerated-height entrance, two levels of living space, accent brick veneer, and an integrated basement-level garage (Mead & Hunt photograph).

styles found throughout the country, but especially on the eastern seaboard, in the Midwest, and in the South. It was most popular in the early postwar period, but continued to be constructed nationally throughout the postwar period. The postwar Colonial Revival residential style had its immediate antecedents in the Colonial Revival style of the 1920s and 1930s, and is sometimes referred to as Neo-Colonial to distinguish it from its 1920s predecessor.

The postwar version of the style displays more restrained details than its early twentieth century predecessor, including freely interpreted entrances, door surrounds, sidelights, and cornices, as well as modern design details such as wide overhanging eaves. Symmetrical arrangement of the front facade is less closely observed in postwar examples, with main entrances often located off-center and dominated by large picture windows. The entrance doors generally have simple surroundings and lack porches, although some examples feature a small portico. The more traditional second story overhang, also referred to as a garrison, is incorporated into some designs. Multi-light double-hung and fixed windows are common.

Elements of the Colonial Revival style were often applied to postwar architectural forms, including Minimal Traditional, Cape Cod, Two-story Massed, Ranch, Split-level, and Split-foyer. Figures 141 to 144 show examples of the Colonial Revival style.

The character-defining features of the style include:

- Multi-light windows and compass windows in the gable end;
- Decorative window surrounds and faux louvered shutters; and
- Architectural details, including sidelights, fanlights, simplified porticos with turned columns, pediments, frieze or cornice boards, quoins, cupolas, and flat or jack arches.

Figure 141. Two-story Massed house in Worthington Hills, Ohio, constructed c.1966, exhibits Colonial Revival style details, including symmetrical fenestration, wide overhanging eaves, faux shutters, compass windows, and simple porch across the facade (Mead & Hunt photograph).

Figure 142. Ranch house in Arlington, Texas, constructed in 1966, displays elements of the Colonial Revival style, including symmetrical massing and wide porch with turned columns (Mead & Hunt photograph).

Figure 143. Ranch house in Omaha, Nebraska, constructed c.1960, with Colonial Revival architectural details, including multi-light windows with faux shutters and pilasters (Mead & Hunt photograph).

Figure 144. Ranch house in Fort Valley, Georgia, constructed c.1960, with Colonial Revival architectural details, including multi-light windows with faux shutters and an entrance stoop with decorative columns and dentils (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

Figure 145. Georgian Revival house in Arlington County, Virginia, with symmetrical front facade, portico, and brick quoins (Mead & Hunt photograph).

Georgian Revival Style. The Georgian variation of the postwar Colonial Revival style is based on the Georgian house of the mid-to-late eighteenth century and its twentieth-century revival in the 1910s-1930s. Although not as popular as the Colonial Revival style, it was commonly constructed in the East between the 1950s and 1980s.

The postwar Georgian Revival style house is distinguished by a greater degree of formality and a more rigorous adherence to symmetrical elevations. However, postwar Georgian architectural elements are freely interpreted rather than historically accurate. Main entrances often feature pilasters and pediments, windows are ornamented with faux shutters, and decorative quoins are employed at the corners. Paneled doors with sidelights are a common feature and some examples have central or full porches with colonnades. Side gable and hip roofs are often more steeply pitched than the postwar Colonial Revival style and frequently punctuated with dormers. The Georgian Revival style was most frequently applied to the postwar Two-story Massed architectural form. Figure 145 presents an example of the Georgian Revival style.

Character-defining features of the style include:

- Symmetrical front façade;
- Central entrance with sidelights;
- Colonnaded porch or portico;
- Decorative window surrounds and faux louvered shutters; and
- Architectural details, such as pilasters, quoins, and pediments.

Storybook Style. The Storybook style, popular for a brief period in the mid-to-late 1950s and most commonly applied to the Ranch form, is also referred to as the "Cinderella Ranch" or "Chalet," and "Disneyland" in Southern California. Although it retains the typical Ranch house form in its horizontal massing and low profile, the most distinguishing feature is the decorative detail. In addition to the character-defining features of the Ranch form, it typically displays fanciful embellishments loosely drawn from the earlier Period Revival styles of the 1920s and 1930s, such as scalloped bargeboards, sweeping gables that extend to the ground, diamond-pane windows, and decorative leaded and stained glass windows. Exterior materials are often textured, such as board and batten or shingle siding.[383] Figures 146 to 148 show examples of the Storybook style.

Architectural details of the Storybook style include:

- Fanciful architectural details;
- Scalloped or shaped bargeboards;
- Sweeping gables;
- Diamond-pane and decorative leaded and stained glass windows;
- Decorative window trim and shutters; and
- Planter boxes or shelves below the windows.

Spanish Colonial Revival Style. Although popular prior to the postwar period, the Spanish Colonial Revival style was often applied to postwar architectural forms. Also referred to as Spanish Contemporary or Spanish Eclectic, it was commonly used in Texas, the Southwest, and California, but regional variations may be found throughout the country. Exterior wall materials include adobe, adobe-type brick, or stucco, and decorative elements draw on the traditions of Southwest frontier and Spanish Colonial architecture, including tile roofs.[384] In desert areas, the roofs may be characterized by a low, broadside gable sheathed in built-up roofing intended to insulate and reflect the desert heat.[385] Although attached carports are frequent in areas with mild climates, attached garages are also common. Figures 149 and 150 present examples of the Spanish Colonial Revival style.

Architectural details of the Spanish Colonial Revival style include the following:

- Adobe, abode-type brick, or stucco exterior;
- Red tile or built-up roofs;
- Arched entrances and windows; and
- Decorative wrought iron details.

Asiatic Style. The Asiatic style, sometimes referred to as the Polynesian or Tiki Style, features Japanese, Chinese, or Polynesian roof lines and decorative embellishments. It was applied to popular forms of the postwar period, including the

[383] California Department of Transportation, 86.
[384] True adobe construction is rare, especially in the postwar period.
[385] Akros, Inc., et al., *Tucson Post World War II Residential Subdivision Development, 1945-1973* (Prepared for the City of Tucson, Arizona, 2007), 46-47.

Figure 146. This house in San Diego, California, constructed c.1957, displays the Ranch form and Storybook features, including scalloped barge boards, diamond-pane windows, decorative shutters and planter boxes, and a sweeping gable (photograph courtesy of Andrew Hope, Caltrans).

Figure 147. This house in Madison, Wisconsin, constructed c.1970, displays the Ranch form and has Storybook features, including diamond-pane windows and decorative shutters and window boxes (Mead & Hunt photograph).

Figure 148. This house in Omaha, Nebraska, constructed c.1960, features the Ranch form and sweeping gables. It is locally referred to as a Chalet Ranch (Mead & Hunt photograph).

Figure 149. Spanish Colonial Revival style applied to the Ranch form in El Paso, Texas. Constructed c.1950, this house features true adobe construction, red tile roof, and decorative wrought iron details (Mead & Hunt photograph).

Figure 150. Spanish Colonial Revival style applied to the Split-level form in La Mesa, California, constructed c.1970, with stucco exterior and tile roof (photograph courtesy of Andrew Hope, Caltrans).

Ranch and Split-level form. The popularity of the style may be due in part to *House Beautiful* magazine; their September 1960 issue had an article titled "How Americans are Using Japanese Ideas," which included exterior details used by merchant builders in residential subdivisions.[386]

Although most popular in California and the Pacific Northwest, examples are found throughout the country. The most prominent element of the style is the gable-on-hip roof with projecting ridge beams, which exhibits shaped ends and upward-pitched eaves that suggest the roof lines of Asiatic temples. Red tile roof cladding was not unusual and red or persimmon double entry doors are common. Windows may be embellished with decorative Shoji screen inserts.[387] Asian-theme hardware

[386] California Department of Transportation, 87-88.

[387] ICF Jones & Stokes, *Cultural Resources of the Recent Past, City of Pasadena,* National Register Multiple Property Document, E-11.

Figure 151. Asiatic style applied to the Ranch form in Whittier, California, constructed c.1960, with exaggerated eaves and a decorative screen (photograph courtesy of Andrew Hope, Caltrans).

in the form of door handles, decorative medallions, and gates were often employed. The overall Asian theme of the house may be enhanced by Japanese-inspired landscaping. Figures 151 and 152 show examples of the Asiatic style.

Architectural details of the Asiatic style include the following:

- Exaggerated eaves and upturned corner or gable end roofs, often executed in red tile;
- Vertical wood latticework, or Shoji decorative screen work;
- Vertical wood to divide the facade into panels;
- Red or persimmon front entrances; and
- Asian-inspired exterior hardware.

Contemporary Style. The Contemporary style was distinctive in the postwar period and its characteristic architectural features were applied to various postwar housing forms. Terms such as Mid-century Modern, Modern, and Post and Beam are also used to describe houses of this period that break from the past and reflect current design trends (and are sometimes used interchangeably with the term Contemporary).[388] The various uses of different stylistic classifications may be due to regional acceptance of one term over another or the distinction of a subcategory within the larger context of Contemporary architecture. For example, Post and Beam style refers to the post and beam construction method, which is a departure from the typical method of load-bearing wall construction, resulting in larger open spaces and more expansive use of glass. Modern is also often described as a style distinct from Contemporary. Residences in the "true" Modern style are almost always architect designed and therefore not characteristic of the ubiquitous postwar property types that are the focus of this study. As a result, a distinct Modern style is not defined.

Figure 152. Asiatic style applied to the Split-level form in the Collier Heights Historic District in Atlanta, Georgia, with upturned eaves and an Asian-inspired entrance (photograph courtesy of Sandy Lawrence, Georgia Department of Transportation).

Contemporary style houses were often custom-built and designed by architects. The features of the style have its origins in the residential work of Frank Lloyd Wright, particularly his pioneering Usonian houses of the 1930s through early 1950s, and were also influenced by Bauhaus architects of the Modern movement. Although the Contemporary style was applied to individual residences across the country, it was successfully mass produced in some regional applications. Due to the scale of application of the Contemporary style to postwar houses, its inclusion in this report is justified. Two examples of large volume merchant builders of Contemporary style architecture are Joseph Eichler, who developed such housing primarily in northern California, and Edward Hawkins in his Arapahoe Acres development in Englewood, Colorado. The Contemporary style was most popular in the 1950s; however, this style never achieved mainstream popularity as it was seen as somewhat dated by the 1960s.[389]

The Contemporary style house is organized with an open floor plan, achieved in some cases through the use of post and beam construction. Roofs are characteristically flat or gabled, and frequently clad with asbestos or composition shingles, although some examples utilize built-up roofs. Both roof types frequently exhibit wide overhanging boxed eaves or a wide fascia at the gable end. The massing is geometric and the front facade has minimal details, often presenting a blank face to the street, similar to Wright's earlier Usonian houses. Entries are de-emphasized and moved to one side of the building or obscured behind a partial wall. Glass block is employed in many examples to provide light while preserving

[388] A review of postwar residential surveys from across the country show the use of various stylistic terms, including Contemporary, Mid-century Modern, Modern, and Post-and-Beam to describe at times a somewhat similar use of architectural design features. This may be the result of regional variations and acceptance of certain terms to describe postwar residences with similarity in architectural design features.

[389] California Department of Transportation, 85.

privacy on the front facade. By contrast, large windows, glass curtain walls, and sliding glass doors are widely employed on the rear elevations, facing onto backyards or interior courtyards. The style also emphasized the unity of indoor and outdoor space, even in climates with long winters. Carports and garages are integrated into the house.

Contemporary houses often employed new building materials, such as Formica, synthetic brick, and sheet panel products, or utilized established materials in new ways, such as glass block, Bakelite, plywood, and concrete block. The Contemporary house also frequently employed natural materials, such as wood and stone, in order to integrate the residence with the natural landscape. Figures 153 to 155 show examples of Contemporary houses.

Character-defining features include the following:

- One or one-and-one-half story;
- Simple, geometric massing;
- Flat or low-pitched roof;
- Large expanses of glass, including curtain walls and sliding glass doors;
- Integrated carport or garage;
- Unadorned wall surfaces and minimal decorative details;
- De-emphasized entries;
- Exposed post-and beam construction; and
- Modern and/or natural building materials.

Shed Style. The Shed house, also known as a "Sea Ranch" in reference to its origins, represented a new direction in domestic architecture starting in the 1960s. Some of the earliest examples were located in the Sea Ranch community in northern California. The condominiums were designed by architects Charles Moore and John Turnbull and completed in 1965. At about the same time, architect Charles Gwathmey designed a Long Island, New York, beach house that was similar to the Sea Ranch homes. Subsequent features in professional journals as well as *House Beautiful* and *House and Garden* magazine caused builders and developers to adopt the style, which was environmentally integrated with natural and rural landscapes and particularly adapted to vacation homes.[390] Though it was used nationwide, the style predominated on the east and west coasts where it was first adopted.

The Shed house is composed of separate but conjoined building volumes with sloping, single-pitch multi-directional roofs with minimal eave overhang. The overall appearance is one of colliding or assembled building blocks and multiple massing, and one to one-and-one-half or two stories. Windows are varied in size with minimal trim and often provide scenic views, or clerestory day lighting at the upper walls.

Figure 153. Contemporary style Split-level house in Omaha, Nebraska, constructed c.1960, with large expanses of glass, sloping roof line, and de-emphasized entrance (Mead & Hunt photograph).

Figure 154. Contemporary style Split-level house in DeKalb County, Georgia, constructed c.1956, with a low-pitched roof, curtain wall at the entrance, minimal decorative details, and an integrated carport (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

Figure 155. Contemporary style house in Palm Springs, California, constructed c.1954, with low-pitched roof, glass curtain wall, de-emphasized entrance, and attached carport (photograph courtesy of Andrew Hope, Caltrans).

[390] California Department of Transportation, 92-93.

Figure 156. Shed house in Lexington, Nebraska, constructed c.1975, with geometric massing, prominent shed roof lines, natural wood siding, and minimal exterior decoration (Mead & Hunt photograph).

The main entrances are commonly recessed and obscured. While shed roofs are most common, compound shed and gable roofs are also common. Cladding usually consists of naturally finished vertical or angled boards, board and batten, shingles, and stone veneer. Large brick or stone chimneys occur in many examples. Attached garages are common, but detached versions are also found in the style. Figures 156 and 157 present examples of Shed houses.

The character-defining features include the following:

- Geometric, multiple massing;
- Asymmetrical fenestration, often including clerestory windows;
- Prominent shed roofs with minimal eave overhang;
- Natural wood siding; and
- Absence of exterior decoration.

Figure 157. Shed house in Palo Alto, California, constructed c.1972, with intersecting shed roof lines, wood siding, clerestory windows, and an integrated garage (photograph courtesy of Andrew Hope, Caltrans).

Figure 158. A-frame house in Overton, Nebraska, constructed c.1970, with overhanging eaves and a one-story addition on the side (Mead & Hunt photograph).

Figure 159. Neo-Mansard style applied to the Ranch form in Worthington Hills, Ohio, constructed c.1970 (Mead & Hunt photograph).

Other Architectural Forms and Styles. Other forms and styles that appeared with less frequency in the postwar period include the A-Frame, Neo-Mansard, Geodesic Dome, and Earthen House. The A-frame gained popularity in the 1950s and 1960s as an iconic vacation home. The house forms an A-shape, with the steeply pitched gable roof extending to the ground. Other features include a rectangular plan, windows in the gable end, overhanging eaves, and a deck or patio (see Figure 158).[391]

Influenced by the Second Empire style of the 1860s-1880s, the Neo-Mansard appeared in the late 1960s as a return to the more traditional architectural forms of the postwar era. The mansard roof form was an easy way to obtain dramatic effect, while maintaining the overall Ranch and Split-level form and massing. The faux mansard roof is often clad in wood shake and it displays recessed windows (see Figure 159).[392]

[391] Chad Garrett Randl, "The Mania for A-Frames," *Old-House Journal* (July-August 2004), 72-78.

[392] Colorado Historical Society, *Selected Post-World War II Residential Architectural Styles and Building Types* ([Denver, Colo.]: Center for Historic Preservation Research, Office of Archaeology and Historic Preservation, Colorado Historical Society, 2006), 13.

Figure 160. Earthen house in Broken Bow, Nebraska, constructed c.1975 into an embankment with only one exposed elevation (Mead & Hunt photograph).

Earthen houses, popular during the 1970s, were designed using natural terrain to form the walls of the house. The insulating qualities of the earth led to adoption of this type of construction during the energy crisis. Typically only one elevation is exposed; as a result, it includes a large number of windows (see Figure 160). Developed by Buckminster Fuller, the Geodesic Dome house is composed of a series of triangular elements. The houses were popular during the 1960s and 1970s and are typically located in rural areas (see Figure 161).

c. Prefabricated Houses

Some of the popular architectural styles and forms of the postwar period were mass produced by large-scale prefabricated home companies that operated at the national level. In addition, several regional firms also experienced success in the prefabricated housing market. The most common national-level companies are described herein, followed by regional examples.

Lustron. Carl Strandlund established the Lustron Homes Corporation in 1947 in Columbus, Ohio, with a set purpose to produce an all-steel house. The prefabricated Lustron houses were manufactured between 1948 and 1950 and sold through

Figure 161. Geodesic Dome house, constructed c.1970, with a one-story Ranch addition in Dane County, Wisconsin (Mead & Hunt photograph).

Figure 162. Lustron house in Arlington County, Virginia, erected in 1949, retains the porcelain enamel dove gray siding, steel roof, inset entry and support post, and steel windows (Mead & Hunt photograph).

local dealers. The houses represented a new and innovative system of panelized prefabrication using steel framing and porcelain enamel coated steel panels that came in a variety of neutral and pastel colors, including surf blue, maize yellow, desert tan, and dove gray. The company characterized the houses as a "conservative-modern Ranch style." Their product is in many ways similar to the Minimal Traditional house in its compact massing and lack of exterior ornamentation.[393]

All of the models were rectangular in form with compact floor plans and a side gable roof clad in steel. The houses feature steel frame casement and aluminum frame picture windows. Some models include a recessed entry with a steel support post. The most important and distinguishing feature is the porcelain enamel panels that constitute both the exterior cladding and interior walls. The Lustron Company offered customers various options to customize their houses. These included matching garages or carports, breezeways, patios, and screen porches. Fewer than 2,600 Lustron houses were constructed nationwide, with concentrations in New York, Virginia, and the Midwest.[394] Figures 162 to 164 show examples of Lustron houses.

The character-defining features include the following:

- Porcelain enamel coated steel siding;
- Gable roof clad in steel;
- One-story rectangular massing;
- Large aluminum frame picture and steel casement windows; and
- Recessed entrance with steel support (not on all models).

[393] Lustron Corporation, *The Lustron Home: A New Standard of Living* (1948 advertising brochure) http://strandlund.tripod.com/index-21.html (accessed 22 January 2011).

[394] "The Lustron Home: A New Standard of Living," *The Preservationist,* Vol. II, No. 2, Fall/Winter 2007,15.

Figure 163. Lustron house in Madison, Wisconsin, erected c.1950, retains the porcelain enamel maize yellow siding, steel roof, and inset entry and support post; the windows have been replaced (Mead & Hunt photograph).

Gunnison Homes/U.S. Steel. Gunnison Homes, based in New Albany, Indiana, pioneered the production of panelized stressed-skin plywood beginning in 1935. At the peak of World War II, the company produced 600 homes each month for war housing projects. U.S. Steel purchased controlling interest in the company in 1944 and bought out founder Foster Gunnison's interest in 1953. At that time, the company became known as U.S. Steel Homes, Inc. The company ceased production of houses in 1974. Gunnison Homes were widely distributed across the country; by 1951 Foster Gunnison, founder of the company, stated that Gunnison Homes had been erected in 44 states. Gunnison Homes were popular due to the moderate price and customizable options. They were also constructed quickly; it has been stated that once the foundation was in place, you could start construction on a Tuesday morning and eat dinner in the home on Friday evening.[395]

Figure 164. Rear elevation of a Lustron house in Glenville, New York, erected in 1949, that retains the porcelain enamel dove gray siding, steel roof, support post, and steel windows (photograph courtesy of Kimberly Konrad Alvarez, Landmark Consulting LLC/NYS Lustron Project Coordinator).

Gunnison manufactured 4-ft by 8-ft wood frames and heat-treated plywood panels with door and window openings pre-installed at the factory. The panels could be assembled into a number of different configurations, and could be expanded in 4-ft increments, allowing the homeowner to customize the design. Other customizable options included fireplaces, brick chimneys, porches, breezeways, and garages.[396] They were usually erected on a concrete slab on grade, but some were built on full basements. A collection of Gunnison Homes in Omaha, Nebraska, is situated on concrete basements with integrated garages, resulting in a Raised Ranch appearance.

