

Community Development Block Grants in Colonia Communities: Infrastructure, Housing, and Resources for Forgotten America

Keith Wiley
Manda LaPorte
Housing Assistance Council

Abstract

The U.S.-Mexico border region is often in the news for immigration and border security concerns; however, the issues of substandard housing and living conditions in many of these communities—commonly referred to as “colonias”—are overlooked by the public. Over 2,000 known colonias are in the border region, and these communities are home to over half a million people (Federal Reserve Bank of Dallas, 2015). On the ground, stakeholders have sought assistance in addressing the most common housing and infrastructure needs of families within colonias, both recognized and informal. The federal government began responding to these calls in the early 1990s.

Beginning in 1991, HUD’s Community Development Block Grant (CDBG) nonentitlement program included a set-aside requirement that a percentage of funds be used for colonias. This set-aside was meant to ensure that CDBG resources are used to address the substandard living conditions that exist in these unregulated developments (colonia) found near the U.S.-Mexico border in all four border states (Arizona, California, New Mexico, and Texas). Despite having been in operation for over 32 years and requiring millions of dollars to be used to improve colonias, limited academic study has been conducted on colonias and the federal resources that flow to these communities.

This article seeks to improve understanding of the program through analyzing administrative data on the CDBG nonentitlement program and perspectives from experts and practitioners who work directly in colonia communities and the CDBG program. The analysis describes CDBG funds awarded during the 2014 to 2023 period in all four U.S.-Mexico border states and was augmented by interviews detailing CDBG’s role and impact to meet these distinct communities’ needs. The authors highlight that although nonentitlement colonia set-aside funds, in aggregate, most often support infrastructure and water/sewer treatment activities, uses vary across states. The authors further emphasize that these set-aside projects, along with other nonentitlement efforts, were closely related to the Federal Housing Finance Agency’s designated colonia investment areas. Experts and practitioners viewed the set-aside funds as an important resource for colonias that could be strengthened by altering the program’s definition by expanding its coverage and by increasing efforts to build up local capacity to both access and effectively use resources.

Colonias Have a Long History in the United States, but Many Gaps in Information Still Exist

In the United States, the term *colonias* has been applied generally to unincorporated communities located in California, Arizona, New Mexico, and Texas along the U.S.-Mexico border that are characterized by high poverty rates and substandard living conditions. In practical terms, colonias are largely defined by what they often lack, such as potable drinking water, water and wastewater systems, paved streets, and conventional mortgage financing. Studies have estimated that over 2,000 colonias are in the border region (Wiley, George, and Lipshutz, 2021), with most (90 percent) located in Texas. The issue of colonias and substandard living conditions impacts hundreds of thousands of people along the U.S. Mexico border (Federal Reserve Bank of Dallas, 2015).

Colonias are the result of several dynamics, but their creation and evolution are largely a factor of housing affordability (Durst and Cangelosi, 2021). Driven at least in part by low wages and incomes, many residents of the region were unable to afford conventionally built homes that use high-quality building techniques and materials. An alternative way to homeownership developed. Families purchased unimproved lots, which often lacked access to basic infrastructure (water, sewer, paved streets, etc.), and, over time, built their homes themselves in a piecemeal approach. These developments became known as colonias.

Lax land use regulations in turn made such development possible. For much of the 20th century, county governments lacked the power to regulate the subdivisions of land that lie outside the jurisdiction of city governments. Without these controls in place, landowners would be able to subdivide and sell their property through a range of methods without the necessary infrastructure (Parcher and Humberson, 2007). By 1995, Texas enacted several laws, including the Model Subdivision Rules, that prohibited the development of subdivisions without proper infrastructure and services, such as plumbing (Federal Reserve Bank of Dallas, 1996; Olmedo and Ward, 2016). Poor housing quality and conditions persist, even though access to basic infrastructure has improved (Olmedo and Ward, 2016).

Another factor in colonia formation was access to financing, which, particularly in Texas, came in the form of a contract for deed arrangement in which a buyer makes payments directly to the developer while the land title remains with the developer until the amount is paid in full. These arrangements often involved high interest rates, and many are not recorded with the county clerk (Federal Reserve Bank of Dallas, 2015). In this largely informal arrangement, just one missed payment could result in the developer foreclosing on a property and the buyer losing their entire investment (Parcher and Humberson, 2007).

Colonias Are Not Monolithic

Despite being categorized together, colonias vary extensively within the region, from small clusters of homes located near agricultural employment opportunities to established communities whose residents commute to nearby urban centers (Núñez-Mchiri, 2009). Colonias have varied histories. Some emerged in the past 50 years, but others have been in existence since the 19th century. Various factors led to colonia development within each border state. The large number and increased

visibility of colonias in Texas, however, tends to guide common perceptions and even government policy based on the situations of colonias located there (Mukhija and Monkkonen, 2006).

A variety of settlements have been designated colonias by local, state, and federal governments, with those communities in Arizona, California, and New Mexico varying considerably and including Native American lands, old mining towns, and retirement communities. Colonias in Arizona, California, and New Mexico are generally older than those found in Texas (Mukhija and Monkkonen, 2006). Many New Mexico colonias, for example, have been in existence since the mid-1800s, and all California colonias were developed before 1929, when subdivision laws went into effect in that state (Núñez-Mchiri, 2009). In Arizona, “wildcat” subdivisions emerged in the 1950s and differ in several ways from patterns for Texas’ colonias. Things also continue to evolve, though, as can be seen with New Mexico’s historic settlements that are experiencing new fringe growth in the form of illegal subdivisions similar to those created in Texas under contract for deed arrangements (Donelson and Holguin, 2001).

CDBG Reaches Colonia Communities

Beginning in 1990 with the passage of the Cranston-Gonzalez National Affordable Housing Act (“1990 Cranston-Gonzalez Act”), HUD requires the four U.S.-Mexico border states to make available a percentage of their nonentitlement CDBG funds in colonias. This policy is known as the “colonia set-aside,” and the current requirement is that Arizona, New Mexico, and Texas can spend up to 10 percent and that California can spend up to 5 percent of their nonentitlement funds on colonias.¹

Colonia Definitions: Old and New

The 1990 Cranston-Gonzalez Act sets out the parameters for what communities can be considered colonias under CDBG. A key component is that a colonia must be in the border region, which the Act defines as land within 150 miles of the U.S.-Mexico border and outside of metropolitan areas with populations of one million residents or more.² The entire border region is vast, covering over 254,000 square miles and home to over 33 million people,³ and much of that region is served by the nonentitlement CDBG program (exhibit 1).

As defined by the 1990 Cranston-Gonzalez Act, colonias are communities within the border region that lack basic infrastructure (water, sewer systems) and quality housing communities that were in

¹ As of June 6, 2024, see the following report for information on set-aside threshold: <https://www.hud.gov/sites/documents/12-08CPDN.PDF>

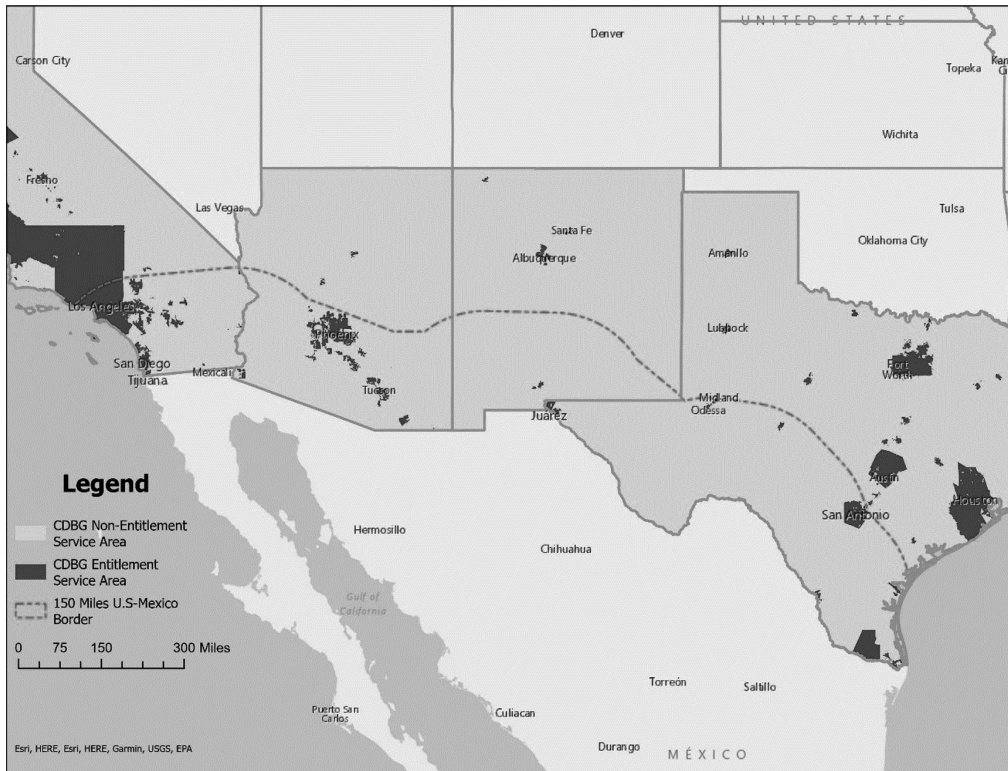
² The Cranston-Gonzalez National Affordable Housing Act of 1990 defined colonias and established the CDBG colonia set-aside. As of 2020, the U.S.-Mexico border region contained at least parts of five metropolitan statistical areas with more than 1 million people: San Antonio–New Braunfels, Texas; Tucson, Arizona; Phoenix–Mesa–Chandler, Arizona; San Diego, California; and Riverside–San Bernardino–Ontario, California.

