This report constitutes the comprehensive documentation of information that was gathered, evaluated, and assessed to develop the recommendations presented at the conclusion of this study. The City staff and community members were very helpful in providing information and documents requested along the way in regards to the state of housing and aspects related to quality of residential development, and residential issues in Nogales.

The project was funded by the Arizona Department of Housing through a contract with the Drachman Institute during the contract year of 2007-2008.

Credits:
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Masakazu Aoe, Architecture Student, School of Architecture
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with
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Marilyn Robinson, Associate Director, Drachman Institute
Corky Poster, Director, Drachman Institute
Introduction

Scope of Document  pg iii
Uniqueness of Nogales  pg iv
The Arizona Department of Housing received a grant proposal from the City of Nogales requesting technical assistance from the Drachman Institute. The scope of work indicated was for an overall housing assessment determining both physical conditions of housing and potential affordable housing needs in the city. The agreed upon scope of work includes the following:

- Conduct windshield surveys of general neighborhood housing and property conditions to provide a current visual assessment of the City’s housing stock for identified areas;
- Summarize the existing housing data including housing stock quantity, age, and home sizes (rooms per dwelling);
- Estimate possible workforce or other community housing needs including sizes and levels of affordability;
- Develop a set of Recommendations for addressing possible affordable housing needs and suggest methods and strategies for facilitation and implementation of these recommendations.

An initial project scope meeting was held in Tucson with representatives from Arizona Department of Housing, Drachman Institute staff, and City of Nogales staff. Subsequent progress presentations were made to the Santa Cruz Affordable Housing Partners and various survey visits were conducted. The dates for each of these site visits, meetings, and presentations were as follows:

- Project Scope Meeting October 5, 2007
- Initial Visual Survey of Central City Target Areas December 14, 2007
- Overview Survey of entire city for overview analysis April 27, 2008
- Housing Assessment Progress Presentation May 8, 2008
- Housing Assessment + Strategic Plan Final Presentation July 28, 2008
Nogales, Arizona is a unique place with a dual identity; it is both an American city and a Mexican city. The figure/ground maps above reveal this interesting character: Nogales, Arizona’s urban patterns bear similarities to both those of Sierra Vista, Arizona and those of Nogales, Sonora. Nogales, Arizona has the density of Nogales, Mexico but also some of the street and suburban layouts of American cities, characterized by Sierra Vista. The city of Nogales is defined by its topography, and its existence shows the sensitivity that the original city planners had towards the landscape. In many American cities, the ground has been completely leveled to make way for development. In the City of Nogales, the distinctly red hills still define the city, creating pockets of higher density in areas with less slope. All of these elements are part of what makes Nogales a distinctive place.
The Assessment portion of the housing analysis is a process of collecting quantitative and qualitative data for housing, economic conditions, and demographics within the city of Nogales.

The Assessment is divided into two parts: Statistical and Visual. The Statistical Assessment is a review of the 2000 U.S. Census data, including statewide and county comparisons of demographic and economic information. Further data was collected for the City of Nogales at the census tract level, providing a more detailed understanding of the demographic and economic differences that exist based on geographic location in the city.

The Visual Assessment is a review of the existing housing stock and its physical condition. A windshield survey was conducted for the identified target area, in which the researchers at the Drachman Institute evaluated the exterior condition (there was no review of the interior condition of any of the housing). The housing stock is rated according to five categories: excellent, good, fair, poor, and replacement.
The housing survey begins by taking a look at information from the 2000 U.S. Census. The map to the left shows the boundaries of the census tracts, and the target area identified based on the compiled information.

It should be noted that although the data from the 2000 Census was gathered nearly a decade ago, the information for Nogales appears to be still valid as we are advised that there has been minimal change in the city’s population and economy during this period. The information analyzed in this document is based on the census tracts in Nogales. Census tract 9961.02 extends beyond the boundaries of the city of Nogales and includes parts of Rio Rico and the remainder of Santa Cruz County.
Statewide Comparisons

The following charts depict Santa Cruz county - in which Nogales is located - in relation to all Arizona counties. In general, Santa Cruz County is shown to have a relatively small population and average income and housing costs.

Source: 2000 U.S. Census and the Arizona Department of Economic Security
From the county level, we look more specifically at the census tracts within Santa Cruz County. Tract 9964.02 contains downtown Nogales and the Target Study Area, as shown on the map on page 3.

**Population (Census 2000)**

<table>
<thead>
<tr>
<th>Tract 9960</th>
<th>Tract 9961.01</th>
<th>Tract 9961.02</th>
<th>Tract 9962</th>
<th>Tract 9963</th>
<th>Tract 9964.01</th>
<th>Tract 9964.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,781</td>
<td>1,990</td>
<td>12,875</td>
<td>4,143</td>
<td>7,944</td>
<td>3,845</td>
<td>4,999</td>
</tr>
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</table>

**Median Gross Rental Cost (Census 2000)**

<table>
<thead>
<tr>
<th>Tract 9960</th>
<th>Tract 9961.01</th>
<th>Tract 9961.02</th>
<th>Tract 9962</th>
<th>Tract 9963</th>
<th>Tract 9964.01</th>
<th>Tract 9964.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>$453</td>
<td>$780</td>
<td>$589</td>
<td>$472</td>
<td>$424</td>
<td>$463</td>
<td>$426</td>
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</tbody>
</table>

**Median Household Income (Census 2000)**

<table>
<thead>
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<th>Tract 9960</th>
<th>Tract 9961.01</th>
<th>Tract 9961.02</th>
<th>Tract 9962</th>
<th>Tract 9963</th>
<th>Tract 9964.01</th>
<th>Tract 9964.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>$41,325</td>
<td>$38,624</td>
<td>$34,800</td>
<td>$27,219</td>
<td>$21,555</td>
<td>$26,116</td>
<td>$19,785</td>
</tr>
</tbody>
</table>

**Median Home Price (Census 2000)**

<table>
<thead>
<tr>
<th>Tract 9960</th>
<th>Tract 9961.01</th>
<th>Tract 9961.02</th>
<th>Tract 9962</th>
<th>Tract 9963</th>
<th>Tract 9964.01</th>
<th>Tract 9964.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>$172,700</td>
<td>$161,900</td>
<td>$92,600</td>
<td>$128,100</td>
<td>$55,500</td>
<td>$56,600</td>
<td>$59,800</td>
</tr>
</tbody>
</table>

Source: 2000 U.S. Census
The density graphs reveal that tract 9964.02 has the highest density in the City of Nogales. There is also a relatively low number of housing units, which begins to suggest that there may be overcrowding occurring within the housing units.

Source: 2000 U.S. Census
Population by Race for the City of Nogales

Percentage of Races for Tract 9961.02
- White: 79.4%
- Black or African American: 2.7%
- American Indian and Alaska Native: 0.1%
- Asian: 0.8%
- Native Hawaiian and other Pacific Islander: 0.5%
- Some Other Race: 2.6%
- Two or More Races: 0.2%

Percentage of Races for Tract 9962
- White: 79.4%
- Black or African American: 2.7%
- American Indian and Alaska Native: 0.1%
- Asian: 0.8%
- Native Hawaiian and other Pacific Islander: 0.5%
- Some Other Race: 2.6%
- Two or More Races: 0.2%

Percentage of Races for Tract 9963
- White: 79.4%
- Black or African American: 2.7%
- American Indian and Alaska Native: 0.1%
- Asian: 0.8%
- Native Hawaiian and other Pacific Islander: 0.5%
- Some Other Race: 2.6%
- Two or More Races: 0.2%

Percentage of Races for Tract 9964.01
- White: 77.8%
- Black or African American: 3.3%
- American Indian and Alaska Native: 0.2%
- Asian: 0.8%
- Native Hawaiian and other Pacific Islander: 0.5%
- Some Other Race: 2.6%
- Two or More Races: 0.1%

Percentage of Races for Tract 9964.02
- White: 81.1%
- Black or African American: 2.7%
- American Indian and Alaska Native: 0.1%
- Asian: 0.8%
- Native Hawaiian and other Pacific Islander: 0.5%
- Some Other Race: 2.6%
- Two or More Races: 0.1%

White vs. Hispanic Population
- Percent of Population that is White: 79.3%
- Percent of Population that is Hispanic: 93.3%

Source: 2000 U.S. Census
Age and Sex Comparisons in the City of Nogales

Tract 9961.02
- Under 18: 17.5%
- 18-24: 31.3%
- 25-44: 37.6%
- 45-64: 7.6%
- 65 and Over: 0.1%

Median Age: 28.9

Tract 9962
- Under 18: 17.7%
- 18-24: 29.1%
- 25-44: 38.3%
- 45-64: 6.5%
- 65 and Over: 8.5%

Median Age: 27.7

Tract 9963
- Under 18: 10.7%
- 18-24: 24.6%
- 25-44: 20.9%
- 45-64: 29.1%
- 65 and Over: 4.5%

Median Age: 30.1

Tract 9964.01
- Under 18: 11.5%
- 18-24: 23.8%
- 25-44: 20.5%
- 45-64: 11.5%
- 65 and Over: 34.6%

Median Age: 30.4

Tract 9964.02
- Under 18: 10%
- 18-24: 25.1%
- 25-44: 18.4%
- 45-64: 14.4%
- 65 and Over: 32.2%

Median Age: 31.1

Males Per 100 Females
- All Ages: 83
- 18 and Above: 81.9

Source: 2000 U.S. Census
Tract 9964.02 has the highest percentage of people who were living at or below the poverty level in 1999. This begins to demonstrate the need for affordable housing in this particular area.