By 1950 Gunnison offered 14 basic models for assembly. Most of the models can be described as one-story, gable roof Ranch form houses, although Gunnison also offered more traditional Cape Cod and Colonial Revival models. Windows were steel casements, double-hung sash, or awning style, and it was common for a picture window to be prominently located on the facade. Marine-grade plywood was used on the exterior, which could be covered with shingles, siding, or other weatherboarding, or simply painted. Several Gunnison houses exhibit a distinctive sheet metal chimney, making them easy to identify. For those with a detached garage, Gunnison Homes offered an arbor to connect the building to the house. Metal registration plates with the company name and serial number were installed in the utility room.[397] Figure 165 presents an example of a Gunnison house.

Character-defining features include:

- Paneled frame construction;
- Gable roof;
- Steel casement windows, often with a nine-light picture window on the façade;
- Wood exterior doors; and
- Sheet metal chimneys.

National Homes Corporation. Located in Lafayette, Indiana, National Homes was established in 1940 by three former Gunnison Homes employees. It became one of the largest prefabricated home producers in the country in the 1950s and 1960s, selling 325,000 homes by 1968. The company continued in business until at least 1971. Authorized dealers in Ohio, Indiana, Kentucky, Illinois, Michigan, and Wisconsin were responsible for the distribution of the homes.[398]

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[395] Patricia Lowry, "Prefab-ulous: Gunnison houses were sturdy, affordable and went up in a wink," *Pittsburgh Post Gazette,* 10 March 2007.
[396] Lowry.
[397] Kentucky Heritage Council, *House in a Box: Prefabricated Housing in the Jackson Purchase Cultural Landscape Region, 1900 to 1960,* June 2006, Available at http://heritage.ky.gov/NR/rdonlyres/69811BB7-B64C-43E7-AC2B-C7A83390E09D/0/HouseinaBox.pdf, 56, 87.
[398] Kentucky Heritage Council, 57.

Figure 165. Gunnison Bride's House model, erected in Omaha, Nebraska, in 1955, with an integrated garage (Mead & Hunt photograph).

Figure 166. Charles Goodman-designed National Homes Corporation c.1953 prefabricated home in Bel Air, Maryland (photograph courtesy of Anne Bruder, Maryland State Highway Administration).

National Homes manufactured prefabricated, panelized, stressed-skin plywood homes. Panels were produced as full-room sized units with doors and windows pre-installed. A steel structural floor frame underpinned the primary structure. The company offered five basic floorplans with nine different architectural forms or styles, including Ranch, Split-level, Colonial Revival, and Contemporary. Windows were commonly double-hung with a picture window on the front façade, and exterior cladding was typically asbestos shingle, cedar shake, Masonite, or masonry.[399] One of National's most distinctive houses was the modest "Thrift" model, a small "starter" house with a rectangular plan and side gable roof that resembled the Minimal Traditional form. Similar to Gunnison Homes, metal registration plates with the company logo and serial number were installed in the utility room.[400]

In 1953 the company retained noted Washington, D.C., area architect Charles Goodman to design a line of "Contemporary" models (see Figure 166). One of his first designs was the one-story "Ranger" model, a Ranch form that was customizable with options including a carport and fenced "garden court." Two National Homes subdivisions were established in the Washington, D.C., area with Goodman-designed homes.[401] In addition to the D.C. area subdivision, neighborhoods identified with National Homes include the Edgelea Subdivision in Lafayette, Indiana; Cornell and Brookhaven in Paducah, Kentucky; and the Brookdale and Snyder Subdivisions in Mason, Michigan (see Figure 167).[402]

Character-defining features include the following:

- One story;
- Rectangular form;
- Double-hung and picture windows;
- Paneled plywood construction; and
- Asbestos shingle, cedar shake, Masonite, or masonry cladding.

Regional prefabricated manufacturers. In addition, smaller companies experienced regional success during the postwar era. Homes constructed by such companies may be encountered during survey and evaluation efforts. For example, Wisconsin had several companies that produced prefabricated homes at the regional level, including Harnischfeger Homes, Inc., which shipped out of state, and U-Form-It houses produced and erected in the Madison area by Marshall Erdman.

Harnischfeger Homes, Inc., a division of the Milwaukee-based Harnischfeger Corporation established in the 1930s,

Figure 167. National Homes prefabricated house in the Snyder Subdivision in Mason, Michigan, erected c.1956, with replacement siding and windows (Mead & Hunt photograph).

[399] Crane, 5.
[400] Kentucky Heritage Council, 57.
[401] Crane, 5-6.
[402] Kentucky Heritage Council, 93; "National Homes Arrive Early in the Morning, are Assembled on Foundations Before Nightfall," *Ingham County News,* 15 January 1956: 2; "The First Lifetime Aluminum Home Opens New Year's Day!" *Ingham County News,* 1 January 1996: B.

Figure 168. Harnischfeger prefabricated home in Madison, Wisconsin, erected c.1950 (Mead & Hunt photograph).

Figure 169. Prefabricated U-Form-It House in Madison, Wisconsin, erected in 1955 (Mead & Hunt photograph).

was located in Port Washington, Wisconsin, and sold prefabricated homes between the mid-1930s and mid-1960s. Harnischfeger subdivisions have been identified in Port Washington and Madison, Wisconsin, and Mason, Michigan. The Blackhawk Park Subdivision in Madison contains 136 single-family houses that were intended to serve as rental units at the time of development in 1950. The prefabricated homes feature rectangular massing and a side gable roof, in some cases with a slight eave overhang. Picture windows and a double-hung sash typically flank the entrance.[403] Figure 168 shows an example of a Harnischfeger prefabricated home.

The U-Form-It prefabricated house (see Figure 169) was developed by Marshall Erdman, a Madison-based merchant builder who was concerned with advantages of residential prefabrication such as cost savings and standardization of parts for quick assembly and erection. In 1953 Erdman and a local lumber supplier introduced two models of the U-Form-It house. Built of pre-cut modular panels, these first models were one-story, three-bedroom residences designed by the local architectural firm of Weiler & Strang. Theoretically, the U-Form-It residence could be assembled and arranged by the homeowner; however, these residences were most frequently erected by Erdman or other local contractors and builders. Each model included two plan options and roof and garage variations. In 1953 and 1954, the kits were available only within a 75-mile radius of Madison.[404] According to a *Life Magazine* article from October 26, 1953, Erdman's U-Form-It residences were "neither the first nor cheapest . . . but probably the best-designed."[405]

4. Garages and Carports

The garage became an integral part of the home during the postwar period. In previous decades, the garage was typically a detached structure that was also functionally separated from the home's living space. These freestanding structures of prior decades often mimicked the appearance of the house and were located at the rear of the lot. With the omission of rear alleys from the majority of postwar residential developments, the detached garage shifted to the front of the property and was often attached directly to the house or integrated into an exposed basement level.

Attached and integrated garages were the preferred option beginning in the late 1930s as garages located at the rear of the lot were seen as detracting from available garden and outdoor living space. After the war, this trend only increased. In 1948 attached garages were promoted by the Community Builders' Council. At this time the Council also promoted the garage as additional storage space or overflow recreational space and recommended adding 5 to 6 ft of additional space in a single-car garage. Although attached garages may have increased construction costs, the shorter driveways and integral construction resulted in savings.[406]

Nationally, 47 percent of new homes constructed in 1953 included a garage; however, they were significantly more popular in certain regions. In Los Angeles, the forefront of the automobile culture, 88 percent of new homes had a garage, and the two-car garage was already popular. Basement-level garages were popular in areas where basements were a necessity, including Pittsburgh.[407]

[403] Miller, n.p.

[404] It is unknown if or when the kits began to be distributed beyond the greater Madison area.

[405] Doug Moe and Alice D'Alessio, *Uncommon Sense: The Life of Marshall Erdman* (Black Earth, Wis.: Trails Custom Publishing, 2003), 75-77; Anna Andrzejewski "The Builder's Wright: Marshall Erdman, Wrightification and Regional Modernism in Madison, Wisconsin," Paper presented at the 30th Annual Vernacular Architecture Forum, Washington, D.C., 19-22 May 2010.

[406] Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1948), 87.

[407] Jacobs, "*You Can't Dream Yourself a House*": *The Evolving Postwar Dwelling and Its Preeminent Position within a Renewed Consumer World 1945-1970,* 161-162.

Figure 170. Postwar houses with carports in the Eastridge subdivision of Lincoln, Nebraska, which qualified for FHA financing when it was developed in 1953 (Mead &Hunt photograph).

Figure 171. Ranch house in Upper Arlington, Ohio, constructed c.1955, with a carport integrated into the overall form (Mead & Hunt photograph).

For builders, the aspect of the width of the house to the width of attached garage was important to create an appealing entrance or view from the street. The architecture of the Colonial Revival, Ranch, Split-level, and Contemporary home was well suited to attached garages. In addition, the integrated basement-level garage worked well with variations of the Ranch and Split-level forms.

Although carports were utilized by Prairie School architects in the 1910s and by Frank Lloyd Wright in his Usonian designs of the 1930s, it was not until the postwar era that they became commonplace. Their minimalist appearance worked well with modern architectural styles and they were generally less expensive than garages. As a result, carports were common in subdivisions that received FHA financing, which had a maximum home cost (see Figures 170 and 171).[408] Although carports were more practical in warmer climates, both attached and freestanding varieties were popular nationwide. The majority of carports had similar features; attached models were connected to one end of the house and included within the roofline. They often incorporated the same materials as the house and included a storage area. Plan books from the 1950s and 1960s included carports that could be incorporated into the overall house to increase living space, allowing families to purchase a home at a lower cost and have the flexibility to modify the carport as they needed the space.[409]

By the 1970s the garage proved more popular than the carport. The openness of the carport was its downfall as multi-car families in need of storage wanted enclosed spaces that were not visible.[410]

5. Landscape and Site Features

Like postwar subdivisions and architecture, where the same overall layouts, forms and styles were popular across the country, landscape designs were similar nationwide. As a result, most postwar subdivisions looked similar regardless of the region.[411] Designs were promoted by the FHA, ULI, NAHB, and popular magazines of the period, including *House Beautiful.* Regional variation was generally limited to planting selections and response to topography and lot configuration.

a. Yards and Fences

In the 1936 publication *Principles of Planning Small Houses,* the FHA stated "trees and shrubbery may be used to enhance the architectural character, and are frequently more effective than the decorative use of material in providing the charm essential to a satisfactory home. Planting may furthermore add directly to the living quality of a property." Shade trees were recommended to frame the house design as well as provide respite from the afternoon sun. Trees could also be used to subdue projecting garages and unify the composition of the property. Slow growing evergreen and deciduous trees were recommended for planting near the house, as they would not develop quickly and obscure the view of the facade. Large trees were recommended for placement at the corners along with lower shrubs. Hedges along lot lines were viewed as a way to increase privacy and prevent footpaths from being worn on the lawn.[412]

Although *House Beautiful* featured many architect-designed homes with designed landscapes, during the postwar era

[408] Jason Fox and R. Brooks Jeffery, *Carport Integrity Policy, Arizona State Historic Preservation Office* (Unpublished, adopted October 2005), Available at the Arizona State Historic Preservation Office, 2.

[409] Fox and Jeffery, 2-3.

[410] Fox and Jeffery, 3.

[411] Marc Treib, ed., *The Architecture of Landscape, 1940-1960* (Philadelphia, Pa.: University of Pennsylvania Press, 2002), 160.

[412] United States Federal Housing Administration, *Principles of Planning Small Houses* (1936), 34-35.

the magazine also provided guidance for accommodating such designs to subdivisions, where lots typically averaged 60 by 120 ft.[413] The magazine also urged homeowners to add their individuality to the suburban landscape by creating a yard or garden that reflected their personality, while also conforming to the established neighborhood. Noted landscape architects of the period also provided guidance to the home owners, including Thomas Church and the *Gardens Are for People: How to Plan for Outdoor Living,* Garrett Eckbo and the *Art of Home Landscaping,* and *Sunset Magazine's* "Landscape for Western Living."[414]

Although developers were encouraged to incorporate overall planting plans into their developments, individual homeowners were also encouraged to develop individual landscape plans that fit with the overall neighborhood character. The NAHB recommended that developers promote individual landscape plans for purchase by home owners at the time of the house purchase. Developed by landscape architects, the plans were to be simple and included diagrams for each area of the lot, along with a planting list. The NAHB also encouraged developers to have a completed landscape with the model home as an incentive for potential buyers.[415]

The lawn became an important symbol of the postwar suburban neighborhood. Initially, grass was planted by developers after construction because it was a fast and inexpensive way to enhance the area and create a park-like setting. The result was a subdivision that resembled those of the previous decades, with the exception being the lack of trees that had been cleared for building. The lush green lawn quickly became an American ideal, promoted in print and advertisements. Several new products were made available to create the uniform, park-like green space between the street and the house. Beginning in the 1950s, hybrid grass seeds, chemical fertilizers, pesticides, herbicides, power lawn mowers, and automatic sprinkler systems were available to the American public to further this ideal of the suburban lawn.[416]

During the postwar era, the backyard transformed from an area used to complete outdoor housework, such as laundry, to a recreational space that was an extension of the indoor living space. Clotheslines were removed and backyard gardens, patios, barbeques, and children's play areas became popular additions

Figure 172. Patio located at rear elevation of c.1956 Ranch house in Lincoln, Nebraska (Mead & Hunt photograph).

to the landscape. Outdoor paving materials and planters were seen as a low-maintenance way to enhance the area.

With the increased outdoor living space and the number of expansive windows in postwar homes, privacy became a key aspect of design. Walls, fences, concrete screens, and hedges were integrated into the landscape as visual barriers. The ULI saw these as integral into the site and lot development and urged builders to consider their inclusion during the initial planning phase. *House Beautiful* promoted fences and hedges, especially those that provided privacy but did not offend the neighbor.[417]

b. Patios

Although not all climates were ideal for year-round outdoor living, almost all Ranch homes and other popular forms and styles included patio or outdoor living space (see Figure 172). A 1947 *House Beautiful* article asserted "The ranch house indoor-outdoor way of living needn't be limited to the West . . . it can fit cold climates, too."[418]

The patio was a way to integrate the interior and exterior living space, and large expanses of windows and sliding glass patio doors often provided access to the outdoor space. The patio typically included a paved area suitable for outdoor living and dining, bordered by raised planters or decorative screening, such as vegetation or concrete walls. The size of the patio varied from a small paved pad with limited space for barbequing and dining to large elaborate areas with outdoor living furniture and defined recreational areas.

In warmer climates patios often took the form of courtyards, surrounded by the house on two or more sides, which offered additional shade. In some areas, including Georgia,

[413] Treib, 183.

[414] Ames and McClelland, 71. Thomas Church was a noted landscape architect who worked with Eichler and other notable builders during the period.

[415] The National Association of Home Builders, *Home Builders Manual for Land Development, Second Revised Edition* (Washington, D.C.: The National Association of Home Builders, February 1958), 201-202.

[416] Virginia Scott Jenkins, *The Lawn: A History of American Obsession* (Washington, D.C.: Smithsonian Institution Press, 1994), 102.

[417] Treib, 193; Community Builders' Council of the Urban Land Institute, *The Community Builders Handbook* (1954), 102.

[418] As quoted in Richfield, 40.

Figure 173. Ranch house near Decatur, Georgia, constructed in 1949, with screen porch on the side elevation (photograph courtesy of Georgia Department of Natural Resources, Historic Preservation Division).

Figure 174. The Gainsforth House in Ogallala, Nebraska, a modest Ranch house constructed in 1949 with an underground bunker (photograph courtesy of the Nebraska State Historical Society).

the patio took the form of a screen porch, allowing for protection from mosquitos and other pests (see Figure 173).

c. Driveways and Sidewalks

The earliest driveways were strips of pavement or worn earth that led from the street to the detached garage, typically located near the rear of the lot. However, in the postwar era, as the garage became integrated into the house, the driveway shifted to the front of the yard and became a focal feature. The resulting driveway was wider and often served as the primary entrance to the home, in some cases replacing the front walk. The driveway also became more permanent as the standard materials evolved from compacted dirt or gravel to concrete and asphalt. In many postwar neighborhoods, driveways evolved to serve several other functions, including play areas, ball courts, and front yard patios for socializing. In many cases they became the primary parking area as garages were used predominantly for storage.[419]

d. Family Shelters

In addition to the patio and outdoor living space, "family shelters" were a postwar innovation that influenced the residential yard. As the Cold War persisted throughout the postwar period and the public's fear of nuclear weapons grew following the Cuban Missile Crisis, family shelters, also known as fallout shelters and bomb shelters, were marketed to families as sanctuary in the event of a nuclear war. At the height of their popularity, between 1949 and 1962, approximately 200,000 shelters were constructed in the United States.[420]

The Department of Defense published handbooks for the construction of fallout shelters. These designs were intended to be erected in backyards and basements, for use by families without access to community shelters. The 1962 edition of the Department of Defense's "Family Shelter Designs" edition included instructions for a variety of shelters, from basement to mounded designs. The December 1961 edition of *Popular Mechanics* included plans for a model that could be constructed quickly under the backyard patio, based on previously unpublished plans from the Office of Civil Defense. These shelters were designed to protect families from the effects of radioactive fallout and could be easily constructed with available materials, provided one followed the included construction sequence. A complete shelter typically included a toilet, a battery-operated lighting system, fresh air intake and exhaust system, cots, and a supply of food and water.[421]

The Gainsforth House in Ogallala, Nebraska, includes an early example of a family shelter that was constructed in 1949, at the same time as the family's Ranch house (see Figure 174). Dr. Gainsforth designed the shelter himself, which was accessible only from a tunnel between the house and the garage (see Figure 175). The shelter included indoor plumbing, with water coming from a nearby well. The family stocked the shelter with enough canned food to last one week and enough water to last two weeks.[422]

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[419] Girling and Helphand, 31-32.

[420] California Department of Transportation, 37-40; Jill M. (Ebers) Dolberg, Dr. Burdette and Myrna Gainsforth House National Register Nomination, 8-3.

[421] Department of Defense – Office of Civil Defense, "Family Shelter Designs," *Handbook* (Washington, D.C.: n.p.,1962); "You Can Build a Low-Cost Shelter Quickly" *Popular Mechanics* December, 1961, 85-86.

[422] Dolberg, 8-4.

Figure 175. Concrete tunnel between the Gainsforth House and garage in Ogallala, Nebraska, that also led to the family bunker (photograph courtesy of the Nebraska State Historical Society).

Because fallout shelters and bunkers were intended to house only the immediate family or a small group of people, their locations were not made obvious. Oftentimes only a few elements, such as hatches or air intakes, are visible on the landscape, making them difficult to identify (see Figure 176).

Figure 176. Bomb shelter in Sonora, California, constructed c.1960, from left to right are the exhaust air vent, hatch, and fresh air intake (photograph courtesy of Andrew Hope, Caltrans).

H. Conclusion

This national historic context discusses the national trends that influenced suburbanization and residential development during the postwar period, as well as the architectural styles and forms that were prevalent during this era. It provides the framework for understanding the social, economic, governmental, and political influences on the development of postwar single-family residences nationally. Along with the model context outline, which will assist with the development of targeted local and regional contexts, this national context can guide development of an appropriate local or regional context which can, in turn, be used to inform field survey and documentation efforts and evaluate the National Register eligibility of postwar residential resources.

CHAPTER 5

Conclusion

A. Expected Benefits

The production of housing increased significantly following World War II, with over 39.5 million new housing starts from 1950 to 1975 alone to address the shortage.[423] As these vast numbers of postwar residences meet the National Register 50-year guideline, state DOTs, SHPOs, and cultural resource professionals struggle with how to efficiently and consistently evaluate the significance and integrity of these resources. Most states are currently using traditional survey methods and existing National Register guidance to identify and evaluate this specific and ubiquitous resource type, and they are increasingly challenged by the vast number of similar resources that are being surveyed and evaluated. Traditional methods are also leading to inconsistent eligibility recommendations. The evaluation of individual postwar resources and neighborhoods along transportation project corridors without benefit of resource-specific guidance or contextual information has also led to increased project costs and delays. A few DOTs and SHPOs have begun to address these concerns through the development of statewide historic contexts and development of National Register eligibility requirements; these documents provide a good first step in addressing this issue.[424] The NCHRP identified the need for consistent national guidance focusing on this specific and ubiquitous resource type. The current study was directed toward fulfilling this need.

