

ASSESSING THE HOUSING PLAN QUALITY AND LOCATIONAL
OUTCOMES IN THE UNITED STATES

A Dissertation

by

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ABSTRACT

Housing plays a central role in connecting individuals, families, and society during human life. To support the goal of providing decent housing at an affordable price in a suitable living environment for all American families, the United States Department of Housing and Urban Development (HUD) creates a financial mechanism to support local jurisdictions through a variety of affordable housing and community development programs. To receive these grants, a local government submits a Consolidated Housing Plan (ConPlan) that analyzes the current conditions, highlights the goal and objectives, and proposes strategies for implementation. Given the importance of this planning document, yet little research undertakes an evaluation of plan quality for ConPlan, its characteristics and its impacts on local communities have never been assessed.

This dissertation develops an evaluation protocol by which ConPlan may be assessed. It then applies to more than 70 cities in the United States. Using an evaluation scorecard, the study assesses the quality of the ConPlan by revealing its characteristics and performances. Then, this dissertation examines external factors that might affect the quality of the ConPlan. Two major groups of external factors, with a total of eleven variables, include planning context and housing stock. These variables are added to three regression models to find significant elements affecting the quality score.

After that, two cities are randomly chosen for case study analysis. These jurisdictions represent high- and low-score in ConPlan's quality. The dissertation

analyzes two major issues include plan implementation and outcomes. The study performs three levels of spatial analysis to address the implementation process: city-level, neighborhood-level, and project-level. These approaches show the mismatch between the location of the needed population and where the public money went to. They shed light on the effectiveness of the planning implementation process in each case study. In addition, the dissertation explores the locational outcomes of the planning process by comparing the conditions before and after adopting ConPlan.

The findings highlight the quality of the plan preparation process and raise some serious questions about how we use public money and how to plan and implement planning documents effectively. Finally, the findings are expected to create guidelines for policymakers and local authorities, and researchers in supporting affordable housing and community development nationwide.

DEDICATION

To me, this dissertation is a genuinely academic journey. I have experienced all ranges of “up and down” during this period. In every step leading to the end of this journey, I feel lucky to receive support from my families, friends, and colleagues.

I dedicate my dissertation work to my father (Bố Dũng), my mother (Mẹ Hồng), and my sister (chị Hà), who nurture me with love, empathy, and discipline. Even though they are far away on the other side of the ocean, their love and attention are always close to supporting my strive.

I dedicate this work to my grandmother (Bà Ngoại). Her love, care, and kindness teach me to become a better person.

I dedicate this work to my son (Anthony/ Tiến-Nam) and daughter (Emily/ Thu-An). Probably it will be a long time until the day they can understand one part of this dissertation (I hope), but the joy of having them in my life has supported my journey.

Especially, I dedicate this work to my wonderful wife, Trang. Having her companion, I am motivated to work harder for our better future. This dissertation, without doubt, cannot be finished without her support emotionally and strategically. She is deserved more than anybody to receive my recognition on this.

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I want to thank my committee members, Dr. Galen Newman, Dr. Wei Li, and Dr. Wesley Highfield, for their guidance and supports throughout this research. By their understanding and experience, each of them has shown me how to identify problems and, more importantly, how to address these issues extensively.

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The plan evaluation process was supported by three graduate students Jessica Lee, Tristan Lanza, Ki Jin Seong of the Department of Landscape Architecture and Urban Planning, and graduate student Trang Le of the Department of Recreation, Park, and Tourism Sciences.

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NOMENCLATURE

HUD	United States Department of Housing and Urban Development
ConPlan	Consolidated Housing Plan
CDBG	Community Development Block Grant Program
HOME	HOME Investment Partnerships Program
CHAS	Comprehensive Housing Affordability Strategy
CDC	Center for Disease Control and Prevention
AMI	Area Median Income
CFR	Code of Federal Regulations
ESG	Emergency Solutions Grants Program
HOPWA	Housing Opportunities for Persons With AIDS
LMI	Low- and Medium- Income population
Non-LMI	Non-Low- and Medium-Income population

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1. INTRODUCTION

Urban planning is a complex process that involves multiple stakeholders, covers a wide range of topics, and makes an impact on different geographic scales for a long time. To assess the quality of urban planning comprehensively and extensively, the approach must clearly define the typology of planning work as well as the timeline when the evaluation takes place. More importantly, each phase in urban planning carries its unique mission with its unique characteristics including stakeholders, objectives, requirements, among others. Therefore, it is important to design a specific evaluation approach to assess the results and efficiency of each planning phase. Provide decent housing at an affordable price in a suitable living environment is the ultimate goal of housing policy.

In the United States, the government creates a financial mechanism that requires local jurisdiction to submit a Consolidated Housing Plan as a condition of receiving funding through the formula block grants. A housing plan aims to increase affordable housing choice and provide quality community development activities for local people, especially low- and moderate-income households. This dissertation assesses the housing plan quality of more than 70 local jurisdictions across the United States to address the knowledge gap about housing plans. In addition, implementation is a critical phase to realize the proposed goals and objectives of any plan. This dissertation uses a case study approach to compare and contrast the Consolidated Housing Plan implementation process. Two cities are chosen from the sample of more than 70 cities across the nation.

This research proposes a three-level analysis for plan implementation in each case study. First, at the city level, data mapping shows the distributions of population and funding. Second, at the neighborhood level, we use the location quotient index to examine the geographic location of beneficiary neighborhoods. Finally, at the project level, spatial analysis analyzes the density and spatial autocorrelation of funded programs and population concentration. Together, these approaches show the funding's location, size, and type, then overlaying them with the distributions of different income groups. The findings highlight the spatial mismatch between population distribution and funding allocation.

Then, the study examines the changes in local communities after plan implementation to learn about the relationship between plan quality, plan implementation, and potential locational outcomes. The findings identify some serious issues regarding the way public dollar was spent at a local level. It raises some significant concerns toward implementing a housing plan and proposes some strategies to increase the efficiency of the planning process

1.1. Urban Planning Evaluation Framework

In this dissertation, I propose the urban planning evaluation framework to comprehensively assess the quality of this process. The framework, shown in Figure 1-1, highlights different planning processes and their equivalent approach. Planning phases are the processes changing a city from “Before planning” to “After planning”. The planning topic that the dissertation focuses on is ConPlan. This is an important plan that

supports affordable housing and community development at the local level. The details of this plan will be discussed extensively in the later sections of this dissertation.

Overall, there are several major phases of this planning process. First, the planning preparation was started by the local government to initiate the efforts toward improving living conditions for local communities. After the preparation process, which normally takes several months to a year, the local government adopts a plan. As the result, this planning document indicates local vision, goal, objectives, strategies to achieve better outcomes for the communities. This document can be seen as a blueprint for a project. It not only indicates the future form and characteristics but also layouts the possible funding sources and how they can be spent to make realize the plan. Therefore, the quality of the planning document also impacts the outcomes and the successes of the project.

After adopting a plan, the implementation process starts. In this phase, the local government and other stakeholders initiate plans and activities proposed in the plan to achieve its goals and objectives. This process holds a fundamental role in the success of the planning program. After implementing the plan, it is expected to bring positive changes to the city and local communities.

Because of these complex processes of planning work, it is critical to have a framework that distinguishes the process and proposes an appropriate approach for each phase and outcome of planning. This dissertation is structured to respectively addresses each of the critical phases and outcomes of the ConPlan. It targets a wide range of local

jurisdictions across the United States to build a practical evaluation protocol and assessment tools for local officers, planning researchers, and local communities.

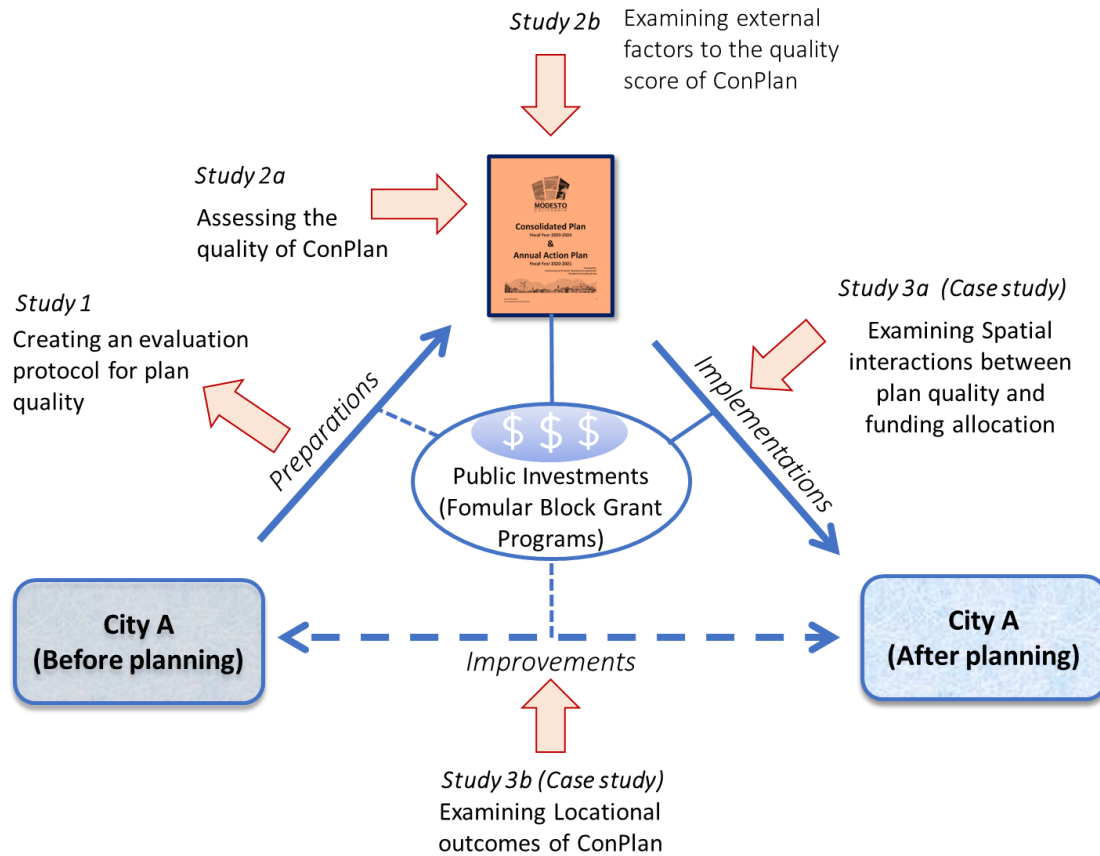


Figure 1-1 Urban Planning Evaluation Framework

1.2. Dissertation Structure

The dissertation is structured as a three-paper content. Each paper represents a study that addresses a critical research question. In the following part, I will present each study and how it supports answering the research questions. The first study seeks to show how to build an evaluation protocol for ConPlan. assess the planning preparation

process of ConPlan. To do that, it used a content analysis approach to quantify the quality based on an evaluation protocol. The protocol is the major component that guides the evaluation process. This study will present a detail process on how to create an evaluation protocol applied for a housing plan in the United States. This study is expected to lay a groundwork for another field in urban planning by showing how to create an evaluation protocol for housing related plan.

In the next study, I will apply this evaluation protocol to assess the quality of housing plan among cities nationwide. The performance of each evaluation criteria will reveal how good the local government prepare for the planning document. In addition, this study also analyzes the external factors that might impact the quality of a planning document. The findings provide local government, communities, researchers, and other stakeholders empirical evidence on what element can potentially contribute a high-quality urban planning product. More importantly, this shows in detail how the evaluation protocol can be applied and, more importantly, prepare for the next and final study.

To access the implementation process and the locational outcomes of a housing plan, this dissertation uses case study approach in the final study. Two cities with similar characteristics will be chosen to represent high and low quality in housing plan. Using the results from the previous studies, the third study in the literature will shed light on how each local government spend public funding. More importantly, the outcomes of their approach will be revealed and compared to show the correlation between housing plan quality and the locational outcomes. Together, three studies in this dissertation will

assess the comprehensive issue of affordable housing and community development of cities across the United States.

2. CREATING AN EVALUATION PROTOCOL: A FUNDAMENTAL STEP TO ASSESS THE QUALITY OF A HOUSING

2.1. Introduction

For society to develop, high quality is expected for every activity. Every product or service places quality and performance as top priorities. Planning is no different. Thus, the need to explore “how well planning processes have been conducted” as well as “how well plans achieve their objectives” appear to be appropriate demands (Berke & Godschalk, 2009). Given the increasing importance to the success of an initiative that the public has placed on plans, there is a need to determine the quality of this vital document. The plan quality evaluation approach seems to address this need in society as shown by the growing number of publications in this field since the 1990s. The development of plan quality evaluation literature has been reviewed and discussed extensively in recent studies (Berke & Godschalk, 2009; Lyles & Stevens, 2014; Stevens et al., 2014). Plan quality evaluation is becoming a rising field in planning research that attracts numerous researchers in developing and refining the theories as well as expanding the practical knowledge (Baer, 1997; Berke & Godschalk, 2009; Berke et al., 2006; Lyles & Stevens, 2014; Stevens et al., 2014).

2.2. Meta-Analysis of Plan Quality Evaluation

This is not the first study that attempts to analyze the publications in plan quality evaluation literature. Two previous meta-analysis studies have been conducted. The first one was published by Berke and Godschalk (2009) and the second one belongs to Lyles and Stevens (2014). The early paper scrutinized 16 studies between 1997 and 2007 And

the later one, published five years later, extended the time frame of the analysis from 1994 to 2012 and included a total of 43 publications. It has been about the same amount of time between the first two studies, and I realize the need for an update and a greater understanding of the current rise of this literature. Therefore, the research focuses on plan quality evaluation literature between 1993 and 2019. Since the latest literature review, the total number of publications has risen to 55. I pursue this approach for two most important reasons. The first is to understand how the evaluation protocols have been created in the literature. The second is to examine the unpopularity of affordable housing-related studies in this field. Thus, I believe that meta-analysis is the best way to provide us a clear picture of plan evaluation literature and what important knowledge is still missing.

Some major features of this literature canvas will be described below to depict the image of plan quality evaluation literature to date. Then, I will point out the literature gaps and how this study can fill them. The full list of all publications is shown in Appendix A.

2.2.1. General characteristics of plan quality evaluation

2.2.1.1. Topic

Among 55 studies, environment-related topics, including natural hazards, environmental management, ecosystem management, green infrastructure, and climate change, are dominant with a proportion of 43 studies, equal to about 80% of all plan evaluation literature. There are eight studies (about 15% of the total publications) in the

built Environment field. My concern, affordable housing-related studies, falls into this group. The complete detailed information is listed in the table in the Appendix section.

Overall, hazard management and climate change share the top position in the list of dominant research topics. Each has 13 publications between 1993 and 2019. Looking at the timeline, there is a clear trend between these two. While the focus on hazard management seemed to have increased during the 1990s and 2000s, most climate change-related publications have appeared during the 2010s. These two topics overlap somewhat, but it clearly shows the movement of concern on the overall issue of the environment, via the number of publications, in recent years. On another note, affordable housing is among the earliest topics using content analysis in plan quality evaluation literature. In the early 1990s, Connerly and Muller (1993) published a study evaluating housing elements in a local comprehensive plan. However, until now, there is only one other study in plan evaluation literature that focuses on affordable housing. This latest one, conducted by Hoch (2007), was published over two decades ago. Looking at the big picture of plan evaluation topics, I have to admit that housing-related topics are outside of the plan quality evaluation mainstream. Therefore, I hope to provide a necessary tool, an evaluation protocol, for the stakeholders so they will be able to assess the quality of a housing plan independently and comprehensively. The list of topics and its description is shown in the Appendix B

2.2.1.2. Geographic Settings

The plan evaluation studies took place in a variety of geographical settings. I categorized these studies into four groups based on the location of the study: international, foreign country, United States multiple states, and United States single states. The international setting is when the study addresses issues in two or more countries in their analysis. Three studies look at the context of international planning. Among these, a recent publication authored by Woodruff and Regan (2019) examines a large number of nations (38 countries) when they tested the content of national climate change plans. The other two international studies involved countries on the list of the

Organization for Economic Co-operation and Development (OECD): the USA, Canada, Australia, and England. (Hamin, 2011; Preston et al., 2011).

Eight of the 55 studies were conducted solely in countries outside of the USA. Among these, New Zealand had the most with three studies from Dr. Berke and his colleagues (1994; 1999; 2002). Two studies took place in Canada, one in 2014 (Baynham & Stevens) and the other in 2019 (Guyadeen et al.). The other three publications were located in the Netherlands (Termorshuizen et al., 2007), Australia (Baker et al., 2012), and China (Li & Song, 2016).

The third group includes studies conducted in two or more states in the United States. There are 22 of them, equal to 40% of the total plan quality evaluation publications. There is a similar number of publications that chose a single state as the location for research. Among these, North Carolina and Florida are the two states most chosen in a study. While North Carolina has been chosen seven times, six studies use Florida as the only location of their research. Finally, there are five states, Arizona, Illinois, Michigan, Texas, and Wisconsin, selected in single-state studies. The detailed information of geographic settings is listed in Appendix C.

2.2.1.3. Types of Jurisdictions

In the United States and other countries, the government at any level has prepared different plans to accommodate the diverse groups of programs or initiatives in the local areas. In this section, I only focus on 44 publications in the United States. There remain five levels of administrations: (1) small community (village, tribal areas), (2) local municipality (city, township), (3) county, (4) regional entity (metropolitan

statistical area, river corridor), and (5) state. The plan evaluation approach has a variety of choices when deciding a unit of analysis. To simplify this, I organized this information into two groups: single jurisdiction and mixed jurisdictions. Among 44 publications in the US, 22 embrace a single-level jurisdiction. Among these, the level of a local municipality has the highest number of studies with 14 publications. Four publications use the county as the only level of analysis. With a single-use regional or state level, each has been mentioned twice in US studies.

The second group, mixed levels of jurisdictions, includes 22 papers that address two or more jurisdictions in their analysis. Among these, 15 papers address issues related to city and county levels. Four publications focus on three levels of jurisdictions in their analysis. While three of them address issues of city, county, and region, only one research chose small communities, city, and county. Figure 2-1 describes the mixture of information about the unit of analysis among plan quality evaluation studies in the US. The list of jurisdiction types is mentioned in Appendix D.

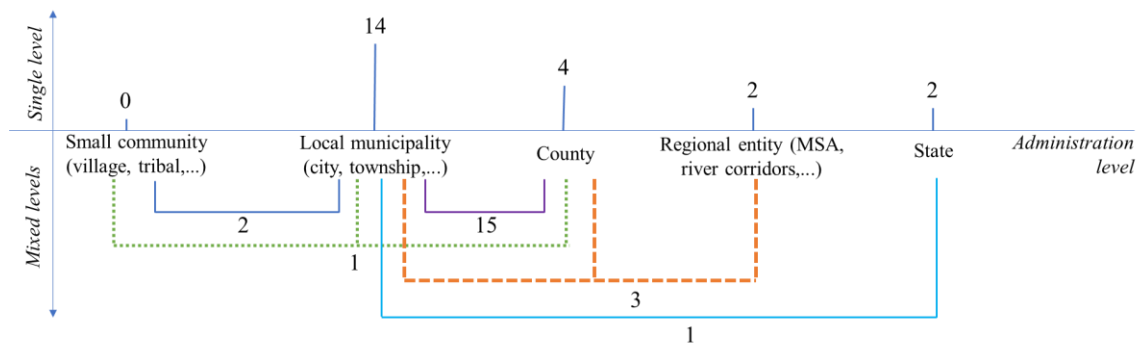


Figure 2-1. Quantity and Typology of Jurisdictions in Plan Quality Evaluation Studies

2.2.1.4. Types of plans

In plan quality evaluation, a planning document is a primary candidate as an object of analysis. A comprehensive plan (including land use content) seems to be dominant among documents used for a content analysis approach. In the 55 studies, 29 (or 53%) publications use the comprehensive plan as an object of analysis. In the US, a comprehensive plan is a legal planning document adopted by the local government that addresses a wide range of local issues including land use, transportation, housing, and economic development. Some plans, such as the Official Community Plan in Canada, which share similarities in terms of content and role in the planning system, are considered as a comprehensive plan in the US context. The second most used document in plan evaluation literature is the Climate Change/Adaptation Plan. This plan was used in 16 publications or almost one-third of the literature. It ranges from a local to a national plan and reflects the importance of environmental-related issues in planning and development. Three publications used a coastal plan and the same number used a

pedestrian & bike plan in their analysis. The list of document typology is listed in Appendix E.

2.2.2. Evaluation Protocol

In plan evaluation literature, evaluation protocols are seen as the backbone of the study. The protocols shed light on different angles, revealing the invisible meanings, trends, or implications of the document. To capture the hidden message or quality of a planning document, an evaluation protocol is carefully designed and implemented. To comprehensively assess the quality of planning documents, I need to add two major elements in the planning process: plan-making and plan implementation. The first element is a plan-making process. By applying content analysis to a planning document, I can rank its quality based on the achieved score of an evaluation protocol. Having a “good” or “high-quality” plan is just the beginning of reaching the envisioned goals. Stressing the importance of implementation, Talen (1997) wrote: “...When divorced from implementation or outcome, the notion of success in plans and policies is controlled by the interpretation of the evaluator.” This statement is correct when the agreement between coders over the same issues cannot be solved clearly and systematically. Previous studies provided an approach and method to minimize the potential negative effects of the evaluation process (Lombard et al., 2002; Stevens et al., 2014). This maintains the measurement validity and improves the measurement reliability of the study. On another note, I share the concern with Dr. Talen and believe that a complete study of plan evaluation should address two major elements in planning: plan-making and plan implementation. This is the overall goal of this dissertation. In this

paper, I will focus on building an assessment tool that mainly serves the first element. In the following parts, I extract the information about an evaluation protocol including protocol source, structure, instruction, and availability. The evaluation protocol characteristics is listed in Appendix F.

2.2.2.1. Source of the Evaluation Protocol

As mentioned above, the evaluation protocol is the fundamental element of a content analysis approach. Lacking this piece of information makes understanding the research's approach difficult. However, six publications out of 55 did not mention the source of their evaluation protocol. Almost a quarter (23.6%) of the plan evaluation studies adopted an evaluation protocol from others (Berke & French, 1994; Berke et al., 1996; Fu & Tang, 2013; Nelson & French, 2002).

Other authors built their assessment scorecard based on previous publications. About one-third of the studies chose this approach. These protocols can be built from others from the same author(s) (Brody et al., 2004; Woodruff & Regan, 2019), different author(s) (Brody, 2003b; Li & Song, 2016; Norton, 2005a; Steelman & Hess, 2009); or from public resources such as the Federal Emergency Management Agency (FEMA) (Kang et al., 2010) or the United States Environment Protection Agency (US EPA) (H. Kim & T. Tran, 2018). These evaluation protocols were modified by adding or removing some elements or sections to best fit with the purpose of the study. For example, H. W. Kim and T. Tran (2018) reworked the EPA's guidance to policy assessments with additional instructions and examples based on best practices. The revised evaluation

protocol, after being restructured, was able to be applied to local comprehensive plans nationwide.

Finally, over one-third of plan evaluation studies (19 publications) have an original evaluation protocol. This means it is the first time the evaluation protocol has been introduced with no similar versions. Among these, eight described how to create an evaluation protocol. However, the level of detail was general and vague. These publications just briefly mentioned that the literature was used to create an evaluation protocol without specific sources (Norton, 2008). Other studies, showing more detail in the development of an evaluation protocol, show some major sources they used such as from public agencies like FEMA or APA (Fu & Tang, 2013) or best practices of annual reports (Baker et al., 2012). Few studies described the process of how to create an evaluation protocol (Preston et al., 2011; Termorshuizen et al., 2007). For example, Preston et al. (2011) proposed a framework for evaluation by connecting the evaluation theory with guidance for adaptation planning developed by the practitioner community. The authors suggested five steps:

- Step 1: Identification of core stages in adaptation planning from decision science and development evaluation literature;
- Step 2: Identification of critical planning processes associated with each planning stage that can be used as evaluation criteria;
- Step 3: Selection of adaptation plans for evaluation;
- Step 4: Scoring of plans against evaluation criteria; and
- Step 5: Categorization of adaptation options embodied within plans

2.2.2.2. Structure of the Evaluation Protocol

In terms of the protocol structure, I focus on the size and how the grading systems work. This examines the number of evaluation items in each protocol. An evaluation protocol is normally divided into different components, each component will have several principals, and under each principle, evaluation items are listed to measure the performance of the planning documents. Therefore, I chose the smallest level of measurement, evaluation items, to quantify the size of evaluations in the literature. Overall, nearly three-quarters of the literature (40 studies) mentioned the number of evaluation items. On average, there were 43 items for each study. Among these, the number of items ranged from three (BenDor et al., 2017; Stone et al., 2012) to 554 items (Horney et al., 2012). This huge difference suggested a wide range of approaches and measurements of plan quality. It also shows the diversity in the evaluation size and flexibility of the content analysis in testing how the plan performed.

The majority of the literature (47 publications or 85%) used a grading system to assess the performance of the planning document. There were two major types: nominal and ordinal systems. Among these, 13 papers applied only a nominal grading system. For instance, a protocol can measure whether or not the plan complies with regulations (Deyle & Smith, 1998) or if an evaluation item is mentioned or not in the plan (Fu et al., 2017; Guyadeen et al., 2019; Jones et al., 2010; Srivastava & Laurian, 2006; Steelman & Hess, 2009; Woodruff & Regan, 2019).

The ordinal grading system was the most popular approach in the coding process. There were 25 papers (almost 45% of the literature) that used this grading system as the

only way to quantify the content of the plan. The typical set of assignments for each evaluation item is 0-1-2. “0” means the item was not mentioned, “1” means the item was mentioned but not in detail, and “2” means the item was mentioned in detail. Several studies utilized this approach including Berke et al. (1996), Nelson and French (2002), Brody (2003a, 2003b), Davis (2004), Tang and Brody (2009), and Li and Song (2016).

Using a similar 0-1-2 system, Connerly and Muller (1993) applied “Not at all,” “Somewhat,” and “Substantially” to measure how the evaluation items were mentioned in the plan. Besides, some papers used other types of ordinal grading systems such as a five-point scale (0,1,2,3, or 4) employed by Baker et al. (2012) to measure the performance of Australian local governments in their adaptation plan. Berke and Conroy (2000) and Conroy and Berke (2004) used a slightly different version of the ordinal grading system. They measured how the policies were mentioned in the plan based on the level of commitment the plan expressed via word choice. If the policy was “suggested” (measured by some keywords such as to encourage, consider, intend, or should), it was coded as 1. If the plan uses strong language such as shall, will, require, or must, in their policy, it was coded as 2.

Twelve papers (or about 22%) of the publications used a mixed grading system in their analysis. One of the popular approaches was applied when the protocol contained multiple components (such as facts, goals, strategies, implementation, and participation). Among these, the goals component was normally evaluated with a nominal scale (0 and 1) while all others were evaluated using an ordinal scale (0, 1, and 2) (Berke, 1994; Berke & French, 1994; H. Kim & T. Tran, 2018). Hoch (2007)

measured four components of a plan: compliance, consistency, relevance, and commitment. While the compliance component was measured with ordinal scales of noncompliance-partial compliance-full compliance (or 0-1-2), the other three components were graded using a nominal scale to see whether the plan displayed these evaluation items. Another example of using a mixed grading system was from Deyle et al. (2008) who used an ordinal scale (0,1,2, and 3) for evaluation items while applying a nominal grading system for maps. The list of grading systems used in the literature is shown in Appendix G.

2.2.2.3. Instructions of the Evaluation Protocol

Explaining the structure of the evaluation protocol is very important, especially for re-productivity. I examined the literature to see how many of the publications explained the details of the evaluation protocol. As a result, there were 23 studies (or 41.8%) of the literature that presented the evaluation protocol with any level of explanation. Among these, however, only 5 papers cited direct quotes from the planning document as explanations. This reflects the perception and approach of the authors showing how they judged the different levels of details from the text.

2.2.2.4. Attachment of the Evaluation Protocol

Finally, I looked for the availability of the evaluation protocol in each publication. There were 25 studies (or 45.5%) of the literature that did not provide information about the evaluation protocol. Some studies had a large size for the protocol such as Horney et al. (2012) (554 items) and Norton (2005a, 2005b) (over 400 items). The large figure probably is the main reason that prevented them from being published.

Several papers with less than 150 evaluation items were also not included. This might leave the readers with confusion and questions about the content and structure of the scorecard. It also prevented one of the major characteristics of research, regenerability. Alternatively, 13 studies had part of the evaluation in its transcripts. These papers normally showed the evaluation protocol as a part of a result table. Finally, there were 17 studies that included a full evaluation protocol in their text. This definitely increases the transparency and allows the replication of the study in the future. This, in my humble opinion, should be the standard of any plan evaluation study.

2.3. Gaps in the Literature

There are several gaps in the literature that I would like to address in this study. First, the topic of housing and community development is rare in plan quality evaluation literature. The most recent study of plan quality evaluation discussing housing-related issues was conducted more than two decades ago. In fact, there are very few studies that selected Consolidated Housing Planning (ConPlan) as the object of the research. The only notable publication to date is the report by Turner et al. (2002). This study assessed the effectiveness of the Department of Housing and Urban Development (HUD)'s requirements for the development of local housing plans in the 1990s. The authors explored the relationship between planning documents and affordable housing development in six metropolitan areas as case studies. It did not use any evaluation protocol. Instead, the authors collected data from the metropolitan areas and their ConPlan documents before listing them in a table with which to do a cross-tabulation comparison. This approach was designed specifically for a case study analysis.

Therefore, the application of this method is limited. More seriously, lacking an evaluation protocol prevents a systematic assessment of the quality of planning documents nationwide.

Second, the quality of the ConPlan has never been assessed in the literature. This raises concerns about its role, performance, and the current practice supported by HUD and local governments. Notably, the ConPlan manages a huge amount of public funds including the CDBG, HOME, ESG, and HOPWA. In particular, the CDBG program was awarded about 54 billion dollars between 2000 and 2013 (Spader & Turnham, 2014). Therefore, the financial resources linked with a ConPlan can surely add up to a serious amount of tax dollars. Understandably, the public should at least have an idea about the quality of this important document. Furthermore, these funds are tied to low- and moderate-income populations, they are “helping communities develop new affordable housing for both renters and homebuyers, rehabilitate existing homes, and turn around troubled neighborhoods” (Department of Housing and Urban Development, n.d.-b). According to the guidebook published by the Department of Housing and Urban Development (n.d.-b), 70 percent of CDBG money must benefit people with incomes below 80% of their area median income (AMI). Similarly, 100% of the HOME funds should benefit this same population group. Billions of tax dollars are tied in with the ConPlan annually to support affordable housing and community development, especially for low- and moderate-income groups. Therefore, the quality of the plan must be assessed and analyzed to understand how tax dollars are proposed, implemented, and spent.

The third lack of knowledge is the systematic application of the research. Until now, there is no nationwide study at a local level that has been conducted in plan evaluation that focuses on housing topics. The most recent study by Hoch (2007) only took place in Illinois. The first plan evaluation study addressing the housing element in a local comprehensive plan also only focused on one state, Florida (Connerly & Muller, 1993). To paint the picture of plan quality in the United States, the sample size should be relatively large to cover all major regions nationwide. Connerly and Muller (1993) only analyzed the plans of four counties and six cities and Turner et al. (2002) chose six metropolitan areas across the nation for their analysis. In the most recent study, Hoch (2007) selected 36 planning documents for his analysis. Therefore, a large sample size supports the analysis and the generalization power of the study.

Another gap is related to public funding in ConPlan. The formula grant is for non-competitive funding. As long as the local jurisdiction fulfills the requirement of submitting a plan and paperwork, they will usually be awarded the funding. This special type of plan gives small cities or local jurisdictions with few resources access to the public funding they desperately need. Nobody can deny the role of each program in the ConPlan for affordable housing and community development. Significantly, the plan has a direct connection to the preparation process and how a city will prioritize its spending in the coming fiscal years. That makes the quality of the ConPlan critical. Accordingly, from the academic and professional viewpoint, there is a clear need to understand the quality of a ConPlan at the local level across the United States. I believe that this work will shed light on these issues and contribute to the knowledge of ConPlan quality.

2.4. Consolidated Plan (ConPlan)

2.4.1. The Evolution of a Consolidated Plan

Since the establishment of the organization in 1965, the U.S. Department of Housing and Urban Development (HUD) has pursued its mission of creating strong, sustainable, inclusive communities and quality affordable homes for all Americans. Among its activities, managing public funding and maximizing the return for local communities were among its top priorities. A formula block grant is a popular public funding mechanism for federal programs. This public money is granted for community development and housing purposes under various programs. The grant is awarded based on a pre-defined formula. Formula block grants related to housing and community development programs are normally calculated based on population characteristics. Block grants are “fixed-sum federal grants to state and local governments that give them broad flexibility to design and implement designated programs” (Finegold, 2004).

To understand the evolution of a ConPlan, it is critical to look at the programs it manages, including the Community Development Block Grant Program (CDBG), The Home Investment Partnerships Program (HOME), the Emergency Solutions Grants Program (ESG), and the Housing Opportunities for Persons with AIDS Program (HOPWA). These programs and their characteristics help paint the picture of a ConPlan.

The landmark Housing and Community Development Act of 1974 was the foundation for this evolution by creating a new approach for community development projects. By creating the CDBG program, the Federal Government no longer had to decide on every local project (Department of Housing and Urban Development, 1999).

Instead, the local jurisdictions or grantees became the main players, deciding what, where, and when the activities would take place with the financial support. The Act also established the preparation of a Housing Assistance Plan (HAP) as a fulfillment for a local jurisdiction. According to Struyk and Khadduri (1980), a HAP helps local governments to develop fact-based and local market-oriented strategies to assist low-income residents. More importantly, the HAP also supports HUD in building a national housing strategy by aggregating local approaches and practices. Until 1990, HAP remained the major planning document requirement for localities regarding community development funding.

In 1987, the McKinney Homeless Assistance Act (renamed the McKinney-Vento Homeless Assistance Act in 2000) was passed in Congress to become the first and remains the only major federal legislative support for the homeless (National Coalition for the Homeless, 2006). This Act created the Emergency Shelter Grant program, which was later renamed the Emergency Solutions Grant program. To receive this block grant, the local government had to prepare a separate plan, the Comprehensive Homeless Assistance Plan (CHAP).

Since 1990, concern about housing issues across the nation has gradually increased. Some members of Congress expressed concern about the state of the nation's housing, including homelessness, sub-standard housing, and homeownership opportunities for Americans (Jones, 2014). According to the congressional task force's report, federal funding for housing programs was unable to support the affordable housing needs among Americans, especially those with low incomes (National Housing

Task Force, 1988). In contrast, the CDBG program mostly gives the local government flexibility and resources to support economic development and community revitalization projects. The solution was to create a new formula block grant program similar to the CDBG but solely focused on the issue of housing (Turner et al., 2002). In 1990, Congress passed a housing bill, the Cranston-Gonzalez National Affordable Housing Act (NAHA), which created the HOME program among other new initiatives. This is the largest Federal block grant program that provides public funding exclusively to low- and very low-income families for affordable housing (Department of Housing and Urban Development, 2018b).

Together with creating the HOME program, the Cranston-Gonzalez National Affordable Housing Act of 1990 also requires a locality's preparation of a Comprehensive Housing Affordability Strategy (CHAS) which replaces two previous documents, HAP and CHAP. CHAS became the required planning document for local governments applying for CDBG, HOME, ESG, and the newly created Housing for People with AIDS (HOPWA) program (Gramlich, 1998; Turner et al., 2002). The structure of CHAS is similar to HAP, however, there are some improvements in the operation and management of the process. HUD has learned from the feedback of HAP's submissions and made significant efforts to help localities. For instance, HUD provides technical support including data and analysis, and published special studies and guidebooks to help smooth the preparation process (Bogdon et al., 1994). More importantly, this is the first time that the National Housing Act of 1990 mandates the preparation of a local Citizen Participation Plan as part of CHAS (Gramlich, 1998). The

significant public participation in the local process of planning was mentioned in the CDBG's National Housing Act of 1974. However, as part of the content of CHAS, this is the first time it has been officially required.

Unlike the previous plans (HAP, CHAP, CHAS) that were created by the National Housing Act, the Consolidated Plan (ConPlan) was created based on modifications of the CHAS regulations. The major reason leading to this change was an effort to reduce the workload and combine several plans and reports into one "consolidated" document. According to Turner et al. (2002), localities were required to prepare and submit separate applications and annual reports for each of the programs covered by the CHAS. This process pressured local governments and created more work for both local officers and HUD. Moreover, there was a concern that the obligation to coordinate between local government and housing advocacy groups was not being enforced. Therefore, the ConPlan was created in response to these concerns. A ConPlan, dubbed CHAS, is a three- to five-year strategic plan for housing and community development. It identifies local housing needs, proposes goals and priorities that address the local needs, then prioritizes the activities that local government will carry on during the plan's term. Also, the localities are required to submit an annual update on the implemented process of the plan.

With the creation of the ConPlan, HUD required, for the first time, that localities must present an explicit plan for the non-housing elements of the CDBG in their submission. And, to address the concern previously mentioned, HUD also extended consultation requirements of the plan-making process to cover advocacy groups,

adjacent local jurisdictions, and the Public Housing Agency (PHA), in addition to other entities (Turner et al., 2002).

2.4.2. Structure of a Consolidated Plan

A ConPlan has a rigorous structure that local jurisdictions must follow. Because of the financial mechanism, this probably helps HUD review the submission more quickly and approve the grant. The structure of the ConPlan is extensively described in the final regulations ("Consolidated Plan Revisions and Updates: Final Rule," 2006). Gramlich (1998, 2016), in the advocate guidelines for the National Low-Income Housing Coalition (NLIHC), also delivers very useful information about the process and structure of a ConPlan. In this paper, I will briefly introduce the key elements in this planning document.

The first element of a ConPlan is *Housing and Community Development Needs*. This requires the grantee to estimate the needs for housing stock and other community developments for the next three to five years. These estimations are calculated based on US Census data provided by HUD. There are some specific requirements such as the number of different income groups, tenure types, homeless population, elder and special needs groups, and public housing, among other issues.

The second element is a *Housing Market Analysis* that focuses on some basic factors like the demand, supply, cost, and condition of a local housing market. This part also requires discussing facilities and services for the homeless or other special needs groups. The third element of a ConPlan is a *Strategic Plan*. It plays a critical role in realizing the envisioned goals and objectives of the plan. It defines the fund allocation

priorities, and at the same time, analyzes and explains the rationales behind the proposals (for different population groups or in different geographic areas). Besides the prioritized list, the local grantee has to identify the measurable goals for each activity during the timeframe of the plan. The fourth element of a ConPlan is an *Anti-poverty Strategy*, which focuses on reducing the number of people with incomes below the poverty line. The plan must explain how it will help a local jurisdiction achieve this goal.

With the issue of aging housing in many cities, *Lead-based Paint*, the fifth element of a ConPlan, has a huge impact on the health of residents, especially children. HUD requires that the strategic plan of a ConPlan must assess the situation of lead-based paint in the local housing stock. Namely, the local government needs to highlight how they will act to reduce and eliminate this type of hazard. *Fair Housing* is the sixth element of a ConPlan. Affirmatively Furthering Fair Housing (AFFH) is “taking meaningful actions, besides combating discrimination, that overcomes patterns of segregation and fosters inclusive communities free from barriers that restrict access to opportunity based on protected characteristics” (HUD, 2016). A critical part of AFFH, Analysis of Impediment (AI), is not required to be part of the ConPlan document. The seventh element of a ConPlan is the *Annual Action Plan*. This is a document where the jurisdiction describes the agenda for the upcoming year. In this, the local government lists all the reasonably expected resources from the public and private sectors. Besides indicating the resources, the Annual Action Plan also shows the priority locations and the justifications behind the decisions.

Finally, *Public Participation* is required through the local government. This critical part necessitates communication between a ConPlan and the public made stronger with specific requirements from HUD. For example, the final rules state that it is mandatory for the local jurisdiction to follow certain procedures such as the minimum of two public meetings during the plan-making process, a 30-day period to receive public comments on the draft version, and the composition of participants for the meetings. This, with the previously mentioned items, reflects the vital role of different aspects in the making of a ConPlan. I aim to create an evaluation protocol to capture the quality of these elements in a ConPlan based on the references extracted from various studies.

2.5. Framework to Build an Evaluation Protocol for a Consolidated Plan

The framework to assess the quality of a ConPlan includes several steps. First, I build a reference base containing various sources of literature and practical knowledge. This reference will support the design of an evaluation protocol: identifying an appropriate structure, defining the right content for every level of an evaluation protocol from general to details, and laying out some general steps to guide the grading process. Second, I create the basic structure of the evaluation protocol including evaluation components and evaluation criteria. The structure of the protocol aims to be comprehensive in measuring the plan's quality to provide cohesion and clarity for the user. To do this, I avoid using jargon and provide a clear explanation with a concrete example for each evaluation item. This serves the purpose of popularizing the evaluation protocol with the government officers, planners, researchers, and members of the local

community. Third, I describe the grading system and the evaluation process of the ConPlan. This guidance supports the re-generate purpose of the study, and, preserves the time and efficiency of the process. In the following section, I will describe and explain each of the steps mentioned above.