Source: 2000 U.S. Census
According to the 2000 U.S. Census, Tract 9964.02 has the highest percentage of non-family households in Nogales.
The 2000 U.S. Census data reveals that Tract 9964.02 has the highest percentage of female householders, and the lowest percentage of married couple households.
The data reveals that Tract 9964.02 has the highest percentage of householders living alone and the highest percentage of elderly householders. This begins to indicate that housing accessible for seniors and perhaps single residence occupancy housing solutions may be appropriate choices for future housing developments in the target area.
Homeowners vs. Renters in the City of Nogales

The graph to the left reveals that Tract 9964.02 has the highest percentage of renters and is also the only tract in the City of Nogales that has a higher percentage of renters than home owners. If it can be assumed that Nogales renters have generally lower incomes than home owners, this may be an indication that this area is in need of affordable housing solutions.

Source: 2000 U.S. Census
Statistical Assessment

Reasons for Vacant Housing in the City of Nogales

Source: 2000 U.S. Census
Overall, the City of Nogales had 60% of ownership of households with a mortgage and 40% without a mortgage. There is a relatively high number of households without a mortgage, which shows a potential for homeowners to reinvest in their homes.

Source: 2000 U.S. Census
The primary occupational activity throughout the population living in Nogales appears to be sales and office occupations.
The most densely populated areas of Nogales are the ones where people use public transportation, though even then, the percentage remains small.

Source: 2000 U.S. Census
Information from City-Data.com reveals that there is a Nogales daytime population change due to 2,405 people commuting into the city, which is approximately 11.5% of the population. This shift in population appears to be due to people working for the city, state, and federal governments, who primarily live outside the City of Nogales and commute to work.
Housing Characteristics for the City of Nogales

Tract 9964.02 has the largest proportion of older housing stock in the City of Nogales.

Source: 2000 U.S. Census
Unit Number : Tract 9961.02
- Single Unit Dwellings: 92%
- Dwellings in Buildings With 2-9 Units: 17%
- Dwellings in Buildings of 10 Units or More Units: 1%

Unit Number : Tract 9962
- Single Unit Dwellings: 73%
- Dwellings in Buildings With 2-9 Units: 22%
- Dwellings in Buildings of 10 Units or More Units: 5%

Unit Number : Tract 9963
- Single Unit Dwellings: 61%
- Dwellings in Buildings With 2-9 Units: 39%
- Dwellings in Buildings of 10 Units or More Units: 0%

Unit Number : Tract 9964.01
- Single Unit Dwellings: 73%
- Dwellings in Buildings With 2-9 Units: 22%
- Dwellings in Buildings of 10 Units or More Units: 5%

Unit Number : Tract 9964.02
- Single Unit Dwellings: 58%
- Dwellings in Buildings With 2-9 Units: 34%
- Dwellings in Buildings of 10 Units or More Units: 8%

Tract 9964.02 has the most multifamily units, reflective of the higher density in this area.

Source: 2000 U.S. Census
Housing Characteristics for the City of Nogales

Tract 9964.02 has the highest percentage of units lacking complete plumbing or kitchens, the smallest units, and the greatest reported overcrowding.

Overcrowding should not be confused with density. The U.S. Census Bureau defines overcrowding as conditions where there is more than one person per bedroom, while the U.S. Department of Housing and Urban Development (HUD) defines it as more than two persons per bedroom. Density is a measure of units per acre, and is not necessarily an indicator of overcrowding.

Source: 2000 U.S. Census
There are a few main points to consider from the information analyzed in the Statistical Assessment:

- The City Median Income is less than half that of the state median income.
- First-time home ownership is unaffordable due to low income levels.
- There is a high rental population, likely due in part to the aforementioned issue.
- The existing houses are small, with a high percentage of people sharing rooms, which suggests that there is possible overcrowding.
- The housing stock is older, and some homes lack adequate facilities.
- There is very little new construction taking place, and when there is new construction it tends to be expensive.
- There is a high stress area (inadequate housing to meet needs combined with lack of affordability) in the densest part of the city. This area has the lowest incomes, the greatest number of people per housing unit, and the greatest number of housing units per square mile.

When taken together, the data in this section indicated that the downtown area of Nogales was appropriate for targeted study, as there is a demonstrated need for increased affordable housing in census tract 9964.02. The visual assessment which follows further examines this area.
The figure/ground map to the left shows the urban pattern for the whole of the City of Nogales (the Target Study Area is outlined in red). The map shows clusters of neighborhoods grouped together that vary in density and pattern. Some neighborhoods are planned communities, while others are scattered across the landscape. The neighborhoods are isolated from one another as the hills of Nogales create physical barriers between them.

There is a different approach to the way the southern part of Nogales has developed as opposed to the north. In the northern area, the neighborhoods are distinct from one another and follow regular grid patterns. To the south, the neighborhoods have a more organic form that appears to be shaped by the topography. As a whole, the urban form of Nogales reflects that development has occurred in a piecemeal fashion and that the topography has been one of the biggest determinants in that development.
The figure/ground map for the target area shows that tract 9964.02 is one of the densest settlements in the City of Nogales. It also shows that there is a central core within the downtown area, shown shaded, comprised of civic and commercial structures. To the east and west of this core, smaller scale residential neighborhoods have developed. As a whole, there is no clear sense of a grid or imposed development pattern; instead, the streets seem to radiate from the core, and are determined by the topographical features.
This map delineates an interpretation of neighborhood divisions within the target area of study. They have been created according to geographic boundaries and shared physical characteristics observed during the visual survey.

The following pages contain sample images of each neighborhood that exemplify the housing in that area. The pictures give a sense of neighborhood character and demonstrate the exterior condition of homes, which informs housing needs.
Visual Assessment
Northeast Neighborhood
Visual Assessment
Southeast Neighborhood
Visual Assessment
Northwest Neighborhood
Central Neighborhood
812 N. Western Ave. Community
Homes included in the The Visual Survey were evaluated according to five categories defined below:

- **Excellent = $0**
  This is a house that is like new, everything is kept up, and no work is apparently needed.

- **Good = up to $25,000**
  This property is in good condition, but needs up to $25,000 in repair as part of normal maintenance. These are primarily cosmetic improvements.

- **Fair = $25,000-$45,000**
  Fair condition means that the house is a “fixer-upper.” The structure and general situation is good, but $25,000 to $45,000 in work is needed.

- **Poor = $45,000-$65,000**
  Poor condition units need major rehabilitation and $45,000 to $65,000 in repair work, but are still worth repairing.

- **Replacement**
  When the cost to repair the house is greater than the value of the final product, then the home is deemed to need replacement. This would include abandoned or severely dilapidated buildings, provided they have no historic value.
Excellent
3 “Excellent” Properties
0.17% of all Properties

Good
559 “Good” Properties
33.33% of all Properties

Fair
845 “Fair” Properties
50.39% of all Properties

Poor
130 “Poor” Properties
7.75% of all Properties

Replace
3 “Rehab Cost Greater Than Value” Properties
0.17% of all Properties

Vacant
137 “Vacant” Properties
8.17% of all Properties
Manufactured Housing

47 “Fair” Properties (72.31%)
18 “Poor” Properties (27.70%)
3.88% of all Properties
Multifamily Housing
13 “Good” Properties (27.08%)
29 “Fair” Properties (60.42%)
6 “Poor” Properties (12.5%)
2.86% of all Properties
182 Total Units
Infill Potential for Vacant Properties
Based on topography

Legend
- Developable
- Undevelopable

107 undevelopable
30 developable
The windshield survey was continued in seven regions outside the target area that were identified to be areas of interest or concern. The following section illustrates the findings in these neighborhoods outside the downtown/Target Area.
Overall, the condition of most of the housing stock both in and outside the Target Area is predominantly “fair,” with a smaller percentage of the housing stock being in either “good” or “poor” condition. This information, in combination with the fact that 40% of the household owners have no mortgage, begins to raise the question of how these homeowners might begin to gain access to the equity in their homes for home improvement projects. Furthermore, the housing in the target area is generally small, and could be added on to.