Due to the sheer volume of postwar single-family residences, it is not typically practical or prudent to apply traditional survey methodologies to these resources. Traditional approaches followed by many state DOTs and their consultants require the field survey documentation of numerous similar, and in many cases nearly identical, houses. For example, in some states compliance survey procedures require any property that is over 40 years old and in the APE be included in the survey documentation. In the case of a project that may affect a large postwar subdivision, this approach may result in a significant expenditure of time, resources, and budget to document hundreds or thousands of like resources. One of the goals of this project was to find ways to streamline the typical survey and evaluation approaches by focusing on the properties that have the most potential to meet National Register Criteria.

Through the completion of this project, it was determined that a resource-specific selective survey approach complemented by the development of a local historic context provides the necessary information to identify potential historic resources and apply the National Register Criteria. Since most postwar residences are more likely to be eligible as a component of a historic district, the selective survey methodology advocates for the field review of a collection of resources first as a potential historic district without recordation of each building individually within the potential historic district. The greatest efficiencies can be achieved through documentation of a collection of resources during field survey efforts instead of individual properties. To address properties that may have the potential to be individually eligible, the selective survey approach limits documentation efforts to examples of postwar styles and forms that meet the survey criteria outlined in this report and stand out amongst similar properties. Use of the recommended survey methodology is expected to result in a streamlined and consistent process for dealing with large numbers of postwar residential properties.

The national historic context prepared for this study also provides some key benefits to cultural resource professionals. First, the national historic context offers a succinct background and history of the overall trends and influences on postwar housing. As a result, this general background and history does not need to be developed when preparing a historic context for a specific transportation project that may affect

[423] U.S. Census data available at http://www.census.gov/const/startsan.pdf (accessed 29 March 2011) and U.S. Census data from 1966 in Checkoway, 23.

[424] See bibliography in Appendix A for list of identified state postwar residential studies that have been completed to date.

postwar residences. Instead, time and focus can be spent on developing the local context and its relationship to the national trends. The national historic context and the model context outline also simplify the preparation of a local context by serving as a guide for research efforts and areas of context development. The national context also provides cultural resource professionals with a clear and wide-ranging definition of the residential housing forms and architectural styles utilized during the postwar period. This includes a discussion of character-defining features for the styles and forms and architectural details that are frequently applied to the housing forms. Few architectural style guides cover the postwar period in detail. This document pulls together the work that has been done by individual states and various professionals to provide a comprehensive, national perspective.

The historic context outline and the survey and evaluation methodology developed for this project provides specific guidance that is tailored to postwar residential housing to be applied by cultural resource professionals. Application of these tools is expected to streamline the Section 106 review process for these ubiquitous resources. The practical approach developed by this research should help ensure that the model context and survey methodology are useful to state DOTs, SHPOs, cultural resource professionals, and the FHWA. Application of the recommended methodology by cultural resource professionals will lead to more effective and efficient practices in addressing postwar housing during transportation project development. Ultimately, the use of the national context and streamlined survey methodology can potentially lower project costs and expedite project schedules. This benefit will primarily be realized during the project development phase of a project.

A consistent, credible approach to surveying, evaluating, and assessing the integrity of postwar properties can help change a perception among both practitioners and the general public that postwar resources are unimportant. While few postwar resources will be individually eligible for the National Register, a significant residential building boom reflects important trends in community planning and development, architecture, and social history. Postwar residences tell a unique story of the history of our nation's housing both in the distinctive architectural styles and forms that developed following the technologies and societal preferences after World War II and in the development of large residential subdivisions in response to the postwar housing demand.

B. Dissemination of Results and Areas for Additional Research

The widespread distribution of the model context and the survey and evaluation methodology is necessary to inform the historic preservation community of these research results. Dissemination of the results of this research can be accomplished through webinars, conferences, professional meetings, and newsletters. Using social media, notices regarding its completion and availability can be sent to appropriate user groups, list serves, and communicated in newsletters to organizations such as the National Conference of State Historic Preservation Officers (NCSHPO) and the American Association of State and Highway Transportation Officials (AASHTO) Standing Committee on Environment. Widespread use by state DOTs and SHPOs will result in a nationally consistent, streamlined approach to address the survey and evaluation of postwar residential resources.

Development of local postwar historic contexts focusing on residential development will increase the value of these research results. Local historic contexts would greatly assist efforts to evaluate postwar resources on the local level. The challenge faced by compliance projects is that they are project specific and therefore it is often difficult to justify the development of city-wide, county- and/or state-wide historic contexts for a single transportation project. However, as identified through this project, the application of the evaluation criteria is most effective when both the national and the local historic context are developed. The evaluation of resources in one neighborhood is not as effective as the ability to evaluate those resources within the broader context of a community whether it be for the city or county.

While the lack of available local historic contexts makes it challenging to evaluate postwar resources, this limitation does not generally restrict survey efforts. As noted above, tremendous efficiencies can be realized through documentation of a collection of postwar residential resources during field survey efforts instead of individual properties. For individual properties, the selective survey approach allows documentation efforts to focus on examples of postwar styles and forms that meet the survey criteria outlined in this report and stand out amongst similar properties.

The results of this project could be the topic of a National Register Bulletin (Bulletin) and/or National Register MPD for postwar residential properties that furthers the work of the *Historic Residential Suburbs* Bulletin and MPD. The context in the *Historic Residential Suburbs* Bulletin covers the period through 1960. The results of this research add to the historic context for residential development by including additional properties that are now 50 years old and were built through 1975. In addition, the streamlined survey and evaluation methodology provide practical tools that enhance the guidelines for evaluation and documentation provided in the Bulletin.

The preparation of an illustrated guide to postwar residential architectural styles and form would also be helpful since most architectural style guides do not cover the postwar period in much detail. The guide could expand on the information

presented in this research project and serve as a tool for educating cultural resource professionals and promoting consistency in the description and discussion of these styles and forms.

The results of this research could also support a nationwide programmatic agreement between the FHWA, NCSHPO and the Advisory Council on Historic Preservation that would be similar to the nationwide programmatic agreement adopted for cell towers that outlines documentation and evaluation procedures for that particular undertaking. The programmatic agreement could expand upon these research results to address typical project activities and the application of the criteria of effect for transportation projects impacting postwar residential properties. If a nationwide programmatic agreement is pursued, the development of a standard survey form and/or database to collect field survey data and generate survey records could be a useful tool. The form and data collection fields could be tailored to this postwar resource type to assist the surveyor in data collection and evaluation. The lack, however, of national standards for surveys and for database systems of surveyed properties could make the adoption of a national standardized survey form and data collection procedures for these resources challenging.

APPENDIX A

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Items with a plus sign (+) were used for the evaluation methodology.

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APPENDIX B

Model Context Outline

Model Context Outline

This model context outline, which follows the organization of the national context, is provided to serve as the basis for the development of a project-specific historic context. It is understood that not all themes included in the outline will be relevant to a specific location. Therefore, the context should be limited to only those areas that are appropriate.

A. History of Suburbanization, 1946-1975
   1. Overview of early suburbs (railroad, street car, and early automobile)
   2. Postwar and early freeway suburbs
   3. Housing need and demand
B. Transportation Trends
   1. Automobile age
   2. Interstate Highway Program
C. Government Programs and Policies (including financing)
   1. Federal Housing Administration (FHA)
   2. Veteran's Administration (VA) housing programs
   3. Urban renewal
D. Social, Economic, and Cultural Trends
   1. Economic conditions
   2. Demographic trends
      a. Segregation
      b. Civil Rights Movement and racial desegregation
      c. Family size and age (baby boom)
E. Planning and Development
   1. Development patterns
      a. Infill development
      b. Ordinances, codes, and covenants
   2. Subdivisions
      a. Developers
      b. Builders
      c. Real Estate Companies
      d. National Association of Home Builders
   3. Advertising
   4. Design and Layout Features
   5. Utilities and Infrastructure
F. Materials and Construction
   1. Advances in materials
   2. Mass production, standardization, innovation
G. Architecture, Site, and Landscape
   1. Residential design characteristics, including plan/layout, size, materials, and style
   2. Use of plan services and architects
   3. Popular architectural forms and styles of period
      a. Postwar architectural forms
         i. Minimal Traditional
         ii. Cape Cod
         iii. Two-Story Massed
         iv. Transitional Ranch
         v. Ranch Form
         vi. Raised Ranch
         vii. Split-level/Split-foyer
      b. Postwar architectural styles
         i. Colonial Revival
         ii. Georgian Revival
         iii. Storybook
         iv. Spanish Colonial Revival
         v. Asiatic
         vi. Contemporary
         vii. Shed
         viii. Other architectural forms and styles
      c. Prefabricated houses
         i. Lustron
         ii. Gunnison/U.S. Steel
         iii. National Homes Corporation
         iv. Regional prefabricated manufacturers
   4. Garages and carports
   5. Landscape and site features
      a. Yards and fences
      b. Patios
      c. Driveways and sidewalks
      d. Family shelters

APPENDIX C

Glossary of Terms and List of Abbreviations

Glossary of terms used in the report

Character-defining features—Prominent or distinctive aspects, qualities, or characteristics of an architectural style or form that contribute significantly to its physical character. Generally, the character-defining features represent the physical manifestation of the significant elements of the property. Features may include materials, engineering design, and structural and decorative details.

Contributing Resource—Refers to buildings, structures, objects, or sites within a historic district that were built within the period of significance and possess historic integrity.

Determination of Eligibility—See intensive-level survey.

Documentation—Refers to the process of compiling the results of the identification and evaluation processes and may include a historic context, survey results, and eligibility evaluations.

Elevation—Refers to the sides and rear of a building.

Facade—Refers to the front of a building.

Form—Refers to the overall massing, layout, and shape of a building.

Field Survey Documentation—The process of collecting information and photographs for a property as part of the field survey.

Identification—Refers to the process of conducting field survey, including surveying properties in the field and analyzing the survey data.

Intensive-level survey—Builds upon the efforts of the reconnaissance-level survey and includes historic research. Additional descriptive information may also be prepared. This level of survey and evaluation often leads to a National Register eligibility recommendation, also referred to as a determination of eligibility.

National Register Evaluation—Refers to the process of applying the National Register Criteria to a property to assess eligibility.

Noncontributing Resource—Refers to buildings, structures, objects, or sites within a historic district that have been substantially altered or were constructed after the period of significance.

Phase I survey—See reconnaissance-level survey.

Phase II survey—See intensive-level survey.

Project sponsor—Considered the lead agency responsible for fulfilling the obligation of Section 106 of the National Historic Preservation Act (contained in the Code of Federal Regulations at 36 CFR Part 800).

Reconnaissance-level survey—Documentation of resources with photographs, brief descriptions, mapping, and limited historic research.

Style—Refers to the decorative details and materials that are applied to exemplify a particular architectural style.

Subdivision—Planned residential developments and also the process of dividing a parcel of land into smaller units that serve as buildable lots.

Survey—See reconnaissance-level survey and intensive-level survey.

Abbreviated terms in the report

AASHTO	American Association of State and Highway Transportation Officials
AIA	American Institute of Architects
ALCOA	Aluminum Company of America
APE	Area of Potential Effects
ASPO	American Society of Planning Officials
CMU	Concrete Masonry Unit
DOT	Department of Transportation
Fannie Mae	Federal National Mortgage Association
FHA	Federal Housing Administration
FHWA	Federal Highway Administration
FRP	Fiber reinforced plastic
GIS	Geographic Information Systems
GM	General Motors
GNP	Gross National Product
IBM	International Business Machines
MPD	Multiple Property Document
NAHB	National Association of Home Builders
NAREB	National Association of Real Estate Boards
NCSHPO	National Conference of State Historic Preservation Officers
NHA	National Housing Agency
NPS	National Park Service
PVC	Polyvinyl Chloride
RFC	Reconstruction Finance Corporation
SHPO	State Historic Preservation Office
SMSA	Standard Metropolitan Statistical Areas
TRB	Transportation Research Board
ULI	Urban Land Institute
USGS	United States Geological Survey
VA	Veteran's Administration
VAF	Vernacular Architecture Forum

APPENDIX D

Arlington County, Virginia, Model Historic Context

CHAPTER 1

Introduction

Between 1946 and 1975, Arlington County, Virginia, experienced significant development as a result of increased housing demand by government workers who desired to live in the suburbs around Washington, D.C., rather than in the city. Although other localities in the Washington metropolitan area experienced increased growth during the postwar period, certain factors produced a more dramatic increase in Arlington, such as its proximity to the city, the presence of federal institutions in the county, and the historical booms in population during and following early twentieth-century wartimes.[1] Arlington's historical foresight in planning, transportation and other infrastructure also added to its advantages.

Throughout the eighteenth and nineteenth centuries, Arlington was a rural landscape. During the first decades of the twentieth century, electric streetcars, increased rail routes, and additional roadways opened the county to development for residents seeking homes near the federal capital. By the 1930s the county was firmly established as a commuter suburb, and wartime and postwar development focused on housing the many new government workers who moved there. At the end of World War II, Arlington retained some areas of farmland; however, the influx of government workers and the demands for housing and public services resulted in the county shedding its rural character and transforming itself into an urbanized area.

The following historic context traces this development and provides a broad background against which the area's postwar homes, subdivisions, and neighborhoods may be evaluated. Previous cultural resources and historical studies have focused on Arlington County and its resources have been extensively surveyed and researched. Not all regional or local historic contexts will include the breadth of information that Arlington County has, but this historic context stands as an example of what types of topics can be explored.

[1] For the purposes of this study, the Washington, D.C., metropolitan area includes the District of Columbia and the counties of Arlington and Fairfax, Virginia; the cities of Alexandria, Fairfax, and Falls Church, Virginia; and the counties of Montgomery and Prince George's, Maryland.

CHAPTER 2

History of Suburbanization, 1946-1975

A. Brief Introduction to Arlington County History and Twentieth-Century Suburbanization

1. Introduction

Arlington County lies in the northeastern tip of Virginia separated from Washington, D.C., by the Potomac River, which flows along the north and east sides of the county (see Figure 1). The 26-square-mile county is bordered on the northwest by the City of Falls Church, on the west by Fairfax County, and on the southeast by the City of Alexandria. Arlington's distinctive squared boundaries date back to 1791 when the area was part of the 10-square-mile parcel given by the Commonwealth for the creation of the District of Columbia (D.C.) and the new federal capital. In 1846 the Virginia portion of the district was ceded back to the state and was known as Alexandria County. The county separated from the City of Alexandria in 1870 and adopted the name of Arlington in 1920. Because of its proximity to the nation's capital, Arlington's population, residential, and commercial development, as well as its transportation patterns, have been significantly tied to the growth of the federal government.

Figure 1. This map shows the location of Arlington County in the Commonwealth of Virginia and a detailed view of the present-day boundaries of the county (Arlington County GIS).

During the eighteenth century, the majority of present-day Arlington County was granted in large tracts to wealthy landowners. As a rural county, settlement was sparse and usually consisted of large farms that were connected by a few roadways to the port towns of Georgetown and Alexandria. Many of Arlington's twentieth-century thoroughfares developed from these eighteenth-century transportation routes, including Leesburg Turnpike (State Route 7), Glebe Road (State Route 120), Lee Highway (U.S. Route 29), Wilson Boulevard, and the Jefferson Davis Highway (U.S. Route 1).[2]

2. Early Settlement Patterns

During the nineteenth century, Arlington (then Alexandria County) remained a sparsely settled, rural area with the majority of its population concentrated in the town of Alexandria. After the Civil War, the area of Arlington contained two distinctive developments at its northeastern edge, both of which were occupied by the federal government. The 1,100-acre Arlington Estate, located along the banks of the Potomac and owned by the Custis family, was seized during the Civil War by the federal government and developed into Arlington National Cemetery. The U.S. Army's Fort Myer, adjacent to the cemetery on the west, also was established during the Civil War. These occupations mark the beginning of the federal presence in Arlington, which was to have a profound effect on the developmental patterns of the county.

[2] Dorothy Ellis Lee, *A History of Arlington County, Virginia* (Richmond, Va.: The Dietz Press, Inc., 1946), 20; Virginia Department of Transportation, "List of Highways in Virginia, 2003," http://www.virginiadot.org/info/resources/route-index-07012003.pdf (accessed 6 February 2011); C.B. Rose, Jr., *Arlington County, Virginia: A History* (Arlington, Va: Arlington Historical Society, Inc., 1976), 45-46.

At the end of the nineteenth century, the county remained largely rural with small settlements located along and at the intersection of transportation routes. A few single-family, residential neighborhoods were platted and developed during this period and by 1900 included portions of Addison Heights, Ballston, Bon Air, Butler-Holmes, Cherrydale, Clarendon, Corbett (Barcroft), Fort Myer Heights, Fostoria, Glencarlyn, Hall's Hill (High View Park), Johnston's Hill, Nauck (Green Valley), Lyon Village, Queen City, Virginia Highlands, and Rosslyn.[3] Developers boasted of Arlington's bucolic setting, numerous amenities, and its quick and easy access to the city via public transportation. It was during this period that present-day Arlington began to change from a rural landscape into a commuter suburb to the federal city.

3. Population Growth in the Early Twentieth Century

Rapid population growth in the county during the first two decades of the twentieth century fueled the housing market. Numerous local developers bought up farms that were subdivided into housing parcels. At the end of the nineteenth century, the population in the county more than doubled, and with the United States' involvement in World War I and the increased availability of federal jobs, the suburban areas around Washington were booming. Between 1900 and 1910, plats for 70 neighborhood communities were recorded in the Alexandria County deed books.[4]

The 1930s population growth in the county was fueled by the federal government's New Deal programs and available employment opportunities associated with the various new federal agencies. Many new residents chose to reside in Arlington given its proximity to downtown Washington, D.C. Over 40 percent of the county's residents at the time worked for a federal, state, or local government agency. The population surge and the resultant housing shortage in Arlington encouraged the last of the county's farmers to sell off their agricultural property for residential development. In the area of East Falls Church, for example, part of the 1,000-acre Crossman family dairy farm was subdivided at this time for new houses.

4. Federally Funded Housing Projects During World War II

As a means to ease the housing shortage, Arlington County supported multi-family residential development as a significant portion of its housing stock. Known as garden apartments, these developments were an early application of Garden City planning concepts aimed at providing housing for working, middle-class residents. The complexes were enhanced by a park-like setting and included planned shopping districts. Colonial Village was the first large-scale, rental housing development to be insured by the Federal Housing Administration (FHA), which was established in 1934 under the National Housing Act (NHA). The Buckingham Apartment Complex was another early and highly successful development that was begun in 1937 with subsequent phases built through 1953. These early apartment complexes were developed in the northeast part of the county, close to D.C. and public transportation routes. Although these developments were financed by the FHA through insured mortgages, the FHA generally preferred to invest in single-family developments during the war years. Garden apartments continued to be a significant portion of the county's housing stock after the war.[5]

Through a variety of programs, the federal government endeavored to provide affordable housing in areas throughout the country that experienced an influx of wartime workers. Two such wartime developments in Arlington—the Paul Dunbar Homes (1942) and the George Washington Carver development (1944)—were designed specifically for African-American residents and included apartments and semi-detached homes. Although the Carver homes were demolished after the war, the Dunbar Homes, located in the Nauck area, served as postwar housing for returning African-American veterans.[6]

Defense Homes Corporation (DHC) developments were another significant federally backed housing effort undertaken during wartime in Arlington. Between 1942 and 1944, the DHC built a garden apartment complex in Fairlington that provided housing for workers at the nearby Navy Annex and Pentagon offices. DHC also sponsored the construction of houses in the Columbia Forest neighborhood, which were rented to young military officers and ranking officials with families. These developments were retained as part of Arlington's postwar housing stock. In

[3] Rose, 138-139, 140, 242-244; Sherman W. Pratt, *Arlington County, Virginia: A Modern History* (Arlington, Va.: Sherman Pratt [1997]), 422.
[4] Rose, 157.

[5] Paradigm Development Company, Buckingham Historic District National Register of Historic Places Nomination (VDHR #000-0025); Kenneth T. Jackson, "Federal Subsidy and the Suburban Dream: The First Quarter-Century of Government Intervention in the Housing Market," *Records of the Columbia Historical Society* 50 (1980): 428; Nancy Seannell, "Developments Provide Crucial Arlington Housing," *Washington Post,* 30 July 1972.
[6] "Arlington Board to Get Report on Housing Plan," *Washington Post,* 20 February 1944; "Dunbar Homes Sold to Tenants at Half of Cost," *Washington Post,* 11 December 1948. Federally backed housing for white residents was also built but was demolished after the war.