³ See the following link to view the Fannie Mae/Housing Assistance Council report, entitled *Colonias Investment Areas: Working Toward a Better Understanding of Colonia Communities for Mortgage Access and Finance*, November 2020, for information: <https://www.fanniemae.com/media/37566/display>.

existence before 1990.⁴ The “before 1990” stipulation means CDBG activities occurring in newly formed colonia or colonia-type communities would not be considered part of the colonia set-aside.

Exhibit 1

U.S.-Mexico Border Region and Community Development Block Grant (CDBG) Grantee Service Areas



Note: The Cranston-Gonzalez National Affordable Housing Act defines the U.S.-Mexico border region as excluding metropolitan statistical areas with populations over 1 million.

Sources: Housing Assistance Council-generated map. The following HUD website (as of June 1, 2024) provided CDBG grantee boundaries information: <https://hudgis-hud.opendata.arcgis.com/datasets/HUD::community-development-block-grant-grantee-areas/about>

The border region, for HUD CDBG program purposes, can be divided into service areas for its 133 entitlement (urban/suburban areas) and 4 state nonentitlement grantees (which include most of the border region’s land area).⁵ The CDBG colonia set-aside requirement only applies to the four state nonentitlement grantees and qualifying communities that meet HUD’s colonia definition within 150 miles of the border in their service areas.

⁴ As of June 1, 2024, see the following URL with the 1990 Cranston-Gonzales Act that contains the colonia definition language: <https://files.hudexchange.info/resources/documents/Section-916-of-the-National-Affordable-Housing-Act-of-1990-As-Amended.pdf>.

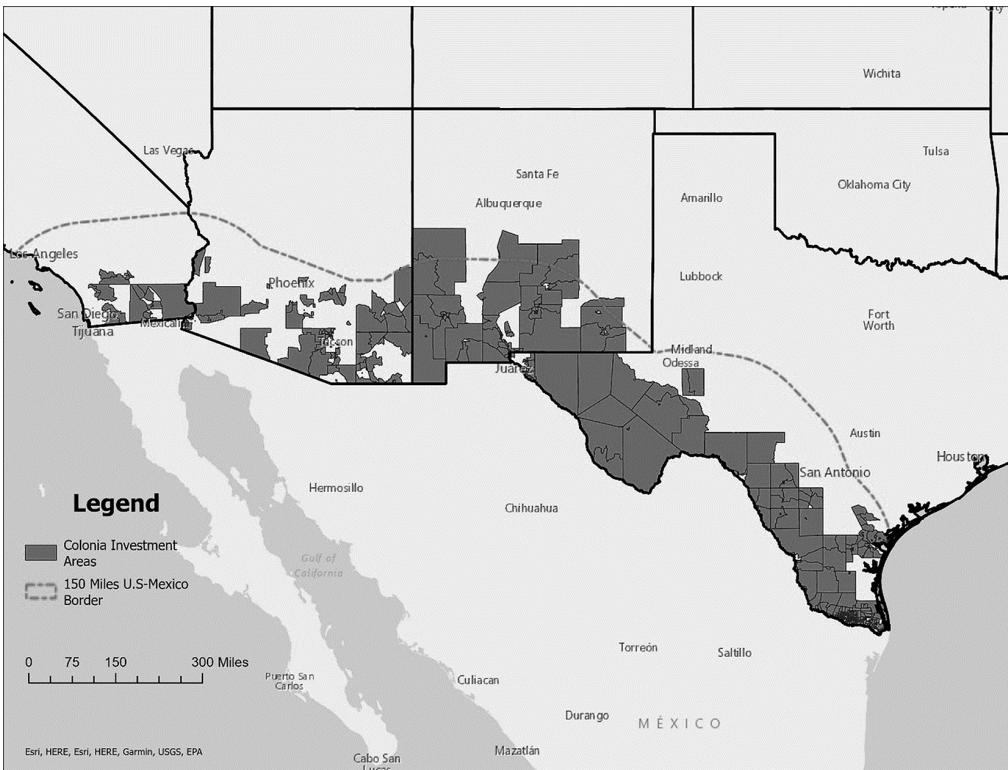
⁵ These numbers refer to HUD CDBG grantees that have at least some land areas that fall within the 150-mile border region delineation. <https://hudgis-hud.opendata.arcgis.com/datasets/HUD::community-development-block-grant-grantee-areas/about>.

Colonia Investment Areas: A New Rubric to View Colonias

Although it is nearly impossible to identify the location of every colonia community, if for no other reason than what constitutes a colonia varies by the definition used, the Federal Housing Finance Agency's (FHFA's) designated Colonia Census Tracts represent census tracts with government-recognized (federal, state, and local) colonia communities. For this analysis, the FHFA's Colonia Census Tracts are referred to as *colonia investment areas*, which was the name of the original concept and definition adopted by FHFA (Housing Assistance Council, 2020). These 577 colonia investment areas, with more than 1 in each of the four-border-states region, provide a colonia baseline of located communities (exhibit 2). Linking the colonia investment area data to HUD's Integrated Disbursement and Information Systems (IDIS) awards information highlights the degree to which CDBG efforts are reaching colonia communities.

Exhibit 2

Colonia Investment Areas



Source: Housing Assistance Council-generated map using data from the Federal Housing Finance Agency identifying colonia investment areas. See the following URL for data: <https://www.fhfa.gov/data/duty-to-serve/eligibility-data>

UGLGs Operate Nonentitlement Projects

CDBG nonentitlement grantees do not operate projects themselves. Instead, they largely use a competitive process, determined by each state, to select applications from smaller units of general

local government (UGLGs) to engage in qualifying community development projects and activities.⁶ The UGLGs then play an important part in the process.

Using HUD's UGLG data, the border region is home to approximately 600 UGLGs, of which 337 are primarily located within nonentitlement service areas.⁷ CDBG nonentitlement funds granted to one of the 337 UGLGs for undertaking a project or activity that impacts a HUD-recognized colonia can count toward their colonia set-aside.

Methodology

Through this research, the authors took a mixed-methods approach to describe HUD's CDBG colonia set-aside funding and explored how it might be more effectively accessed. First, the authors performed a descriptive analysis of CDBG nonentitlement activities using HUD's IDIS administrative data. The IDIS data present CDBG activity (nonentitlement and entitlement) occurring during the calendar years 2014 to 2023 for the four U.S.-Mexico border states. The data include information on the amount of CDBG funds awarded, the location of the activity, the local government unit involved, and the type of activity undertaken. This analysis helped provide a time series picture of CDBG set-aside activities in colonia communities.

To help contextualize and provide additional insights into the data analysis, the Housing Assistance Council conducted interviews with key stakeholders and organizations that work directly in and with colonia communities to present their experiences and perspectives on HUD's CDBG program in these areas. The interviews were open-ended, and stakeholder insight guided the discussion. This element of the research focused on challenges, strengths, and recommendations for improving CDBG set-aside access and effectiveness.

Unit(s) of Analysis

This study's IDIS data analysis uses funds awarded to describe nonentitlement programs rather than the number of tasks completed (e.g., number of houses repaired or number recipients of healthcare services). The authors chose this approach primarily because HUD's IDIS data are not configured or recorded with enough consistency to reliably analyze individual tasks or items. The data, for example, may include a record for each individual home repaired, but one record often represents many homes being repaired. In addition, the way in which IDIS data are structured makes it difficult to compare tasks completed due to variation in categories (e.g., drug treatments, microenterprise loans, and water treatment facilities). This review avoided such complexities by focusing on funded awards, not tasks completed.

⁶ As of June 6, 2024, see the following HUD website for a definition and map of UGLGs: <https://hudgis-hud.opendata.arcgis.com/datasets/HUD::unit-of-general-local-government-uglg/about>.