2.5.1. References

The references used to build an evaluation protocol are based on three major sources: (1) a regulation basis, (2) an academic basis, and (3) a practical basis. The sources and the degree to which they impact the final form of the evaluation protocol are highlighted in Table 2-1. In the table, I rank how strongly each group of references influences the final form of the evaluation protocol. There are three levels: low, medium, and high. Since it is very difficult to quantify exactly how much each source has contributed to the final results, I believe this overall order will show how the protocol is formed in general. The creation of the evaluation protocol includes two major parts: structure and usage. The layout of the protocol includes the components, principles, and items. The evaluation usage instructs the coder (direct user of the protocol) on how to assess the content of each evaluation item. I will describe each of the reference sources before explaining the evaluation protocol in detail.

Table 2-1 References for a Consolidated Plan Protocol Design

		Protocol Structure			Protocol Usage		
		Component	Criteria	Item	Instruction / Example	Grading system	Coding process
Regulation Basis	Programs Final Rules	○	●	○	○	-	-
	Housing Acts	-	●	○	-	-	-
	Governmental Guidance	-	●	●	○	-	-
	Plan evaluation literature	●	●	○	-	●	●

Academic Basis	In-need population literature (homelessness, people with HIV/AIDS)	○	●	○	○	-	-
	Affordable housing and Community development literature	○	●	○	○	-	-
Practical Basis	Best practices	-	○	●	●	-	-
	Awarded projects	-	○	●	●	-	-
	Practical reports	-	●	●	●	○	○

Note: Low: - Medium: ○ High: ●

2.5.1.1. Regulation Basis

The regulation basis includes three main sources: final rules for the program, housing acts, and governmental guidance. A legal source is used to build a foundation for the evaluation protocol. Because of its characteristics, a ConPlan's structure and content are guided by the final rule, 24 CFR Parts 91 ("Consolidated Plan Revisions and Updates: Final Rule," 2006). As I discussed above, this plan is a requirement for non-competitive funding, open to all states and almost all cities. The legal document describes in detail the requirements and content for the submission of this plan. I extract the information from this final rule to frame a content structure for the evaluation protocol. Following this, I use other types of legal documents such as Housing Acts and the Final Rules of the CDBG, HOME, ESG, and HOPWA programs. These legal documents provide us a broad view of the overall goals and objectives of each program that comprises the final product of a ConPlan. For example, while the CDBG focuses on community development activities, HOME exclusively supports affordable housing development. Similarly, ESG and HOPWA are designated to support individuals and families who are in extreme situations. Based on the language in these legal documents

and regulations, I prioritize the evaluation content. For example, if the text uses strong words such as *must, have to, shall, need to...* it will be put at a higher priority than other words such as *should, suggest...* This approach was used in planning evaluation literature by Berke and Conroy (2000) and Conroy and Berke (2004). I also consulted the Federal Register, an official journal of the federal government of the United States, which houses government agency rules, proposed rules, and public notices. Taking an explanation from the Federal Register (2016) Principle of Clear Writing Guidelines: “must” “imposes an obligation, indicates a necessity to act” while “should” “infers obligation, but not absolute necessity.”

The first primary source also includes guidance from the governments and can come from public agencies such as FEMA, the CDC, the USEPA, or the Public Housing Authority (PHA). These sources were also cited in the literature. For instance, Peacock et al. (2009) and Kang et al. (2010) used the guidelines from FEMA as the foundation for their evaluation protocol. Taking a similar approach, H. Kim and T. Tran (2018) selected the “Water Quality Scorecard” from the U.S. Environmental Protection Agency (USEPA) as the foundation in designing their evaluation protocol. Another example of using a public resource for designing an assessment protocol comes from the drought-resilient study of Fu and Tang (2013). In this research, the authors used a report prepared by the collaboration between FEMA and APA as a primary source for their evaluation protocol. Also, in a study of local and regional government responses to climate change, Li and Song (2016) used the annual report of the government on policies and actions for

climate change as a critical source to develop the list of evaluation items for a climate change plan.

2.5.1.2. Academic Basis

The second primary source, an academic basis, includes the works of researchers in different fields. I acquired three groups of literature to build the evaluation protocol: (1) plan evaluation, (2) in-need population, and (3) affordable housing and community development. The forms of academic basis include published materials such as articles from peer-reviewed journals, book chapters, case studies, and reports. While reviewing these materials, I paid special attention to the results, discussions, policy implementations, suggestions, and criticisms. These critical parts sparked ideas and guidelines for the protocol evaluation. For example, I decided to add “Fair Housing” as one of the evaluation criteria based on its importance to individual, family, and community development. The decision is supported by the academic works on the housing search model (Courant, 1978), barriers to racial integration of neighborhoods (Farley et al., 1979; Farley & Frey, 1992), the fair housing audits tool (Yinger, 1986), the relationship between affordable housing and property value (Nguyen, 2005), and many other excellent publications. I share consent with the statement from Julian (2008): *I must invest in the difficult task of creating inclusive communities of opportunity, and truly take seriously the Fair Housing Act mandate to “affirmatively further fair housing” in every aspect of the housing and community development work.*

The plan quality evaluation literature is the most popular source researchers used to build their evaluation form. Connerly and Muller (1993) acquired knowledge from the

theory and ethical values in public policy studies. In addition, Norton (2005a), Peacock et al. (2009), and Kang et al. (2010) took plan evaluation literature as one of the major sources besides the literature that directly related to the topic of their research. For example, while Norton (2005a) used development management literature, Peacock et al. (2009) relied on hazard mitigation literature to support their protocol creation. The general source of academic literature was also mentioned across studies in plan evaluation (Fu et al., 2013; Fu & Tang, 2013; Li & Song, 2016; Preston et al., 2011).

In the academic literature of the in-need population, I focused on the topic of housing for the homeless and persons with HIV/AIDS. For example, one of the previous publications, the National Symposium on Homelessness Research (Dennis et al., 2007; Fosburg & Dennis, 1999), provides a comprehensive picture of the different aspects in the life of the homeless. These materials helped us understand the different issues of these in-need populations, then, transfer those insights to the content of the protocol. The paper from Locke et al. (2007) shows us the importance of different services for homeless families including short-term assistance, transitional housing, and permanent supportive housing. This information later is included in the evaluation protocol. The paper “Reconnecting Homeless Individuals and Families to the Community,” by Rog and Holupka (1999), presented a great summary about reconnecting homeless people to the community, as well as moving toward self-sufficiency. This becomes supportive evidence and a good example of the evaluation protocol when assessing the ConPlan.

Another group of literature is affordable housing and community development. The findings in these studies also give us a valuable approach to the protocol’s design.

The answer to the question “What should be done to support the low-income population?” becomes the guideline when I search for academic resources. For instance, some parts of the protocol are designed based on the findings in the studies of federal housing programs such as Low Income Housing Tax Credit (LIHTC) and Housing Choice Voucher programs (HCV) (McClure, 2008; Olsen, 2003; Sard, 2001; Turner, 1998); the Moving To Opportunity program (Goering & Feins, 2003), and the HOPE VI program (Popkin et al., 2004).

2.5.1.3. Professional Basis

Input from practitioners also plays a vital role in providing diverse viewpoints for the protocol creation process. According to Dunn (2015), empirical evidence and intuition are part of the recommendations for creating evaluation criteria for any public policy analysis and assessment. Connerly and Muller (1993), in the evaluation of housing elements in a local comprehensive plan, echoed this approach. They suggested the local jurisdiction should obtain a broad understanding of the problem in their community to address the issues. In other notes, Baker et al. (2012) and Li and Song (2016) praised the best practice literature as critical in guiding their quality assessment of a planning document. Woodruff and Stults (2016) sought information from the guidance documents published by international, federal, state, and non-governmental organizations. Taking additional steps, Berke et al. (1999) consulted directly with the professionals. The authors organized three workshops to allow practitioners to review the principles and to make recommendations in the structure and usage of evaluation protocol, then refined the protocol to achieve the highest results possible.

The third primary source used for creating an evaluation protocol includes lessons learned from real-life projects. I call this a practical basis. Good examples can be the projects from best practices of the governments, non-profit organizations, and professional associations. Besides recognized achievements such as best practices and awarded projects, I also examine the official guidelines recommended by professional associations, governmental agencies, research institutions, and nonprofit organizations for practical purposes. I adopted the recommended lists of organizations and think tanks from university libraries (NYC Wagner; University of Cincinnati Libraries, 2020; USC Libraries, 2019). For example, a professional association in planning, the American Planning Association (APA), is one of the prioritized resources. This national organization and its state chapters have annual awards and best practices given to a particular project to recognize its achievement and contribution in different fields. Its National Planning Excellence Award is very well recognized among practitioners nationwide. It has several notable categories including Best Practice, A Grassroots Initiative, Implementation, Public Outreach, and Innovation in Sustaining Places. Each of these awards provides useful insights, experiences, and creativity to build the evaluation protocol. Besides, the APA also has a series of publications, Planning Advisory Service (PAS), that focus on different topics. This valuable resource guides stakeholders who are involved in the planning process toward a better outcome. For example, the PAS Report 595, A Planner's Guide to Meeting Facilitation (Herd, 2019), was used in conjunction with the Public Participation requirement in the final rule of a ConPlan to design evaluation items. Also, another example of achievement I used for

this study is the Case Study Award organized by the Association of Collegiate Schools of Planning (ACSP) and the Lincoln Institute of Land Policy. This award is given for a real-life project in the US and worldwide. It presents the issues, highlights the approaches of stakeholders, and indicates the lessons and achievements of the study. The diversity topics of this best practice also provide us with multiple views and a comprehensive approach when applying it to designing the evaluation protocol for a ConPlan. Another example is a guideline conducted by the American Council for an Energy-Efficient Economy (ACEEE) (Shoemaker, 2016). This guide discusses some best practices from the different states in the US for implementing and evaluating a low-income energy-efficient program. Significantly, its exploration gives us a concrete example of programs and approaches successfully used in the US. Particularly, this type of work feeds the instructions and examples when designing an evaluation item.

2.5.2. Evaluation Component of the Protocol

Defining a “good” plan is not an easy task. Planning scholars and experts often disagree about what constitutes a “good plan” (Baer, 1997; Bunnell & Jepson Jr, 2011; Susskind, 1978; Wiewel & Knaap, 2005). The factors that contribute to the difficulty of judging a good plan come from various sources. The plan itself must typically address a complex set of issues. More importantly, conflicting goals and interests, among many other factors, are raised during the process of plan-making. Given the complexity and diversity of the planning context, it is unrealistic to have one best plan that works for all. Therefore, the evaluation protocol must be designed with a specific set of features to best fit with the plan it serves. In this section, I will go through the development of evaluation

components in the literature. Then, I will describe what components will be used in the protocol to assess a ConPlan. After that, the evaluation criteria and items will be presented to further describe the protocol.

2.5.2.1. The Development of Evaluation Components in the Literature

Among 55 studies in plan evaluation literature, 40 mentioned the structure of an evaluation protocol. Generally, each evaluation protocol is divided into different parts that cover the entire content of the plan, and are called “plan components.” This allows us to scrutinize the content of the planning document from different angles. Each component can then be divided into smaller evaluation items or, sometimes, grouped into different evaluation criteria. In this section, I will describe the changes in the evaluation components and explain the format of the assessment. The majority of plan evaluation literature has been influenced and inspired by the approach presented in Kaiser et al. (1995)

The very first core components of plan quality assessment were drawn from the book *Urban Land Use Planning* (Kaiser et al., 1995). These components are comprised of (1) *Factual Basis*, (2) *Goals and Objectives*, and (3) *Policies, Tools, and Strategies*. A *Factual Basis* of a plan discusses information about the location and related facts as an input for a plan. With a clear and correct input, the plan maker can identify and use the information for different stages of producing a plan that fits with the factual basis (Kang et al., 2010). The *Goals and Objectives* component refers to the general aspirations and shared values of the community. This section describes the outcomes that the plan maker expects to occur in the future (short-term or long-term). The guidelines and agenda for

achieving these envisioned achievements are seen as another fundamental element of plan quality evaluation: *Policies, Tools, and Strategies* (Peacock et al., 2009). These three major components are widely applied in other studies (Berke, 1994; Brody, 2003a; Srivastava & Laurian, 2006). Nelson and French (2002), in their case study of the Northridge earthquake, divided the *Policies* component into two groups, *Regular* and *Awareness*, to capture the wide range of policies in local comprehensive plans.

Other scholars also revised the original approach when applying content analysis to their field of interest. With several publications related to ecosystem management, Brody (2003, 2003b, 2003c) introduced two important components for a comprehensive plan's assessment: (1) *Inter-organization Coordination & Capabilities* and (2) *Implementation* (Brody, 2003; Kang et al., 2010; Peacock et al., 2009). The component of *Inter-organization Coordination & Capabilities* represents the ability of a local jurisdiction to collaborate with adjacent jurisdictions and organizations (Brody, 2003). This principle focuses on joined actions, shared information, and any agreement among neighboring jurisdictions in dealing with transboundary natural resources. The component of *Implementation* was created to address the effectiveness of comprehensive planning. This principle includes “designation of responsibility, a timeline for actions, regular plan updates, and the monitoring of resource conditions and policy effectiveness” (Brody, 2003; Brody et al., 2004; Kang et al., 2010; H. Kim & T. Tran, 2018). Tang and Brody (2009) and Tang et al. (2011) stressed the importance of monitoring as an undetachable part of the *Implementation* component in their studies.

Peacock et al. (2009) and Kang et al. (2010), tested mitigation plans for coastal communities and added two more components to the evaluation frameworks: *Vision Statements* and *Public Participation*. The importance of these two additional components was echoed by Jones et al. (2010) and Evenson et al. (2012). In the studies of pedestrian planning, these authors suggested that the additional evaluation components helped highlight the involvement of the public in the plan-making process. Besides, other components are similar to the original ones proposed by Kaiser et al. (1995). Jones et al. (2010) and Evenson et al. (2012) used *Analysis of Current Conditions* and *Proposal of Policies & Programs* as substitutes for *Factual Basis* and *Policies* in the earlier study.

Recently, Woodruff and Stults (2016) introduced a new evaluation component, *Uncertainty*, to the set of evaluation components developed by Kaiser et al. (1995) (*Factual Base, Goals, Policies & Strategies*), Brody (2003a) (*Coordination and Implementation & Monitoring*), and Peacock et al. (2009) (*Public Participation*). Their study on a climate change adaptation plan explained how uncertainty can play a vital role in affecting plan quality, especially in light of global climate issues.

2.5.2.2. Evaluation Components to Assess the Quality of a Consolidated Plan

After scrutinizing the development of an evaluation component, a key structure of an evaluation protocol, with the reflection in housing plan literature, I built the protocol around five popular components: (1) *Factual Basis*, (2) *Goals and Objectives*, (3) *Policies and Strategies*, (4) *Implementation and Monitoring*, and (5) *Participation*

and Coordination. Each of these components contains groups of evaluation items categorized into different criteria. The detailed structure will be presented below.

The Factual *Basis* component of an evaluation protocol focuses on the information and facts prepared by the local jurisdiction. This includes required data from HUD such as demographics, income groups, housing demands, homelessness, lead-paint issues, and market analysis. In addition, this component also addresses facts related to the community. These can come from surveys, public data, discussions in a public meeting, or any community involvement as long as it provides more understanding of the plan preparation process of the jurisdiction. Maps, catalogs, and diagrams are additional elements of the factual basis that describe the distribution of land uses, natural resources, and environmental and socioeconomic facts of the local communities (Brody, 2003b; Tang et al., 2008). Previous researchers have confirmed the importance of the factual basis through the quality of maps, videos, checklists, or tables describing physical and social impacts (Arlikatti et al., 2006; Tang et al., 2011; Zhang et al., 2004). Adopting from H. W. Kim and T. Tran (2018), text and graphics will share an equal role in representing the facts and information about the local jurisdiction. In a ConPlan, facts and information about the local community can be learned from the sections presenting housing and community needs, housing market analysis, lead-based paint, and fair housing among others.

The second component, *Goals and Objectives*, expresses the general expectation of the local jurisdiction regarding the outcome of the ConPlan. Overall, goals are more general and abstract, while objectives are more specific with details to further explain

what the plan should achieve. This information can be extracted from multiple parts of a ConPlan's content including the strategic plan, anti-poverty strategy, and lead-based paint, among others.

Policies and Strategies is the third evaluation component in the ConPlan evaluation protocol. This includes tools or actions proposed by the jurisdiction to realize the pre-defined goals or objectives of the plan. As the heart of the plan, these action-oriented statements and guidelines create specific methods, development management, and commitments that guide the local planning process (Kaiser et al., 1995). In a ConPlan, actions of local jurisdictions can be presented in any element of the content. However, some parts have a clear tendency in this such as the anti-poverty strategy or annual action plan.

The fourth component, *Implementation and Monitoring*, is the road map showing how and when the plan should turn proposals into real-life outcomes. In his book about project management for planners, Clark (2002) stressed the implementation component with requirements for a clear schedule for performing tasks and allocating the required resources to achieve the goals and objectives. In a ConPlan evaluation protocol, this component examines the tasks and responsible agencies in a specific project, work, or campaign in a community. More importantly, this component also addresses how the plan manages to monitor its implementation process to see how much and to what extent it meets its pre-defined expectations (Tang et al., 2011).

The fifth and final evaluation component in the protocol is *Participation and Coordination*. This component includes both inter-organizational coordination and

public participation in every stage of the plan-making process. The internal organizational coordination looks for the collaboration between different departments or agencies in the local jurisdiction. Public participation counts on citizen engagement and collaboration between the local jurisdiction and public institutions such as a university or federal agencies. Also, collaboration and integration with other plans, i.e. a comprehensive plan or hazard mitigation plan, is considered and assessed in the ConPlan evaluation protocol.

As a result, I expect that these five evaluation components of the protocol will shed light on every important aspect of a ConPlan, revealing its advantages and disadvantages. Each of these evaluation components is then divided into subcategories for further evaluation. Following Berke et al. (2013) approach, I group the first three components as *Direction-setting*. The last two components are in the *Action-oriented* group. The detailed structure and content of the evaluation criteria are presented in the following section.

2.5.3. Evaluation Criteria of the Protocol

If evaluation components can be considered as different pages of a scorecard, evaluation criteria can be seen as the features of a scorecard shown in each of these pages. In the evaluation protocol, there will be two major sets of criteria, each will appear in two groups of components. In this part, I will explain the evaluation criteria and in what components they will appear.

As I mentioned above, the content of a ConPlan is assessed via five components divided into two groups: the Direction-setting components group: (1) Factual Basis, (2)

Goals and Objectives, and (3) Policies and strategies and the Action-oriented components group: (4) Implementation and Monitoring and (5) Participation and Collaboration. The first group is evaluated by four general criteria: (1) decent housing, (2) suitable living environment, (3) expanding economic opportunity, and (4) fair housing. Each of these general criteria is divided into a list of evaluation criteria. Each evaluation criterion then is divided into several evaluation items. The quantity and content of evaluation criteria and items are proposed using reference sources mentioned in the reference table (Table 2-2). Using a similar approach, the action-oriented component group is assessed using two general criteria: (1) proactive involvement and (2) organization arrangement. After that, the evaluation criteria and items are also proposed using the framework discussed above. As a result, the final form of the ConPlan evaluation protocol contains 105 evaluation items. The evaluation criteria of the Direction-setting components group and the Action-oriented component group are summarized in Table 2-2 and Table 2-3, respectively. In the following discussion, I will further explain each evaluation criterion in the two-component groups.

2.5.3.1. Evaluation Criteria for Direction-Setting Components

The Housing Act of 1949 is seen as “a historic milestone as a piece of planning legislation, as a recognition of the importance of cities to the national welfare, as a recognition of the necessity for comprehensive city planning...”(Wheaton, 1949). The declaration of a National Housing Policy has laid the groundwork for the national effort in supporting “a goal of a decent home and a suitable living environment for every American family.” This ultimate goal became the basis for every housing and

community development program in the US since then. Take a CDBG program as an example. Its statement of purpose is “...to ensure decent affordable housing, to provide services to the most vulnerable in the communities.” Notably, the program adds one more critical element to its vision, “Create jobs through the expansion and retention of businesses” (Department of Housing and Urban Development, n.d.-a, n.d.-b; Levy et al., 2012). Other housing programs share the goal of providing decent housing for the low-income population parallel to their missions. For example, the HOME program focuses on “strengthening the partnership among all levels of government and the private sector” (Department of Housing and Urban Development, 2018a, 2018b; National Low Income Housing Coalition, 2019). Or, the ESG program and HOPWA program target their support toward the most vulnerable groups in the society, extremely low-income families, the homeless, or a person with HIV/AIDS (Department of Housing and Urban Development, 2019a, 2019b, 2019a; *Emergency Solution Grants (ESG)*, 2019; *Housing Opportunities for Person With AIDS (HOPWA)*, 2019).

To understand the importance of these programs and their purposes, general criteria for the Direction-setting components are proposed for the ConPlan evaluation protocol. They are (1) decent housing, (2) suitable living environment, (3) expanding economic opportunities, and (4) fair housing. The rationales behind the first three general criteria are quite clear and straightforward, as discussed above. The fourth criteria, fair housing, is added for several reasons. First, the analysis of impediments, the backbone of Affirmatively Further Fair Housing, is not required by HUD in a ConPlan. Taking the essential element of fair housing “out of sight” may negatively impact the

overall quality of a ConPlan. More seriously, it can reduce the efforts of local governments in supporting housing for all to unrealistic proposals. Second, the integration of fair housing action is crucial for any affordable housing and community development projects. This has been confirmed by the literature, as discussed above in the academic resource of the reference section. Hence, the aspect of fair housing should be embedded in the content of the ConPlan in all elements. Table 2-2 lists all evaluation criteria for the first group of components. Each of the criteria will be presented below. In the presentation, I will explain and give an example of what the ConPlan evaluation protocol will look for in each of the components.

Table 2-2 Evaluation Criteria for Direction-Setting Components

General Criteria	Evaluation Criteria	Number of Evaluation Items		
		(1) Factual Basis	(2) Goals & Objectives	(3) Policies & Strategies
Decent housing (DH)	DH1- Assisting homeless people and special needs population to obtain affordable housing	4	2	2
	DH2- Assisting person at risk of becoming homeless and low- and moderate-income people	2	2	2
	DH3- Retaining affordable housing stock	2	3	5
	DH4- Increasing the availability of affordable housing in standard condition for low- and moderate-income families	3	3	5
A Suitable Living Environment (SE)	SE1- Improving the safety and livability of a neighborhood	2	3	3
	SE2- Provide quality services for low- and moderate-income neighborhood	1	2	2
	SE3- Preserving and restore properties of special historic, architectural, or aesthetic value	1	2	2
	SE4- Conserving energy resources and use of renewable energy resources	2	2	3
	EO1- Job creation and retention	2	2	2

Expand Economic Opportunities (EO)	EO2- The provision of public services concerned with employment	2	2	2
	EO3- Availability of financial support for low- and moderate-income persons	1	1	1
Fair Housing	Promote housing choice for all	2	2	4

2.5.3.1.1. “Decent Housing” Criteria

The first general criteria, *decent housing*, is divided into four subcategories (or evaluation criteria), each of these is then divided into evaluation items. I will explain each of the criteria below, the number of items for each is listed in Table 2-2. The first criterion is *Assisting homeless people and special needs populations to obtain affordable housing*. It tests how the local government prepares to provide decent housing for the most in-need population groups, homeless and special needs populations (disabled, elderly, a person with HIV/AIDS). For example, in the *Factual Basis* component, I evaluate this by looking at how the ConPlan identifies these populations and the available supportive facilities. In the *Goals and Objectives* component, I assess their commitment and determination by examining how the ConPlan lays out its goals to help the homeless transition to permanent housing and independent living. The protocol also assesses how local jurisdictions define the outcomes of supporting special needs populations with public facilities and services. In the *Policies and Strategies* component, I focus on how the local government plans specific initiatives to provide emergency shelter, transitional housing for the homeless, as well as acting to address the needs of special needs populations based on what is currently available and the outcomes they are aiming for.

The second evaluation criterion is *Assisting a person at risk of becoming homeless and low- and moderate-income people*. This criterion focuses on extremely low-income (income less than 30% AMI) and very low-income groups (income between 30% and 50% AMI). Following HUD's instructions, I consider these groups of populations to be at high risk of being homeless. Therefore, subsidized housing is an appropriate approach to support these individuals and families. The *Factual Basis* component of the protocol tests how the ConPlan prepares factual data about this population, and at the same time, identifies the available facilities and services. In the *Goals and Objectives* component, the specific outcomes of public housing, and rental housing preservation, renovation, and production are among the expected outcomes in a ConPlan. The protocol also addresses how the local government sets goals related to increasing homeownership opportunities for these groups. After that, the evaluation items in the *Policies and Strategies* component focus on the actions of the ConPlan. The actions include specific rental assistance programs, or non-housing assistance such as job training, education improvement, or self-sufficiency initiatives.

Retaining affordable housing stock is the third evaluation criterion. This shows the importance of maintaining affordable housing stock in the local communities. In the *Factual Basis* component, the protocol assesses how the local government provides facts about the housing market such as the quantity and physical quality status of different housing types. Also, the local authority identifies specific housing problems in different areas. With the available data set provided by HUD, the evaluation protocol looks for how the local government presents the data including housing cost burdens,

overcrowding, and substandard conditions, among other characteristics. In the *Goals and Objectives* component, the evaluation protocol assesses how the local government sets outcomes for preserving and maintaining affordable housing units. The next component, *Policies and Strategies*, measures the ConPlan performance by its preparation for concrete action. For instance, the local government needs to show a clear intention to prevent foreclosures and vacancies, and, it also acts to preserve public housing and other affordable housing developments. More importantly, the local government should be active in seeking additional state and federal funding sources to maintain the supply of affordable housing stock.

The final evaluation criteria of *decent housing* is *Increasing the availability of affordable housing in standard condition for low- and moderate-income families*. This targets the supply side of affordable housing for low- and moderate-income individuals and families. In the *Factual Basis* component, the protocol assesses the preparation of the local government via its published information about housing conditions, especially lead-based paint hazards, and its estimations for the housing needs for the next 5 years. Equally important, the facts and trends of the local housing market are expected to be presented in the ConPlan. After that, the protocol seeks to evaluate how the local government defines its envisioned outcomes in the *Goals and Objectives* component. By setting goals and objectives to address the issues of sub-standard housing or lead-paint hazards, in addition to expanding the capacity of housing providers and promoting high-quality housing production, the ConPlan shows clear intention to support the supply side of affordable housing stock. In the *Policies and Strategies* component, the protocol

expects to see a set of concrete actions and initiatives detailed in the ConPlan. For example, the city should support redevelopment in degraded areas or remove any governmental constraints on affordable housing development. Also, the local government can apply inclusionary zoning tools to increase the supply of affordable housing and provide activities to improve housing quality. In the protocol, each of these evaluation items is explained in detail with instructions and a concrete example so that the user can perform an assessment with a written ConPlan.

2.5.3.1.2. “Suitable Living Environment” Criteria

The second set of general criteria, a *suitable living environment*, focuses on non-housing issues in local areas. There are four sub-sets of this criterion that help to capture the performance of a ConPlan at a more detailed level. I will explain each of the evaluation criteria. The first one is *Improving the safety and livability of the neighborhood*. This evaluation criterion includes items, in the *Factual Basis* component, that measure how well the ConPlan identifies or describes the current conditions of local communities. For example, the local neighborhood’s conditions can be revealed through the data and facts about the crime rate, housing vacancy, and environmental degradation, among other issues. In addition, the city can also identify natural hazard issues such as flooding by showing historic flood maps or aggregated data about damages. In the component of *Goals and Objectives*, the ConPlan is tested on whether it shows a commitment in setting goals for the physical improvement for low- and moderate-income neighborhoods. A specific goal can be to end slums or blight in certain areas. Moreover, setting priority areas as part of specific goals is vital for the action steps later

on. Then, the *Policies and Strategies* component of a ConPlan is expected to present actions to support these goals. The protocol focuses attention on specific efforts such as code enforcement, outreach, or development restrictions to improve the physical condition of low- and moderate-income neighborhoods. Also, the local government should be proactive in increasing awareness among property owners and residents about the importance of property maintenance to long-term housing quality.

The next evaluation criterion is to *Provide quality services for low- and moderate-income neighborhoods*. In the *Factual Basis* component, the protocol examines the ConPlan to understand how the local government describes current public facilities and services for its population, especially for those with low- and moderate-incomes. These can be done by showing the quantity and quality of current facilities such as schools, hospitals, churches, and libraries, among other public facilities. The local government can be creative in presenting the data by comparing the local situation with regional or state standards, or with adjacent jurisdictions. Conducting a separate survey to report the current issues is another good approach. After that, in the *Goals and Objectives* component, the protocol addresses how the local government defines outcomes for improving the quality of public facilities and services, especially in the area of low- and moderate-income neighborhoods. Additionally, proposing a new program or service to support these populations should be on the list of the ConPlan. To support these goals and outcomes, the local jurisdiction, in the *Policies and Strategies* component, should outline specific initiatives for the next 5 years. For instance, the local authorities can provide childcare assistance, health care services, crime prevention

programs, or substance abuse consultation for designated areas. These activities will contribute to building a better community, especially for those living in distressed areas across the jurisdiction. The evaluation protocol counts on specific initiatives mentioned in the ConPlan.

The third evaluation criterion is *Preserving and restoring properties of special historic, architectural, or aesthetic value*. This criterion is proposed following the final rule of the ConPlan ("Consolidated Plan Revisions and Updates: Final Rule," 2006). In the *Factual Basis* component, the protocol evaluates how the ConPlan talks about the current conditions of the historic, architectural, and aesthetic values of the neighborhood and community. To assess the expectations of the local jurisdiction, the evaluation protocol, in the *Goals and Objectives* component, analyzes the proposed outcomes to see how they are related to preserving and restoring these valuable properties. Significantly, the ConPlan, in the *Policies and Strategies* component, needs to show their planned actions to achieve the outcomes mentioned above. These actions can be illustrated by creating a special committee or program in charge of special properties before organizing preservation and restoration initiatives.

Conserving energy resources and the use of renewable energy resources is the fourth and final element in this group. It addresses the issue of clean energy which has become more and more important today. In the *Factual Basis* component, the evaluation protocol assesses how the local government identifies energy-saving programs and the usage of renewable energy in local areas. The ConPlan can show maps, graphs, or any type of illustration to describe the current state of renewable energy. Then, the local

government will be evaluated on how they layout goals to promote these approaches. Furthermore, the local government can also set outcomes in promoting sustainable development strategies for the community. In the *Policies and Strategies* component, the evaluation protocol focuses on the proposed initiatives mentioned in the ConPlan. For example, it evaluates how the local government proposes activities such as providing assistance and technical support or encouraging energy-efficient programs that help reduce housing energy costs.

2.5.3.1.3. “Expand Economic Opportunities” Criteria

The third set of criteria, *expand economic opportunities*, addresses a vital element of any housing and community development program. Besides the main purpose of the program, it is expected to create more job opportunities for low- and moderate-income populations in the local areas. This evaluation protocol aims to capture this effect by measuring the performance of a ConPlan on three sets of evaluation criteria. The first one is *job creation and retention*. In the *Factual Basis* component, the protocol tests how the local government prepares necessary information such as identifying the state of employment and/or unemployment. The ConPlan is expected to describe the current status of local businesses, especially small business development. This information can be shown in the data about job creation or new business information. A ConPlan can illustrate a job improvement trend or a summary of local business development. In the *Goals and Objectives* component, the protocol focuses on the types of outcomes the ConPlan sets to achieve. For example, revitalizing particular geographic areas can contribute to the positive outcomes of local business development, which leads

to job creation. Also, one important objective a local government can propose is related to reducing regulatory and fee requirements for new development. This helps reduce costs and stimulate local business expansion. In the next component, *Policies and Strategies*, the protocol assesses a ConPlan on the proposed initiatives to improve business activities, especially in distressed areas. These initiatives can be in any form such as streetscaping, building code enforcement, or supporting mixed-use development. Moreover, the local government also needs to show its commitment to promoting small businesses by diverse approaches such as tax increment financing, providing an incubator environment, cluster developments, and commercial rehabilitation.

The second evaluation criterion is *The provision of public services concerned with employment*. In the *Factual Basis* component, the protocol tests how the ConPlan describes the current status of public services for employment. The local government is expected to identify empowerment and self-sufficiency assistance services for low- and moderate-income people. Next, the protocol, in the *Goals and Objectives* component, concentrates on the outcomes of a local government in supporting employment via public services. An example of outcomes can be providing technical assistance services for more than 50% of small local businesses. The ConPlan can list intentions to offer training opportunities to support an individual who is unemployed and currently seeking a job. In the *Policies and Strategies* component, the protocol assesses the types of programs that are proposed and how a local government highlights action steps to launch those programs. These initiatives can include employment services for the unemployed or placement services for the underemployed. The more detail included for the proposed

programs the better the outcomes generated for the local community. Also, the protocol requires an estimated number of jobs created for low- and moderate-income individuals that result from carrying out these programs proposed in the ConPlan.

The availability of financial support for low- and moderate-income persons is the third and final evaluation criteria. This criterion concentrates on financial support to low- and moderate-income people. In the *Factual Basis* component, the protocol evaluates how well the ConPlan identifies current access to financial resources (i.e. loans, mortgages) for people in the most need. Next, the protocol, in the *Goals and Objectives* component, looks for the outcomes that a local government achieves to increase access to sustainable mortgage credit or other types of financial services for those with low-and moderate-incomes. This can be direct or indirect financial support for a first-time homebuyer. Finally, in the component of *Policies and Strategies*, the ConPlan is evaluated based on the programs and initiatives that a local jurisdiction highlights in its agenda. These initiatives should aim to provide more financial support for low- and moderate-income individuals and families.

2.5.3.1.4. “Fair Housing” Criteria

The fourth general criterion is *fair housing*. There is only one evaluation criterion for this, *promote housing choice for all*. This evaluation addresses different contents of the ConPlan via each component. In the *Factual Basis* component, the protocol weighs how the ConPlan identifies impediments to affordable housing such as regulations, building codes, or practical barriers to fair housing. Equally important, the protocol also looks for a statement of current fair housing issues remaining in different neighborhoods

across local areas. In the *Goals and Objectives* component, the protocol focuses on the outcomes proposed in the ConPlan. For example, the local government can set goals for promoting fair housing choices for all types of housing as well as overcoming the effects of any impediments for fair housing. Moreover, keeping a record of the analysis and action taken to further support fair housing is an important outcome that the ConPlan should promote. In the next component, *Policies and Strategies*, the protocol focuses on initiatives proposed by the city to promote housing choice for all. These are educational outreaches, advertisement campaigns, or any action leading to the understanding of positive impacts, as well as a necessity for fair housing actions. Additionally, the ConPlan should list plausible programs to increase fair housing practices in different geographic areas or with different housing tenures. It is also very important to the local government to build a monitoring system that helps update the status of the impediments as well as tracks the actions of the authorities.

2.5.3.2. Evaluation Criteria for Action-Oriented Components

In this section, I will present the evaluation criteria and items designed to examine the Action-oriented components: (4) Implementation and Monitoring and (5) Participation and Collaboration. Table 2-3 lists the evaluation criteria and the number of items in each of these components. To assess the Action-oriented components of the ConPlan, I propose two general criteria: *Proactive Involvement* and *Organizational Arrangement*. These general criteria highlight the efficiency of the local government in preparation and implementation activities. Each of the general criteria and their evaluation criteria will be presented below.

Table 2-3 Evaluation Criteria for Action-Oriented Components

General Criteria	Evaluation Criteria	Number of Evaluation Items	
		(4) Implementation & Monitoring	(5) Participation & Collaboration
Proactive involvement (PI)	PI1- Information sharing	3	3
	PI2- Diverse involvement	1	5
Organization	OA1- Leadership	2	1
Arrangement (OA)	OA2- Priority arrangement	6	1

2.5.3.2.1. “Proactive Involvement” Criteria

The first group, *Proactive Involvement*, focuses on the way local government performs during every stage of planning. The first evaluation criteria for this group is *Information Sharing*. It prioritizes the transparent approach from the local government through communication. In the *Implementation and Monitoring* component, the protocol examines the actions carried out to support the implementation process of the ConPlan. For example, the local government is expected to regularly update the status of a different project, development, or bidding process. The protocol also tests how the ConPlan delivers these updates. The city can maintain a website designated for the plan only or integrate it into the city’s website. The protocol also evaluates how the city prepares for the monitoring process. During the implementation of the plan, things will happen in a way that does not align with the plan. Thus, the city must show they are being proactive regarding new information or issues. This preparation will help us understand more and be able to form a correct judgment about the ConPlan. In the *Participation and Coordination* component, the protocol assesses the whole process of planning from the beginning until adoption. It evaluates how the government provides

opportunities for citizens, public agencies, and other interested parties to receive information, review it, and submit their comments regarding the content of the ConPlan. Also, according to the law, the planning process must contain at least two meetings that are open to the public. The city will be evaluated on how they deliver information to all citizens, especially low-income and vulnerable groups (non-English speakers, minorities, and the disabled). The protocol looks for the method of communication presented in the ConPlan. Some cities only post information on their website or social media. Others, being more creative, reach a larger audience through an advertisement campaign, YouTube video, or even meeting in person.

The second criterion is the *Diverse Involvement*. This evaluation criterion stresses the diversity of the plan-making process. In the *Implementation and Monitoring* component, the protocol examines how the local government incorporates diverse groups into the implementation process. During this period, a task force involving different stakeholders can be created through the ConPlan. In *Participation and Coordination*, the protocol concentrates more on the inclusiveness of planning activities by endorsing public engagement. For example, the local government must coordinate with public and private agencies in their city, as well as agencies from the adjacent jurisdictions or even at the regional and state level. Also, there is a high expectation of participation by the citizen in every process. As the direct beneficiary of the programs, the citizen must be involved in all the stages of ConPlan preparation. Local institutions such as a university or college are also expected to be involved and contribute to the preparation of a ConPlan.

2.5.3.2.2. “Organizational Arrangement” Criteria

Organizational *Arrangement* is measured by two criteria: *Leadership* and *Priority Arrangement*, each of these is then reflected by multiple items. It is undeniable that leadership plays a crucial role in every step of planning. The city with strong leadership will achieve more on its proposals. In the *Implementation and Monitoring* component, the protocol looks for how the local government assigns responsibility to implement the ConPlan particularly on both macro and micro levels. For example, the overall policies are assigned to one of several city departments while each strategy or action has its responders. This will not only increase the efficiency of the implementation process but also strengthen the transparency and accountability of the ConPlan’s grantee. In *Participation and Collaboration*, leadership is measured via the direct involvement of the city leaders. Particularly, the protocol assesses how elected officials participate in the process of planning. A simple example can be the description of city leaders joined in the ConPlan or an attachment of a letter or notification with a signature to show the commitment of city leadership.

The second criterion is the *Priority Arrangement*. This reflects the ability of the local government in arranging works and activities in different stages of the ConPlan. In the *Implementation and Monitoring* component, the protocol looks for some signs of priority in the implementation process such as a clear timeline for a list of actions or strategies. Also, the ConPlan can categorize these into short- and long-term arrangements. In addition, the protocol evaluates how the local government identifies priorities in funding, project outcomes, and geographic locations. To propose a good

priority list, the government must present its eligibility criteria or standards to explain its decisions. Also, the protocol expects to see what groups will appear on the target's list for different actions. In the *Participation and Collaboration* component, the protocol assesses how the government prioritizes citizens during the plan-making processes. Particularly, the quality of a ConPlan can be revealed by how they engage with and encourage the public, especially low-income and vulnerable groups. For example, the protocol tests how a ConPlan engages with a non-English-speaking individual, minorities, and the disabled in its approaches. The local government can show their priorities and intentions to inclusively involve these groups simply by being mindful when choosing the time and place of the meeting. A survey is also considered an effective way to engage with individuals during planning. The protocol examines the creative ways the local government increases the quality of participation and collaboration activities.

2.6. The Grading System of the Consolidated Plan Evaluation Protocol

Designing an evaluation protocol for the ConPlan document is just the first half of the mission. To truly capture the quality of this planning document, the evaluation protocol must be implemented in a standardized process. In the following section, I will discuss two major factors impacting the implementation process of a ConPlan: validity and reliability. In the discussion, the elements of coders, grading systems, or usage of the protocol will be mentioned.

2.6.1. Validity

This protocol will adopt different strategies to increase the measurement validity of the evaluation. Following the suggestion of Norton (2008), it concentrates on several major elements that were discussed in the literature of content analysis (Putt & Springer, 1989; Spector, 1992). First, the protocol content will ensure vocabulary consistency for the meaning sensitivity of each term. For example, it will use the term “score” or “point” for the measurement of each content element. This usage helps avoid the unnecessary confusion caused by using easily-misunderstood terms such as “scale” or “index,” which has been discussed in a previous study (Spector, 1992). The simple and clearly explained language will also increase the applicability of the protocol, ensuring its regeneratable characteristics.

The second critical element to ensure validity is the usage of the weighting of the items comprising a measure. The study will apply the method of scoring by using the ordinal system “0-1-2.” This scoring system has been used widely in plan evaluation literature (Berke et al., 2012; Brody, 2003a; Kang et al., 2010; H. W. Kim & T. Tran, 2018). The evaluation item will be scored “0” if it is absent from the plan. If the item has been mentioned in the plan but only with basic information, it will be scored “1.” And, the protocol will give a score of “2” for an evaluation item that shows detailed information about the content of the item. It is clear what defines the evaluation item that receives a score of “0.” However, distinguishing between scores “1” and “2” can sometimes be tricky. I take a section discussing overcrowding issues as an example to distinguish between two cities that have scores of “1” and “2.” The city of San Bernardino (CA), in its ConPlan 2005-2010, presents the issue of overcrowding (page 3-

6) with the text explaining the status of local overcrowding issues with a table showing overcrowding by tenure. In its ConPlan 2004-2008, the city of Shreveport (LA) presents similar basic information about overcrowding with a table showing overcrowding by tenure. However, the table presented in San Bernardino's ConPlan only shows the overcrowding with two levels: overcrowded (1.01-1.5 persons/room) and severely overcrowded (>1.5 persons/room). Shreveport, looking at the same topic, shows a more detailed table with five levels of overcrowding: 0.50 or less, 0.51 to 1.00, 1.01 to 1.50, 1.51 to 2.00, and 2.01 or more. Moreover, this city adds an extra table, overcrowding by race, to provide more local facts. Significantly, this city also adds a colored map showing overcrowding by tract. This map is an intuitive way to describe the situation and increases the understanding of the readers. With the same content, each city has its own space to be creative and mindful about how it can deliver the message. In this case, the city of Shreveport's ConPlan will get 2 points for this evaluation item while the city of San Bernardino's ConPlan only gets 1 point. Obviously, not every evaluation item can be as clearly defined as in the case of these cities. Therefore, the evaluation protocol needs a more systematic approach to this issue.