1947 the Fairlington apartments were sold to private owners but remained rental units for 30 more years; the Columbia Forest homes were sold to the public with a preference given to veterans.[7]

B. Arlington Plans for Postwar Development

1. Housing Shortage Continues in Postwar Period

Following the end of World War II, the population boom experienced in the Washington, D.C., metropolitan area during the war did not abate. In fact, with a large number of returning veterans, the onset of the Cold War in the early 1950s, and the new practice of locating governmental agencies and office buildings in the suburbs, there was a renewed demand for housing in the area. The population in the metropolitan Washington area tripled between 1945 and 1960, ranking it among the fastest growing areas in the country.

2. Postwar Establishment of a Planning Commission

In 1930 Arlington County had adopted a zoning ordinance "to encourage orderly development and prevent conflicting uses on the land within the county."[8] This plan formed the basis of postwar planning in the county, and in 1951 the county's Planning Commission produced its Six Year Improvement Plan, *Arlington Looks Ahead.* This report proposed a program that set priorities for expansion and improvements to public facilities and services and made a survey of land use for future commercial development. This was followed in 1957 by a Planning Division report on land use in the county, which stated that single-family homes occupied 78 percent of the county's land area but produced less revenue than they required in services. In contrast, commercial development, which was at a virtual standstill in the 1950s in the county, occupied only 4 percent of the land, contributed 18 percent of revenue, and required only 7 percent of expenditures on services.[9] Attention turned to ways in which the county could increase its commercial development without jeopardizing its neighborhoods.

The 1960 General Land Use Plan established areas of residential, commercial, industrial, and open space uses in the county. The report aimed at a low-density residential community with commercial and industrial uses as needed. The plan also outlined requirements for additional water, sewer, and other public works for future growth.[10] Local sentiment also led to the policy that commercial development would be located along certain corridors and that the character of Arlington's established residential neighborhoods should be retained.

The 1970s were a time when the growth that had been widely welcomed in previous decades was viewed as something that required additional controls. At close to 200,000 residents in 1972, Arlington had "just about run out of growing room." In 1962, in an effort to provide more room for development, the County Board approved zoning changes that allowed high-rise residential and office development. Many county residents, who had been used to the pre- and postwar low-rise character of the county's buildings, were alarmed. High-rise buildings began to replace older houses, shops, and garden apartments and resulted in additional traffic on the streets and placed adjacent properties at risk of redevelopment.[11] In response, Arlington sought to control development through limiting the size and extent of sewer lines and encouraged "appropriate" development through the land use plan and zoning ordinances.

3. The Federal Presence in Arlington

During World War II, numerous military and other governmental agencies were located in Arlington. The federal facilities at the Pentagon (opened in 1942), the Navy Annex (along Columbia Pike), Arlington Hall, and Henderson Hall held offices that were vital to the wartime effort, but after the war these units remained active. The significant federal developments at the Aeronautical Authority, the Quartermaster Depot, the Alexandria Torpedo Plant, and Fort Belvoir also were located in or near Arlington. By 1955 the

[7] Fairlington Historical Designation Committee, Fairlington Historic District National Register of Historic Places Nomination (VDHR #000-5772); EHT Traceries, Columbia Forest Historic District National Register of Historic Places Nomination (VDHR #000-9416). Both copies on file in Archives, Virginia Department of Historic Resources, Richmond.

[8] Arlington County, Virginia, Department of Community Planning, Housing, and Development, "Planning History and the Development of the General Land Use Plan," http://www.arlingtonva.us/departments/CPHD/planning/docs/CPHDPlanningDocsGLUP_HISTORY.aspx (accessed 9 March 2011).

[9] Rose, 226; Pratt, 428.

[10] Pratt, 429-430.

[11] Jay Mathews, "Growth Still Main Issue in Arlington Board Race," *Washington Post,* 21 October 1972; Pratt, 432. Pratt notes that by the mid-1990s "almost every available tract of land designated for high rise building construction has been so used."

federal government employed half of the area's population and occupied 17 percent of its land.[12]

The construction of the Pentagon during the war had a lasting effect on Arlington with regard to housing, as well as transportation. Established adjacent to Arlington National Cemetery, the Pentagon was the largest office building in the world when it was constructed and housed 37,000 employees. The development of the 583-acre site, including 67 acres of parking lots and a massive road system, displaced many of Arlington's African-American residents in the Jackson City, Queen City, and East Arlington neighborhoods. Arlington County Manager Frank C. Hanrahan stated that the county would have to increase its request for federal aid by "several millions," to fund increases in sewer, water, school facilities, and roads to serve the influx of defense workers. Hanrahan also stated that "all these Federal improvements present an unprecedented challenge in American municipal life, and it is fortunate that Arlington County has proper planning and zoning laws, as well as a modern police and fire system to meet the new developments."[13]

[12] Christopher T. Martin, *Tract-House Modern: A Study of Housing Design and Consumption in the Washington Suburbs, 1946-1960* (PhD Dissertation, George Washington University, 2000), 60; C.K. McClatchy, "Arlington Confident of Future Progress," *Washington Post,* 24 April 1955.

[13] "Arlington's Need for U.S. Aid Increased," *Washington Post,* 26 July 1941.

CHAPTER 3

Transportation Trends

A. Increase in Transportation Corridors and Modes

During the postwar period, government agencies located in the county continued to increase, adding to the demands on Arlington's infrastructure and resources as more vehicular commuters passed through the county daily. Officials began to look for ways to alleviate the congestion through the construction of new roads, the widening of existing roads, and the construction of a public transit system.

As discussed above, Arlington's initial residential and commercial development was located at major transportation intersections. At the beginning of the twentieth century, the electric streetcar systems played a significant role in the pattern of development by influencing the location of neighborhoods at or near stops along the streetcar. Development in the 1930s also followed this pattern by locating along major roadways. Prewar arterial roads in the county included Lee Highway and Wilson Boulevard; the Arlington Memorial Bridge opened in 1932, providing an additional connection to Washington. Roadways that were established in the late 1930s include Lee Boulevard (renamed Arlington Boulevard, U.S. Route 50), Old Dominion Drive (established along the route of the Washington and Old Dominion Railroad), and the initial section of the George Washington Memorial Parkway (between Key Bridge and Memorial Bridge).[14]

The wartime construction of the Pentagon brought transportation issues to the forefront for Arlington planners. Prewar arterial roads operated at capacity every day. The prospect of so many additional commuters in the Memorial Bridge area also quickened the pace of construction of a new four-lane highway—the Henry G. Shirley Memorial Highway. The Shirley Highway was one of the country's first limited-access highways and extended from the Virginia end of the 14th Street Bridge (near the Pentagon) to the Prince William County community of Woodbridge. The initial section of the road, constructed in 1942, extended from the 14th Street Bridge to Arlington Ridge Road (now Eisenhower Drive within the Arlington National Cemetery) and connected to the George Washington Memorial Highway. An intersection at Boundary Channel Drive funneled cars off the highway and into the newly constructed Pentagon complex. During the 1960s and 1970s, the road was reconstructed and became part of the interstate highway system as I-395.[15] Although many Arlington residents were dismayed that the roadway bisected existing neighborhoods, it provided a rapid connection between the southern portion of the county and downtown Washington.

The increased transportation routes in the postwar period allowed development to move farther out in the county. Other factors in this shift included the scarcity of available land closer to downtown and the increase in automobile ownership. As the automobile gained in popularity, the electric streetcar system was abandoned; some of the former rail routes were reused for roadways.[16] As residents moved further away from downtown, there was significant travel from adjacent counties through Arlington, and into Washington; in 1955, 225,000 cars crossed through Arlington to and from Washington, D.C., every day. Arlington, the Commonwealth of Virginia, and the federal government undertook construction of several new roads in the postwar period in an effort to relieve congestion on the existing roads and to offer different routes for the many commuters.

[14] Doretha Andrews, "Arlington Is Modern 'Cinderella'," *Washington Post,* 27 May 1945.

[15] Donald Smith, "Shirley Highway: A Chronicle of Nightmare Nonplanning," *Washington Post,* 26 September 1971.

[16] Rose, 140.

B. Interstate 66

The planning of Interstate 66 (I-66) through Arlington extended over many decades as residents and highway agencies wrangled over the placement and appropriateness of the highway. Extending almost 10 miles through the northwestern part of the county, the road would run west from Washington, D.C., through Arlington County, the City of Falls Church, and into Fairfax County and eventually connect with the planned north-south Interstate 81 in Virginia's Shenandoah Valley. The route of the new highway, which generally followed the abandoned route of the Washington and Old Dominion Railroad, had been proposed prior to World War II, and right-of-way acquisition had begun in the late 1940s. However, when public hearings were held in the late 1950s, hundreds of residents attended to oppose the construction of the roadway.[17] Much of the opposition was focused on the way the road would impact existing neighborhoods and the environmental impacts. Stiff opposition, design complications, legal obstacles (including right-of-way acquisition), and tangles in financing delayed construction of the road. The proposed Congressional financing was connected to the plan for the rapid rail transit system in the region (the Metro). Segments of I-66 through western Fairfax were completed to the Beltway in 1970; the routes inside the Beltway and through Arlington County were not opened until 1982.

C. The Metro Rail

Through Congressional committee manipulations, the funding for Metro became linked to funding for I-66.[18] Locked in a bitter political impasse, officials who had opposed the I-66 route through Arlington relented in the early 1960s and agreed to the plan in order to release funds for the construction of the Metro line. Traffic planning policy also was altered in the county at that time. As traffic problems increased, Arlington County officials came to the conclusion that increased road building could not, and never would, handle traffic problems. Instead, in the 1960s it was decided that after the construction of I-66 and Shirley Highway (I-395), the widening of Arlington Boulevard, and the completion of several new arterial roads, the county would discontinue highway construction. Instead of trying to "keep up" with the traffic, the policy in the 1960s was to "let the agonies of commuters grow" so that "eventually, it is hoped, the pressure will encourage—and, if necessary, force—construction of rail rapid transit lines, now planned to terminate on the Virginia shore, out into the sub- and exurbs whence most of the commuters come."[19]

Arlington planning officials viewed the Metro route as a tool of transformation and the Metro corridor as an economic engine that would transform the transit stops into destinations for retail, office, and mixed residential uses. Shrewd placement and a sufficient number of Metro stops would direct foot traffic to the new developments. Officials were convinced that for the line to serve the density it was intended for, many stops located close together were necessary.[20] Many attribute the routing of the Metro as the groundwork for "modern Arlington." Although discussions about a transit rail line had begun prior to 1960, the Washington Metropolitan Area Transit Authority was not created until 1967 and rail service did not commence until 1976.

[17] Bart Barnes, "Major Battle Shaped Up over Building of I-66," *Washington Post,* 7 March 1971; Leland White, "Dividing Highway: Citizen Activism and Interstate 66 in Arlington, Virginia," *Washington History* 13, No. 1 (Spring/Summer, 2001): 53-57. Such citizen opposition existed in both Arlington and Fairfax Counties.

[18] See further discussion in Zachary M. Schrag, *The Great Society Subway: A History of the Washington Metro* (Baltimore, Md.: The Johns Hopkins University Press, 2006), 124-125ff.

[19] Leslie Cheek and Hank Burchard, "Arlington Torn by Choice of Being City or Suburb," *Washington Post,* 26 June 1966.

[20] Schrag, 221.

CHAPTER 4

Government Programs and Policies

Federal government programs continued to promote new construction in Arlington County after World War II and greatly shaped the types of houses built, the design of the subdivisions, and how builders and owners financed mortgages for the new homes. After the lifting of wartime building restrictions, construction in Arlington County continued in earnest, with a focus on housing returning veterans.

High land and construction costs, however, greatly impaired Washington, D.C.-area builders from being able to take advantage of FHA-insured loans. The Title II Section 203 amendment in 1948 had a $6,000 mortgage insurance ceiling, making it difficult for Washington-area builders to take advantage of the program. Many local builders complained that federal housing legislation did not allow builders in high-cost areas the same benefits as those in low-cost areas.[21] High costs and poor financing caused many builders in the Washington metropolitan area to postpone projects until conditions improved.[22] In 1949, the *Washington Post* reported:

> Actual construction of the home itself, with attractive features designed to make a home buyer's mouth water, is child's play compared to arranging financing, getting FHA to insure the mortgage, completing streets, curbs, gutters, sewers – and finally, making a fair profit.[23]

The builders particularly complained about FHA's insurance policies. Arthur Pomponio, an Arlington-based developer and realtor, told the *Washington Post* that local builders wanted to construct low-cost housing but lot costs were prohibitive in populated areas, causing builders to go "way out" for cheap land.[24]

Although the 1934 National Housing Act stated that FHA would insure an 80 percent loan based on the appraised value of the house, the mortgage could not exceed $16,000 for a one-family house. Thus, the possibility of a FHA-insured load became more and more difficult in Arlington County as land became scarce and buyers expected larger houses and more amenities.[25] Consequently, many houses built in new subdivisions in Arlington County during the late 1940s and early 1950s were not able to take advantage of FHA financing.

FHA financing became more available in 1954 with changes to the Housing Act. The maximum mortgage amount that the FHA would insure increased to $20,000. In addition, the 1954 Housing Act added Section 222 for servicemen, which provided 30-year loans up to $17,100 and 95 percent of the appraised value of the house.[26] This increase in the mortgage ceiling boosted construction in Arlington County and around the metropolitan region. Directly illustrating the policy change, Madison Manor in Arlington County offered a three-bedroom brick rambler, or Ranch house, for $20,900 in 1957 at a cost of exactly $17,100 for servicemen.[27]

Since the approval of subdivision design by the FHA enabled developers to get private financing, the FHA greatly influenced both the appearance of new subdivisions and housing in Arlington. FHA standards for subdivision and house design became a qualifying measure for lending institutions even if

[21] Martin, 66.

[22] "High Costs, Financing Forcing Many Builders to Postpone Projects," *Washington Post,* 19 December 1948.

[23] "Builders Charge High Lot Development Costs Peril Low Cost Homes," *Washington Post*, 13 March 1949.

[24] "Builders Charge High Lot Development Costs Peril Low Cost Homes."

[25] Federal Housing Administration, The *FHA Story in Summary: 1934-1959* (Washington, D.C.: U.S. Government Printing Office,1959),5.

[26] United States Senate, 84th Congress, 2nd Session, Report 1448, *Review of Federal Housing Programs* (Washington, D.C.: U.S. Government Printing Office, 1956), 109, 114.

[27] "Offutt's Addition to Madison Manor," *Washington Post,* 9 February 1959.

the project was not FHA-insured. Thus, the influence of the FHA's publications that illustrated specific street layouts, housing plans, and their preference for traditional styles and forms, such as the Colonial Revival, can been seen throughout Arlington County in subdivisions built before and after World War II.

The FHA's Land Planning Division strove for new residential neighborhoods across the country to abandon rectilinear street plans for curvilinear developments. FHA-influenced plans also promoted the use of cul-de-sacs, courts, and minor streets interlinked by larger connector streets.[28] The use of curvilinear streets in particular can be seen throughout the neighborhoods in Arlington County that were developed just before and after the war. The shift toward curvilinear streets and cul-de-sacs is apparent when viewing a map of the county in its entirety and is particularly evident in the northwestern and northeastern sections of Arlington County.

Many of Arlington's developers followed the FHA's Principles of Planning Small Houses technical bulletins prior to and after World War II. In particular, the 1946 revised bulletin illustrated mostly traditional Cape Cod and two-story Colonial houses, with some variation, such as a Cape Cod with a projecting front gable. These house types are visible throughout Arlington County's postwar neighborhoods.[29]

[28] EHT Traceries, Westover Historic District National Register of Historic Places Nomination (VDHR #000-0032), 140; Arlington County Preservation Program, Arlington Forest National Register Nomination (VDHR #000-7808), 172.

[29] Federal Housing Administration, *Principles of Planning Small Houses, Technical Bulletin No. 4* (Washington, D.C.: National Housing Agency, Federal Housing Administration, 1946).

CHAPTER 5

Social and Economic Trends

At the end of World War II, Arlington's social and economic profile had not changed significantly, though its population had increased dramatically. Its social makeup remained the same, an almost exclusively white community of middle and upper-middle class white-collar workers and their families. African-Americans, only five percent of the population, were relegated to a few segregated neighborhoods in the county. Population growth in the county began to decline as undeveloped land became scarce and county planning limited growth, ultimately resulting in a negative population growth during the early 1970s. Still one of the wealthiest areas in the state and the nation, Arlington had transitioned from suburban to urban, with high-density development and small households predominating.

A. Economic Conditions

By 1940 the government was the mainstay of Arlington County's economy, providing work for over half of all employed Arlingtonians.[30] The federal government, and to a lesser extent the Commonwealth of Virginia and Arlington County, provided the take-home pay that supported retail and service trades and allowed workers to purchase the new homes being constructed throughout the county.[31]

As the primary employer in the region, the federal government also contributed to a median income that was among the highest in the nation. The remainder of the work force was employed in service industries and wholesale and retail trade.[32] Thus, the housing market had a high percentage of white-collar, lower-middle and middle-class workers that contributed to Washington's ranking as first nationally in "buying power."[33]

A 1967 report by the Bureau of Population and Economic Research of the University of Virginia found that personal incomes in northern Virginia were 65 percent above the national average, making it the wealthiest part of the state. In 1965 the national average per capita income was $2,746, the state's average was $2,413, and northern Virginia's was $3,944; Washington's average income was $3,708. Arlington was the richest county in Virginia with a per capita income of $4,499 (Falls Church in Fairfax County was second with a per capita income of $4,349).[34] The increase in per capita income in Arlington was due to Arlington's population shift to smaller households of well-educated working professionals. By 1974 half of the population over 25 years or older had completed at least one year of college and a third of the same age group had completed four or more years.[35]

The secure economic status of many of Arlington's middle-class residents did not, in general, apply to Arlington's African-American families, whose median incomes were roughly half that of Arlington families as a whole. As in many American communities during the 1960s, Arlington County's African-Americans were predominantly given the lowest paying jobs. In the county government, nine of the 13 divisions had no black employees; only nine of 253 professional employees in the divisions were black. In contrast, nearly all of the low-wage "non-professional" posts in the Sanitation, Highway, Sewer, and Public Buildings divisions were filled by African-Americans in 1966.[36]

[30] Rose, 200.
[31] Rose, 200.
[32] Connie Feeley, "Arlington No Longer a War Baby," *Washington Post,* 22 April 1956.
[33] Martin, 75.
[34] Gail Bensinger, "Northern Va. Income Held at 165% of Nation's," *Washington Post,* 27 August 1967.
[35] The Washington Center for Metropolitan Studies, "Washington Area's 'Real Central City' Now Includes Arlington and Alexandria, Key Indicators Show," Press Release, 16 January 1974 (Arlington County Public Library Population Vertical File), 2.
[36] "Job Reports on Negroes Weighed," *Washington Post,* 20 March 1966.

B. Demographic Trends

Arlington County's population grew steadily during the early twentieth century and in the years leading up to World War II. In 1940 the county's population totaled 57,040. The influx of workers that moved to the Washington area resulted in estimates that Arlington's population would double in the next four years, to approximately 120,000. A special census gave Arlington's official population in 1948 as 123,832.[37]

Between the 1948 and 1950 censuses, Arlington's population increased by another 11,617, giving it a total population of 135,449. Similarly, the entire Washington metropolitan area experienced an explosion in population as a direct result of the expanding federal government, which employed 57 percent of the area's workforce during the 1950s. As area residents moved from their city and inner suburban rental apartments to the Virginia and Maryland suburbs, residential construction increased. Between 1940 and 1950, the population of the District of Columbia grew only 21 percent while the Virginia suburbs grew 130 percent and the Maryland suburbs grew 107 percent. Arlington County grew by 138 percent between 1940 and 1950, second only to Fairfax County at 141 percent.[38] What had been a predominantly African-American county during the nineteenth century had become almost exclusively white in the mid-twentieth century, with only 8.8 percent of the population African-American in 1940 and 4.9 percent by the 1950 census.[39]

Arlington's population growth between 1930 and 1950 was about 6,000 per year, but slowed to 4,000 people per year from 1955 to 1966. As population growth slowed to a manageable rate, county planners began to consider the desired residential character of Arlington. In 1955 Arlington's housing stock was composed of 47 percent single-family homes, 9 percent two-family dwellings, and 44 percent apartment units. Planner Frank L. Dieter stated, "Arlington's residential character is a problem. It is a question of what density is desired. There are relatively few high-density areas here, and it appears to be the wish of the people to keep the high-density areas to a minimum."[40]

By 1960 Arlington County was almost entirely developed. Thus, while Fairfax County, located west of Arlington, grew 153 percent and Montgomery County grew by 107 percent during the 1950s, Arlington County only grew by 28 percent. It is important to note, however, that compared to Montgomery (Maryland), Fairfax (Virginia), and Prince Georges (Maryland, east of Washington) Counties, which are roughly equal in size at 400 square miles, Arlington County encompasses only 25.5 square miles.