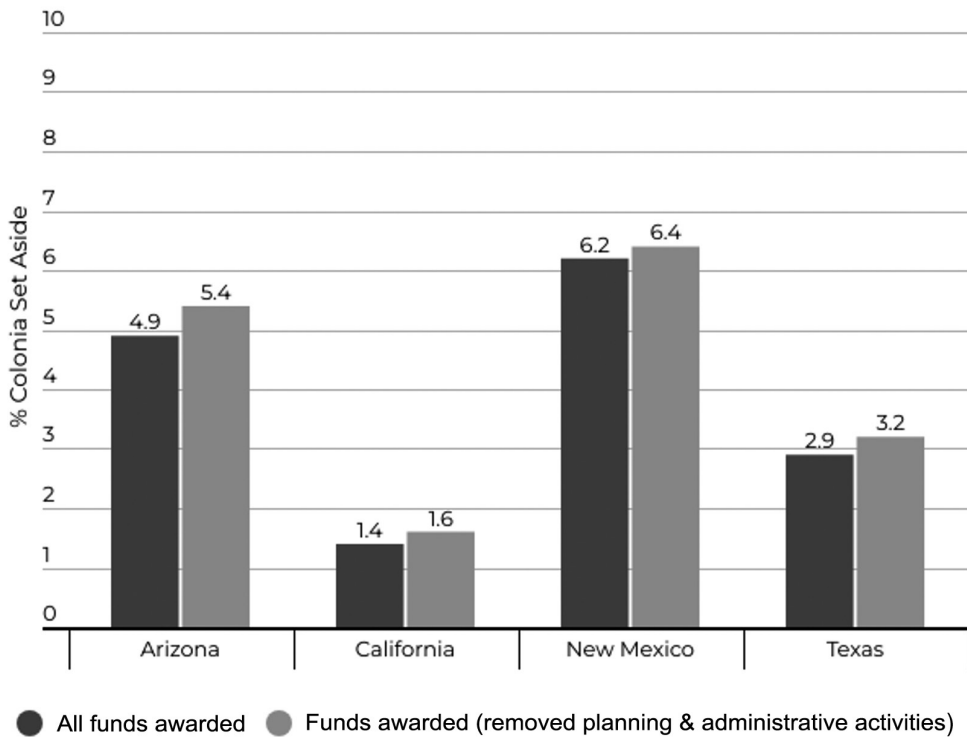
⁷ The analysis first identified UGLGs that are at least in part within the 150-mile U.S.-Mexico border region. Next, from those border region UGLGs, the authors selected UGLGs with a center point within a nonentitlement grantee's boundary. The UGLG boundary data are from the following HUD website: <https://hudgis-hud.opendata.arcgis.com/datasets/97c733d6b4504d6ebbb111b7061ab393/explore>. The CDBG grantee boundary data come from the following HUD website: <https://hudgis-hud.opendata.arcgis.com/datasets/HUD::community-development-block-grant-grantee-areas/about>.

Data Questions and Limitations

IDIS data are important and useful, but they come with significant limitations. The most important challenges for this study are the data coverage and the completeness of records. To review the data, the authors compared the CDBG set-aside thresholds and other HUD-reported allocation information. Exhibit 3 presents the percentage of funds awarded in the IDIS subset that are identified as colonia set-asides for the four border states. In no case did the percentages reach the set-aside maximum of 10 percent for Arizona, New Mexico, and Texas or the 5-percent maximum for California. It is understandable that the percentages would not necessarily match, but they should be closer if there were no grantee data reporting errors.

Exhibit 3

Percent of IDIS-Reported CDBG Awarded Funds Classified as Colonia , 2014 through 2023



CDBG = Community Development Block Grant. IDIS = Integrated Disbursement and Information Systems.

Source: Housing Assistance Council tabulation of a subset of HUD's IDIS data covering the calendar years 2014 through 2023

An additional comparison was made between aggregated IDIS colonia set-aside total funds awarded for each state and estimates of what these totals should be based on HUD-reported state allocations using the colonia set-aside thresholds. The IDIS totals were lower than the estimates for each of the four states; however, these IDIS totals did represent a sizable proportion of the estimated allocations (exhibit 4).

Exhibit 4

IDIS Funded Awards as Percent of Estimated Allocations, FY 2015–23

State Entitlement Programs	IDIS-Funded Awards as Percent of Estimated Allocations (FY 2015–23)*	
	Colonia Set-Aside Allocations (%)	Colonia Set-Aside Allocations Administrative Expenses Removed (%)
Arizona	74.9	83.2
California	62.3	69.2
New Mexico	43.0	47.8
Texas	38.1	42.4
Total	46.0	51.1

*For administrative expenses restriction, the authors removed 10 percent of the initial allocation and then applied the set-aside threshold.

IDIS = Integrated Disbursement and Information Systems.

Notes: For administrative expenses removed, first take out 10 percent for administrative expenses. Then, arrive at estimate by multiplying allocation totals by percent of set-aside (10 percent for Arizona, New Mexico, and Texas; 5 percent for California).

Source: Housing Assistance Council tabulation of HUD IDIS data and HUD Community Development Block Grant https://www.hud.gov/program_offices/comm_planning/budget

These differences likely reflect the fact that IDIS awards data may not be complete or may possibly suffer from data reporting challenges.⁸ Although all activities and expenditures are reported in IDIS, the system has less reliable indicators for activities under the colonia set-aside. However, the data do represent a large portion of CDBG colonia set-aside activities and serve as a reasonable snapshot into the program’s operations over the last 10-year period.

Analysis of the CDBG Colonia Set-Aside Program

State Level

IDIS data contained 130 unique nonentitlement CDBG colonia set-aside activities,⁹ totaling \$46,078,404 in funds awarded during the calendar years 2014 to 2023. Texas was awarded the largest amount of colonia set-aside funds, which is directly related to its larger annual CDBG nonentitlement allocation. For example, the 2023 nonentitlement allocations were by state and included Arizona (\$9.9 million), California (\$31 million), New Mexico (\$11 million), and Texas (\$68 million).¹⁰ This distribution aligns with the general composition where two-thirds of HUD-identified colonias are located in Texas (Wiley, George, and Lipshutz, 2021; exhibit 5).¹¹

⁸ It may be that data input is incomplete or there is a misunderstanding on how it is to be done. This may result in information being omitted or duplicate reporting of an activity.

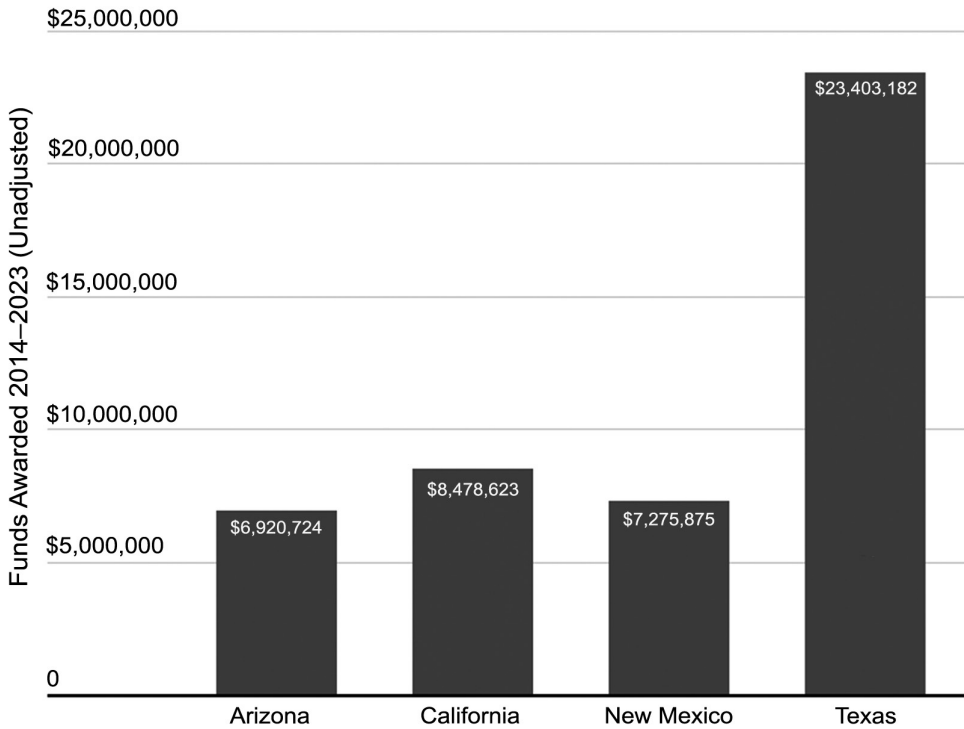
⁹ In total, there were 118,813 records for both entitlement and nonentitlement CDBG grantees during the 2014 to 2023 calendar year period. Only 152 of these records were specifically identified as having involved colonia set-aside activities. This number declined to 130 when the authors removed duplicate records (unique identifiers created out of grantee name, IDIS activity number, and year reported). What appears to have occurred is the data for the entire activity were entered into the system each time something of note was completed. For example, each time a home was rehabilitated the record would say \$500,000, but this amount reflects all five records filled in, not the amount for each occurrence.

¹⁰ Using the 2023 nonentitlement allocations as an example, applying the colonia set-aside percentages of 10 percent for Arizona, New Mexico, and Texas and 5 percent for California would result in an order of funds allocated like what is shown in exhibit 3: Texas with the most awards, followed by California, New Mexico, and Arizona. The actual number of funds and percentages in the data are not perfect matches with the allocation numbers, although that is likely due to how the data are reported and other issues.

¹¹ The IDIS individual colonia set-aside records by state: 11 for Arizona and New Mexico, 9 for California, and 99 for Texas.

Exhibit 5

IDIS CDBG Colonia Set-Aside Funds Awarded, 2014–23



CDBG = Community Development Block Grant. IDIS = Integrated Disbursement and Information Systems.