From an aesthetic perspective, much of the housing stock has good historic integrity and character. Many of the neighborhoods that were identified have very recognizable features that begin to create an identity for these areas. These characteristics should be preserved and enhanced.
Evaluation/Analysis

Introduction - pg 49

Affordability Gap - pg 50

Livability - pg 53
  - Livability Map
  - Livability Assessment/ Recommendations

Historic Neighborhood Analysis - pg 60

Subdivisions by Development
  - Development by Decade maps (Condition + Neighborhood)
  - Historic Maps and Individual Landmark Buildings
  - Subcategory Conclusions

Housing Stock Analysis - pg 87
  - Periods/Types
  - Features

Physical Capacity Analysis - pg 103
  - Zoning
  - Infrastructure
  - Downtown Potential for Adaptive Reuse
This evaluation and analysis chapter provides a more detailed examination of many of the central issues related to housing conditions in the city of Nogales.

- The **affordability gap analysis** compares economic indicators to determine the level of demand for affordable housing in the city.

- The **livability analysis** is an evaluation based on the geographic placement of amenities in relation to housing within the target area.

- The **historic neighborhoods analysis** aims to understand the historic trends in neighborhood growth and construction.

- The **housing stock analysis** categorizes architectural features that are typical of Nogales homes.

- The **physical capacity analysis** examines possibilities for development, extension, and expansion of housing within the historic core of the city.
Housing Cost Gap Analysis Summary

The size of the circles shown on the graph on the upper left represent the portion of the Nogales workforce employed in that arena. The occupational dispersion data shown above indicates that Sales and Office occupations comprise the largest portion of the resident workforce. The Sales and Office occupations also represent the second lowest annual median income levels for the overall workforce sectors, earning an average of $20,135 per year. In contrast, Management and Professional occupations earn a median annual income level of $37,688. The total resident workforce represented in this graph is 6,257 employees.

The graph on the upper right represents the monthly housing cost limits to maintain affordability levels (determined by HUD at 30% AGI) for each sector of the workforce. In other words, the worker should be spending no more than the dollar amount appearing in the circle on his or her monthly housing costs. Sales and Office occupations can generally contribute $500 per month towards housing and housing-related costs, while Management and Professional occupations can contribute $850 to housing each month and remain within affordability levels.

The value of the housing stock in Nogales has remained fairly steady over the past decade, depreciating slightly. Much of the new housing construction in the past 5-10 years has taken place in the community of Rio Rico north of the Nogales city limits, and most of the affordably priced housing for middle-income working-class families has developed in Rio Rico and not in Nogales. The newer housing construction in Nogales has generally been very limited (only 26 residential permits in 2006), and the recent average construction price falls around $202,500. This is partially due to the limited amount of developable land within the city limits, the steep topography, and the limited infrastructure supply. The result of these limitations is that the new housing construction in Nogales has generally been higher-end home development that is unattainable for lower-income households.

Most of the existing homeownership housing stock has been occupied by families for decades. The proportion of homeownership households without a mortgage is at a very high 40% for the city. However, to date there is very little evidence of major reinvestment efforts in the existing aging housing stock, which is something that the City and its partners should consider for encouraging future city success. Also, some properties have acquired additional manufactured housing units or secondary accessory structures, indicating the need for additions and expansions to existing housing stock for larger family size or for investment property rental unit additions.

It is important to mention the overall decline of the housing market during the time of this study. The recent downturn can be partially attributed to the national phenomenon of sub-prime lending and the increase in foreclosures generally affecting the housing market. This nation-wide situation has greatly impacted the state of Arizona, where housing growth has been more rapid than many other states over the past 3-5 years, and thus is experiencing a greater decline due to these trends. Housing development has essentially come to a halt, with investors completely withdrawing interest from the residential sector. The price and quantity of housing units on the market is inflated, causing sales to slump.

Despite the resultant decline in housing sales prices, the generally upward trend may revive itself. In addition, increases in housing costs have far outpaced any wage increases, leaving a large gap between what people can afford to pay for housing and how housing is priced. Concerns of housing affordability should be considered for the long-term planning of a stable resident workforce in the City of Nogales.

The graphs on the following pages highlight some of the gaps that exist between incomes and housing costs.
The graph above represents the total available housing units on the market in the Nogales vicinity in 2007, and the median sales prices for the range available. There were 566 units on the market, including single-family, manufactured homes, condominiums, and townhomes. The size of the circles is representative of the percentage of housing units available within a certain price range (indicated by the Sales Price column on the left of the graph). About 109 housing units at or below a median price of $100,000 were available in 2007. All other housing units ranged in median price from $150,000 through $300,000.

The graph above represents the average monthly costs for the housing that was on the market in Nogales in 2007. The monthly costs are calculated based on a standard 30-year mortgage at a 6% interest rate, plus insurance, utilities, maintenance and reserve (totalling approximately an additional $500/month on top of the mortgage payments). The range of monthly costs are between $1,100 and $2,300. The median monthly ownership costs for 2007 housing units falls around $1,600 per month.
The graph on the upper left compares the 2007 homeownership housing costs to the affordable monthly housing cost limits by workforce dispersion for a one-income household. The red circles represent the 2007 housing units for sale (quantified by relative size of the circles) and the monthly costs required to own those homes. The colored circles along the bottom of the graph represent the workforce dispersion and the median monthly amount that such a worker could allot to housing costs and remain within affordability limits (30% AGI). For a one-income household, there is clearly a wide gap that exists between what the workforce earns and can afford compared to the cost of housing in Nogales. Only the upper pay grades in the Management + Professional occupations could attain even the lowest-cost housing available on a single income.

The graph on the lower left compares the 2007 homeownership housing costs (red circles) to the affordable monthly housing cost limits for a one-and-a-half-income household by workforce dispersion (colored circles). For a one-and-a-half-income household, there is still a wide gap that exists between what the majority of the lower-income workforce can afford and the cost of housing. The lowest-cost housing available in 2007 (with a median monthly cost of $1,098) is still unattainable for one-and-a-half income households in the Construction + Maintenance, Sales + Office, and Service sectors.

The graph on the upper right compares the 2007 homeownership housing costs (red circles) to the affordable monthly housing cost limits for a two-income household by workforce dispersion (colored circles). For a two-income household, there is still a gap that exists between what the Service workforce sector can afford compared to the cost of available housing. However, in the two-income scenario, all other workforce sectors can now potentially attain most of the housing on the market, with exception of the housing above $300,000 dollars ($2,292 in monthly costs).

It is important to note that there is a high percentage of single-income earner households in the City of Nogales (as identified from the US Census 2000 data). There is also a fairly high percentage of unmarried female householders with children. It is clear that much of the for-sale housing is unavailable for these particular families considering the affordability gap that exists for one-income households.
The geography of Nogales offers many challenges and opportunities in terms of livability. Topography tends to isolate neighborhoods by making interrelation and movement difficult, both between neighborhoods and between residential areas and amenities. The dispersion of heavily trafficked highways, streets, and railways in the landscape further subdivides and isolates residential areas. The concentration of activity and amenities that occurs in the historic town center, however, is a major advantage that increases the livability within the neighborhoods clustered around that core.
Parks
There are very few parks within the city of Nogales. Almost all parks exist within the historic core of Nogales, and very few neighborhoods and subdivisions outside the target area have local parks. This deficit has an impact on quality of life for Nogales residents, though it is likely that the many tracts of undeveloped and easily accessible land that exist in the city are used as a substitute for official parks.

While the primary target area has more community parks than elsewhere in the city, it still lacks sufficient public open space. Particularly in the areas west of the commercial core where - despite having the highest population density - no local parks exist. To the east of the commercial core, several easily accessible parks serve local neighborhoods. Some successful parks in this area have a significant positive impact on their neighborhoods by acting as centers for activity and reinforcing local identity.

Community Centers
Two significant clusters of community facilities exist within Nogales. One, the athletic center, is relatively far from residential areas and is most likely accessed entirely by use of the automobile. Its surroundings - commercial and undeveloped area - offer few opportunities for the center to generate activity within its context. The symbolic sense of center and opportunities for informal interaction that a community center ought to generate are not present here, perhaps primarily because of the complex's isolation from the community core.

The second community center is located within the target area, and in close proximity to many residential neighborhoods. This center offers more opportunities to reinforce positive attributes of neighborhood identity and improve day-to-day quality of life because of its location. The center is placed so that it has potential to act as an important generator for activity and a symbolic center for the community.
Medical Centers

Two medical centers exist in Nogales, and both are fairly close to the target area, but separated from it by topographical barriers (and in the case of the Carondelet Holy Cross Hospital, the freeway). Neither institution is directly inside the historic core, or in direct proximity to residential areas. The distance between the medical centers and primary living areas may be a general advantage because of the traffic and noise that medical institutions generate. However, this placement precludes direct pedestrian access to medical amenities. Overall, the existence of medical centers and their relatively close proximity to residences undoubtedly has a positive impact on quality of life in the target area.