A number of factors compounded over the years to make the Washington metropolitan area planners, including those in Arlington, rethink their growth policies. Population growth in Arlington County never again increased on the scale of the war and early postwar years, but residents began to fear that Arlington would become over-developed.[41] In an attempt to prevent over-development, Arlington enacted measures to slow its growth during the 1960s. Much of the remaining vacant land in the county was reserved for parks and other public purposes. The County increasingly implemented plans to control growth, including putting limitations on utilities expansion. It fought to control growth in the 1970s by deleting some proposed sewer mains and limiting the size of other pipes so that they could serve a population of no more than 250,000, not the original 350,000 called for by 2000.[42]

Arlington's suburban-to-urban evolution began during the 1960s. As Arlington focused on managing growth in previously developed areas of the county, mainly through the construction of high-density housing units, its demographic profile began to change. The county, along with Alexandria and Washington, were the only three jurisdictions in the metropolitan area to have a net out-migration during this period, when more people moved out of the county than moved into it. Families moved from Arlington to suburban areas where more, larger housing units were available. During the 1960s outmigration was balanced by total births in the county, but as more families left the county in the 1970s, the total population of Arlington County decreased. As families left, they were replaced by singles and childless couples, with a 52 percent increase in residents in their twenties and a 42 percent increase in residents 55 years old and older.[43] Arlington's residential land use and development trends mirrored those of Washington more than outlying suburbs, with high renter occupancy and increased numbers of smaller housing units, ideal for the singles and childless couples that were moving into the area. In both Arlington and Alexandria, "close-in land is being converted from primarily residential to office/industrial uses. More and more of the land which remains in residential use is occupied at high density levels, and renter-occupied units predominate."[44] New high-rise office, commercial, and residential development in Crystal

[37] Rose, 197; "Arlington's Population Now 123,832," *Washington Post,* 10 April 1948.
[38] "Arlington's Population Now 123,832."
[39] U.S. Census Bureau, *17th Census of the United States (1950)* (Washington, D.C.: Government Printing Office, 1953).
[40] McClatchy.
[41] Kenneth Bredemeier, "Suburbs Struggle to Preserve Quality of Life in the 70s," *Washington Post,* 19 January 1972.
[42] Bredemeier.
[43] The Washington Center for Metropolitan Studies, 8-14; Ron Shaffer, "Arlington Profile Projects Continued Population Loss," *Washington Post,* 14 November 1974.
[44] The Washington Center for Metropolitan Studies, 2.

City and Rosslyn since the mid-1960s has converted those areas to "mini-down-towns."[45]

1. Segregation Within Neighborhoods and Subdivisions

As Arlington transitioned into an urban environment, one major difference between it and Washington was the county's racial profile. Washington's population was 71 percent African-American in 1970, compared to six percent in Arlington. The vast majority of Arlington's neighborhoods were exclusively white, because of either restrictive covenants or unwillingness to sell to African-Americans. These practices effectively halted any growth that might have taken place and, as a result, African-American residents in Arlington were forced to live in the few segregated communities available to them: Arlington View, Nauck, Butler-Holmes, and High View Park (Hall's Hill). Other areas previously occupied by African-Americans were casualties of development, such as South Washington along U.S. Route 1 or Queen City and East Arlington located on the present-day site of the Pentagon.[46] Displaced residents and organizations moved to the remaining African-American enclaves where land was available to blacks for development, creating areas of higher population density than other single-family residential areas in the county.

In addition to population density, living conditions for African-Americans were dramatically different from the rest of the county. A 1966 report by Arlington's anti-poverty Community Action Committee stated, "In Arlington, as in the whole Metropolitan community, families with low incomes simply do not have access to decent housing. In Arlington, as in all of the suburbs, Negro families of whatever income find it almost impossible to find housing outside of a few scattered ghettos."[47] The report also stated that 22.2 percent of African-Americans occupied dwellings that were substandard, compared to 4.4 percent countywide. The county voted down the creation of a public housing authority in 1958, which rendered it ineligible for participation in the rent supplement and low-rent housing programs under the Federal Housing Act of 1965 that might have alleviated housing problems.[48]

During the 1950s and 1960s, the average income and education level of African-Americans in the communities

Figure 2. This house at 5100 22nd Street North is one of the first large houses constructed in High View Park, built in 1965 (Louis Berger photograph).

of High View Park and Arlington View increased. As more affluent African-Americans moved into the area, vacant lots were bought, and new homes were valued up to as much as $50,000 in High View Park. Lots with older homes in poor condition were remodeled or torn down to make way for new houses.[49] In 1964 more than half of the Arlington View's housing units were either remodeled or newly built within the past 12 years.[50]

The dearth of choices for African-Americans, even those who could afford to live elsewhere, resulted in a larger spectrum of housing in all of the neighborhoods. Newspaper articles on Arlington View and High View Park reported that houses ranged in value from $50,000 to "practically worthless."[51] The wider range of income levels contributed to the variety of housing types and materials (see Figure 2). The variety of construction included owner-built, small-scale development of a few (usually no more than two or three) houses, and architect-designed houses. Houses were typically single-family, though duplex housing was occasionally constructed. The range of builders and span of decades over which these areas were developed resulted in no single, cohesive style or type of housing. Forms and styles of these houses included minimal-traditional, Cape Cod, Ranch, Split-level, Split-foyer, and Colonial Revival. Basic forms were occasionally turned on end, gable end to the road frontage, to accommodate a narrow lot or as a way to vary these forms.

[45] The Washington Center for Metropolitan Studies, 4.

[46] "Some Black History in Arlington County: A Preliminary Investigation," *The Arlington Historical Magazine* 5, No. 4 (October 1973), 11-14.

[47] Leslie Cheek, "Fair Housing Ordinance Is Proposed for Arlington," *Washington Post,* 23 March 1966.

[48] Cheek.

[49] John M. Langston Citizens Association, *High View Park Neighborhood Plan* (Arlington County, Va.: Arlington County Office of Planning, 1965), 11.

[50] Lee Lescaze, "Saving Aging Neighborhoods Goal of Arlington County Plan," *Washington Post,* 1 September 1964.

[51] Pepper Leeper, "Arlington View War on Blight is a 'We' Effort," *Washington Post,* 27 February 1969; Hank Burchard, "Hall's Hill: Blacks Hold the High Ground," *Washington Post,* 27 February 1969.

CHAPTER 6

Planning and Development

A. Development Patterns

Immediately following World War II, housing construction began slowly because of shortages in building materials, but within a couple of years new developments were underway. Even before the war ended, the *Washington Post* reported that "plans already in blueprint stage will give the county millions more in residential and business improvement."[52] Some of Arlington's early twentieth-century neighborhoods grew significantly during the immediate postwar years; however, in the 1950s, as more neighborhoods became "built out" and available land became scarce, residential development moved further out (6 to 10 miles) from the downtown D.C. core.[53]

Prior to World War II, the majority of neighborhoods in Arlington County were developed by subdividers, who purchased the land, made improvements (e.g., roads) and subdivided the lots, and sold the lots to individuals who engaged an architect or builder to construct a house. Just prior to the war and in the decades after, development primarily occurred through merchant builders, who purchased available land, improved and subdivided the land, and built the houses on the lots. This type of development was a result of the demand for housing in the Washington, D.C. metropolitan area, the availability of FHA-backed loans for merchant builders, and a shift in construction methods.[54]

The demand for housing in the 1950s for Arlington's 155,000 residents drew numerous builders to the area, but as Christopher Martin points out in *Tract-House Modern: A Study of Housing Design and Consumption in the Washington Suburbs: 1946-1960,* due to high land and construction costs "the Washington home building market was exclusively a local enterprise."[55] Large-scale merchant builders similar to Levitt and Sons were priced out of the market, and most residential development was undertaken by small to medium local companies, although a few larger firms participated in the boom. Unlike other areas of the country affected by the governmental/military/industrial presence where developers erected thousands of similar, low-cost houses, the metropolitan Washington real estate market catered to white-collar, middle-class residents with higher than average incomes who expected, most often, a brick Colonial Revival-style dwelling.[56] The need for housing was so great that some postwar developments did not include commercial areas in their plans.[57]

Most local builders were classified by industry standards as small (1 to 24 houses a year) or medium (25 to 99 houses a year). Medium and large (more than 100 houses per year) builders produced the majority of the area's housing. Large-scale builders also typically worked on more than one project at a time. For example, one large-scale builder in the area,

[52] Andrews, "Arlington Is Modern 'Cinderella,'" *Washington Post,* 27 May 1945.

[53] Martin, 76.

[54] David Ames and Linda McClelland, *Historic Residential Suburbs: Guidelines for Evaluation and Documentation for the National Register of Historic Places* (Washington, D.C.: National Park Service, 2002), 26-27; EHT Traceries, *Phase X Architectural Survey Report of Arlington County, Virginia* (Washington, D.C.: 2008), 11, 63.

[55] Martin, 60.

[56] Martin, 60; McClatchy. McClatchy's article states that many of the federal workers received "salaries in the upper-middle bracket." See also Conrad P. Harness, "Arlington Continues Hectic Building Pace," *Washington Post,* 11 April 1948. This article provides statistics on the majority of period construction as single-family, brick, two-story dwellings with "practically no new homes in the county for sale under $10,000." The article also discusses the postwar increase of garden apartments in the county.

[57] EHT Traceries, Claremont Historic District National Register of Historic Places Nomination (VDHR #000-9700). The original plans for the Claremont neighborhood, built between 1946 and 1954, did not include shopping centers or schools, which had typically appeared in Arlington developments prior to the war. This neighborhood was planned by local developer Gerald A. Freed and the Claremont Development Corporation with architects Allan F. Kamstra and Albert D. Lueders.

M.T. Broyhill and Sons, worked on five separate area subdivisions in 1955 with plans for over 1,400 houses. Among such a large group of competitors, builders thus sought to distinguish themselves and their product by varying house forms, exterior appearance, interior features, as well as through advertising mechanisms.[58] In many instances, these builders sought land adjacent to established neighborhoods and often erected houses that were similar to the existing dwellings; some erected dwellings that reflected modern architectural trends and modern materials.

Not all developers nationwide subdivided and developed land and built large numbers of houses in one area. This was particularly the case in Arlington County, where large expanses of land were no longer common. In some instances, subdividers continued to improve the land and sell individual lots to private owners. More common was available land that had been subdivided during late 1930s or early 1940s where development had been halted with the onset of World War II. Thus, after the war, builders purchased small or large quantities of the subdivided parcels or often re-subdivided the land, within existing neighborhoods. While some medium and large-scale builders purchased land in existing neighborhoods, it was more commonly developed by small-scale builders, who constructed houses in small clusters. Infill development on undeveloped platted lots within existing neighborhoods also was common during this time. Garden apartments also were constructed to keep pace with the county's high housing demand.

1. Merchant Builders and Planned Subdivisions

Prior to and after World War II, Arlington County's tremendous growth attracted several medium- to large-scale builders to establish subdivisions of similar, almost identical single-family dwellings where larger tracts were available. These merchant builders and speculative housing are synonymous with the development of Arlington County. The number of merchant builders, from small- to large-scale, in Arlington County was so large during the postwar decades that it is difficult to name them all.

M.T. Broyhill and Sons was one of the most prolific merchant builders in Arlington County and is recognized for building more than 8,000 brick homes in Northern Virginia between 1946 and 1955.[59] Marvin T. Broyhill (1918-1969), along with his brothers, learned the building and construction trades from his father, who was involved in a small-scale lumber and building business. Broyhill moved his family to Arlington County in 1937 and subsequently founded the M.T. Broyhill and Sons Corporation that combined development, construction, insurance, and realty. M.T. Broyhill and Sons served as the construction company, M.T. Broyhill and Sons Partnership held rental properties, and Broyhill Insurance offered insurance for the houses.[60] In Arlington County, Broyhill's postwar developments included Waverly Hills, Country Club Manors, Country Club View, and Broyhill Forest.[61] One of Broyhill's first developments in Arlington County after World War II was Broyhill's Addition to Arlington Forest in 1948. There Broyhill subdivided the land and made necessary improvements, as well as built approximately 60 Colonial Revival-style houses.

Luria Brothers was also a medium- to-large-scale merchant builder who constructed several subdivisions in Arlington County. Luria Brothers consisted of a partnership between two brothers, Gerald and Eli Luria. The brothers started their business in 1945 to capitalize on the tremendous building needs after the war. Eli recalled, "There were a number of developers starting up right after the war and of course the demand was very, very strong. So sales were active and most anything would sell."[62] Luria Brothers' first development was located in Waverly Village in Arlington County. Started in 1946, the project consisted of 33 brick houses with two basic forms: a two-story Colonial and a one-story Ranch, also known as a rambler. The houses sold for $12,000 to $13,000, a mid-priced house for the area. Between 1947 and 1948, the brothers developed 64 lots in Berkshire, located in the northern section of Arlington County. In Berkshire, the Lurias mostly built two-story Colonials for the price of $16,750. In 1949, when sales were almost complete in Berkshire, the company purchased 32 lots in northern Arlington County for their Garden City project. Here, the brothers built a one-story rambler that featured a low-pitched roof and large picture windows, deviating from the more traditional houses they had built in the past. Riding on the success of Garden City, Luria Brothers continued to build one-story rambler types in Arlington County in the subdivisions of Jonstown, Marshall Park, Sycamore Grove, and Sleepy Hollow Knoll.[63] Luria Brothers went on to develop the modern subdivision of Holmes Run Acres in nearby Falls Church, Virginia, in 1951.

Mace Properties is an example of a large-scale merchant builder in Arlington County and is credited with building

[58] Martin, 61, 67-68.
[59] Martin, 79.
[60] Eugene Scheel, "With 'the Park,' County's Growth Battles were Just Beginning," *A History of Loudoun County, Virginia* (2002), http://www.loudounhistory.org/history/sterling-park-beginnngs-1961.htm (accessed 4 March 2010).
[61] "Country Club View," *Washington Post,* 10 September 1950.
[62] Martin, 143.
[63] Martin, 144-146.

over 4,000 single-family houses in Arlington County as well as several shopping centers and apartment buildings. Established by Merwin A. "John" Mace (1900-1969), a real estate broker, developer, and builder, Mace Properties is known for its high construction standards and low construction costs. The success of Mace Properties was largely based on its ability to capitalize on FHA financing. By the 1950s Mace operated several divisions, including Pollard Gardens, Westover Inc., Mace Management, and Arlington Homes Corporation. Mace Properties developed several subdivisions in Arlington County prior to World War II and also built and developed Dominion Hills in Arlington after World War II. Dominion Hills had been initially platted in 1942 by a subdivider; however, development was halted by the war. After the war, Mace purchased the subdivision of Dominion Hills in 1945 and purchased and platted the adjacent Section Two of Dominion Hills in 1946. By the end of 1948, both sections of Dominion Hills consisted of 361 houses built by Mace.[64]

While the majority of Arlington's merchant builders, including Broyhill, Luria Brothers, and Mace, almost exclusively built subdivisions for white middle-class and white upper-middle-class families, Syphax Construction built for African-American families. Syphax Construction, owned by William and Margarite Syphax, was the largest African-American-owned construction company in Arlington County and was the first African-American construction company of any size in Northern Virginia. William Syphax was a native of Arlington County and realized the need for a construction company that would build houses for middle-income African-Americans after World War II. "[D]espite a postwar influx of black government workers who needed decent homes and had the salaries to pay for them, no builders in Northern Virginia were willing or able to construct houses for black buyers in any number. And as Washington's suburbs began their outward spread – with developments of moderately priced houses that were sold almost exclusively to whites – Syphax quickly tired of 'white men legislating my equality.'"[65] The business began by building houses for the Syphaxes' friends. They designed a brick rambler and worked with subcontractors to create copies in Arlington's African-American neighborhoods (see Figure 3). Syphax Construction was able to arrange construction loans and permanent financing because of the prominence of the Syphax name in the area, when lack of financing limited other African-American builders who constructed only a few houses each year. During the 1950s Syphax Construction built approximately 100 houses that were priced from $14,000 to over $16,000.[66] Syphax Construction grew by the early 1970s into W.T. Syphax Enterprises, which included construction, real estate, and property management.

Figure 3. This house at 2720 1st Street South, built in 1956, is one of the brick Ranch houses built by Syphax Construction for African-American residents in Arlington (Louis Berger photograph).

2. Infill Development Within Existing Subdivisions and Isolated Postwar Houses

While medium and large-scale merchant builders who platted the land and built the houses in a subdivision were common in Arlington County, a large amount of the development occurred in existing neighborhoods, often by numerous small- to medium-scale builders. The immense need for housing and the scarcity and high cost of land in Arlington County after World War II caused builders to purchase any available lots in the county's established neighborhoods for new housing. Thus, merchant builders would "create small enclaves that have been engulfed by larger communities" and thus lose the distinctive association with a builder.[67] The result is often clusters of postwar houses or a single postwar house located amongst distinctively prewar houses. Often, land that had been subdivided prior to World War II was later re-subdivided by merchant builders to offer additional lots and to conform to the new subdivision design practices in the mid-twentieth century, such as curvilinear streets and cul-de-sacs.

One example of this phenomenon in Arlington took place in Glencarlyn. Originally platted in 1887 as Carlyn Springs,

[64] EHT Traceries, Dominion Hills Historic District Preliminary Information (VDHR #000-4212). On file in Archives, Virginia Department of Historic Resources, Richmond.

[65] Claudia Levy, "The Syphaxes of Arlington: One House Led to Another," *Washington Post,* 22 June 1974.

[66] Levy.

[67] EHT Traceries, *Phase XI Architectural Survey Report of Arlington County, Virginia* (Washington, D.C.: 2009), 63.

Glencarlyn is Arlington County's oldest planned residential suburb. Initial construction in Glencarlyn was slow; however, several high-style single-family dwellings were built on the large lots at the end of the nineteenth and early twentieth centuries. Development in Glencarlyn remained sparse until after World War II, with its largest amount of construction occurring between 1947 and 1958 when developers built over 180 single-family dwellings. Four development companies were the primary builders during this 12-year period: Hamilton Homes, Glen Realty Company Inc., M. Pomponio and Sons, and Colonial Construction Company. These builders erected modest houses often of the same design and materials, typical of postwar construction. Between 1959 and 1979, approximately 60 new houses were built in Glencarlyn. The modest two-story Colonial Revival-style dwellings, Ranch houses, and Split-foyers contrast greatly with the large Queen Anne-style houses from Glencarlyn's initial development.[68] Glencarlyn displays a large range of single-family house types, from the late nineteenth century to the third quarter of the twentieth century; this type of development was not uncommon in Arlington County within its established neighborhoods.

The common development pattern of small-scale postwar construction can be seen in what is currently known as the neighborhood of Leeway Overlee. The current neighborhood is composed of several different subdivisions, many of which were platted before the war and re-subdivided during the postwar boom. The 1925 subdivision of Tuckahoe Village, for example, attracted merchant builders after World War II because it had inexpensive, unimproved lots. The merchant builders left their mark with no less than 15 re-subdivisions that effectively altered nearly all of the original lots in Tuckahoe Village. "The largest parcels were divided into uniformed lots, corner parcels were reworked to take maximum advantage of their location, and lot lines once set at an angle were redrawn perpendicular to the street, a grid pattern promoted by the Federal Housing Administration."[69] Builders constructed new single-family dwellings in groups of no more than three on the newly divided lots and quickly provided much-needed housing. Builders included W.E. Morgan, Fire Safe Homes, W.H. Bacon Jr., and Pomponio and Sons, Inc. (later Pomponio Realty). [70]

Additional examples of similar infill development are located in the neighborhood of Arlington Heights, where developers purchased vacant parcels and re-subdivided the land, often into smaller lots than had been initially platted.