Source: Housing Assistance Council tabulation of a subset of HUD's IDIS data covering the calendar years 2014 through 2023

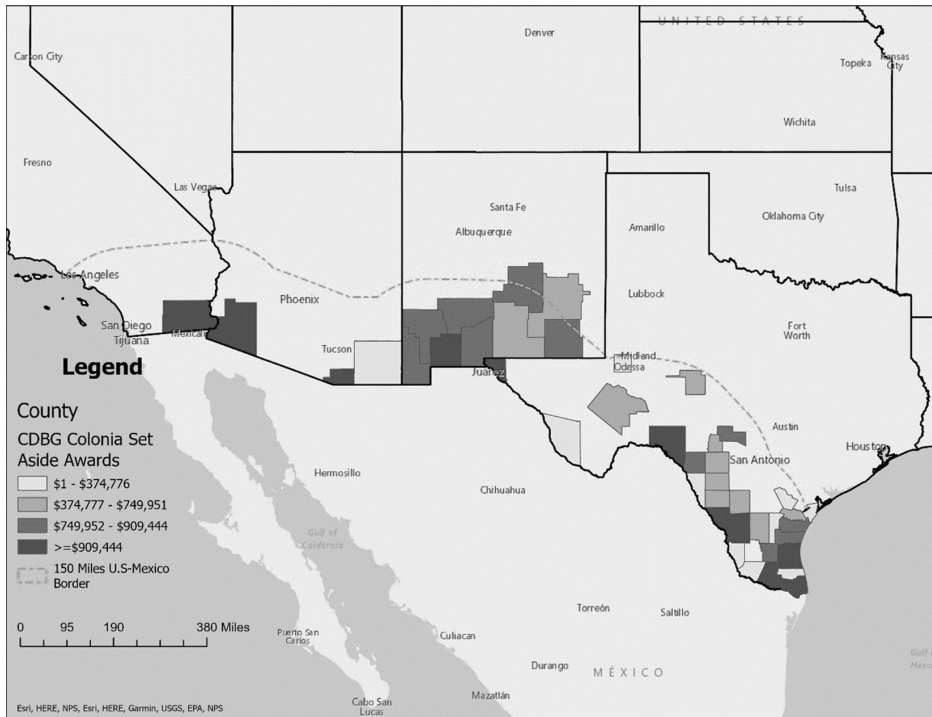
County Level

The state nontitlement programs awarded colonia set-aside funds for use in 42 different counties,¹² of which more than one-half (29) were in Texas (exhibit 6). During the analysis period, six counties each received more than \$2 million in designated set-aside funds, with Imperial County in California receiving the largest amount (\$8,478,623). Imperial County is the only county in California with HUD-recognized colonias, which explains its elevated awards total. The 10 counties with the most funded awards account for nearly two-thirds of the reported colonia set-aside funds.

¹² One record had the incorrect county Federal Information Processing Standard (FIPS) code (Sacramento County, California, when it should have been Imperial County, California), and another listed a county beyond the 150-mile border region threshold. The authors removed the former case and corrected the state-county FIPS code for the latter California case.

Exhibit 6

Counties Receiving CDBG Colonia Set-Aside Funds, 2014–23



CDBG = Community Development Block Grant.

Source: Housing Assistance Council-generated map. Calculation of HUD-provided CDBG colonia set-aside funds data

Although nonentitlement funds are mainly used in nonentitlement service areas, HUD regulations allow¹³ and the IDIS data show an overlap between Texas nonentitlement colonia set-aside activities and Hidalgo County (an entitlement grantee) (exhibit 7). Hidalgo County, Texas, has more colonias than any other county in the region (over 900 identified colonias), and it is home to 40 percent of all colonias in Texas, so CDBG activities in that county are likely to impact a colonia (Fannie Mae and Housing Assistance Council, 2020).

Exhibit 7

Top Ten Counties CDBG Colonia Set-Aside Funds Awarded, 2014–23 (1 of 2)

County Name	Funded Amount (\$)
Imperial County, California	8,478,623
Santa Cruz County, Arizona	3,857,267
Yuma County, Arizona	2,779,868
Cameron County, Texas	2,651,206
Val Verde County, Texas	2,544,436
Webb County, Texas	2,199,316

¹³ See HUD's Community Planning and Development (CPD) Notice 12-008 (page 4), which explains how nonentitlement funds may be used in entitlement areas and Tribal areas.

Exhibit 7

Top Ten Counties CDBG Colonia Set-Aside Funds Awarded, 2014–23 (2 of 2)

County Name	Funded Amount (\$)
El Paso County, Texas	1,704,490
Hidalgo County, Texas	1,508,808
Kenedy County, Texas	1,329,721
Luna County, New Mexico	1,250,000

CDBG = Community Development Block Grant.

Source: Housing Assistance Council tabulation of a subset of HUD's Integrated Disbursement and Information Systems data covering the calendar years 2014 through 2023

Unit of General Local Government (UGLG) Level

Although CDGB funds can be organized by the county where they are used, another way to explore the data is by the UGLG (sub-state unit of government such as county, city, town, parish, or borough) that undertakes the project. That is, just because a project occurs in a specific county does not universally mean that the county government operated it.

Of the more than 330 HUD-listed UGLGs¹⁴ in the four U.S.-Mexico CDBG nonentitlement service areas, 51 were awarded colonia set-aside funds during the 2014–23 period. The population size of the grantees ranges from fewer than 1,000 in UGLGs like the village of Hope, New Mexico, to over 100,000 in places like Imperial County, California. Most UGLGs receiving nonentitlement colonia set-aside funds are counties (68 percent, or 33 of 51), and these county governments received 78 percent of all set-aside funds (exhibit 8).

Exhibit 8

UGLGs in CDBG Nonentitlement Colonia Set-Asides, 2014–23

State	Number Non-County UGLGs	Number County UGLG	Percent UGLGs County (%)	Total UGLGs
Arizona	4	2	33.3	6
New Mexico	11	0	0	11
Texas	1	31	96.9	32
California	0	2	100	2
Totals	16	35	68.6	51

CDBG = Community Development Block Grant. UGLG = unit of general local government.

Source: Housing Assistance Council tabulation of a subset of HUD's Integrated Disbursement and Information Systems data covering the calendar years 2014 through 2023

The rationale for nonentitlement programs awarding most colonia set-aside funds to county governments is that most nonentitlement areas are rural and sparsely populated jurisdictions where only county governments have the capacity to both develop a workable proposal/plan and implement/undertake it. Nevertheless, some variation exists in UGLGs across the four states, with all of California's colonia set-aside awards involving Imperial County government, whereas none of New Mexico's activities involved a county UGLG. The way colonias are defined is an important

¹⁴ UGLG data were downloaded from the following HUD website, which provided them in ArcGIS format for mapping (<https://hudgis-hud.opendata.arcgis.com/datasets/97c733d6b4504d6ebbb111b7061ab393/explore>). These data do not contain all general local units of governments (such as school districts). They more accurately represent larger UGLGs that access HUD funds, such as CDBG.

factor in who administers assistance projects. For example, New Mexico colonias are primarily defined as entire towns. Conversely, in Texas, a colonia is usually defined at the neighborhood or subdivision level. Another factor is which level of local government has the responsibility and expertise to perform the job, which can vary by state and task (wastewater, housing, etc.).

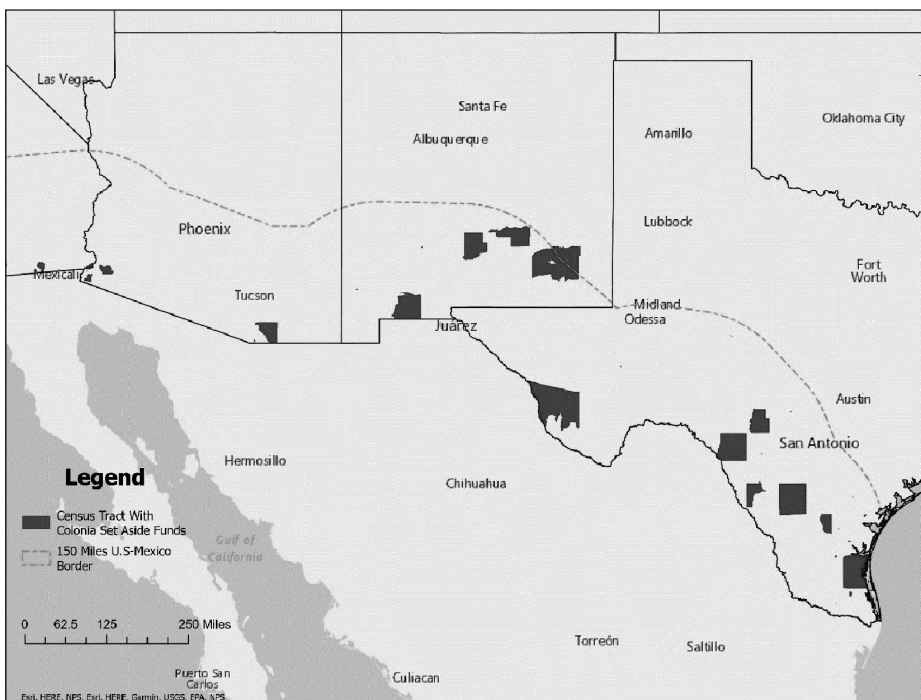
Census Tract Level

This research was able to identify 50 separate census tracts which the IDIS data listed as the locations for colonia set-aside projects.¹⁵ Most of these census tracts were in Texas (30 of 50), which is reflective of that state having the most colonias. Exhibit 9 shows the location of these census tracts.¹⁶

Exploring CDBG set-aside activity at a smaller geography allows for additional analysis and makes it easier to relate this information to other data, such as the colonia investment areas. However, reducing or estimating a project's service area (area of impact) to a single census tract is difficult. For example, a water treatment project could serve a large area, certainly more than one census tract.

Exhibit 9

Census Tracts With CDBG Colonia Set-Aside Activities, 2014–23



CDBG = Community Development Block Grant.
 Source: Housing Assistance Council-generated map using HUD Integrated Disbursement and Information Systems data to identify census tracts with colonia set-aside funds

¹⁵ Of the initial 52 census tracts, the authors dropped 1 because it was erroneously listed as being in Sacramento, California, and another because it was beyond the 150-mile HUD colonia definition threshold (Falls County, Texas).

¹⁶ Census tract data in IDIS can be incomplete. Grantees report an activity address, and if that reported address is a valid USPS address, it will be georeferenced to tracts. Many addresses in rural areas will not validate by the USPS, and no tract data would be available.

Reaching Known Colonia Communities

The analysis used proximity to relate the CDBG colonia set-aside census tracts to FHFA colonia investment areas (exhibit 10). For Arizona, California, and New Mexico, every census tract associated with a colonia set-aside activity was either in or shared a border with a colonia investment area. Texas stands out as having about 30 percent of activities in areas that are further away from colonia investment areas, but most of them are still relatively close, within 5 miles or less of the 150-mile threshold. Given the lack of precision, often due to an inability to denote one census tract service area (as in the case of an infrastructure project that reaches a large area), the 5-mile-or-less threshold seems most reflective of the units of geography of service area coverage.¹⁷

Exhibit 10

Census Tracts Reported Location of CDBG Colonia Set-Aside Activity and Proximity to Colonia Investment Areas, 2014–23

Nonentitlement Program	In Colonia Investment Area (%)	Bordering Colonia Investment Area (%)	<=5 Miles Colonia Investment Area (%)	>5 Miles Colonia Investment Area (%)
Arizona	77.8	22.2	0	0
California	66.7	33.3	0	0
New Mexico	75	25	0	0
Texas	50	20	20	10
Totals	60	22	12	6

CDBG = Community Development Block Grant.

Source: Housing Assistance Council tabulation of a subset of HUD's Integrated Disbursement and Information Systems data covering the calendar years 2014 through 2023

Looking at the relationship the other way, of the 577 colonia investment areas, 359 had their center point in a nonentitlement service area. Of these nonentitlement colonia investment areas, 195 are within 10 miles of a census tract where a colonia set-aside project was listed as occurring, and 127 are within 5 miles. These numbers do not include the activities impacting Hidalgo County, where colonias and colonia investment areas are relatively common.

Activities in CDBG Colonia Set-Aside Awards, 2014–23

A hallmark of the CDBG program is its flexibility and how inclusive it is when it comes to the types of activities that can be supported. The IDIS database contained over 90 different types of activities that nonentitlement grantees conducted in their CDBG awards. The activities included outlays for water/sewer improvements, tree planting, and microenterprise assistance as examples. To simplify the data and make it easier to understand, this study organized these activities into 10 general categories shown in exhibit 11.

¹⁷ It is unclear how the other 7 percent of Texas colonia set-aside census tracts fall outside of the 5-mile threshold, and these are areas currently not identified as a colonia by either the colonia investment area work or the Texas Office of Attorney General's website. (<https://www.texasattorneygeneral.gov/divisions/colonias-database>)

Exhibit 11

CDBG Nonentitlement Grantee Awarded Activities (2014–23) by Category

Category	Examples of Activities Included
Health Care and Disability Services/Facilities	Mental Health Services, Operating Costs of Homeless/AIDS Patients Programs, Health Facilities
Child/Youth Services/Facilities	Childcare Centers, Youth Services, Abused and Neglected Children Facilities
Public Safety	Crime Awareness, Substance Abuse Services, Service for Victims of Domestic Violence
Community Investment/Infrastructure	Parking Facilities, Neighborhood Facilities, Transportation Services
Housing	Direct Homeownership Assistance, Homebuyer Counseling, Public Housing Modernization
Senior Services	Senior Centers, Senior Services
Water/Sewer Treatment Facilities	Water/Sewer Improvements, Solid Waste Disposal Improvements
Direct Economic Assistance	Microenterprise Assistance, Employment Training, Economic Development Technical Assistance
Administrative Expenses	State Administration, State CDBG Technical Assistance to Grantees, General Program Administration
Miscellaneous	Subsistence Payment, Legal Services, Interim Assistance

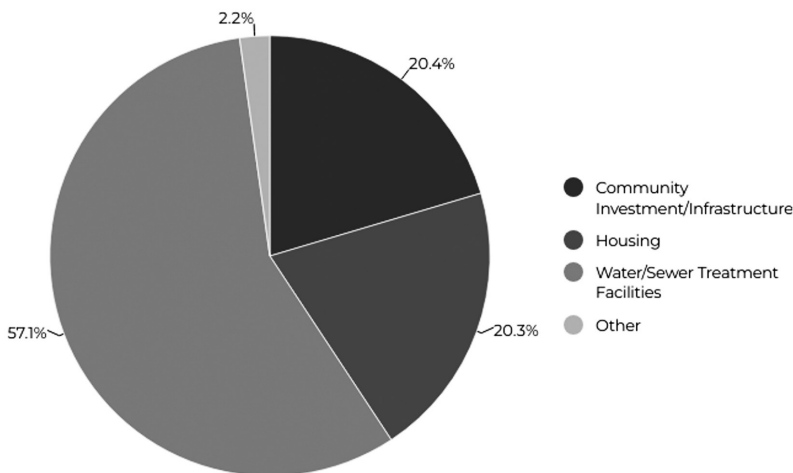
CDBG = Community Development Block Grant.

Source: Housing Assistance Council categories of CDBG covering the calendar years 2014 through 2023

IDIS-reported CDBG activity funded by colonia set-aside status for all four states' nonentitlement programs can be found in exhibit 12. As expected, the data indicated that a majority of nonentitlement colonia set-aside funds were awarded for use on water/sewer treatment facilities. Community investment/infrastructure and housing were the other two areas with significant awards, and this fits with the literature's documentation of limited infrastructure (electric, roads, street lights, etc.) and poor-quality housing present in many colonias (Ward and Peters, 2007).

Exhibit 12

Colonia Set-Aside Nonentitlement Awards, 2014–23



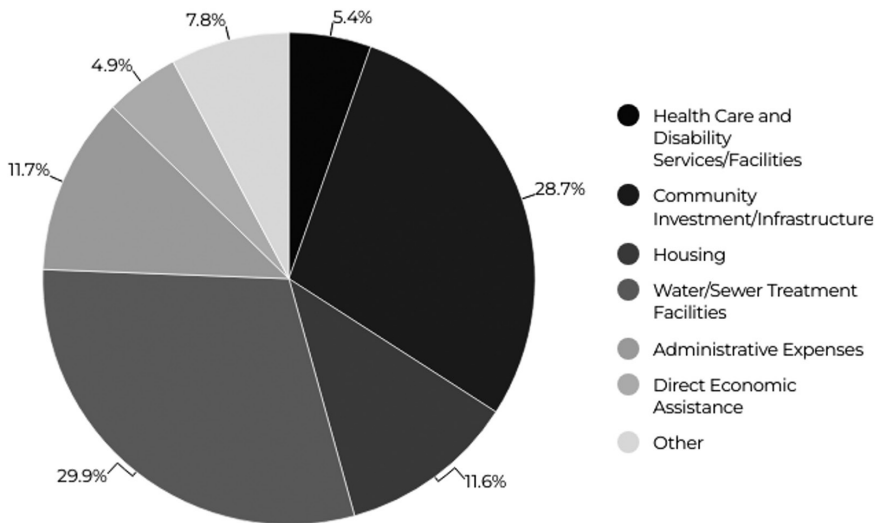
Source: Housing Assistance Council tabulation of a subset of HUD's Integrated Disbursement and Information Systems data covering calendar years 2014 through 2023

Economic and Healthcare-Related Activities are More Common Than Other Nonentitlement Activities

Exhibit 13 indicates that all other nonentitlement activities involved less funding, proportionately, for water/sewer treatment and housing and more funding for other activities, particularly direct economic assistance and healthcare and disability services. These outlays likely reflect differences in community need, with colonias needing more basic infrastructure and housing investments and other areas already having sufficient infrastructure in need of activities that address efforts such as economic growth and public health. These differences highlight a unique structure of the CDBG program that allows flexibility in how grantees may use funds to address community needs.