The third element to improve validity is the context-dependency of the plan and research endeavor. This study notices the unique theme of a ConPlan which heavily focuses on the housing realm. Besides the general training for coders, the evaluation protocol will clearly explain and define terms that might confuse them. The uniformity in evaluating items will be ensured at every step and during the process of the study.

2.6.2. Reliability

Highly reliable results should be the goal of any plan quality evaluation study. As suggested by Krippendorff (2012), the methodology of content analysis should be transparent and open so that other researchers will be able to reproduce a similar analysis with similar data to get a similar result. To achieve that, the process of grading must secure inter-coder reliability. The role and importance of this element were discussed extensively by Berke and Godschalk (2009), then echoed by Stevens et al. (2014). The ConPlan evaluation protocol will follow the recommendations to increase inter-coder reliability, which leads to the reproductivity of the study.

First, the evaluation protocol is used with multiple coders who work independently. I recommend at least two coders work with the assessment for each ConPlan. Any disagreement will be reconciled through a discussion. This approach will increase the intercoder reliability for the results and avoid any potential bias with a single coder approach (Lyles & Stevens, 2014). The final score is the one that both coders agree on. The key to the grading process is independence and reconciliation. Making sure these two aspects are implemented will yield results with a high degree of consistency and reliability.

Second, appropriate approaches to increase the efficiency of the grading process should be established. Even working independently, coders must share common ground in their approaches. Before working independently, coders should conduct a test run for the grading process to train themselves on how to maximize the efficiency of reconciliation. The evaluation protocol is built to reflect regulations, academics, and practicality. The coders should first agree on the priority sources for an item on which

they disagree. For example, when evaluating how a city presents information about the issue of overcrowding, the coders should prioritize the requirements from HUD, then expand it to other sources. Then, coders will exchange their judgment about the item using general evaluation criteria as a reference. Each should put himself or herself in the position of the other to understand the basis behind the assessment. However, I have to accept that there will be evaluation items the coders are just unable to agree on. At that time, another expert's opinion might be the key. After that, the item might be reconciled by a majority vote. With a disagreement, the investigator should set and report the acceptable level of agreement. Each of the items on which there is disagreement should be recorded and analyzed. The analysis will indicate the agreement coefficients, calculated by the rate of agreed items over total items. Based on the ranges of this coefficient in the literature, Berke and Godschalk (2009) suggested the lowest acceptable coefficient of at least 0.88. With a more specific approach, Krippendorff (2004) believes the agreement coefficient should be measured separately based on the specific criteria or characteristics. Then, the smallest number among them should be reported as the overall coefficient of the evaluation.

2.7. Discussion

It has been almost three decades since the first time the content analysis method was introduced in plan quality evaluation. A wide range of topics in planning has been addressed including natural disasters, environmental management, climate change, and built environment, among others. However, Housing-related plans seem to be left out of the plan quality evaluation's mainstream studies.. The urgent need to address the gap in

housing plan quality literature was also presented and analyzed. The meta-analysis of more than 50 publications in plan quality evaluation literature indicates the need to understand how to create an evaluation protocol, the backbone of any study. The creation process has been introduced and the protocol's structure and usage have been explained. Below are some of the final thoughts about the ConPlan quality evaluation protocol and what I should do next.

There are some limitations in current approach to housing plan quality. First, the scale of the study to measure national housing-related plan quality needs to be increased. The housing plan's quality evaluation studies currently only address the concern of a few housing plans in six metropolitan areas (Turner et al., 2002). In this report, the authors depicted how ConPlan addresses the local housing needs. The sampled cities in six metropolitan areas (Atlanta, Boston, Cleveland, Minneapolis-St. Paul, San Antonio, and San Francisco) represent different regions nationwide. However, most local jurisdictions in the United States (city, township are much smaller (in terms of population size) than these sampled areas. To improve the generalization power of the study nationwide, it is a need for a large sample size with the focus on the typical size of local jurisdictions. Other studies in the literature of housing-related plan quality also show similar drawbacks. For example, Connerly and Mueller (1993) only analyzed plans of four counties and six cities in Florida, while Hoch (2007) used 36 comprehensive plans of local jurisdictions in Illinois. Therefore, this study's analysis of 72 local jurisdictions' ConPlans increases the generalization when discussing the quality of ConPlan nationwide. Thanks to the

large sample size, its findings and recommendations are reliable and applicable to other local jurisdictions.

Second, the level of details regarding the quality of a housing plan is abstract. In their report, Turner et al. (2002) delivered conclusions with some general terms regarding the performance of local jurisdictions. For example, when discussing the overall effectiveness of local ConPlans, they wrote: *"The data presented here indicate that the jurisdictions we studied did a responsible job with the ConPlan process. They conducted sensible analyses of market conditions and needs, ...They prepared reasonable strategies relative to the overall market conditions..."* The terms "responsible job," "sensible analyses," or "reasonable strategies" are blurry and too general to indicate the performance of a ConPlan indeed. Since there are various topics, statements, processes, ... involved in the ConPlan, it is critical to have a systematic and comprehensive quality measurement. Therefore, the framework proposed in my study answers the limitations of the current approach about ConPlan's quality and performance. It provides a clear picture with a measurable index of each content's elements.

Third, the current studies lack a standardized evaluation framework that can systematically assess the local ConPlans of jurisdictions across the nation. The study conducted by Turner et al. (2002) uses the framework as Yes/No approach to examine whether a ConPlan discussed a particular topic. The authors generated a series of tables that act as a checklist for each city regarding a specific topic. Connerly and Muller (1993) and Hoch (2007) did not focus on ConPlan. Their study

applied a similar approach in assessing the quality of a Comprehensive plan. They evaluate how well each criterion had been presented in sample plans. The authors use an ordinal grading system (substantially, somewhat, not at all) to examine the documents. Hoch (2007) went further to conduct interviews with local planners to create a more comprehensive picture of the quality of housing-related planning documents. However, these studies show the limitation of lacking a standard evaluation protocol. They did somewhat mention different framework components, but there was no clear constructed form or scorecard presented. Therefore, I propose an evaluation scorecard that can be applied to any local jurisdictions across the country in my work. The framework is built using a credible approach praised in the plan evaluation literature. Learning from the previous studies, my framework is designed to capture the quality of ConPlan by considering all elements in this planning documents. Having a sizable thesis of plan evaluation literature in various fields (environment, ecology, climate change, ...) is an advantage to building an original evaluation protocol for ConPlan. Extracting from the references, I did adopt the basic structure and added new elements to the protocol to truly and effectively capture the quality of a housing plan.

The standardized evaluation protocol offers several advantages over the current studies. First, the framework allows a different group of stakeholders' usage. For example, local officials, researchers, policymakers, and the local community can use this tool to assess the ConPlan's quality. Anybody who possesses proper training in the grading process and basic knowledge about affordable housing and community

development planning can perform the assessment framework. It popularizes the usage of the framework to the public and increases the transparent approach of the evaluation process. Second, the evaluation protocol is designed to quantify the quality of ConPlan into a score with a total of 50 points. It can distinguish between ConPlans based on this score. Unlike previous approaches, we only know ConPlan A is better than ConPlan B in terms of specific criteria. With this approach, I can confidently indicate how many points (or percentage) City A is outperforming City B based on their ConPlans. More importantly, it allows users to scrutinize further how different plan components correlate and potentially lead to the results. For example, the goals and objectives of ConPlan are built based on the facts collected about the social demographic and housing conditions of the local jurisdiction. And, goals and objectives are the inputs for the city to propose policies or strategies in their action plan. Therefore, performance in one part of the ConPlan can impact the other's content. With the framework presented in this study, the user can draw linkages of plan components between ConPlans and within a ConPlan of a city. It provides advantages in analyzing data and leads to better or more accurate findings. To assess the plan's quality, supporting references are seen as a solid foundation to build a suitable evaluation protocol. ConPlan is prepared to reflect the local conditions, propose goals and objectives, and highlight actions with an implementation agenda to execute them. In other words, it can be seen as a blueprint for local housing and community development for the next five years. Thus, to reflect the diverse content of ConPlan, I use three sources of references: regulation, academic, and practice. Each of these sources has been discussed extensively in the previous section.

The evaluation criteria reflect the comprehensive approach from diverse stakeholders. They are directly related to ConPlan and provide valuable information to design an effective and reliable evaluation protocol.

Besides the systematic and comprehensive approach, the evaluation protocol's content focuses on the ultimate vision of affordable housing and community development activities. The assessment's uniqueness makes the framework an excellent housing and community development plan review. In its programs, HUD aims for the ultimate goals of providing American individuals and families with decent housing, suitable living environments, and expanding economic opportunities. The early study of Connerly and Muller (1993) chose evaluation criteria of *technical criteria, data consistency, evaluation, and attribute*. These criteria reflect the effectiveness and performance of the housing element in the Comprehensive Plans. Meanwhile, Turner et al. (2002) did not use evaluation criteria to assess the quality of ConPlans. None of the current studies specifically examine the ConPlan's performance regarding the three aforementioned visions. Therefore, I integrated these critical elements as primary evaluation criteria to measure how well ConPlans support low-income individuals and families with decent housing in a suitable living environment while expanding their economic opportunities.

In addition, I add the fourth evaluation criteria, Fair Housing, to the evaluation framework. Fair housing certification is required in ConPlan's regulation. However, it is just a signed form from the local jurisdiction suggesting that it will follow principles and approaches to addressing the issue of fair housing. Without assessment, there is no way

to know how well the local jurisdictions would address this issue in their action plan. In addition, ConPlan preparation requires a variety of specific content and discussion. Thus, the evaluation protocol is proposed to examine the hidden critical factors during the plan preparation.

Finally, the outcomes of the evaluation framework provided a complete picture of the ConPlan quality. They reveal the performance of different plan components, such as housing market analysis, homelessness needs, or community development demand. At the same time, the findings highlight how well each of the four primary criteria (decent housing, suitable living environment, expanding economic opportunities, and fair housing) has been addressed in the ConPlan. Together, a complete picture of a housing plan is illustrated to stakeholders, including the local community, local authorities, and federal agencies.

I am not trying to evaluate the evaluation protocol, but rather express opinions and optimism about this tool and its applications. The key questions that keep us awake at night are: How to create a “good” protocol that truly works for the purpose, that is not difficult to use and can be used to create a similar study. There is no clear answer or definition of a good protocol. Like defining a good plan, this is subject to significant debate. I believe the evaluation protocol might be a distance from perfect, however, the imperfect is always a part of the planning and this protocol is no different

First, this protocol helps interpret the plan in a way that reveals it from different angles. The results can indicate what part of the plan achieves how much on the quality score ladder. Besides, the protocol also reveals what criteria are performed at what level

of quality. By seeing the planning document from the different filters, I can identify the areas where I should pay more attention, both positively and negatively.

Second, the protocol can benefit different groups. For example, the local authority that prepares the plan and will implement it can understand the performance and learn from other “high-quality” plans. Next, the federal government, or HUD, will have a reflection of what has been done regarding this program. From there, they can revise the regulations or requirements to pivot the plan to a different target. Also, the researcher can benefit from using this protocol. The evaluation process will reveal the advantages and disadvantages of the plan. The results of the evaluation process can spark more ideas for new studies.

Finally, I believe that the citizens will receive direct and indirect benefits from the protocol. They will understand how their role of participation can impact the quality of the scores. More importantly, the citizens can use the evaluation protocol as a checklist to hold the local government accountable. The citizens also receive benefits indirectly from other groups mentioned above if they address the concerns raised in the protocol.

In conclusion, I will apply this evaluation protocol to the ConPlan of cities across the United States to collectively measure the quality of this plan nationwide.

Additionally, the future study also integrates with outcome evaluation to create a complete quality evaluation assessment: from the plan preparation to implementation.

Understanding the quality of planning documents, then correlating them with what happens in real life will create valuable insights in plan quality studies. Through the

creation of an evaluation protocol, I hope to see that this study has restarted the concerns about housing-related issues in plan quality evaluation.

2.8. References

- Arlkatti, S., Lindell, M. K., Prater, C. S., & Zhang, Y. (2006). Risk area accuracy and hurricane evacuation expectations of coastal residents. *Environment and Behavior*, 38(2), 226-247.
- Baer, W. C. (1997). General plan evaluation criteria: An approach to making better plans. *Journal of the American Planning Association*, 63(3), 329-344.
- Baker, I., Peterson, A., Brown, G., & McAlpine, C. (2012). Local government response to the impacts of climate change: An evaluation of local climate adaptation plans. *Landscape and Urban Planning*, 107(2), 127-136.
- Baynham, M., & Stevens, M. (2014). Are we planning effectively for climate change? An evaluation of official community plans in British Columbia. *Journal of Environmental Planning and Management*, 57(4), 557-587.
- BenDor, T. K., Spurlock, D., Woodruff, S. C., & Olander, L. (2017). A research agenda for ecosystem services in American environmental and land use planning. *Cities*, 60, 260-271.
- Berke, P., & Godschalk, D. (2009). Searching for the good plan A meta-analysis of plan quality studies. *Journal of Planning Literature*, 23(3), 227-240.
- Berke, P., Godschalk, D., & Kaiser, E. J. (2006). *Urban land use planning. 5th ed*
[Bibliographies
Non-fiction]. Urbana : University of Illinois Press, [2006]

5th ed. <http://lib-ezproxy.tamu.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=cat03318a&AN=tamug.2695622&site=eds-live>
<http://www.loc.gov/catdir/toc/ecip0512/2005012429.html>

- Berke, P. R. (1994). Evaluating environmental plan quality: the case of planning for sustainable development in New Zealand. *Journal of Environmental Planning and Management*, 37(2), 155-169.
- Berke, P. R., & Conroy, M. M. (2000). Are we planning for sustainable development? An evaluation of 30 comprehensive plans. *Journal of the American Planning Association*, 66(1), 21-33.
- Berke, P. R., Crawford, J., Dixon, J., & Ericksen, N. (1999). Do cooperative environmental planning mandates produce good plans? Empirical results from the New Zealand experience. *Environment and Planning B: Planning and Design*, 26(5), 643-664.
- Berke, P. R., Ericksen, N., Crawford, J., & Dixon, J. (2002). Planning and indigenous people: Human rights and environmental protection in New Zealand. *Journal of Planning Education and Research*, 22(2), 115-134.
- Berke, P. R., & French, S. P. (1994). The influence of state planning mandates on local plan quality. *Journal of Planning Education and Research*, 13(4), 237-250.
- Berke, P. R., J, R. D., Kaiser, E. J., & Burby, R. J. (1996). Enhancing plan quality: evaluating the role of state planning mandates for natural hazard mitigation. *Journal of Environmental Planning and Management*, 39(1), 79-96.

- Berke, P. R., Smith, G., & Lyles, W. (2012). Planning for resiliency: Evaluation of state hazard mitigation plans under the disaster mitigation act. *Natural Hazards Review, 13*(2), 139-149.
- Berke, P. R., Spurlock, D., Hess, G., & Band, L. (2013). Local comprehensive plan quality and regional ecosystem protection: The case of the Jordan Lake watershed, North Carolina, USA. *Land use policy, 31*, 450-459.
- Bogdon, A., Silver, J., & Turner, M. A. (1994). *National analysis of housing affordability, adequacy, and availability: a framework for local housing strategies*. US Department of Housing and Urban Development, Office of Policy Development
- Brody, S. D. (2003). Examining the role of resource-based industries in ecosystem approaches to management: An evaluation of comprehensive plans in Florida. *Society & Natural Resources, 16*(7), 625-641.
- Brody, S. D. (2003a). Are we learning to make better plans? A longitudinal analysis of plan quality associated with natural hazards. *Journal of Planning Education and Research, 23*(2), 191-201.
- Brody, S. D. (2003b). Implementing the principles of ecosystem management through local land use planning. *Population and Environment, 24*(6), 511-540.
- Brody, S. D. (2003c). Measuring the effects of stakeholder participation on the quality of local plans based on the principles of collaborative ecosystem management. *Journal of Planning Education and Research, 22*(4), 407-419.

- Brody, S. D., Highfield, W., & Carrasco, V. (2004). Measuring the collective planning capabilities of local jurisdictions to manage ecological systems in southern Florida. *Landscape and Urban Planning*, 69(1), 33-50.
- Bunnell, G., & Jepson Jr, E. J. (2011). The effect of mandated planning on plan quality: a fresh look at what makes “a good plan”. *Journal of the American Planning Association*, 77(4), 338-353.
- Clark, T. A. (2002). *Project management for planners: a practical guide*. Planners Pr.
- Connerly, C. E., & Muller, N. A. (1993). Evaluating housing elements in growth management comprehensive plans. *Sage Focus Editions*, 146, 185-185.
- Conroy, M. M., & Berke, P. R. (2004). What makes a good sustainable development plan? An analysis of factors that influence principles of sustainable development. *Environment and Planning A*, 36(8), 1381-1396.
- Consolidated Plan Revisions and Updates: Final Rule, 22 § 91 6950 (2006).
- Courant, P. N. (1978). Racial prejudice in a search model of the urban housing market. *Journal of Urban Economics*, 5(3), 329-345.
- Davis, B. C. (2004). Regional planning in the US coastal zone: a comparative analysis of 15 special area plans. *Ocean & Coastal Management*, 47(1-2), 79-94.
- Dennis, D., Locke, G., & Khadduri, J. (2007). *Toward understanding homelessness: the 2007 national symposium on homelessness research*. US Department of Health and Human Services, US Department of Housing and
- Department of Housing and Urban Development. (1999). *Housing and Community Development Act of 1974*. Retrieved 2/11 from

<https://www.hudexchange.info/resource/2184/housing-and-community-development-hcd-act-of-1974/>

Department of Housing and Urban Development. (2018a). *2013 HOME Final Rule*.

<https://www.hudexchange.info/programs/home/home-final-rule/>

Department of Housing and Urban Development. (2018b). *HOME Overview*. Retrieved

5/6 from <https://www.hudexchange.info/programs/home/home-overview/>

Department of Housing and Urban Development. (2019a). Emergency Solution Grants (ESG) Program. Retrieved 2/25/2019, from

<https://www.hudexchange.info/resources/documents/EmergencySolutionsGrantsProgramFactSheet.pdf>

Department of Housing and Urban Development. (2019b). *ESG Law, Regulations, and*

Notices. Retrieved 2/25 from <https://www.hudexchange.info/programs/esg/esg-law-regulations-and-notices/>

Department of Housing and Urban Development. (2019a). *Housing Opportunities for*

Persons With AIDS. Retrieved 2/25 from

<https://www.hudexchange.info/programs/hopwa/>

Department of Housing and Urban Development. (n.d.-a). *CDBG: Community*

Development Block Grant Programs. Retrieved 3/31 from

<https://www.hudexchange.info/programs/cdbg/>

Department of Housing and Urban Development. (n.d.-b). *HOME and CDBG*

Guidebook. <https://www.hudexchange.info/resources/documents/HOME-CDBGGuidebook.pdf>

- Deyle, R. E., Chapin, T. S., & Baker, E. J. (2008). The proof of the planning is in the platting: An evaluation of Florida's hurricane exposure mitigation planning mandate. *Journal of the American Planning Association*, 74(3), 349-370.
- Deyle, R. E., & Smith, R. A. (1998). Local government compliance with state planning mandates: The effects of state implementation in Florida. *Journal of the American Planning Association*, 64(4), 457-469.
- Dunn, W. N. (2015). *Public policy analysis* (5 ed.). Routledge.
- Emergency Solution Grants (ESG). (2019). Retrieved 2/25 from <https://www.benefits.gov/benefit/5890>
- Evenson, K. R., Satinsky, S. B., Rodriguez, D. A., & Aytur, S. A. (2012). Exploring a public health perspective on pedestrian planning. *Health promotion practice*, 13(2), 204-213.
- Farley, R., Bianchi, S., & Colasanto, D. (1979). Barriers to the racial integration of neighborhoods: The Detroit case. *The Annals of the American Academy of Political and Social Science*, 441(1), 97-113.
- Farley, R., & Frey, W. H. (1992). Changes in the segregation of whites from blacks during the 1980s: Small steps toward a more racially integrated society. Center. The University of Michigan,
- Federal Register. (2016). *Drafting Legal Documents, Principles of Clear Writing*. Retrieved 3/17 from <https://www.archives.gov/federal-register/write/legal-docs/clear-writing.html>
- Finegold, K. (2004). Block grants: Historical overview and lessons learned.

- Fosburg, L. B., & Dennis, D. L. (1999). *Practical lessons: The 1998 national symposium on homelessness research*. The Depts.
- Fu, X., Gomaa, M., Deng, Y., & Peng, Z.-R. (2017). Adaptation planning for sea level rise: a study of US coastal cities. *Journal of Environmental Planning and Management*, 60(2), 249-265.
- Fu, X., Svoboda, M., Tang, Z., Dai, Z., & Wu, J. (2013). An overview of US state drought plans: crisis or risk management? *Natural Hazards*, 69(3), 1607-1627.
- Fu, X., & Tang, Z. (2013). Planning for drought-resilient communities: An evaluation of local comprehensive plans in the fastest growing counties in the US. *Cities*, 32, 60-69.
- Goering, J. M., & Feins, J. D. (2003). *Choosing a better life?: Evaluating the moving to opportunity social experiment*. The Urban Insite.
- Gramlich, E. (1998). Consolidated Plan and Community Development Block Grant Advocacy. *Clearinghouse Rev.*, 32, 173.
- Gramlich, E. (2016). *Consolidated Planning Process*.
<http://nlihc.org/sites/default/files/2014AG-212.pdf>
- Guyadeen, D., Thistlethwaite, J., & Henstra, D. (2019). Evaluating the quality of municipal climate change plans in Canada. *Climatic Change*, 152(1), 121-143.
- Hamin, E. M. (2011). Integrating adaptation and mitigation in local climate change planning. *Climate change and land policies*, 122-143.
- Herd, M. (2019). *A Planner's Guide to Meeting Facilitation* (Planning Advisory Service, Issue.

- Hoch, C. (2007). How plan mandates work: Affordable housing in Illinois. *Journal of the American Planning Association*, 73(1), 86-99.
- Horney, J. A., Naimi, A. I., Lyles, W., Simon, M., Salvesen, D., & Berke, P. (2012). Assessing the relationship between hazard mitigation plan quality and rural status in a cohort of 57 counties from 3 states in the southeastern US. *Challenges*, 3(2), 183-193.
- Housing Opportunities for Person With AIDS (HOPWA)*. (2019).
<https://www.benefits.gov/benefit/5888>
- HUD. (2016). Affirmatively Furthering Fair Housing (AFFH) Final Rule.
<https://www.hudexchange.info/programs/affh/>
- Jones, D. K., Evenson, K. R., Rodriguez, D. A., & Aytur, S. A. (2010). Addressing pedestrian safety: A content analysis of pedestrian master plans in North Carolina. *Traffic Injury Prevention*, 11(1), 57-65.
- Jones, K. (2014). *An Overview of the HOME Investment Partnership Program*.
<https://fas.org/sgp/crs/misc/R40118.pdf>
- Julian, E. K. (2008). Fair Housing and Community Development: Time to Come Together. *Ind. L. Rev.*, 41, 555.
- Kaiser, E. J., Godschalk, D. R., & Chapin, F. S. (1995). *Urban land use planning* (Vol. 4). University of Illinois Press Urbana, IL.
- Kang, J. E., Peacock, W. G., & Husein, R. (2010). An assessment of coastal zone hazard mitigation plans in Texas. *Journal of Disaster Research*, 5(5), 520-528.

- Kim, H., & Tran, T. (2018). An Evaluation of Local Comprehensive Plans Toward Sustainable Green Infrastructure in US. *Sustainability*, 10(11), 4143.
- Kim, H. W., & Tran, T. (2018). An evaluation of local comprehensive plans toward sustainable green infrastructure in US. *Sustainability*, 10(11), 4143.
- Krippendorff, K. (2004). Reliability in content analysis. *Human communication research*, 30(3), 411-433.
- Krippendorff, K. (2012). *Content analysis: An introduction to its methodology*. Sage.
- Levy, D., Pendall, R., Abravanel, M., & Biess, J. (2012). *Housing Programs in the United States: Responding to Current and Future Challenges*.
<https://bipartisanpolicy.org/wp-content/uploads/sites/default/files/U.S.%20Housing%20Programs.pdf>
- Li, C., & Song, Y. (2016). Government response to climate change in China: A study of provincial and municipal plans. *Journal of Environmental Planning and Management*, 59(9), 1679-1710.
- Locke, G., Khadduri, J., & O'Hara, A. (2007). 10-Housing Models. Toward Understanding Homelessness: The 2007 National Symposium,
- Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human communication research*, 28(4), 587-604.
- Lyles, W., & Stevens, M. (2014). Plan Quality Evaluation 1994–2012 Growth and Contributions, Limitations, and New Directions. *Journal of Planning Education and Research*, 0739456X14549752.

- McClure, K. (2008). Deconcentrating poverty with housing programs. *Journal of the American Planning Association*, 74(1), 90-99.
- National Coalition for the Homeless. (2006). *McKinney-Vento Act*. Retrieved 2/12 from <https://www.nationalhomeless.org/publications/facts/McKinney.pdf>
- National Housing Task Force. (1988). *A decent place to live: The report of the National Housing Task Force* (Vol. 63). National Housing Task Force.
- National Low Income Housing Coalition. (2019). *HOME Investment Partnership Program*. Retrieved 2/3 from <https://nlihc.org/issues/other/home>
- Nelson, A. C., & French, S. P. (2002). Plan quality and mitigating damage from natural disasters: A case study of the Northridge earthquake with planning policy considerations. *Journal of the American Planning Association*, 68(2), 194-207.
- Nguyen, M. T. (2005). Does affordable housing detrimentally affect property values? A review of the literature. *Journal of Planning Literature*, 20(1), 15-26.
- Norton, R. K. (2005a). Local commitment to state-mandated planning in coastal North Carolina. *Journal of Planning Education and Research*, 25(2), 149-171.
- Norton, R. K. (2005b). More and better local planning: State-mandated local planning in coastal North Carolina. *Journal of the American Planning Association*, 71(1), 55-71.
- Norton, R. K. (2008). Using content analysis to evaluate local master plans and zoning codes. *Land use policy*, 25(3), 432-454.
- NYC Wagner. *Urban Planning Associations*. Retrieved 3/23 from <https://wagner.nyu.edu/portal/students/careers/resources/upassoc>

- Olsen, E. O. (2003). Housing programs for low-income households. In *Means-tested transfer programs in the United States* (pp. 365-442). University of Chicago Press.
- Peacock, W. G., Kang, J. E., Husein, R., Burns, G. R., Prater, C., Brody, S., Kennedy, T., No, U. G. C., & Center, R. (2009). An assessment of coastal zone hazard mitigation plans in Texas. *A Report Prepared for the Texas General Land Office and The National Oceanic and Atmospheric Administration*.
- Popkin, S. J., Katz, B., Cunningham, M., Brown, K. D., Gustafson, J., & Turner, M. A. (2004). A decade of HOPE VI: Research findings and policy challenges.
- Preston, B. L., Westaway, R. M., & Yuen, E. J. (2011). Climate adaptation planning in practice: an evaluation of adaptation plans from three developed nations. *Mitigation and Adaptation Strategies for Global Change*, 16(4), 407-438.
- Putt, A. D., & Springer, J. F. (1989). *Policy Research: Concepts, Methods, and Applications*. Prentice Hall.
- Rog, D. J., & Holupka, C. S. (1999). Reconnecting homeless individuals and families to the community. Practical Lessons: The 1998 National Symposium on Homelessness Research. US Dept of Housing and Urban Development and Dept. of Health and Human Services,
- Sard, B. (2001). Housing vouchers should be a major component of future housing policy for the lowest income families. *Cityscape*, 89-110.

- Shoemaker, M. (2016). Best Practices in Developing Energy Efficiency Programs for Low-Income Communities and Considerations for Clean Power Plan Compliance.
- Spader, J., & Turnham, J. (2014). CDBG Disaster Recovery Assistance and Homeowners' Rebuilding Outcomes Following Hurricanes Katrina and Rita. *Housing Policy Debate*, 24(1), 213-237.
- Spector, P. E. (1992). *Summated rating scale construction: An introduction*. Sage.
- Srivastava, R., & Laurian, L. (2006). Natural hazard mitigation in local comprehensive plans: The case of flood, wildfire and drought planning in Arizona. *Disaster Prevention and Management: An International Journal*, 15(3), 461-483.
- Steelman, T. A., & Hess, G. R. (2009). Effective protection of open space: does planning matter? *Environmental management*, 44(1), 93-104.
- Stevens, M. R., Lyles, W., & Berke, P. R. (2014). Measuring and reporting intercoder reliability in plan quality evaluation research. *Journal of Planning Education and Research*, 34(1), 77-93.
- Stone, B., Vargo, J., & Habeeb, D. (2012). Managing climate change in cities: will climate action plans work? *Landscape and Urban Planning*, 107(3), 263-271.
- Struyk, R. J., & Khadduri, J. (1980). Saving the Housing Assistance Plan Improving Incentives to Local Governments. *Journal of the American Planning Association*, 46(4), 387-397.
- Susskind, L. (1978). Should state government mandate local planning?... No. *Planning*, 44(6), 17-20.

- Talen, E. (1997). Success, failure, and conformance: An alternative approach to planning evaluation. *Environment and Planning B: Planning and Design*, 24(4), 573-587.
- Tang, Z., & Brody, S. D. (2009). Linking planning theories with factors influencing local environmental-plan quality. *Environment and Planning B: Planning and Design*, 36(3), 522-537.
- Tang, Z., Lindell, M. K., Prater, C., Wei, T., & Hussey, C. M. (2011). Examining local coastal zone management capacity in US Pacific coastal counties. *Coastal Management*, 39(2), 105-132.
- Tang, Z., Lindell, M. K., Prater, C. S., & Brody, S. D. (2008). Measuring tsunami planning capacity on US Pacific coast. *Natural Hazards Review*, 9(2), 91-100.
- Termorshuizen, J. W., Oplam, P., & Van den Brink, A. (2007). Incorporating ecological sustainability into landscape planning. *Landscape and Urban Planning*, 79(3-4), 374-384.
- Turner, M. A. (1998). Moving out of poverty: Expanding mobility and choice through tenant-based housing assistance. *Housing Policy Debate*, 9(2), 373-394.
- Turner, M. A., Kingsley, G. T., Franke, M. L., Corvington, P. A., & Cove, E. C. (2002). Planning to Meet Local Housing Needs: The Role of HUD's Consolidated Planning Requirements in the 1990s. *Prepared for the US Department of Housing and Urban Development Office of Policy*.
- University of Cincinnati Libraries. (2020). *Professional Organizations*. Retrieved 3/23 from <https://guides.libraries.uc.edu/urbanplanning/pro-dev>

- USC Libraries. (2019). *Urban & Regional Planning: Organizations/Think Tanks*.
Retrieved 3/23 from <https://libguides.usc.edu/c.php?g=234938&p=1559266>
- Wheaton, W. L. J. J. o. t. A. I. o. P. (1949). The Housing Act of 1949. *15*(3), 36-41.
- Wiewel, W., & Knaap, G. (2005). *Partnerships for smart growth: university-community collaboration for better public places*. ME Sharpe.
- Woodruff, S. C., & Regan, P. (2019). Quality of national adaptation plans and opportunities for improvement. *Mitigation and Adaptation Strategies for Global Change*, *24*(1), 53-71.
- Woodruff, S. C., & Stults, M. (2016). Numerous strategies but limited implementation guidance in US local adaptation plans. *Nature Climate Change*, *6*(8), 796-802.
- Yinger, J. (1986). Measuring racial discrimination with fair housing audits: Caught in the act. *The American Economic Review*, 881-893.
- Zhang, Y., Prater, C. S., & Lindell, M. K. (2004). Risk area accuracy and evacuation from Hurricane Bret. *Natural Hazards Review*, *5*(3), 115-120.

3. ASSESSING THE QUALITY OF CONSOLIDATED HOUSING PLAN IN THE UNITED STATES

3.1. Introduction

In the United States, financial mechanisms play a vital role in the federal agenda. Supportive funding takes many forms with specific structures and requirements. Depending on the program, the funding mechanism is designed and executed to maximize benefits for the beneficiary, the local and federal governments. Among these, a formula block grant is a popular form of public funding that is granted to a local jurisdiction for a particular purpose. This non-competitive grant is awarded based on a pre-defined formula (Finegold, 2004). The Consolidated Plan (ConPlan) manages four major block grant programs: the Community Development Block Grant Program (CDBG), the HOME Investment Partnerships Program (HOME), the Emergency Solutions Grants Program (ESG), and the Housing Opportunities for Persons With AIDS Program (HOPWA). This plan was proposed by the Department of Housing and Urban Development (HUD) in 1995 to replace some previous plans managing housing and development programs. They included the Housing Assistance Plan (HAP, 1974), the Comprehensive Homeless Assistance Plan (CHAP, 1987), and the Comprehensive Housing Affordability Strategy (CHAS, 1990). The ConPlan identifies local housing needs, proposes goals and priorities that address the local needs, and then prioritizes the local government's activities during the plan's term. Also, the localities are required to submit an annual update on the implementation process of the program.

3.2. The Motivations to Study ConPlan

First, a ConPlan plays a vital role in preparing, distributing, implementing, and monitoring the money pouring into a local community. As mentioned above, a ConPlan links to federal funding programs, including CDBG, HOME, ESG, and HOPWA. Between 2000 and 2013, the CDBG program alone was awarded about \$54 billion (Spader & Turnham, 2014). Thus, the total of all programs managed by a ConPlan can reach a serious amount of tax dollars designated for low- and moderate-income populations. This raises the concern about the performance and impact of a ConPlan on a local government. Therefore, an assessment of ConPlan quality will provide insights for HUD, local jurisdictions, and communities about its performance.

Second, the quality of ConPlans has never been addressed. In urban studies, plan quality evaluation was instituted at the beginning of the 1990s, when a content analysis approach was introduced into urban studies. Connerly and Muller (1993), among the earliest authors in plan quality evaluation literature, conducted a study to analyze the housing element in a local Comprehensive Plan. In the 55 publications in plan quality evaluation literature between 1993 and 2019, only two focus on a housing-related topic. The most recent one, completed by Hoch (2007), was published more than two decades ago. Based on the number of publications and their timelines, a housing-related topic seems not to be included in the mainstream of plan quality evaluation studies. In fact, there is only one notable study to date that directly concentrates on a ConPlan. A report conducted by Turner et al. (2002) examines the effectiveness of the requirements for the development of housing plans in the 1990s. This report examines six metropolitan areas using social demographic data and ConPlan documents. However, the authors did not

apply any evaluation protocols to assess the entire content of the plan. Instead, they conducted a cross-tabulation comparison to highlight housing need analysis, priorities, and strategy development. Then, the study examined the actual housing implementation that occurred during this period to compare it with case studies (Turner et al., 2002). Lacking a comprehensive approach in assessing the content of a ConPlan signifies the need for an evaluation protocol that can be systematically applied to any jurisdiction.

Lack of a ConPlan quality assessment leads to the third motivation for this study. The external factors that directly impact the quality of a ConPlan are unknown elements. The literature on plan quality identified several factors that directly or indirectly affect plan quality. However, how they impact a ConPlan, or to what extent, still needs to be explored. The second part of this study sheds light on the unknown territory of these factors. The results are expected to be valuable for multiple stakeholders of ConPlans, such as HUD, local jurisdictions, local communities, policymakers, and urban planners. Together, these three issues of ConPlans lead to the need to explore more about this important planning document for affordable housing and community development. Therefore, we propose the following research questions to further examine the quality of ConPlans:

- What is the overall quality of the ConPlans of cities across the United States?
- What plan components and criteria receive the greatest attention and how extensively are they presented in the ConPlan?
- What are the external factors that significantly impact the quality of a ConPlan?

3.3. Framework to build evaluation protocol

An evaluation protocol is a critical part of any plan quality evaluation study. The protocol works as a special filter to reveal the hidden values of planning documents. Depending on the research, there are several ways to determine the content of an evaluation protocol in a plan quality evaluation study. First, the protocol is adopted from other sources without any modification. It usually comes from the same group of authors (Berke & Conroy, 2000; Conroy & Berke, 2004).

Second, the evaluation protocol is built from other sources. This approach is the most popular process for constructing an evaluation protocol. Similar to the previous type, the protocol can be created from the works of the same authors (Brody et al., 2004; Woodruff & Regan, 2019) or different author(s) (Brody, 2003b; Li & Song, 2016; Norton, 2005a; Steelman & Hess, 2009). Equally important, the sources to build an evaluation protocol can come from governmental guidance such as the Federal Emergency Management Agency (FEMA) (Kang et al., 2010; Peacock et al., 2009) or the United States Environment Protection Agency (US EPA) (H. Kim & T. Tran, 2018). There are many ways of utilizing the sources for protocol creation. Typically, the authors transfer the guidance into a list of items or questions to evaluate how a plan addresses them. In addition, they can add or remove some elements to best fit the purpose of the study.

Third, the evaluation protocol is introduced the first time in a study, or what I call the original protocol. It can adopt or build the structure from others; however, the content used to assess the quality of a plan must be an original work. Among housing-related studies in plan evaluation literature, the ConPlan has never been a subject of

analysis. Therefore, this study will propose an original protocol to evaluate the content of ConPlans.

I propose an evaluation protocol using three significant sources: regulations, academic materials, and practices. Each of these contains several groups of materials supporting the protocol's creation. It is designed to capture how local jurisdictions follow basic requirements from the federal government. More importantly, the protocol examines how a local ConPlan promotes a high-quality product by revealing hidden values and the potential issues associated with its work. In the following paragraphs, I will discuss each of the three sources mentioned above.

3.3.1. Regulation sources

First, the regulations are composed of sources including the programs' final rules, housing acts, and governmental guidance. These are the foundation on which we build the content of our evaluation protocol. Unlike a Comprehensive Plan or competitive grant plan in which the grantee has to win the awarded funding, a ConPlan is a requirement for a non-competitive grant, a federal formula block grant. This type of grant is more popular with the large number of grantees that qualify. Thus, HUD has created a standardized format for the plan described in its final rule, 24 CFR Parts 91 ("Consolidated Plan Revisions and Updates: Final Rule," 2006). This vital document is a guideline for local governments in preparing, creating, and implementing the ConPlan. In addition, we also rely on the Housing Acts and the Final Rules associated with the programs that ConPlan oversees, including CDBG, HOME, ESG, and HOPWA. These documents, together with other governmental guidance, back the protocol in identifying

general criteria for evaluation. With more detail of the protocol's content, the other two references play a more vital role.

3.3.2. Academic sources

The second primary source we used to build an evaluation protocol is academic resources. They include literature on plan quality evaluation, in-need population, and affordable housing and community development. These materials provide empirical research evidence on the topics of inquiry. Significantly, we take extra care with the sections discussing results, findings, policy implications, suggestions, or criticism. Each of the academic groups provides insights into the protocol design process. For example, some of the works include studies on the housing search model (Courant, 1978), barriers to racial integration of neighborhoods (Farley et al., 1979; Farley & Frey, 1992), a fair housing audits tool (Yinger, 1986), and the relationship between affordable housing and property value (Nguyen, 2005).

3.3.3. Practical sources

The The third and final reference group has a practical basis that focuses on lessons learned from real-life projects. There are some primary sources, including best practices projects. They receive awards from public agencies, non-profit organizations, or professional associations. We also utilize the recommended guidelines from these organizations in addition to their recognized achievements. These valuable insights help me prepare more details, instructions, and examples for the evaluation criteria in the protocol. The protocol will introduce different approaches from a practical viewpoint. For instance, we use *A Planner's Guide to Meeting Facilitation* (Herd, 2019) from the

American Planning Association (APA) to generate detailed examples for the section discussion on public participation in the ConPlan evaluation protocol. Another example involves the Case Study Award organized by the Association of Collegiate Schools of Planning (ACSP) and the Lincoln Institute of Land Policy. The real-life projects are from the US and around the world and deal with diverse topics. They provide multiple views and comprehensive approaches to design evaluation protocols for housing and community development plans nationwide.

3.4. Evaluation protocol structure

A number of studies in plan quality evaluation literature since the 1990s have followed the primary form of the protocol proposed by Kaiser et al. (1995). Overall, the protocol has several components, and each addresses a particular topic related to the plan. For example, the author presented three areas: (1) *Factual basis*, (2) *Goals and objectives*, and (3) *Policies, tools, and strategies*. In several publications related to ecosystem management, Brody (2003, 2003b, 2003c) introduced two critical components for a comprehensive plan's assessment: (1) *Inter-organization coordination and capabilities* and (2) *Implementation* (Brody, 2003; Kang et al., 2010; Peacock et al., 2009). Later, several authors added these core components to *Public participation* (Evenson et al., 2012; Jones et al., 2010; Kang et al., 2010). Recently, Woodruff and Stults (2016) introduced a new element, *Uncertainty*, to the set of evaluation components.

Following a similar approach with Berke et al. (2013) and Kim and Tran (2018), we propose two groups of components, including *Direction-setting* and *Action-oriented*

components. The first group comprises three components: (1) *Factual basis*, (2) *Goals & objectives*, (3) *Policies & strategies*. The second group includes (4) *Implementation & monitoring*, and (5) *Participation & coordination*. Each group will be evaluated by sets of evaluation criteria, and under each criterion, there are multiple evaluation items. An evaluation item, the most detailed level of analysis, will address one particular issue.

3.4.1. Factual basis component

This component focuses on the information and facts prepared by the local jurisdiction, such as demographics, population groups, the local housing market, or the lead-paint issue. HUD provides data from the census and an additional database. It also presents basic guidelines for what information is required in the ConPlan. The details of the information and how it should be shown (via text, table, map, or graph) depend on the local government or planning authority. Previous researchers have confirmed the importance of the factual basis established through the quality of the maps, videos, checklists, or tables describing physical and social impacts (Arlikatti et al., 2006; Tang et al., 2011; Zhang et al., 2004).

3.4.2. Goals and objectives component

Goals and objectives component addresses how a local government establishes the vision and outcomes for the next three to five years in a local area. These reflect the general aspirations and shared values of the community. While *goals* tend to be broad and abstract, *objectives* are more detailed with specific descriptions (Berke & French, 1994; Tang et al., 2011).

3.4.3. Policies and strategies component

The third component of the ConPlan evaluation examines one of the essential parts of any plan, the actions. It supports the pre-defined objectives to realize the envisioned goals of the program. The action statement and guidelines create specific methods, development management, and commitments that guide the implementation process of planning (Kaiser et al., 1995). The ConPlan discusses the action strategies in different parts, such as anti-poverty strategy or annual action plan.

3.4.4. Implementation and monitoring component

When the city has defined its expected outcomes and specific actions to achieve them, it needs a clear timeline to show how feasible the proposals are. The implementation strategy is a critical part of any plan, especially the one that uses public funding as the vehicle to achieve their goals, like a ConPlan. To effectively implement the plan, the local jurisdiction should play an active role in the implementation process by clearly defining the responsibility and timeline of each action or suggesting additional resources to support the plan implementation process. As emphasized by previous authors, monitoring is considered an inseparable part of the implementation process (Tang & Brody, 2009). In a ConPlan, the implementation component is presented in several areas such as the strategic plan, public participation, or annual action plan.

3.4.5. Participation and coordination component

The final component in the ConPlan evaluation protocol is the collaboration within and between the ConPlan's grantees. This means the local jurisdiction that owns the plan should seek partnerships with other stakeholders, including local and non-local participants. The involvement of different departments in the local government reflects

inter-organizational collaboration (Brody, 2003). Besides, this research also assesses citizen participation during a ConPlan's process. The public involvement of the residents, regardless of their socio-demographic status or expertise, is a critical element for the quality of a ConPlan, as this is the plan that was prepared and implemented to support the needs of low- and moderate-income populations. Therefore, their involvement in every stage of the program is seen as necessary. HUD also recognizes this by requiring a separate part in a ConPlan that spotlights a local public participation plan.

3.5. Factors influencing Consolidated plan quality

This study presents two sets of independent variables that may influence the housing plan quality of local jurisdictions: (1) *planning context* and (2) *housing stock characteristics*. The *planning context characteristics* group includes the social demographic features and planning-related characteristics of the local community. The *housing stock characteristics* variables reflect the condition of the housing situation at the local level. This is an essential input for the ConPlan to argue its proposal.

All the ConPlan documents and data were collected for the years between 2000 and 2010. The database that cities used for their analysis was established in 2000 and is recommended and provided by HUD. The planning process variables are collected based on the information stated in the ConPlan and the publicly available database. The details of each variable are listed in the Appendix A

3.5.1. Planning context characteristics variables

The *planning context characteristics* group includes (1) *population*, (2)

population growth, (3) *income*, (4) *education*, (5) *preparation time*, and (6) *consultant*.

The variable *population* measures the size of a population of a city in the year 2000. Other authors (Berke et al., 1996; H. W. Kim & T. Tran, 2018; Tang et al., 2011) also used this variable in their studies. The population size of a city or jurisdiction reflects the primary demographic status of the location. Therefore, population size can affect the planning process in different ways. For example, a large population can contribute to planning work such as permission issues and environmental degradation, among many other problems. In addition, a large population size can indicate considerable available resources such as intellectual activities, economic agglomeration, or talent attraction.

The second variable in the contextual group is *population growth*, measured by the rate of increase between 2000 and 2010. Some studies also examined this variable in their analysis (Brody et al., 2003; Conroy & Berke, 2004; H. W. Kim & T. Tran, 2018), while other authors chose a different approach when using a similar variable. For example, Norton (2005a) measured population growth by the average annual percentage change between two timelines. The population growth reflects the development velocity of the local jurisdiction; in turn, it affects the local planning processes. Dalton et al. (1989), in their study about plan implementation conducted in California, confirmed that rapidly growing cities are faced with more zoning issues and plan change compared to a slowly growing jurisdiction. Norton (2005a) and Tang and Brody (2009) echoed this in their statement suggesting a causal relationship between population growth and an increased level of disturbance in environmental quality.

Third, the variable *income* reflects the wealth of the local community. There are several ways to measure the wealth in the literature, such as median home value (Brody et al., 2006) or median value of owner-occupied housing (Dalton & Burby, 1994). In this paper, we measured a community's wealth by the median household income in 2000. This approach was shared by Tang et al. (2010), Woodruff and Stults (2016), and H. W. Kim and T. Tran (2018). The literature suggests that the more affluent individuals or communities are more concerned about planning issues (Tang & Brody, 2009). According to Conroy and Berke (2004), affluence is expected to create a more suitable plan "given the likely availability of planning resources."

Education is the fourth variable in the first independent variables group. This variable was analyzed by previous studies (Brody et al., 2006; H. W. Kim & T. Tran, 2018; Tang & Brody, 2009). Using a similar measurement as H. W. Kim and T. Tran (2018), we measure this variable by the percentage of people above 25 years old with a bachelor's degree or higher in 2000. The positive impact of educational attainment on community planning is also suggested in a previous study. According to Tang and Brody (2009), highly educated communities can influence the planning process with more concentration on planning issues compared to poorly educated communities.

Fifth, *preparation duration* measures how long it takes the city to complete the preparation of its ConPlan. The variable is calculated by the number of months from the time the process is set in motion until the day ConPlan is adopted. This variable can reveal the preparation process of the ConPlan. It is difficult to hypothesize the direction of this variable and the plan quality. We suspect their correlation can be a reverse U-

shape since a short amount of preparation time might yield a low-quality plan. However, taking too long to finish a plan can also reveal other issues such as limited staff or an inadequate budget, which, in turn, can lower the plan's quality.

A consultant is the sixth and final variable of the *planning context characteristics* group. This variable examines whether or not a professional consultant firm prepares the ConPlan. It can't be denied that consultant firms have intellectual and experience advantages because of their multidisciplinary experts. According to H. W. Kim and T. Tran (2018), the consultants "possess the knowledge and technical skills and can provide a network of experts to work on the preparation process." Woodruff and Stults (2016) take a similar approach when adding a *plan author* variable to learn about the organization responsible for writing the plan. However, a consultant was not among their list of organizations. Working closely with the local authority can help the consultant overcome the possible shortcoming of lack of specific knowledge about the locality. Therefore, we hypothesize that a ConPlan prepared by a consultant will have a higher quality score when compared with the one designed solely by local planning staff.

3.5.2. Housing Stock Variables

The housing stock characteristics, as potential external factors, include five variables: (1) *housing age*, (2) *housing problem*, (3) *housing overcrowded*, (4) *owner cost-burden*, and (5) *renter cost-burden*. These reflect the current housing status of the local jurisdiction and impact the strategies for overcoming housing and community development issues suggested in the ConPlan.

First, *housing age* focuses on the proportion of housing stock with potential health issues. It measures the percentage of housing structures built before 1979, the year when lead paint was banned in the US. This suggests that housing built before this year most likely contains lead paint which can significantly impact the health of dwellers, especially children.

Second, the *housing problem* variable describes the physical condition of local housing stock. It addresses the percentage of occupied housing units with at least one issue, including lack of complete plumbing or kitchen facilities and no telephone service. This data is critical for the preparation of a ConPlan. It helps a local government to build a better housing stock for the local community.

Third, *housing overcrowded* indicates the occupant status of the local housing stock. It reveals the percentage of occupied housing units with more than one tenant per room. This variable, similar to the previous one, highlights the downside of the local housing stock. Therefore, the ConPlan preparation process must analyze and propose solutions to address the issues.

The final two variables are *owner cost-burden* and *renter cost-burden*. These variables describe the financial issues of occupants in the local housing stock. They measure the percentage of housing owners and renters who pay more than 30 percent of their monthly income for housing costs. By examining these two variables, this research aims to address the seriousness of the affordability of the housing stock. More importantly, it might reveal some connections with the local ConPlan quality.

The descriptive statistics of independent variables are shown in Table 3-1 below. In addition, the description of each variable and data source are listed in Appendix H.

Table 3-1 Descriptive Statistics of External Variables

#	Variables	N	Mean	S.D.	Min	Max
Planning Context group						
1	<i>Population</i>	72	175,332	165,667	34,919	735,617
2	<i>Population growth</i>	72	15.6	24.3	-29.1	115.1
3	<i>Income</i>	72	39,983.8	11,272	21,180	78,722
4	<i>Education</i>	72	26.2	12.8	5.4	69.2
5	<i>Preparation time</i>	72	6.3	3.5	2	24
6	<i>Consultant</i>	72	0.2	0.4	0	1
Housing Stock group						
1	<i>Housing Age</i>	72	66.8	20	19.8	96.7
2	<i>Housing Problem</i>	72	3.6	2.6	0.7	18.3
3	<i>Housing Overcrowded</i>	72	8	6.7	1.1	32.7
4	<i>Housing Owner Cost Burden</i>	72	24.7	5.5	15.0	42.8
5	<i>Housing Renter Cost Burden</i>	72	41.1	6.5	19.9	63.8

3.6. Methods

3.6.1. Study Area

To assess the quality of ConPlans across the US, we selected the jurisdictions at the city level for analysis. The database of cities used for this study comes from the *500 Cities Projects* (Center for Disease Control and Prevention, 2018). We excluded cities with populations larger than 3 million people to reduce the impact of outliers on the statistical models and better represent most local jurisdictions across the country. With each city, we acquired the ConPlan document for the years between 2000 and 2010. This allowed us to match the data used in these ConPlans with the publicly available data, making the analysis in the later stages feasible. The planning document can be obtained through several sources, including the city’s website or social media contact, email, or a

phone call directly to a responsible department. We were a little surprised to find that the digitalization of planning documents at the local level is not popular. And, we learned from our conversations that the city is only required to keep the ConPlan document in its archive for three to five years. Because of this, we estimated that about 20 to 30 percent of them did not have a ConPlan between the years 2000 and 2010. After contacting all the cities on the list, we received 72 ConPlan documents in soft and hard copies, which qualified for plan evaluation and further analysis. The locations of the chosen cities are shown in Figure 3-1.

The study covers cities across the nation, with a population in year 2000 ranging from 35,000 (Meridian, ID) to 736,000 (Jacksonville, FL). Among these, California had the highest number of 20 cities. The study area distribution shows that most of the country has representation on the map, except the northern midwest region (MT, ND, SD, NE) and some states in the west (NV, UT). Based on the population size and distribution, the sample seems to represent the population distribution nationwide. Therefore, we believe that the results of this study can infer nationwide insights.

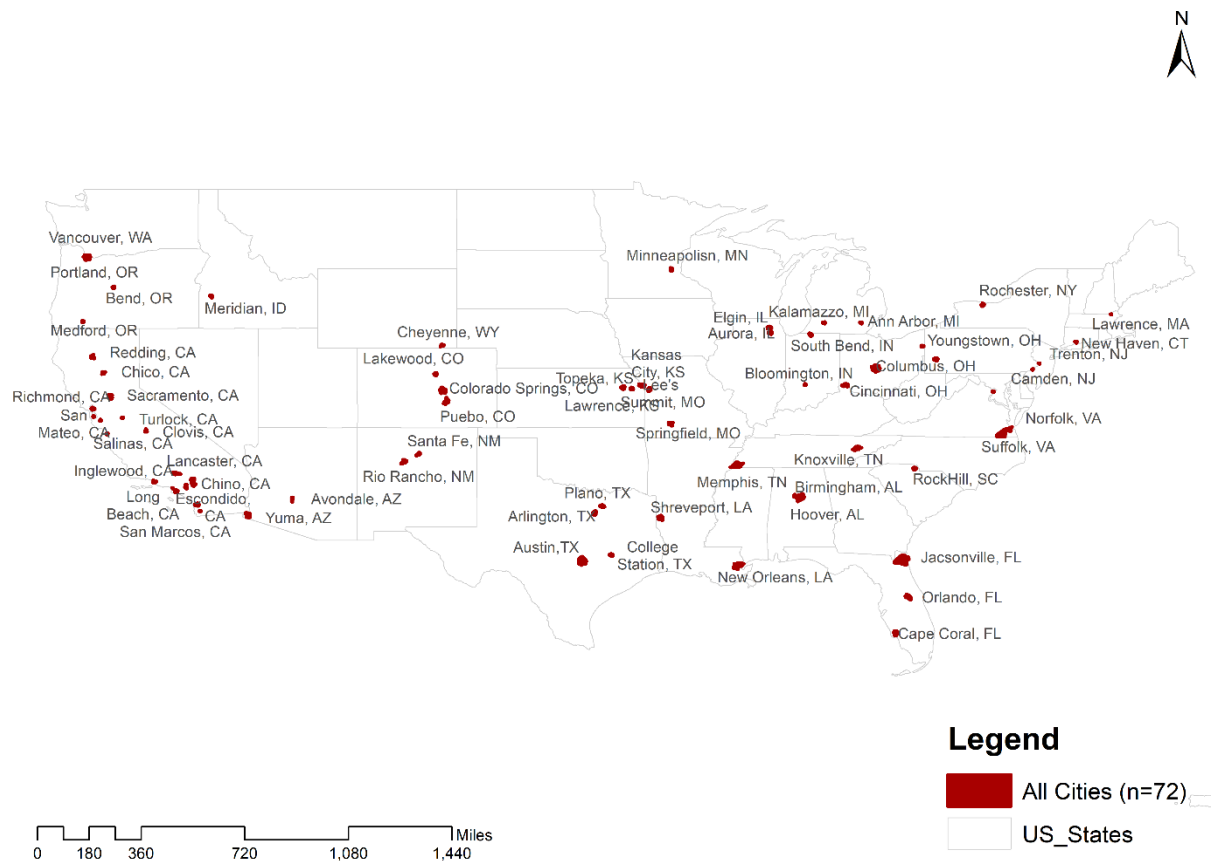


Figure 3-1 Sample Locations for Consolidated Plan Evaluation

3.6.2. Assessment Process

The evaluation protocol includes five components with a total of 117 evaluation items. The protocol applies the ordinal grading system “0-1-2” widely used in the literature (Berke et al., 2012; Brody, 2003a; Kang et al., 2010; H. W. Kim & T. Tran, 2018). The evaluators used the protocol to evaluate the content of the planning documents. If the evaluation item was not mentioned anywhere in the plan, it received “0.” If it is discussed, but only with basic information, it received “1.” Finally, the plan received “2” if it mentioned and discussed the evaluation item in detail.

The distinction between “0” and “1” is clear and easy to enter since it is obvious if the item is mentioned or not. However, deciding between “1” and “2” points for an evaluation item can sometimes be tricky. There is no clear line between “1” and “2” points. There are multiple ways an evaluation item can receive “2” points, for example, if the city presents more detail than the basic requirements of HUD. First, the regulation requires the city to provide basic information on housing stock issues. City A delivers the facts about local housing stock and adds more detail on the trend, development, or comparison to another city regarding the housing stock issues to further explain its problems. Second, if the jurisdiction creatively presents required information. Similar to the previous example, the city can receive a better score if it uses illustrations such as maps, charts, or tables to present and describe the basic information about local housing stock issues. These approaches reflect the extra effort of the plan’s author in preparing the planning document, and they lead to richer content, better presentation, and higher quality for the ConPlan.

Reliability is a crucial factor in content analysis and plan evaluation. It ensures the ability to produce a similar study and yield results using the same data source (Krippendorff, 2012). Thus, we adopted the grading process to ensure the reliability of the research following the suggestion of Berke and Godschalk (2009) and Stevens et al. (2014). Two trained coders independently evaluated each plan. Moreover, any disagreements between the coders was reconciled after personal judgments were discussed. The final score is the agreed-upon score certified by both coders

3.6.3. Plan Quality Indicators

This study adopts the plan quality calculation previously used in H. W. Kim and T. Tran (2018) and other studies (Brody et al., 2003; Tang & Brody, 2009)

$$TQS = \sum_{j=1}^5 CS_j \quad (1)$$

Formula 1 shows the calculation of the total quality score (TQS) of a ConPlan. It is measured by the sum of all components' scores (PCS). There are five components in the evaluation protocol, as discussed above. j identifies the component's order in a protocol.

$$CS_j = \frac{10}{2m_j} \sum_{i=1}^{m_j} IS_i \quad (2)$$

Each component score (CS) is calculated by the sum of all individual evaluation item's scores (IS). The total number of items (m) in each component is mentioned in Table 3-2. m_j represents the number of evaluation items in the evaluation component j th. Each evaluation item i , IS_i , ranges from 0 to 2 points. The score of each evaluation component (CS_j) is converted into a scale of 10 by dividing the total score of all evaluation items by the total possible score of all evaluation items, then multiplying by 10. The total plan quality score (TQS) of each ConPlan ranges from 0 to 50.

3.6.4. Evaluation Criteria Indicators

I also examine each evaluation criteria's breadth and depth indexes (Brody, 2008; Godschalk, 1999; H. W. Kim & T. Tran, 2018; Tang et al., 2010). Breadth indexes of an evaluation item show the number of plans which address that item in their presentation. In other words, breadth indexes can be seen as the percentage of planning documents that mention the evaluation item.

Meanwhile, depth indexes identify the extent to which the j th evaluation item is discussed in the plan within which it is addressed. Tang et al. (2011) discussed extensively with concrete examples explaining the formation and application of these indexes. In this study, we adopt the calculations from Tang (2008):

$$B_j = \frac{P_j}{N} \quad (3)$$

Where B_j indicates the breadth index of the j th evaluation item; N refers to the total number of ConPlan ($N = 72$); P_j shows the number of plans that discuss the j th evaluation item. B_j ranges from 0 to 1, with 0 means no plan in the pool addresses the j th evaluation item, whereas 1 suggests all plans mention it in their documents.

$$D_j = \frac{\sum_{j=1}^{P_j} I_j}{2P_j} \quad (4)$$

Where D_j refers to the depth index of the j th evaluation item; I_j refers to the score of the j th evaluation item (ranging from 0 to 2); P_j indicates the number of plans that discuss the j th evaluation item. D_j ranges from 0 to 1, with 0 means there is no plan in the pool that addresses the j th evaluation item, whereas 1 means all of the plans mention it in their documents did mention it with great details.

A performance score (ranging from 0 to 2) is calculated by the total of breadth and depth scores. It indicates how evaluation criteria (or subcriteria) have been mentioned and discussed in sampled housing plans

3.6.5. Regression Analysis

This study measures the ConPlan quality of the 72 sampled local jurisdictions nationwide. The analysis includes several stages of data analysis. First, we used

descriptive statistics to study the quality of the 72 sampled plans. Then, the study examines the performance of evaluation criteria among these documents using breadth and depth scores. Finally, the Ordinal Least Square (OLS) regression was employed to examine how external factors explain the ConPlan's total quality score variance. Due to the limited sample size, we ran each independent variables group as a separate model. The significant variables at a 0.05-level are then grouped in the final model, a combined model. This approach is used by some previous studies (H. W. Kim & T. Tran, 2018; Lubell et al., 2009; Woodruff & Stults, 2016).

This study also runs different statistical tests to ensure the best, linear, and unbiased measurements in every analysis. As a result, there is no violation regarding multicollinearity, heteroskedasticity, autocorrelation, internal consistency, and measurement validity.

3.7. Results

3.7.1. Descriptive Statistics for Consolidated Plan Quality

According to the descriptive results shown in Table 3-2, the average ConPlan quality score for the 72 localities is 26.85, suggesting that the sample jurisdictions only reach slightly above the middle of the quality score's ladder. The variation in quality across all cities is quite large. Among sampled jurisdictions, the City of Santa Fe (NM) had the highest score at 37.76 for its ConPlan. Conversely, the lowest score belongs to the ConPlan prepared by the City of San Buenaventura (CA). This plan only received 12.55 points for a total quality score of 50.

Table 3-2 Descriptive Statistics of Evaluation Components

Plan Component	Number of items	Mean	Standard Deviation	25% percentile	Median	75% percentile	Range
Factual basis	24	4.70	1.27	4.12	4.74	5.63	1.77-7.19
Goals & Objectives	26	4.66	0.94	4.13	4.62	5.38	2.50-7.12
Policies & Strategies	33	4.87	1.44	3.79	5.00	6.06	1.67-7.73
Implementation & Monitoring	12	5.46	1.34	4.62	5.77	6.54	2.31-8.08
Participation & Collaboration	10	7.16	1.42	6.00	7.50	8.25	3.50-9.50
Total	105	26.85	5.15	24.04	26.57	30.73	12.55-37.76

Table 3-2 also highlights the performance of each evaluation component. Among five evaluation components, *Participation & collaboration* received the highest mean score of 7.16 (on a 0-10 scale), It indirectly suggests that the local jurisdictions had been well-prepared in public engagement and collaboration with external stakeholders. One important note is that HUD has specific requirements about the public participation sections in a ConPlan. Therefore, it might contribute to the high score results. The *Implementation & monitoring* component has the second-highest average score (5.46), showing that the sample localities clearly plan to adopt the ConPlan with a relatively strong mechanism for plan implementation and monitoring.

The other three components have relatively low scores. And these scores are not so different from each other, ranges between 4.66 and 4.87. It reflects the close links among these since one is built based on another. The *Goals & objectives* component obtains the lowest average score of 4.66 out of 10. It indicates that jurisdictions tend to set unclear goals or objectives for affordable housing and community development. This

can be explained since the average quality score of *Factual basis* is also low, only 4.7. When a ConPlan fails to identify the local issues, it is not easy to propose explicit goals and objectives. Hence, it prevents the local jurisdictions from creating detailed actions or initiatives that effectively support the local community. This also explains the low score of *Policies & strategies* (4.87.). The detailed illustrations of the score distributions for each component are shown in Appendix I.

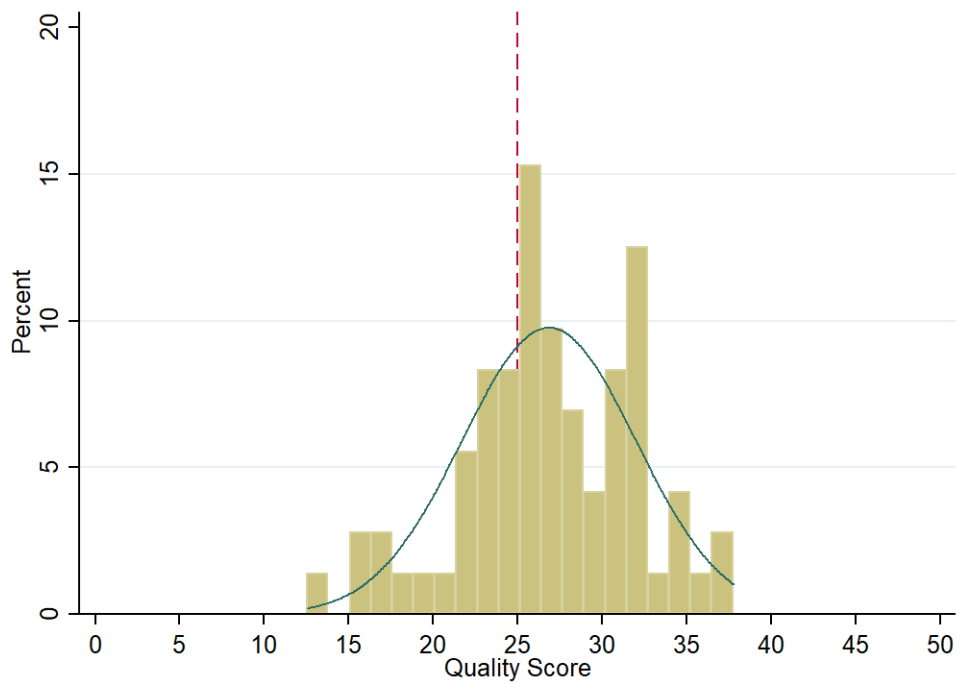


Figure 3-2 Distribution of Total Quality Score (N=72 Cities)

3.7.2. Evaluation Criteria Performance of Direction -Setting Components

I categorized the index's score range into three groups: small, medium, and large. The small score is when the score falls between 0 and 0.34, the medium score ranges between 0.35 and 0.66, and the large score is between 0.67 and 1. Next, we assign

narrative phrases for each score group in breadth and depth indexes (Table 3-3.) Finally, Table 3-4 highlights the average scores and performance scores of evaluation criteria in direction-setting components.

Table 3-3 Narrative phrase for breadth and depth indexes

Score range	Breadth index	Depth index
Low (0 - 0.33)	occasionally mentioned	briefly discussed
Medium (0.34 – 0.66)	frequently mentioned	decently discussed
High (0.67 – 1)	widely mentioned	profoundly discussed

As Table 3-4 indicates, the overall performance score of evaluation criteria ranges between 0.66 (criterion SE4) and 1.75 (criterion DH1). On average, the *Decent housing (DH)* criteria have the highest score, followed by *Expand economic opportunity (EO)* and *Fair Housing (AF)* criteria. *Suitable living environment (SE)* criteria have the lowest score of performance. The results highlight wide variation between evaluation criteria performance and indicate the topics that contribute to the overall quality of sampled housing plans.

Table 3-4 Breadth (B) and Depth (D) Indexes of Direction-Setting Components

Evaluation Criteria	Factual basis		Goals & Objectives		Policies & Strategies		<i>Average score across criteria</i>	
	B	D	B	D	B	D	B	D
DH1 Assisting homeless people and special needs population to obtain affordable housing	0.96	0.71	0.97	0.80	0.98	0.83	0.97	0.78
DH2 Assisting person at risk of becoming homeless and low- and moderate-income people	0.92	0.78	0.90	0.64	0.99	0.74	0.94	0.72
DH3 Retaining affordable housing stock	0.97	0.84	0.96	0.66	0.75	0.72	0.89	0.74
DH4 Increasing the availability of affordable housing in standard condition for low- and moderate-income families	0.96	0.83	0.81	0.53	0.79	0.76	0.86	0.71

SE1	Improving the safety and livability of a neighborhood	0.48	0.46	0.58	0.57	0.47	0.63	0.51	0.55
SE2	Provide quality services for low- and moderate-income neighborhood	0.83	0.53	0.93	0.63	0.73	0.68	0.83	0.61
SE3	Preserving and restore properties of special historic, architectural, or aesthetic value	0.17	0.35	0.26	0.57	0.15	0.60	0.19	0.51
SE4	Conserving energy resources and use of renewable energy resources	0.02	0.13	0.27	0.51	0.41	0.66	0.23	0.43
EO1	Job creation and retention	0.65	0.52	0.67	0.56	0.88	0.78	0.74	0.62
EO2	The provision of public services concerned with employment	0.61	0.35	0.91	0.63	0.55	0.76	0.69	0.58
EO3	Availability of financial support for low- and moderate-income persons	0.54	0.36	0.92	0.73	0.93	0.87	0.80	0.65
FH	Promote housing choice for all	0.60	0.52	0.63	0.61	0.60	0.63	0.61	0.59
Average score across components		0.64	.053	0.73	0.62	0.69	0.72		

Note: DH: Decent Housing, SE: Suitable Living Environment, EO: Expand Economic Opportunity, FH: Affirmatively Fair Housing

3.7.2.1. Decent Housing Evaluation Criteria

Provide decent housing is one of the fundamental goals of any federal housing assistant program. These criteria reflect the concern of local jurisdiction regarding the requirements of each program funded through ConPlan. Four evaluation subcriteria of *Decent housing*, including DH1 to DH4, have high breadth and depth indexes values, indicating the popularity of these evaluation criteria. In other words, the average score suggests all criteria have been widely mentioned and profoundly discussed in sampled housing plans. Among these, *Assist homeless people and special needs population to obtain affordable housing* (DH1) criterion has the highest performance score (1.75 out of 2), followed by *Assist person at risk of becoming homeless and low- and moderate-income people* (DH2) (1.66), *Retain affordable housing stock* (DH3) (1.63), and *Increase the availability of affordable housing in standard condition for low- and moderate-income families* (DH4) (1.57).

The first criterion, *Assist homeless people and special needs population to obtain affordable housing* (DH1), has the highest scores of breadth (B = 0.97) and depth indexes (D = 0.78). It means, on average, 97% of sampled housing plans discuss this criterion with a relatively high level of detail. Overall, the findings suggest most housing plans are well prepared to analyze the current situations, identify goals, and propose strategies to assist homeless people and special need populations with housing solutions.

The topic of *assisting persons at risk of becoming homeless and low-and moderate-income* (DH2) is also widely mentioned among 94% of sampled jurisdictions. The detail level, reflected via a depth score of 0.72, is relatively high. However, the depth index in the *Goals & objectives* component is only 0.64. This score suggests room for improvement in defining goals and objectives for future developments that support various income groups.

Criterion *Retain affordable housing stock* (DH3) shows a similar performance pattern as the DH2 criterion discussed above. On average, about 89% of local jurisdictions mentioned the issue of maintaining affordable housing stock with a relatively high level of depth score (0.74). Among the three *Direction-setting* components, the depth score in the *Goals & objectives* component is 0.66, which is the lowest compared to the similar index in the *Factual basis* and *Policies & strategies* sections. The detailed breadth scores also indicate that retaining affordable housing stock is more prevalent in *Factual basis* and *Goals & objectives* components than in *Policies & strategies*. It implies that while many cities (96%-97%) have a clear vision for

affordable housing stocks, about one-fourth (26%) still lack strategies to achieve these objectives.

The final criterion in *Decent housing* is to *increase the availability of affordable housing in standard condition for low- and moderate-income families*. Most sampled jurisdictions (96%) document their affordable housing conditions in housing plans. However, about 81% of the plans propose detailed objectives addressing this issue. And, the similar proportion (79%) of the plans highlights strategies to increase high-quality, affordable housing stock. Regarding the level of details, the *Goals & objectives* component has a depth score of 0.53, suggesting more attention is needed when discussing the vision of providing affordable housing in standard condition.

3.7.2.2. Suitable Living Environment Evaluation Criteria

The evaluation criteria assess the plan's content to understand how local governments support the community-wide activities. According to Table 3-4, the performance score of the *Suitable living environment* criteria ranges between 0.66 and 1.44. The low scores reflect the limited attention local jurisdictions paid to improve the livelihood of the communities. For example, *Provide quality services for low- and moderate-income neighbourhood* (SE2) criterion has the highest performance score (1.44), followed by *Improve the safety and livability of a neighbourhood* (SE1) criterion (1.06), *Preserve and restore properties of special historical, architectural, or aesthetic value* (SE3) criterion (0.70), and *Conserve energy resources and use of renewable energy resources* (SE4) criterion (0.66).

On average, half of the sampled jurisdictions (51%) discuss the topic *Improve the safety and livability of a neighbourhood* (SE1) in their housing plans. As Table 3-4 shows, this criterion is more popular in *Goals & objectives* (58%) than the other two components: *Factual basis* (48%) and *Policies & strategies* (47%). It means more cities pay attention to the local community's living conditions in their visions for the future. However, the analysis of the facts and the proposed actions remains less popular among these areas. Unlike the breadth score, this criterion's depth score performs best in the *Policies & strategies* component (D = 0.63). More detailed suggested proposed actions reflect the concern of local jurisdictions toward improving living conditions for local communities.

On average, about 83% of sampled housing plans mention the criterion of *Provide quality services for low- and moderate-income neighbourhoods* (SE2) in their content. Furthermore, this topic is discussed in the analysis of present conditions (among 83% of housing plans), visions for future development (among 93% of housing plans), and actions to achieve these proposals (among 73% of housing plans)). The depth scores suggest a similar pattern regarding the level of details compared to the previous one (SE1). It confirms the attention of local jurisdictions toward proposed activities to provide quality services for low- and moderate-income individuals and families.

As Table 3-4 highlights, only about one-fifth of sampled cities mentioned the topic of properties preservation (SE3 criterion) and energy conservation (SE4 criterion). Besides, their performance scores are among the lowest of all evaluation criteria.

Only 17% of jurisdictions mentioned criterion SE3, *Preserve and restore properties of special historic, architectural, or aesthetic value* in their analysis of current conditions. While more housing plans (26%) discuss this topic in their visions for future development, only 15% of the plans proposed initiatives to preserve and restore valuable properties. These numbers suggest two possibilities. First, the availability of unique properties in the local communities is rare among sampled cities. Second, most housing plan authorities don't prioritize this topic when considering funding for affordable housing and community development. We assume HUD's instruction for plan-making plays a critical role in this case. While the final regulation of ConPlan identifies the requirement of special properties preservation, the HUD's guideline does not mention it. As a result, most of the sample jurisdictions do not address the topics adequately.

The *Conserve energy resources and use of renewable energy resources* (SE4) criteria, on average, is mentioned in only 23% of sampled jurisdictions (Table 3-4). Especially, only 2% of housing plans mention it in their factual analysis. Its popularity increases in *Goals & objectives* (27%) and *Policies & strategies* (41%) components. These breadth indexes suggest the increased concern toward conserve energy resources and the usage of renewable energy. More cities proposed their future development with regards to these topics. Significantly, the depth score (0.66) highlights relatively medium- to high-level detail among strategies to support conserve energy and renewable energy usage

3.7.2.3. Expand Economic Opportunity Evaluation Criteria

Besides supporting better living conditions for low- and moderate-income groups, the local government also uses public funding to benefit local employment and businesses. The *Expand economic opportunity* criteria are proposed to capture these efforts implied in housing plans. According to Table 3-4, all criteria are widely mentioned and decently discussed in sampled housing plans. It reflects the well-received concern of local government toward local economic and employment issues. However, medium depth scores (ranging between 0.58 and 0.65) indicate the need to improve the details and quality of these discussions. Overall, the performance score is led by the *Availability of financial support for low- and moderate-income persons* (EO3) criterion (1.45), followed by *Job creation and retention* (EO1) criterion (1.36), and *The provision of public services concerned with employment* (EO2) criterion (1.27)

The findings reveal the detailed performance of each evaluation criteria in *direction-setting* components. Criterion *Job creation and retention* (EO1) shows similar performance in *Factual basis* and *Goals & objectives* components. As Table 3-4 indicates, about 65% of cities present current local employment issues. A similar proportion (67%) identifies job-related issues as a part of their goals and objectives. In *Factual basis* and *Goals & objectives* components, job creation and retention topics are decently discussed with medium depth indexes. The criterion is widely mentioned in 88% of sampled housing plans' *Policies & strategies* section. More importantly, the actions proposed are profoundly discussed, with a depth score achieves 0.78. It highlights the concerns and efforts of the local jurisdiction in expanding economic opportunity.

Approximately 61% of the sampled plans mention *The provision of public services concerned with employment* (EO2) in their factual analysis. However, the depth score (0.35) indicates that the public services for employment development were not sufficiently discussed. Lacking details signifies the underdevelopment of public programs that support employment. The popularity of this topic (EO2) among most (91%) plans' *Goals & objectives* components confirms our observations. Moreover, these housing plans propose programs and services to address the issue of employment indicate with medium- to high- level of detail (D = 0.63). It reflects the appropriate approach to the employment issue and expanding economic opportunities for the local community. The popularity of criterion E02 drops to 55% among housing plans. Notably, the high depth score (D = 0.78) in *the Policies & strategies* section indicates clear and detailed information among proposed actions. It shows the efforts of local government in using public services to support local employment.

The criterion *Availability of financial supports for low- and moderate-income persons* (EO3) has a similar performance pattern with criterion EO2. About half (54%) of local jurisdictions present facts about available financial supports for disadvantaged groups. However, the level of details discussing such support is reflected through a relatively low depth score (0.35.) The findings indicate that most (92%) of sampled jurisdictions mention financial supports in their goals of housing plans. More importantly, these proposals are profoundly discussed (D = 0.73), reflecting efforts of local governments to support low- and moderate-income persons. Unlike the previous criterion (EO2), the topic of financial support is widespread in sampled housing plans.

The breadth score of 0.93 in the *Policies & strategies* section indicates that 93% of housing plans mentioned financial support in their implementation actions. More importantly, these actions are profoundly discussed with great details reflecting through a high depth score of 0.87

3.7.2.4. Fair Housing Evaluation Criteria

The criterion of *Promote housing choice for all* is frequently mentioned and decently discussed in sampled housing plans with medium breadth and depths scores. This moderate performance reflects the non-mandated policy regarding the analysis of impediments in ConPlan's regulations. Besides, the findings also reveal that fair housing is not a priority in the local agenda. Therefore, its appearance in the ConPlan seems to have limited impact, as shown by the average breadth and depth indexes (B = 0.61, D = 0.59)

3.7.3. Evaluation Criteria Performance of Action-Setting Components

Table 3-5 shows the average and performance scores of evaluation criteria in *Action-setting* components. The detailed information is presented in Appendix J.

On average, the performance scores of *Proactive involvement* and *Organizational arrangement* evaluation criteria are relatively high (ranges between 1.33 and 1.80) compared to evaluation criteria in three *Direction-setting* components (ranges between 0.70 and 1.75.) Between the two measures, *Proactive involvement* seems to perform slightly better than *Organizational arrangement*. Each of these criteria covers two topics. The variety of breadth and depth scores suggest the diversity of the content and scope discussed in sampled housing plans.

Table 3-5 Breadth (B) and Depth (D) Indexes of Action-Oriented Components

Evaluation Criteria		Implementation & Monitoring		Participation & Collaboration		<i>Average score across criteria</i>	
		B	D	B	D	B	D
PI1	Information sharing	0.83	0.88	0.99	0.90	0.91	0.89
PI2	Diverse involvement	0.36	0.85	0.78	0.82	0.57	0.83
OA1	Leadership	0.69	0.66	0.58	0.71	0.64	0.69
OA2	Priority arrangement	0.76	0.69	0.96	0.87	0.86	0.78
Average score across components		0.66	0.77	0.83	0.83		

Note: PI: Proactive Involvement, OA: Organizational arrangement

Proactive Involvement Evaluation Criteria

The *Information sharing* (PI1) criterion assesses how housing plans communicate with the stakeholders during plan-making. On average, 91% of sampled housing plans actively engage in sharing information. The cities follow the requirements regarding the number of public meetings and regularly update the plan's process. Nearly all jurisdictions (99%) show the efforts of sharing information with citizens, public agencies, and other interest parties in the *Participation & collaboration* component. Meanwhile, about 83% of them indicate the transparent information sharing process during the *Implementation and monitoring* section of the housing plans. From the high depth scores (0.90 and 0.88, respectively), communication is well established and effectively carried out in sampled housing plans.

Another critical aspect of proactive involvement in plan making is the *Diverse involvement* (PI2) criterion. It reflects a wide range of collaborations between the plan's author and other groups inside or outside the jurisdiction's boundary. The results show a

surprise that only 36% of sampled cities diversify the involvement of stakeholders during implementation and monitoring processes. At the same time, 78% of them express the wide range of groups and organizations joined the process of participation and collaboration in sampled housing plans. The considerably high depth scores (0.85 and 0.82) also suggest the detailed engagement of different stakeholders.

3.7.3.1. Organizational Arrangement Evaluation Criteria

The *Organizational arrangement* criteria examine the extent to which the leadership and priority are identified in sampled housing plans. The performance scores (1.33) indicate the need for improvement of leadership aspects in both *Implementation & monitoring* and *Participation & collaboration* components.

The *Leadership* (OA1) criterion focuses on the clear arrangement of responsibility during the process of planning. Especially, we pay additional attention to the direct involvements of elected officials since they reflect the meaningful concern and support of local government toward a housing plan. About 69% of sampled plans discuss the participation of leadership in the implementation and monitoring process. Meanwhile, smaller groups of sampled cities (58%) highlight direct involvements and clear roles of top officials in collaborations with other stakeholders. Regarding the quality of the presentation, depth indexes of the *Leadership* criterion are lower in the *Implementation & monitoring* (0.66) than in the *Participation & collaboration* component (0.71.) It is clear that to ensure the success of a housing plan, the more details should be assigned to responsible individuals or groups.

Priority arrangement (OA2) criterion aims to measure how a housing plan prioritizes its agenda to achieve the vision and strategies proposed. Seventy-six percent of sampled plans integrate priority arrangements in their process of plan implementation and monitoring. It includes a clear timeline for the implementation process, potential funding sources, or geographic eligibility. The criterion is much more prevalent in the *Participation & collaboration* component, with 96% of sampled housing plans. According to the results of depth scores, the priority arrangement during Implementation and monitoring need additional preparation to improve its level of detail (D = 0.69). At the same time, the high depth score (0.87) of priority arrangement in *Participation and collaboration* component reflect the efforts in engaging with citizen in plan making process. The priority groups for engagement include low- and moderate-income, minority, or non-English-speaking groups

3.7.4. Correlation Analysis

Before conducting the regression analyses, we ran a Pearson's correlation analysis to examine the relationships between variables. Table 3-6 shows the correlation between the quality scores of housing plan' components and independent variables. The complete result is presented in Appendix K.

According to the table, most of the significant correlation is moderate (the r-value is between 0.3 and 0.5). Among these, the strongest correlation is between *Population* variable and *Policies & strategies* component (r = 0.36, p-value < 0.05). The correlations between the *Population growth* variable and *Factual basis* component and between the *Income* variable and *Participation & collaboration* component are the

weakest among the significant scores. These correlations' values are both negative and equal at 0.25 with a p-value < 0.05. After studying the correlation table, we propose the following hypotheses regarding the external factors and their statistically significant impacts on the total plan quality scores. The *Population* variable is expected to have a positive impact on the plan quality score. Due to the correlation's results, we feel confident that this variable has a strong statistically significant impact on the plan quality scores. The other variables, including *Population growth*, *Income*, *Consultant*, and *Housing owner cost burden*, have a significant correlation with one plan component. We hypothesize that *Population growth*, *Income*, and *Housing owner cost burden* will negatively impact the plan quality score. If these variables are significant, exploring the reason or motivation behind these findings will be exciting. We predict the *Consultant* variable will positively impact the quality score of a ConPlan

Table 3-6 Pearson's Correlation Between Evaluation Components' Scores and Independent Variables

	Factual basis	Goals & Objectives	Policies & Strategies	Implementation & Monitoring	Participation & Collaboration
Population	0.33*	0.37*	0.36*	0.19	0.23
Population growth	-0.25*	-0.15	-0.19	-0.04	-0.02
Income	-0.17	-0.14	-0.22	-0.14	-0.25*
Education	-0.01	-0.10	0.07	0.15	0.15
Preparation time	0.08	0.12	0.16	0.06	0.09
Consultant	0.30*	0.18	0.12	0.04	0.16
Housing Age	0.19	0.11	0.16	0.08	0.07
Housing Problem	0.15	0.10	0.17	0.00	0.14
Housing Overcrowded	0.01	0.13	0.07	0.03	-0.17
Housing Owner Cost Burden	-0.14	-0.06	-0.05	-0.12	-0.34*
Housing Renter Cost Burden	-0.05	0.06	0.12	0.10	-0.02

*: significant at 0.05-level

3.7.5. Regression Analysis

3.7.5.1. Planning Context Model Results

This study conducts multiple regression analyses to identify which variables significantly influence the quality of a ConPlan among sample jurisdictions. Because of the small sample size (N=72), the regression analyses are run separately by groups of variables. There are two models: planning context characteristics (model 1) and housing stock characteristics (model 2). Then, a combined model is computed based on the statistical significance (at an 0.1 level) from each of the previous models. We share this approach with previous publications (Brody, 2003c; H. W. Kim & T. Tran, 2018; Tang et al., 2010; Woodruff & Stults, 2016). Table 3-7 highlights the key findings, and Appendix K shows the full results table.

The results of regression model 1 indicate that three significant variables (*population*, *income*, and *consultant*) make a statistically significant contribution to the housing plan quality.

The population size of the city shows statistically significant ($p = 0.003$) with housing plan quality. The city with a larger population tends to have more resources and capacity such as funding, planning staff, or a network of experts for advising the planning process; therefore, a larger population may lead to a higher quality of housing plan. The significance of the *population* variable reflects similar findings from Burby and Dalton (1994) and H. W. Kim and T. Tran (2018). This result supports our hypotheses proposed in the previous section.

The household income level in 2000 (*Income*) has a statistically ($p = 0.029$) negative effect on the quality score of ConPlan. According to the results, wealthier areas tend to produce lower-quality housing plans. This finding shows a different trend from the previous studies that focus on the correlation between plan quality and environmental-related topics (Berke et al., 1996; Burby & May, 1997). We assume that the plausible explanation is associated with the ConPlan and its programs. All of the programs supported via ConPlan aims low- and moderate-income population. These groups might be less prioritized in the wealthier city. Therefore, it reacts as a negative predictor of housing plan quality score.

In addition, the dummy variable *Consultant* is significant with a p-value equal to 0.029. The plan prepared by a third-party consultant shows a significant impact on the plan quality. Notably, hiring a consultant is an appropriate move since the planning document is in the hands of professionals and experts. As discussed above, the local jurisdiction needs to ensure close collaboration with the consultant firm. This also reflects the local commitment to the planning process, a critical aspect for a successful plan (Burby & May, 1997; Norton, 2005a). Overall, model 1 accounts for about 27 percent of the variance in the dependent variable, plan quality score.

3.7.5.2. Housing Stock Model Result

Model 2 is composed of five independent variables from the housing stock characteristics group. These variables, as a result, account for about 11 percent of the variance in the total housing quality score. *Housing owner cost burden* is the only statistically ($p = 0.016$) significant predictor of plan quality. It indicates that the city with

a smaller proportion of homeowners facing housing cost burdens, the higher its plan quality score. Interestingly, the *Housing renter cost burden* variable performs reverse impact on the quality of a housing plan. However, this variable is not statistically ($p = 0.37$) significant. We cannot come up with any plausible explanation for the finding. Therefore, it is necessary to conduct an extra analysis to understand better why this variable reacts the way it did.

3.7.5.3. Combined Model Result

A final analysis, a combined model, includes statistical significances from the previous models. They are *Population*, *Income*, *Consultant*, and *Housing owner cost burden*. These independent variables account for about 24 percent of the variance in the plan quality score. The R-square value in the combined model (0.24) is less than the R-square yielded in the first model (0.27), planning context characteristics.

As to the findings, there are three significant variables: *Population* ($p = 0.002$), *Income* ($p = 0.057$), and *Consultant* ($p = 0.048$). While population size increases significance, the other two variables become less significant compared to previous separated models.

In the combined model, the significance of *Population* stresses the importance of city size, which is highly correlated with available resources. It confirms the irreplaceable role of population size in every planning stage and the positive impact to plan quality. *Income* remains negative association with the plan quality, even though the level of significance is reduced. The dummy variable, *Consultant*, shows the advantages of hiring professionals to help with the preparation process. A good plan, to us, should

be built as people-centric and supported by multidisciplinary and technological approaches.

Table 3-7 Summary of Regression Analysis on the Total Plan Quality Scores

	M1: Planning Context	M2: Housing Stock	M3: Combined Model
	Coefficient		
Population	0.108***		0.106***
Population growth	- 0.002		
Income	- 1.240**		- 0.948*
Education	0.070		
Preparation time	0.208		
Consultant	2.918**		2.588**
Housing Age		0.0365	
Housing Problem		0.1840	
Housing Overcrowded		0.1669	
Housing Owner Cost Burden		- 0.3646**	- 0.144
Housing Renter Cost Burden		0.0854	
N	72	72	72
R-square	0.27	0.1134	0.2414

*Note: *: significant at 0.1-level; **: significant at 0.05-level; ***: significant at 0.01-level*

3.8. Discussions

3.8.1. Answers to the Research Questions

Regarding the first question (“What is the overall quality of the ConPlans of cities across the United States?”), the findings suggest that the average performance of local jurisdictions on a ConPlan is moderate, to be specific, just slightly above the middle mark of the performance ladder (26.9 over a total of a 50-point scale, or 53.8%). The finding signifies much room for improvement in the plan-making process. This is

the first study attempting to scrutinize the performance of a ConPlan. Therefore, we don't have similar reference research with which to make a comparison or reflection.

However, regarding plan quality evaluation research in general, the performance of ConPlan quality is appreciated. For example, the mean score of 53 plans from Tang et al. (2011) was 22.7 over a total of a 50-point scale (or 45.4%). Or, in the recent study about green infrastructure in a local comprehensive plan, H. W. Kim and T. Tran (2018) found the average quality score of 60 plans was 19.6 over a 50-point scale (or 39.2%). In research assessing coastal zone hazard mitigation plans in the sample of 20 Texas jurisdictions, Kang et al. (2010) revealed the average quality score was 41.6 over a 100-point scale (or 41.6%). We understand the differences between the nature of the issues each plan was working with. Therefore, it is impossible to compare these mean scores of total plan quality directly. However, these studies also provide us a glimpse toward the general performance of planning documents when applying content analysis methodology.

Another reason supporting the appreciation of ConPlan performance is its individual evaluation item's performance. The evaluation items are separated into two dimensions, breadth and depth indexes. The findings, summarized in Table 3-8, suggest that most evaluation items, 39 out of 44 criteria (or 88.6%), have both indexes above medium scores. This means that the majority of evaluation criteria in an evaluation protocol are at least frequently mentioned and decently discussed in the ConPlan. Therefore, viewing the performance of the ConPlan from both directions, between jurisdictions and between criteria, support the interpretation of the performance of the

overall quality of the ConPlan. However, we draw this conclusion with great caution and believe there is room for improvement in every aspect of a ConPlan making process

Table 3-8 Summary of Breadth and Depth Indexes of Evaluation Criteria

		Depth index			Total	
		0-0.33	0.34-0.66	0.67-1		
		briefly discussed	decently discussed	profoundly discussed		
Breadth index	0-0.33	occasionally mentioned	1 (2.3%)	4 (9.1%)	0 (11.4%)	5 (11.4%)
	0.34-0.66	frequently mentioned	0	11 (25%)	3 (6.8%)	14 (31.8%)
	0.67-1	widely mentioned	0	7 (15.9%)	18 (40.9%)	25 (56.8%)
Total			1 (2.3%)	22 (50%)	21 (47.7%)	44 (100%)

Regarding the second research question (“What plan components and criteria receive the greatest attention and how extensively are they presented in the ConPlan?”), the results indicate that overall, the performance of action-oriented components is better than the direction-setting group. The component *Participation & collaboration* has the highest average score in a quality plan, while the *Goals & objectives* receives the lowest score. It suggests that the efficiency of the federal regulation of a required citizen engagement plan is a significant part of a ConPlan. More importantly, the proactivity, determination, and creativity in carrying out public participation activities by the local jurisdiction bring good results. A similar interpretation is applied to the low-score components; many sample jurisdictions fail to provide sufficient effort in building direction-setting components. As we mentioned above, these three components are interconnected; one is built based on the others. Thus, a low score on *Factual basis* will

provide less information as input for *Goals & Objectives*. Similarly, a low-score *Goals & objectives* means the plan has not had a clear vision for what it wants to achieve in the future. Therefore, the *Policies & strategies* component cannot maximize its potential and performance because of limited input.

Looking at the performance of evaluation criteria across all plans, we find a similar pattern of overall outperformance of action-oriented components to direction-setting components. There is less difference in performance between evaluation criteria in action-oriented components. The range between the lowest and the highest score is 0.36 to 0.99. However, the variety of evaluation criteria is greater, ranging from 0.02 to 0.99. Among these, the criteria for *Information sharing* and *Priority arrangement* are the top two criteria in the action-oriented components. In the direction-setting components, the *Decent housing* criteria achieves the highest performance among the four. The lowest performance criteria belong to the *Suitable living environment*. These reflect the overall trend in criteria quality performance: housing-related content outperforms community-related content.

A plausible explanation is that the housing issues seem to be more intuitive and straightforward. The community issues are typically more abstract, complex, and take more effort and time to finish. Two sub-criteria, *Preserving and restoring properties of special historic, architectural, or aesthetic value (SE3)* and *Conserving energy resources and use of renewable energy resources (SE4)*, have the lowest performance among all criteria in the ConPlan. Even though these are mentioned as requirements in the regulations of a ConPlan, only a few plans address these issues decently. The official

guidelines from HUD seem to give these topics a low priority. As a result, they are underperforming compared to the other topics.

With the third research question, (“What are the external factors that significantly impact the quality of a ConPlan?”), the findings indicate that the number of populations is a primary predictor of the ConPlan quality score. It indirectly highlights the associated resources of local jurisdictions when prepare for housing plans. In addition, the regression results also suggest that a plan prepared by a professional consultant firm likely to have better outcomes. However, in our opinion, the critical role leading to success still belongs to local jurisdictions. They need to be proactive in the plan-making process. In other words, local jurisdictions need to utilize the consultant’s expertise and maximize their potential contributions to build a great plan by closely working with them in every phase of the plan-making process. Finally, wealth (measured by income) appears to be a significant factor influencing the ConPlan performance. The findings suggest that wealthier communities seem to prioritize less affordable housing and community development activities for low- and moderate-income populations. Compared to the previous studies, this is the reverse trend: wealthier communities show more interest in environmental-related issues. This finding suggests additional studies toward the relationship between housing-related issues and local approaches..

3.8.2. Academic and Policy Contribution

This study has contributed to the understanding of the ConPlan at the local government level across the US. As the pioneer study in ConPlan quality evaluation, it has provided the assessment framework and an overall picture of the ConPlan quality.

The evaluation protocol is designed based on knowledge acquired from academic literature, professional experience, and real-life lessons. It has been proved to be suitable to the content of a ConPlan, meaning it can capture a wide range of variety in a ConPlan's performance. One reason this evaluation protocol is applicable for various users is its explicit and straightforward language. With careful explanation and avoiding jargon, the protocol can be understood and used by a person who has a college-level degree and understands the general process of planning activities in the US. An assessment framework was presented in the previous section in the coding process.

To maximize the reliability and validity of the assessment, the study has recommended some essential elements of an evaluation process. First, since a ConPlan deals directly with affordable housing and community development issues, its content and basic requirements should be presented to the users and the coders. Second, the evaluation protocol applying to one ConPlan should be finished by at least two coders who work independently. This approach makes the results more reliable due to the cross-checking between evaluators. Third, disagreements during the evaluation are inevitable. Therefore, a pre-defined reconciliation approach is critical. In addition, the leader(s) of the assessment activity should also conduct a test run with one plan among all participants to ensure everybody will have no surprises when disagreements emerge. Eventually, the final score for any evaluation item should be that coders agree on or have the majority of votes from coders if no middle ground is set.

The overall picture of the ConPlan's quality in the US has been described. There are some promising signs of the performance of a ConPlan at the local government level

based on the sampled jurisdictions. Yet, there remains room for improvement in the plan-making process. For instance, the local authority should pay more attention to direction-setting components (*Factual basis, Goals & objectives, and Policies & strategies*) to address the local issues with better preparation and solutions. More importantly, the quality image of ConPlans of sampled cities across the US provides valuable insights to policy makers and governmental agencies that oversee the program. For example, the findings indicate an imbalance between housing-related issues and community-related issues in the plans' performances. It signifies a necessary alteration in terms of strategy for the local leadership and HUD, a program manager. The change can include additional support from the local government for community-related issues such as conducting surveys, organizing public engagement activities, and investing more toward community-wide amenities. The federal government could provide additional community-level databases, release more specific guidance, or support additional training for local staff and stakeholders in reporting the local community's issues to federal agencies.

Understanding the role of consultant, with the condition of public funding available for local communities, the policymaker can offer some initiatives to increase the quality of a ConPlan. For example, HUD or the local government can connect with think tanks or universities and ask for pro bono assistance. This will help bring experts to support the plan-making process, and at the same time, save tax money for other planning tasks. Or, policymakers can provide guidance or training on how to maximize the collaboration between professional consultants and the local communities. These

suggestions are some examples of policy interpretation that evaluation protocol can help to define.

3.8.3. Research Limitation and Future Study

There are some limitations associated with this study. First, the plan quality evaluation method, as content analysis research, has its disadvantages. Want it or not, personal perception, experience, and opinion play a fundamental role in shaping the grading process. The study has proposed a framework to maximize the reliability and validity of the research. However, we still consider this as a potential issue for the study. With the carefully planned evaluation framework and recommended guidance to conduct a similar study, we hope to reduce the method's potential disadvantages and move toward the actual value of the ConPlan's performance. With the agreement rate between coders at about 86% percent, this study is qualified when it positions itself with other plan evaluation studies.

In addition, the way we categorize evaluation criteria into two 3-group (with thresholds of 0.33 and 0.66) breadth and depth indexes, the analysis might not be the best option to describe the nature of the values. For example, if a score value is 0.33, it will be labeled as *occasionally* mentioned for a breadth score or *briefly* discussed for a depth score. And, if a score value is 0.34, it will be marked as *frequently* mentioned for a breadth score or *decently* discussed for a depth score. Consequently, two items whose value is 0.01 different from each other will be categorized into different interpretations. Meanwhile, for example, two objects at 0.34 points and 0.66 points are in the same group. Thus, the range differences of 0.01 points and 0.32 points can look very different

in the planning document, but they might be described similarly depending on their distance to the threshold values in the interpretation.

The number of evaluation items per criterion and the number of evaluation criteria per component are not uniform. This is common among plan quality evaluation studies. The differences between *direction-setting* and *action-oriented* components reflect the nature of the two group components. While the former deals with specific contents of the plan, the latter covers the whole document. Therefore, the standardized calculation for the total plan quality score makes the weight of each evaluation item unequal. In other words, a single evaluation item in the direction-setting components is worth less than a single one in the action-oriented components.

A small sample size is a typical disadvantage of plan quality evaluation literature. The sample size of plan evaluation literature ranges from four (BenDor et al., 2017) to 202 plans (Olonilua & Ibitayo, 2011). Among 55 plan evaluation publications between 1993 and 2019, most of these (50 publications, or 90 percent) have a sample size smaller than 70. This study analyzes a sample of 72 jurisdictions. It is not a large sample size; however, it is an appropriate sample size compared to the peer studies in this field. We are aware of the disadvantages of sample size when conducting regression analysis. Therefore, we chose to run separate analysis models before finalizing the study with a combined model as an appropriate approach to overcome the disadvantage of a small sample size analysis.

This study has opened up a dialogue of the ConPlan quality of local jurisdictions across the US and what external factors impact them. Future research should compare

the quality of the ConPlans between different groups of local jurisdictions. For example, the coastal community would be a great location to explore the relationship between plan quality and climate change risk, including sea-level rise or flooding. In addition, since a ConPlan manages and facilitates a large amount of public money, it is critical to examine how the geographical risk of a coastal area impacts a ConPlan.

This study only addresses the ConPlans dated between 2000 and 2010. In 2012, HUD released a new tool supporting the plan's preparation and submission process. An online platform with a clear template for jurisdictions is designed to streamline submitting and auditing the plan. It brings more conveniences to both the grantee (local jurisdictions) and the grantor (HUD). However, it signifies the need for future research to investigate and make a scientific assessment for using a template on the quality of a ConPlan. In other words, future research should focus on addressing the effectiveness of the template approach in the ConPlan planning process.

Finally, the comprehensive research of plan quality must be expanded with the focus toward implementing the plan. If the planning document reaches a high score, it still can be nothing if the planned objective is not implemented. In other words, having a good plan is good, but not enough. To finish the second half of the story, it must be implemented appropriately to bring positive changes to the communities. Therefore, there is an urgent need for future research to address this issue. The results of the implementation study of a ConPlan can provide exciting discussions regardless of what it will find. All in all, we believe these future studies will add meaningful contexts to the

conversation on ConPlans and how to bring affordable housing and community development for everybody.

3.9. References

- Arlkatti, S., Lindell, M. K., Prater, C. S., & Zhang, Y. (2006). Risk area accuracy and hurricane evacuation expectations of coastal residents. *Environment and Behavior, 38*(2), 226-247.
- BenDor, T. K., Spurlock, D., Woodruff, S. C., & Olander, L. (2017). A research agenda for ecosystem services in American environmental and land use planning. *Cities, 60*, 260-271.
- Berke, P., & Godschalk, D. (2009). Searching for the good plan A meta-analysis of plan quality studies. *Journal of Planning Literature, 23*(3), 227-240.
- Berke, P. R., & Conroy, M. M. (2000). Are we planning for sustainable development? An evaluation of 30 comprehensive plans. *Journal of the American Planning Association, 66*(1), 21-33.
- Berke, P. R., & French, S. P. (1994). The influence of state planning mandates on local plan quality. *Journal of Planning Education and Research, 13*(4), 237-250.
- Berke, P. R., J, R. D., Kaiser, E. J., & Burby, R. J. (1996). Enhancing plan quality: evaluating the role of state planning mandates for natural hazard mitigation. *Journal of Environmental Planning and Management, 39*(1), 79-96.
- Berke, P. R., Smith, G., & Lyles, W. (2012). Planning for resiliency: Evaluation of state hazard mitigation plans under the disaster mitigation act. *Natural Hazards Review, 13*(2), 139-149.

- Brody, S. D. (2003). Examining the role of resource-based industries in ecosystem approaches to management: An evaluation of comprehensive plans in Florida. *Society & Natural Resources*, 16(7), 625-641.
- Brody, S. D. (2003a). Are we learning to make better plans? A longitudinal analysis of plan quality associated with natural hazards. *Journal of Planning Education and Research*, 23(2), 191-201.
- Brody, S. D. (2003b). Implementing the principles of ecosystem management through local land use planning. *Population and Environment*, 24(6), 511-540.
- Brody, S. D. (2003c). Measuring the effects of stakeholder participation on the quality of local plans based on the principles of collaborative ecosystem management. *Journal of Planning Education and Research*, 22(4), 407-419.
- Brody, S. D. (2008). *Ecosystem planning in Florida: Solving regional problems through local decision-making*. Ashgate Publishing, Ltd.
- Brody, S. D., Carrasco, V., & Highfield, W. E. (2006). Measuring the adoption of local sprawl: Reduction planning policies in Florida. *Journal of Planning Education and Research*, 25(3), 294-310.
- Brody, S. D., Godschalk, D. R., & Burby, R. J. (2003). Mandating citizen participation in plan making: Six strategic planning choices. *Journal of the American Planning Association*, 69(3), 245-264.
- Brody, S. D., Highfield, W., & Carrasco, V. (2004). Measuring the collective planning capabilities of local jurisdictions to manage ecological systems in southern Florida. *Landscape and Urban Planning*, 69(1), 33-50.

- Burby, R. J., & Dalton, L. C. (1994). Plans can matter! The role of land use plans and state planning mandates in limiting the development of hazardous areas. *Public Administration Review*, 229-238.
- Burby, R. J., & May, P. J. (1997). *Making governments plan: State experiments in managing land use*. JHU Press.
- Center for Disease Control and Prevention. (2018). *500 Cities: Local Data for Better Health*. Retrieved 5/11 from <https://www.cdc.gov/500cities/about.htm>
- Connerly, C. E., & Muller, N. A. (1993). Evaluating housing elements in growth management comprehensive plans. *Sage Focus Editions*, 146, 185-185.
- Conroy, M. M., & Berke, P. R. (2004). What makes a good sustainable development plan? An analysis of factors that influence principles of sustainable development. *Environment and Planning A*, 36(8), 1381-1396.
- Consolidated Plan Revisions and Updates: Final Rule, 22 § 91 6950 (2006).
- Courant, P. N. (1978). Racial prejudice in a search model of the urban housing market. *Journal of Urban Economics*, 5(3), 329-345.
- Dalton, L. C., & Burby, R. J. (1994). Mandates, plans, and planners: building local commitment to development management. *Journal of the American Planning Association*, 60(4), 444-461.
- Dalton, L. C., Conover, M., Rudholm, G., Tsuda, R., & Baer, W. C. (1989). The limits of regulation evidence from local plan implementation in California. *Journal of the American Planning Association*, 55(2), 151-168.

- Evenson, K. R., Satinsky, S. B., Rodriguez, D. A., & Aytur, S. A. (2012). Exploring a public health perspective on pedestrian planning. *Health promotion practice, 13*(2), 204-213.
- Farley, R., Bianchi, S., & Colasanto, D. (1979). Barriers to the racial integration of neighborhoods: The Detroit case. *The Annals of the American Academy of Political and Social Science, 441*(1), 97-113.
- Farley, R., & Frey, W. H. (1992). Changes in the segregation of whites from blacks during the 1980s: Small steps toward a more racially integrated society. Center. The University of Michigan,
- Finegold, K. (2004). Block grants: Historical overview and lessons learned.
- Godschalk, D. (1999). *Natural hazard mitigation: Recasting disaster policy and planning*. Island Press.
- Herd, M. (2019). *A Planner's Guide to Meeting Facilitation* (Planning Advisory Service, Issue.
- Hoch, C. (2007). How plan mandates work: Affordable housing in Illinois. *Journal of the American Planning Association, 73*(1), 86-99.
- Jones, D. K., Evenson, K. R., Rodriguez, D. A., & Aytur, S. A. (2010). Addressing pedestrian safety: A content analysis of pedestrian master plans in North Carolina. *Traffic Injury Prevention, 11*(1), 57-65.
- Kaiser, E. J., Godschalk, D. R., & Chapin, F. S. (1995). *Urban land use planning* (Vol. 4). University of Illinois Press Urbana, IL.

- Kang, J. E., Peacock, W. G., & Husein, R. (2010). An assessment of coastal zone hazard mitigation plans in Texas. *Journal of Disaster Research*, 5(5), 520-528.
- Kim, H., & Tran, T. (2018). An Evaluation of Local Comprehensive Plans Toward Sustainable Green Infrastructure in US. *Sustainability*, 10(11), 4143.
- Kim, H. W., & Tran, T. (2018). An evaluation of local comprehensive plans toward sustainable green infrastructure in US. *Sustainability*, 10(11), 4143.
- Krippendorff, K. (2012). *Content analysis: An introduction to its methodology*. Sage.
- Li, C., & Song, Y. (2016). Government response to climate change in China: A study of provincial and municipal plans. *Journal of Environmental Planning and Management*, 59(9), 1679-1710.
- Lubell, M., Feiock, R., & Handy, S. (2009). City adoption of environmentally sustainable policies in California's Central Valley. *Journal of the American Planning Association*, 75(3), 293-308.
- Nguyen, M. T. (2005). Does affordable housing detrimentally affect property values? A review of the literature. *Journal of Planning Literature*, 20(1), 15-26.
- Norton, R. K. (2005a). Local commitment to state-mandated planning in coastal North Carolina. *Journal of Planning Education and Research*, 25(2), 149-171.
- Olonilua, O. O., & Ibitayo, O. O. (2011). Toward multihazard mitigation: An evaluation of FEMA-approved hazard mitigation plans under the Disaster Mitigation Act of 2000. *Journal of Emergency Management*, 9(1), 37-49.
- Peacock, W. G., Kang, J. E., Husein, R., Burns, G. R., Prater, C., Brody, S., Kennedy, T., No, U. G. C., & Center, R. (2009). An assessment of coastal zone hazard

mitigation plans in Texas. *A Report Prepared for the Texas General Land Office and The National Oceanic and Atmospheric Administration.*

- Spader, J., & Turnham, J. (2014). CDBG Disaster Recovery Assistance and Homeowners' Rebuilding Outcomes Following Hurricanes Katrina and Rita. *Housing Policy Debate, 24*(1), 213-237.
- Steelman, T. A., & Hess, G. R. (2009). Effective protection of open space: does planning matter? *Environmental management, 44*(1), 93-104.
- Stevens, M. R., Lyles, W., & Berke, P. R. (2014). Measuring and reporting intercoder reliability in plan quality evaluation research. *Journal of Planning Education and Research, 34*(1), 77-93.
- Tang, Z. (2008). Evaluating local coastal zone land use planning capacities in California. *Ocean & Coastal Management, 51*(7), 544-555.
- Tang, Z., & Brody, S. D. (2009). Linking planning theories with factors influencing local environmental-plan quality. *Environment and Planning B: Planning and Design, 36*(3), 522-537.
- Tang, Z., Brody, S. D., Quinn, C., Chang, L., & Wei, T. (2010). Moving from agenda to action: evaluating local climate change action plans. *Journal of Environmental Planning and Management, 53*(1), 41-62.
- Tang, Z., Lindell, M. K., Prater, C., Wei, T., & Hussey, C. M. (2011). Examining local coastal zone management capacity in US Pacific coastal counties. *Coastal Management, 39*(2), 105-132.

- Turner, M. A., Kingsley, G. T., Franke, M. L., Corvington, P. A., & Cove, E. C. (2002).
Planning to Meet Local Housing Needs: The Role of HUD's Consolidated
Planning Requirements in the 1990s. *Prepared for the US Department of
Housing and Urban Development Office of Policy.*
- Woodruff, S. C., & Regan, P. (2019). Quality of national adaptation plans and
opportunities for improvement. *Mitigation and Adaptation Strategies for Global
Change, 24(1), 53-71.*
- Woodruff, S. C., & Stults, M. (2016). Numerous strategies but limited implementation
guidance in US local adaptation plans. *Nature Climate Change, 6(8), 796-802.*
- Yinger, J. (1986). Measuring racial discrimination with fair housing audits: Caught in
the act. *The American Economic Review, 881-893.*
- Zhang, Y., Prater, C. S., & Lindell, M. K. (2004). Risk area accuracy and evacuation
from Hurricane Bret. *Natural Hazards Review, 5(3), 115-120.*

4. CONSOLIDATED PLAN IMPLEMENTATION AND LOCATIONAL OUTCOMES IN THE UNITED STATES

4.1. Introduction

The Consolidated Plan (ConPlan) manages multiple housing and community development programs. These programs support individuals and families who are at the bottom of the income ladder. HUD's strategic approach is to provide affordable housing units and leverage community development via catalyst investments. Therefore, implementing these programs is crucial to the overall success of HUD's policy and bringing positive changes to local communities.

This research examines how ConPlan quality correlates with the implementation process and locational outcomes. First, this study highlights the population distribution and funding allocations during a ConPlan's term in local communities. Second, the analysis examines spatial interactions between the distribution of different income groups and the locations of two major programs, the Community Development Block Grant (CDBG) and the Home Investment Partnership Program (HOME). It will address the critical aspect of plan implementation: spending public money at the proposed places. Implementing a plan following its proposal is just one-half of the success story. The other half is to initiate positive changes in the targeted community. To address this, in the third phase, we examine the local community "before" and "after" ConPlan's implementation. This study hopes to find answers for the following questions:

- How has public funding been allocated to address the in-need population? What are the differences in the spatial interactions between cities with low and high scores on their ConPlan quality?

- What changes does the ConPlan contribute to the local community? How does its quality correlate with locational outcomes?

To answer the research questions, this study is composed of two major parts. The first part addresses the implementation process of planning, and the second part explores the outcomes in local communities?

4.2. Conceptual Framework

With evidence-based input from different aspects, including socio-demographic, the local housing market, and contextual characteristics, a ConPlan proposes using federal funding effectively. The funding allocations are estimated, prioritized, and tailored to support the local agenda and achieve the plan's goals and objectives. These allocations follow federal guidelines to support the Low- and Medium-Income (LMI) population, helping them obtain decent housing with suitable living environments and expanding their economic opportunities. Therefore, the spatial interaction between federal funding allocations and the distribution to different income groups reflects the adequate preparation and quality of a ConPlan.

Using a case study approach, this study is designed with two major phases addressing two research questions. First, this study analyzes two cities representing a high- and low-quality ConPlan score. Then, it compares the performance of outcomes in these cities to understand the potential connections between a ConPlan's quality and its locational impacts. The conceptual framework, illustrated in Figure 4-1, describes the approach of this study

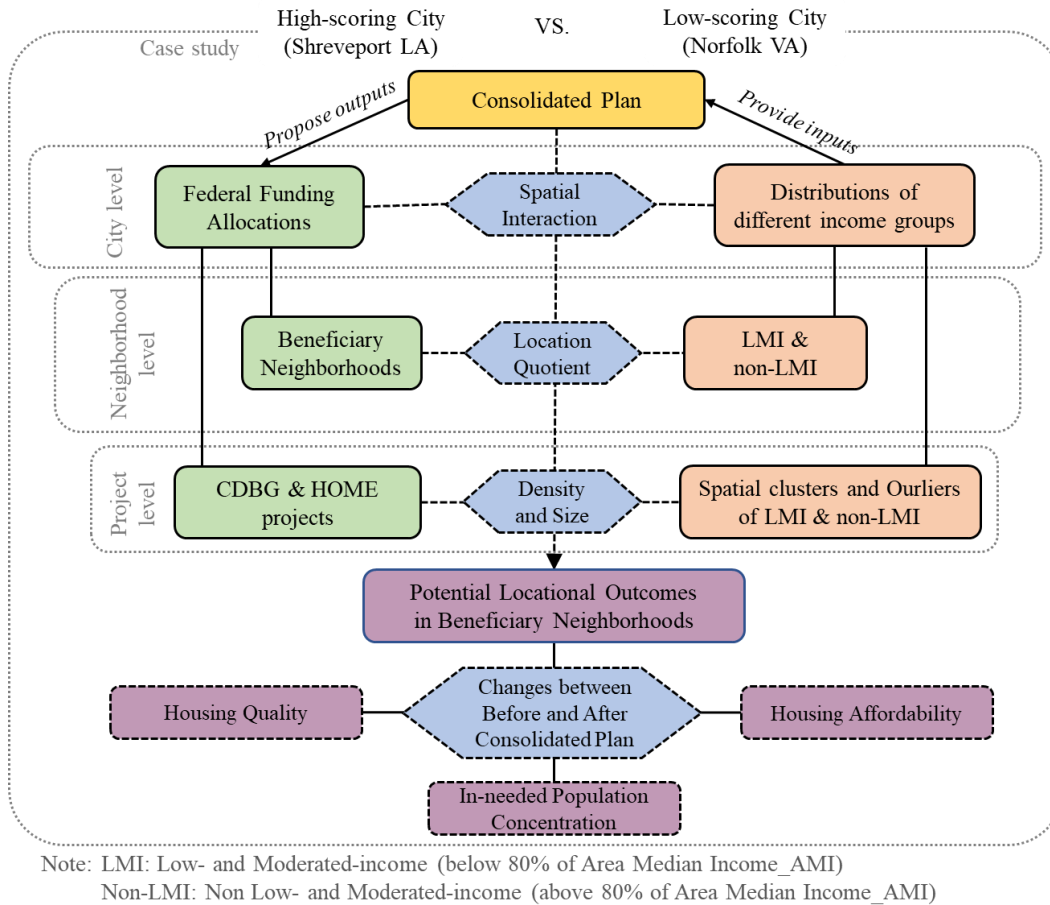


Figure 4-1 Conceptual Framework

A solid line in the framework represents a direct connection between the two elements. A solid arrow indicates a direct consequence relationship. The dotted lines and arrows represent an indirect relationship between two elements in the conceptual framework.

In the first part, we examine the implementation process from large to small scales. There are three levels of analysis: city-level, neighborhood-level, and project-level.

At the city-level analysis, this study shows the spatial distribution of two critical groups: federally funded projects and different income groups. It provides an overall image of the two cities and how these elements are distributed spatially. The next level of analysis is the local

neighborhood. We examine the beneficiary areas that receive federal funding during a ConPlan’s term. With population distribution, the study focuses on two groups of income: LMI and non-LMI. After that, the study extends to the project level to further analyze the relationship between funding allocation and population distribution.

The second part of the study focuses on the changes at the neighborhood level in two chosen cities. The timeline for the investigation is between before and after the implementation of the ConPlan. This approach is expected to highlight the potential correlation between the ConPlan’s quality and the changes brought about in the local communities.

4.3. Case Study Selection

Two case studies were chosen from the list of cities in the sample of 72 cities across the United States. First, these 72 cities were ranked based on their ConPlan’s quality score. And, the pools to select two case studies were from the top 10% and bottom 10% of all the cities. We strategically chose two cities from these groups to represent the high and low scores. The selection criteria included a similarity in population size, the number of funded programs, and the ConPlan’s term. Table 4-1 shows two chosen cities, Shreveport (LA) and Norfolk (VA), with some key factors.

Table 4-1 Key Information of Case Studied Cities

High-score City	Factors	Low-score City
Shreveport (LA)	City name	Norfolk (VA)
107.1	Land area (sq. miles)	54.2
200,145	Population in 2000	234,403
22.8%	Population below poverty	19.6%
6.1%	Unemployment rate	4.7%
2004-2008	Consolidated Plan term	2003-2008
Six months	Plan preparation time	Four months
12	Number of public engagement events	3
Yes	3 rd consultant as lead agency	No

CDBG, HOME, ESG
35/50

Funding programs
Plan quality score

CDBG, HOME, ESG
24/50

The two chosen jurisdictions were Shreveport (LA) as the high-scoring city and Norfolk (VA) as the low-scoring city. The city of Shreveport is located in northwestern Louisiana, near the border of Texas. The city of Norfolk is a coastal city located on the Chesapeake Bay in southeastern Virginia. With 107.14 square miles of land area, Shreveport is double the size of Norfolk at 54.2 square miles. These cities had a similar population size in the year 2000. While Shreveport had about 200,145 people, the Norfolk population was slightly higher at about 234,400. In terms of people below the poverty level, Shreveport had about 22.8 percent, while Norfolk had 19.6 percent. These cities had an unemployment rate of 6.1 percent and 4.7 percent, respectively.

Table 4-1 also highlights some of the characteristics of the ConPlan of both cities. While the ConPlan's term of Shreveport is for the years between 2004 to 2008, the term for Norfolk was 2003 and 2008. The city of Shreveport hired a professional consultant to help them prepare the plan, and the city of Norfolk prepared the plan by themselves. It took Shreveport six months with about 12 public engagement events to finish their ConPlan. Norfolk organized three public events during four months to prepare this planning document. Both cities were applying for three sources of funding: CDBG, HOME, and the Housing Opportunities for Persons with AIDS Program (HOPWA). Finally, the ConPlan of Shreveport had 35 points (over 50 points) in the plan evaluation process, while Norfolk's only had 24. These points made Shreveport the top performer in ConPlan quality, and Norfolk was among the lowest-scoring cities in the sample of 72 cities.

4.4. Steps of Analysis

4.4.1. City-Level Analysis

This paper highlights the spatial distribution of two groups: population and funded programs. For population, I created three maps to show the overall spatial distribution in each city. They are (1) total population, (2) LMI population, and (3) non-LMI population. These maps provide the very first and basic information about population distribution at the census tract level. I used the year 2000 data to reflect a similar dataset used by each city when they prepared for the ConPlan. The outcomes of this analysis include choropleth maps with the census tract as a level of examination.

In the second set of maps, I highlight the locations of funded programs via the ConPlans. The programs (CDBG and HOME) were chosen to maximize the generalization aspects of the formula block grant sponsored through the ConPlans. In addition, I only selected the projects that were completed during the ConPlan's term. This approach stresses the close connection between planning documents and what happens in real life. Finally, the outcomes are included on the dotted maps showing the initial funding allocation pictures in the two case study cities.

4.4.2. Neighborhood-Level Analysis

This analysis further examines the spatial interactions between funding allocation and the distributions of different income groups. I focused on the neighborhoods that received funding during the term of the ConPlans. They are referred to as "beneficiary neighborhoods." In each area, a set of data related to the LMI and the non-LMI population was collected. The purpose of this approach is to understand the population structure of beneficiary neighborhoods. Furthermore, it also helps to identify how the city was spending public dollars.

In this step, I used a location quotient analysis. It is a popular approach in the economic analysis of different sectors based on the number of people working there. I will apply it to analyze the value of the LMI and the non-LMI populations in each beneficiary neighborhood. By doing this, the study can reveal a relative concentration of different income groups compared with the concentration of that group citywide.

The outcomes are illustrated in multi-dimensional graphs. Each shows the beneficiary neighborhoods to indicate the differences between the two cities. Together, the illustrations will show each city's performance regarding the relationships between funding allocation and population distribution.

4.4.3. Project-Level Analysis

After examining the location quotient value of beneficiary neighborhoods, this study focused on funded projects as the research objectives. This approach directly addresses the funding allocation by the spatial location of formula block grant programs. I focused on two aspects of funding allocation: location and size. Compared to the previous phase, this provides a more sophisticated approach with additional details to ascertain the spatial interactions between funding allocation and population distribution.

The exact locations of each program or project are mapped using geographic points. Thus, the project-level analysis will provide more detail and a more precise interpretation of the outcomes when combined with the population distribution. Then, I used the Kernel density analysis to analyze the likelihood of a funded project pattern. The results show the heat map or density map of funded projects in each chosen city using ArcMap software. These maps describe the probability of a funded project happening in a local jurisdiction.

Besides the location, the size is another critical factor of a formula block grant. It directly impacts the granted neighborhood and surrounding areas. This study highlights the size of each funded project based on the available data from HUD. I created a proportional symbols map to reflect the volume of funding in each city and how they are distributed across the areas.

In the following step, I focused on the spatial analysis of population distribution at a local level. I used a statistical approach for spatial analysis for several reasons. First, it can show the statistically significant concentration of a particular income group. This is very important in highlighting the statistically higher area in terms of a specific income group. Second, with the publicly available data set at the census tract level, this approach is practical for local government or urban planners. This analysis can be executed by ArcMap, GeoDa, or any software with spatial analysis tools. I used GeoDa software to examine the Local Indicator for Spatial Association (or LISA) in this study. Third, with the distributions of different income groups, it is not easy to obtain scientific evidence to decide on funding allocations. The general requirement of a formula block grant that the program must benefit at least 80% of the LMI population in the neighborhood is abstract and remains a blurry area in the decision-making process. Therefore, this study offers a more scientific, more intuitive, and easier method for policymakers, local governments, and the community to determine their priorities in supporting population groups that are in the most need.

Applying the LISA method to different income groups allows me to show choropleth maps of clusters and outliers of the population data. These maps represent the statistical concentrations of the population based on income. The spatial interaction between funding allocation and the population distribution is explored by overlaying the choropleth maps (for population analysis) with heat maps (for funding's location) and proportional symbol maps (for

funding's size.) The spatial mismatch between these factors highlight the potential issues associated with the ConPlan implementation.

4.4.4. Locational Outcomes Analysis

In the second part of this study, I explore the effectiveness of public funding on local communities. In addition, the potential connections between the quality of the ConPlans and the locational outcomes are examined by comparing the performances between the two case-study cities. The study compares several aspects of local communities at two time periods: before and after adopting a ConPlan. The date used to represent “before” the ConPlan is 2000, and 2010 represents the date “after” the ConPlan.

The status of a local community is reflected through three key factors. The first is the concentration of the in-need population. This characteristic indicates the relative concentration of an LMI population, the primary beneficiary of formula block grant programs. The second characteristic is housing quality. It is measured by the number of households with at least one housing problem, such as being overcrowded (more than one person per room), or lacking kitchen or plumbing facilities. The third and final characteristic is severe housing cost burden. It measures the proportion of total households that pay more than half of their income for housing. Overall, we believe that a good ConPlan will bring positive changes reflected through these three factors.

To address the research questions, we calculated the location quotient value of the three aspects mentioned above for the beneficiary neighborhoods. After that, the proportion of beneficiary neighborhoods with a location quotient value larger than one is calculated for 2000 and 2010. This proportion indicates the percentage of beneficiary neighborhoods with a

relatively higher concentration of those characteristics than are found citywide. Then, I subtracted the resulting number for 2000 from 2010 to discover the change between these timelines. Finally, the outcome of this phase is summarized in a quantitative table that compares the two cities, at the two timelines, with the three characteristics of local communities

4.5. Data Preparation Process

4.5.1. Population Dataset

In its guideline for the preparation of ConPlan, HUD provides information and an available database to support local jurisdiction. This approach aims to provide local government with tools to create a high-quality plan with evidence-based strategies. Among these, I consider the population income data critical in helping the local jurisdiction understand their current situation socially and economically. In other words, this is one of the essential inputs for ConPlan preparation. This study analyzes the same database recommended by HUD and used by local governments in their ConPlans. However, instead of simply laying out some tables and descriptive statistics as suggested in the ConPlan guidelines, this study will go further and examine the database with a sophisticated methodology to reveal the vital aspects of local communities.

The primary beneficiary of the formula block grant programs (CDBG and HOME) is the low and moderate-income individuals and families (Department of Housing and Urban Development, n.d.). According to HUD, a person is considered “low income” only if they are a member of a family whose income would qualify as “very low income” under the Section 8 Housing Assistance Payments Program (Department of Housing and Urban Development, n.d.-a). It is based on 50% of the HUD Area Median Family (AMI) (U.S. Department of Housing and

Urban Development, n.d.). Therefore, they are critical for HUD programs to identify and categorize groups of population based on their financial capability so that the federally supported programs can target the in-need population. Similarly, the “moderate-income” individual is recognized in Section 8 “lower-income” limits, which are generally tied to 80% of the AMI. Therefore, the low- and moderate-income population include individuals or families with income below 80% of the AMI.

To simplify the analysis and results’ interpretations, this study sorted the population into two groups: (1) low- to moderate-income (LMI, below 80% AMI) and (2) non-low- to moderate-income (non-LMI, above 80% AMI).

These datasets are available on HUD’s website at the census tract level. The dataset for each city was collected for the dates 2000 and 2010. There are multiple income groups in the dataset. These groups were combined to form two main groups of income: LMI, representing the lower-income population, and non-LMI, referring to the higher-income population.

Besides population income data, this study also used housing quality and housing affordability information. The housing quality dataset is measured by the percentage of total households with at least one housing problem, such as lack of kitchen facilities, plumbing, or more than one person in a room (overcrowded). The severe housing cost burden measures the proportion of households that face housing affordability issues. The cost burden is the part of a household’s total gross income spent on housing costs. For renters, housing costs include rent paid by the tenant plus utilities. For owners, housing costs include a mortgage payment, taxes, insurance, and utilities. The household has server cost burden when they spend more than 50% of their income on housing expenses.

In terms of the data source, this study assessed the HUD database, namely the Comprehensive Housing Affordability Strategy (CHAS). This database was created as part of the National Affordable Housing Act of 1990. The primary purpose of CHAS data is to demonstrate the number of households in need of housing assistance (U.S. Department of Housing and Urban Development, n.d.). It includes household characteristics (race/ethnicity, age, family size) and housing unit characteristics (number of bedrooms, housing problems, and cost burden for renter/owner).

To assess the changes associated with a ConPlan, this research uses the 2000 and 2010 datasets to represent “before” and “after” ConPlan implementation, respectively. First, we used the CHAS data for the year 2000. It is the default data source recommended for the grantee by HUD (U.S. Department of Housing and Urban Development, 2018). Since both cities were preparing for a ConPlan between 2003 and 2008, the year 2000 contains the necessary baseline data. Second, CHAS data for 2010 was used as the after ConPlan period. Since the funded programs through the ConPlans were most likely finished by or in 2008, using data for 2010 is appropriate for several reasons. First, these funded activities and programs needed time to show effects at the community, family, or individual levels. Second, this data, provided by HUD, is popular and publicly available. Therefore, we believe in using these datasets to address the research questions that investigate the potential locational outcomes of the ConPlans in the chosen cities

4.5.2. Formula Block Grant Dataset

ConPlan submission is a required document for receiving four major Federal block grants from HUD: (1) the Community Development Block Grant (CDBG) Program, (2) the

HOME Investment Partnerships (HOME) Program, (3) the Emergency Solutions Grants (ESG) Program, and (4) the Housing Opportunities for Persons With AIDS (HOPWA) Program. Each of these programs aims to address affordable housing and community development matters. Collectively, they share the objective of improving the living environment for the less wealthy population in society. A city can apply to all four types of funding. Or, another city can submit a ConPlan requesting funding from one, two, or three programs, depending on the city's needs and priorities. Each program will have additional requirements for the submission process. However, the ConPlan planning document still needs to cover most of the requirements for the federal government to decide.

Among 72 sampled cities, the CDBG appears to be the most popular funding since all the cities on the list submitted a ConPlan to request this financial support. As indicated in Figure 4-2, HOME is the second most popular program, with more than 70% of the sampled jurisdictions applying for this. While the ESG program was requested by nearly half of the 72 cities on the chosen list, only one-fifth of the sample obtained funding for the HOPWA program. Therefore, we selected the CDBG and HOME programs as the objectives of funding allocation analysis to improve the generalization power of the research. By focusing on the two most popular programs funded through a ConPlan, this study lays out a step-by-step approach to guide local governments and communities in future planning preparation.

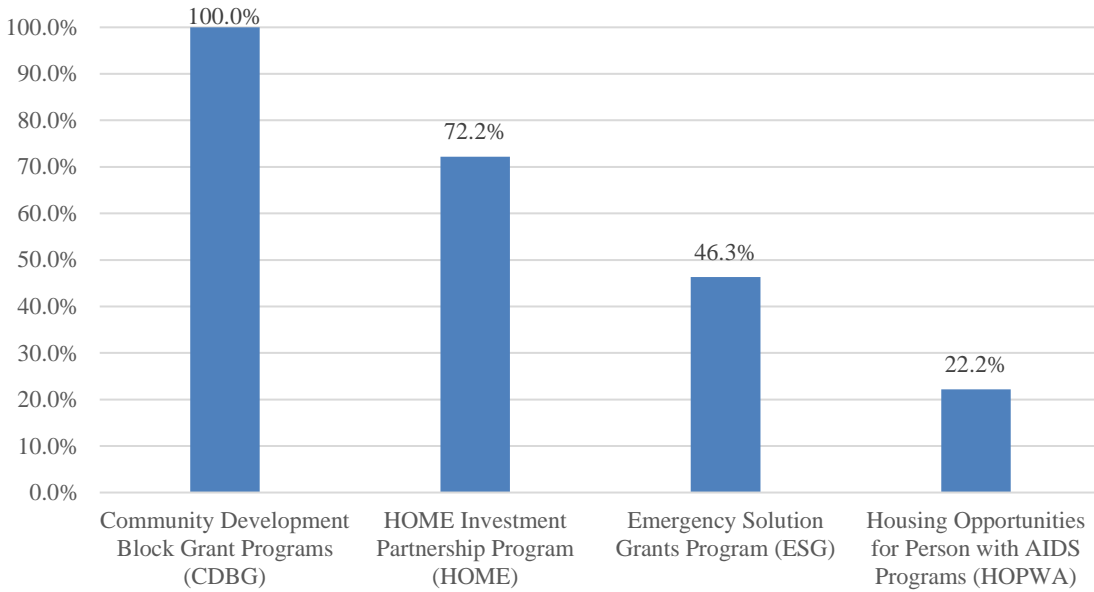


Figure 4-2 Proportion of City Received Formula Block Grant Program

CDBG activities and HOME projects pursue different purposes. The CDBG programs sponsor community development activities such as public services, non-profit organization capacity building, childcare services, clearance and demolition, commercial/industrial building acquisition-construction-rehabilitation, employment training, fair housing activities, food banks, health services, and homebuyer counseling, among others. Meanwhile, the HOME program mainly provides affordable housing to the LMI population through partnerships with local entities. Therefore, the targets of these programs are not the same. CDBG activities seek to support the LMI population by improving the local conditions, directly or indirectly enhancing the living environment of local residents. Therefore, we believe that the CDBG activities should target areas with a highly concentrated LMI population.

The HOME program focuses on a wide range of activities, including building, buying, and rehabilitating affordable housing for rent or homeownership or providing direct rental assistance to low-income people (Department of Housing and Urban Development, 2020;

National Low Income Housing Coalition, 2019). In housing literature, the authors agreed that the targeted destination should be low-income individuals and families to support their well-being and future development. They believed that public policy should aim to help low-income families be located in residential environments that are more integrated by income and race (Crump, 2002; Imbroscio, 2008; Wyly & DeFilippis, 2010). In addition, Popkin et al. (2004) suggested that HUD should support providing housing assistance “to encourage moves to opportunity-rich areas, as well as long-term support to ensure a successful transition and progress toward self-sufficiency.” Therefore, the expectation for HOME projects is to provide low-income people with a chance to settle in a high-opportunity neighborhood. Thus, this study argues that the area with a highly concentrated non-LMI population should be the targeted location for every HOME unit.

In terms of the data source for CDBG and HOME programs, the study used HUD-eGIS Open Data Storefront, geospatial datasets run by the Office of Policy Development and Research (PD&R) (<https://hudgis-hud.opendata.arcgis.com/>). The downloaded dataset presents geographic locations of funded activities by census tracts. After acquiring the data, we chose all the census tracts located within the boundaries of the selected city. Then, we excluded activities that were not finished during the ConPlan term of the two selected case studies. For example, the dataset for Shreveport (a high-score city) was filtered to keep the projects completed between 2004 and 2008. Similarly, the dataset for Norfolk was dated between 2003 and 2008. This approach ensures the relevance of the funding allocation data with the timeline of the ConPlans.

4.5.3. Unit of Analysis

Depending on the analysis, this study used different categories of a unit of analysis,

including city, neighborhood, and project levels. A city-level analysis was applied when comparing the performances of the two chosen cities. For example, when analyzing the locational outcome of a ConPlan, the change of LMI population concentrations was calculated for each city then the numbers were compared. Besides the quantitative approach, the city-level analysis also used maps to compare case studies. Each city will have a map with similar content (i.e., a hot spot for funding and location of LMI areas). Then, using a qualitative approach, these maps were compared between the two chosen cities.

The second level, neighborhood, is a popular unit of analysis in the community planning literature. According to previous scholars, this entity is the most recognizable and viable unit of identity and actions, with a political capacity to maintain the interest and benefit of the community (Martin, 2003; Park & Rogers, 2015; Silver, 1985; Wellman & Leighton, 1979). However, there is no consensus for the definition and geographic delineation of a neighborhood-based approach. Depending on the research topic, analysis methodology, geographic location, and data availability, the size of a neighborhood in planning literature could range from a few houses to a group of street blocks to even a large community with thousands of residents. More importantly, a neighborhood can be categorized differently by some critical factors, including land area, population, community elements, and administration boundary. Park and Rogers (2015) have discussed these elements extensively in their literature review about neighborhood concepts and applications. Following previous studies from Van Zandt and Rohe (2006), Matthews and Turnbull (2007), and Hipp (2010), we used census tracts as a unit of analysis for our neighborhood-level investigation. The data on funding allocations and population distributions used in this study will be integrated with the census tract level to examine the characteristics and changes of a local neighborhood.

The third level of analysis, project or activity, analyzes funding allocations in detail. With this level of analysis, point data was downloaded and used to reveal a more detailed comparison. More importantly, this level of investigation allowed us to apply a more sophisticated spatial analysis methodology such as Kernel density analysis or proportional symbols mapping.

Together, the three levels of analysis provided a comprehensive approach to address the research questions extensively. The detailed summary of each methodology's research analysis, units, and outcomes is listed in Appendix L.

4.6. Methodologies

4.6.1. Mapping

A popular analysis in urban planning is mapping. In this study, we use ArcGIS as a primary tool to show and analyze maps. There are two analyses using mapping technology. First, we geocode the dataset based on the longitude and latitude coordinations of the activities or the address of the projects. Second, we use overlaying maps to compare and contrast the results of different analyses. To ensure the correct outcome, the coordination system is the same in each map. For example, the maps showing population distribution and funding allocation use a similar projection plane, based map, and layout boundary. Therefore, the results will yield a similar map with different layers of information for comparison purposes

4.6.2. Location Quotient Index

The location quotient index (LQ), a popular urban economic analysis, has been widely used by researchers in economic geography and regional economics since the 1940s (Miller et al., 1991). It is a technique used to calculate the relative concentration of a particular industry, workers, or demographic group in an area (i.e., city) compared to a larger region (i.e., nation). It

is calculated as the “percentage of employment in a given local industry of total local employment, expressed as a ratio to the percentage of national employment” (Blumenfeld, 1955, p. 119). This approach is still one of the most popular techniques for estimating the relative concentration of a particular factor compared to a larger geographic region. According to Isserman (1977), one of the advantages is that this approach requires little data and analytic skill. More importantly, it can be executed quickly and inexpensively, leading to its popularity across different levels of administrations and governments (Isserman, 1977). However, simplicity comes with disadvantages. The LQ value can not always be taken at face value (Isard et al., 2017; Miller et al., 1991). This means the LQ only signifies the overall statements of relative concentration. To better understand the issue, the evaluator or researcher needs additional information regarding the context, the market, or other details regarding the analysis.

In this study, the LQ was applied to calculate the relative concentration of different population groups. For example, in the neighborhood analysis, I used this technique to calculate the LQ value of LMI and non-LMI populations in beneficiary neighborhoods to understand the relationships between funding allocations and population distribution. The formula used to calculate these relative concentrations of different income groups is shown below:

$$LQ_i = (p_i / p_{i \text{ neighbor}}) / (P / P_{\text{city}})$$

Where: LQ_i is the location quotient value of the Low to Medium Income (LMI) population of neighborhood i ; p_i equals the number of LMI populations in census tract i ; $p_{i \text{ neighbor}}$ equals the total population of census tract i ; P equals the number of LMI populations in a city; and P_{city} equals the total population of a city.

There are three possible results for the LQ value. First, the LQ value equals 1. This means that the proportion of the LMI population in neighborhood i is similar to the proportion of the LMI population city-wide. Second, the LQ value is smaller than 1, suggesting that the LMI population's representation in neighborhood i is smaller than its city-wide representation. Finally, the LQ value is larger than 1. This indicates that there is more percentage of the LMI population in neighborhood i than the percentage of LMI population in the city. A similar calculation is applied to the non-LMI population group.

There are significant advantages for using this approach to compare case studies. It allows standardized comparisons between cities regardless of the timeline, population size, or demographic composition. First, the LQ simplifies the interpretation of the relative concentrations of different income groups. Since the LQ value already took the citywide population into account when calculated, the value itself can make sense in both cities. Second, this approach allowed us to compare two timelines within the city and between cities. The LQ value of the LMI population in neighborhood i before and after adopting the ConPlan reflects the relative change in the concentration of the LMI group. And, this change presents the contextual effect citywide in each timeline. Therefore, it is appropriate to use the shift in LQ values to compare the performances between cities

4.6.3. Spatial Statistics Analysis

4.6.3.1. The Role of Spatial Approach

The development of spatial analysis science produced an effective tool for the study of social sciences. Many researchers have contributed to developing “spatially integrated social sciences” (Goodchild et al., 2000). Information and communication technologies provide many advantages for spatially related studies. For example, more computational tools have been

created as support for examining the increasing changes in society as well as in nature. These include some prominent technologies such as the Geographic Information System (GIS), the Global Positioning System (GPS), and other remote sensing applications. With the improved availability of geocoded data, it is not too much to think that every aspect of the world is being digitalized. More and more natural elements are being captured, analyzed, or recorded. In general, the process of collecting, handling, and analyzing spatial data is becoming more popular with the rapid development of technology. Many questions have been raised in social studies about the variety of human activities, the changing pattern of human settlement, and the relationships between humans and the environment. Social scientists have diversified study approaches and methodologies by applying spatial technology. For instance, different kinds of social research have been conducted using spatial science such as urban studies (Akerlof, 1997; Glaeser et al., 1991), business and social networks (Brown et al., 1998; Kearney, 1995), social and economic inequality (Harvey & Braun, 1996; Sassen, 2001), environmental and climate change (Brody et al., 2011; Chomitz & Gray, 1996; Van Zandt et al., 2012), health and disease (Epstein, 1998; Kitron, 1998), and criminal justice (Cohen et al., 1998; DeFronzo & Hannon, 1998).

Urban and regional sciences have also taken advantage of the development of the spatial analysis tool and applied it in a variety of topics such as household consumer demands (Case, 1991), unemployment rates (Bronars & Jansen, 1987), the prices of products (Haining, 1984), and transportation (Haider & Miller, 2000). Significantly, housing and affordable housing are among the most popular fields in which researchers consider spatial analysis an excellent tool. Some related studies include housing prices (Basu & Thibodeau, 1998; Can, 1992), the

concentration of affordable housing (Van Zandt & Mhatre, 2009), and neighborhood quality (Dubin, 1992).

In the paper discussing the future development of spatial analysis in the social sciences, Anselin (1999) indicated three significant contributions of spatial analysis offered to the social scientist's analytical tools. First, data integration is an essential characteristic of spatial analysis. The data provided varies between different scales and dimensions. Hence, it allows researchers more flexibility in working with data from various sources. For example, census data can be combined with remote sensing images or survey data across different units, including neighborhood, city, state, or region. The second contribution of spatial analysis is providing the application of Exploratory Spatial Data Analysis (ESDA) and visualization. These applications allow researchers to explore geographic patterns, test hypotheses, and explain the associations between factors (Anselin, 1999; Tukey, 1977). The final contribution that spatial analysis supports in the toolbox of social scientists is about the studies' context (Anselin, 1999). This can be applied in deductive studies, including empirical work based on spatial (cross-sectional) data or when a spatial interaction exists. With the power of spatial statistics methodology, the context of a study is more likely to be examined with great significant supports.

4.6.3.2. Local Indicator of Spatial Association (LISA)

A spatial analysis approach is a sophisticated tool in urban and regional planning. It assesses the magnitude of the correlation between an area and its surrounding neighbors regarding a particular value. This method considers the value of each neighborhood, at the same time, accounts for the distance in the space of each neighborhood. There are multiple statistics analyzing the spatial autocorrelation of an area and the surroundings. In this study, we use a local

version of Moran's I statistic. It was introduced by Anselin (1995) with the full name of Local Indicators of Spatial Associations or LISA.

LISA is defined as a statistic that satisfies two requirements. First, the LISA for each observation indicates the extent of significant spatial clustering of similar values that are located around that observation. Second, the total summary of all LISA values from all observations is proportional to a global indicator value of spatial associations. As the local version of spatial autocorrelation, the LISA statistic is calculated for each area in the region. This index is defined as comparing the values of each feature in a pair to the mean value for all features in the study area (Murack, 2013). Thus, the LISA statistic assesses the significance of the local statistic at each location. In addition, the LISA helps identify spatial clusters, hot spots, cold spots, and outliers.

The LISA can yield two types of values: positive and negative. Each type contains two cases of clustering based on the values of the data set. The positive value of the LISA indicates that the area is surrounded by neighbors that share similar values, either high or low. This area is part of the cluster. The first pattern of positive LISA values is a High-High pattern. It suggests that the value of an area (i.e., in terms of the number of LMI populations) is larger than the mean, and the value of the surrounding areas is also larger than the mean. The Low-Low pattern of a positive LISA shows that the values of both the area and its neighbors are below the mean.

Besides, the negative LISA indicates that areas surround an area with different values. In other words, the neighborhood is now called an outlier. Two patterns of a negative LISA include High-Low or Low-High. The High-Low association is when the value of an area is higher than the mean while the values of the surrounding areas or neighborhoods are below the mean. The Low-High pattern indicates that the value at an area is lower than the mean while the values of

the surrounding neighborhoods are above the mean. Therefore, LISA is an effective method for indicating where and how significant the value of different income groups is spatially distributed.

4.6.3.3. Spatial Cluster of Different Income Groups

To examine the efficiency of public fund spending, I correlated the distribution of in-need population concentrations with the “hot-spots” of federally funded projects. The mismatch between these spatial distributions suggests the efficiency of targeting the public dollar to address the issues of in-need population concentrations. To do this, we used GeoDa software to run a univariate LISA. For each census tract, we calculated the value of the LMI population, then correlated this z-score with a similar value for the neighbor tracts. The neighbor tracts are defined as census tracts with common boundaries. This operation creates a spatial weights matrix to use the spatial autocorrelation analysis. The spatial weight matrix averages the values of the low-income population for the nearest neighbors for each tract (Anselin, 1995; Anselin et al., 2010; Wyly & DeFilippis, 2010). Next, the Local Moran’s I statistics, representing the correlation between tracts and their neighbors, are tested for statistical significance. I applied 9,999 permutations to test the Moran’s I statistics values with spatial randomization for the calculations of every census tract. As a result, the spatial clusters of the low-income population are highlighted. The cluster map depicts locations with significant local Moran statistics (at a probability level of 0.05) and is clustered by type of association. The map illustrates neighborhoods with a spatial correlation to the surrounding areas that exceed the random spatial distribution.

4.6.3.4. Kernel Density Analysis

Besides spatial autocorrelation analysis, we utilized density analysis to further examine

the research questions. It is called a density-based spatial technique, or hot-spot analysis, that highlights the spatial concentration patterns of points data (Wang & Varady, 2005). Density analysis is defined as “tak[ing] known quantities of some phenomenon and spread[ing] them across the landscape based on the amount measured at each location and the spatial relationship of the locations of the measured quantities” (ESRI, n.d.). This approach is also used in different fields of urban studies, including public housing (Wyly & DeFilippis, 2010), urban criminology (Eck et al., 2005; Harries, 1999), or geographical epidemiology (Reader, 2000).

The kernel density analysis, or the kernel-based approach to probability density function estimation, is an effective tool for defining the shape of a probability density distribution of a set of points from that distribution. (Brunsdon, 1995; Silverman, 1986). Given a set of points, this approach can estimate a special surface showing the relative likelihood that further phenomena might occur in various locations of the study region (Brunsdon, 1995). In other words, a smoothly curved plane is projected on top of each point. The surface value is highest at the exact location of the point. Moving outward, the value will decrease and reach zero at the boundary of the search radius of the point (ESRI, n.d.). As a result, the raster output of a kernel density analysis indicates a “hot-spot,” with a high value indicating the likelihood that a phenomenon will happen at that location.

In this study, we applied this method to examine the federally funded activities in each city. It calculates the density of point features, or federally funded projects, around each output raster cell. This method divides the study area into a grid of cells of equal size. The dimensions of the cell affect the smoothness of the output raster. We conducted several experiments and decided to use 0.03 miles (50 meters) as the dimension for each output cell

Another critical factor of kernel density analysis, search radius, can affect the outcomes and the level of generalization (Wang & Varady, 2005). According to Brunson (1995), the optimal search distance when conducting density analysis depends on the distance between points. Following the procedure proposed by Wang and Varady (2005), we ran a series of different search radius to evaluate the sensitivity of each output before finalizing the optimal bandwidth for the kernel density analysis. The search distance ranges between 0.1 to 1 mile (or 0.16 – 1.6 kilometers). The results are shown in Figure 4-3. We found a 0.5-mile (800 meters) radius to be the optimal choice because its raster output can show general information about the density and determine the details of each density area. Therefore, I decided to use 0.5 miles as the standard search radius for the kernel density analysis to identify the hot spots of funding allocation in each city during its ConPlan’s term.

Notably, this density analysis does not apply to HOME projects since their number is only a few. Meanwhile, the amount of CDBG activities is large enough to apply density analysis. We used ArcMap Spatial Analysis tools (created by ESRI, Inc.) to generate the density map for CDBG projects during the period covered in the ConPlan. Using this method, a “hot spot” or “highly recipient neighborhood area” can be estimated, showing the relative likelihood of federally funded activities and their geographic locations.

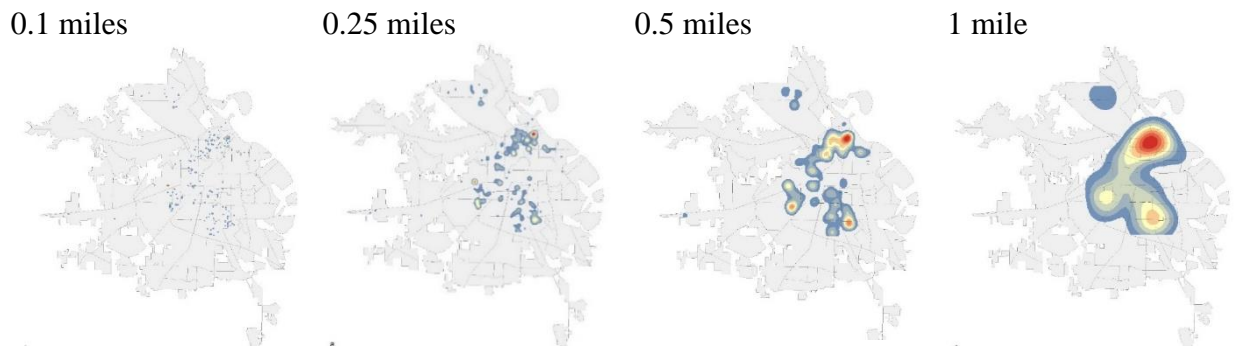


Figure 4-3 Kernel Density Analysis with Different Search Radius Values

4.7. Results

4.7.1. City-Level Analysis

4.7.1.1. Population Distribution

Figure 4-4 and Figure 4-5 show the population distribution in 2000 of Shreveport and Norfolk, respectively. According to the US Census, the population of Shreveport in 2000 was about 200,145 people, while the population of Norfolk was about 234,403. Figure 4 indicates that neighborhoods in the east and southwest in Shreveport have a higher number of populations. Three maps (total population, LMI population, and Non-LMI population) of this city exhibit similarities in the distribution pattern of population groups. However, while the LMI population seems to be concentrated in the center and west side of the city, the neighborhoods on the east side share a high number of non-LMI populations.

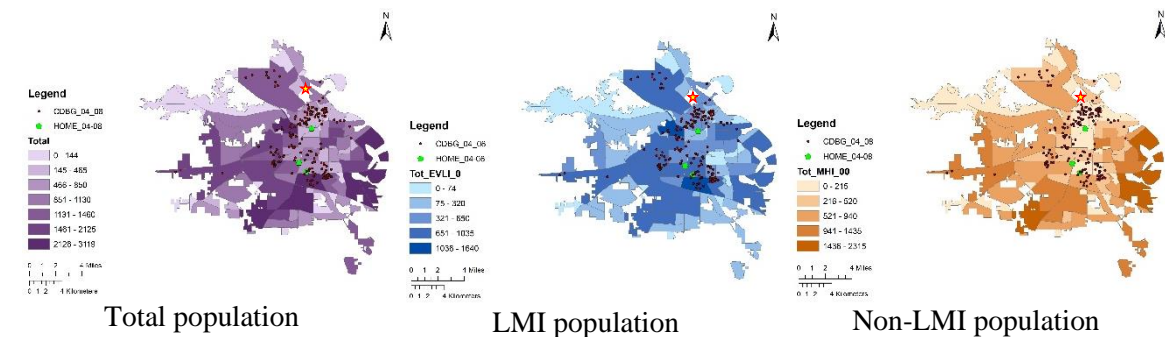


Figure 4-4 Population Distribution in Shreveport LA in the Year 2000

Figure 4-5 shows a more mixed distribution of populations in Norfolk. Overall, the total population seems to be concentrated in neighborhoods in the northeast and west sides of the city. While the census tracts in Shreveport appear to have similar size of residence with their

neighbors, Norfolk’s neighborhoods appear with significant population differences with adjacent areas. Besides, the maps of the LMI populations and non-LMI populations seem to reflect the income segregation. In other words, the more likely an LMI population is living in a neighborhood, the less likely that a non-LMI population will be residing in the same area

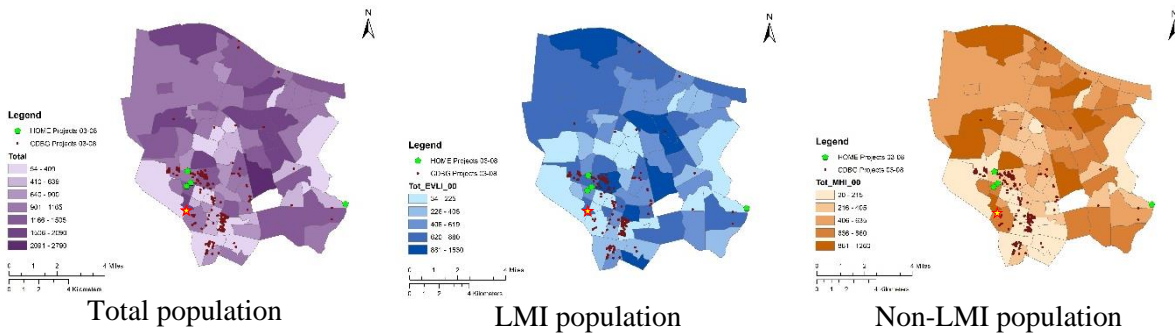


Figure 4-5 Population Distribution in Norfolk VA in the Year 2000

4.7.1.2. Federal Funding Distribution

Figure 4-6 highlights the distribution of CDBG and HOME activities and shows the geographic location of the federally funded projects during the ConPlan’s terms in two cities.

According to the dataset, there were 199 CDBG activities recorded in HUD’s database between 2004 and 2008 for Shreveport. During the same period, there were four HOME projects with a total of 236 housing units. The distribution of these activities is concentrated near the downtown area and its surroundings to the city’s southwest. There were also some projects spread out in the north and west of the town. However, the majority of federally funded activities happen in the south and southwest areas of the downtown.

In Norfolk, there were 394 CDBG activities funded from 2003 to 2008. In addition, there were five HOME projects with a total of 76 finished units supporting the local communities.

Overall, the federally funded projects were mainly concentrated in the southern part of the city, near the downtown area. There are concentrations of projects finished north and east of the downtown area.

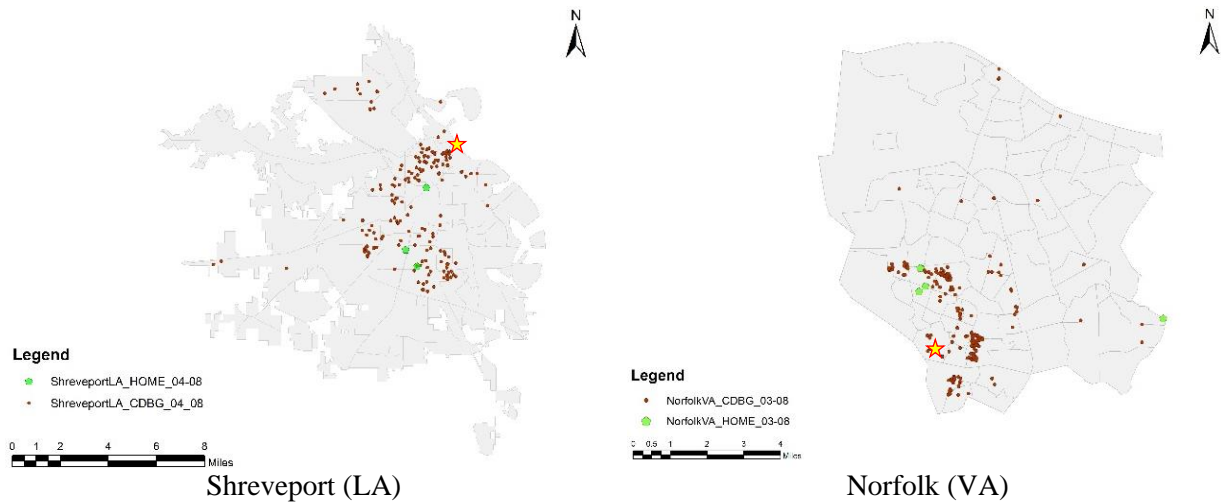


Figure 4-6 CDBG and HOME Locations during Consolidated Plan's Term

4.7.2. Neighborhood-Level Analysis

4.7.2.1. CDBG Activities Distribution

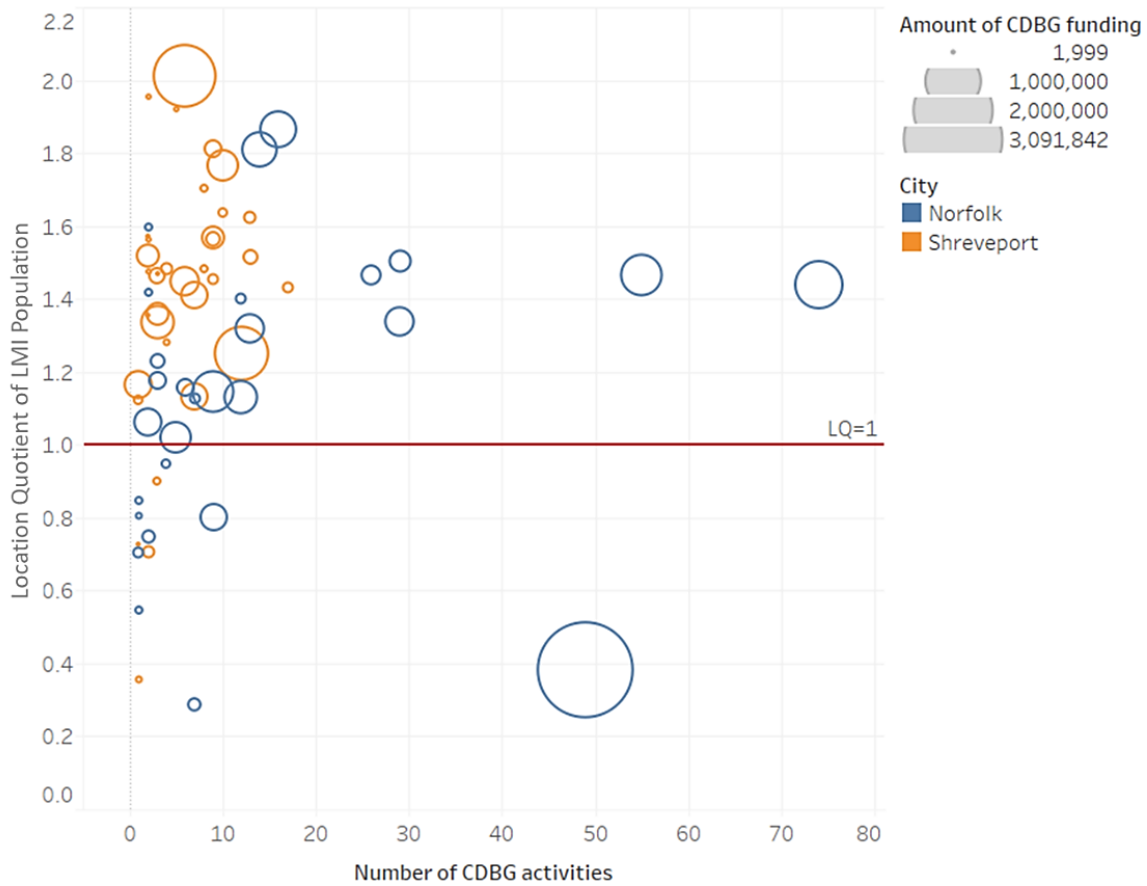
Figure 4-7 compares the funding sizes and distributions of CDBG allocations during the ConPlan's term for two chosen cities. The vertical axis represents the location quotient value of the LMI populations of the census tracts in 2000. The horizontal axis indicates the total number of CDBG activities. Each circle represents a census tract that received CDBG funding, or we call "beneficiary neighborhoods." The circle size depicts the total amount of funding allocated for that neighborhood.

We divided the graph into two zones separated by a horizontal line at the location quotient value of 1. The upper part above the LQ=1-line represents the zone where location

quotient values of the LMI populations are larger than 1. This zone is identified as an “in-need” area since the neighborhoods that appear in this zone have a relatively higher proportion of LMI people than is found citywide. This group of populations is considered a priority recipient of CDBG programs.

The bottom part is where the location quotient of the LMI population is smaller than 1. In other words, neighborhoods in this area contain less LMI than are in the city. The CDBG’s funding allocation is expected to show that beneficiary neighborhoods are located inside the “in-need” zone above the $LQ=1$ -line

As Figure 4-7 indicates, all of Shreveport’s beneficiary neighborhoods received less than 20 CDBG activities in their areas. Meanwhile, beneficiary neighborhoods in Norfolk receive a wide range of CDBG activities. The majority of them get less than 30 activities. However, there are three neighborhoods that get 49, 55, and 74 CDBG activities.



Number of CDBG activities vs. Lq Evli 00. Color shows details about City. Size shows Amount of CDBG funding.

Figure 4-7 Beneficiary Neighborhoods with CDBG Activities and LQ Values

Table 4-2 summarizes the number of activities and the amount of funding allocated in each city. For example, 31 over 35 beneficiary neighborhoods in Shreveport have a location quotient of an LMI population larger than 1. In other words, 89 percent of beneficiary neighborhoods are located inside the in-need zone. This number in the city of Norfolk is 68 percent, representing 19 over 28 beneficiary neighborhoods.

Regarding the number of CDBG activities, Shreveport’s beneficiary neighborhoods received a total of 199 activities during its ConPlan term. Among these, 192 projects (or 99%)

were located inside the in-need zone. In Norfolk, 319 projects equaled 81 percent of 394 CDBG activities targeted the in-need area.

In addition, this study also examines the amount of funding allocated to the local communities. As shown in Table 4-2, in Shreveport, the government spent almost all CDBG funding (99 percent) on neighborhoods with highly concentrated LMI populations. Conversely, only 58 percent of the total CDBG funding was targeted toward the in-needed communities in Norfolk. These findings suggest that the high-score city (Shreveport) outperforms the low-score city (Norfolk). It shows better targeting toward highly concentrated LMI populations of beneficiary neighborhoods, (2) creating more CDBG activities in in-need areas, and (3) spending more funding in in-need areas.

Table 4-2 Summary of Beneficiary neighborhoods with Number and Size of CDBG Activities

	Total		Contain number of CDBG activities		Contain amount of CDBG funding	
	High-score city	Low-score city	High-score city	Low-score city	High-score city	Low-score city
Beneficiary neighborhoods in Citywide	35 (100%)	28 (100%)	199 (100%)	394 (100%)	5,126,388 (100%)	8,404,265 (100%)
Beneficiary neighborhoods in In-need zones	31 (89%)	19 (68%)	192 (99%)	319 (81%)	5,050,771 (99%)	4,866,269 (58%)

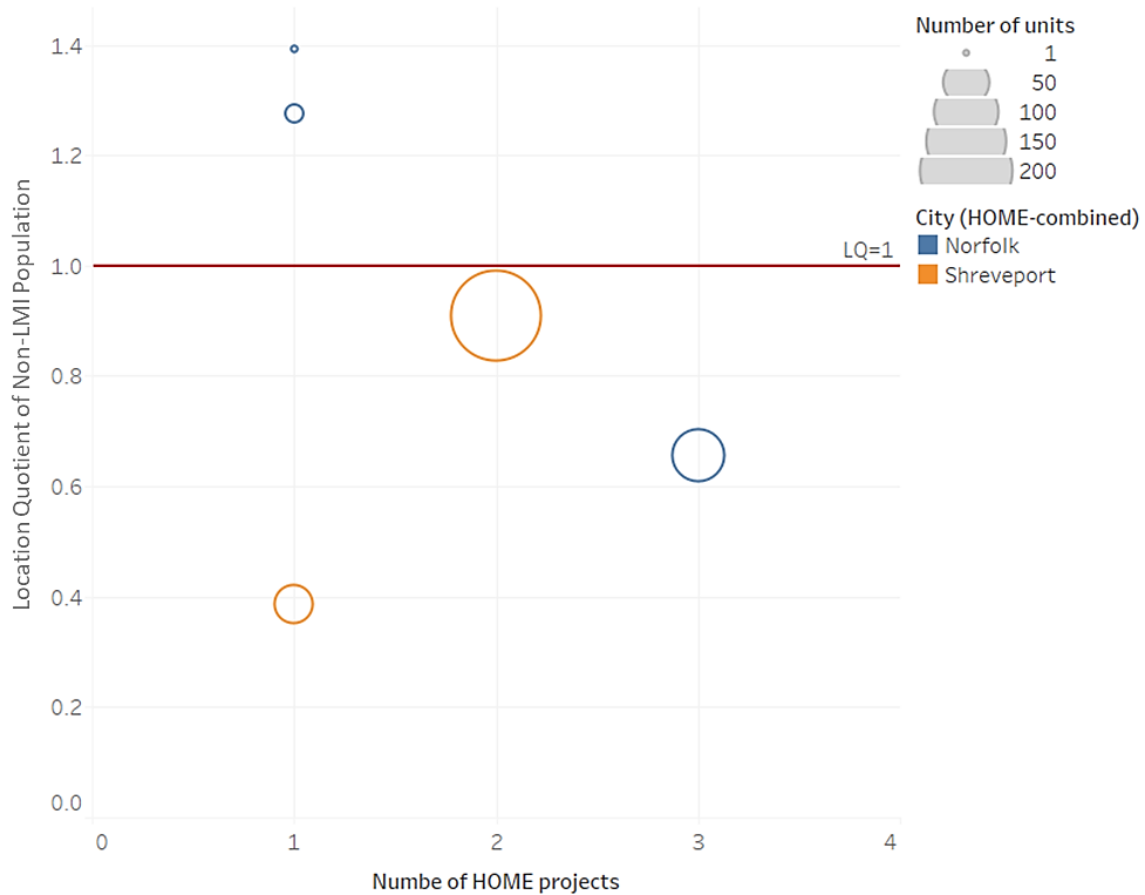
Note: High-score city: Shreveport (LA); Low-score city: Norfolk (VA); In-need zones: Census tracts with a high concentration of LMI population (LQ>1)

4.7.2.2. HOME Project Distribution

This study identifies a beneficiary neighborhood that has a location quotient value of the non-LMI population larger than 1 as the “desired zone.” As a result, we expect to see the local government allocate HOME funding to provide housing assistance through affordable units

inside these areas.

Applying a similar approach to the previous analysis, we analyzed three aspects of HOME funding allocation to understand and compare the strategies of the two cities. Figure 4-8 compares the project size and distribution of HOME funding during the ConPlan's terms for two selected cities.



Number of HOME projects vs. Lq Mhi 00. Color shows details about City (HOME-combined). Size shows Number of units.

Figure 4-8 Beneficiary Neighborhoods with HOME Projects and LQ Values

As Table 4-3 illustrates, Shreveport sponsored three HOME projects with a total of 236 units. Notably, none of these units were located in the desired zone. Meanwhile, Norfolk funded

five HOME projects with a total of 76 affordable units. There are nine units (11.8%) of the total built inside the areas with a highly concentrated non-LMI population.

To conclude, Shreveport allocates CDBG money better at the neighborhood level while Norfolk performs slightly better in spending HOME funding. In the following section, the project-level analysis will provide a different assessment to evaluate how these two cities are spending public money and whether the performances at the neighborhood levels have any connection with the project levels.

Table 4-3 Summary of Beneficiary neighborhoods with Number and Size of HOME Projects

	Total		Contain a number of HOME projects		Contain amount of HOME units	
	High-score city	Low-score city	High-score city	Low-score city	High-score city	Low-score city
Beneficiary neighborhoods in Citywide	2 (100%)	3 (100%)	3 (100%)	5 (100%)	236 (100%)	76 (100%)
Beneficiary neighborhoods in Desired zone	0	2 (66.7%)	0	2 (40%)	0	9 (11.8%)

Note: High-score city: Shreveport (LA); Low-score city: Norfolk (VA); Desired zones: Census tracts with high concentration of medium- and high-income population (LQ>1)

4.7.3. Project-Level Analysis

In the project-level analysis, this study addresses the interactions between the geographic concentration of CDBG and HOME programs and the spatial autocorrelations of different income groups. We applied statistical methods to examine the likelihood of funding allocations and the probabilities of the geographic clusters of different income groups. We used kernel density analysis to generate heat maps (hot spots) of CDBG activities with funding allocation data. Since the number of HOME projects is minimal, it is unreasonable to apply this method. It

is more efficient and accurate when compared to the previous analysis: extrapolating the point location to the polygon (tracts) that contains its. Furthermore, the density analysis accounts for every point, while the previous approach can be ineffective since the outcome of a one-point tract is similar to the outcome of multiple-point tracts. Therefore, this analysis is expected to yield more precise findings than the previous analysis.

4.7.3.1. Location of Funding

Figure 4-9 shows the overlay of two layers: (1) hot spots of CDBG activities and (2) spatial clusters/ outliers of LMI and non-LMI populations. The CDBG's layer shows raster images shaded from blue to red, representing the low to the high value of likelihood of the CDBG project. The higher the value, the more likely funded activities occur at that location. We subjectively scrutinize three hot spots of density in each city for further analysis and better discussion. The second layer highlights several groups of neighborhoods with statistically significant values of LMI and non-LMI population. The area designated "LMI High-High" represented a neighborhood with a high LMI population and surrounded by neighbors with a high value of LMI population. The "LMI High-Low" area indicates a community with a high LMI population and adjacents to areas with a low value of LMI populations. A similar interpretation applies to "Non-LMI High-High" and "Non-LMI High-Low" areas. In short, the second layer shows the cities' neighborhoods with a significantly high value of lower-income population (LMI High-High and LMI High-Low) and higher-income population (Non-LMI High-High and Non-LMI High-Low). As discussed above, we hope to see the hot spots of CDBG funding target lower-income areas.

In Shreveport, communities L1, L2, L3, and L4 have large numbers of LMI populations

and are surrounded by areas with a large number of LMI populations. More importantly, their LMI population values are similar to those of their neighbors (as summarized by the weighted average of the neighboring values, the spatial lag) than would be the case under spatial randomness. The P-value for this spatial analysis is 0.05. In other words, neighborhoods L1, L2, L3, and L4 are considered spatial clusters of a lower-income (LMI) population, in-need groups of CDBG funding. As a result, Shreveport's funding is highly concentrated in the southern area of the downtown (area D1). Other hot spots, area D2 and area D3, are located to the south and southwest of the city. Hot spot D1 does not overlay with any neighborhood with significantly high value of lower-income groups (LMI High-High or LMI High-Low). Meanwhile, half of the hot spot D2 falls inside neighborhood L4, and hot spot D3 is completely located inside neighborhoods L2 and L3. Thus, the spatial intersection between a hot spot of CDBG funding and neighborhoods with in-need population concentrations suggests efficient allocating public dollars to support the needy populations in Shreveport.

In Norfolk, almost all CDBG funding is allocated in the south of the city, near the downtown area. The density map highlights some major hot spots of CDBG activities. Among these, area D2 appeared to be the densest hot spot of funding during the ConPlan term. Neighborhoods L1 and L2 have a "High-Low" value for the LMI population. This means these neighborhoods have a high value for the LMI population and are surrounded by neighborhoods with a low value for the LMI population. In other words, neighborhoods L1 and L2 are considered spatial outliers of in-need population concentrations. Regardless of their surrounding neighborhoods, we expect to see CDBG funding spent here to support the community development efforts. On another note, the neighborhood H1 represents a spatial outlier of the non-LMI population. This area has a significantly high value of non-LMI population and is

surrounded by neighbors with LMI population. As Figure 4-9 shows, the hot spot D3 is located entirely inside neighborhood H1. It illustrates the potential issue of spending public dollars via CDBG activities in the city of Norfolk.

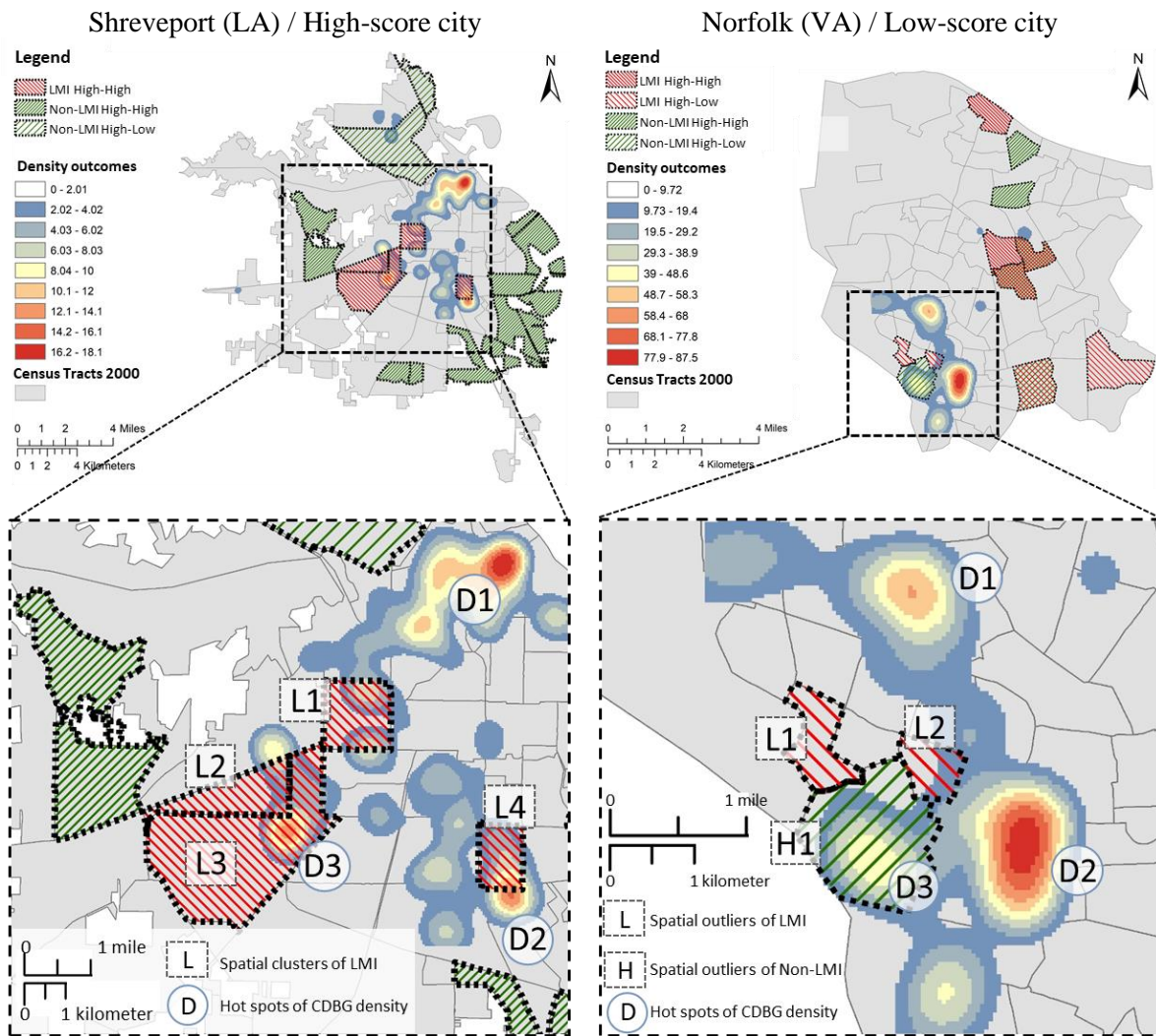


Figure 4-9 Spatial Interaction Between CDBG's Hot Spots and Spatial Statistics Concentration of Different Income Groups

4.7.3.2. Size of Funding

In this analysis, we scrutinized the spatial interactions between the size of CDBG funding

and the distributions of different income groups in two cities. Figure 4-10 shows the distribution of CDBG activities and HOME projects. The symbols' sizes represent the amount of funding (with CDBG activities) and the number of housing units (with HOME projects). As shown in Figure 10, HOME projects appear to be located outside spatial clusters and outliers of both income groups. Therefore, this study can only elaborate on CDBG projects and their sizes.

According to the results (Table 4-4), Shreveport shows 36 activities (or 18% of total activities), while Norfolk has six CDBG activities (or 1.5% of total activities) funded inside the spatial clusters and outliers of the lower-income populations. However, regarding the size of the funding, it displays the opposite picture. According to Table 4-4, Shreveport spent \$120,000 (equivalent to 2.3% of the total funding) in the LMI concentration areas. Meanwhile, Norfolk spent \$272,000 (or 3.2% of its total CDBG funding) on similar regions. Thus, even though the high-score city distributed six times more CDBG activities than the low-score city, its funding is less than half of the total spent in the low-score city.

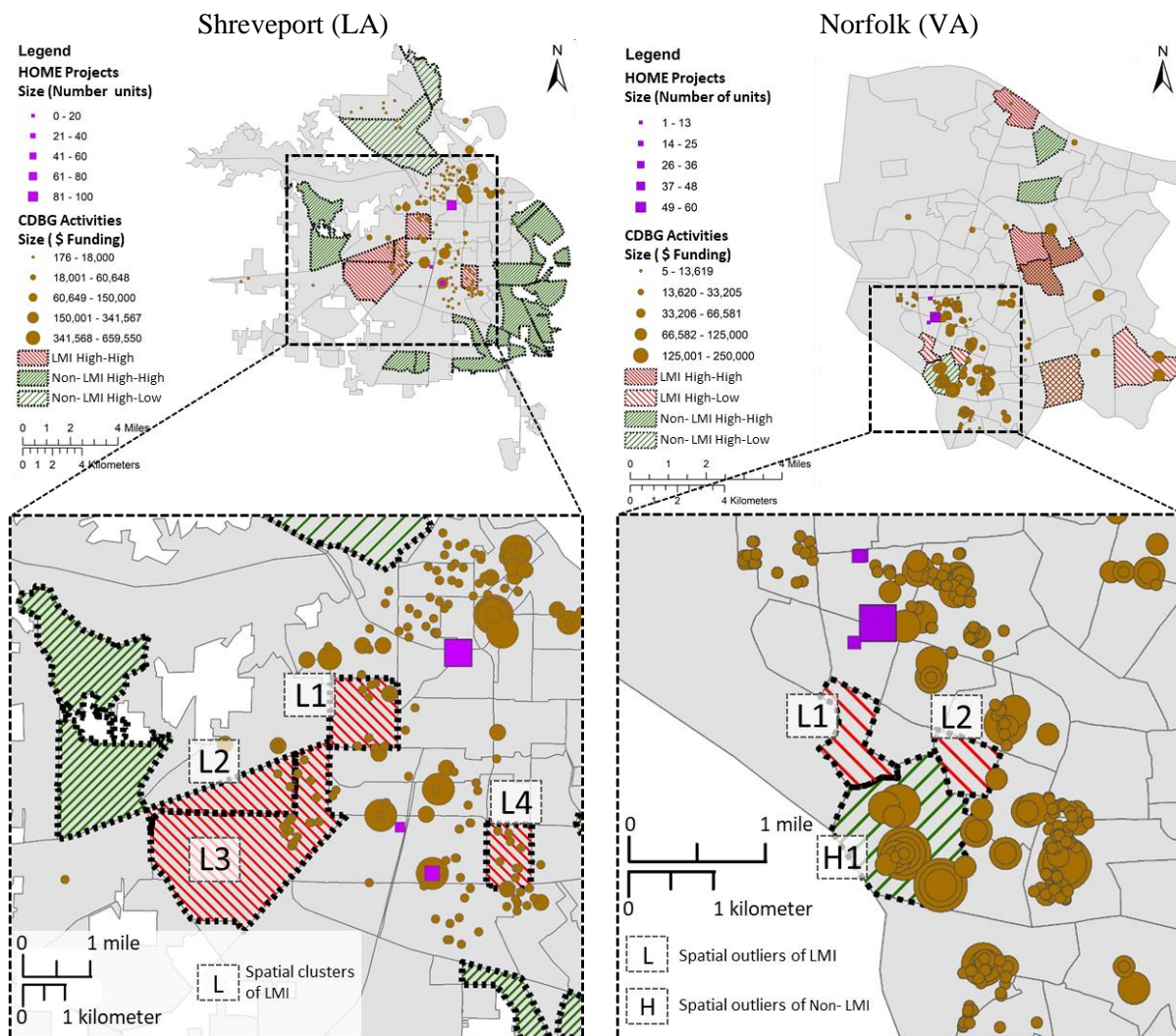


Figure 4-10 Spatial Interaction Between Funding Size and Spatial Statistics Concentration of Different Income Groups

Another issue that caught our attention is how the CDBG funding was allocated relative to the neighborhoods with a statistically high value of the non-LMI population. Spending CDBG dollars here also reflects the potential issue of the planning implementation process. As Figure 4-10 and Table 4-4 show, while Shreveport has four activities (or 2% of all CDBG projects) located in non-LMI concentrated areas, Norfolk has 49 CDBG activities (about 12% of total

projects) funded for similar neighborhoods. This number highlights the issue in allocating CDBG funding to support low-income communities

Table 4-4 Summary of CDBG Funding Location and Size

	Number of CDBG Activities		Contain amount of funding (\$)	
	High-score city	Low-score city	High-score city	Low-score city
Citywide	199 (100%)	394 (100%)	\$5,126,38 8 (100%)	\$8,404,26 5 (100%)
Spatial clusters and outliers of LMI	36 (18.1%)	6 (1.5%)	\$120,000 (2.3%)	\$272,000 (3.2%)
Spatial clusters and outliers of non-LMI	4 (2.01 %)	49 (12.4%)	\$13,000 (0.25%)	\$3,092,00 0 (36.8%)

Moreover, when I reflect on the amount of funding distributed in Non-LMI areas, its numbers are troublesome. For example, while the high-score city spent about a quarter of one percent of the total budget (about \$13,000), the low-score city spent more than one-third of the total funding (about \$3 million) in non-LMI concentration areas.

The interactions between funding allocations and the spatial concentrations of different income groups in the two cities suggest that the high-score city targets better and supports low-income communities. These findings support the previous approach I presented above and adds a more reliable conclusion for this study’s procedures.

4.7.4. Locational Outcome Analysis

As shown in Table 4-5, the changes in beneficiary neighborhoods between 2000 and 2010 are revealed through three aspects. First, Shreveport makes better improvements in addressing in-need population concentrations. The proportion of beneficiary neighborhoods with

highly in-need population concentrations (compared to citywide at the same timeline) of all beneficiary neighborhoods was reduced from 88.9% in 2000 (before ConPlan) to 85.7% in 2010 (after ConPlan). Meanwhile, Norfolk showed a reverse trend when it increased 4.6% between 2000 and 2010. Between these timelines, the proportion of beneficiary neighborhoods with highly in-need population concentrations moved from 63.3% to 67.9%. The results might be linked with the efficiency of CDBG funding allocations mentioned in the previous analyses.

Second, both cities showed positive progress in improving housing quality between 2000 and 2010 among local households. The issue of housing quality is represented by the proportion of total households with at least one housing problem. Between 2000 and 2010, Shreveport reduced the proportion of beneficiary neighborhoods with more housing quality issues (compared to the citywide) from 77.8% to 71.4% (or a 6.4% reduction). Meanwhile, Norfolk reduced a similar proportion by about 2.1% (from 70% to 67.9%). Thus, both cities show progress in reducing the percentage of beneficiary neighborhoods with high-value in housing quality issues. Moreover, the high-score city (Shreveport) performed better than the low-score city (Norfolk).

The third element focuses on the severe housing cost burdens for local households. As Table 5 indicates, Norfolk performed better than Shreveport. For example, Norfolk decreased the number of beneficiary neighborhoods with a high concentration of severe cost burdens by 10.4 percent. Meanwhile, Shreveport increased this number by 7.5 percent. This exciting finding shows a reverse trend in performance between high-score and low-score cities. We propose one potential explanation for this based on the previous results. Since the high-score city seems to allocate CDBG money to the needy population better than the low-score city, this can improve the community-wide living environment. Becoming a better place to live can increase housing

prices in local areas. If the increase in income does not catch up with the housing price's speed, more people will face a housing cost burden.

Table 4-5 Change Between Year 2000 and 2010 in Beneficiary Neighborhoods

Beneficiary Neighborhoods that has LQ>1		2000	2010	Change
In-need population concentration (LMI population)	High-score city	88.9%	85.7%	- 3.2%
	Low-score city	63.3%	67.9%	+ 4.6%
Housing quality (Households with at least 1 housing problem)	High-score city	77.8%	71.4%	- 6.4%
	Low-score city	70%	67.9%	- 2.1%
Severe cost burden (Households pay more than 50% income for housing)	High-score city	61.1%	68.6%	+ 7.5%
	Low-score city	53.3%	42.9%	- 10.4%

4.8. Discussions

Based on the findings, public funding allocation addresses various groups of the population. The funding programs, CDBG and HOME, are different in terms of purpose, targeted population, and supporting mechanism. Therefore, to effectively accommodate each program, this study has comprehensively designed multiple approaches to examine funding allocations and their interactions with population distributions. As a result, the answers to two research questions are formed and supported by the findings.

4.8.1. Answering The First Research Question

As Table 4-6 highlights, the high-score city spent about 5.1 million dollars in 35 neighborhoods with a total of 199 projects. Meanwhile, the money spent during the ConPlan term of the low-score city is about 8.4 million for 192 activities across 28 local neighborhoods. Overall, the high-score city supported more areas than the low-score city (35 vs. 28 census tracts). On average, each beneficiary neighborhood in the high-score city received about 5.7

activities or 146.5 thousand dollars. And, the amount of funding for each activity, on average, was about 25.8 thousand dollars. With the low-score city, each beneficiary neighborhood received about 14.1 sponsored activities or 300.2 thousand dollars. On average, each activity was funded with a total of 21.3 thousand dollars. Thus, the low-score city spent about twice as much per beneficiary neighborhood as the high-score city (300.2 vs. 146.5 thousand dollars). In terms of the quantity of CDBG activity, the low-score city sponsored about 2.5 times more than the high-score city (14.1 vs. 5.7 activities).

Table 4-6 CDBG Program Funding in Citywide

	High-score city	Low-score city
Activities per beneficiary neighborhood	5.7	14.1
Amount of dollar per activity	\$25,761	\$21,331
Amount of dollar per beneficiary neighborhood	\$146,468	\$300,152

To address the efficiency of using public funding to support the in-need populations, we used the location quotient coefficient (LQ) to define the qualified beneficiary neighborhoods. They are the areas with relative concentrations of the targeted populations (with CDBG projects, they are LMI populations) higher than the average figure for the city. Through these lenses of analysis, other details of the funding picture have been revealed. In general, about 89 percent of beneficiary neighborhoods in the high-score city are located in in-need zones, while this number in the low-score city is only 68 percent. Regarding funding, while the high-score city allocates 96 percent of CDBG activities to in-need zones, the low-score city only spent 81 percent of the projects in similar areas. Finally, this study reveals the mismatch between public dollars spent in the “right” areas. While the high-score city allocated almost all received funding (99%) for the

in-need zone, the low-score city only spent 58% of the total budget in similar areas. These differences reflect the efficiency in allocating public funding via the CDBG program between the two cities. The high-score city, Shreveport, appeared to target their spending on the in-need areas better.

The spatial analysis at the project level suggests a similar conclusion: the high-score city performs better than the low-score city. For example, the high-score city allocated 18,1% of CDBG activities in the statistically high concentration of lower-income (LMI) groups. Meanwhile, the low-score city only spent 1.5% of the total CDBG project in these areas. More seriously, the low-score city designated 36.8% of the total amount of funding in the neighborhoods with a high concentration of non-LMI population (higher-income groups). Conversely, only 0.25% of the total budget goes to these higher-income areas in the high-score city.

With the HOME program, the purpose and approach are different compared to the CDBG. Since it mainly supports housing opportunities for LMI populations, this study expects to see HOME units located inside opportunity-rich areas. To address the research question, we examined the funding allocations connected with the non-LMI (or higher income) population distributions.

According to the findings, the high-score city provided funding for 236 units in three housing projects. These projects are located inside two neighborhoods. The low-score city only provided a total of 76 HOME units for the low-income populations. However, these units belong to 5 HOME projects and are distributed in three neighborhoods. Therefore, the high-score city seems to outperform the low-score city by providing three times more affordable housing units (236 vs. 76 units). However, when we calculated the location quotient value of the beneficiary

neighborhoods, the outperformance seems not ideally targeted. With HOME units, we expected to see their location in the opportunity-rich areas or in the neighborhoods with a high value of non-LMI populations. Unfortunately, none of the funded housing units in the high-score city are in desired zones. In contrast, the low-score city managed to provide housing assistance for nine units in desired zones. This suggests that the low-score city seems to be more efficient when allocating HOME funding.

To conclude, with CDBG funding, the high-score city clearly performed better when allocating public dollars to in-need areas. Regarding HOME, the low-score city appears to be the forerunner in spending more funding on housing units in the desired zones.

4.8.2. Answering The Second Research Question

Three aspects measure the change in local communities: the concentration of in-need populations, the housing quality, and the severe housing cost burden. These elements reflect the quantity and the quality of change that appeared in a local community. More importantly, using location quotient analysis, the study can compare within and between cities. Overall, the high-score city performed better than the low-score city by decreasing the proportion of beneficiary neighborhoods with highly in-need population concentrations.

Even though both cities can reduce the proportion of beneficiary neighborhoods with a high concentration of households with housing problems, the high-score city still outperformed the low-score city. For example, during a similar period, the high-score city helped reduce housing problems by 6.4 percent while the low-score city only reduced them by 2.1 percent. In contrast, the low-score city did better than the high-score city in lowering the proportion of

beneficiary neighborhoods with a high number of populations who face severe housing cost burdens.

It is essential to have additional research to fully understand the correlations between ConPlan quality and these aspects of the locational outcome. However, we gained confidence with these findings in concluding that the high score city seems to contribute to better results in the local community than the low-score city.

4.9. Policy Reflections and Recommendations

This study reviewed two planning documents from the sampled cities to gain more insights into how their quality scores are formed. By looking at the similar discussion or content in ConPlan documents, I examine each city's approach and how it might lead to the outcomes of the plan's quality. In addition, I collated the statements of these ConPlans to understand the potential linkage between the stated policies and what has happened in real life. The recommendations, therefore, will be based on the case study approach.

Overall, Shreveport's planning document has more pages (164 versus 129 pages in Norfolk). It signifies the richer content presented in Shreveport's ConPlan, which is prepared by the collaboration between the local jurisdiction and professional consultant firm. Both cities followed the content requirements from HUD, presenting several vital components, including Housing market analysis, Housing and homeless needs assessment, Strategic plan, Citizen participation plan, and Annual action plan. The first two components are fact-based preparation for the program. The other components focus on proposed goals, objectives, strategies, and implementation plans to bring the vision to real life in the next five years.

The critical factor that decides the quality scores difference between two sampled cities includes the details and the clarity of information stated in the documents. As a finding,

Shreveport's ConPlan provided more information regarding a similar discussion. For example, besides basic information about the required topics such as housing market or homeless need assessment, Shreveport provides additional 22 maps to illustrate the content (City of Shreveport, 2003). These maps showed information at a census tract level to enrich the discussion presented in the document. Meanwhile, Norfolk did not have a single map to provide spatial fact-based information to the planning's content. Lacking maps and illustrations did not violate the requirement of the ConPlan submission process. However, having this valuable representation provide local authority and community with a great sense of critical information. It supports the decision-making process and highlights the necessity of an evidence-based approach to address the local issues in housing and community development.

Another example shows the difference between the two ConPlans regarding the required table discussing priority housing needs. Shreveport provides more details to the table. As Figure 4-11 illustrates, at the *Renter* and *Owner* group, it went further in the analysis and categorized these groups into sub-groups, including: (1) Cost burden > 30%, (2) Cost burden > 50%, (3) Physical defects, and (4) Overcrowded (City of Shreveport, 2003, p. 76). Norfolk, in a similar table, did not divide these renter and owner categories into smaller groups at a similar table. In addition, the city also lacked the *Estimated dollars needed to address* (Norfolk, 2002, p. 64). Missing this critical information definitely will impact how the funding will be allocated in the future. This might lead to the mismatch in spending money which has been pointed out in the previous spatial analysis.

City of Shreveport's

City of Norfolk's
Consolidated Plan 2003-2008

Consolidated Plan 2004-2008

TABLE 2A PRIORITY HOUSING NEEDS (households)		Priority Need Level			ESTIMATED UNITS	ESTIMATED DOLLARS NEEDED TO ADDRESS	
		High, Medium, Low, No					
		Such Need					
		0 - 30% MFI	31 - 50% MFI	51 - 80% MFI			
Renter	Small	Cost Burden > 30%	H	M	L	2,998	\$3,597,600
		Cost Burden > 50%	H	M	L	2,036	\$4,886,400
		Physical Defects	H	H	L	491	\$2,455,000
		Overcrowded	M	M	L	257	\$308,400
	Large	Cost Burden > 30%	H	M	L	1,258	\$1,507,200
		Cost Burden > 50%	H	M	L	854	\$2,049,600
		Physical Defects	H	H	L	200	\$1,000,000
		Overcrowded	M	M	L	190	\$228,000

PRIORITY HOUSING NEEDS (households)		Priority Need Level	Estimated Units	Estimated Dollars to Address
Renter	Small	0-30%	M	5,760
		31-50%	M	4,888
		51-80%	L	8,152
	Large	0-30%	M	1,980
		31-50%	M	1,198
		51-80%	L	2,026
	Elderly	0-30%	M	3,772
		31-50%	M	1,950
		51-80%	L	1,798
	All Other	0-30%	M	3,761
		31-50%	M	2,899
		51-80%	L	4,498
Owner	0-30%	H	3,062	
	31-50%	H	3,945	
	51-80%	M	7,610	

Priority Need Levels : High, Medium, Low, N no such need

Figure 4-11 Examples of Priority Housing Need table in two sampled cities.

Shreveport ranks funding category to target its investment better in the future. More importantly, in each section, the sub-priority is also defined. For example, under the "Economic Development," it ranks five categories: (1) Job training and placement services, (2) Small loan to business, (3) Improve appearance of economic development corridors, (4) Technical assistance to businesses, and (5) Create new businesses (City of Shreveport, 2003, p. 71). According to the plan, these priorities were determined *"through a survey of the public that were collected at public meetings..., at focus group sessions..., and distributed through non-profit organizations..."* (City of Shreveport, 2003, p. 71). This statement confirmed the fact-based and attention to detail approach during the plan-making process of Shreveport. It creates an obvious picture of funding priority guiding the action plan of the local jurisdiction. Undoubtedly, it laid a good foundation for proposing goals and objectives that target the vision and mission of the ConPlan. In addition,

In contrast, Norfolk only showed what they would do with each priority level. Without any clear and tangible justification, it lacks guidelines to target the resources for the planning

actions in the latter phases. Figure 4-12 below illustrates the presentation of funding priorities among two sampled cities.

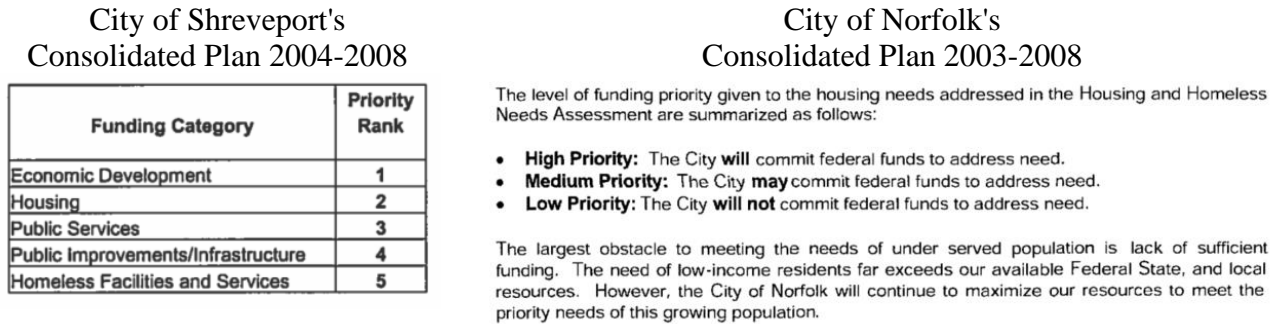


Figure 4-12 Examples of funding priority statements in two sampled cities.

As mentioned above, all planning components are related. An excellent factual basis helps gather information and details for the plan-making process. Then, it supports to propose goals and objectives that closely address the need for local situations. Understandably, rich content of fact will help highlight actions to achieve a proposed vision. Figure 4-13 below describes the outputs of two sampled cities regarding the goals and objectives of the strategic plan in housing and community development. Accordingly, Shreveport had a detailed goal, objective, and strategies with measurable goals. While Shreveport is detail-oriented, Norfolk shows a general approach with no specific objectives or strategies. Shreveport has three-level of details: objectives – strategies- performance goals. Meanwhile, Norfolk only shows two levels of details: objectives and strategy.

City of Shreveport's
Consolidated Plan 2004-2008

City of Norfolk's
Consolidated Plan 2003-2008

Goal: Improve the condition and availability of affordable housing over a five-year period.

Objective 1: Improve the condition of housing for low-income homeowners.

Strategy 1.1: Provide emergency repairs to homeowners with urgent repair needs.

Performance Goal: 75 housing units.

Strategy 1.2: Provide funding for rehabilitation or reconstruction projects for low-income homeowners.

Performance Goal: 100 housing rehabs and 5 reconstruction units.

Strategy 1.3: Continue funding volunteer home repair programs such as Paint Your Heart Out Shreveport and World Changers, and create a roof replacement program.

Performance Goal: 210 homes.

Affordable Housing - High-Priority

Objective: Improve overall quality of Norfolk's housing stock.

Strategies:

- Encourage development of a diversity of housing types
- Continue programs focused on conservation and revitalization of neighborhoods
- Develop additional tools to facilitate neighborhood revitalization
- Insure that infill housing development is compatible in design and existing housing
- Encourage provision of maintenance of amenities that contribute to neighborhood character
- Continue efforts aimed at creating neighborhoods in public housing developments
- Pursue adaptive reuse of appropriate commercial buildings for residential development
- Establish preventative programs, adapting conservation efforts in areas that have potential to decline
- Involve neighborhood residents in neighborhood development and change

Figure 4-13 Examples of goals and objectives in each sampled city.

This study finds a potential link between planning policy and the outcome of allocating public funding, especially with the CDBG grant. In its ConPlan, Shreveport analyzed and proposed a CDBG eligible map. Figure 4-14 highlights eligible block groups which contain *"more than 51% of the population with a household income less than 80% of citywide median household income."* (City of Shreveport, 2003, p. 74). This approach supports the process of defining benefit areas and allocating CDBG money. Conversely, Norfolk did not provide any map suggesting how the funding would be spent or given.

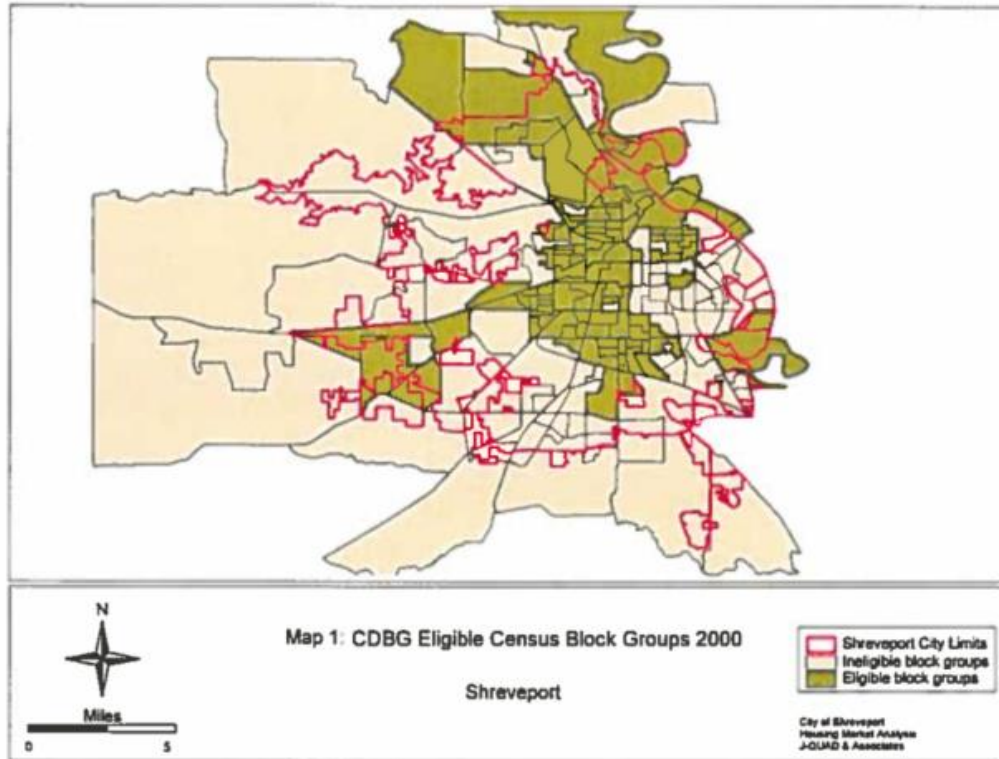


Figure 4-14 Example of funding allocation priority map in Shreveport.

Norfolk only identified the general priority need level associated with different categories to address funding priority. As Figure 4-15 illustrates, each sub-category of Public facility needs is assigned to one priority level. Unlike Shreveport, the critical information of Estimated Dollars to Address, was missed in Norfolk's ConPlan. I firmly believe that using spatial analysis has provided Shreveport with a valuable and effective tool to target the right population group for CDBG activities. It obviously would lead to a better performance in allocating funding, as shown in the findings in my analysis.

Table 2B Priority Community Development Needs	Priority Need Level High, Medium, Low, No Such Need	Estimated Dollars Needed To Address	PRIORITY COMMUNITY DEVELOPMENT NEEDS	Priority Need Level	Estimated Need	Estimated Dollars to Address
Public Facility Needs			PUBLIC FACILITY NEEDS			
Senior Center	H	\$50,000	Neighborhood Facilities	H		
Youth Centers	H	\$100,000	Parks and/or Recreation Facilities	M		
Neighborhood Facilities	M	\$100,000	Health Facilities	L		
Child Care Centers	H	\$100,000	Parking Facilities	L		
Parks and/or Recreation Facilities	M	\$100,000	Solid Waste Disposal Improvements	L		
Health Facilities	M	\$100,000	Asbestos Removal	L		
Parking Facilities	N	\$0	Non-Residential Historic Preservation	M		
Other Public Facilities	L	\$10,000	Other Public Facility Needs	M		

Figure 4-15 Example of Priority community development needs in two sampled cities.

Besides, Shreveport did mention the process of identifying eligible locations for funding before highlighting some specific projects' sites. For example, it indicated that *"the areas of low to moderate-income concentration and certain areas of high minority concentration were targeted"* (City of Shreveport, 2003, p. 161). In Norfolk, the city only described the general location of areas that will receive funding during ConPlan's term. It wrote: *"the activities are primarily occurring in older areas of the city that are in need of revitalization. These areas are characterized by an older housing stock in need of renovation or replacement, or underutilized or vacant commercial and industrial uses."* (Norfolk, 2002, p. 85). It then indicated that *"in most of census tracts affected, 51% or more of the household have low and moderate incomes."* These statements suggest that the city chooses areas for activities before using income as a primary factor to define the benefit locations. This approach seems to lead to the outcome of spending CDBG money in many areas with high concentration of non-LMI population. The detailed statements are shown in Figure 4-16 below.

City of Shreveport's

City of Norfolk's

Consolidated Plan 2004-2008

Geographic Distribution

The proposed allocation of funds is based on federal funding requirements for each formula-allocated grant. Areas of low to moderate-income concentration and certain areas of high minority concentration were targeted. Areas of low homeownership and deteriorating housing conditions were also considered in our targeting process. Those individuals or families participating in the HAPPI program can purchase a home anywhere in the city.

The City will target the majority of its resources in small geographic areas in order to make a visible, measurable impact on eight neighborhoods; Queensborough, Allendale, Ledbetter Heights, Lakeside, Stoner Hill, Ingleside, Mooretown, and Martin Luther King. Model block areas will be identified and targeted for revitalization in each of the neighborhoods. The neighborhoods targeted in the first phase were Queensborough, Mooretown, Allendale, and Stoner Hill. Each of these areas have high minority concentrations.

Consolidated Plan 2003-2008

III. GEOGRAPHIC DISTRIBUTION

The activities are primarily occurring in older areas of the city that are in need of revitalization. These areas are characterized by an older housing stock in need of renovation or replacement, or underutilized or vacant commercial and industrial uses. In most of the census tracts affected, 51% or more of the households have low and moderate incomes. The neighborhoods where most activities are planned are Berkley III, Berkley IV, Lamberts Point, Park Place, West Ocean View, Cottage Line, Central Brambleton, South Brambleton, Ballentine, Huntersville II, Bayview, Campostella Heights, Willoughby, East Ocean View, Oakmont, and Mid Town projects. Support is also provided for the Fairmont Park/Lafayette Blvd area and Broad Creek Renaissance, which includes the Hope VI project (see Conservation & Rehabilitation Map).

Figure 4-16 Example of geographic distribution in two sampled cities.

However, the previous analyses also indicate a potential issue in allocating HOME funding in Shreveport. In the ConPlan, Shreveport stated: "*CDBG, HOME, and ESG funding will be concentrated within the census block groups highlighted in Map 1 ... These block group have been identified as having more than 51% of the population with a household income less than 80% of the citywide median household income.*" (City of Shreveport, 2003, p. 73). This statement indicates that the beneficiary areas of HOME and CDBG are similar. In the previous discussion, I did explain why the HOME and CDBG projects should target different geographic areas. While CDBG focuses on low-income communities, the HOME funding should be spent on higher-income or high-opportunities neighborhoods. Therefore, Shreveport's above statement contains a potential issue, especially with HOME funding. As revealed in the analysis of this study, the assumption that HOME and CDBG programs target a similar population group leads to less effectiveness in spending HOME funding in Shreveport.

This study proposes some recommendations for policymakers and local governments, which directly prepare, adopt, and implement a ConPlan to support its community development efforts. A ConPlan is an essential document with a crucial role in defining and allocating public dollars to support local communities. This document is the key to successful preparation and an efficient program with excellent potential outcomes. Therefore, its preparation, adaptation, and implementation pave the way to better results for low-income communities. In this section, we propose some recommendations to support the quality improvement of the ConPlan planning process, hoping that these can indirectly contribute to the better outcomes of plans.

First, to increase the formula block grants programs (mainly CDBG and HOME), the policymaker and HUD need to be more specific about the beneficiary groups or locations. According to HUD, CDBG supports low- and medium-income individuals or families. The agency states that the funding must benefit 80% or more of low- and medium-income groups. This requirement seems vague and can be misinterpreted or misused. Therefore, this study proposes an approach to defining a beneficiary neighborhood for CDBG funding. Through location quotient coefficient analysis, the managing agency and local government can clearly define the beneficiary neighborhoods. There are several advantages to this approach. First, it is doable for local governments. The method uses public data which is already available and used during the plan preparation process. Secondly, it is intuitive. The location quotient is a simple coefficient yet easy to explain and calculate. Third, using these methods is efficient in targeting public funding. The local government will be able to define the right groups of populations based on their ranking status. It will bring benefits to the local community and maximize the public investment of tax money.

Second, local governments should use spatial analysis as a primary tool while working on their agenda to implement a ConPlan. The location quotient coefficient analysis adds more evidence-based information to the analysis process, which supports the local government's decision-making. This sophisticated methodology requires additional knowledge, techniques, and experience in both statistics and spatial analysis. Therefore, HUD should provide additional training for the local planning staff. The training can be carried out in different ways. It could be technical support for local planners via the website, online courses, in-person support, and other types of assistance. Or, HUD could contract a third-party expert who can run and provide the outcomes of this tool for any local government with an available dataset. In addition, strengthening HUD's data-based and evidence-based approach is appropriate when using spatial analysis in defining the priority of allocating funding. There are some advantages of this approach. For example, it requires no additional datasets. With the current dataset provided by HUD, this tool can run effectively. Besides, the spatial analysis uses statistical analysis to analyze the likelihood of value and location. This scientific approach yields an outcome with a precise geographic location of targeted neighborhoods.

Third, the planning guidelines from HUD should be updated with additional data, especially in the current condition analysis and defining the strategies for achieving local goals and objectives. Since each program has its unique purpose and approach, HUD should categorize the guidelines into different sections targeting different programs. For example, with CDBG and HOME, the ConPlan should guide the local government with two different approaches. While CDBG targets low-income-dominated neighborhoods, HOME money should be allocated to bring more affordable units to opportunity-rich areas. This approach maximizes public

investment and addresses the correct spatial elements to support the local individual or families in need.

4.10. References

- Akerlof, G. A. (1997). Social distance and social decisions. *Econometrica: Journal of the Econometric Society*, 1005-1027.
- Anselin, L. (1995). Local indicators of spatial association-LISA. *Geographical Analysis*, 27(2), 93-115.
- Anselin, L. (1999). The future of spatial analysis in the social sciences. *Geographic information sciences*, 5(2), 67-76.
- Anselin, L., Syabri, I., & Kho, Y. (2010). GeoDa: an introduction to spatial data analysis. In *Handbook of applied spatial analysis* (pp. 73-89). Springer.
- Basu, S., & Thibodeau, T. G. (1998). Analysis of spatial autocorrelation in house prices. *The Journal of Real Estate Finance and Economics*, 17(1), 61-85.
- Blumenfeld, H. (1955). The economic base of the metropolis: Critical remarks on the “basic-nonbasic” concept. *Journal of the American Institute of Planners*, 21(4), 114-132.
- Brody, S. D., Highfield, W. E., & Kang, J. E. (2011). *Rising waters: The causes and consequences of flooding in the United States*. Cambridge University Press.
- Bronars, S. G., & Jansen, D. W. (1987). The geographic distribution of unemployment rates in the US: A spatial-time series analysis. *Journal of Econometrics*, 36(3), 251-279.
- Brown, C., Doumbia, S., Dicko, A., Bagayogo, M., Mokadam, D., Regens, J., Toure, Y., Hodges, D., Doumbo, O., & Beier, J. (1998). Mapping the risk of severe malaria in Cansoumana, Mali: GIS methods for studying malaria at the village level. 3d National Conference, Geographic Information Systems in Public Health,

- Brunsdon, C. (1995). Estimating probability surfaces for geographical point data: an adaptive kernel algorithm. *Computers & Geosciences*, 21(7), 877-894.
- Can, A. (1992). Specification and estimation of hedonic housing price models. *Regional Science and Urban Economics*, 22(3), 453-474.
- Case, A. C. (1991). Spatial patterns in household demand. *Econometrica: Journal of the Econometric Society*, 953-965.
- Chomitz, K. M., & Gray, D. A. (1996). Roads, land use, and deforestation: a spatial model applied to Belize. *The World Bank Economic Review*, 10(3), 487-512.
- City of Shreveport. (2003). *Consolidated Plan 2004-2008*. C. o. S. (LA). shreveportla.gov
- Cohen, J., Cork, D., Engberg, J., & Tita, G. (1998). The role of drug markets and gangs in local homicide rates. *Homicide Studies*, 2(3), 241-262.
- Crump, J. (2002). Deconcentration by demolition: public housing, poverty, and urban policy. *Environment and Planning D: Society and Space*, 20(5), 581-596.
- DeFronzo, J., & Hannon, L. (1998). Welfare assistance levels and homicide rates. *Homicide Studies*, 2(1), 31-45.
- Department of Housing and Urban Development. (2020). *HOME Investment Partnerships Program*. Retrieved 2/23 from https://www.hud.gov/program_offices/comm_planning/affordablehousing/programs/home/
- Department of Housing and Urban Development. (n.d.). *HOME Investment Partnership Program*. Retrieved 05/05 from https://www.hud.gov/program_offices/comm_planning/affordablehousing/programs/home/

- Dubin, R. A. (1992). Spatial autocorrelation and neighborhood quality. *Regional Science and Urban Economics*, 22(3), 433-452.
- Eck, J., Chainey, S., Cameron, J., & Wilson, R. (2005). Mapping crime: Understanding hotspots.
- Epstein, P. R. (1998). Health applications of remote sensing and climate modeling. *People and pixels: Linking remote sensing and social science*.
- ESRI. (n.d.). *Density toolset concepts*. Retrieved 07/21 from <https://pro.arcgis.com/en/pro-app/tool-reference/spatial-analyst/understanding-density-analysis.htm>
- Glaeser, E. L., Kallal, H. D., Scheinkman, J. A., & Shleifer, A. (1991). *Growth in cities*.
- Goodchild, M. F., Anselin, L., Appelbaum, R. P., & Harthorn, B. H. (2000). Toward spatially integrated social science. *International Regional Science Review*, 23(2), 139-159.
- Haider, M., & Miller, E. (2000). Effects of transportation infrastructure and location on residential real estate values: application of spatial autoregressive techniques. *Transportation Research Record: Journal of the Transportation Research Board*(1722), 1-8.
- Haining, R. (1984). Testing a spatial interacting-markets hypothesis. *The Review of Economics and Statistics*, 576-583.
- Harries, K. A. (1999). *Mapping crime: Principle and practice*.
- Harvey, D., & Braun, B. (1996). *Justice, nature and the geography of difference*. Wiley Online Library.
- Hipp, J. R. (2010). A dynamic view of neighborhoods: The reciprocal relationship between crime and neighborhood structural characteristics. *Social Problems*, 57(2), 205-230.

- Imbroscio, D. (2008). “[U]nited and actuated by some common impulse of passion”:
Challenging the dispersal consensus in American housing policy research. *Journal of Urban Affairs*, 30(2), 111-130.
- Isard, W., Azis, I. J., Drennan, M. P., Miller, R. E., Saltzman, S., & Thorbecke, E. (2017). *Methods of interregional and regional analysis*. Taylor & Francis.
- Isserman, A. M. (1977). The location quotient approach to estimating regional economic impacts. *Journal of the American Institute of Planners*, 43(1), 33-41.
- Kearney, M. (1995). The local and the global: The anthropology of globalization and transnationalism. *Annual review of anthropology*, 547-565.
- Kitron, U. (1998). Landscape ecology and epidemiology of vector-borne diseases: tools for spatial analysis. *Journal of medical entomology*, 35(4), 435-445.
- Martin, D. G. (2003). Enacting Neighborhood1. *Urban Geography*, 24(5), 361-385.
- Matthews, J. W., & Turnbull, G. K. (2007). Neighborhood street layout and property value: The interaction of accessibility and land use mix. *The journal of real estate finance and economics*, 35(2), 111-141.
- Miller, M. M., Gibson, L. J., & Wright, N. G. (1991). Location quotient: A basic tool for economic development analysis. *Economic Development Review*, 9(2), 65.
- Murack, J. (2013). *Spatial Autocorrelation Using GIS*. MIT. Retrieved 8/3 from https://libraries.mit.edu/files/gis/spatial_auto_presentation_iap2013.pptx.
- National Low Income Housing Coalition. (2019). *HOME Investment Partnership Program*. Retrieved 2/3 from <https://nlihc.org/issues/other/home>
- Norfolk, C. o. (2002). *Consolidated Plan 2003-2008*. <https://www.norfolk.gov/>

- Park, Y., & Rogers, G. O. (2015). Neighborhood planning theory, guidelines, and research: Can area, population, and boundary guide conceptual framing? *Journal of Planning Literature*, 30(1), 18-36.
- Popkin, S. J., Katz, B., Cunningham, M., Brown, K. D., Gustafson, J., & Turner, M. A. (2004). A decade of HOPE VI: Research findings and policy challenges.
- Reader, S. (2000). Using survival analysis to study spatial point patterns in geographical epidemiology. *Social Science & Medicine*, 50(7-8), 985-1000.
- Sassen, S. (2001). *The global city: New york, london, tokyo*. Princeton University Press.
- Silver, C. (1985). Neighborhood planning in historical perspective. *Journal of the American Planning Association*, 51(2), 161-174.
- Silverman, B. W. (1986). *Density estimation for statistics and data analysis* (Vol. 26). CRC press.
- Tukey, J. W. (1977). *Exploratory data analysis*.
- U.S. Department of Housing and Urban Development. (2018). *Using IDIS to Prepare the Consolidated Plan Annual Action Plan, and CAPER/PER*. Retrieved 07/08 from <https://files.hudexchange.info/resources/documents/eCon-Planning-Suite-Desk-Guide-IDIS-Conplan-Action-Plan-Caper-Per.pdf>
- U.S. Department of Housing and Urban Development. (n.d.). *CHAS: Background*. Retrieved 07/08 from https://www.huduser.gov/portal/datasets/cp/CHAS/bg_chas.html
- Van Zandt, S., & Mhatre, P. (2009). Growing Pains: Perpetuating Inequality Through the Production of Low-Income Housing in the Dallas/Fort Worth Metroplex. *Urban Geography*, 30(5), 490-513.

- Van Zandt, S., Peacock, W. G., Henry, D. W., Grover, H., Highfield, W. E., & Brody, S. D. (2012). Mapping social vulnerability to enhance housing and neighborhood resilience. *Housing Policy Debate*, 22(1), 29-55.
- Van Zandt, S., & Rohe, W. M. (2006). Do first-time home buyers improve their neighborhood quality? *Journal of Urban Affairs*, 28(5), 491-510.
- Wang, X., & Varady, D. (2005). Using Hot-Spot Analysis to Study the Clustering of Section 8 Housing Voucher Families. *Housing studies*, 20(1), 29-48.
<http://linkresolver.tamu.edu:9003/tamu?sid=google&auinit=X&auid=Wang&atitle=Using%20hot-spot%20analysis%20to%20study%20the%20clustering%20of%20section%208%20housing%20voucher%20families&id=doi%3A10.1080%2F0267303042000308714&title=Housing%20studies&volume=20&issue=1&date=2005&spage=29&issn=0267-3037>
- Wellman, B., & Leighton, B. (1979). Networks, neighborhoods, and communities: Approaches to the study of the community question. *Urban affairs quarterly*, 14(3), 363-390.
- Wyly, E., & DeFilippis, J. (2010). Mapping public housing: the case of New York City. *City & Community*, 9(1), 61-86.

5. CONCLUSIONS

5.1. Limitations of the Dissertation

This research has been conducted with extensive preparation from the conceptualization framework to the literature review, methodology analysis, and data processing. I have worked closely with my committee members to propose, discuss, and revise different parts of the work to make sure it follows the right direction. During the extended time working on this project, the outcomes received much positive feedback from other researchers and urban experts. However, I understand that this dissertation is still a distance from perfect. In this section, I will discuss some of the limitations of this research.

First, there remain unknown factors that can contribute to the planning process of a ConPlan. As the main subject of the research, a ConPlan is examined for potential links in allocating public funding and locational outcomes in local communities. However, there are other plans that also connect with housing issues in local areas. For example, a Comprehensive Plan is the most critical planning document that addresses various topics related to local jurisdictions. Housing is a popular section in a Comprehensive Plan. This plan indeed has an impact on the overall agenda of the city. This means that a ConPlan also needs to follow it. Besides the Comprehensive Plan, other documents have a high potential link to local development. Two of them are a Statewide Housing Plan and a Qualified Allocation Plan.

A Statewide Housing Plan is prepared by the state housing department or similar department to paint a current picture of the housing issues in the state. This document includes a Statewide Housing Plan, a Statewide Housing Needs Assessment, and a Statewide Housing Assessment. Regardless of the title, this plan's content comprises some key elements including recent trends in housing market dynamics (demand, supply, and pricing/affordability), describes

housing challenges in the coming years, and proposes effective strategies to overcome these challenges. Thus, this document is considered a “road map” to realize the state’s housing vision in the near future. More importantly, its content can reveal how thoroughly overcoming barriers to housing affordability has been accomplished.

A Qualified Allocation Plan (QAP) is administered by the Internal Revenue Service (IRS) and was established in 1986 as a way to distribute tax credits in the Low-Income Housing Tax Credits (LIHTC) program. The program requires a state’s financial agency responsible for allocating tax credits to prepare a QAP. This plan sets out the state’s eligibility priorities and criteria for awarding federal tax credits to housing properties. Under IRS regulations, the state agency must develop a QAP that identifies the selection criteria for determining housing priorities (i.e., location, housing needs, tenant population, waiting list); and gives preference to projects serving the lowest income tenants for the longest period, located in qualified census tracts, and which will contribute to a community revitalization plan. This plan reflects how the state’s financial agency observes and transfers their priorities according to the content of the QAP. Thus, the QAP assessment will suggest potential approaches to address the issue of housing affordability statewide. Hence, collectively, these plans can impact the ConPlan development process and the outcomes in local communities. This limitation of the dissertation will be addressed in my future study, which I will discuss in the next section.

The second limitation of this study comes from the dataset. Even though the data is publicly available and easy to access, it has some disadvantages. According to HUD, the CHAS dataset used in this study primarily identifies the number of households in need of housing assistance (U.S. Department of Housing and Urban Development, n.d.-a). It is an estimated number of different household groups based on their social demographic status or other

characteristics. Therefore, adding up estimated numbers in some calculations used in this study can potentially reduce the accuracy of the outcomes. This limitation is an unavoidable feature of the estimated dataset that CHAS is based on since switching to the American Community Survey (ACS) data survey in 2005 (U.S. Department of Housing and Urban Development, n.d.-b).

Another limitation related to the data used in this study is the timelines. While decennial data measure the data for 2000, the 2010 data is based on the 2008-2012 ACS 5-year estimate. Even though there remains some potential differences between these sources, they are on the list of available data for the plan preparation process (U.S. Department of Housing and Urban Development, n.d.-b).

The third limitation of this study is related to some potential measurement errors. In the section examining the spatial mismatch between allocating public funding and population distribution, I used two techniques when analyzing at the project level. They are Kernel density analysis and LISA analysis. Each of these methods contains a certain technical element that might cause a potential measurement issue. For example, in Kernel density analysis, the outcome's sensitivity depends on the query's search radius.

Additionally, with the LISA method, permutation value is a potential element causing measurement errors. The permutation value indicates how many times the statistical process runs to yield the results that support the randomness of the analysis. In this study, I tried multiple values range from 99 to 9999 to test the outcomes. The value of permutation 999 was chosen since it yields the most common consequences that cover the other permutation value's outcomes. In addition, the results of these two methodologies are raster images of the statistical likelihood. Therefore, when I overlay these maps, there will be potential errors caused by the interpretations.

5.1.1. Future Study

Based on the findings and foundations of this research, I plan to expand future work to investigate the network of housing plans. As I mentioned in the previous sections, the housing issue is complex and will not be effectively addressed by a single plan. Therefore, to comprehensively understand housing affordability from the plan-making perspective, examining multiple housing plans that share goals and impacts in a geographic location is necessary.

A plan is seen as a boldly written document that reflects the plan makers' vision, efforts, and commitments. There are a variety of state-level housing plans created by different entities or organizations. However, regardless of the differences in their titles, creators, requirements, funding mechanisms, or other factors, housing plans share the vision of providing decent housing at affordable prices in a suitable living environment for American families. Therefore, a housing plan assessment is a critical first step in exploring the barriers to implementing housing strategies at the state level to address the housing affordability crisis and overcome these barriers.

State-level housing plans are critically important policy documents. They offer a view of the current housing portfolio, development trends, policies, and strategies that states use to achieve their housing visions and goals for the coming years. In addition, these planning documents can be a powerful tool to address housing affordability issues. Therefore, the document's quality is crucial for its intention and impact on housing in states for years to come. In future research, I plan to address a network of state housing plans, including (1) a State-wide Housing Plan, (2) a State Consolidated Plan, and (3) a Qualified Allocation Plan.

The purpose of future work is to assess state-level housing plan quality and understand the challenges, barriers, and promises of implementing those plans. The first stage of the plan quality analysis involves a content analysis of three different state-level housing plans. Then,

based on the initial findings, surveys and interviews with planning stakeholders will be conducted to explore potential strategies to overcome these barriers. Together, this research will provide a greater understanding of the tools and strategies used to address unaffordable housing. In addition, this research can be used by housing planners, policymakers, and scholars who seek to understand the quality of housing plans and how they guide housing decisions state wide.

Based on these, I propose several research objectives for future work. First, to build an evaluation protocol to assess the content of the states' housing plans. The protocol will focus on the challenges and barriers to housing affordability and evaluate the states' efforts to address the housing affordability crisis via a network of planning documents. Three housing plans will be considered: Statewide Housing Plans, Consolidated Plans, and Qualified Allocation Plans. These are among the most important planning documents that directly impact public sector housing and community development. Second, to analyze the performance of housing plans through plan quality evaluation components and criteria. The results will offer recommendations for ways to improve the quality of housing plans. Third, conduct surveys and personal interviews with stakeholders involved in the plan-making process and key informants who are experts in state-level housing affordability issues. Fourth, to analyze the results from the plan quality assessment, surveys, and interviews to provide recommendations to state-level housing planners and policymakers about improving plan quality and best practices in addressing housing unaffordability. These results can also guide researchers in identifying future areas for research.

With this future work plan, I hope to extend my field and support affordable housing and community development in the United States as a planning scholar. Together with this, I will participate in non-academic activities to further support the overall goal of creating better living conditions for low-income communities in the US and other countries or regions.

5.2. References

U.S. Department of Housing and Urban Development. (n.d.-a). *CHAS: Background*. Retrieved

07/08 from https://www.huduser.gov/portal/datasets/cp/CHAS/bg_chas.html

U.S. Department of Housing and Urban Development. (n.d.-b). *Consolidated Planning/CHAS*

Data. Retrieved 3/1 from <https://www.huduser.gov/portal/datasets/cp.html>

APPENDIX A. PLAN QUALITY EVALUATION PUBLICATIONS TO DATE

#	Author(s)	Topic	Location(s)	Number of plans	Type of plan(s)
1	Connerly & Muller (1993)	Affordable housing	USA (Florida)	10	Comprehensive Plan
2	Berke (1994)	Environmental Plans	International (NZ)	8	Environmental Plan
3	Burby & Dalton (1994)	Natural Hazards	USA (5 states)	140	Land use plan
4	Berke & French (1994)	Natural Hazards	USA (5 states)	139	Comprehensive Plan
5	Berke et al. (1996)	Natural Hazards	USA (5 states)	139	Comprehensive Plan
6	Deyle & Smith (1998)	Coastal Management	USA (Florida)	18	Comprehensive Plan
7	Berke et al. (1999)	Environmental Management	International (NZ)	50	Environmental plan
8	Berke & Conroy (2000)	Sustainable development	USA (10 states)	30	Comprehensive Plan
9	Berke et al. (2002)	Human rights	International (NZ)	34	Environmental Plan
10	Nelson & French (2002)	Natural Hazards	USA (California)	19	Comprehensive Plan
11	Brody (2003a)	Natural Hazards	USA (2 states)	60	Comprehensive Plan
12	Brody (2003b)	Ecosystem Management	USA (Florida)	30	Comprehensive Plan
13	Brody et al. (2004)	Ecosystem Management	USA (Florida)	45	Comprehensive Plan
14	Davis (2004)	Coastal Management	USA (12 states)	15	Regional coastal plan
15	Conroy & Berke (2004)	Sustainable development	USA (12 states)	42	Comprehensive Plan
16	Norton (2005a)	Coastal Management	USA (North Carolina)	40	Local Coastal Area Management Plan
17	Norton (2005b)	Growth management	USA (North Carolina)	40	Local Coastal Area Management Plan
18	Brody et al (2006)	Sprawl	USA (Florida)	46	Comprehensive Plan
19	Srivastava & Laurian (2006)	Natural Hazards	USA (Arizona)	6	Comprehensive Plan
20	Edwards & Hainess (2007)	Smart growth	USA (Wisconsin)	30	Comprehensive Plan
21	Hoch (2007)	Affordable housing	USA (Illinois)	36	Comprehensive Plan
22	Termorshuizen et al. (2007)	Ecosystem Management	International (TN)	38	Landscape Plan
23	Deyle et al. (2008)	Natural Hazards	USA (Florida)	76	Comprehensive Plan
24	Norton (2008)	Development Management	USA (Michigan)	29	Comprehensive Plan & Zoning Codes
25	Wheeler (2008)	Climate Change	USA (29 states)	64	Climate Change Action Plan
26	Evans-Cowley & Gough (2008)	Environmental Protection	USA (Mississippi)	9	Comprehensive Plan
27	Evans-Cowley & Gough (2009)	New Urbanism	USA (Mississippi)	9	Comprehensive Plan
28	Steelman & Hess (2009)	Open space	USA (North Carolina)	20	Comprehensive Plan
29	Tang & Brody (2009)	Environmental protection	USA (California)	40	Comprehensive Plan
30	Bassett & Shandas (2010)	Climate Change	USA (14 states)	20	Climate Action Plan
31	Jones et al. (2010)	Pedestrian safety	USA (North Carolina)	46	Pedestrian Master Plan
32	Kang et al. (2010)	Natural Hazards	USA (Texas)	12	Hazard Mitigation Plan
33	Tang et al. (2010)	Climate Change	USA	40	Climate Action Plan
34	Aytur et al. (2011)	Physical Activity	USA (North Carolina)	41	Pedestrian and Bike Plan
35	Hamin (2011)	Climate Change	International (USA, CA, EN, AU)	7	Climate Change Plan
36	Bunnell & Jepson (2011)	Persuasiveness	USA (2 states)	40	Comprehensive Plan & Growth Plan
37	Olonilua & Ibitayo (2011)	Natural Hazards	USA (18 states)	202	Hazard Mitigation Action Plan
38	Preston et al (2011)	Climate Change	International (USA, EN, AU)	57	Adaptation Plan
39	Tang et al. (2011)	Coastal Management	USA (5 states)	53	Land Use Plan
40	Evenson et al. (2012)	Physical Activity	USA (North Carolina)	46	Pedestrian Plan
41	Berke et al. (2012)	Natural Hazards	USA (30 states)	30	Mitigation plan
42	Baker et al. (2012)	Climate Change	International (AU)	7	Climate Adaptation Plan
43	Stone et al. (2012)	Climate Change	USA (29 states & DC)	50	Climate Action Plan
44	Horney et al. (2012)	Hazard Mitigation	USA (3 states)	57	Hazard Mitigation Plan
45	Berke et al. (2013)	Ecosystem Management	USA (North Carolina)	9	Comprehensive Plan
46	Fu et al. (2013)	Natural Hazards (drought)	USA (44 states)	44	Drought Plan
47	Fu & Tang (2013)	Natural Hazards (drought)	USA (29 states)	81	Comprehensive Plan
48	Baynham & Stevens (2014)	Climate Change	International (CA)	39	Official community Plan
49	Woodruff & Stults (2016)	Climate Change	USA (19 states)	44	Adaptation Plan
50	Li & Song (2016)	Climate Change	International (CN)	42	Climate Change Plan
51	Fu et al. (2017)	Climate Change	USA (13 states)	36	Comprehensive Plan & Hazard mitigation Plan
52	BenDor et al. (2017)	Ecosystem Management	USA (4 states)	4	Comprehensive Plan
53	Kim & Tran (2018)	Green infrastructure	USA (21 states)	60	Comprehensive Plan
54	Guyadeen et al. (2019)	Climate Change	International (CA)	63	Climate Change Plan
55	Woodruff & Regan (2019)	Climate Change	International (38 countries)	38	National Adaptation Plan

USA: United States of America (DC: District of Columbia), AU: Australia, CA: Canada, CN: China, EN: England, NZ: New Zealand, TN: The Netherlands,

APPENDIX B. TOPICS OF STUDY IN PLAN QUALITY EVALUATION
PUBLICATIONS

Topic	Description	Frequency in data set of 55
Natural Hazards	Includes topic related to hazard mitigation, natural hazards	13 (23.6%)
Environmental Management	Includes topic related to coastal management, ecosystem management, sustainable development, environmental protection, green infrastructure	17 (30.9%)
Built environment	Includes topic related to housing, sprawl, smart growth, pedestrian and bike, open space, development management	8 (14.5%)
Climate Change	Includes topic related to climate change	13 (23.6%)
Other	Other topics such as Physical activities, Persuasiveness, Human rights, etc.	4 (7.3%)

APPENDIX C. STUDY LOCATION IN PLAN QUALITY EVALUATION

PUBLICATION

Study Location Setting	Description	Frequency in data set of 55
International	Conducted in 2 or more countries	3 (5.5%)
Foreigner country	Solely conducted in a foreigner country	8 (14.5%)
New Zealand		3 (5.5%)
Canada		2 (3.6%)
The Netherlands		1 (1.8%)
Australia		1 (1.8%)
China		1 (1.8%)
USA multiple states	Conducted in 2 or more states	22 (40%)
USA single state	Solely conducted in a state	22 (40%)
Florida		6 (10.9%)
California		2 (3.6%)
North Carolina		7 (12.7%)
Mississippi		2 (3.6%)
Wisconsin		1 (1.8%)
Arizona		1 (1.8%)
Illinois		1 (1.8%)
Michigan		1 (1.8%)
Texas		1 (1.8%)

APPENDIX D. JURISDICTION IN PLAN QUALITY EVALUATION

PUBLICATIONS (US LOCATIONS)

Item	Description	Frequency in data set of 44
Single level: City	Includes local municipality such as city, town, township...	14 (31.8%)
Single level: County	Include county-level jurisdiction	4 (9.1%)
Single level: Region	Includes regional entity (such as Metropolitan Statistical Areas, river corridor...)	2 (4.5%)
Single level: State	Includes state-level jurisdiction	2 (4.5%)
Mixed levels: Small community and city	Include small community level (such as village, tribal) and local municipality-level jurisdictions	2 (4.5%)
Mixed levels: Small community, city, and county	Include small community levels (such as village, tribal), local municipality-level jurisdictions, and county-level jurisdictions	1 (2.3%)
Mixed levels: City and county	Includes local municipalities (city, town, township...) and county-level jurisdictions	15 (34.1%)
Mixed levels: City, county, and region	Includes local municipalities (city, town, township...), county-level jurisdictions, and regional entities (MSAs, river corridors...)	3 (6.8%)
Mixed levels: City and state	Includes local municipalities (city, town, township...) and state-level jurisdictions	1 (2.3%)

APPENDIX E. DOCUMENT TYPOLOGY IN PLAN QUALITY EVALUATION

PUBLICATIONS

Document	Description	Frequency in data set of 55
Comprehensive Plan	Includes a general plan, community plan, land use plan, Official Community Plan (Canada)...	29 (52.7%)
Adaptation / Mitigation Plan	Includes a climate change plan, hazard mitigation plan, environmental plan...	16 (29.1%)
Pedestrian / Bike Plan	Includes bike and pedestrian plan, transportation plan...	3 (5.5%)
Coastal Plan	Local Coastal Area Management Act of 1974 (CAMA) Plan	3 (5.5%)
Other	Includes some other types of planning documents such as landscape plan, policy statement (New Zealand)	4 (7.3%)

APPENDIX F. EVALUATION PROTOCOL CHARACTERISTICS IN PLAN
QUALITY EVALUATION PUBLICATIONS

Item	Description	Frequency in data set of 55
Protocol Source		
<ul style="list-style-type: none"> • Not mentioned 	No information about the source of an evaluation protocol	6 (10.9%)
<ul style="list-style-type: none"> • Protocol fully adopted from other sources 	indicate the paper use protocol from other sources without modification	13 (23.6%)
<ul style="list-style-type: none"> • Protocol design based on other sources 	Indicate evaluation protocol is developed based on other sources	17 (30.9%)
<ul style="list-style-type: none"> • Protocol originally created 	Indicate the evaluation protocol used in the research for the first time	19 (34.5%)
Protocol Structure		
<ul style="list-style-type: none"> • Size of protocol 	Indicate the number of evaluation items	40 (72.7%)
<ul style="list-style-type: none"> • Grading system 	Include Grading system (ordinal or nominal scale)	47 (85.5%)
Protocol Instruction		
<ul style="list-style-type: none"> • Explained in detail 	Describe and explain the evaluation protocol	23 (41.8%)
<ul style="list-style-type: none"> • Evaluation example 	Show examples on how to grade an item in evaluation protocol using a direct quote from the plan	5 (9.1%)
Protocol Attachment		
<ul style="list-style-type: none"> • No protocol included 		25 (45.5%)
<ul style="list-style-type: none"> • Part of the evaluation protocol included 	Some part of an evaluation or the evaluation appeared as a result of tables/illustration	13 (23.6%)
<ul style="list-style-type: none"> • Full evaluation protocol included 	For replication study	17 (30.9%)

APPENDIX G. GRADING SYSTEM IN PLAN QUALITY EVALUATION

PUBLICATIONS

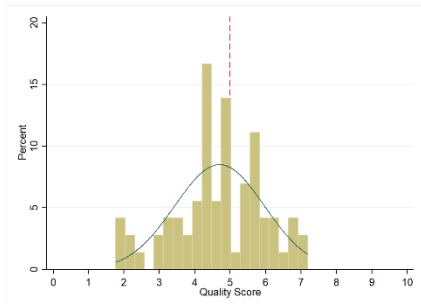
Item	Description	Frequency in data set of 55
No grading system	The paper does not mention the grading system used in the paper	7 (12.7%)
A single grading system (Nominal)	The paper uses two values to evaluate an item: 0 and 1 to see whether or not it is available in the plan	13 (23.6%)
A single grading system (Ordinal)	The paper uses the hierarchical value to measure the different levels of detail in an evaluation item	23 (41.8%)
Mixed grading system	The paper uses both nominal and ordinal grading systems in the evaluation protocol	12 (21.8%)

APPENDIX H. INDEPENDENT VARIABLES MEASUREMENT AND SOURCE

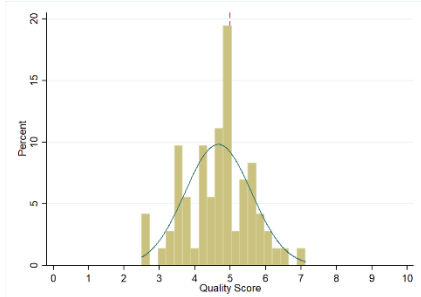
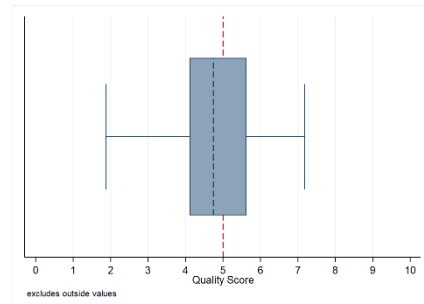
#	Variables	Measurement	Sources
[Planning Context Group]			
1	<i>Population (1/10,000)</i>	The number of populations in year 2000	US Census
2	<i>Population growth</i>	Percentage change in population between 2000 and 2010	
3	<i>Income (1/10,000)</i>	Median household income in dollar (in 2000 inflation-adjusted dollar)	
4	<i>Education</i>	Percentage of persons whose age is above 25 with bachelor's degree or higher, in 2000	
5	<i>Preparation time</i>	Number of months for the plan preparation from the beginning until it is adopted	Consolidated Plan document; City's resources
6	<i>Consultant</i>	Whether professional consultant as lead agency in preparing the plan	
[Housing Stock Group]			
1	<i>Housing Age</i>	Percentage of housing structure built before 1979	HUD's
2	<i>Housing Problem</i>	Percentage of occupied housing units with one of the issues including lacking complete plumbing facilities, lacking complete kitchen facilities, and no telephone service.	Comprehensive Housing Affordability Strategy database
3	<i>Housing Overcrowded</i>	Percentage of occupied housing units with more than 1 occupant per room	
4	<i>Housing Owner Cost Burden</i>	Percentage of housing owner who pay more than 30% of monthly income for housing cost in 1999	
5	<i>Housing Renter Cost Burden</i>	Percentage of housing renter who pay more than 30% of monthly income for gross rent in 1999	

US: United States; HUD: Department of Housing and Urban Development

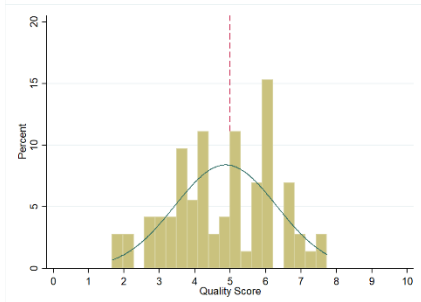
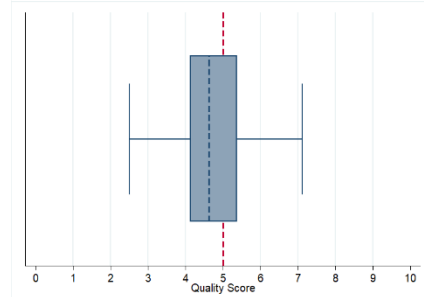
**APPENDIX I. DISTRIBUTION AND BOX PLOT OF EVALUATION
COMPONENT'S QUALITY SCORE**



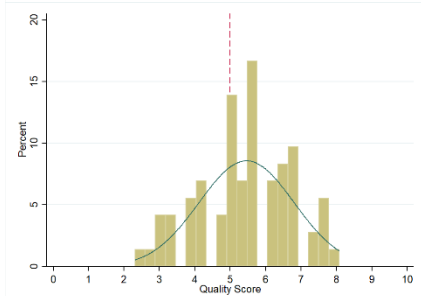
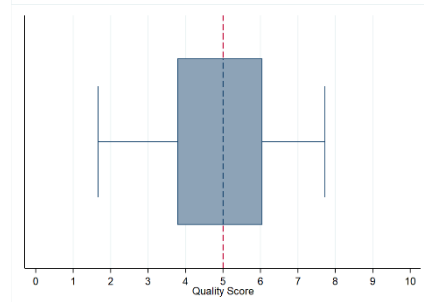
Factual basis



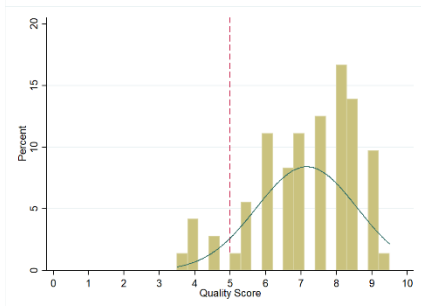
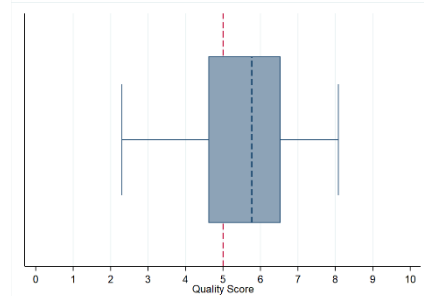
**Goals
&
Objectives**



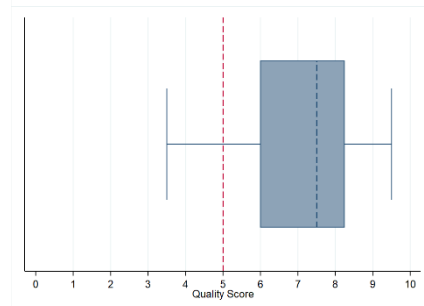
**Policies
&
Strategies**



**Implementation
&
Monitoring**



**Participation
&
Collaboration**



APPENDIX J. PEARSON'S CORRELATION ANALYSIS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Factual basis	1.00															
2 Goals & Objectives	0.65*	1.00														
3 Policies & Strategies	0.65*	0.71*	1.00													
4 Implementation & monitoring	0.39*	0.39*	0.61*	1.00												
5 Participation & collaboration	0.55*	0.43*	0.61*	0.53*	1.00											
6 Population	0.33*	0.37*	0.36*	0.19	0.23	1.00										
7 Population growth	-0.25*	-0.15	-0.19	-0.04	-0.02	-0.30*	1.00									
8 Income	-0.17	-0.14	-0.22	-0.14	-0.25*	-0.12	0.34*	1.00								
9 Education	-0.01	-0.10	0.07	0.15	0.15	0.04	0.04	0.35*	1.00							
10 Preparation time	0.08	0.12	0.16	0.06	0.09	-0.12	0.05	0.04	0.13	1.00						
11 Consultant (dummy)	0.30*	0.18	0.12	0.04	0.16	-0.06	0.15	0.06	-0.12	0.05	1.00					
12 Housing Age	0.19	0.11	0.16	0.08	0.07	0.21	-0.81*	-0.45*	-0.20	-0.10	-0.19	1.00				
13 Housing Problem	0.15	0.10	0.17	0.00	0.14	0.07	-0.33*	-0.51*	-0.47*	-0.11	0.06	0.51*	1.00			
14 Housing Overcrowded	0.01	0.13	0.07	0.03	-0.17	-0.01	-0.08	0.10	-0.38*	0.02	0.12	0.14	0.17	1.00		
15 Housing Owner Cost Burden	-0.14	-0.06	-0.05	-0.12	-0.34*	-0.04	-0.06	0.00	-0.49*	0.03	-0.06	0.18	0.17	0.66*	1.00	
16 Housing Renter Cost Burden	-0.05	0.06	0.12	0.10	-0.02	-0.20	0.00	-0.41*	0.07	0.14	-0.17	0.01	0.03	0.14	0.22	1.00

APPENDIX K. PLAN QUALITY SCORE REGRESSION ANALYSIS

	M1: Planning Context			M2: Housing Stock			M3: Combined Model		
	Coefficient	P-value	VIF	Coefficient	P-value	VIF	Coefficient	P-value	VIF
1. Population	0.108	0.003	1.12				0.106	0.002	1.02
2. Population growth	-0.002	0.923	1.25						
3. Income	-1.240	0.029	1.31				-0.948	0.057	1.02
4. Education	0.070	0.139	1.2						
5. Preparation time	0.208	0.192	1.04						
6. Consultant	2.918	0.029	1.05				2.588	0.048	1.01
7. Housing Age				0.0365	0.3	1.37			
8. Housing Problem				0.1840	0.489	1.37			
9. Housing Overcrowded				0.1669	0.168	1.8			
10. Housing Owner Cost Burden				-0.3646	0.016	1.88	-0.144	0.153	1.01
11. Housing Renter Cost Burden				0.0854	0.37	1.05			
N	72			72			72		
R-square	0.27			0.1134			0.2414		

APPENDIX L. SUMMARY OF RESEARCH PROCESS AND ANALYSIS

	Type	Analysis	Methodology	Unit of Analysis	Tool	Outcome
City-level	Case study	Funding distribution during ConPlan’s term	Mapping	Point	ArcMap	Dot density maps
		Population distribution in year 2000	Mapping	Census Tract	ArcMap	Choropleth maps
Neighborhood level	Case study	Relative concentration of (1) LMI and (2) non-LMI in beneficiary neighborhoods	Location Quotient analysis	Census Tract	Excel	Quantitative numbers
	Comparison	Spatial interaction between (1) funding allocation and (2) population distribution in beneficiary neighborhoods	Overlaying maps	Funding Program / City	Tableau	Scatter-grams charts
Project level	Case study	“Hot spot” of CDBG funding distribution during ConPlan’s term	Kernel Density Analysis / Mapping	Point	ArcMap	Heat maps
		Proportion Analysis of funding’s size (CDBG and HOME projects) during ConPlan’s term	Mapping	Point	Excel & ArcMap	Proportional symbols maps
		Spatial clusters and outliers of LMI and non-LMI (in year 2000)	Local Indicator for Spatial Association analysis	Census Tract	GeoDa	Choropleth maps
	Comparison	Spatial interaction between (1) funding allocation and (2) population distribution during ConPlan’s term	Overlaying maps	City	ArcMap	Overlay maps
Locational Outcome Analysis	Case study	Relative concentration of (1) in-need population concentration, (2) housing quality, and (3) housing severe cost burden of beneficiary neighborhoods in year 2000 and 2010	Location Quotient analysis / Tabulate calculation	Census Tract	Excel	Quantitative numbers
	Comparison	Changes in the proportion of beneficiary neighborhoods (with Location Quotient value larger than 1) between year 2000 and 2010	Tabulate calculation	City	Excel	Quantitative table