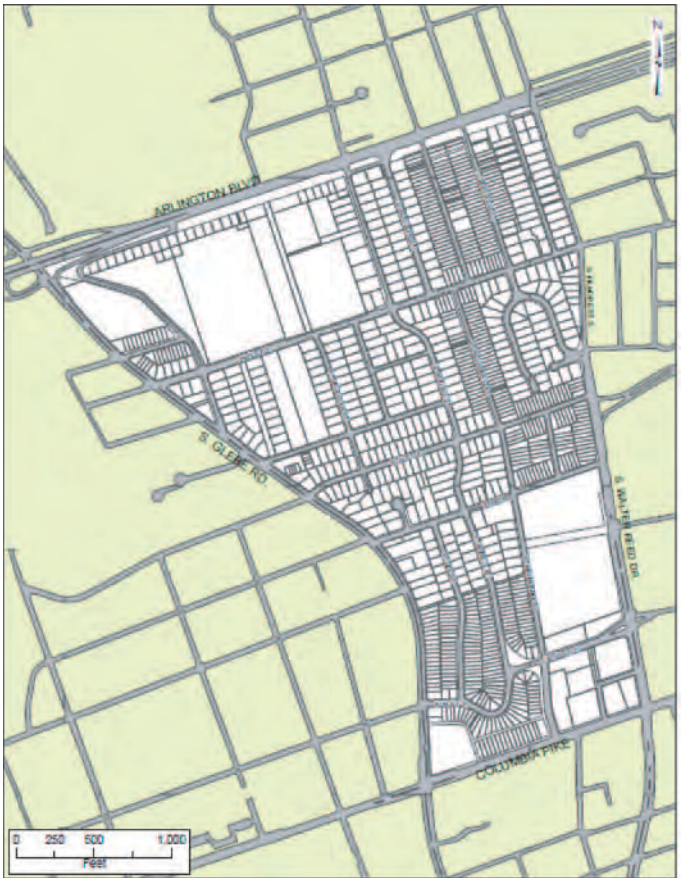

Figure 4. This detail map of the Arlington Heights neighborhood illustrates the difference in pre- and post-war development patterns. The sections platted before World War II use a linear street alignment and hold larger lots; the postwar development utilized curvilinear streets and smaller lot sizes (Louis Berger map).

Arlington Heights' postwar development occurred in Caron's Addition (1948), Bernstein and Reinsch's Addition (1950), and Cook's Addition (1950). An additional re-subdivision occurred in 1963 after the demolition of an existing house. The more recent subdivisions in Arlington Heights can easily be differentiated on a map by the curvilinear street patterns and cul-de-sacs that are lacking in the initial development. Also notable in the southern section of Arlington Heights (Bernstein and Reinsch's addition) is the size of the lots, which are substantially smaller than those platted earlier. Here, Bernstein and Reinsch built 41 Colonial Revival-style brick houses between 1950 and 1951 (see Figure 4).[71]

Although subdividers were mostly active prior to World War II, some subdividers were active in Arlington County after the war. In many instances, the land had been subdivided in

[68] EHT Traceries, Glencarlyn Historic District National Register of Historic Places Nomination (VDHR #000-9704), 51, 61-62.

[69] EHT Traceries, Leeway Overlee Preliminary Information Form (VDHR #000-4209). On file in Archives, Virginia Department of Historic Resources, Richmond.

[70] EHT Traceries, Leeway Overlee Preliminary Information Form.

[71] EHT Traceries, Arlington Heights Historic District National Register of Historic Places Nomination (VDHR #000-3383), 8, 187-188.

the late 1930s and early 1940s, but development did not come to fruition because of World War II. Thus, the subdividers continued to sell individual lots or groups of lots to small-scale and, in some cases, large-scale builders. One example of an area primarily developed by a subdivider who in turn sold lots individually or in groups to larger-scale builders is Bellevue Forest. Charles and John Grunwell began to subdivide their family's property in 1938 with John, an architect and surveyor, playing a large role in its layout and design. Over the next 20 years, the Grunwells subdivided 18 sections of Bellevue Forest with 5,000 lots. Unlike companies such as Broyhill and Mace, the Grunwells did not build the houses in Bellevue Forest but sold the lots off to individuals or to developers. In 1954 the majority of the lots developed in Bellevue Forest were by single owners or small-scale builders. Thus, the houses in Bellevue Forest for the most part vary in design. Development in Bellevue Forest shifted in the 1950s when May Properties constructed nearly 150 houses between 1954 and 1958, all similar in design.[72]

The tremendous need for housing prompted the desire for any available land in Arlington County. Thus, single houses were also built on vacant lots in existing neighborhoods, and in some instances large lots with existing houses were subdivided to provide room for additional dwellings. One example is located in Virginia Heights. All of the lots in Virginia Heights had been built upon by 1953 except one at 5236 12th Street South. In 1962 a Split-foyer house was built on the property and is visibly distinct from its neighboring small, one-story, L-shaped ramblers (see Figure 5).[73]

Arlington's African-American neighborhoods also experienced a great deal of infill development during the postwar era. Though they are some of the oldest residential areas in the county, dating to the post-Civil War era, the county's African-American population was small through the early and mid-twentieth century. By the early postwar era, numerous empty lots were available for purchase or further subdivision. Thus, in African-American neighborhoods, such as Nauck, postwar houses commonly stand between late nineteenth- and early twentieth-century houses (see Figure 6).

3. Ordinances, Codes, Covenants, and Deed Restrictions

Covenants stipulated in subdivision deeds were a tool that ensured the homogeneity of Arlington County's neighborhoods. Many of the covenants restricted development

Figure 5. This house at 5236 12th Street South in Virginia Heights, built in 1963, is an example of a 1960s-era Split-foyer house that was built in a neighborhood of 1950s Ranches (Louis Berger photograph).

and were related to lot size, building types, fences, and secondary resources. Others were more racially or ethnically based and only allowed owners and occupants who were white and non-Jewish. Covenants had a large impact on the design and development of Arlington's postwar housing.

Many of the covenants were put in place during the 1930s and the early 1940s when the subdivisions were first platted, thus forcing those subsequently purchasing any lot or group of lots to adhere to the existing covenants. One example is Bellevue Forest, which was first platted in 1938 with Section 1. The owners, Charles and John Grunwell, established a total of 21 covenants stipulated for Section 1 of Bellevue Forest. The subdivision covenants excluded farm animals, businesses and manufacturing establishments, entertainment facilities, schools, dance halls, and lot-line fences, among other items. To keep the streetscape harmonious, one covenant stated, "No structure shall be built upon or moved onto any lot unless it shall conform to and be in harmony with existing structures in the immediate locality."[74] Restrictions were also placed on the construction or alteration of any structure and often required plans to be approved by the subdivision owners.[75]

Typical of the time, the covenants in Bellevue Forest restricted the sale of lots or houses to people of certain races. One Bellevue Forest covenant specifically stated that lots could not be "used, occupied by, sold, demised, transferred, conveyed unto, or in trust for, leased, rented, or given, to negros [*sic*], or any person or persons of Negro blood or extraction, or to any person of the semetic [*sic*] race, blood, or origin, which

[72] Bellevue Forest Civic Association, "Bellevue Forest: Its History," http://www.bellevueforest.org/BFHistory.htm (accessed 11 March 2011).

[73] EHT Traceries, Virginia Heights Historic District National Register of Historic Places Nomination (VDHR #000-9701), 15.

[74] Bellevue Forest Civic Association.

[75] Bellevue Forest Civic Association.

Figure 6. This 1965 Map of Arlington View illustrates the infill construction that occurred in the postwar period; shaded lots are new single- and two-family homes and shaded lots with an "R" designation are remodeled homes (Arlington County).

racial description shall be deemed to include Armenians, Jews, Hebrews, Persians and Syrians." [76] In all, the Grunwells platted 18 sections of Bellevue Forest over the course of 20 years. The majority of the development occurred after World War II. Although the covenants continued after the war, the Grunwells amended the race requirements for the postwar sections to allow for "Armenians, Jews, Persians and Syrians," but still excluded African-Americans.[77]

In 1947 M. T. Broyhill and Sons established Country Club View, Inc. for the purposes of subdividing and developing a subdivision adjacent to Washington Golf and Country Club in Arlington County. The deeds listed two important covenants. The property in Country Club View could not be "sold to, leased to, devised to, used or occupied by any person or persons not of the Gentile Caucasian Race."[78] In addition, the parcels could not be divided or subdivided into smaller lots,

[76] Bellevue Forest Civic Association.
[77] Bellevue Forest Civic Association.

[78] Arlington County Land Records, Deed Book 800, 252, 1947.

only one house could be built on a subdivided lot, and no house or residence could be constructed on any lot at a cost of less than $25,000. All plans had to be approved by Country Club View, Incorporated. Thus, Broyhill limited not only the race of people who could buy houses in Country Club View but also their class, since $25,000 was $10,000 more than many of the houses offered in Arlington County at that time. Broyhill subtly advertised the covenants in place at Country Club View in a full-page ad in the *Washington Post* in 1950 by calling the subdivision "exclusive and restricted . . . The result is a distinguished suburb peopled with carefully screened families . . . the sort of neighbors you want to live among, and whose children are the sort you want your children to grow up with (see Figure 7)."[79]

In 1949 the FHA announced that as of February 15, 1950, it would no longer insure mortgages on real estate that was subject to racial covenants, forcing Arlington County's developers to leave out any covenants based on race or ethnicity in their subdivision deeds if they wanted to take advantage of FHA-insured mortgages.[80] Although racially based covenants may not have been allowed in subdivisions after 1949, developers could still easily restrict certain residents by choosing to whom they would sell the houses or by enforcing existing racial covenants in areas subdivided prior to 1950. Arlington builder Sol Adelman, founder of Old Dominion Development Corp. (Virginia Heights), and his family faced existing covenants restricting Jews when attempting to build a house in the Shirley Woods subdivision in northern Arlington County in 1950. Although the designs for the Adelman house were initially approved by the developer, the Adelmans were told that they could not build their house because of the exclusion of "any person of the Semitic race, blood or origin" from building in the subdivision. [81] The owners of the subdivision, Mr. and Mrs. Fred G. Belm of Arlington County, stated that the Adelmans purchased the property in Shirley Woods in 1944, "subject to their abiding by the covenant restrictions."[82] Consequently, the Adelmans filed suit against the subdivision owners. The Arlington County Circuit Court filed in favor of the Adelmans in November 1950 since their house plans conformed to the standards of the development, and the developers were forced to permit the Adelmans to build on their lot.[83]

Covenants also promoted stylistic homogeneity in Arlington County, particularly in subdivisions that were developed by subdividers. In many instances, covenants required that building plans had to be approved by the subdivision owner, and some specifically required that all houses built in the neighborhood must be "harmonious." One extreme example landed an Arlington architect in court in 1969. Brockhurst C. Eustice built a contemporary house in the northern Arlington subdivision of Rivercrest. Eustice thought his "starkly modern new home [was] beautiful," but his neighbors, who lived in more "traditional structures," did not agree and took him to court.[84] An Arlington County judge sided with the neighbors and ruled that Eustice violated a Rivercrest covenant "calling for harmony."[85] The house was razed in 1972.[86]

4. Real Estate Companies and Builders

In Arlington County, merchant builders often served as both builder and realtor and marketed and sold the houses in their newly developed subdivision. Many of the larger merchant builders in Arlington County had several divisions within the company that handled the different aspects of the development business. This often included real estate brokerage. Mace Properties, for example, served as its own realtor and was described in its ads as "Builders, Developers, Realtors." Broyhill also had its own realty business that sold the houses in the neighborhoods it developed, allowing for complete control over the construction and sale of their properties.[87] Initially, Luria Brothers also operated Luria Reality Co. to sell the houses in its subdivisions. In 1960 the company announced that it would no longer be involved in the sale of the houses that it built. The company appointed KayRo Realty as exclusive sales agents for its developments. The transferring of marketing and selling responsibility to KayRo allowed Luria Brothers to concentrate on larger-scale subdivisions.[88] Pomponio Reality Inc. and George H. Ruckers Co. both served as realty companies and developers. Pomponio Realty, formerly Pomponio and Sons, for example, developed Williamsburg Village in northern Arlington in 1951, and George H. Ruckers Co. built houses in Country Club Hills in the late 1940s and early 1950s.

5. Advertising Trends

Local builders in the Washington, D.C., metropolitan area "sought individuality through various methods of

[79] "M.T. Broyhill and Sons," *Washington Post,* 10 September 1950.
[80] Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1985), 208.
[81] "Suit Attacks Race Covenant," *Washington Post,* 17 October 1950.
[82] "Suit Attacks Race Covenant."
[83] "Couple Beats Covenant," *Washington Post,* 22 November 1950.
[84] "Architect's 'Dream House' Ordered Torn Down," *Washington Post*, 17 September 1969.
[85] "Architect's 'Dream House' Ordered Torn Down."
[86] "House Being Razed as 'Inharmonious,'" *Washington Post,* 3 June 1972.
[87] "Here is the Latest Mace Project," *Washington Post,* 12 April 1953.
[88] "Luria Firm to Quit Sale of Houses," *Washington Post,* 10 September 1960: B4.

Figure 7. 1950 Advertisement for Broyhill's "exclusive and restricted" Country Club View Development, which was governed by covenants that restricted sales to certain races and people of certain economic status (Washington Post).

advertising and publicity, often resulting in innovative and novel marketing ideas that clearly separated some of them from their competitors."[89] Local builders used various tactics to draw potential buyers to subdivisions. Most builders and developers advertised in the *Washington Post* and the *Washington Star* newspapers, and many ran repeat ads to ensure visibility. The complexity of the ads varied, although many included drawings or photographs of a typical house available in the neighborhood. Many builders and developers erected a model house to attract potential buyers. Open houses were then advertised in the local newspapers or in other media outlets, such as radio and television; a 1952 newspaper advertisement for a house in Stratford Hills states, "See This Home on Television. Tune in 'New Homes Preview' WMAL-TV Channel 7, Sunday 11:30 am until 12 noon."[90]

[89] Martin, 61.

[90] "Stratford Hills," *Washington Post,* 17 August 1952.

One way that local builders advertised was at the annual "home show," which was sponsored by the Home Builders Association of Metropolitan Washington. The first Washington area home show was held in October 1947 at the D.C. Armory and quickly became the premier marketing mechanism for local builders. The 1947 home show attracted over 70,000 visitors. By 1950 the show had been moved to spring and brought 70,000 to 100,000 attendees over its two-week operation. The event allowed locals to view the newest construction features and materials throughout dozens of trade-related booths and exhibits. One of the most popular was the "gallery of homes," which featured the latest subdivisions by member builders.[91] The 1949 home show, for example, featured several builders who worked in Arlington County, including M. T. Broyhill and Sons, Mace Properties, and L. E. Breuninger and Son Inc.[92]

Another popular advertising venue was through the *Washington Post*-sponsored "Homes of the Year" exhibit. Beginning in 1948, this exhibit featured new houses in subdivisions around the Washington metropolitan area as a way to allow the public to see the latest housing trends first hand. Co-sponsors of the event were local developers and furniture companies. The "Homes of '48 for Better Living" exhibit consisted of 10 new houses that were fully decorated and furnished and ranged in price from $15,000 to $45,000. The vice president of the National Association of Home Builders told the *Washington Post* before the exhibit opened that he hoped "when the public inspects these homes that they will observe the careful planning, good layout and excellent quality of workmanship. They will see what a fine job of building is being done by today's builders."[93] One of the houses featured in the 1948 exhibit was a two-story Colonial built by Luria Brothers in the Williamsburg area in western Arlington County. [94] The number of participants in the exhibit grew tremendously over the years, and by 1956 the exhibit offered 70 houses.[95]

Participants in the exhibit included many of Arlington County's most successful developers: Courembia Construction Co. (1949), M. T. Broyhill and Sons (1949, 1950, 1952, 1954), Pomponio Realty (1951), and Mace Properties (1954). The list of developers and the location of the houses illustrate active builders during that time, the type of houses they were building, and the location of new subdivisions in Arlington County. Houses in Arlington County were featured in the yearly "Homes of the Year" exhibit after 1948, but were notably absent between 1956 and 1958. The exhibit featured Arlington County houses in 1959 around the Arlington Golf and Country Club in northern Arlington County, but none were featured in 1960 or 1961. By the late 1950s and early 1960s, the majority of houses featured in the exhibit were located in Montgomery, Prince George's, and Fairfax counties, illustrating the decline in residential construction and the unavailability of land in Arlington County by that time.

Overall, advertisements for Arlington County subdivisions and single-family houses after World War II promoted their convenient proximity to Washington, D.C., the overall amenities of the house, the design, whether it was traditional or modern, and often the affordability or available financing. Ads often exclaimed "G.I. Approved" to attract returning veterans. Larger development companies could afford more elaborate means of advertising, such as illustrated newspaper ads and television spots; smaller-scale developers often used the classified ads as their primary means of advertisement.

B. Utilities and Infrastructure

Before the 1930s, Arlington County lacked basic public works, such as water and sewage systems. Even once those utilities were put into place, service was constantly being expanded as the county struggled to keep up with the rapid development that threatened to overwhelm the capacity of the system.[96] By the early postwar era, the situation had not improved. Although developers were responsible for the construction of infrastructure in new developments, the county worked to update utilities and infrastructure in older communities. Improvements that were needed included storm sewers, sidewalks, curbs, and gutters.[97]

Arlington's struggle to meet public works needs stemmed partially from its governmental structure, which did not allow it to assume financial obligations extending beyond a single fiscal year. Additionally, its main source of income, tax revenue, was insufficient to meet needed financial outlays. As the postwar era began, incorporation as a city was proposed as a panacea. Proponents of the city proposal argued that it would give Arlington a "greater power of self-determination: added power to regulate public utilities; power to make long-range improvements; to undertake new activities; it would have more effective control over local finances." Tax revenue would increase through the addition of a wider base that would include occupational and auto licenses, and other

[91] Martin, 95.
[92] "District Home Show Opens With 200 Different Booths," *Washington Post,* 9 October 1949.
[93] "Big Four-Week Home Exhibition Endorsed by Housing Leaders," *Washington Post,* 27 June 1948.
[94] "Big Four-Week Home Exhibition Endorsed by Housing Leaders."
[95] "Big Homes of '57 Exhibit To Be Held in September," *Washington Post,* 1 June 1957.
[96] Rose, 179-181.
[97] "$30,000 Voted for Arlington Curbs, Sewers," *Washington Post,* 5 August 1945.

forms of local taxation available to a city.[98] Although the county never became incorporated, it would revisit the issue in subsequent years.

The burden of rapid population growth and expansion on county infrastructure is illustrated best by Arlington's lack of sewage treatment facilities. During the late 1940s, it was reported that half of its raw sewage was being dumped in the river and the other half was treated only to remove solids. Arlington was not alone in the practice, as both Washington and Alexandria were also dumping large portions of their raw sewage.[99] Plans to remedy the problem took two decades to complete, when finally, in 1968, the secondary treatment plant at 3401 South Glebe Road was completed. Prior to the plant's opening, the primary treatment facility removed roughly 65 percent of the pollution before it flowed into the river. The new plant was designed to eliminate 90 percent of pollution.[100]

The builder's responsibility for ensuring utilities and infrastructure increased when the Commonwealth of Virginia passed a Subdivision Ordinance in 1959 that allowed municipalities to require a bond or check from a developer as a surety that improvements would be completed. The first bond files on record at Arlington County date to 1964. Work that was required to be completed included placement of monuments at all corners of the subdivision and property lines; storm sewers, culverts under roadways, and outlet ditches; street construction; concrete sidewalks, curbs, and gutters on both sides of all thoroughfares; frontage and service connection for public water; and a public sewage system at each building site. Once the work was completed and accepted by the appropriate county divisions, the bond was released.[101]

The Subdivision Ordinance guaranteed improvements for new communities, but preexisting neighborhoods lagged behind in receiving them. More than any of the other older neighborhoods, living in one of the African-American areas of Arlington at the time would have meant drastically different infrastructure conditions. These communities lacked basic improvements long after other Arlington neighborhoods had received them. In 1965 these areas were described as having "dead-end streets and small 'Berlin walls,' some covered with roses, separating Negro communities from the rest of the county. [There was a] sharp contrast in the amount of curbs, gutters, street lights, recreation space, trash removal and other public improvements. . . ."[102]

Figure 8. 1966 photograph of an Arlington View street illustrating the lack of improvements, such as curb, gutter, and sidewalk (Arlington County Dept. of Community Planning).

In 1964 Arlington County created the Neighborhood Conservation Program to partially fund improvements to "eliminate the influences of urban decay at the neighborhood level while they are still controllable."[103] Specifically, Arlington developed the program to fight the encroachment of high-rise apartment development, which targeted older residential neighborhoods where land values were lower and owners might be willing to sell. It was set up as a community-initiated program in which neighborhood commitment would involve preparing and presenting a plan that would inventory the neighborhood and propose improvements. Under the program, owners paid for 50 percent of the cost of sidewalk, curb, and gutter construction and driveway entrances.[104]

African-American neighborhoods were among the first to benefit from the program, with the neighborhood of Arlington View acting as the pilot to test the new program. Arlington View's Conservation Plan indicated that 80 percent of existing street frontage had no curb or gutter, there were eight dead-end streets, and some streets were so narrow as to make passing difficult (see Figure 8). Part of the problem in Arlington View and other African-American communities was that, although there was new building, it was not undertaken by a large developer who was obligated to make street improvements. By 1957 there

[98] Doretha Andrews, "Arlington's Residents Form Their 'Industry,'" *Washington Post,* 11 September 1945.