Exhibit 13

Non-Colonia Set-Aside Nonentitlement Awards, 2014–23



Source: Housing Assistance Council tabulation of a subset of HUD's Integrated Disbursement and Information Systems data covering calendar years 2014 through 2023

Change in Activities

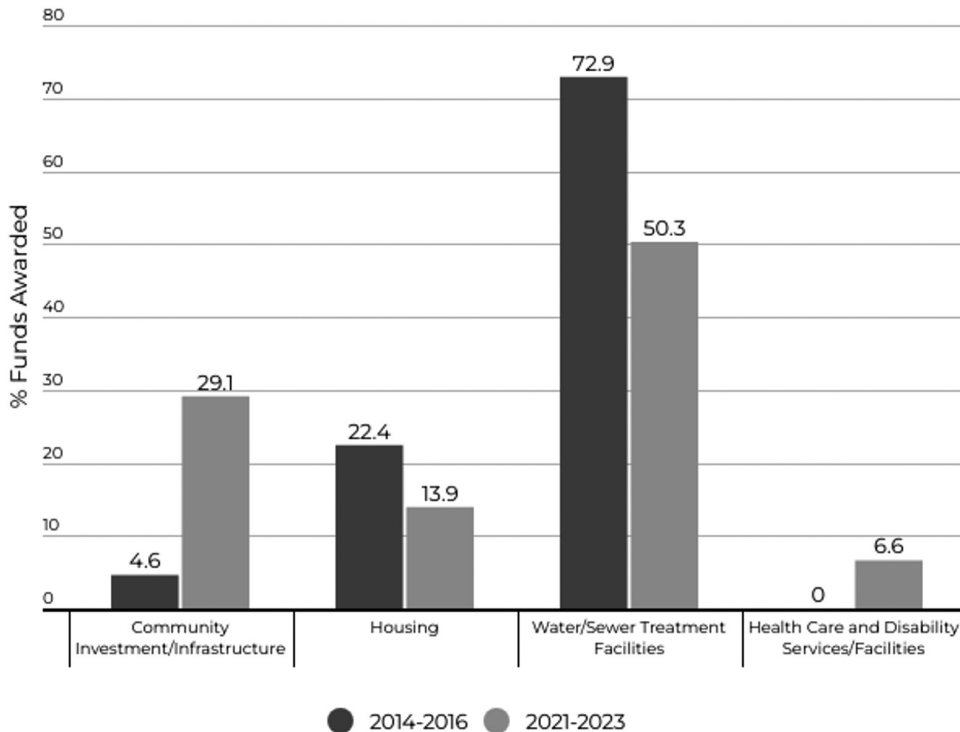
Colonia program priorities can change and evolve over time, mirroring changes in community needs and dynamics. As basic infrastructure deficiencies are addressed, more funds may focus on such things as economic development and health care. To assess changes in activities, this research compared awards from the first 3 years (2014–16) and the last 3 years (2021–23) of the study period.

A majority of colonia set-aside funds went to water and sewer treatment facilities projects in both the 2014-to-2016 period and the 2021-to-2023 period (exhibit 14). Water and wastewater activities, however, did decline between the two time periods (73 percent to 50 percent), with the share going to community investments and infrastructure increasing (5 percent to 29 percent). It is unclear why water and sewer treatment declined, but it may reflect some change in focus that

could relate to the success of earlier efforts to address water and sewer treatment infrastructure needs or other policy efforts like annexation.¹⁸

Exhibit 14

Colonia Set-Aside Activities, 2014–16 and 2021–23



Source: Housing Assistance Council tabulation of a subset of HUD’s Integrated Disbursement and Information Systems data covering calendar years 2014 through 2023

Some variation was present in the type of set-aside activities undertaken among the four border states (exhibit 15). Although most state colonia set-aside awards involve either water and sewer treatment facilities or community investment and infrastructure, Arizona and Texas stand out for a relatively sizable proportion of funds going to housing activities, whereas New Mexico has a larger share of funds going to healthcare and disability services and facilities activities. To put this into perspective, the Texas and Arizona share of awards going to housing are three times as large as the housing share of expenditures for all non-colonia set-aside awards.

These differences across states relate to differences in need. The focus on housing efforts in Texas clearly fits with the prevalence of substandard housing in colonias. Similarly, California colonias are often older communities (Mukhija and Monkkonen, 2007) with aging infrastructure, which may

¹⁸ Due to the limited number of activities involved, one should look at these data with caution. The addition or decline of just a few activities can alter such results but may not be reflective of broader change. For example, there was an increase in the 2021–23 period in health care etc. awards, which one might think is reflective of the global pandemic, but the increased healthcare-related activity is driven by one state, New Mexico.

explain why two-thirds of awards are in the community investment/infrastructure rather than the water/sewer treatment category as in the other three states.

Exhibit 15

Percentage of State Colonia Set-Aside Awards by Activity Type, 2014–23

Activity	Arizona (%)	California (%)	New Mexico (%)	Texas (%)
Water/Sewer Treatment Facilities	53.5	36.6	51.9	67.1
Community Investment/Infrastructure	13.6	63	30.9	3.6
Housing	32.9	0	6.9	28.2
Health Care and Disability Services/Facilities	0	0	10.3	0
Other	0	0.4	0	1.1
Total	100	100	100	100

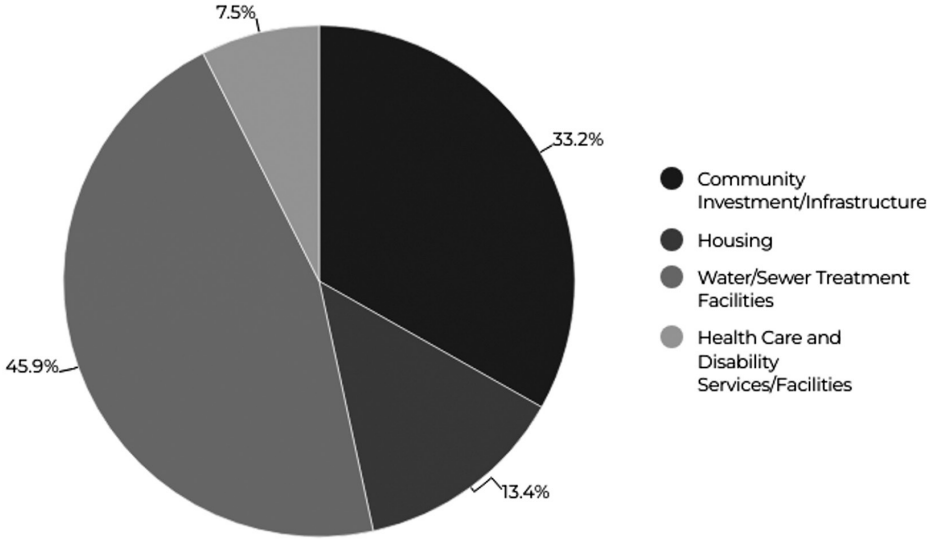
Source: Housing Assistance Council tabulation of a subset of HUD's Integrated Disbursement and Information Systems data covering calendar years 2014 through 2023

Regarding UGLG-related activity, the analysis suggests two areas of difference. First, a larger share of non-county UGLG activity involved water and sewer treatment facilities compared to county government activities (exhibit 16). Second, a larger share of county UGLG activity involved housing activities compared to non-county UGLGs (exhibit 17). Differences such as these might, at least in part, be reflective of the government units that are directly engaged in these types of projects. For example, a smaller local government may be more involved in water and sewer treatment or infrastructure projects because they are more likely to directly work with local utilities/service providers.

Variability in government responsibility likely shapes differences in which a municipality undertakes an activity. For example, in many states, county governments operate school districts, but in other areas, cities, towns, or townships take on these responsibilities. The entity operating a primary education program would then depend on the government responsible for overseeing that service. Independent of this, caution should be exercised when assessing CDBG colonia set-aside activities by UGLGs because the number of cases involved is small, particularly because county governments undertake most activities. One or two projects can skew results, so closer scrutiny needs to apply.

Exhibit 16

Non-County UGLG Colonia Set-Aside Activity

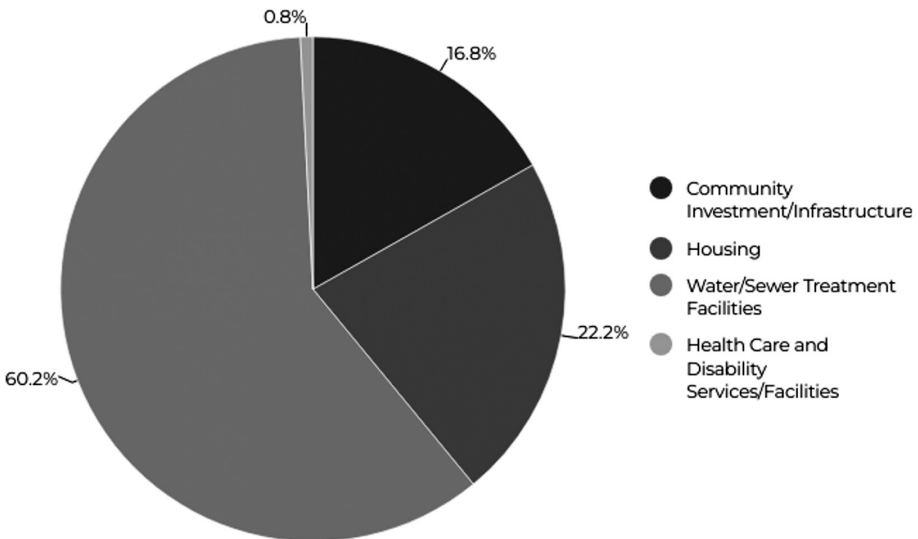


UGLG = unit of general local government.

Source: Housing Assistance Council tabulation of a subset of HUD's Integrated Disbursement and Information Systems data covering calendar years 2014 through 2023

Exhibit 17

County UGLG Colonia Set-Aside Activity



UGLG = unit of general local government.

Source: Housing Assistance Council tabulation of a subset of HUD's Integrated Disbursement and Information Systems data covering calendar years 2014 through 2023

CDBG Involvement in Colonias Goes Beyond the Set-Aside

Although the CDBG colonia set-aside ensures that a specific amount of funds and attention will be focused on colonias, other CDBG projects in these four U.S.-Mexico border states can and certainly do reach residents of colonias. To evaluate these activities, this research linked the IDIS entitlement and nonentitlement activities data to colonia investment areas using the census tract information provided for the activity. Non colonia set-aside activities that fit within one of the following CDBG categories are considered as likely (to some degree) impacting a colonia:

- Nonentitlement activity identified by HUD as including in its service area-recognized colonia (though not a set-aside).
- Nonentitlement activity involves a colonia investment area.
- Entitlement activity involves a colonia investment area (Hidalgo County, Texas, is an entitlement grant, and almost all of the county's census tracts contain at least part of a colonia).

For the 2014-through-2023 period, IDIS CDBG data were used to highlight the number of activities and funds awarded in areas identified as having a colonia —either by HUD or the FHFA colonia investment area classification. The data suggest that although CDBG funds are awarded to areas with colonias, they are not typically a part of the colonia set-aside, but rather they are the standard entitlement or nonentitlement programs. Twice the amount of CDBG nonentitlement activities outside of the colonia set-aside program are reaching colonias than within the designated colonia set-aside program (exhibit 18).

Exhibit 18

CDBG Activity in U.S.-Mexico Border States by Colonia

CDBG Program Description	Number of Unique Activities	Awards (\$)
Total (Entitlement & Nonentitlement)	60,986	8,686,845,774
Nonentitlement	8,332	1,665,732,353
Colonia Set-Aside	130	46,078,404
Not Colonia Set-Aside	8,202	1,619,653,949
HUD-Defined Colonia	46	12,234,067
Colonia Investment Area	429	114,611,530
All Other	7,727	1,492,808,352
Entitlement	52,654	7,021,113,421
Colonia Investment Area	1,826	110,396,554
All Other	50,828	6,910,716,867

CDBG = Community Development Block Grant.

Source: Housing Assistance Council tabulations of HUD Integrated Disbursement and Information Systems 2014–23 data provided by HUD

One caveat is that the analysis uses a single census tract to capture the location/impact of a project, and, as noted earlier, this information is always less than complete. Although receiving CDBG colonia set-aside designation refers to a direct relationship between the activity and colonia residents, no such relationship necessarily exists between the other designations. The grantee may have intended to report these activities as part of the colonia set-aside but failed to properly flag the

activity in IDIS. This omission likely explains the differences in colonia set-aside counts/awards, but it is also reasonable to assume that more activities and resources do reach colonia residents than the colonia set-aside award totals reflect alone.

Beyond the Data: Expert and Practitioner Perspectives on CDBG's Effectiveness in Colonias

This study's administrative data analysis, while important, does not fully capture the nuances of the program or areas for improvement. To help contextualize and add depth to the descriptive CDBG colonia activity analysis, this research sought perspectives informed by experience from experts and practitioners either directly or indirectly involved with colonias and CDBG colonia set-aside operations. The goal of these interviews was to better understand how the program operates in the real world and what or how these operations might be improved upon.

This element of the analyses specifically involved six interviews with colonia experts working directly with these communities and those who have experience using HUD's CDBG set-aside. The interviews were primarily open-ended (the interviewee's comments steered discussion). Although the responses to questions varied, they provided valuable information that helped put the IDIS data analysis into perspective. The authors summarize the responses below, organizing them around the guiding questions and focusing on where the responses either relate to the data analysis and/or shed light on specific program attributes and operations.

While talking with experts in the field and working directly with colonias, it is important to reiterate that no two colonias are the same—especially state-to-state. What may be applicable to one colonia may not ring true for another. Recognizing the extreme shifts in trends among colonias is necessary when trying to address their challenges and opportunities.

Changes, Challenges, and Opportunities in Colonias

Colonia communities have been around for several decades. In some areas, colonias that are more established face different challenges than the “new colonias,” such as HUD's CDBG set-aside, which do not have the same access to funding as traditional colonias. For example, older colonias in certain parts of Texas do not have the same infrastructure challenges as they once had. Recently, organizations that serve these communities have noticed an increase in housing quality needs as opposed to plumbing and drainage concerns.

However, when looking at colonias in New Mexico, for example, many are still dealing with severe infrastructure concerns. Respondents noted that the attention colonias received in these areas has slowly disappeared, placing them in the shadows once again. Unfortunately, as state procedures around CDBG set-aside change, so does the ability for the most in-need communities to access these funds.

Major opportunities highlighted by all interviewees were an increase in capacity for services, an even greater flexibility in available funding, and an overall revitalized reinvestment in CDBG. Due to the complexity of applying for the nonentitlement set-aside funds and the fact that each state has a different system, accessible trainings around accessing the funds are needed. In some colonias,

one-on-one technical assistance would increase the likelihood of these communities accessing the CDBG funds.

In addition, flexibility in how and where the funds go from state to state would benefit CDBG programming. Texas has a requirement to provide a tool bank for colonia communities to access power tools and other resources. Organizations working directly with colonias, however, have seen little use of these services and have noted that these funds would be better spent on other projects within these communities. On the other hand, in New Mexico, an increased flexibility in the 150-mile rule would help reach more communities. In fact, experts have noticed that in New Mexico colonias receiving CDBG have slowly shrunk to 100 miles from the border, further limiting some communities' access to the set-aside program.

Finally, a revitalization of CDBG colonia set-aside would help bring awareness back to the program and the communities that could benefit from its resources, especially colonias. Experts have mentioned that although CDBG has provided amazing programming for colonias, more awareness could be brought back to colonias.

Capacity is Key

HUD's CDBG set-aside is one of the earliest federal policies targeting assistance to colonias and is one of the longest duration continuous efforts. However, with the longevity of this program, capacity issues have been revealed. In Texas, HUD CDBG set-aside funding first goes to the Texas Department of Agriculture before going to the Texas Department of Housing and Community Affairs. From there, the funds are distributed to awardees. Reporting then travels back to the Texas Department of Agriculture through the Department of Housing and Community Affairs. Some practitioners assert that this procedural maze has put a capacity strain on local governments and organizations using these funds.

Moreover, experts have noted that colonias located in unincorporated areas are finding it difficult to compete with communities in incorporated towns or closer to higher density areas. However, in both unincorporated and incorporated colonias, capacity continues to be a huge concern.

At the HUD level, CDBG set-aside funding allocates each state to use \$100,000 plus a 3-percent match on administrative costs. However, at the state level, each state awarding CDBG funds can determine the administrative budget allocated to UGLGs (with a 20-percent cap for administration and planning). The state-calculated allocation often does not cover the administrative process for these organizations, causing them to lose money when providing services. Due to the complex process of applying, pre-award costs can be an additional burden. Although technical assistance and planning resources are available, applicants may be unaware of those resources.

Once funds are awarded, the capacity to manage construction and infrastructure projects is a concern. These activities often rely on contractors, leaving UGLGs in charge of contract management, which they may have limited capacity and experience executing.

Furthermore, more and more frequently as colonia areas are becoming incorporated communities, colonias located in unincorporated areas are falling further behind. With less capacity, unincorporated communities are struggling to apply for CDBG entitlement and nonentitlement programming.

Definitions and Geography Matter

In the border states, only colonias identified before 1990 are qualified to receive funding from the HUD CDBG set-aside. CDBG funds are available to communities or “new colonias” that fall outside the 1990 rule; however, these CDBG funds are not a part of the specific colonias set-aside fund. Regardless of the set-aside, organizations that work with colonias rely heavily on CDBG funds.

Some interviewees recommended the expansion of the definition of colonias to include communities outside of the 1990 qualification to reach “new colonias.” They argued that these communities often look identical to colonias but do not have access to the same funding opportunities. On the other hand, others worried that expanding the definition would stretch the funding, giving fewer dollars to communities that have grown to rely on the set-aside.

Discussion and Recommendations to Improve CDBG for Colonias

The data analysis and feedback from experts in the border colonial region reinforce the idea that HUD’s CDBG program significantly impacts colonias and serves as an important resource for the communities and groups involved in community development/housing affordability in this region of the United States. However, the program could still benefit from some improvements. Below are recommendations for improving CDBG set-aside programming.

Ensure that colonias experiencing the greatest needs have access to CDBG set-aside funding.

A recurring theme when interviewing colonia experts was that access to HUD’s CDBG set-aside funds was not equal from colonia to colonia or state to state. Capacity, especially for colonias in unincorporated areas, is a massive barrier to colonias in desperate need of resources. During several conversations, some experts expressed concern that CDBG funds may be going to new developments near colonia developments but that the funds weren’t being used to improve infrastructure or housing within the existing colonia.

In order to better identify colonias with greater needs and barriers, capacity building needs to be strengthened through increased community and civic engagement programming from technical assistance providers at every level. On-the-ground programming is the best way to ensure that CDBG programming is reaching colonias with the greatest needs in each region and in each state.

Increasing awareness and understanding about where CDBG funding is going can help ensure that states are awarding funds to colonias with the greatest needs. One possible consideration may be to use information from a relatively recent EPA/USDA assessment of communities along the U.S.-Mexico Border that classifies colonias based on level and type of need (Rural Community Assistance Partnership, 2015).

Consider adopting the definition of colonias investment areas to increase access to border communities and grow CDBG set-aside reach. A common concern raised during the conversation

with experts was the definition of colonias. Despite efforts to restrict the formation of new colonias, these communities exist. In both unincorporated and incorporated areas, no two colonias are the same. Labeling one community a colonia but not another one because of the year it was developed, where it is located along the border, or whether or not it has water access further limits these communities' access to resources, including HUD's CDBG nonentitlement set-aside. Adopting a modern definition can help pave the way for other federal programming that also uses restrictive or outmoded colonia definitions.

The incorporation of a colonia definition that is reflective of today's market, economic, and housing dynamics would also be more reflective of the CDBG programs' impact on colonias. Any expansion of the colonia definition must contain protections on its use to ensure that activities receiving the colonia set-aside classification truly aid them.

Increase set-aside funds to allow for greater impact within colonias. CDBG set-aside funds are a drop in the bucket for colonias. Along with modernizing the definition of colonias, increasing the CDBG funding is necessary to ensure that communities that need these resources the most have access. Increased funding would also reduce the costly and prohibitive competition for funds. If HUD truly wants to address the infrastructure and housing needs of these communities, major investments need to be made, and those investments need to be flexible.

Give colonias communities and residents the attention they deserve. It is no surprise that the topic of colonias is a polarizing issue. Often tied to conversations around immigration, many border state officials try to avoid addressing colonias. Unfortunately, this avoidance is a concern for experts on the ground. In the early days of CDBG's set-aside, colonias received notable and needed attention. In recent years, however, this attention has waned, causing colonias to fall back into the shadows. Bringing colonias back into the conversation, especially by local and state officials, can help elevate programming available to them.

Colonias vary by state, so flexibility is needed. States address the needs of colonias differently. Texas has set forth laws, such as the Model Subdivision Rule of 1995, to discourage the formation of new colonias. With the highest number of colonias, Texas has established programming that stakeholders have learned to navigate. Other states have not paid as much attention to their colonia communities. With the CDBG nonentitlement set-aside going directly to the state before being awarded to colonias and the organizations, administrative procedures can change from year to year, forcing some colonias to relearn protocols over and over again. Improving the bureaucratic process of CDBG funding can help with capacity issues on the ground.

Enhancing access to CDBG data would increase program visibility and impact. Although this report had access to the 2014 to 2023 CDBG data, increasing the visibility of this information can help inform communities, especially colonias, on the impact of the CDBG set-aside. Increased access to data and information can help inform strategies and solutions, allowing states to provide better advice for future programming to the communities that have been awarded funding. For instance, in New Mexico, set-aside funding was not used for public safety activities from 2014 to 2023. Future improved data collection and organization, along with enhanced capabilities of

linking data resources, could help users better identify and understand data reporting issues and help to develop a clearer picture of the CDBG program.

What's Next for CDBG and Colonia Communities?

Ultimately, the consistency and longevity of programming like HUD's CDBG nonentitlement colonia set-aside has helped colonias become more established communities, improving the quality of life for residents. This report seeks to highlight the tremendous efforts of HUD and its CDBG program while raising concerns and offering recommendations for improvements. Colonias and the individuals living in these communities deserve more, and this article is merely a stepping stone to more research that needs to be done.

Acknowledgments

This research aligns with the Housing Assistance Council's (HAC's) goal and dedication to increasing the understanding of colonias and helping serve colonias regions. Lance George, Eugene Gonzalez, and Arthur Marrujo, also from HAC, reviewed and provided assistance for this report. HUD provided CDBG data. Robert Calvillo (AHSTI), Nick Mitchell-Bennett (cdcb), Robert Peterson (HUD), Rey Garcia (TNB), Valerie Cardenas (TNB), Eugene Gonzalez (HAC), and Arthur Marrujo (HAC) participated in interviews throughout this research. HAC is solely responsible for the accuracy of the statements and interpretations of the data contained in this document. HAC is a national nonprofit corporation that helps build homes and communities across rural America. For over 50 years, HAC has supported local efforts to improve rural housing conditions. HAC is an equal opportunity employer and housing provider.

Authors

Keith Wiley is a senior researcher, and Manda LaPorte is a research associate at the Housing Assistance Council.

References

- Donelson, Angela, and Esperanza Holguin. 2001. "Homestead Subdivision," *Memoria of a Research Workshop: Irregular Settlement and Self-Help Housing in the United States*: 39–41.
- Durst, Noah J., and Elena J. Cangelosi. 2021. "Self-Help Housing and DIY Home Improvements: Evidence From the American Housing Survey," *Housing Studies* 38 (8): 1231–1249. DOI: [10.1080/02673037.2020.1759514](https://doi.org/10.1080/02673037.2020.1759514).
- Fannie Mae and Housing Assistance Council. 2020. *Colonias Investment Areas: Working Toward a Better Understanding of Colonia Communities for Mortgage Access and Finance*. <https://www.fanniemae.com/media/37566/display>.

Federal Reserve Bank of Dallas. 1996. *Texas Colonias: A Thumbnail Sketch of the Conditions, Issues, Challenges, and Opportunities*. <https://www.dallasfed.org/~/media/documents/cd/pubs/colonias.pdf>.

———. 2015. *Las Colonias in the 21st Century: Progress Along the Texas-Mexico Border*. <https://www.dallasfed.org/~/media/documents/cd/pubs/lascalonias.pdf>.

Housing Assistance Council. 2020. *Understanding Colonias Investment Areas: Working Toward a Better Understanding of Colonia Communities for Mortgage Access and Finance*. Washington, DC: Housing Assistance Council. <https://ruralhome.org/wp-content/uploads/2021/05/colonias-investment-areas-report.pdf>.

Mukhija, Vinit, and Paavo Monkkonen. 2006. “Federal Colonias Policy in California: Too Broad and Too Narrow,” *Housing Policy Debate* 17 (4): 755–780. <https://doi.org/10.1080/10511482.2006.9521589>.

———. 2007. “What’s in a Name? A Critique of ‘Colonias’ in the United States,” *International Journal of Urban and Regional Research* 31 (2): 475–488.

Núñez-Mchiri, Guillermina. 2009. “The Political Ecology of the Colonias on the U.S.-Mexico Border: Human-Environmental Challenges and Community Responses in Southern New Mexico,” *Southern Rural Southern Rural Sociology* 24 (1): 70.

Olmedo, Carlos, and Peter M. Ward. 2016. “Model Subdivisions: The New Face of Developer Lot Sales for Low-Income Colonia-Type Housing in Texas,” *Land Use Policy* 52: 181–194. <https://doi.org/10.1016/j.landusepol.2015.12.003>.

Parcher, Jean W., and Delbert G. Humberson. 2007. “CHIPS: A New Way to Monitor Colonias Along the United States-Mexico Border.” U.S. Geological Survey Open File Report 2007-1230. <https://pubs.usgs.gov/publication/ofr20071230>.

Rural Community Assistance Partnership. 2015. *U.S.-Mexico Border Needs Assessment and Support Project: Phase II Assessment Report*. Prepared for the United States Department of Agriculture, Rural Development. https://rcap.org/wp-content/uploads/2016/03/RCAP_Colonias-Phase-II-Assessment-Report_FINAL_web.pdf.

Ward, Peter M., and Paul A. Peters. 2007. “Self-Help Housing and Informal Homesteading in Peri-Urban America: Settlement Identification Using Digital Imagery and GIS,” *Habitat International* 31: 205–218.

Wiley, Keith, Lance George, and Sam Lipshutz. 2021. “Colonias Investment Areas: A More Focused Approach,” *Cityscape: A Journal of Policy Development and Research* 23 (3). <https://www.huduser.gov/portal/periodicals/cityscpe/vol23num3/ch1.pdf>.