Schools and Colleges

Many of Nogales’ schools, especially elementary schools, appear to be localized. There is a significant potential for students to walk and bike to school from the city’s major residential neighborhoods. Some schools and colleges outside of the target area are isolated in patches of industrial or commercial activity. This locational strategy neglects opportunities for short or alternative-mode commutes that exist for schools integrated into neighborhoods, as well as reducing the likelihood that schools will serve as social and symbolic centers for the community.

Within or close to the target area of study there are seven primary schools, a parochial school, a medical training school, a college, and a school for the deaf and blind. The local presence of these institutions offers significant opportunities for non-automobile commuting. The majority of schools are located in the city’s commercial core or at the periphery of residential areas. Often these institutions are separated from major residential areas by considerable pedestrian barriers, including topography, the freeway, heavily trafficked roadways, and the railway lines. It is likely that schools that are isolated in this way are accessed entirely by motor vehicles. Strategically placed pedestrian amenities, including sidewalks, crosswalks, bike paths, urban trails, and overpasses, could significantly alter the way in which local schools are accessed.
Libraries, Museums, and Galleries

The only major cultural institutions in Nogales exist within the target area in the town’s historic core. The three institutions are relatively dispersed, but their centralized placement within the city offers a strong opportunity for quick access or access by alternative means. From any residential portion of the target area, the library can be accessed by a quick bicycle ride or an extended walk. The proximity of cultural institutions contributes to the quality of life in the target area.

Transportation

Planned public transportation routes follow the central automobile traffic lanes of the city and encircle the target area. These routes could have a major positive impact for residents who do not have access to motor vehicles. The lines have the potential to make the more distant, like the medical centers, the athletic center, and some schools and colleges, much more accessible amenities. In an extreme case, a popular bus line could generate significant activity that would encourage the development and extension of amenities available within the historic core. The placement of bus lines at the periphery of residential areas means that residents will need to commute to the bus lines by foot or bike, and this commute may not be very easy or pleasurable without some form of street enhancement.
Commercial Area

A historic commercial core lies at the heart of the target area. The historic pattern of interdependence and interaction between residential and commercial areas is clearly evident in the townscape. The traditional pattern has been challenged and altered by more contemporary developments that disperse commercial areas across the city and are based on automobile access, large parking lots, and inexpensive construction methods. This commercial paradigm may have little relevance for the target area because of the limited space and high densities to be found there. It may be that dispersed, automobile-based commercial areas are actually inconvenient for target area residents because of the long trips on heavily trafficked roads involved in accessing them. The potential quality of life benefits offered to residents by the existence of a healthy, relevant, and diverse commercial district are numerous; the existence of the historic commercial core within the target area is therefore a definite quality of life advantage. The historic commercial area is easily reached from any part of the primary target area by foot, bike, or a very short car trip, which makes the area readily accessible for day-to-day needs.

Industrial Areas

Nogales’ light industrial districts are generally placed far away from residential areas, with one major swath to the west in proximity to the freeway, and another in the north-central portion of the town along Grand Avenue. The placement of these areas has the advantage of keeping undesirable industrial noise, traffic, and views away from residential areas. One disadvantage, however, is that workers are forced into an automobile commute, since industry is generally distant from both residential areas and the historic commercial core. Planned bus routes may help somewhat in encouraging alternative transport, but the fact remains that the route to work for industrial workers who live in the target area is not easy or direct.
Livability Map

Legend
- Parks
- Community Centers
- Medical Centers
- Schools and Colleges
- Libraries, Museums, and Galleries
- Commercial Areas
- Industrial Areas
- Proposed Transit Routes
This section explores how Nogales has developed by decade. Each decade is represented by a map of the historic downtown/Target Area showing which structures were built at that time. The neighborhood(s) constructed are also shown, along with information about the current condition of the housing stock.

The general pattern of development within Nogales appears at first to be relatively sporadic; however upon closer inspection it becomes clear that there have been a few trends over the decades. The city began its development close to the core, around Morley and Grand Avenues where the railroads run. These settlements became more dense as development slowly moved outwards to the east and west.

It is also interesting to note the correlation between housing condition and the decade in which it was built. The 1950s and 1960s were a time of development, and it appears that the highest percentage of houses still in good condition were built during these decades. The construction techniques utilized during this era seem to have stood the test of time and may be worth emulating in future developments.
Historic Neighborhood Analysis

- Court Neighborhood (1900-1999)
- Southern Neighborhood (1900-2008)
- Bella Vista Terrace (1890-2008)
- N.L. & I. Subdivision (1910-2008)
- Cumming McIntyre (1970-1999)
- Liberty Place (1960-1999)
- Lydia Park (1900-1979)
- Elm School (1900-1999)
- Herold Subdivisions (1900-2008)
- Spargur Heights (1950-2008)
- Noon Addition (1900-2008)
- Beck Subdivision (1900-1999)
- Mountain View (1900-2008)
- Lomas Encinos (1960-1999)
- Morelo's Park (1910-2008)
- Ellis Ranch (1900-2008)
- Wise Subdivision (1920-2008)
- Smelter Tract (1900-2008)
- Sherman Heights (Not Developed)
- Bella Vista Heights (1980-1999)
- Western Subdivision (1900-2008)
- Town Terraces No. 1 (1960-1979)
- Flores Tract (1960-1969)
- City of Nogales (1910-1999)
- Villa Coronado (1940-2008)
- Villa Hermosa (1940-1999)
- Macris Manor (1940-2008)
- Northern Addition (1900-2008)
- Silver Place (1980-1989)
- Barry Tract (1940-1999)

Data taken from the Santa Cruz County Assessor maps.
Historic Neighborhood Analysis

Development by Decade-1890-1899

- New Development
- Existing Development
- Undeveloped
- Non-residential
Evaluation/Analysis

Historic Neighborhood Analysis

Development by Decade-1890-1899

Legend
- Excellent
- Good
- Fair (1 lot, 100%)
- Poor
- Rehab cost exceeds property value
- Vacant

Property Conditions for 1890-1899

Legend
- Soto Subdivision
- Court Neighborhood
- Southern Neighborhood
- Bella Vista Terrace (1 lot)
- N.L. & I. Subdivision
- Cumming McIntyre
- Liberty Place
- Lydia Park
- Elm School
- Herold Subdivisions
- Spargur Heights
- Noon Addition
- Beck Subdivision
- Mountain View
- Lomas Encinos
- Morelo’s Park
- Ellis Ranch
- Wise Subdivision
- Smelter Tract
- Sherman Heights
- Bella Vista Heights
- Western Subdivision
- Town Terraces No. 1
- Condominio del Sol
- Flores Tract
- City of Nogales
- Villa Coronado
- Villa Hermosa
- Macris Manor
- Northern Manor
- Silver Place
- Barry Tract
Historic Neighborhood Analysis
Development by Decade-1900-1909

- New Development
- Existing Development
- Undeveloped
- Non-residential
Development by Decade-1900-1909

Legend
- Excellent
- Good (14 lots)
- Fair (57 lots)
- Poor (15 lots)
- Rehab cost exceeds property value
- Vacant

Property Conditions for 1900-1909

- Fair 67%
- Good 16%
- Poor 17%
- Vacant 0%
- Replacement 0%

- Soto Subdivision
- Court Neighborhood (10 lots)
- Southern Neighborhood (4 lots)
- Bella Vista Terrace (22 lots)
- N.L. & I. Subdivision
- Cuming McIntyre
- Liberty Place
- Lydia Park (5 lots)
- Elm School (27 lots)
- Herold Subdivisions (8 lots)
- Spargur Heights
- Noon Addition (2 lots)
- Beck Subdivision (5 lots)
- Mountain View (3 lots)
- Lomas Encinos
- Morelo’s Park (1 lot)
- Ellis Ranch (3 lots)
- Wise Subdivision
- Smelter Tract (1 lot)
- Sherman Heights
- Bella Vista Heights
- Western Subdivision (2 lots)
- Town Terraces No. 1
- Condominio del Sol
- Flores Tract
- City of Nogales
- Villa Coronado
- Villa Hermosa
- Macris Manor
- Northern Addition (2 lots)
- Silver Place
- Barry Tract
Historic Neighborhood Analysis

Development by Decade - 1910-1919

- New Development
- Existing Development
- Undeveloped
- Non-residential
Development by Decade-1910-1919

Legend
- Excellent
- Good (42 lots, 33%)
- Fair (69 lots, 55%)
- Poor (15 lots, 12%)
- Rehab cost exceeds property value
- Vacant

Property Conditions for 1910-1919

- Excellent 0%
- Fair 55%
- Poor 12%
- Vacant 0%
- Replacement 0%

Neighborhoods by Decade
- Soto Subdivision
- Court Neighborhood (21 lots)
- Southern Neighborhood (3 lots)
- Bella Vista Terrace (7 lots)
- N.L. & I. Subdivision (3 lots)
- Cumming McIntyre
- Liberty Place
- Lydia Park (4 lots)
- Elm School (26 lots)
- Herold Subdivisions (17 lots)
- Spargur Heights
- Noon Addition (2 lots)
- Beck Subdivision (7 lots)
- Mountain View (12 lots)
- Lomas Encinos
- Morelo’s Park (5 lots)
- Ellis Ranch (2 lots)
- Wise Subdivision
- Smelter Tract (13 lots)
- Sherman Heights
- Bella Vista Heights
- Western Subdivision (5 lots)
- Town Terraces No. 1
- Condominio del Sol
- Flores Tract
- City of Nogales (1 lot)
- Villa Coronado
- Villa Hermosa
- Macris Manor
- Northern Addition (4 lots)
- Silver Place
- Barry Tract
Historic Neighborhood Analysis

Development by Decade-1920-1929

- New Development
- Existing Development
- Undeveloped
- Non-residential
Development by Decade-1920-1929

Legend
- Excellent
- Good (32 lots, 30%)
- Fair (67 lots, 64%)
- Poor (6 lots, 6%)
- Rehab cost exceeds property value
- Vacant

Property Conditions for 1920-1929

- Soto Subdivision
- Court Neighborhood (11 lots)
- Southern Neighborhood (3 lots)
- Bella Vista Terrace (4 lots)
- N.L. & I. Subdivision
- Cumming McIntyre
- Liberty Place
- Lydia Park (3 lots)
- Elm School (11 lots)
- Herold Subdivisions (9 lots)
- Spargur Heights
- Noon Addition (14 lots)
- Beck Subdivision (13 lots)
- Mountain View (7 lots)
- Lomas Encinos
- Morelo's Park (3 lots)
- Ellis Ranch (11 lots)
- Wise Subdivision (1 lot)
- Smelter Tract (13 lots)
- Sherman Heights
- Bella Vista Heights
- Western Subdivision (5 lots)
- Town Terraces No. 1
- Condominio del Sol
- Flores Tract
- City of Nogales
- Villa Coronado
- Villa Hermosa
- Macris Manor
- Northern Addition (6 lots)
- Silver Place
- Barry Tract
Historic Neighborhood Analysis

Development by Decade-1930-1939

- New Development
- Existing Development
- Undeveloped
- Undeveloped
- Non-residential
Development by Decade-1930-1939

Legend
- Excellent
- Good (3 lots, 10%)
- Fair (22 lots, 71%)
- Poor (6 lots, 19%)
- Rehab cost exceeds property value
- Vacant

Property Conditions for 1930-1939

- Excellent: 0%
- Good: 10%
- Fair: 71%
- Poor: 19%
- Replacement: 0%
- Vacant: 0%
Historic Neighborhood Analysis

Development by Decade-1940-1949

New Development
Existing Development
Undeveloped
Non-residential
Legend
- Excellent
- Good (33 lots, 39%)
- Fair (41 lots, 48%)
- Poor (8 lots, 9%)
- Rehab cost exceeds property value
- Vacant (3 lots, 4%)

Property Conditions for 1940-1949
- Excellent 0%
- Good 39%
- Fair 48%
- Poor 9%
- Replacement 0%
- Vacant 4%

Development by Decade-1940-1949
- Soto Subdivision
- Court Neighborhood (2 lots)
- Southern Neighborhood (6 lots)
- Bella Vista Terrace (7 lots)
- N.L. & I. Subdivision (1 lot)
- Cumming McIntyre
- Liberty Place
- Lydia Park (3 lots)
- Elm School (9 lots)
- Herold Subdivisions (11 lots)
- Spargur Heights
- Noon Addition (7 lots)
- Beck Subdivision (7 lots)
- Mountain View (1 lot)
- Lomas Encinos
- Morelo's Park (1 lot)
- Ellis Ranch (4 lots)
- Wise Subdivision
- Smelter Tract (9 lots)
- Sherman Heights
- Bella Vista Heights
- Western Subdivision (6 lots)
- Town Terraces No. 1
- Condominio del Sol
- Flores Tract
- City of Nogales
- Villa Coronado (7 lots)
- Villa Hermosa (2 lots)
- Macris Manor (2 lots)
- Northern Addition (5 lots)
- Silver Place
- Barry Tract (4 lots)
Historic Neighborhood Analysis

Development by Decade-1950-1959

- New Development
- Existing Development
- Undeveloped
- Non-residential
Historic Neighborhood Analysis

### Development by Decade-1950-1959

**Legend**
- Excellent
- Good (67 lots, 45%)
- Fair (67 lots, 45%)
- Poor (14 lots, 9%)
- Rehab cost exceeds property value
- Vacant (2 lots, 1%)

**Property Conditions for 1950-1959**

- Excellent: 0%
- Good: 45%
- Fair: 45%
- Poor: 9%
- Vacant: 1%
- Replacement: 0%

### Neighborhoods by Decade

- Soto Subdivision
- Court Neighborhood (13 lots)
- Southern Neighborhood (4 lots)
- Bella Vista Terrace (5 lots)
- N.L. & I. Subdivision (7 lots)
- Cumming McIntyre
- Liberty Place
- Lydia Park (3 lots)
- Elm School (5 lots)
- Herold Subdivisions (5 lots)
- Spargur Heights (3 lots)
- Noon Addition (4 lots)
- Beck Subdivision (8 lots)
- Mountain View
- Lomas Encinos
- Morelo's Park (6 lots)
- Ellis Ranch (8 lots)
- Wise Subdivision (7 lots)
- Smelter Tract (4 lots)
- Sherman Heights
- Bella Vista Heights
- Western Subdivision (15 lots)
- Town Terraces No. 1
- Condominio del Sol
- Flores Tract
- City of Nogales
- Villa Coronado (26 lots)
- Villa Hermosa (6 lots)
- Macris Manor (10 lots)
- Northern Addition (14 lots)
- Silver Place
- Barry Tract
Development by Decade-1960-1969

Legend
- Excellent (1 lot, 0%)
- Good (73 lots, 32%)
- Fair (125 lots, 55%)
- Poor (31 lots, 19%)
- Rehab cost exceeds property value
- Vacant

Property Conditions for 1960-1969

- Good 32%
- Fair 55%
- Poor 13%
- Vacant 0%
- Excellent 0%
- Replacement 0%

- Soto Subdivision
- Court Neighborhood (9 lots)
- Southern Neighborhood (3 lots)
- Bella Vista Terrace (9 lots)
- N.L. & I. Subdivision (1 lot)
- Cumming McIntyre
- Liberty Place (2 lots)
- Lydia Park (4 lots)
- Elm School (11 lots)
- Herold Subdivisions (1 lot)
- Spargur Heights (3 lots)
- Noon Addition (4 lots)
- Beck Subdivision (10 lots)
- Mountain View (4 lots)
- Lomas Encinos (3 lots)
- Morelo’s Park (3 lots)
- Ellis Ranch (8 lots)
- Wise Subdivision (23 lots)
- Smelter Tract (17 lots)
- Sherman Heights
- Bella Vista Heights
- Western Subdivision (13 lots)
- Town Terraces No. 1 (3 lots)
- Condominio del Sol
- Flores Tract (7 lots)
- City of Nogales (3 lots)
- Villa Coronado (14 lots)
- Villa Hermosa (3 lots)
- Macris Manor (5 lots)
- Northern Addition (17 lots)
- Silver Place
- Barry Tract (27 lots)
Legend
- Excellent
- Good (43 lots, 34%)
- Fair (71 lots, 56%)
- Poor (9 lots, 7%)
- Rehab cost exceeds property value
- Vacant (4 lots, 3%)

Property Conditions for 1970-1979
- Excellent 0%
- Fair 56%
- Poor 7%
- Replacement 0%
- Vacant 3%

- Soto Subdivision (4 lots)
- Court Neighborhood (9 lots)
- Southern Neighborhood (2 lots)
- Bella Vista Terrace (5 lots)
- N.L. & I. Subdivision (2 lots)
- Cumming McIntyre (2 lots)
- Liberty Place (3 lots)
- Lydia Park (1 lot)
- Elm School (2 lots)
- Herold Subdivisions (7 lots)
- Spargur Heights (2 lots)
- Noon Addition (2 lots)
- Beck Subdivision (4 lots)
- Mountain View (1 lot)
- Lomas Encinos (1 lot)
- Morelo’s Park (5 lots)

- Ellis Ranch (5 lots)
- Wise Subdivision (21 lots)
- Smelter Tract (16 lots)
- Sherman Heights
- Bella Vista Heights
- Western Subdivision
- Town Terraces No. 1 (4 lots)
- Condominio del Sol
- Flores Tract
- City of Nogales (3 lots)
- Villa Coronado (3 lots)
- Villa Hermosa
- Macris Manor
- Northern Addition (9 lots)
- Silver Place
- Barry Tract (9 lots)
Historic Neighborhood Analysis

Development by Decade-1980-1989

- New Development
- Existing Development
- Undeveloped
- Non-residential
Legend
- Excellent
- Good (52 lots, 44%)
- Fair (54 lots, 46%)
- Poor (8 lots, 7%)
- Rehab cost exceeds property value
- Vacant (4 lots, 3%)

Property Conditions for 1980-1989
- Excellent: 0%
- Good: 44%
- Fair: 46%
- Poor: 7%
- Vacant: 3%
- Replacement: 0%

Development by Decade-1980-1989

- Excellent
- Good: (52 lots, 44%)
- Fair: (54 lots, 46%)
- Poor: (8 lots, 7%)
- Rehab cost exceeds property value
- Vacant: (4 lots, 3%)

- Soto Subdivision (22 lots)
- Court Neighborhood (2 lots)
- Southern Neighborhood
- Bella Vista Terrace (4 lots)
- N.L. & I. Subdivision
- Cumming McIntyre (6 lots)
- Liberty Place
- Lydia Park
- Elm School (7 lots)
- Herold Subdivisions
- Spargur Heights (2 lots)
- Noon Addition (3 lots)
- Beck Subdivision (4 lots)
- Mountain View
- Lomas Encinos (3 lots)
- Morelo's Park (1 lot)
- Ellis Ranch (2 lots)
- Wise Subdivision (7 lots)
- Smelter Tract (6 lots)
- Sherman Heights
- Bella Vista Heights (3 lots)
- Western Subdivision (10 lots)
- Town Terraces No. 1
- Condominio del Sol (22 lots)
- Flores Tract
- City of Nogales
- Villa Coronado (3 lots)
- Villa Hermosa (3 lots)
- Macris Manor (2 lots)
- Northern Addition (12 lots)
- Silver Place (1 lot)
- Barry Tract
Historic Neighborhood Analysis

Development by Decade-1990-1999

- New Development
- Existing Development
- Undeveloped
- Non-residential
**Development by Decade-1990-1999**

**Legend**
- Excellent
- Good (24 lots, 44%)
- Fair (30 lots, 46%)
- Poor (1 lots, 7%)
- Rehab cost exceeds property value
- Vacant (4 lots, 3%)

**Property Conditions for 1990-1999**
- Excellent 0%
- Good 44%
- Fair 46%
- Poor 7%
- Vacant 3%
- Replacement 0%

**Neighborhoods by Decade**
- Soto Subdivision (14 lots)
- Court Neighborhood (2 lots)
- Southern Neighborhood (1 lot)
- Bella Vista Terrace (3 lots)
- N.L. & I. Subdivision
- Cumming McIntyre (1 lot)
- Liberty Place (1 lot)
- Lydia Park
- Elm School (3 lots)
- Herold Subdivisions (4 lots)
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- Beck Subdivision (3 lots)
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- Ellis Ranch (2 lots)
- Wise Subdivision (3 lots)
- Smelter Tract (6 lots)
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- Bella Vista Heights (1 lot)
- Western Subdivision (7 lots)
- Town Terraces No. 1
- Condominio del Sol
- Flores Tract
- City of Nogales (1 lot)
- Villa Coronado (2 lots)
- Villa Hermosa (1 lot)
- Macris Manor
- Northern Addition (4 lots)
- Silver Place
- Barry Tract (2 lots)
Historic Neighborhood Analysis

Property Conditions for 2000-2008

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<th>Condition</th>
<th>Number of Lots</th>
<th>Percentage</th>
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<td>Replacement</td>
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</tr>
</tbody>
</table>

Legend

- Excellent
- Good (18 lots, 58%)
- Fair (10 lots, 32%)
- Poor
- Rehab cost exceeds property value
- Vacant (3 lots, 10%)
Historic Neighborhood Analysis

Historic Districts/Buildings

Data taken from the National Register of Historic Places.
This analysis is intended to be a guide to recognizing the historic architectural characteristics that are typical to Nogales. Examining the distinct characteristics that typify each era demonstrates the diversity of influences that are present in the existing housing stock. The characteristics that have been defined in this analysis may be used in the future to begin to identify historic districts and to examine their authenticity. The information on historic housing typologies and the analysis of materials and components also inform the appropriate considerations for future reinvestment and rehabilitation efforts.

The following is an evaluation of housing stock by architectural style. These styles should inform new development, particularly within the target area, so that the area’s historic character is preserved.
proportion

- rectangular profile
- strong relationships between window and door openings and overall proportion
- defined by extremely wide, flat parapet and vertical windows and doors
- not common

fenestration

- typically sash window
- surround of plain stucco or very simple trim of wide wooden strips
- surface of window deeply recessed
- not common
proportion

- rectangular profile with vertical emphasis
- strong proportional link between openings and overall mass
- sash windows and high peaked roof give an overall vertical character
- very common

fenestration

- typically sash window, rarely casement
- exposed or stuccoed masonry openings, often with distinctive arched lintel, sill of stone or brick
- surface of window recessed
- false mullions in upper lights and decorative woodwork
- very common
Historical Types-Midcentury
(1940-1960)

proportion

- predominantly horizontal profile
- basis on structural bay and material proportions
- elongated windows and porches enhance horizontal character
- typical of construction
- common

fenestration

- typically casement window
- exposed masonry openings with angled brick sill for water runoff
- surface of window recessed
- often distinguished by use of smaller glazing units and thin metal mullions
- common
proportion

- horizontal profile
- basis on structural bay and material proportion
- defined by wide flat wall spaces and unemphatic directionality
- very common

fenestration

- typically casement window
- exposed masonry openings with angled rowlock course as sill for water runoff
- surface of window recessed
- very similar to midcentury, but distinguished by use of wide, flat panes of glass in sliding windows
- common
Mobile Home

- very narrow profile at street
- restricted proportions based on prefabrication standards results in strong horizontal banding and tight, shallow features
- one to one relationship between building mass and exterior space
- somewhat common

fenestration

- typically sliding, but rarely sash
- surrounds trimmed with wood, plastic or metal
- surface of window is usually flush with exterior wall
- trim, decorative shutters, and shading devices give character
- somewhat common

Housing Stock Analysis

Historical Types-Manufactured Home
(1960-Present)
zero setback

- living space opens directly onto public right-of-way
- almost no buffer between street and home
- creates very well-defined streets
- public/private division is sharply defined
- no buffer between living space and public space
- typical of Sonoran type

porch at lot line

- living space separated from public right-of-way by 5'-15' wide front porch or terrace raised 1' or more off street-level
- little division between street and home
- creates well-defined streets
- affords some buffer between private space and public space
- Porch is semi-public extension of living area: serves as social link with street
- not common

setback with flat yard

- living space separated from public right-of-way by 10'-20' wide front yard at street-level, typically with low wall at property line
- somewhat well-defined division between street and home
- affords privacy in home
- yard serves as semi-public space
- common
**setback with raised yard**

- living space separated from public right-of-way by 10’-20’ wide front yard raised 3’ or higher above street level
- well-defined barriers between street and home
- affords more privacy than simple setback
- good sense of private space in yard
- requires entire house to be set on pedestal
- very common

**communal open space**

- living space faces communal open space
- relationship with street is minimal
- affords privacy from street but exposure to neighbors
- requires large lots and high density
- does not encourage sense of identity or ownership
- not common

**isolated on very large lot**

- house is surrounded by private open space
- relationship with street almost non-existant
- affords privacy and space
- high cost, low density
- not common
**flat**

- low-slope roof of waterproof membrane or layered tarpaper and bituminous binder
- typically low profile
- design of parapet has major impact on expression
- very little hierarchy
- common

**shed**

- single-slope roof typically of asphalt shingle
- high profile at street
- expression is very uniform
- secondary volumes are somewhat easy to incorporate
- very strong hierarchy, emphasis on highest point
- not common

**gabled facing streetfront**

- double-slope roof typically of asphalt shingle
- high profile at street
- expression varies greatly
- secondary volumes commonly incorporated
- Very strong hierarchy, emphasis on highest point at streetfront
- very common
gabled facing away from streetfront

- double-slope roof typically of asphalt shingle
- typically low profile at street
- expression varies greatly
- secondary volumes commonly incorporated
- weak hierarchy, emphasis on long, low profile
- very common

hipped

- many-slope roof typically of asphalt shingle
- high profile at street
- expression varies greatly
- secondary volumes commonly incorporated
- Very strong hierarchy, emphasis on both highest point at streetfront and on continuous horizontal of roofline
- common

multiple roof types

- many-slope roof typically of asphalt shingle
- profile varies greatly
- expression varies greatly
- secondary volumes frequently incorporated
- hierarchy, varies greatly
- common
### adobe

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<th>High/Easy</th>
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### stone

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### brick

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### concrete masonry units and slump block

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### wood framing

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<tr>
<td>Local character</td>
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</table>
slab-on-grade

- mass of home rests almost directly on the surface of the earth
- requires relatively low material and labor investment
- only practical on flat lots
- minimal expression of foundations
- very common

plinth

- mass of home is raised above the surface of the earth by means of stem walls
- requires more materials and labor than slab-on-grade
- practical for both flat and gently sloped sites
- strong expression of foundations
- very common

terrace

- mass of home rests on an artificial terrace created by retaining walls and earthen fill
- material and work intensive
- typical solution for low and medium slopes
- retaining wall or earthen berms employed dominate expression
- very common
basement

- home is raised above the earth by means of retaining walls and an excavated, below grade basement
- very material and work intensive
- occurs on flat, low, and medium slope sites
- strong expression of foundations
- common

stepped profile

- mass of home rests directly on grade, but mass of building is divided and stepped according to the fall of the site
- medium investments in material and labor
- only practical on low slope sites
- very expressive of topography
- not common

double ground floor

- home is integrated into terrain by means of retaining walls and a partially excavated level
- very material and work intensive
- occurs only on extreme slopes
- distinguished by having two separate levels that meet the ground
- somewhat common
### Housing Stock Analysis

#### Window Types

<table>
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<th>Double-Hung</th>
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<td><strong>Thermal Resistance</strong></td>
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<td><strong>Historic Character</strong></td>
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<table>
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<table>
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<td><strong>Noise Abatement</strong></td>
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<td><strong>Thermal Resistance</strong></td>
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</tr>
<tr>
<td><strong>Historic Character</strong></td>
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### Window Types

- **vinyl frame**
  - fixed
  - horizontal slider

<table>
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<td>historic character</td>
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</table>
The physical and regulatory systems in place in the City of Nogales were studied in order to gain an understanding of the current provisions for and challenges to increasing affordable housing capacity in the Target Area. Current land use, as shown through zoning and a survey of current space usage, is paramount to this analysis. It is also highly important to consider the existing infrastructure layout and whether it will support additional load.

These findings are then used to determine potential for new housing as well as adaptive reuse, which can be considered a form of urban infill. This practice transforms buildings and spaces from their original use to a new use (in this case, dwelling units) while retaining historic features.
The number designation of each Single Family Residential category signifies the number of thousand square feet of land per dwelling unit; for example, a dwelling unit in the SFR-4 category requires a minimum lot size of 4,000 square feet per unit.
The primary zones around the downtown core are residential, with major streets lined with General Commercial zones, and Light Industrial zones adjacent to the railroad lines.

There were a number of vacant parcels identified within the target area, most of which are scattered throughout Single Family Residential zones.
The vacant parcels identified from the visual survey tend to be located on sites that can generally be said to have steeply sloped topography. Only two generally flat areas with vacant parcels were identified (indicated by the shaded circles).
Infrastructure costs were cited as a major concern for affordable housing development in the city. Many of the infrastructure conditions are unknown, and due to the age of the sewer and water lines, a thorough assessment for such conditions should be conducted. The city should consider investment in infrastructure upgrades as a primary concern.
The visual survey of the historic commercial core was undertaken to assess whether significant potential exists for adaptive reuse. It was found that there are currently as many as fifteen buildings with vacant second stories, and as many as five buildings with vacant second and third stories. Uncertainty exists because buildings could only be assessed from the exterior, but it can fairly be stated that a great deal of opportunity exists within the downtown for redevelopment of the vacant second floors in commercial buildings.
Physical Capacity Analysis

Downtown Potential for Adaptive Reuse

Visual Survey of Morley Avenue (Continued)
Physical Capacity Analysis

Downtown Potential for Adaptive Reuse

Visual Survey of Grand Avenue (Continued)
The physical capacity analysis reveals that although Nogales has many vacant lots that have the potential to be developed, most of these sites prohibit feasible development due to steeply sloped terrain. A second challenge to development may be infrastructure; sewer and water are of primary concern because some of these systems are older, especially in the downtown core, and may not be able to handle the additional stress of future development. There is a great potential for future redevelopment to take place within the existing commercial buildings of the downtown core by means of adaptive reuse. Many of these historic buildings have vacant second- and third-stories that have the potential to be transformed into housing. This would bring even more effective use to the downtown core and potentially alleviate the dependence on automobiles for people who might also be able to work in the downtown area.
Planning/Design

Introduction - pg 114
Planning Recommendations - pg 115
  Improve Infrastructure
  Mixed-Use Overlay Zone
  Maintain Existing Housing Stock
  Neighborhood Organizations
Downtown Mixed-Use Prototype - pg 119
  Adaptive Reuse
Addition/Expansion Prototypes - pg 123
  Prototype 1: Attached Ground Unit
  Prototype 2: Attached Sky Unit
  Prototype 3: Detached Ground Unit
Based on the information collected and the findings determined, the following set of recommendations for improving the availability, quality, and access to affordable and attainable housing in Nogales is provided:

- Assess existing infrastructure capacity; seek infrastructure improvement grants
- Create a mixed-use overlay zone to foster the growth of a vibrant city center with integrated affordable residential uses
- Improve the quality and maintenance of existing housing stock
- Encourage the identification of cohesive neighborhoods and subsequently the formation of Neighborhood Organizations
- Encourage Affordable Residential Units in Adaptive Reuse of existing downtown commercial building stock
- Alleviate possible overcrowding of existing housing stock and support extended family households by allowing additions and expansions in target area

Each of these recommendations are explored in more detail in the following pages. Where a design solution is possible and appropriate, conceptual prototypes have been developed by the Drachman Institute and students at the University of Arizona.
Assess existing infrastructure capacity; seek infrastructure improvement grants

Financial assistance should be sought for improvements to the potable and wastewater systems in Nogales so that they can support increased population density. There are several possible avenues for this funding. One major source is the U.S. Environmental Protection Agency (EPA), which administers the Drinking Water State Revolving Fund. Funding is allotted to each state, and can be used for treatment, certain storage facilities, transmission and distribution systems, and consolidation of systems. The EPA also provides funding through The North American Development Bank (NADB) in the form of the Border Environment Infrastructure Fund (BEIF). Specific to the U.S./Mexico border area, these monies can be used for water and wastewater projects. The NADB has further programs concerned with water system improvements: the Rural Infrastructure Development Fund (RIDF), and the Water Conservation Investment Fund (WCIF), which focus more on regional resources such as watershed management, irrigation, etc.

Another major funding source is the U.S. Department of Agriculture’s Rural Development branch. Funds are available through the Rural Utilities Service Water and Waste Disposal Program and the Rural Community Development Initiative (RCDI). State resources include the Arizona Water and Infrastructure Finance Authority (WIFA) which provides “bond banking” and technical assistance, and the Community Development Block Grant (CDBG) program, administered by the Arizona Department of Housing.
Create a mixed-use overlay zone to foster the growth of a vibrant city center with integrated affordable residential uses

To develop a mixed-use overlay zone in the downtown core (Downtown Urban Use zone or DUU), consider a two-phase implementation process. The two highlighted areas in the downtown core shown on the map to the left have been identified as potential mixed-use zones. Currently these areas are primarily zoned as Commercial with some Light Industrial use. Although Commercial zoning allows for residential use, there are some limitations to implementing residential units easily. Creating a Mixed-Use Overlay Zone that allows for residential units to be included will bring more permanent residents downtown and activate the urban environment.

The large amount of light industrial use land along the railroad and between Grand and Morley Avenues is prime development land for mixed-use projects. It is under-utilized central city property, and affordable housing units should be considered as part of the mix for future projects in this area.
**Planning Recommendations**

**Maintain Existing Housing Stock**

- Improve the quality and maintenance of existing housing stock
  - Reinvest in and Rehabilitate existing housing stock in target areas
  - Identify grant and funding sources for assistance with reinvestment and rehabilitation actions
  - Protect existing historic characteristics during rehabilitation process

Approximately 8% of the housing stock that was visually surveyed was identified to be in “Poor” condition. These homes (approximately 130) could greatly benefit from reinvestment and maintenance improvements. Reinvestment funds may be readily available for the city through grant applications, considering the “Poor” condition housing units are located within a census tract that has “qualified” status (tract 9964.02). Determined by the U.S. Department of Housing and Urban Development and set forth by the IRS, qualified census tracts are created when 70% or more of families earn incomes that are 80% or less than the statewide median income levels. Target area census tracts often qualify for reinvestment grant funds through various programs more readily than non-target area census tracts.
Planning Recommendations

Neighborhood Organizations

- Encourage the identification of cohesive Neighborhoods and subsequently the formation of Neighborhood Organizations.

- Studies have shown that neighborhoods with established resident/homeowners associations benefit from residents having a greater sense of ownership for, and investment in, personal and community property.

- Provide incentives or priority access to reinvestment grants for neighborhoods that have established an identifiable organization.

This map shows the neighborhoods identified in the Target Area during the visual survey, based on similar housing types, topographical barriers, and accessibility between neighborhood blocks.

This map shows the neighborhoods identified by Subdivision Development in greater downtown Nogales. These neighborhoods are much smaller in size than those identified during the visual survey. Neighborhood organizations might consist of a collection of clustered historic subdivisions.
• Encourage Affordable Residential Units in Adaptive Reuse of existing downtown
commercial building stock

The large amount of currently vacant second and third stories of existing commercial building stock in the downtown area is prime real estate for reinvesting in and redeveloping the Grand and Morley Avenue district. Incorporating affordable housing in the downtown area will enhance affordability because of the proximity to many other city amenities (reducing transportation costs). Affordable unit types should be considered which are appropriate for the population in need of below market-rate housing, such as the elderly or transitional residents moving into the workforce. One example of an adaptive reuse project study in Nogales is provided on the following pages. This project shows the currently vacant upper stories of the historic Bowman Hotel with commercial activities remaining on the ground floor retail levels, but with the above floors converted to residential use. This particular example shows two- and three-bedroom affordable housing units, but various mixes and unit sizes could be provided. Provide incentives and identify funding sources for Adaptive Reuse projects that include affordable housing units.
Downtown Mixed-Use Prototype
Adaptive Reuse

section 4

section 5

third floor

section 4

section 5

west facade
Downtown Mixed-Use Prototype
Adaptive Reuse

Units

Section 1

Utility Core
Module

Section 2

Section 3

Second Floor

3 Bedroom
2 Bedroom
Three sites were chosen that represented some of the typical opportunities and challenges to the addition and expansion of existing housing within the target area. The site for Prototype 1 in the Smelter Tract neighborhood, indicated by the central highlighted area, represents a site in a dense historic neighborhood. The site for the second prototype, indicated by the easternmost highlight, represents a site where ground space is so limited that any addition must be multi-story. The final prototype’s site, indicated by the highlight in the southwest, is chosen to demonstrate how detached additions can be created in the long linear sites that are typical to many historic Nogales neighborhoods.
Prototype 1: Attached Ground Unit

Addition prototype for a high-density, historic neighborhood.
Additions/Expansions Potential
Site Analysis for Smelter Tract Neighborhood Prototype

**Intent**
The purpose of this prototype study is to look at the potential for additions and expansions to existing residential units in order to alleviate overcrowded housing situations. This particular site was selected to show how an addition might happen in a more historic setting with higher densities. The concept here is to create transitions; transitions in the earth and sky, transitions between old and new. Transitions in the earth are created by terracing the addition up the landscape in section. Transitions in the sky are made by creating a sense of ephemerality in the different roof planes, the roof floats above the indoor areas and is a lightweight, repeatable element that projects changing shadows in the outdoor area. Transitions between old and new are made in plan as the addition is pulled apart from the existing structure to create an outdoor living space, a place to contemplate the changing conditions of light and nature.

**Zoning Analysis**
Zoning Standards for Multi Family Residential Area

<table>
<thead>
<tr>
<th>Zoning Standard</th>
<th>Allowed</th>
<th>Existing</th>
<th>Potential</th>
<th>Proposed</th>
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<td>Minimum Side Yard Setback</td>
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<td>4 ft.</td>
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<td>N/C</td>
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**Concept Diagram**
Transitions between Old and New
Transitional Hallway at 8 am on July 21

Transitional Hallway at noon on July 21
Prototype 2: Attached Sky Unit

Addition prototype for a high-density, neighborhood with little space for ground floor expansions.
Additions/Expansions Potential
Site Analysis for Soto Subdivision Prototype

Intent
The purpose of this prototype study is to look at the potential for additions and expansions to existing residential units in order to alleviate overcrowded housing situations. This example was selected to show how a second story addition might occur on an existing single story structure. The area is zoned as one of the least dense residential areas, which poses a design dilemma; how to keep the sense of the neighborhood’s horizontality, while still adding a vertical element? The concept here became a play of mass. The existing building and addition are portrayed as two shifting boxes. The second story addition slightly cantilevers over the mass beneath to create a rooftop terrace, as well as a front porch, that takes advantage of the available front yard setbacks. The idea of mass plays out in other elements such as windows and doors, which are expressed as square punches that seemingly randomly pierce the mass.

Zoning Analysis
Zoning Standards for Single Family Residential 4 Area

<table>
<thead>
<tr>
<th>Zoning Standard</th>
<th>Allowed</th>
<th>Existing</th>
<th>Potential</th>
<th>Proposed</th>
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<td>836 sq. ft.</td>
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Concept Diagram
Two shifted immaterial boxes
Bedroom 2 at 8 am on July 21

Bedroom 2 at 12 noon on July 21

Bedroom 2 at 5 p.m. on July 21
Prototype 3: Detached Ground Unit

Addition prototype for a long, linear site in the “West” neighborhood.
Additions/Expansions Potential
Site Analysis for West Neighborhood Prototype

Intent
The purpose of this prototype is to detach the addition and create a more private space separate from the existing house. This is considered a guest house, which has one bedroom (a second can be added) a kitchen, dining, and living room. This prototype is flexible and can be used for a new couple, parents, or guests, or can be rented.

The design incorporates features from the original building to create a harmonious relationship and transition to the addition building. Some examples are: using the same style and pitch of the roof; using horizontal wood cladding to match the horizontal exterior lines of the original buildings masonry; etc.

There are three main aspects to the design concept: creating usable space between the buildings, designing to gain a large amount of natural light into the house, and creating a flexible plan.

- The outdoor space between the buildings is intended to create a shaded patio space with access from each building, and to create an active relationship with the existing house while at the same time maintaining privacy.
- A large clerestory window located on the north side of the house provides natural light without increasing solar gain.
- The plan is designed to make it easy to add a second bedroom if desired.

Zoning Analysis
Zoning Standards for Single Family Residential 7 Area (SFR-7)

<table>
<thead>
<tr>
<th>Zoning Standard</th>
<th>Allowed</th>
<th>Existing</th>
<th>Potential</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Lot Area</td>
<td>7,000 sq. ft.</td>
<td>7,159 sq. ft.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Maximum Floor Area</td>
<td>2,861 sq. ft.</td>
<td>1,320 sq. ft.</td>
<td>1,541 sq. ft.</td>
<td>740/920 sq. ft.</td>
</tr>
<tr>
<td>Minimum Lot Width</td>
<td>25 ft.</td>
<td>98 ft.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Minimum Lot Depth</td>
<td>N/A</td>
<td>190 ft.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Maximum Building Height</td>
<td>25 ft.</td>
<td>12 ft.</td>
<td>N/A</td>
<td>20 ft.</td>
</tr>
<tr>
<td>Minimum Front Yard Setback</td>
<td>20 ft.</td>
<td>20 ft.</td>
<td>13 ft.</td>
<td>20.5/10.5 ft.</td>
</tr>
<tr>
<td>Minimum Rear Yard Setback</td>
<td>20 ft.</td>
<td>52 ft.</td>
<td>0 ft.</td>
<td>N/A</td>
</tr>
<tr>
<td>Minimum Side Yard Setback</td>
<td>7 ft.</td>
<td>9 ft.</td>
<td>32 ft.</td>
<td>7 ft.</td>
</tr>
<tr>
<td>Minimum Street Yard Setback</td>
<td>10 ft.</td>
<td>20 ft.</td>
<td>2 ft.</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Site Plan and Neighborhood
**Scheme 1**
One Bedroom Addition

**Scheme 2**
Two Bedroom Addition

Aerial view: Existing house and one bedroom addition
Scheme 1
One Bedroom Addition - Total Floor Area: 740 sq ft.

Scheme 2
Two Bedroom Addition - Total Floor Area: 920 sq ft.
Outdoor space between the two buildings

Interior View: Living, dining, kitchen space

Interior View: Bedroom
Credits
Special thanks to Nils Urman, from the City of Nogales, Yvonne Delgadillo from Nogales Community Development, and Angie Donelson and her consult, for all of the knowledge and support that they have provided.

Sources
Information and images in this presentation obtained from other sources have been cited appropriately. Any information or images not cited have come from the Drachman Institute.

Disclaimer
The information contained within this report is intended as guidance for the City of Nogales in informing decisions related to housing developments and improvements. The visual survey assessment was performed to the best knowledge and judgement of The Drachman Institute staff and employees, and is subject to verification by the City of Nogales or other parties prior to implementation of any action.