[99] Verne C. Close, "Letter to the Editor," *Washington Post,* 16 January 1945.

[100] "Arlington Sewer Plant Dedicated," *Washington Post,* 19 May 1968.

[101] For an example of what was required of developers, see *Bond File #65: Foster's Third Addition to Country Club Hills* (Arlington County, Va.: Department of Environmental Services, June 29, 1973).

[102] Helen Dewar, "Integration Stops at the Doorkey," *Washington Post,* 20 June 1965.

[103] Arlington County Office of Planning, *General Information. Neighborhood Conservation Program Arlington County, Virginia* (Arlington, Va.: Arlington County Office of Planning, 1965), 1.

[104] Arlington County Office of Planning, 2-6.

were 351 miles of roads in Arlington and only 0.05 percent was not hard-surfaced.[105] But 1960s neighborhood conservation plans from African-American communities indicated that unpaved roads were not uncommon, likely making up a large portion of the total unpaved roads in the county. Complete fulfillment of conservation plans could be slow. [106]

The citizens of Nauck repeatedly petitioned for improvements for their neighborhood. In September 1967 a group of residents appeared before the Arlington County Board to petition for more improvements. By that year slightly more than half of Arlington's roads had curbs and gutters and less than half had sidewalks. In contrast, about two-thirds of Nauck's streets had no curbs, gutters, or sidewalks. County officials had included South Monroe Street in Nauck as one of the priorities for improvements, admitting that there was much to be done in the area.[107] Nauck citizen John Fitchett presented a nine-point program for improvements costing $250,000, stating that " . . . the citizens of this area are of the opinion that we have . . . been bypassed in County investments and programs."[108] Though county officials agreed to schedule a meeting with representatives of Nauck to develop a proposal, the petition was not met with complete tolerance. After Arlington Community Action Committee field coordinator John Robinson cited Washington's investment in ghetto areas, a board member replied, "If they're going to spend all that money in Washington, why doesn't he (Robinson) move there?"[109] In 1973 the County approved a Nauck conservation plan, which indicated that Nauck still lacked the basic improvements.[110]

[105] A.T. Lundberg, "Arlington Won't Rest On Past Achievements," *Washington Post,* 27 April 1957.
[106] Leeper.
[107] Katharine Gresham, "Green Valley Sets a Protest," *Washington Post,* 25 August 1967.
[108] Katharine Gresham, "Negroes Urge Arlington to Upgrade Area," *Washington Post,* 10 September 1967.
[109] Gresham, "Negroes Urge Arlington to Upgrade Area."
[110] Arlington County Board, "Nauck Conservation Plan," 1973.

CHAPTER 7

Architecture, Site, and Landscape

A. Design Characteristics

1. Materials and Construction Methods

Prior to World War II, the majority of single-family and multi-family dwellings in Arlington County, as well as in the surrounding region, were built of balloon framing or concrete block with a brick veneer. The brick building tradition was deeply instilled in the Washington, D.C., area by the nineteenth century. By the early twentieth century, brick building persisted due to the dominance of the Colonial Revival style and the interest and publicity surrounding the restoration and rebuilding of Colonial Williamsburg in 1927. Before and after World War II, the local masonry and building industry capitalized on the heightened interest in Williamsburg; in particular, single and multi-family dwellings built in the 1930s and 1940s were predominantly brick and Colonial Revival in style.[111] As explained by Martin, "High median income, an affinity for the colonial period, and plentiful local brickyards were key factors contributing to the high proportion of brick homes in the postwar housing boom."[112]

After World War II, shortages of traditional building materials such as brick and lumber led to the use of new products. In August 1947, the *Washington Post* reported that few frame houses were being built in the area. The use of frame instead of brick, however, made the houses more affordable and a "few new dwellings in the better residential areas [could] boast three bedrooms and an $11,000 sales price."[113] One of these neighborhoods was Claremont in Arlington County, which was built by the Claremont Development Corporation in 1946. The architects of Claremont, Allan F. Kamstra and Albert D. Lueders, both worked with Clarence Stein and Henry Wright, who were influential in promoting the Garden City movement. Kamstra and Lueders designed affordable housing that also upheld the ideals of the Garden City Movement. Claremont offered two traditional housing types, the Cape Cod and a two-story "Colonial," but unlike their Arlington County predecessors, the houses in Claremont were clad in Waveline asbestos shingles. Claremont stands out amongst the numerous red brick Cape Cods and two-story Colonial Revival-style single-family houses in Arlington County as a conscious effort to gain public acceptance of nontraditional building materials by using traditional forms.[114]

As new house forms and styles became popular in the years following World War II, more non-traditional houses were built using non-traditional materials. The majority of the houses in Virginia Heights, built by Old Dominion Development Corporation in 1950, used frame construction with exteriors clad in asbestos siding with projecting front gables clad in Perma-stone or brick veneer (Figure 9).[115] Despite the efforts to use cheaper and more readily available building materials, the prevalence of brick in Arlington County's postwar construction is visible throughout subdivisions built after World War II. Brick was often used in combination with asbestos siding, stone, or even Formstone, but it was most often the primary exterior cladding of the house.

The high construction and land costs in Arlington County also led builders to use standardized plans with minimal complexity and differentiation to reduce costs. By using one basic design and varying the details, such as the door surround, or by varying the houses between two designs, such as a two-story Colonial and a one-story Ranch, developers were able to offer houses at a faster rate and at a lower cost.

[111] Martin, 77.
[112] Martin, 79.
[113] "What's In the Future," *Washington Post,* 10 August 1947.
[114] EHT Traceries, Claremont Historic District National Register of Historic Places Nomination.
[115] EHT Traceries, Virginia Heights Historic District National Register Nomination.

Figure 9. This house in Virginia Heights, built in 1950, is clad with Formstone, a non-traditional material introduced on Arlington houses in the 1950s (Mead & Hunt photograph).

These construction methods were synonymous with postwar development and can be seen throughout Arlington County.

2. Merchant Builders and the Use of Architects

During the postwar housing boom, the relationship between builders and architects shifted from "one of mutual skepticism to increasing cooperation. Stereotypical perceptions characterized the modernist architect as a social reformer preoccupied with avant-garde aesthetics, and the tract builder [developer] as a speculative profiteer that clung to conservative mainstream taste."[116] The Washington, D.C., home building market was one that promoted builder-architect collaboration. The increase in population that drove the postwar housing market also brought a large number of architects to the area. In addition, the high median income and cosmopolitan nature of the city also contributed to an appreciation of contemporary design. The city was also the headquarters for the American Institute of Architects (AIA) and the National Association of Home Builders, which brought coordinated efforts to promote builder-architect collaboration during the 1950s.[117]

Builders and architects had been working together in Arlington County prior to World War II. Mace Properties, for example, employed architect Harry E. Ormston to aid in the design of the single-family houses in Westover between 1938 and 1942, and Meadowbrook used architect Robert O. Scholz in the design of its single-family houses in Arlington Forest in 1938.[118] Both of these subdivisions were FHA-insured, and the house designs were based on plans illustrated in FHA's Principles of Planning Small Houses.[119]

One of the early examples of postwar builder/architect collaboration in Arlington County is in the subdivision of Claremont. The Claremont Development Corporation hired architects Allan F. Kamstra and Albert D. Lueders to design the Cape Cod and Colonial houses in Claremont in 1946. As discussed above, both Kamstra and Lueders were known for their involvement in the design of low-cost neighborhoods and also served as the architects of the garden-apartment complex of Buckingham in Arlington County. Although the designs for the houses in Claremont were by no means elaborate and also followed the design aspects illustrated in Principles of Planning Small Houses, the use of Kamstra and Lueders illustrates the involvement of architects in Arlington's subdivisions.

Arlington merchant builders Broyhill and Mace also worked with architects in the postwar period to design houses in the subdivisions they developed. In 1948 Broyhill developed "Broyhill's Addition" to Arlington Forest and employed Arlington County architect J. Raymond Mims to design the two-story Colonial Revival houses. Mims, originally from Luray, Virginia, established the firm of Mims, Speake and Company in the 1910s and opened his architectural firm in Arlington County in 1938 at 2429 Wilson Boulevard. Mims designed several residential and commercial buildings in Arlington and its neighboring counties over his 40-year career. Mace also used architects in its postwar subdivisions. Between 1948 and 1949, Mace constructed 53 houses in Sections 4, 5, and 6 of Westover Park and employed Washington, D.C., architect Albert Sidney Johnston Stephens.[120]

Although the climate of Washington, D.C., promoted the use of architects and modern design, the houses in Arlington built by merchant builders and designed in collaboration with architects are not the contemporary-style houses that are often associated with the use of an architect. In most cases in Arlington County, the architects were used to design traditional two-story Colonials, Cape Cods, and standard brick ramblers. This suggests that the architects were hired by builders to ensure quality design practices and that the houses would be FHA-insured. It also emphasizes the preference for traditional dwellings in Arlington County.[121]

[116] Martin, 103.
[117] Martin, 103-105.
[118] EHT Traceries, Westover Historic District National Register Nomination, 140; Arlington County Preservation Program, 172.
[119] Federal Housing Administration, *Principles of Planning Small Houses,* 1.
[120] Arlington County Preservation Program, 5; "J. Raymond Mims, 79; Architect, Civic Leader," *Washington Post,* 24 December 1965; EHT Traceries, Westover Historic District National Register Nomination, 140.
[121] Martin, 113.

B. Popular Architectural Forms and Styles

1. Minimal Traditional

As housing shortages reached all-time highs after World War II, many developers built small, modest dwellings in Arlington County in response. These Minimal Traditional dwellings were often situated on smaller lots and were offered at a lower cost than their prewar counterparts. The houses were typically one-story with an L-shaped form, varied only by exterior cladding, windows, and entrance stoops or porches. One subdivision example in Arlington County is Virginia Heights, which has over 50 Minimal Traditional houses built by Old Dominion developers. The Minimal Traditional model, built in 1950, is a small one-story house with a projecting front gable. The five-room house features two bedrooms and one bath. The model had two variations determined by the location of the primary entrance. The houses were further diversified by different window types, such as six-over-six wood sash or two-over-two horizontal wood sash, and exterior cladding material, including asbestos shingles, Formstone, and brick (see Figure 9).[122] Minimal Traditional houses are also common in lower-income neighborhoods in Arlington County, such as Nauck, where the form was often varied by facing the gable end towards the street, both for variety and to accommodate long, narrow lots.

2. Cape Cod

The Cape Cod house, along with the two-story Colonial, was one of the most popular house forms in the Washington region and in Arlington County before and after World War II. The small, one-story, side-gable houses typically had a central chimney in the Northeast, but in the Washington area, the Cape Cod typically displayed a gable-end chimney, illustrating the regional folk preferences in the Tidewater and Mid-Atlantic. The Cape Cod was particularly prevalent in the Washington, D.C., area because of its affordability, costing between $7,000 and $10,000 in the late 1940s. Cape Cod houses on small lots were emblematic of the postwar developments in the Washington area.[123] By the late 1940s, the Cape Cod was often larger than its predecessors and had a steeply-pitched roof that allowed for an upper story illuminated by dormers and gable-end windows.

In Arlington County, Cape Cod houses were individualized by varying materials, ornamentation, and porches. Cape Cods were typically constructed of brick with gabled dormers, an exterior-end chimney, and six-over-six wood-sash windows. The houses were symmetrically fenestrated, and the centered main entrance was often enhanced by a Colonial Revival-style door surround. Additional ornamentation commonly consisted of ogee or dentil cornices.[124] Examples of the postwar Cape Cod are located in the subdivision of Country Club Hills and were built by M.T. Broyhill and Sons in 1948. Similar to examples built before the war, these Cape Cods were brick with front-gabled dormers, a dentil cornice, and an exterior-end brick chimney.[125]

The popularity of the Cape Cod was also evident in less expensive neighborhoods directly after World War II, which emphasizes the comfort and popularity of the style and the need for inexpensive housing. In order to keep costs low, many postwar Cape Cods lacked ornamentation or had simple ornamentation that was suggestive of the Colonial Revival style. These modest Cape Cod houses kept the traditional one-and-a-half-story, three-bay form. Examples of modest Cape Cods are located in the subdivision of Claremont, located in southwestern Arlington County. Like the Colonial model, the Cape Cod in Claremont was built of wood framing with asbestos siding. The Cape Cod offered five rooms (two bedrooms) with an attic that was available for future expansion. Thus, as built, many of the houses lacked the gabled dormers on the front unless the attic was finished. The Cape Cod model in Claremont was sold for $11,500 in 1948 with a down payment of $2,900 and monthly payments of $61 a month with a 4.5 percent FHA-insured mortgage.[126] At this price, the Claremont Cape Cod offered a full basement, a fireplace, oak floors, and plastered walls and ceilings (see Figure 10).[127]

As the Ranch house became more popular in the late 1940s and early 1950s, its popular features, such as large picture windows and attached garages, began to influence the traditional form of the Cape Cod in Arlington County. The houses retained the one-and-a-half-story, three-bay wide form; however, many exhibited a large picture window on the front facade and/or a projecting front gabled bay. Others incorporated garages into the design, with a one-bay garage attached to the side elevation.[128]

[122] EHT Traceries, Virginia Heights Historic District National Register Nomination, 36.

[123] Martin, 80.

[124] EHT Traceries, *Phase X Architectural Survey Report of Arlington County, Virginia,* 68; EHT Traceries *Phase XI Architectural Survey Report of Arlington County, Virginia,* 25.

[125] EHT Traceries, *Phase X Architectural Survey Report of Arlington County, Virginia,* 24.

[126] EHT Traceries, Claremont Historic District National Register Nomination, 110.

[127] "Ready for Occupancy," *Washington Post,* 20 June 1948.

[128] Traceries, *Phase X Architectural Survey Report of Arlington County, Virginia,* 35; EHT Traceries, *Phase VIII Architectural Survey Report of Arlington County, Virginia* (Washington, D.C.: 2004), 19.

Figure 10. 1948 Advertisement for Claremont showing typical housing styles and forms offered in the postwar period (Washington Post).

These modifications to the Cape Cod emphasize the popularity of its form and the desire to attract home buyers who preferred traditional houses but also wanted the modern features of the Ranch house. Several examples of this Cape Cod type were built in 1948 by Milton G. and Maude S. Smith in the Williamsburg area of Arlington County.[129]

[129] EHT Traceries, *Phase X Architectural Survey Report of Arlington County, Virginia,* 34, 69.

3. Two-story Massed Form

Even as the Ranch house and other modern forms began to dominate the residential housing market after World War II across the county, the two-story massed form, particularly with Colonial Revival-style influences, resonated in Arlington County. As explained by Christopher Martin, "the relatively high income level [in the Washington metropolitan area] combined with a brick building tradition reinforced by admiration of nearby Williamsburg, resulted in a suburban landscape dominated by conservative brick houses displaying variations of the Colonial Revival."[130] In the early twentieth century, one of the "biggest factors influencing the local and regional preference for brick was the dominance of the Colonial Revival in architectural taste."[131] Colonial Revival was the chosen style for numerous apartment buildings and housing developments supported by the FHA prior to World War II, especially in Arlington County. Colonial Village and Buckingham, both garden apartment complexes, and Westover Village, a single-family housing development, all consisted of red brick Colonial Revival-style buildings and were financed through FHA-backed loans.

The ubiquity of the two-story Colonial dwelling in Arlington County was also a result of the need for fast, inexpensive housing. By building similar houses of similar materials, it allowed for faster construction times and lower construction costs. As the *Washington Post* stated, "Since the two-story brick homes are essentially out of the same mold, prices vary little for the same product. Land cost and extra trimmings make up the difference (see Figures 11 and 12)."[132]

The two-story Colonial was a larger alternative to the Cape Cod. The houses typically had a box-like form and side-gable roofs; however, hipped roofs were also common and were often called "Georgian." The facade commonly displayed either a two-part fenestration, with a single window and door on the first story, or a three-part central hall version, with a centered door flanked by single windows. The exteriors often featured minimal classic details such as triangular or semicircular pediments over the main entry or dentil cornices.[133]

In Arlington County, two-story Colonials built directly after World War II were more modest than most prewar houses to meet the housing and economic demands of the postwar home buyer. Typical features of houses built of this type include accentuated main entry doors, symmetrical facades, single and paired multi-paned double-hung sash windows, and side gable or hipped roofs. The repetition of form and detailing typically indicate the mass production by

[130] Martin, 61.
[131] Martin, 77.
[132] Martin, 77.
[133] Martin, 82.

Figure 11. 1949 Advertisement for Colonial Revival-style houses in Northern Arlington by Broyhill (Washington Post).

Figure 12. Examples of Broyhill's Colonial Revival-style houses as built at 2541 and 2535 23rd Road North, built in 1949 (Louis Berger photograph).

one developer or builder. In many instances, the houses continued the traditional two-story, three-bay form, but often lacked the classical ornamentation that is characteristic of the Colonial Revival style.

The subdivision of Dominion Hills in Arlington County is a good example of this modest ornamentation and repetition in design. Built by Mace Properties between 1945 and 1948, the first section of Dominion Hills consisted of two-story Colonials that are nearly identical in form, massing, design, materials, ornamentation, and setback. The houses exhibit a rectangular plan, side-gable asphalt-shingled roofs with shallow cornices and false returns, and a three-bay facade with an off-set entrance. The exterior walls are clad in brick veneer with soldier-coursed water tables and belt courses. Windows are six-over-six wood-sash flanked by false louvered shutters. Each house has an exterior-end brick chimney. Distinction between

the houses was only achieved by variance of the Colonial Revival-style door surround, a technique that is common in Arlington County. Typically door surrounds, built of wood, incorporated fluted or plain Tuscan pilasters, ogee molded architraves and cornices, dentil cornices, keystones, or pediments. The pilasters were often capped with closed or open triangular or semicircular pediments. Mace Properties was one of the prolific development companies in Arlington County that used one basic two-story Colonial Revival-style form that merely differed by their Colonial Revival-style door surrounds.[134]

Although the majority of two-story Colonial Revival-style houses built in Arlington County after World War II were built of concrete block or wood frame with a brick veneer, some examples with alternative cladding were built. One example is in the subdivision of Claremont, which was built by the Claremont Development Corporation between 1946 and 1949. Here, the two-story, double-pile houses had a box-like form with a two-bay facade. To lower the price and avoid problems acquiring brick due to shortages, the houses were clad in asbestos siding. The houses were differentiated by the color of the siding and by the simple Colonial Revival-style door surrounds or porticos on the main entrances. The two-story model offered six rooms, including three bedrooms, and was a larger alternative to the Cape Cod model that was also offered in Claremont. The Colonial in Claremont was offered at $11,650 in 1948 (see Figure 10).[135]

Alternative cladding was also used to provide differentiation between houses of a similar or identical form. Since many of the two-story Colonial Revival-style houses built in Arlington County were very similar in plan, especially those built by one developer, the houses were also varied by the use of cladding materials. One common variation was a two-story, three-bay house with its first story clad in stretcher or five-course American-bond brick and the second story clad in horizontal siding. Mace Properties used this technique in Dominion Hills with a model that had its second story clad in asbestos siding. In some examples, the second stories of the houses were built with an overhang, or jetty, that is illustrative of seventeenth-century Colonial houses. Post-World War II houses in Arlington County had shallower overhangs than their Colonial-era predecessors but were still suggestive of this Colonial building feature. Common to Colonial-era buildings, the corners of the postwar houses' overhangs were often finished with a corner drop or pendant.[136]

The popularity of the two-story Colonial began to decline in the Washington metropolitan area and across the country during the 1950s, as preferences shifted towards Ranch variations; however, the two-story Colonial form continued to be built in many of the northern subdivisions of Arlington County. As the lower-cost houses began to shift toward Ranch houses and ramblers, builders still preferred the Colonial Revival-style for larger, upscale houses.[137]

4. Ranches and Ramblers

Although the two-story Colonial Revival-style house dominated the postwar residential landscape of Arlington County, the Ranch house slowly began to emerge in both newly developed subdivisions and established neighborhoods. The *Washington Post* noted in 1948 that in Arlington County, "Ramblers are few and far between and nearly all are custom-built."[138]

Builders and developers began constructing Ranch houses in the Washington, D.C., metropolitan area by the late 1940s, and their popularity grew tremendously during the 1950s. Ranch houses were typically one-story with a rectangular footprint and a side-gable roof, but local builders often modified the Ranch house with the addition of a real or false cross-gable roof to one side, often over the front door. Variations of the Ranch house included a version with a projecting front gable, creating an L-shaped footprint, and a larger version with a U- or H-shaped footprint with two projecting gables. The latter is a common form of custom-designed houses in the region.[139]

Local builders commonly referred to Ranch houses as "ramblers," a name still used today by residents and area realtors. Builders satisfied the buyer's need for two levels of living space by creating "basement ramblers," Ranch houses with full basements. By the 1950s ramblers were the most popular type of house in real estate ads. A 1954 Washington area study revealed that the 63.5 percent of those considering a new house preferred "basement ramblers" while 16.5 percent favored the Colonial, 11.4 percent Cape Cod, and 0.3 percent Split-level.[140]

Ranch houses in Arlington County were often advertised as "California-style" or "California Type." One unique type of Ranch house built in Arlington County and referred to as a "California Type" had a modest square footprint with a pyramidal roof and a large, shouldered, exterior-end chimney on the facade.[141] Examples of this house type are seen in the subdivision of Richmond Hill (Highland Park Overlee

[134] EHT Traceries, *Phase XI Architectural Survey Report of Arlington County, Virginia,* 18-19.
[135] EHT Traceries, Claremont Historic District National Register Nomination, 110; "Ready for Occupancy."
[136] EHT Traceries, *Phase X Architectural Survey Report of Arlington County, Virginia,* 23, 66.
[137] EHT Traceries, *Phase IX Architectural Survey Report of Arlington County, Virginia* (Washington, D.C.: 2006), 21-22.
[138] Harness.
[139] Martin, 86.
[140] Martin, 86.
[141] "5617 N 214th Street, Arlington, VA," *Washington Post,* 28 March 1948.

Knolls) and Glencarlyn. These examples were constructed by different builders: C.J. Saxer Construction, M. Company, M. Pomponio and Sons, and John H. Gullett. The dwellings are constructed of concrete block and covered in stucco, which added to the California character of the house. Other notable features are their unassuming, asymmetrically placed recessed entries and large window openings that originally held metal casements.[142] Ranch houses built in Virginia Heights in Arlington County between 1951 and 1952 were also advertised as "California Ranch Style." The houses featured the "very latest in modern time saving equipment and represent the finest in new home construction."[143] The Virginia Heights houses were advertised as one-story with a full basement and a screened-in porch.[144]

The early Transitional Ranch houses in Arlington County commonly lacked garages, which provided a smaller, truncated appearance (see Figure 13). The lack of garages most likely reflected the smaller available lots in Arlington County. In the 1950s, the Ranch houses in Arlington County were larger, often built on a sloping lot that incorporated a walkout basement or garage located on the basement level into the design. These later Ranch houses were more typical in the sense that they were large, horizontal buildings that emphasized the integration of the automobile into the design of the house.

As the Ranch style grew in popularity, developers and builders frequently offered both two-story Colonials and Ranch houses as options for buyers, such as those in Broyhill's subdivision of Carlyn Springs. Here, Broyhill built the two-story Colonial Revival-style dwellings on the corner lots to instill the traditional nature of the subdivision and built one-story Ranch houses on the interior lots.[145] In addition, Ranch houses often appeared in existing neighborhoods where land was available; thus a cluster of Ranch houses often stands on the edge of a subdivision and greatly contrasts with the neighboring two-story Colonials and Cape Cods. Illustrating this phenomenon and the growing preference for Ranch houses, the Claremont Development Corporation hired builders Banks and Lee to build 36 Ranch houses on the eastern edge of Claremont in 1954.[146]

Figure 13. 1953 Advertisement for a Transitional Ranch house in Boulevard Manor (Washington Post).

5. Split-levels and Split-foyers

Although the Ranch dominated the housing market as the preferred house type for potential buyers, the Split-level's popularity rose dramatically two years later; in 1954 only 0.3 percent favored Split-levels and by 1956 it grew to 34.3 percent. Builders introduced the Split-level to the Washington area by late 1953 and immediately attracted large crowds and advanced sales. In the Crestwood subdivision in Springfield, Virginia, southwest of Arlington County, the developer pre-sold 108 of the 195 planned Split-levels. Locally, the Split-level was popular during the mid-1950s and remained so through the early 1960s.[147]

Although Arlington County lacks a large subdivision of all Split-levels, builders and developers did erect Split-levels in groups, along with Ranches or Colonials, or on single lots available in existing subdivisions. The construction of Split-level houses in Arlington County marked a shift toward larger and more expensive houses compared to the small, affordable single-family houses built directly after World War II. Although not as common as Split-levels, Split-foyers were also built in Arlington County during the 1950s. Split-foyers, also called raised Ranches, bi-levels, or bi-level

[142] EHT Traceries, *Phase XI Architectural Survey Report of Arlington County, Virginia,* 41-42.
[143] "Virginia Heights," *Washington Post,* 20 January 1952.
[144] "Virginia Heights;" *Washington Post,* 20 January 1952; EHT Traceries, Virginia Heights Historic District National Register Nomination, 36.
[145] Martin, 84-85.
[146] EHT Traceries, Claremont Historic District National Register Nomination, 112.
[147] Martin, 88-89.

Figure 14. 1955 Advertisement for a Split-level house in Jamestown Village (Washington Post).

ramblers in the Washington metropolitan area, offered many of the traditional aspects of two-story Colonials and in a more traditional appearance compared to Split-levels. These houses had minimal ornamentation, yet had a two-story appearance, often had symmetrical fenestration, and louvered-shuttered windows. Garages were almost always incorporated into the design of Split-foyers.

Many Split-levels, along with larger Ranch houses, were built in the northeastern sections of Arlington County near the Washington Golf and Country Club, which was mostly developed in the 1950s. These subdivisions adjacent to the country club typically were composed of larger lots, thereby affording the construction of Split-level houses. A Split-level house in Country Club Hills, for example, was marketed as the "Washington Post Home of '53." The house, built by Crestdale Inc., had four bedrooms and air-conditioning throughout at a cost of $38,750.[148] Split-level houses were also built in Jamestown Village, a subdivision also located near the country club. Advertisements for Jamestown Village illustrate a Split-level built on a sloping lot, with a garage on the basement level. The Jamestown Village Split-levels were slightly smaller than those built by Crestdale Inc., with three bedrooms and a cost of $28,750 in 1955 (see Figure 14).[149]

6. Contemporary

Beginning in 1948, the Washington, D.C., metropolitan area saw its first neighborhood of contemporary-style houses. Hollin Hills, located in Fairfax County, Virginia, was the collaboration of developer Robert Davenport and Washington, D.C., architect Charles M. Goodman. Hollin Hills was nationally and internationally recognized in trade journals and consumer magazines early in its development. Goodman's modular, post-and-beam modern houses were known for their horizontality, large spans of windows, and butterfly and flat roofs that invoked influences from modernist architect Mies van der Rohe. Prices for the initial three models ranged from $12,000 to $20,000.[150] By the time the last Goodman-design house was completed in 1971, Hollin Hills consisted of 458 single-family dwellings. Holmes Run Acres, also located in Fairfax County, followed in 1950 with its first houses completed in 1951. Holmes Run Acres was developed by Luria Brothers with architects Donald Lethbridge and Nicholas Satterlee and consisted of 281 contemporary single-family dwellings.[151]

In Arlington County, the popularity of contemporary houses similar to Hollin Hills and Holmes Run Acres is illustrated in singularly built houses located in established neighborhoods. Known examples of Contemporary houses are located in northern and northwestern Arlington County and include a single-family house at North Dinwiddie Street in the Clark & Hill subdivision of Yorktown, built by builder Will A. Lewis in 1948. The distinctive characteristics of the wood-frame house are its shallow-pitched side-gable roof with overhanging eaves, an open, inset bay on the east elevation that doubles as a porch and a carport, and large tripartite windows with fixed one-light windows in the center and one-light awning windows above and below.

A second example is located on Old Dominion Drive in the Woodland Acres subdivision of Rock Spring. The one-story house was built in 1948 by builder E.S. Cormany in the Woodland Acres subdivision. The house is built of concrete block with a brick veneer and has a single sloped roof with wide eaves and attached carport. The roads in Woodland Acres are not linear like most traditional mid-century subdivisions in Arlington County; instead they meander and respond to the existing topography, allowing for expansive wooded yards and vistas, not unlike the roads and surroundings of Hollin Hills and Holmes Run Acres.[152] Similar topography in Bellevue Forest, along with a subdivider sell-

[148] "Your Washington Post Home of '53," *Washington Post,* 27 September 1953.

[149] "Jamestown Village, A New Group of Fine Split Levels and Colonial Brick Ramblers," *Washington Post,* 6 March 1955.

[150] Martin, 115-118.

[151] EHT Traceries, *Phase X Architectural Survey Report of Arlington County, Virginia,* 36-37.

[152] EHT Traceries, *Phase X Architectural Survey Report of Arlington County, Virginia,* 36-37.

Figure 15. A Contemporary-style house located at 3710 30th Street North in Bellevue Forest, built in 1963 (Louis Berger photograph).

ing individual lots, allowed for variation and several contemporary houses. Examples include 3800 30th Street North and 3710 30th Street North (see Figure 15). In particular, the house at 3710 30th Street South is similar to many of Goodman's designs with a small rectangular footprint, flat roof, the use of brick and vertical board siding, and large spans of floor-to-ceiling windows.

Although Contemporary-style houses in Arlington County are rare, examples do exist and demonstrate the shift to a new type of housing in the decades after the war. They were most likely influenced by the nationally recognized and nearby Hollin Hills and Holmes Run Acres. These houses occur more often in areas that were developed by subdividers who sold individual lots rather than as large-scale developments.

7. Pre-fabricated Houses

As plants formerly producing materials for World War II began to shift towards the manufacturing of prefabricated housing, the Washington, D.C., metropolitan area anticipated that this would help ease its desperate need for housing. However, the prefabricated market faced prejudice from buyers who favored more traditional houses and materials. Thus, despite the tremendous need for housing, the construction of prefabricated houses in Arlington County and the rest of the metropolitan area began slowly.

One of the first subdivisions specifically planned for prefabricated houses in the region was Virginia Heights, located on the southwestern edge of Arlington County, with a few lots spilling over into Fairfax County. The neighborhood, owned and designed by Adolph K. N. Waterval, consisted of approximately 21 acres with 107 lots. Waterval, an architect and planner, was involved with the development of Langston Terrace, in Washington, D.C., the first public housing project in the United States. Waterval chose the William H. Harmon Corporation of Philadelphia to erect 104 steel homes in Virginia Heights. The *Washington Post* reported in "Steel Home Attracts Visitors" that the Virginia Heights Harmon house was the first built in the area.[153] The model house was open to the public in August 1947. The *Washington Post* hailed it a success and reported, "The home's flowing lines are eye-catching. It is well situated on a wooded lot, with landscaped sodded terrain. It has the 'House Beautiful' look."[154] The first Harmon house in Virginia Heights (5209 12th Street South) was also its last, as the Harmon Corporation went out of business shortly thereafter.[155]

To promote prefabricated houses, many dealers constructed model houses to draw potential buyers. In 1947 a Gunnison House was erected in Chevy Chase View, Maryland, to discredit "the widely accepted theory that prefabs are necessarily small, boxy, jerry-built dwellings usually situated in low cost housing areas."[156] The three-bedroom "luxury model" was built on a $3,000 lot, and the cost of the house was $13,700. The house was built in an existing upscale neighborhood with houses ranging from $16,000 to $50,000. The *Washington Post* reported that this was not the first Gunnison House to be constructed in the area; 17 were built before World War II, the first in 1936, and 13 had been built in the Washington, D.C., area since 1946. Gunnison had several dealers in the metropolitan area. Newspaper advertisements show that the Carey Winston Company, located in northwest D.C., served Arlington and Fairfax Counties and the City of Alexandria in Virginia.[157] One Gunnison House was built in Virginia Heights after the failure of Waterval's plan for the Harmon houses. The Gunnison "Rambler," located at 1231 South Forest Drive, was advertised in the *Washington Post* as having three bedrooms, a stone fireplace, and a "fully equipped" kitchen (see Figure 16).[158]

Lustron Corporation joined its competition in May 1948 when it erected a model house in Northwest Washington, D.C. The enameled metal panel house attracted 75,000 visitors by the end of the summer. Lustron Corporation President Carl Strandlund appointed Carlton Construction Company as the official dealer and builder of Lustrons in the Washington,

[153] "Steel Home Attracts Visitors," *Washington Post,* 21 December 1947.
[154] "Unique, Fast Rising Steel Prefabs Boost Factory-Made Housing," *Washington Post,* 3 August 1947.
[155] EHT Traceries, Virginia Heights Historic District National Register Nomination, 33-34.
[156] "Luxury Prefab Holds Own in Fine Home Area," *Washington Post,* 1 June 1947.
[157] "Luxury Prefab Holds Own in Fine Home Area."
[158] "Virginia Heights," *Washington Post,* 5 February 1950.

Figure 16. A Gunnison House erected in 1951 at 1231 South Forest Drive in Virginia Heights (Louis Berger photograph).

Figure 17. A Lustron house erected in 1949 at 1124 South Forest Drive in Virginia Heights (Mead & Hunt photograph).

D.C., area, including Arlington County. The area's first sales office opened in August of the same year.[159]

Between 1948 and 1949, 11 Lustrons were built in Arlington County. The first Lustron was built in the established neighborhood of Maywood in 1948. In 1949 five Lustrons were built in Virginia Heights (see Figure 17). After Waterval's plan with the Harmon Corporation failed, he sold the majority of the lots to Old Dominion Development Corporation; however, Waterval retained five lots that would become the sites for Lustrons. Four of the five Lustrons were built by the Construction Associates of Portsmouth, Virginia, in 1949. The Construction Associates built two additional Lustrons in Arlington County in 1949 in the neighborhoods of Old Dominion and Cherrydale. The other Lustrons, located in the neighborhoods of Arlington Forest, Barcroft, Ballston-Virginia Square, and Maywood, were built by Macfarlane Enterprises and the Carlton Construction Corporation.[160]

In addition to Gunnison and Lustron, other prefabricated housing firms operating in the area in 1947 included Arlington Homes, Skill-Craft, and Johnson Quality Homes.[161] In 1950 the Washington Post reported that the acceptance of prefab houses was growing "and some local builders and realtors think they're in on the hottest thing on the market.[162] At least a half dozen new prefabricated housing firms entered the market in 1950 and aimed at a selling price of $10,000 or under. National Homes Corporation was one of the new firms that began to offer prefab houses in the Washington region in 1950, one of the largest manufacturers of prefab houses at that time.[163]

In 1955 the Washington, D.C., supply company of Barber & Ross entered the local prefabricated home market when it established its "Packaged Home Division" that supplied a buyer with the components for a do-it-yourself three-bedroom house. The package, complete with nails and paintbrushes, was priced at $3,495 and the option of monthly payments of $35. The company advertised its first 1,200-square-foot model, the "Sun Valley," as something "the average man or family could build using their own time and labor."[164] The buyer received separate truckloads of materials for each stage of construction. The package did not include electric materials or plumbing, and the buyer was responsible for the slab foundation or basement. Shipping within 100 miles of Washington, D.C., was free. In order to attract buyers and show the finished product, the company built a model home in Northeast Washington, D.C. The idea was the brainchild of S. Ross Lipscomb, president of the company.[165] By 1956, the company had sold over 600 houses and began to offer packaged heating and plumbing.[166] Illustrating the rising popularity of prefabricated housing in the Washington area, Barber & Ross opened a second manufacturing plant in Leesburg, Virginia, in 1960. By that time, the company offered seven different models for buyers to choose from. The company offered a one-story Ranch house model called "The Texan" or "The Californian," a Cape Cod model called "The New Englander," and two Split-level models called "The Capri" and "The Westport."[167]

[159] Cynthia Liccese-Torres and Kim A. O'Connell, *The Illustrious Lustron: A Guide for the Disassembly and Preservation of America's Modern Metal Marvel* (Arlington, Va.: Virginia Community Program, 2007), 9.
[160] Liccese-Torres and O'Connell, 5.
[161] "Luxury Prefab Holds Own in Fine Home Area."
[162] "Looks Like a Big Year for Prefabs," *Washington Post,* 9 April 1950.
[163] "Looks Like a Big Year for Prefabs."
[164] "Handymen Get Tough Challenge," *Washington Post,* 23 October 1955.
[165] "Handymen Get Tough Challenge."
[166] "Over 600 Sold!" *Washington Post,* 27 October 1956.
[167] Martin, 91-92; "Barber & Ross Packaged Homes," *Washington Post,* 4 April 1959.

By 1960, 14 manufacturers had shipped prefabricated houses to the Washington, D.C., area. While most of the manufacturers were based in the Midwest, there were also several in the Washington, D.C., region. In addition to Barber & Ross, other prefabricated housing plants in the area were Lesco Homes in Martinsville, Virginia; Continental Homes in Boones Mill, Virginia; and Maryland Housing Corporation in Baltimore. Nearby Pennsylvania also boasted four prefabricated housing firms with manufacturing plants.[168]

C. Garages and Carports

The initial residential construction taking place after World War II in Arlington County lacked attached garages and carports. The tremendous need for housing resulted in smaller lots and houses, and an attached garaged or carport was not seen as a necessity. Garages also raised the price of the house; thus they were often omitted. These new subdivisions did not have rear alleys like their predecessors, and owners did often construct garages or carports on the side of their houses toward the back yard. As the lots were small, these garages and carports also were small and typically accommodated a single vehicle. In many cases, the garages were built simultaneously with the accompanying house, and the form, style, scale, and cladding materials of both the garage and house were identical.[169]

A 1949 article in the *Washington Post* emphasized the increasing size of garages in relation to the growing size of automobiles: "Parking a big sleek, long 1949 model car in some prewar homes with built-in garages is like berthing the Queen Mary in the Anacostia."[170] Charles M. Goodman, architect of Hollin Hills, pointed out that the new ideal garage size in 1949 was 9 by 20 feet compared to the typical 8 by 18 feet. In 1949 the cost to add a garage to the house was estimated at $1,000, depending on the materials and if a common wall between the garage and the house was used. However, "garages were an exception and not the rule for homes costing under $15,000 in the Washington Area."[171] Incorporated garages became more common in houses that cost $20,000 and higher. The article emphasized the popularity of the carport—"the car port seems to have great possibilities of spreading"—and cited an example of a luxury subdivision in Bethesda, Maryland, that used this "architecture innovation."[172]

In the decades following World War II, attached garages and carports in Arlington County became more commonplace, in particular with the rising popularity of the Ranch house. Some Colonial Revival-style houses did incorporate garages into the main block of the house, often in a one-story wing attached to the side elevation. In other instances, a one-car garage was built on the basement level of the house, in particular if the house was built on a sloping lot. Ranch houses and Split-levels more commonly integrated one or two-car garages into the design of the houses, a number of which were built in the northern subdivisions of Arlington County that were developed in the 1950s where larger lots were available.

D. Landscape and Site Features

House setbacks and orientation to the street were important aspects promoted by the FHA in their recommendations for subdivision design. Thus, houses in Arlington are commonly set back from the street with ample frontage. Although lots in subdivisions developed immediately after World War II tended to be smaller than those developed in the 1950s and early 1960s, the lots still offered rear yards that commonly served as play areas for children, patios and decks, and storage sheds. In many cases, subdivision covenants restricted the placement of fences along the front property line; however, fences often enclosed the rear yards, providing privacy and security. Front yards are commonly more formal than rear yards and display designed landscaping. Mature trees shade both the front and rear yards.

Because many of the postwar houses lack attached garages, paved driveways are commonly located in the front or side yards of houses to provide off-street parking. Concrete sidewalks typically line the streets; however, sidewalks are sometimes absent in subdivisions, such as Belleview Forest and Woodmont in northern Arlington County. In some instances, sidewalks end abruptly on a street, illustrating a change in subdivider or merchant builder, such as in the 2500 block of North Buchanan Street in Old Dominion.

In African-American neighborhoods, lots were typically smaller, houses were set closer to the street, and often some streets were planned as dead ends to cut off access from these neighborhoods. These neighborhoods were further isolated by boundary walls that separated them from adjacent white neighborhoods. As discussed above, African-American neighborhoods initially lacked sidewalks and other public works improvements and did not have the same design conformity as the postwar white neighborhoods. Fences commonly enclose the front yards in African-American neighborhoods.

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[168] Martin, 91.

[169] EHT Traceries, *Phase X Architectural Survey Report of Arlington County, Virginia,* 73-74.

[170] "That Sleek '49 Car Needs a Sizable Garage," *Washington Post,* 8 May 1949.

[171] "That Sleek '49 Car Needs a Sizable Garage."

[172] "That Sleek '49 Car Needs a Sizable Garage."

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Abbreviations and acronyms used without definitions in TRB publications:

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI–NA	Airports Council International–North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HMCRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation