

## ABSTRACT

Title of Document:                   PRESERVING THE SOUL OF  
  HOUSTON'S THIRD WARD:  
  WITH TRANSIT ORIENTED DEVELOPMENT +  
  FORM-BASED CODES

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Master of Architecture, 2012

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Transit-Oriented Development (“TOD”) has been used as a smart growth catalyst for renewal, maximizing accessibility and opportunity. However, these new investments can raise rapid appreciation in property and housing costs, spurring the possibility for gentrification in low-income neighborhoods. Many TODs fail to integrate this new mixed-use development with the context, potentially obliterating existing communities. The use of form-based codes in designing TODs can preserve the social infrastructure that makes up the soul of the community. Third Ward, Houston, TX will serve as a case study addressing how a TOD can help revitalize a vernacular neighborhood by revealing its own identity and “sense of place” against the pressures of gentrification.

**PRESERVING THE SOUL OF HOUSTON'S THIRD WARD:  
WITH TRANSIT ORIENTED DEVELOPMENT + FORM-BASED CODES**

By

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Thesis submitted to the Faculty of the Graduate School of the  
University of Maryland, College Park, in partial fulfillment  
of the requirements for the degree of  
Master of Architecture  
2012

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## Dedication

I would like to dedicate this to my family and friends for all their love and support,  
especially to my parents who have always encouraged me to do what I love.



## Acknowledgements

Thank you to my family and friends for all your love and support. I would also like to thank my committee—Madlen Simon, who has helped me communicate my design intentions, Isabelle Gournay, who has brought a wealth of knowledge, and Brian Kelly, who has guided me throughout my thesis.

## Table of Contents

Dedication .....	ii
Acknowledgements.....	iii
Table of Contents.....	iv
List of Figures .....	vi
Chapter 1: Introduction .....	1
Background .....	1
Transit-Oriented Development.....	1
Form-Based Codes .....	2
Chapter 2: People and Place .....	4
History and People.....	4
Location and Boundaries .....	4
Demographics .....	7
History and Culture .....	9
Climate + Landscape .....	17
Climate .....	17
Vegetation + Hydrology .....	18
Land-Use + Infrastructure .....	19
Land-Use .....	19
Transportation Networks.....	21
Chapter 3: Community + Culture Awareness .....	26
Place-making.....	26
Major Landmarks .....	26
History + Memories.....	27
Chapter 4: Transit-Oriented Development.....	28
Definition .....	28
Principles.....	28
Types .....	29
Urban Transit-Oriented Developments .....	29
Neighborhood Transit-Oriented Developments.....	30
Program.....	31
Core Commercial Area .....	32
Residential Area .....	32
Secondary Area .....	33
Density .....	34
Proposed Urban TOD .....	35
Proposed Neighborhood TOD.....	38
Multi-Modal Connectivity .....	39
Qualities .....	42
Active streets for the Pedestrian .....	42

Positive Practices .....	43
Barrio Logan’s Mercado Project .....	43
San Diego, CA .....	45
Chapter 5: Form-Based Codes .....	47
Definition .....	47
Importance of Form-based Codes .....	47
Components.....	48
Regulating Plan .....	48
Public Space Standards .....	51
Building Form Standards.....	57
Building Type Standards .....	63
Chapter 7: Design Approach .....	65
Development of Urban + Neighborhood TOD .....	65
Further Development of Block at Transit Stop .....	70
Chapter 8: Conclusions .....	75
Works-Cited .....	76

## List of Figures

Figure 1 Location Efficiency and Housing Type .....	3
Figure 2. Greater Third Ward indicated in yellow. ....	5
Figure 3. Third Ward's proximity to Houston's amenities.....	6
Figure 4. Townhouses on 2376 Bastrop St. priced at \$272,900 for a 2-bedroom unit.6	
Figure 5. One of many abandoned houses in the neighborhood.....	7
Figure 6. Median household income in 2000 by neighborhood. Red box highlights Third Ward. ....	8
Figure 7. Rate of violent crime by neighborhoods .....	9
Figure 8. Between 1999-2003, almost half of the Greater Third Ward residents ages 25 and above reported that they had not graduated from high school. ....	9
Figure 9. El Dorado Ballroom .....	11
Figure 10. Emancipation Park was purchased around 1870 to commemorate the end of slavery. ....	11
Figure 11 John Biggers, 1987. <i>Shotguns</i> . ....	13
Figure 12. Shotguns being renovated. ....	13
Figure 13 One of the art projects in Round 33. ....	14
Figure 14 The Hannah Project designed by Rice University Architecture students. (Source: Author).....	16
Figure 15. Average Temperatures .....	17
Figure 16. Wind Roses.....	18
Figure 17. Third Ward's proximity to bayous and parks.....	18
Figure 18 Land Use.....	20
Figure 19 Vacant lots are abundant north of Alabama Street. ....	21
Figure 20 Street Network.....	22
Figure 21 Houston's current plan of proposed light rail lines. ....	23
Figure 22 Existing Metro Bus Network. ....	24
Figure 23 Existing Bike Paths. ....	25
Figure 24. Community Landmarks .....	26
Figure 25. Landmarks marked by local residents. ....	27
Figure 26. Urban TOD Diagram by Peter Calthorpe. ....	30
Figure 27. Neighborhood TOD Diagram by Peter Calthorpe. ....	31
Figure 28. Diagram based on Peter Calthorpe's recommendations of program percentages within Urban and Neighborhood TODs. ....	35
Figure 29. Commercial concentration on Dowling Street. ....	36
Figure 30. Proposed Urban TOD node.....	37
Figure 31. Proposed Urban TOD node has connections to major landmarks. ....	38
Figure 32. Proposed Urban and Neighborhood TODs. ....	39
Figure 33. Proposed Bus Network. ....	40
Figure 34. Proposed Bicycle Network.....	41
Figure 35. Proposed Multi-modal Network. ....	42

Figure 36. Mercado Apartments + Artwork.....	44
Figure 37. Zoning Diagram .....	44
Figure 38. Street Section.....	45
Figure 39. Before and After .....	46
Figure 40. Public spaces.....	46
Figure 41 Regulating Plan .....	50
Figure 42. Existing + Proposed Street Section of Alabama St.....	52
Figure 43. Existing + Proposed Street Section of Dowling St.....	53
Figure 44. Existing + Proposed Street Section of Elgin St. ....	54
Figure 45. Existing + Proposed Street Section of a typical neighborhood street. ....	55
Figure 46 Map Key of proposed street sections. ....	56
Figure 47. Diagram of housing with shared backyards.....	59
Figure 48. Existing Common Frontages .....	61
Figure 49. Proposed Common Frontages. ....	62
Figure 50. Proposed Building Types.....	64
Figure 51. Existing Figure Ground showing Urban + Neighborhood TOD nodes. ....	66
Figure 52. Proposed Figure Ground at Urban + Neighborhood TOD nodes.....	67
Figure 53. Final Figure Ground at Urban + Neighborhood TOD nodes. ....	68
Figure 54. Proposed Urban Fabric. ....	69
Figure 55. Floor Plans of block at transit stop. ....	71
Figure 56. Section through block at transit stop. ....	72
Figure 57. Perspectives at transit node. ....	73
Figure 58. Perspectives at transit node. ....	74

# Chapter 1: Introduction

## Background

### Transit-Oriented Development

Transit-Oriented Development (“TOD”) maximizes accessibility and opportunity by providing a mixed-use community within walking distance of a transit stop. “Residents from communities with higher density, greater connectivity, and more land use mix report higher rates of walking or cycling for utilitarian purposes than low-density, poorly connected, and single land use neighborhoods (Figure 1).”<sup>1</sup> TODs can help link people to a range of services, amenities, and jobs by offering a number of viable transportation options, making it convenient for people to travel by transit, bicycle, foot, or car.

Since TODs are physically presented as nodes defined by transit stops, they can become an identifiable social or commercial core that is integrated with higher-density housing, jobs, retail, services, and public spaces. These nodal mixed-use developments create an environment where a range of resources and amenities are accessible within walking distance, thereby lowering automobile dependency.

With these new investments comes rapid appreciation in property and housing costs, spurring the possibility for gentrification in low-income

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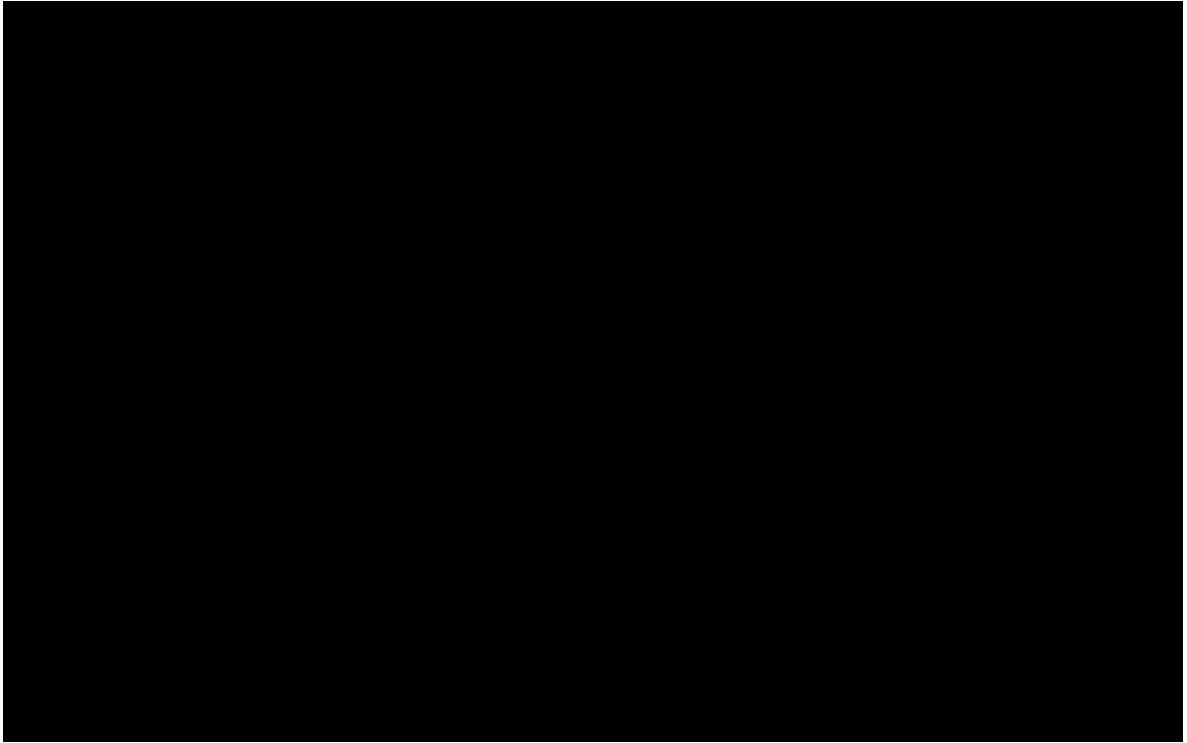
<sup>1</sup> U.S. Environmental Protection Agency, “Location Efficiency and Housing Type,” Jonathan Rose Companies, [http://www.epa.gov/dced/location\\_efficiency\\_BTU.htm](http://www.epa.gov/dced/location_efficiency_BTU.htm) (accessed November 2, 2011).

neighborhoods. Newcomers reap financial benefits, while existing residents are disadvantaged. Even worse, many TODs fail to integrate this new mixed-use development with the context, potentially obliterating existing communities. In order to preserve the social infrastructure that makes up the soul of the community, form-based codes will be designed in order to encourage the same “life.” Third Ward, Houston, TX will serve as a case study addressing how a TOD can help revitalize a vernacular neighborhood by revealing its own identity and “sense of place” against the pressures of gentrification.

Transit-oriented development plays a dual role, being both a “node” within a larger context and a “place” as its own node. Since TODs are presented as nodes, it has the potential to act as an identifiable landmark that can become emblematic of the community. By strategically placing TODs where landmarks are, it can help preserve and strengthen the history and culture of the community. This involves researching and analyzing what the community deems as important to keep, and what additional programs are needed to maintain relevance to both the city and the neighborhood.

#### Form-Based Codes

Third Ward, Houston, TX will serve as a case study addressing how a vernacular TOD can help revitalize a neighborhood by revealing its own identity and “sense of place” against the pressures of gentrification. A master plan will lay the groundwork to encourage positive renewal, and a mixed-use building will be further developed.



**Figure 1** Location Efficiency and Housing Type  
Source: U.S. Environmental Protection Agency



## Chapter 2: People and Place

### History and People

#### Location and Boundaries

Third Ward is one of Houston's six wards that were created in 1836 to establish political subdivisions. Even though these wards no longer exist politically, many Houstonians continue to use them today.<sup>2</sup> The Greater Third Ward lies south of the core of Houston close to downtown amenities, parks, universities, the Texas Medical Center and the Museum District (Figure 2+ Figure 3). These assets have made it a prime target for developers, who want to make a profit in meeting the demands for inner city living. According to sociologist Stephen Klineberg, the number of suburbanites interested in moving back into Houston's downtown has doubled since 2003.<sup>3</sup> High-end residential buildings have increased real estate taxes of the surrounding areas. New townhouses (Figure 4) sell for \$200,000-\$400,000 as opposed to the older homes, which are valued from \$50,000-\$100,000.<sup>4</sup> By 2007,

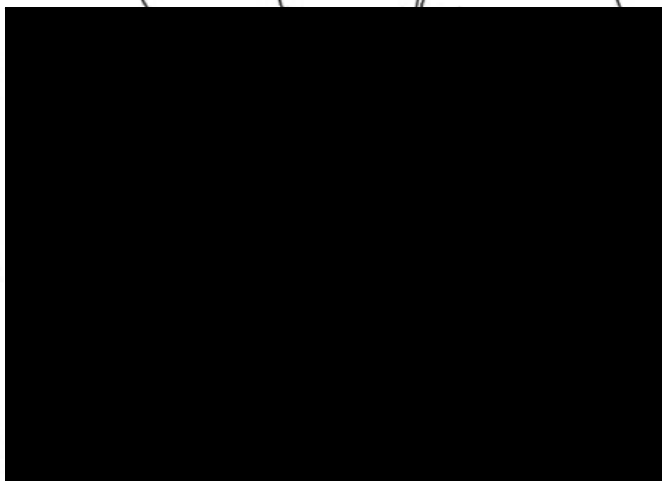
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<sup>2</sup> Kever, Jeannie, "Politically they're gone, but in people's minds they'll never die; Where the wards are." *Houston Chronicle*, [Houston, TX] September 7, 2004: 1. *InfoTrac Newspapers*, Web. Mar 29, 2011.

<sup>3</sup> Buntin, John. "Land Rush." *Governing* 19.6 (2006):24-32.

<sup>4</sup> Tolson, Mike. "Fighting to save the heritage of the Third Ward; Neighbors organize against townhouse developers." *Houston Chronicle* [Houston, TX] March 14, 2004: 1. *InfoTrac Newspapers*. Web. 28 Mar. 2011.

the appraisal values have increased to 20%, driving taxes up.<sup>5</sup> The rise in property taxes becomes a problem when almost 80% of Third Ward residents rent their house.<sup>6</sup> This increase has taken a toll on many residents. Third Ward has the highest number of tax-delinquent properties of any ZIP code in the city, owing \$17 million to the county.<sup>7</sup> Since 2005, the foreclosure rate has doubled.<sup>8</sup> Many properties were left vacant and abandoned (Figure 5). To voice their concerns, many residents have posted signs in front of their house with “Third Ward is Our Home, and it’s not for Sale.”



**Figure 2.** Greater Third Ward indicated in yellow.  
Source: Community Health Profiles

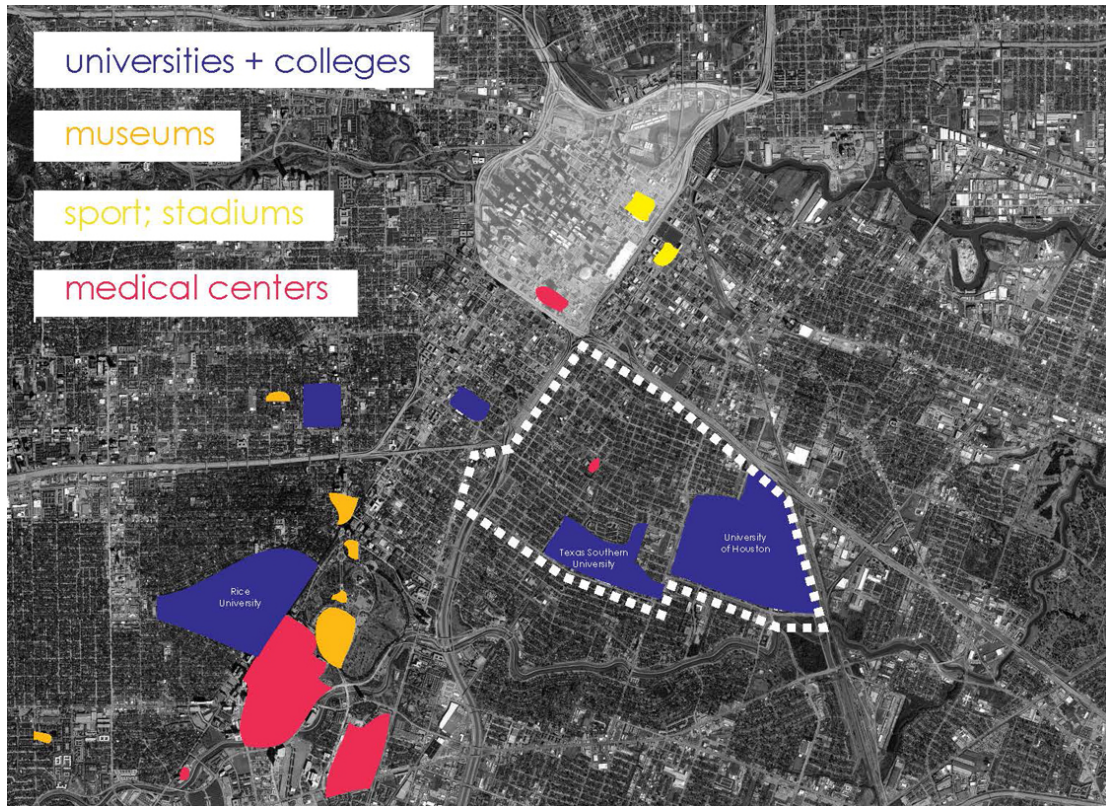
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<sup>5</sup> Casimir, Leslie. “Older Black Communities Hurt by Family Issues, Appraisal Hike.” *Houston Chronicle*. 2007. 19 March 2011 <http://www.chron.com/dispatch/story.mpl/headline/metro/5189858.html>.

<sup>6</sup> Bobb, Maurice. “Housing project targets families for Third Ward; Row House part of group's plan to preserve area.” *Houston Chronicle* [Houston, TX] 28 Oct. 2004: 1. *InfoTrac Newspapers*. Web. 29 Mar. 2011.

<sup>7</sup> Casimir, Leslie. “Older Black Communities Hurt by Family Issues, Appraisal Hike.” *Houston Chronicle*. 2007. 19 March 2011 <http://www.chron.com/dispatch/story.mpl/headline/metro/5189858.html>.

<sup>8</sup> “Houston-Greater Third Ward.” *Block Shopper*. 19 March 2011.  
[http://houston.blockshopper.com/foreclosures/by\\_city/houston-greater\\_third\\_ward](http://houston.blockshopper.com/foreclosures/by_city/houston-greater_third_ward).



**Figure 3.** Third Ward's proximity to Houston's amenities.

Source: Diagram by Author overlaid on top of aerial from Google Maps © 2012 Google, DigitalGlobe, GeoEye, Houston-Galveston Area Council, Texas General Land Office, Texas Orthoimagery Program, U.S. Geological Survey, USDA Farm Service Agency.



**Figure 4.** Townhouses on 2376 Bastrop St. priced at \$272,900 for a 2-bedroom unit.

Source: Author



**Figure 5.** One of many abandoned houses in the neighborhood.  
Source: Author

### Demographics

The Greater Third Ward has historically been an African-American community ever since freed blacks settled here after the Civil War. It was once a thriving mixed income community filled with pride and culture, but became a neighborhood of poverty and crime in the 1960s after the end of housing segregation. Many upper and middle-income African American families left the inner-city neighborhood to live in suburbs, which left the neighborhood primarily with low-income residents who could not afford to move.<sup>9</sup> In the year 2000, nearly half of the households earned less than \$15,000, making Third Ward one of the poorest areas in Houston (Figure 6).<sup>10</sup> It also has one of the highest annual average rates of violent crime in the city

<sup>9</sup> Row House Community Development Corporation, "Our History," Project Row Houses, <http://www.rowhousecdc.org> (accessed October 12, 2011).

<sup>10</sup> Illus. in Swamplot, "Houston Real Estate Landscape," <http://swamplot.com/playing-with-the-pie-houston-by-dot-and-slice/2010-12-16/> (accessed April 3, 2011).

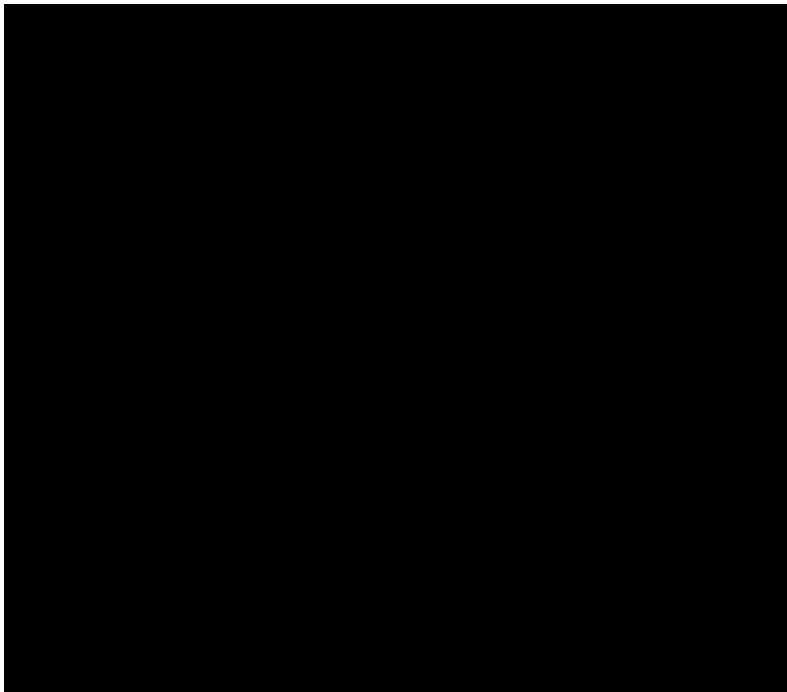
(Figure 7).<sup>11</sup> Education is also low in this neighborhood. Almost half of the Greater Third Ward residents ages 25 and above reported that they had not graduated from high school (Figure 8).



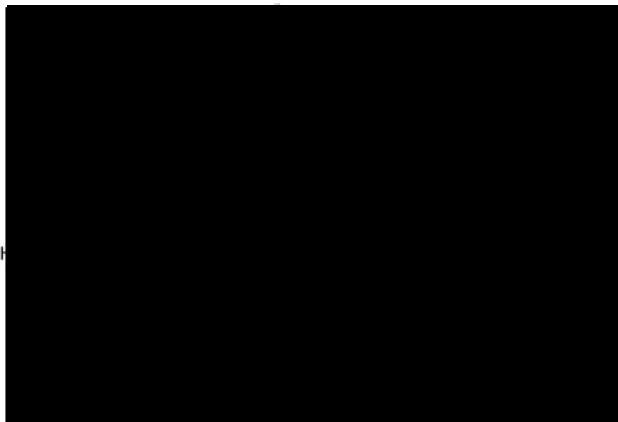
**Figure 6.** Median household income in 2000 by neighborhood. Red box highlights Third Ward.  
Source: Swamplot

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<sup>11</sup> City of Houston Department of Health & Human Services, "Community Health Profiles," <http://www.houstontx.gov/health/chs/Greater%20Third%20Ward.pdf> (accessed March 19, 2011).



**Figure 7.** Rate of violent crime by neighborhoods  
Source: Community Health Profiles



**Figure 8.** Between 1999-2003, almost half of the Greater Third Ward residents ages 25 and above reported that they had not graduated from high school.  
Source: Illus. in "Community Health Profiles." City of Houston Department of Health & Human Services. 19 March 2011 <<http://www.houstontx.gov/health/chs/Greater%20Third%20Ward.pdf>>.

### History and Culture

It is apparent that Third Ward residents strongly hold onto the history and culture that make up their close-knit community, making sure their voices are heard.

Every year, students from Yates High School exhibit photography pieces at the Houston Museum of Fine Arts to capture and spread the history and culture that is prevalent in the Third Ward community.<sup>12</sup> Ryan Middle School opened an exhibition on March 24, 2011 called "Working Shop," which portrays the historical figures and landmarks of the Third Ward. Students from Ryan Middle School worked collaboratively with the University of Houston Architecture & Graphic Communication students on the installations. The exhibition included important landmarks, such as the El Dorado Ballroom (Figure 9), which was the ward's social and cultural hub since the late 1930s. Famous musicians have performed here, including Ray Charles, B.B. King and Sam "Lightnin'" Hopkins. Also prominent in the neighborhood is the Texas Southern University, which was founded in 1935 as the Houston College for Negroes before it was taken over by the state in 1847.<sup>13</sup> Emancipation Park is also an important landmark when the original owners of Emancipation Park purchased it around 1870 to commemorate the end of slavery (Figure 10).

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<sup>12</sup> "Eye on Third Ward." Houston Museum of Fine Arts. 1001 Bissonnet Street, Houston, TX 77005. 24 March 2011.

<sup>13</sup> Kever, Jeannie. "Politically they're gone, but in people's minds they'll never die; Where the wards are." *Houston Chronicle* [Houston, TX] 7 Sept. 2004: 1. *InfoTrac Newspapers*. Web. 29 Mar. 2011.





**Figure 9.** El Dorado Ballroom

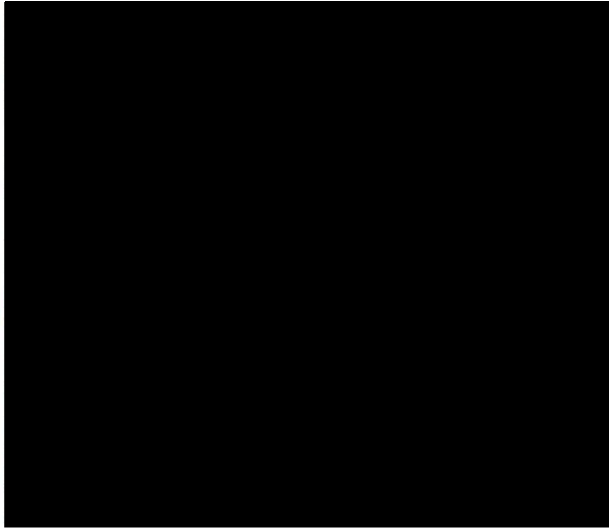
Source: Illus. in Project Row Houses. Row House Community Development Corporation. 10 March 2011 <<http://projectrowhouses.org/>>.



**Figure 10.** Emancipation Park was purchased around 1870 to commemorate the end of slavery. Source: Illus. in Emancipation Park. Project for Public Spaces. 10 March 2011 <<http://www.pps.org/projects/emancipation-park/>>.



The Project Row House has become a new landmark for Third Ward residents to voice their pride of their heritage. This project was founded by Rick Lowe in 1993 to address social change in one of Houston's most challenged neighborhoods, the Third Ward. He was inspired by an artwork by John Biggers, an African American artist, who illustrated rows of shotgun houses that reflected the pride and community of a neighborhood (Figure 11). Rick wanted to find an area that portrayed this painting and bring it back to life. He later discovered a row of 22 abandoned shotgun houses in the Third Ward and decided to restore its social and cultural significance (Figure 12). The goal was to purchase land in the Third Ward and rehabilitate and preserve the shotgun shacks as affordable housing. Funds from the National Endowment for the Arts and the Elizabeth Firestone Graham Foundation provided the means to purchase the properties. This created a stir within the community, and soon volunteers began pitching in. Employees from the Menil Collection helped renovate the shotgun style houses, while Chevron funded work for half the houses. Many volunteers participated in cleaning up, installing drywall, and building porches.



**Figure 11** John Biggers, 1987. *Shotguns*.

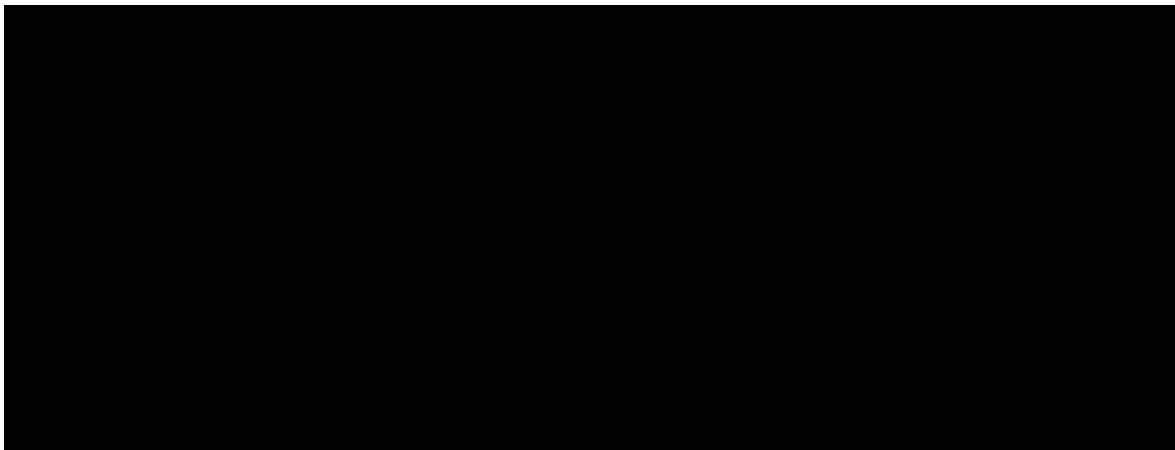


**Figure 12.** Shotguns being renovated.

Founders Rick Lowe and Jesse Loft during renovation of the original 22 row houses.  
Source: Illus. in Roeck, Waters. "Project Row Houses." Introspective. 02 April 2011  
<[http://www.1stdibs.com/introspective/on\\_location/project\\_row\\_houses\\_2010](http://www.1stdibs.com/introspective/on_location/project_row_houses_2010)>.

Of these original row houses, seven are dedicated art spaces (Figure 13), hosting creative installations by artists from around the world. Every four months, a new exhibition or "Artist Round" focuses on a theme. These themes reflect the surrounding Third Ward community in order to spread the importance of preserving the neighborhood's rich history and culture. Community residents visit, watching the

artist's progress, while the artists use the interaction as inspiration. Artist studios are also provided for three professional artists every year in exchange for their participation in the surrounding community, such as creating art projects, leading workshops, and giving lectures. Summer Residency Art Studios are also offered competitively to eight local college and university students who are studying the visual arts. This provides an opportunity for emerging artists to create and showcase their work in an urban community setting. The Project Row House campus includes eight houses for both local and international artists who can live here from a week to 5 months to do anything they please, hopefully with the intention of creating something within the community.



**Figure 13** One of the art projects in Round 33.

Source: Illus. in Project Row Houses. Row House Community Development Corporation. 10 March 2011 <<http://projectrowhouses.org/>>.

While the Project Row Houses renovated abandoned homes, they also filled vacant lots with new construction of affordable housing. Rick Lowe founded the Row House Community Development Corporation (RHCDC), a sister nonprofit organization to Project Row Houses, with the mission of “develop[ing] housing for

low-to-moderate income residents, public spaces, and facilities to preserve and protect the historic character of the Third Ward. [The] dream is to relocate families from substandard slums into new affordable rental units, while buying land for the construction and sale of affordable, owner-occupied homes over time.”<sup>14</sup> RHCDC has designed and built nine low-income housing units and is in the process of building and acquiring additional property for rental and home ownership. In the block behind the original row houses, four newly constructed two-story duplexes were designed by Architecture students at Rice University’s Building Workshop, also known as the Hannah Project (Figure 14). These new homes are low-density to match the context of the neighborhood. The designers also came up with a contemporary take on the African-American shot gun style homes, honoring the history and legacy of the community. Shot-gun style shacks are commonly found in the Third Ward and dates back to when freed slaves lived in these houses after the Civil War. The process involved studying the history of the shotgun houses and preserving traditions, such as using pier-and-beam to lift the houses above the ground for ventilation. Large porches were also incorporated, which traditionally served as a space from which interaction could occur.

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<sup>14</sup> Project Row Houses. Row House Community Development Corporation. 10 March 2011  
<<http://projectrowhouses.org/>>.

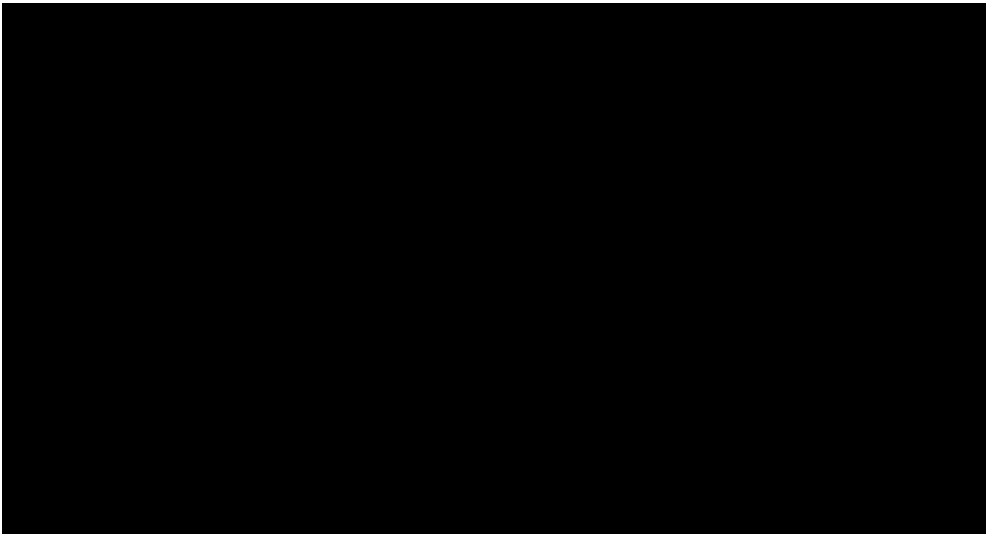


**Figure 14** The Hannah Project designed by Rice University Architecture students. (Source: Author)

## Climate + Landscape

### Climate

Houston's climate is hot and humid (Figure 15). Since winds are primarily coming from the South and Southeast (Figure 16), it brings in moisture from the Gulf of Mexico, causing the temperature to feel higher than it really is. To adapt to this climate, many Houston's early homes used pier and beam foundations to allow air to flow through the raised foundations. Covered porches were also used as outdoor spaces residents could enjoy comfortably.



**Figure 15.** Average Temperatures

Source: U.S. Climate Data, "Climate-Houston-Texas," Temperature-Precipitation-Sunshine, <http://www.usclimatedata.com/> (accessed October 20, 2011).

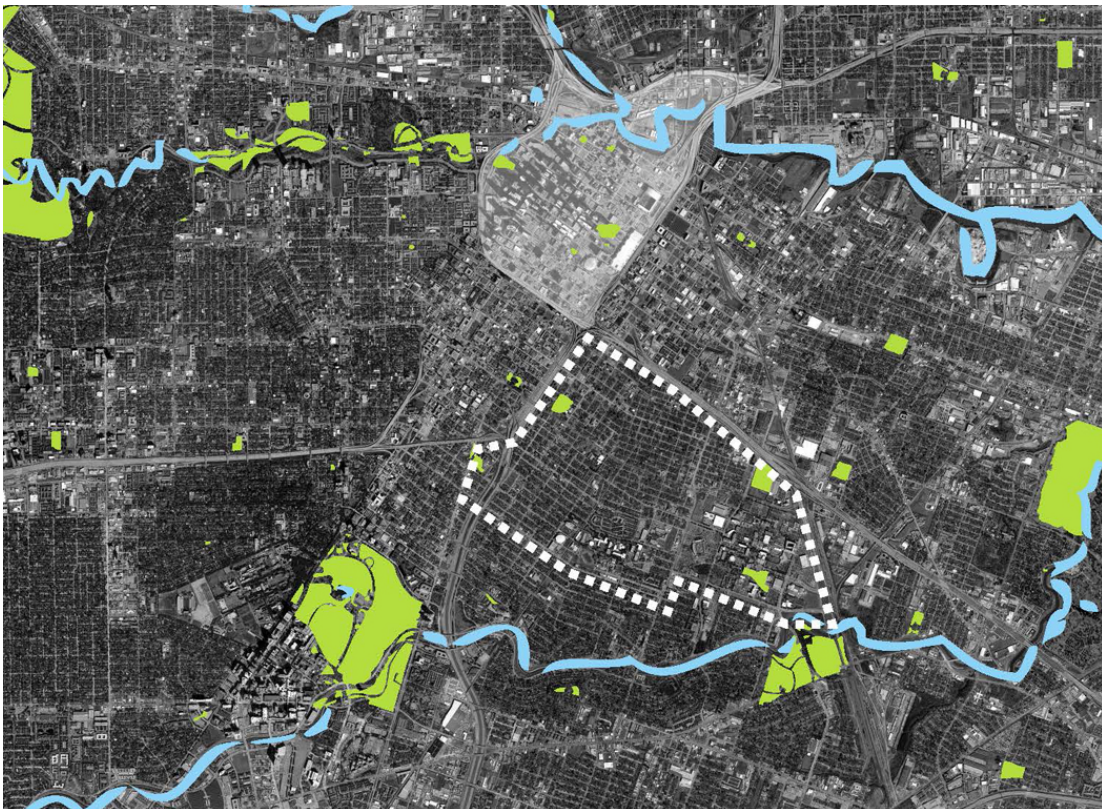


**Figure 16.** Wind Roses

Source: Natural Resources Conservation Service, “National Water & Climate Center,” United States Department of Agriculture, <http://www.wcc.nrcs.usda.gov/> (accessed October 20, 2011).

#### Vegetation + Hydrology

Houston is located near the Gulf Coast, alongside Buffalo Bayou which is a large river that runs through the city (Figure 17). Third Ward is also close to outdoor recreation and parks.



**Figure 17.** Third Ward's proximity to bayous and parks.

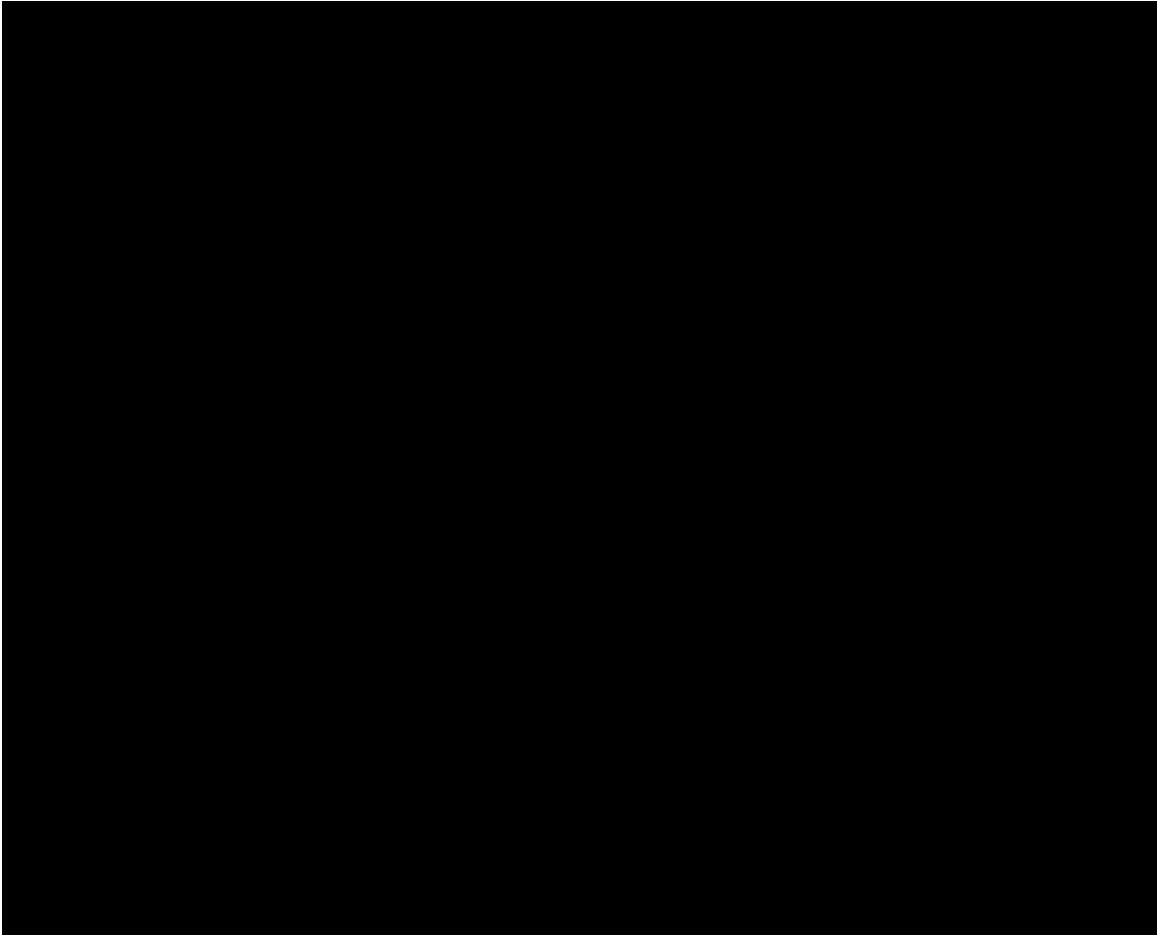
**Source:** Diagram by Author overlaid on top of aerial from Google Maps © 2012 Google, DigitalGlobe, GeoEye, Houston-Galveston Area Council, Texas General Land Office, Texas Orthoimagery Program, U.S. Geological Survey, USDA Farm Service Agency.

## Land-Use + Infrastructure

### Land-Use

A significant portion of land is single family residential with the University of Houston and Texas Southern University making up a large portion of the institutional land uses (Figure 18). Many commercial buildings and offices are concentrated along Dowling Street, which used to be a vibrant main street for Third Ward. Even though Dowling Street acts as the main corridor of the Third Ward, it is populated with empty lots and dilapidated buildings. It is evident that the neighborhood's loss of middle and high-income families during the 1960s, along with the recent rise in property values has left many lots vacant. There are undeveloped lots of land, especially north of Alabama Street towards downtown (Figure 19). It is apparent that middle-income families live South of Alabama Street since the blocks are more defined and consist of single family brick homes. Wooden shotgun houses populate the northern area where lower-income families live.





**Figure 18** Land Use  
Source: HoustonTX Planning



**Figure 19** Vacant lots are abundant north of Alabama Street.  
Source: Diagram made by Author based on GIS information.

### Transportation Networks

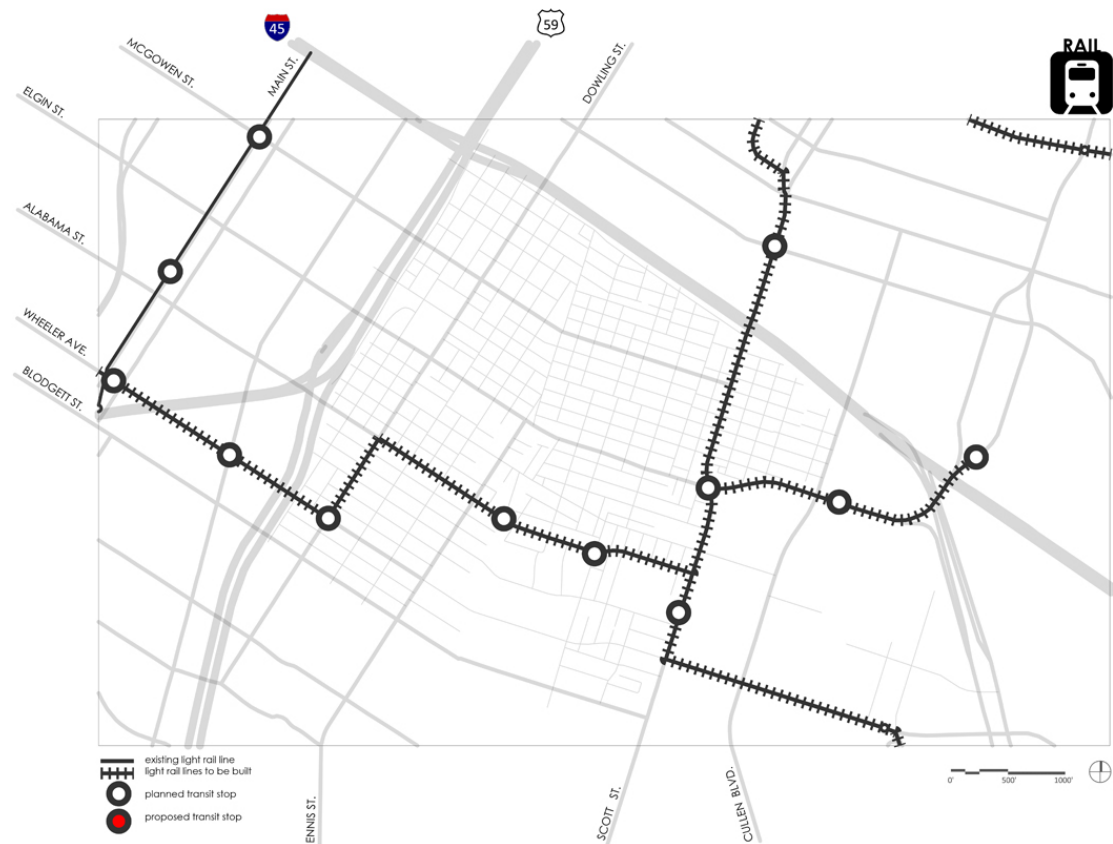
Third Ward is bounded by I-45 and US-59, which physically divides the neighborhood from downtown and the surrounding context (Figure 20). The fact that a small number of streets northeast of the site connect beyond Third Ward further highlights the division. The blocks are wide at the southern part of the neighborhood, but become smaller going north.



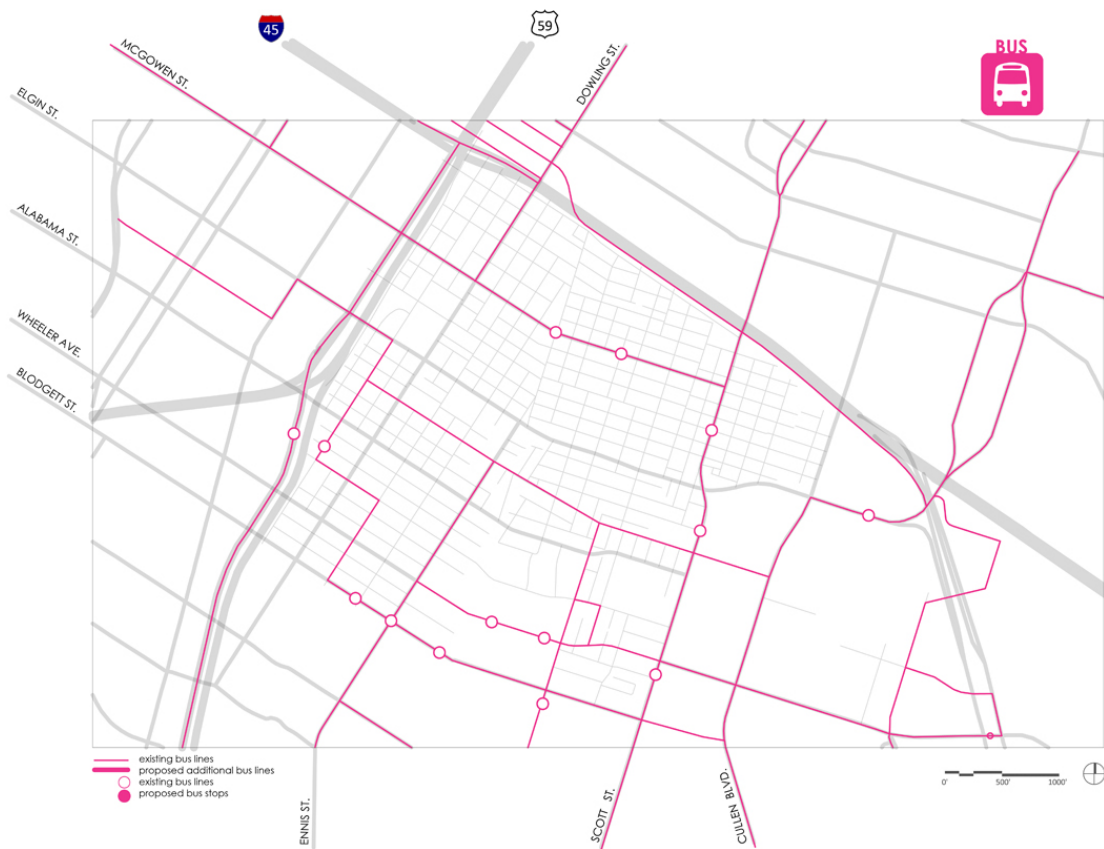
**Figure 20** Street Network  
Source: Author

The city's current proposed light rail lines cut through the Greater Third Ward (Figure 21), which has the potential to act as a divider. To avoid this division, careful design of the streets with light rail is necessary to offer safe crossings. Figure 22 shows the existing bus network, which must be reworked to accommodate the new light rail lines. Feeder buses should occur near these transit stops, in order to conveniently transfer people to other areas of Third Ward. The existing bike paths (Figure 23) will also need to be reworked to provide safe paths from all light rail transit and bus stops. The different modes of transportation networks must work

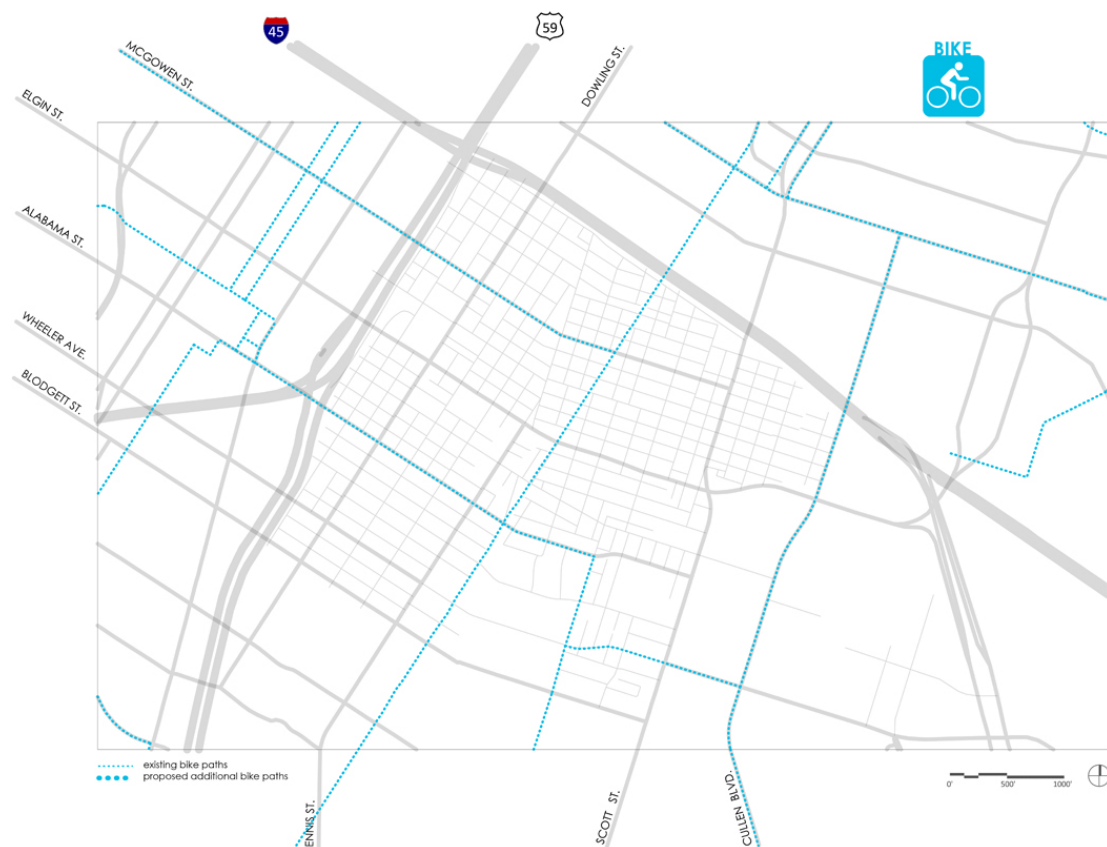
together in such a way that allows people to easily switch between modes,  
hopefully, lowering automobile dependency.



**Figure 21** Houston's current plan of proposed light rail lines.  
Source: Author



**Figure 22** Existing Metro Bus Network.  
Source: Author.



**Figure 23** Existing Bike Paths.  
Source: Author

## Chapter 3: Community + Culture Awareness

### Place-making

#### Major Landmarks

In Figure 24, major landmarks are highlighted. Two universities bound the southern part of Third Ward. Historical landmarks include the Project Row Houses campus and Emancipation Park. Knowing the location of landmarks will help strategically place developments, so that they increase visibility and accessibility to these important places.

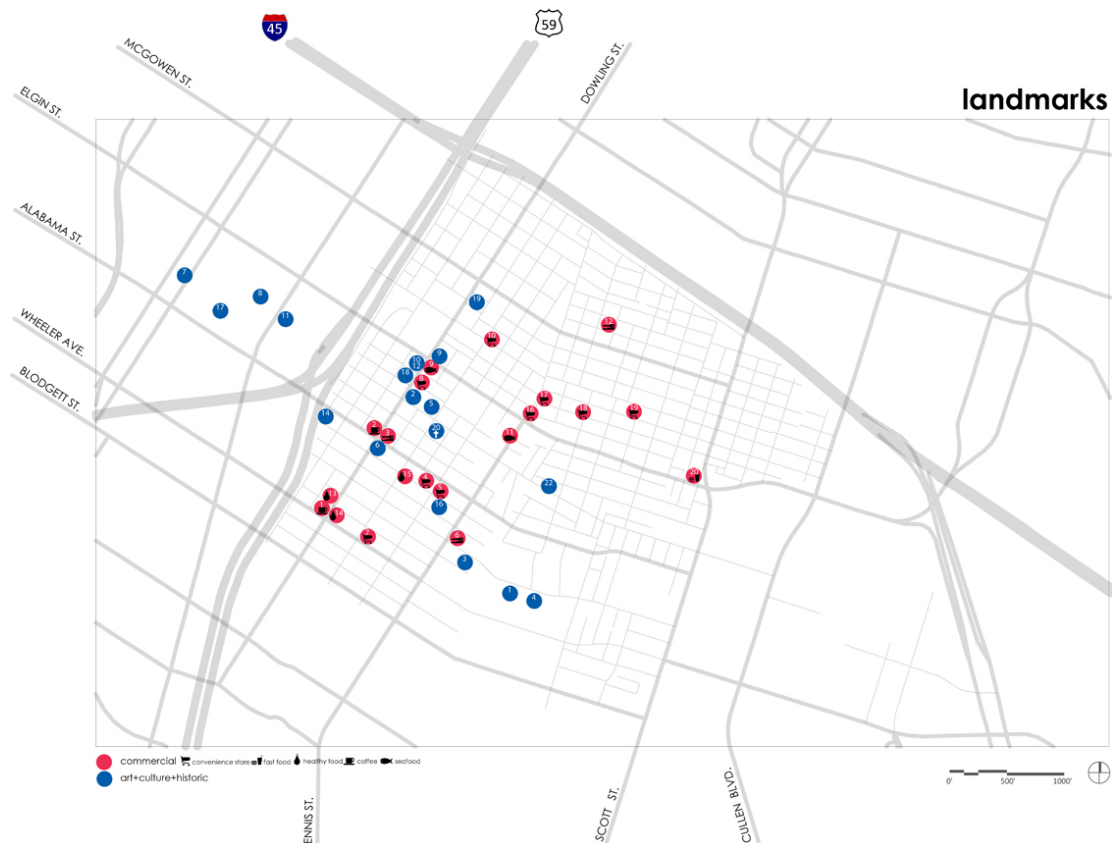


**Figure 24.** Community Landmarks  
Source: Author



## History + Memories

Project Row House recently held an exhibition, called “Communograph,” in which it mapped landmarks that were important to local residents (Figure 25). These include mom and pop shops, restaurants, community centers, and art and cultural landmarks. What makes Third Ward unique is that there are no chain stores. The commercial businesses are all local and family owned. Many of these landmarks have been around for about 50 years and are thus, crucial to keep. It is essential to weave new developments with these landmarks in order to bring more people to visit these places.



**Figure 25.** Landmarks marked by local residents.  
Source: Author



## Chapter 4: Transit-Oriented Development

### Definition

#### Principles

According to Peter Calthorpe, the main purpose of Transit-Oriented Development is to lessen urban sprawl and automobile-dependency by designing compact walkable communities at strategic nodes along transit lines. Many concepts, such as Pedestrian Pockets, Urban Villages and Compact Communities share the same goal of creating walkable mixed-use communities, but do not incorporate the transit system. Instead, these focus on structuring communities and neighborhoods at an individual basis, while TODs are integrated into the regional scale of public transit. Planning the city to include a transit network organizes development and supports meaningful communities, while preventing random growth. It can also encourage infill and redevelopment. TODs act as nodes that must be strategically located in order to strengthen and improve existing communities. New areas of growth can also be created if thoughtfully located.

The main principles of Transit-Oriented Developments involve placing a mix of uses (civic, commercial, jobs, housing, and parks) within walking distance of transit stops, creating pedestrian-friendly street networks that connect people to local destinations, offering a variety of housing types, densities and costs, providing open space to foster interaction, and encouraging infill and redevelopment along transit nodes in neighborhoods. The concentration of many uses within walking

distance allows people to conveniently access multiple destinations in one trip.<sup>15</sup>

This efficiency makes the place affordable to live in because it saves time and lowers automobile dependency. It also activates the area with public amenities and spaces to foster interaction and community building.

### Types

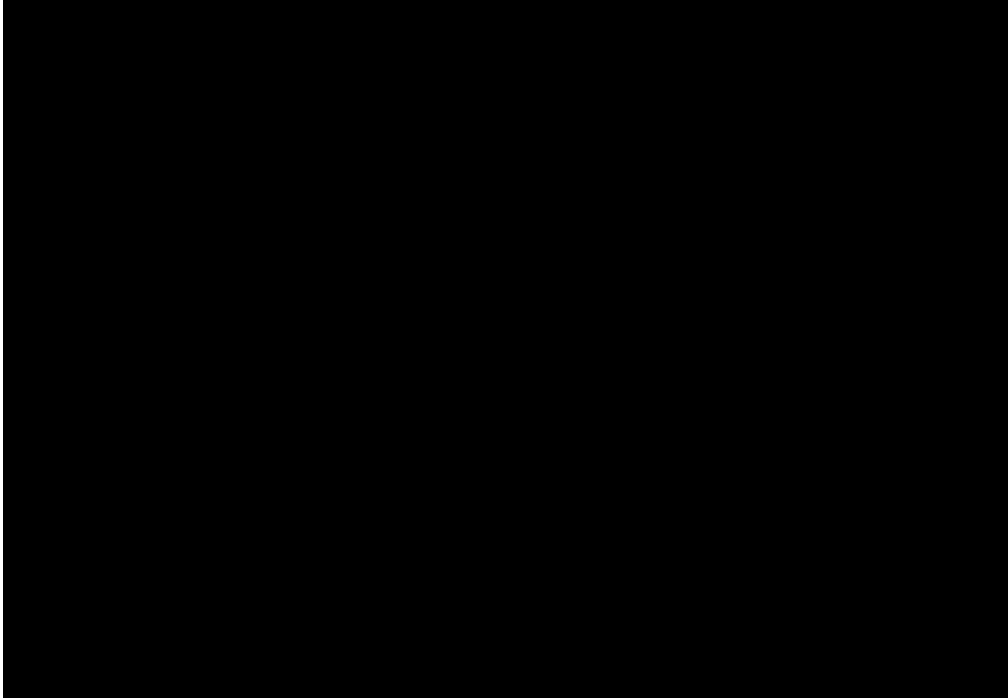
An organized network of Transit-Oriented Developments throughout the region will increase public use of the transit system, especially if each node is well developed and well used. Since there are different types of communities, not all TODs can be the same. Peter Calthorpe describes two types of Transit-Oriented Developments, which are Urban TODs and Neighborhood TODs. These types of TODs provide hierarchy at a regional scale.

#### Urban Transit-Oriented Developments

Urban TODs (Figure 26) are located on the trunk line of the heavy rail, light rail, or express bus stop transit system. Since these transit stops are directly accessible, these developments should include high commercial density, plenty of job opportunities, and moderate to high residential densities. TODs should also have its own character based on the location, market demands, and existing developments. This allows each node to have its own identity.

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<sup>15</sup> Calthorpe, Peter. *The Next American Metropolis* (New York: Princeton Architectural Press, Inc., 1993), 43.



**Figure 26. Urban TOD Diagram by Peter Calthorpe.**

(Source: *The Next American Metropolis*, 57)

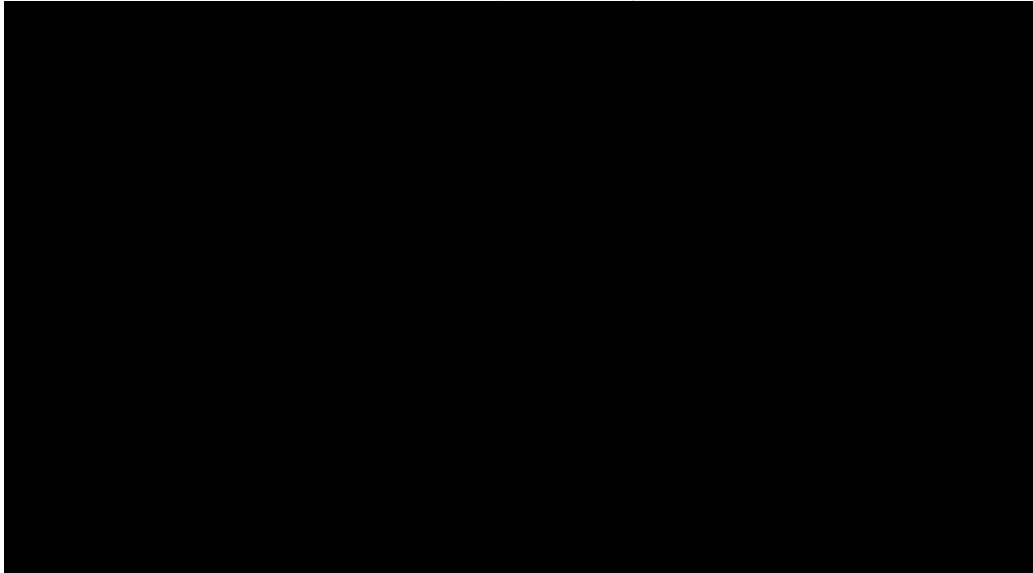
#### Neighborhood Transit-Oriented Developments

In a Neighborhood TOD (Figure 27), the focus is on serving the local neighborhood instead of the public. This development is located on a local or feeder bus line that is no more than 3 miles (about 10 minutes transit travel time) away from a trunk line transit stop.<sup>16</sup> Since fewer outsiders will visit the Neighborhood TOD compared to the Urban TOD, the residential, service, retail, civic, and recreational uses are moderate in density to serve the demands of the local neighborhood. A diversity of

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<sup>16</sup> Calthorpe, Peter. *The Next American Metropolis* (New York: Princeton Architectural Press, Inc., 1993), 57.

housing types also allows the TOD to be affordable for many different families. Neighborhood TODs can help improve existing communities by respecting the character and culture of the neighborhood.



**Figure 27.** Neighborhood TOD Diagram by Peter Calthorpe.

(Source: The Next American Metropolis, 57)

### Program

According to Peter Calthorpe, a TOD must have a core commercial area, residential area, and secondary area. Even though the densities of each area differ between the Urban TOD and Neighborhood TOD, the program's uses must still relate to the existing neighborhood. For every TOD, the core commercial and residential areas should be placed within a 5-minute walking distance from the transit stop, while the secondary area is beyond this imaginary boundary.

### Core Commercial Area

The core commercial area mainly consists of a mixture of retail, offices, second floor residential, entertainment, public and light-industrial uses, but can be as minimal as providing only retail and offices.<sup>17</sup> These should be located adjacent to the transit stop where they can be easily accessed. By combining retail and services at the transit stop, more people are likely to go to work using public transit. It makes it more convenient to run multiple errands at a time. The transit stop and core commercial area should also be complemented with public uses (parks, plazas, and public buildings) that serve people who live and work in TODs. Successful public spaces represent the community's identity, while encouraging social interaction and community functions. In order to create a vibrant and safe environment, there must be places where people can meet, eat, and participate in recreational activities. These public spaces should be activated by public buildings, civic services, transit, or retail nearby.<sup>18</sup>

### Residential Area

The residential areas in a TOD require a mix of housing types- small lot single family, townhomes, condominiums, and apartments that are walking distance from the core commercial areas and the transit stops. This variety of housing type, density and cost allows the community to be affordable for many different families. In order to support the demand of living near resources and amenities at the transit stop, a

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<sup>17</sup> Calthorpe, Peter. *The Next American Metropolis* (New York: Princeton Architectural Press, Inc., 1993), 58.

<sup>18</sup> Calthorpe, Peter. *The Next American Metropolis* (New York: Princeton Architectural Press, Inc., 1993), 59.

higher concentration of households is required compared to typical residential areas. These residential areas must “extend from the core commercial area and transit stop over an area that is an average of 2,000 feet in radius, representing a 10-minute walking distance.”<sup>19</sup> Having many households at the transit stop also keeps an eye of the area after commercial hours, which creates a safer environment.

#### Secondary Area

Surrounding the walking radius of the TOD is the secondary area for low-density uses, which are located no further than one mile from the core commercial area. These include the single-family houses, schools, lower intensity businesses, and major parks. Even though the secondary areas are outside the TOD, it should provide direct street and bicycle pathways to the transit stop. By maximizing street connections to the TOD, residents from single-family homes are more likely to walk, bike or use public transportation. The secondary areas are essential to support the TOD where residents and workers can shop and generate riders for the transit system. Care must be taken to avoid commercial uses that compete with the core commercial areas, so that they do not lessen the center’s viability. Low intensity industrial and warehousing uses should also be avoided, since they do not generate enough employees to support core commercial areas.<sup>20</sup>

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<sup>19</sup> Calthorpe, Peter. *The Next American Metropolis* (New York: Princeton Architectural Press, Inc., 1993), 59.

<sup>20</sup> Calthorpe, Peter. *The Next American Metropolis* (New York: Princeton Architectural Press, Inc., 1993), 42.

## Density

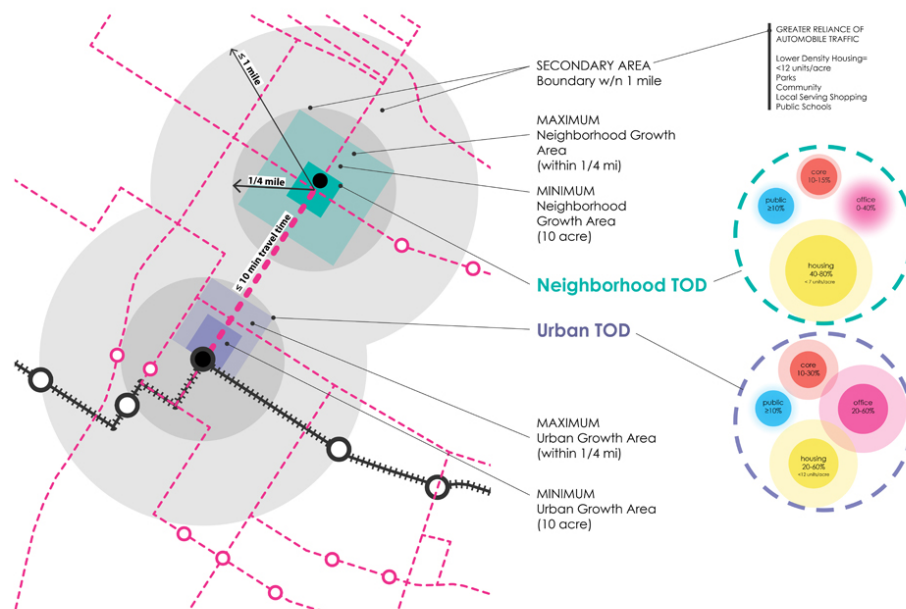
Every TOD's density depends on both the site and economy of the development, so there is no absolute density standard for a TOD. However, TOD density usually matches or exceeds the highest densities found elsewhere in the community. The mix of uses- commercial, residential, and public – are defined with minimum densities and land areas. Based on Peter Calthorpe's theory and recommendations, a diagram was created defining Urban and Neighborhood TODs with suggested land area program percentages within each TOD (Figure 28). The purpose is to make sure there are enough mixed-use programs to activate pedestrian activity. The ranges of percentages allow communities to define appropriate densities based on their specific site, context, market demand, infrastructure capacity and how often people use transit.

TODs can occur in redevelopable, infill, and new growth sites. Redevelopable sites are areas that have been developed, but are in dire need of improvement. These sites need to be revitalized with appropriate program uses and transit service. Infill sites are vacant areas near existing urban areas. For both redevelopable and infill sites, the area of the TOD must meet a minimum of 10 acres to encourage a sufficient mix of uses. TODs can also occur in new growth sites, which are large undeveloped areas typically at the edge of the city. These developments require a minimum of 40 acres.<sup>21</sup> Since Third Ward has many vacant lots, Transit-Oriented Developments can serve as a revitalization tool to bring in new uses that the

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<sup>21</sup> Calthorpe, Peter. *The Next American Metropolis* (New York: Princeton Architectural Press, Inc., 1993), 68.

community needs. This development should integrate existing uses that are essential in defining the character of the community. A transit line can also stimulate growth by bringing people in, while connecting residents to outside resources and amenities.



**Figure 28.** Diagram based on Peter Calthorpe's recommendations of program percentages within Urban and Neighborhood TODs.

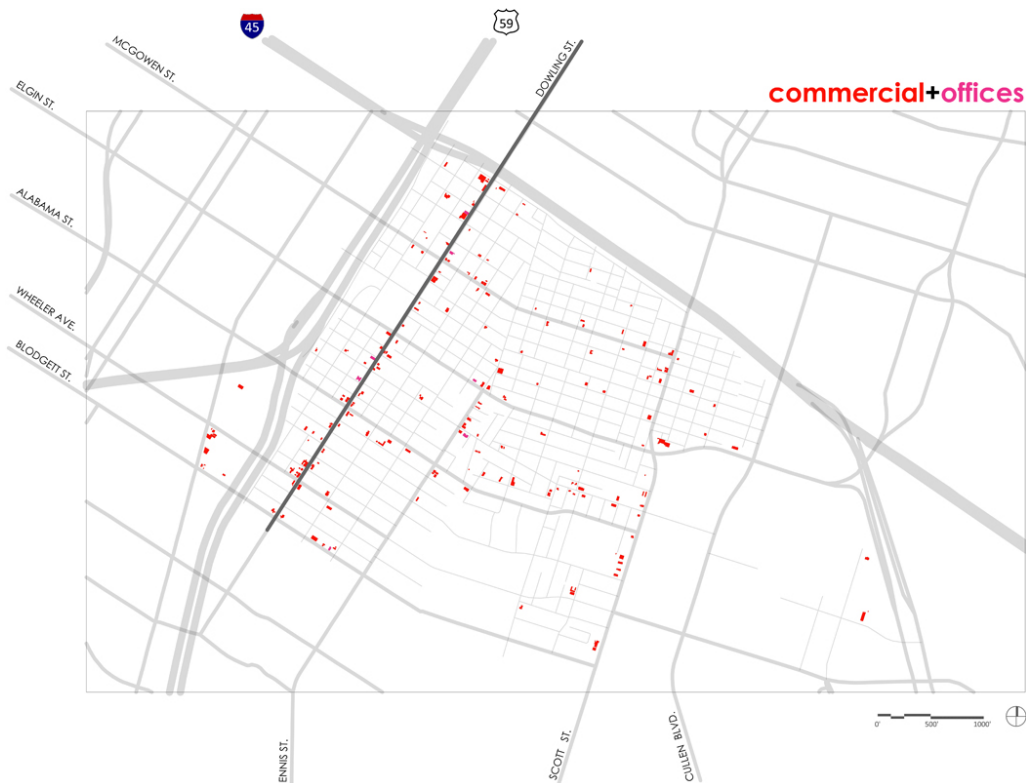
Source: Author's diagram based on Peter Calthorpe's theory

### Proposed Urban TOD

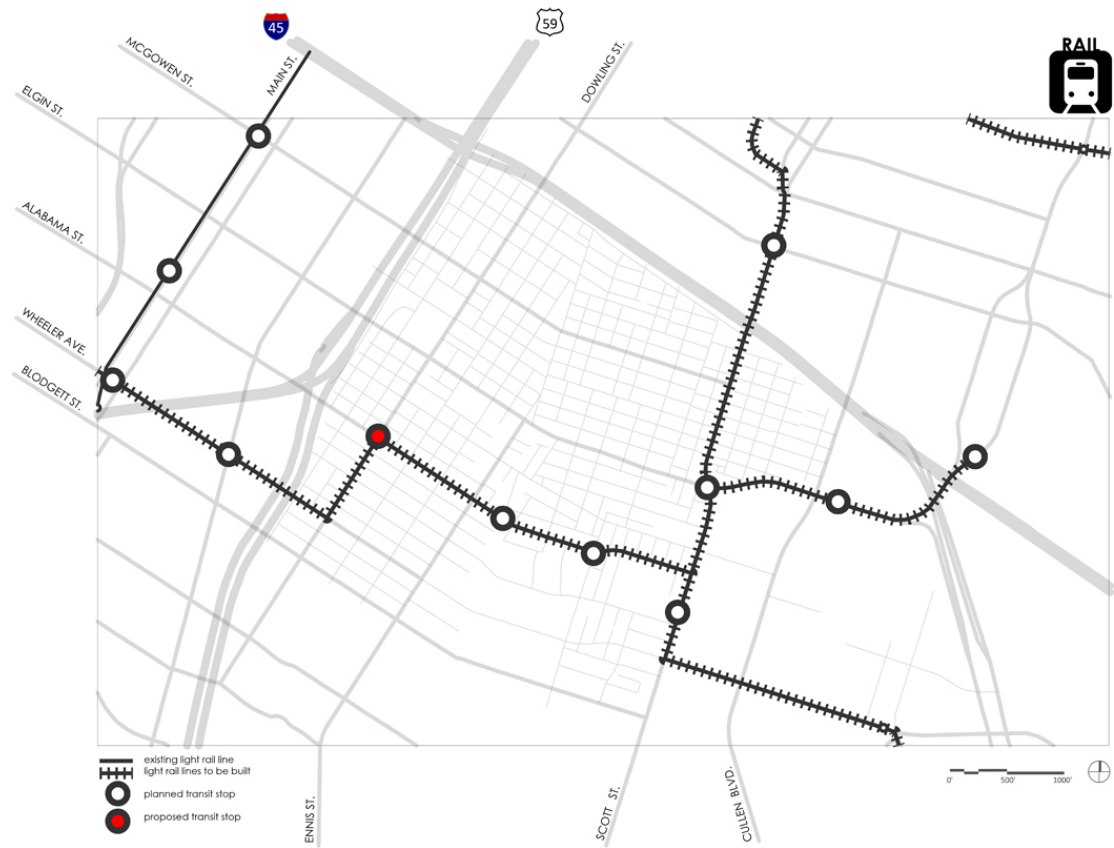
Since the northwestern part of Third Ward has many vacant lots, transit oriented development can be utilized to revitalize the area. Many commercial and office buildings are concentrated on Dowling Street (Figure 28), which is historically known



as the main street of Third Ward. It is also peppered with historical landmarks, such as churches, mom and pop stores, barber shops, and small restaurants that have been around for years. By placing a transit stop at the corner of Alabama Street and Dowling Street (Figure 29), the Urban TOD can weave mixed-use developments north of the intersection with the existing fabric. A 5-minute walking radius from this proposed transit stop easily reaches landmarks, such as the Project Row Houses campus and the Emancipation Park (Figure 30). This stop can become a gateway to the heart of the community, increasing visibility and connectivity between Third Ward and the surrounding context. This transit node can act as a landmark that celebrates the history and culture of Third Ward.



**Figure 29.** Commercial concentration on Dowling Street.  
Source: Diagram made by Author based on GIS information and Land Use map.



**Figure 30.** Proposed Urban TOD node.  
Source: Author



**Figure 31.** Proposed Urban TOD node has connections to major landmarks.  
Source: Author

#### Proposed Neighborhood TOD

A Neighborhood TOD is proposed northeast of the Urban TOD (Figure 31), where abandoned lots are most abundant. The Neighborhood TOD is less than 10 minutes away by feeder bus from the light rail transit stop. Introducing new development in the most underutilized land areas can create opportunities to rebuild and fill these patches with mixed-use programs and different types of housing. The Neighborhood TOD and the Urban TOD also strategically meet at Third Ward's major historical landmark, Emancipation Park. This enables Emancipation Park to be easily accessible to people outside of the neighborhood, while also serving the local residents from the Neighborhood TOD.



**Figure 32. Proposed Urban and Neighborhood TODs.**  
(Source: Author)

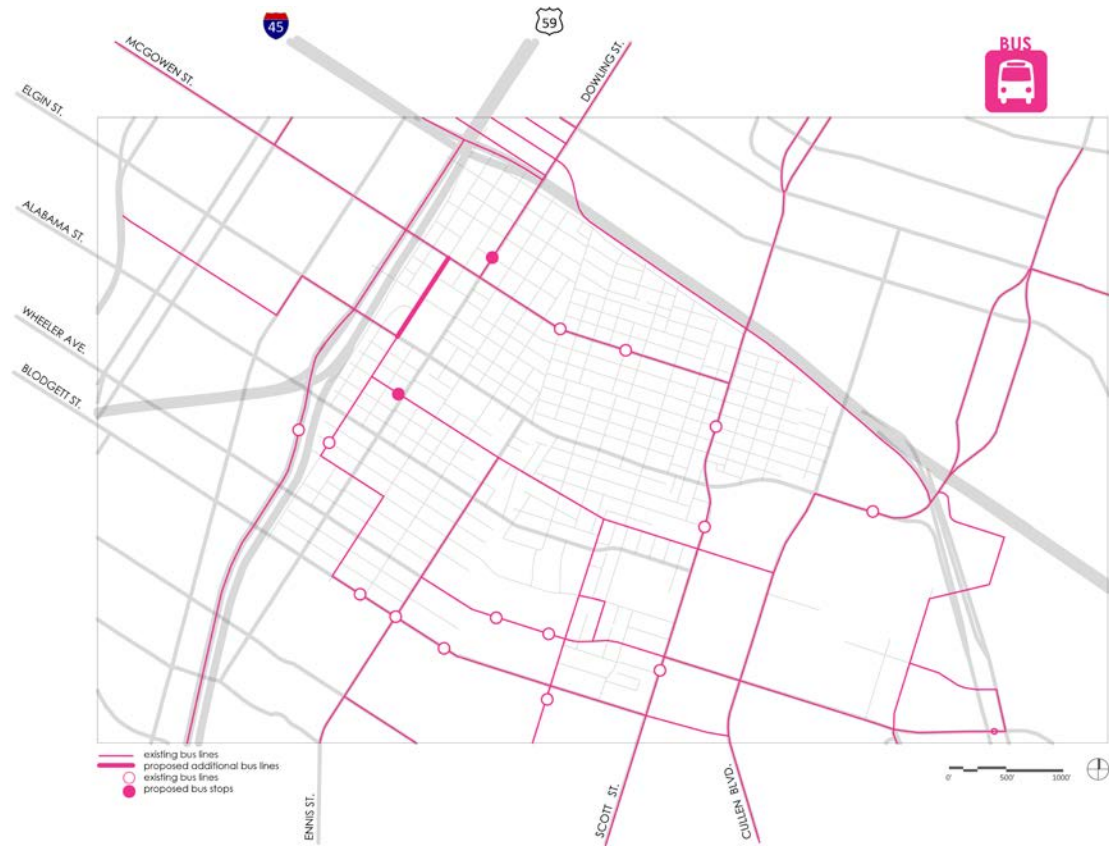
### Multi-Modal Connectivity

Every TOD should have a multi-modal network that supports alternatives to a car.

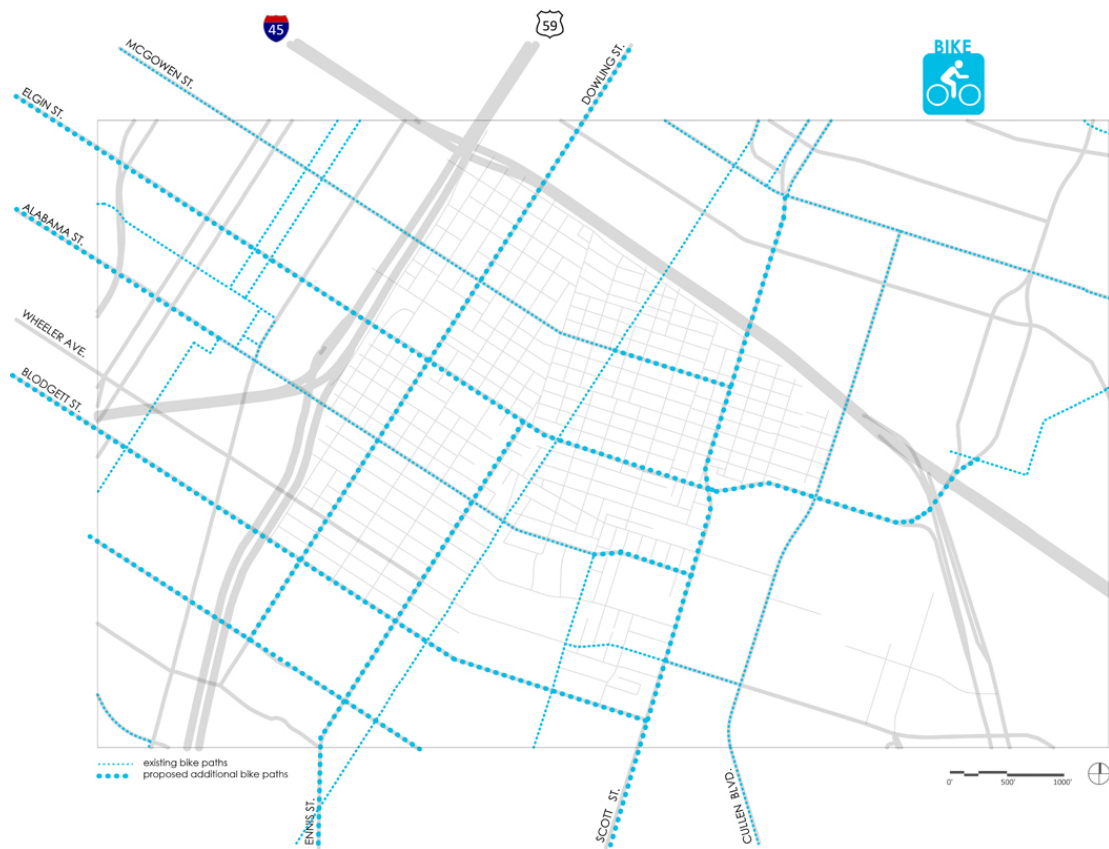
The public transit, bus, bicycle, and walking network should holistically work together. This will allow people to combine trips more easily between different modes of transportation and have more direct routes to local destinations. When less people use their car, it may lower traffic on highways and arterial roads.<sup>22</sup>

<sup>22</sup> Calthorpe, Peter. *The Next American Metropolis* (New York: Princeton Architectural Press, Inc., 1993), 46.

In the bus network (Figure 33), a feeder bus is added to connect the Urban TOD with the Neighborhood TOD. In the bicycle network (Figure 34), more pathways were added to major roads that extend beyond Third Ward's boundaries. Figure 35 shows the proposed multi-modal networks that holistically work together, so that people can easily transfer between modes.

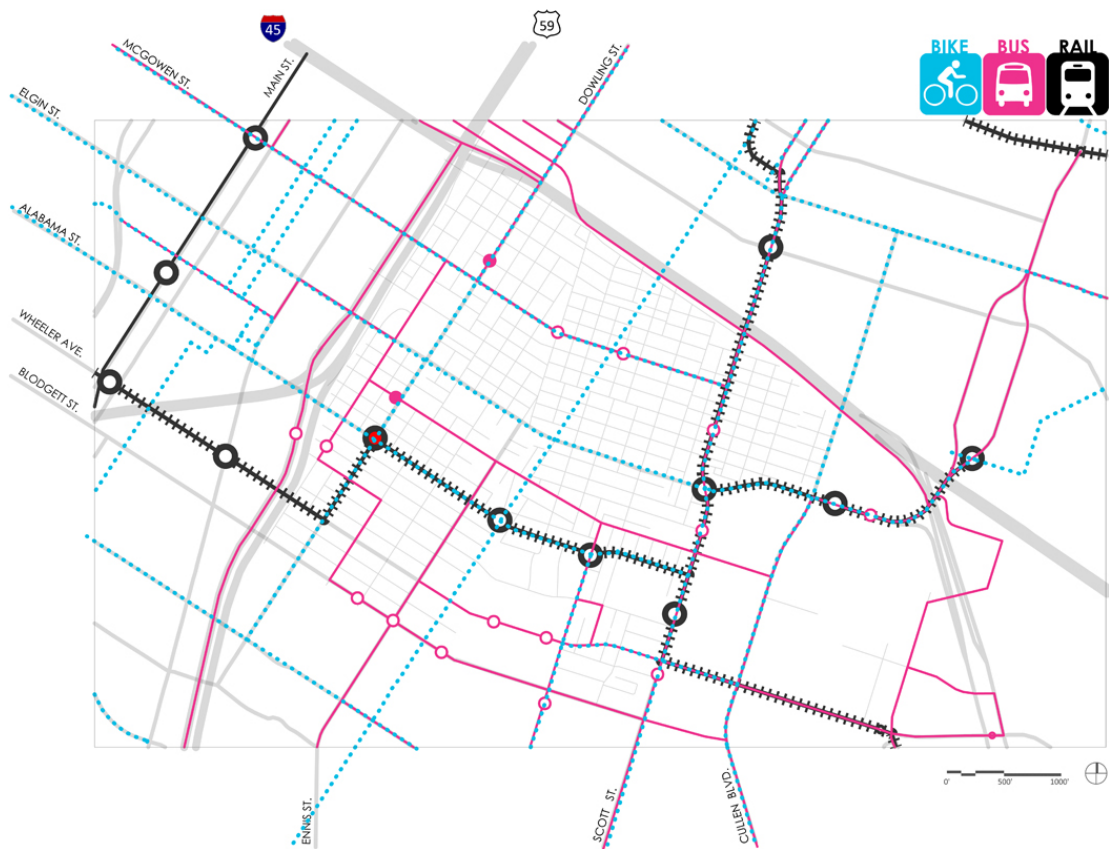


**Figure 33.** Proposed Bus Network.  
Source: Author.



**Figure 34.** Proposed Bicycle Network.  
Source: Author.





**Figure 35.** Proposed Multi-modal Network.  
Source: Author.

### Qualities

#### Active streets for the Pedestrian

In order to create an active street, it should be supported by a mix of uses that offer the pedestrian a number of choices. Only programs that generate pedestrian activity can be located at the ground floor. Public streets must all have sidewalks with building setbacks minimized. Bringing buildings close to the sidewalk helps define the edge, while encouraging window shopping and street-side activity. Peter Calthorpe recommends a 15'-20' sidewalk to allocate space for pedestrians as well

as things that enhance the pedestrian-friendliness of a street, such as plantings, street furniture, outdoor dining, etc.<sup>23</sup> The entrances should also open onto public streets with connections to the sidewalk.

### Positive Practices

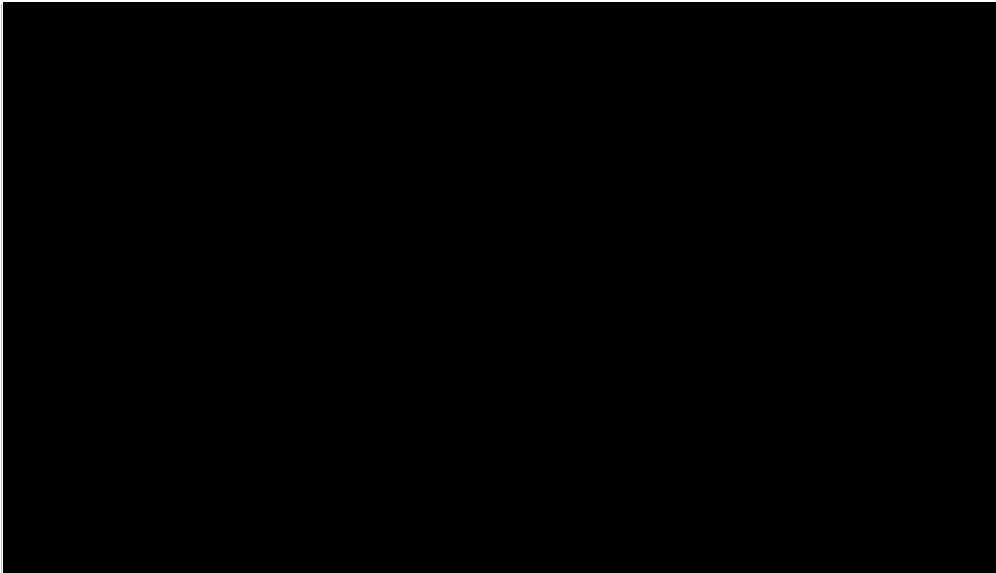
#### Barrio Logan's Mercado Project

Barrio Logan's Transit-Oriented Development is a successful example of how a poor inner city neighborhood was revitalized, while maintaining the character of the community. Artists were hired to paint murals and create sculptures that give the place an identity. The architecture of the Mercado affordable housing project also reflects the vernacular of the neighborhood by using a colorful palette typically found in the Hispanic culture (Figure 36). In Figure 38, the street section shows how "eyes on the street" are kept by creating porches and balconies that face the street. Parking on either side also slows down traffic, while creating a buffer zone for the pedestrians.

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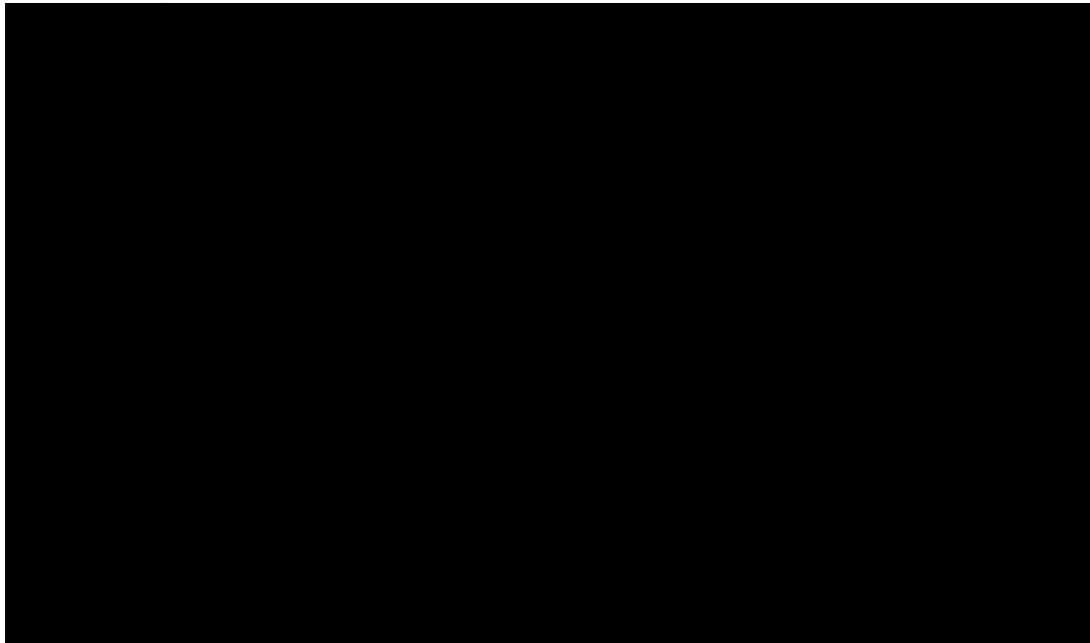
<sup>23</sup> Calthorpe, Peter. *The Next American Metropolis* (New York: Princeton Architectural Press, Inc., 1993), 79.



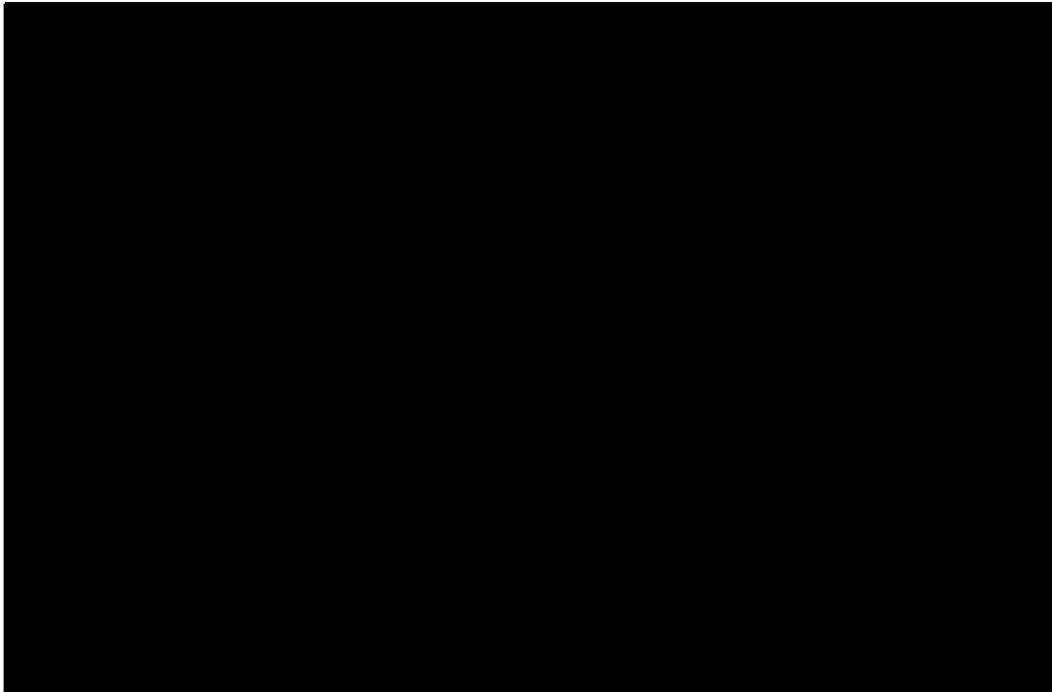


PRECEDENT ANALYSIS  
Barrio Logan's Mercado Project: San Diego, CA

**Figure 36.** Mercado Apartments + Artwork  
Source: Environmental Protection Agency



**Figure 37.** Zoning Diagram  
Source: Environmental Protection Agency

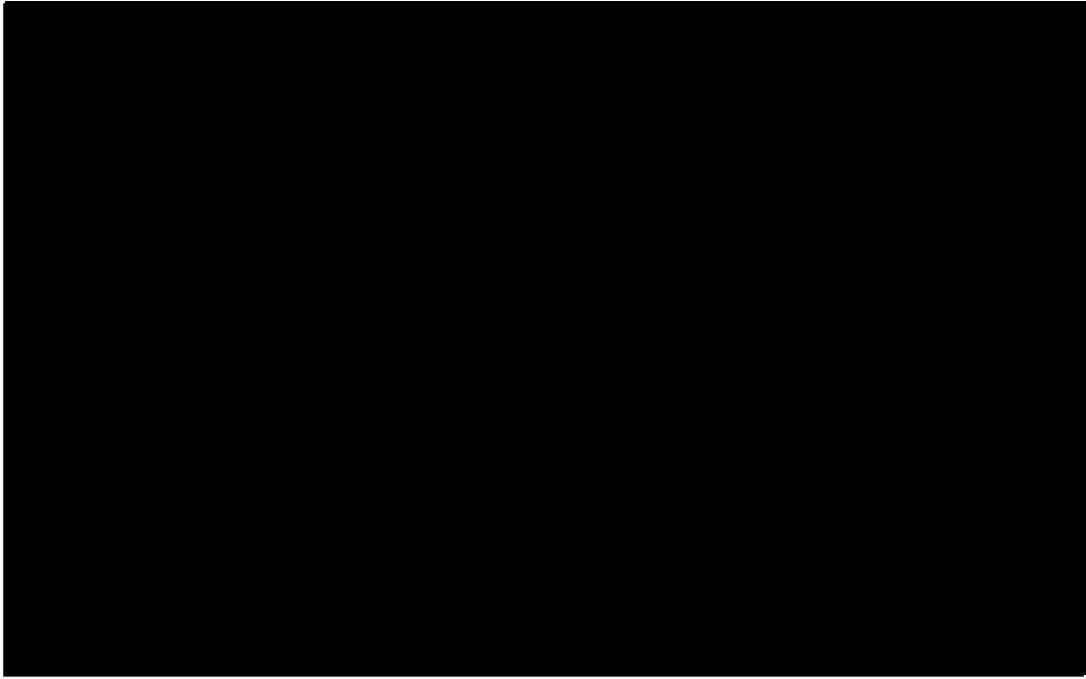


**Figure 38.** Street Section

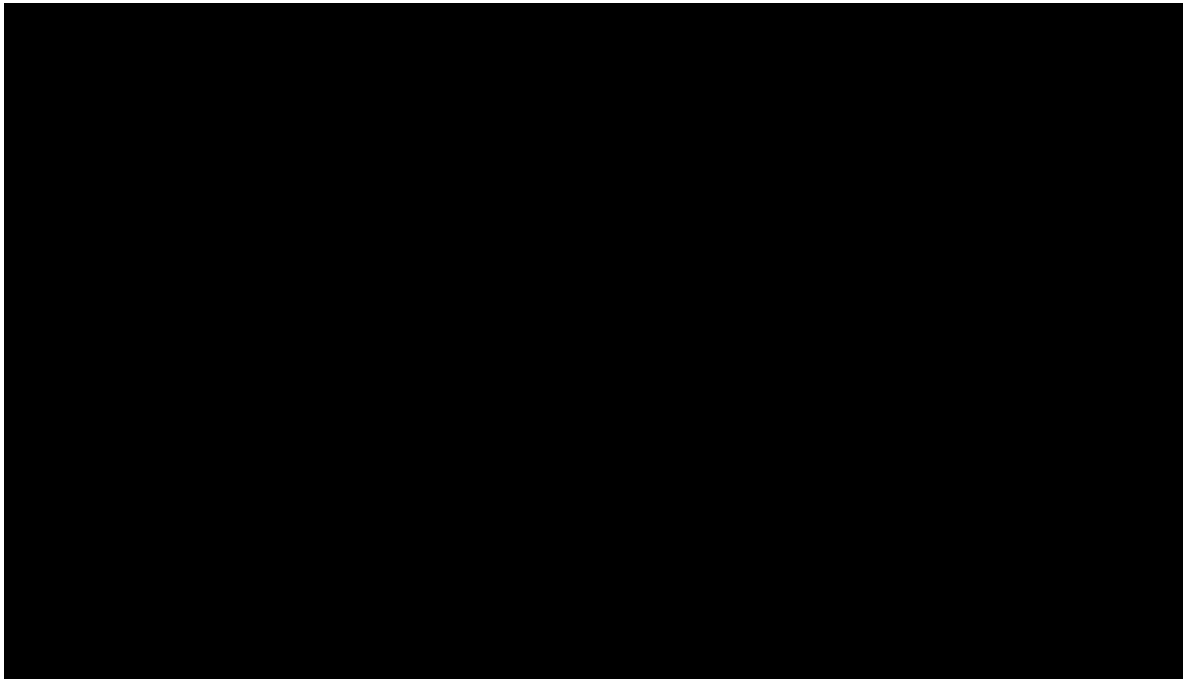
Source: Street View taken from Google Maps + Street Section by Author

San Diego, CA

Calthorpe Associates designed the transit-oriented development in San Diego CA. Before the intervention, there was a lack of public and semi-public spaces. Most of the extra spaces were allotted to parking of automobiles. In the intervention, the residential mixed-use buildings and public buildings front the streets, while creating semi-public spaces within the block (Figure 39). Trees line the streets to make it more pedestrian-friendly. In Figure 40, Calthorpe designed several different types of street sections to give streets a different character and feel.



**Figure 39.** Before and After  
Source: Peter Calthorpe



**Figure 40.** Public spaces  
Source: Base map from [Peter](#) Calthorpe & altered by Author

## Chapter 5: Form-Based Codes

### Definition

Form-based codes are an alternative to conventional zoning. Instead of focusing in separation of uses, it establishes regulations of the physical form in hopes to create or maintain a certain character of a place. The components of form-based codes consist of the regulating plan, public space standards, building form standards, and building type standards.<sup>24</sup>

### Importance of Form-based Codes

Many TOD projects fall short in their potential in place making. One such example is the Rosslyn-Ballston Corridor, which had success in attracting developments, but not much success in creating interesting places. There were no plans in preserving and integrating historic landmarks into the transit-oriented development. The community lost its original character due to new developments that ignored the vernacular.<sup>25</sup>

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<sup>24</sup> Daniel O. Parolek et al., *Form-Based Codes* (New Jersey: John Wiley & Sons, Inc., 2008), 15.

<sup>25</sup> Hank Dittmar and Gloria Ohland, *The New Transit Town* (Washington: Island Press, 2004), 150-1.

Like any building, TODs should build on the positive aspects of the existing urban fabric to establish a strong sense of community. Within transit-oriented development nodes, form-based codes are proposed as a way to maintain the character and culture of Third Ward. In order to design these codes, a thorough study of the social infrastructure is necessary to understand what makes it conducive to the community.

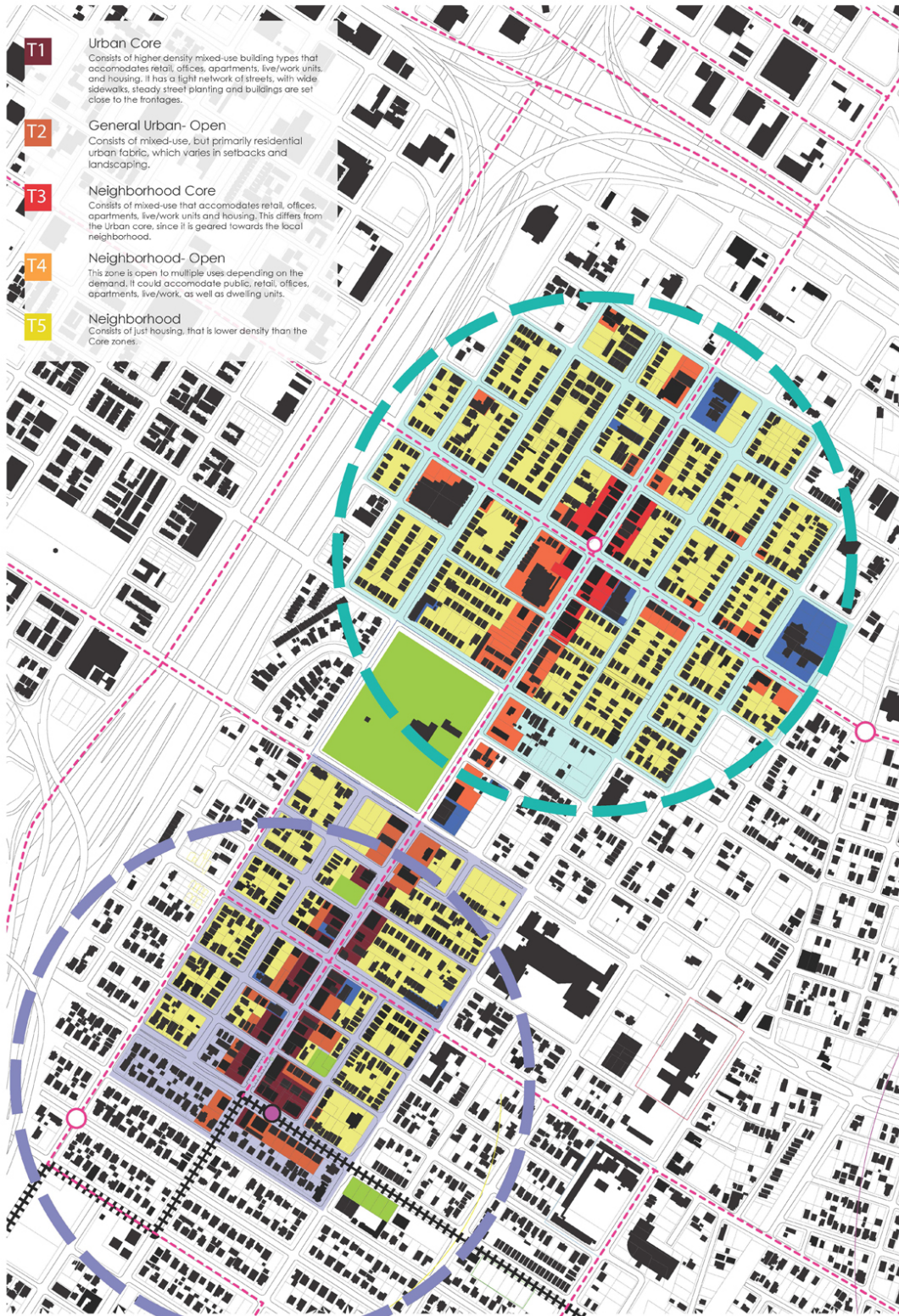
### Components

#### Regulating Plan

A regulating plan assigns the various standards to physical locations by zones. It regulates places, instead of uses. These proposed zones establish a hierarchy of form and intensity. Using the proposed program percentages recommended by Peter Calthorpe, a regulating plan was created for Third Ward that included both the Urban and Neighborhood TODs (Figure 41). Zone T1 is the Urban Core, which is the commercial core of the Urban TOD. It consists of higher density mixed-use building types that concentrate retail, offices, apartments, live/work units and housing in this zone. T2 is General Urban-Open, which is open to any program depending on the demand. T3 is the Neighborhood Core, which is the commercial area in the Neighborhood TOD. This differs from the Urban Core, since it is geared towards the local neighborhood. T4 is Neighborhood- Open, which is open to multiple uses depending on the demand. The last zone is T5, the Neighborhood, which consists of just housing that is lower density than the core zones.



## Regulatory Plan | Zones



**Figure 41** Regulating Plan  
Source: Author

## Public Space Standards

Public space standards are created to design the public realm of a community, such as the streets and civic spaces. This is particularly important for transit-oriented developments, since its success relies heavily on how easy it is for pedestrians to navigate between different modes of transportation. Sidewalks, travel lanes, street trees, along with the interface of buildings can be regulated to create a pleasant streetscape.<sup>26</sup> The thoroughfares in Third Ward are generous in width, making it easier for people to drive over the speed limit. These faster speeds create unsafe and unpleasant street life for pedestrians. In order to analyze and propose improvements, existing street sections were first drawn and recorded.

Since the light rail line will travel along Alabama Street, it will shorten the width of the street from four to two travel lanes. In Figure 42, Alabama's existing street section is shown on the left, while the proposed improvements are on the right. This type of street is highlighted in blue, which is keyed to the map on Figure 46. Bicycle lanes are added to create a separate lane from vehicular traffic. Since Houston has hot and humid weather, trees are added to provide shade for pedestrians and cyclists.

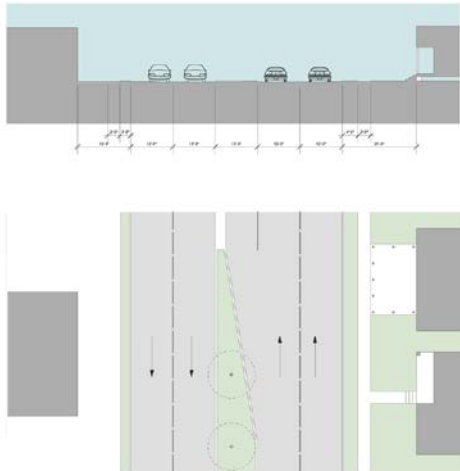
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<sup>26</sup> Daniel O. Parolek et al., *Form-Based Codes* (New Jersey: John Wiley & Sons, Inc., 2008), 15.



## Existing

Alabama St.



## Proposed

Major Street w/ Light Rail Line

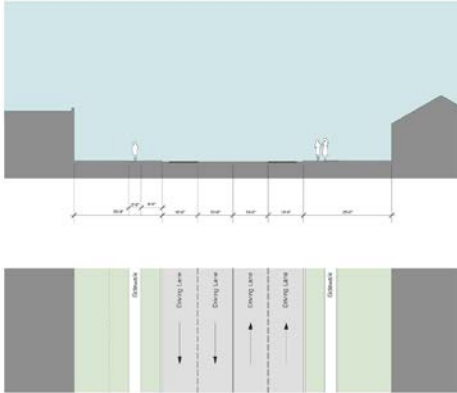


**Figure 42.** Existing + Proposed Street Section of Alabama St.  
(Source: Author)

For Dowling Street, parallel parking lanes are added at either side to shorten the width, thereby decreasing the traffic speed (Figure 43). The shorter distance and bulb-out configuration makes it easier and safer for pedestrians to cross the street. It also creates a buffer zone between the travel lanes and the sidewalks, which creates a safer and more pleasant street life. In the existing condition, the sidewalk is so far from the building fronts that it feels lifeless and bare. By adding trees and street furniture, the sidewalk becomes more active with people.

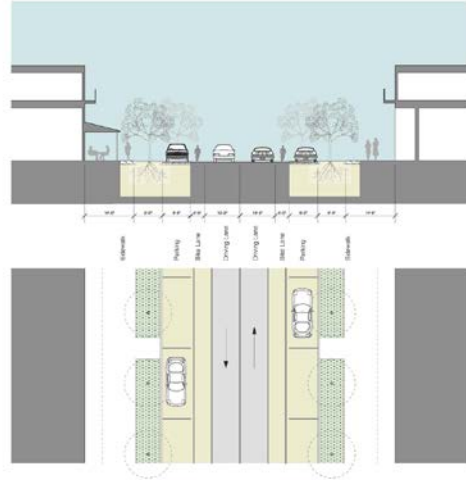
## Existing

Dowling Street



## Proposed

Main Street

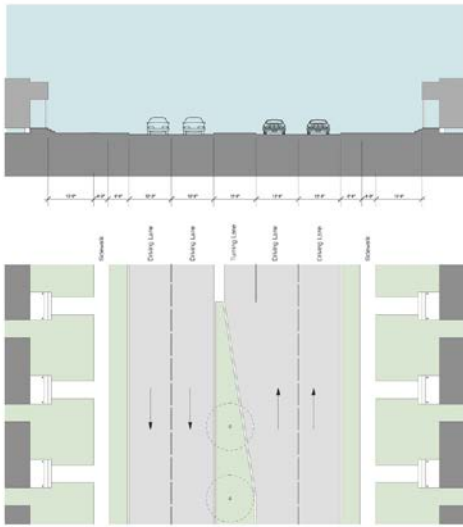


**Figure 43.** Existing + Proposed Street Section of Dowling St.  
(Source: Author)

Similar to the proposed changes for Dowling Street, parallel parking and bicycle lanes are added to decrease the width of the street in the four-lane avenues (Figure 44). Decreasing the amount of driving lanes will also slow down traffic and make it safer for pedestrians.

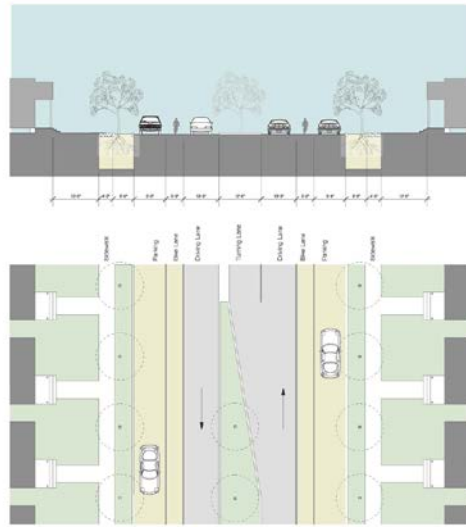
## Existing

Elgin St.



## Proposed

Four-Lane Avenue

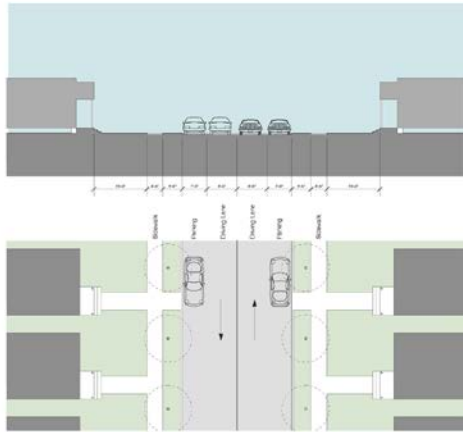


**Figure 44.** Existing + Proposed Street Section of Elgin St.  
(Source: Author)

All the smaller neighborhood streets currently allow parking at either side for residents (Figure 45). Since traffic is slow in these streets, the only suggested improvement is to add trees, which is optional. Improvements should be made for major thoroughfares, while neighborhood streets are kept at its current condition. Caution should be used to avoid major unnecessary changes to the whole neighborhood, so residents do not feel that their neighborhood is undergoing massive change.

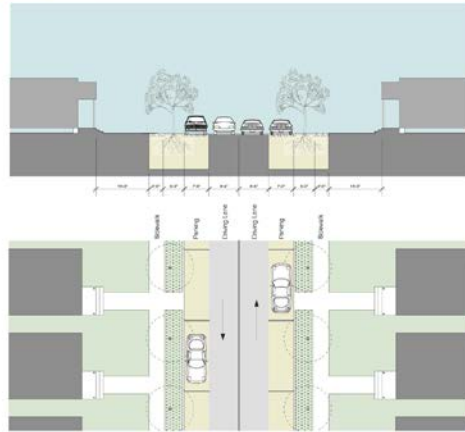
## Existing

Typical Neighborhood Street

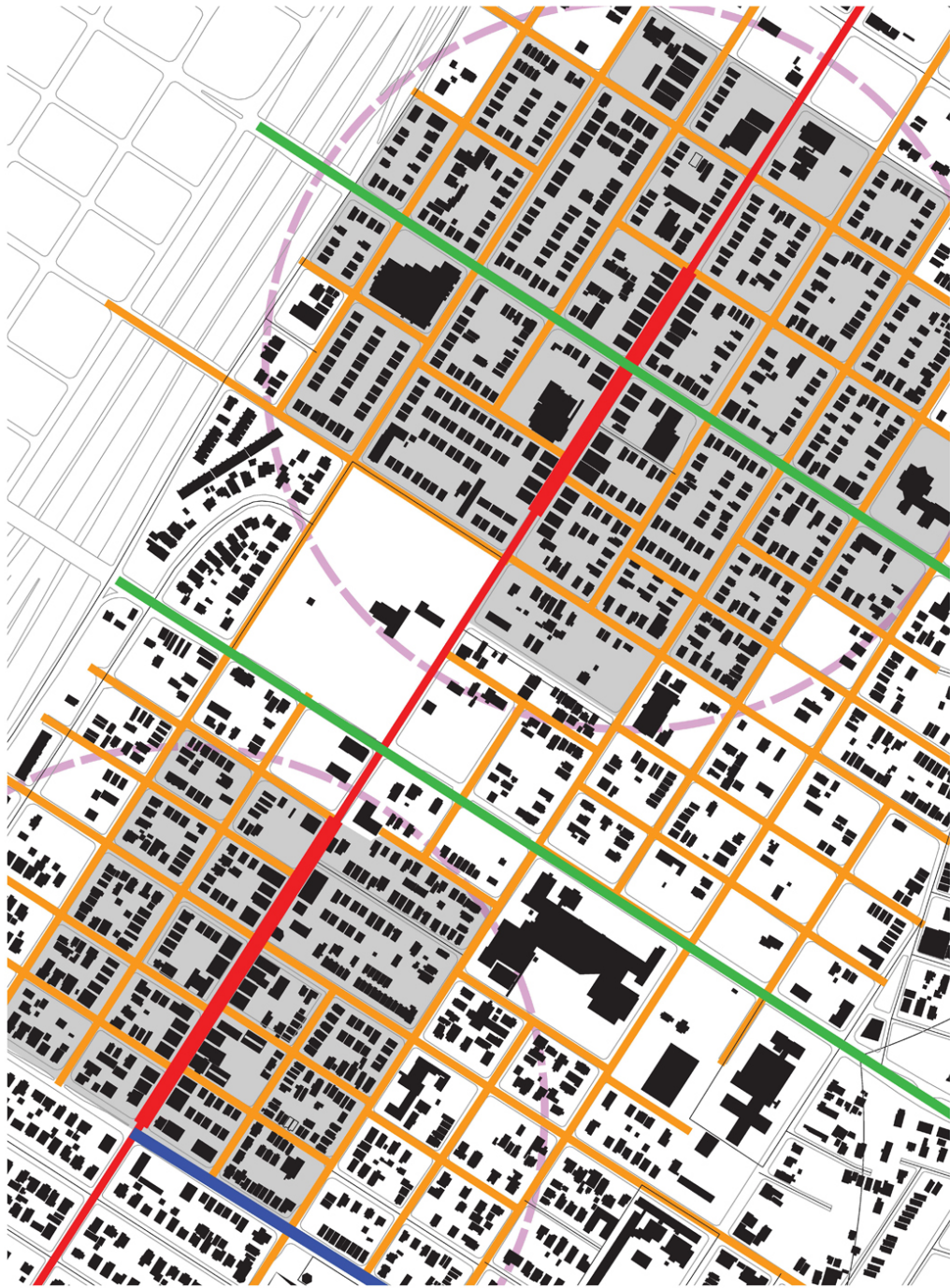


## Proposed

Neighborhood Street



**Figure 45.** Existing + Proposed Street Section of a typical neighborhood street.  
(Source: Author)



**Figure 46** Map Key of proposed street sections.  
Source: Author

## Building Form Standards

The building form standards regulate “the configuration, features, and functions of buildings that define and shape the public realm.”<sup>27</sup> This includes the building use, the frontage types, and the way buildings are placed in a lot.

In order to develop the building form standards, a thorough documentation of existing conditions is required to analyze the positive and negative aspects. At the surface, Third Ward may seem lifeless and bare, but upon closer inspection, there is a rich (though sometimes messy) vitality that the social infrastructure stimulates. After a week of walking, observing, and documenting Third Ward, it was clear that residents here did not care about the materialistic things in life, but instead valued family and community.

Many of the houses have front porches where residents can relax and enjoy the weather. This simple extension from the front of the house creates a transitional space from inside to outside, while encouraging leisurely chats with family and friends who pass by or visit. It also helps keep eyes on the street. The most conducive to community building are the blocks in which houses have both front and back porches. These back porches face the back porches of other houses, creating a shared backyard (Figure 47). Shared backyards are semi-public in that they are only accessible to the residents living in the block. This communal space facilitates backyard gatherings for barbeques, parties, and hanging out. Since many

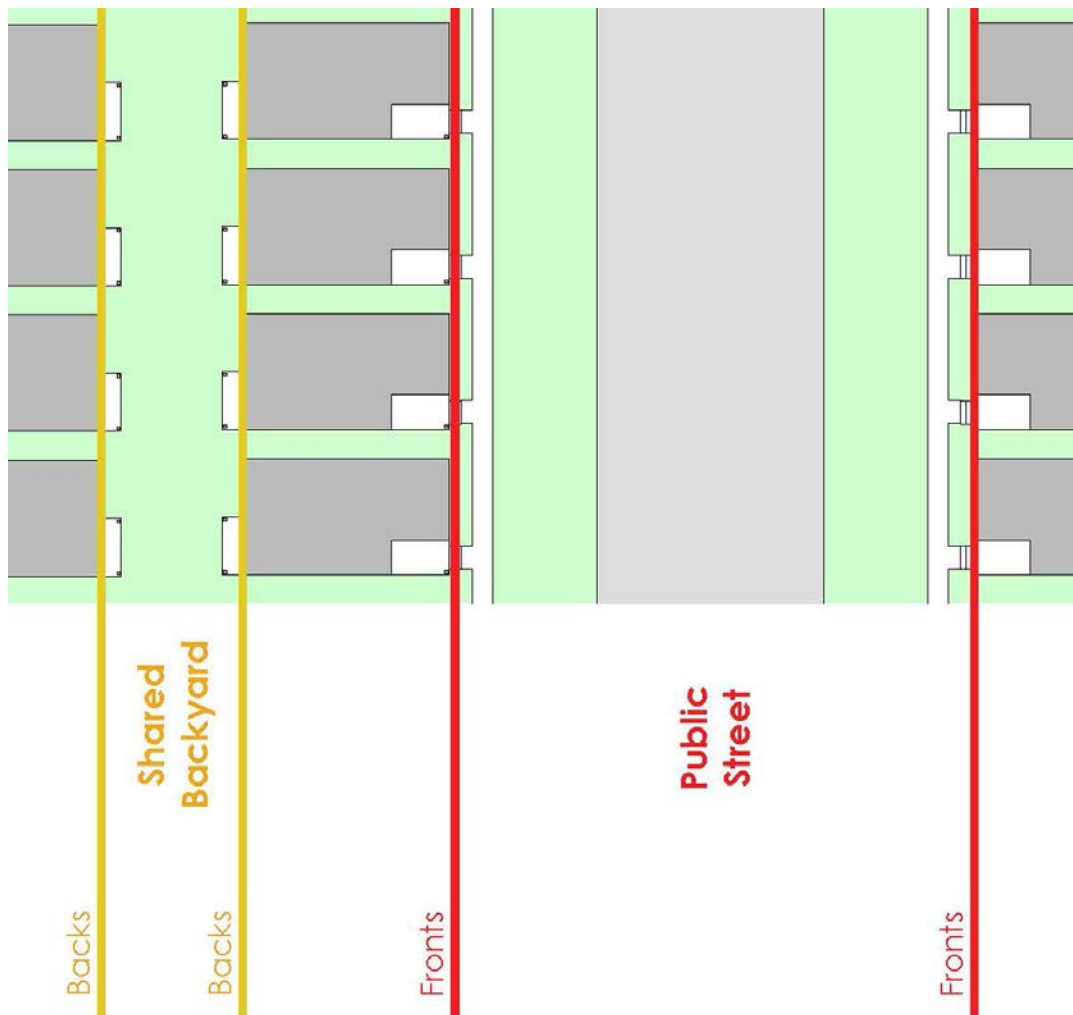
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<sup>27</sup> Daniel O. Parolek et al., *Form-Based Codes* (New Jersey: John Wiley & Sons, Inc., 2008), 15.

parents cannot afford the luxury of daycare centers or babysitters, the communal space allows one mother to watch over everyone's children in the block. These types of social interactions help build a well-knitted community within the block. It is also safer, since everyone knows each other.<sup>28</sup> Variations of this organization are shown in Figure 48. Porches are also found in multi-family residential buildings. Some have shared balconies where residents of the building can intermingle, whereas others have individual balconies. It is really a matter of preference as either type of porch still positively encourages interaction.

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<sup>28</sup> Evans, Tamika. Interview with Chau Pham. Personal Interview. Houston, January 13, 2011.



**Figure 47. Diagram of housing with shared backyards.**  
(Source: Author)

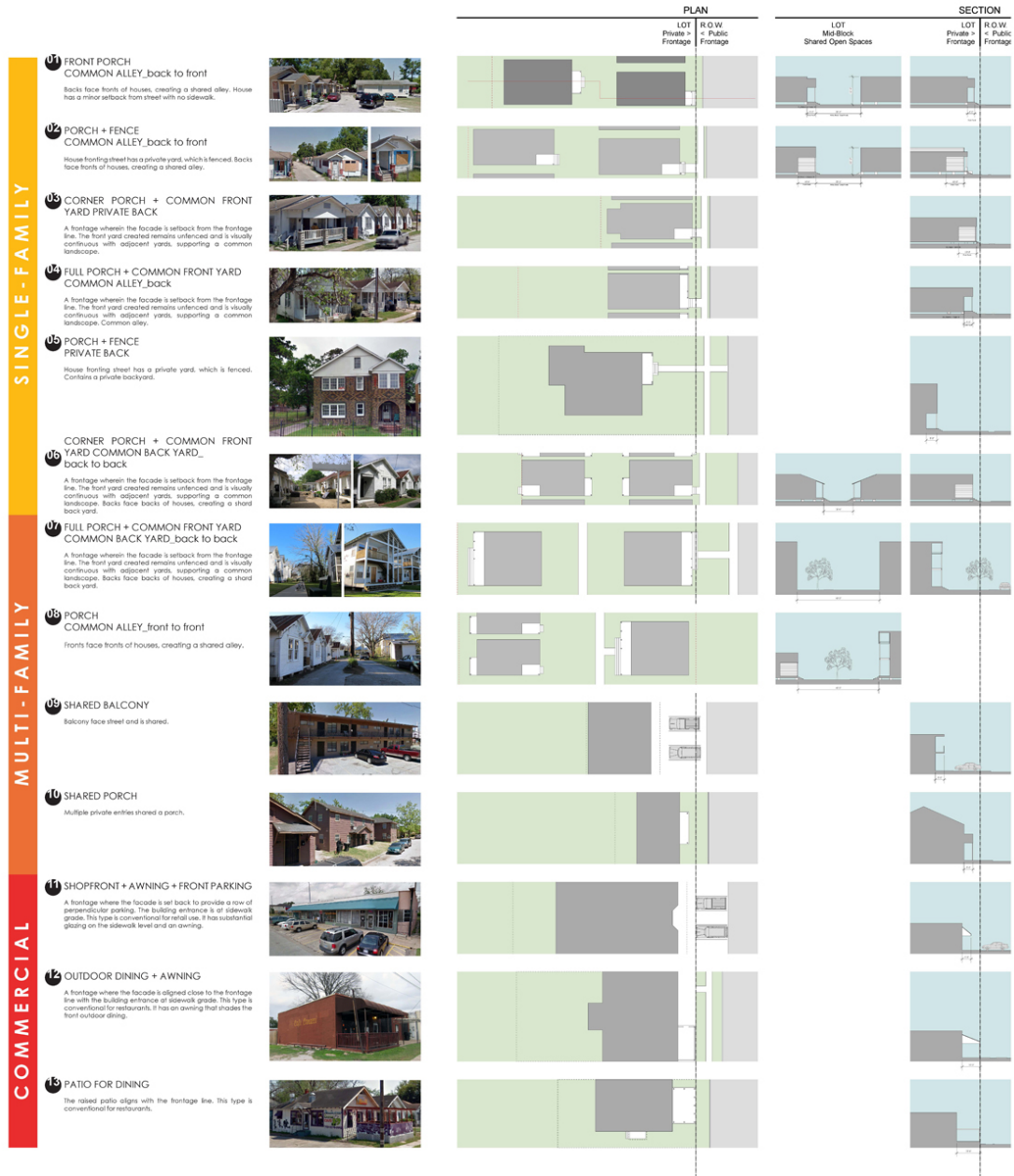
Many of the houses in Third Ward have frontages that help facilitate community. However, only a few examples of commercial and retail buildings do anything to activate street life. In Frontage Type 12 and 13 in Figure 48, restaurants have patios or porches for outdoor dining, which stimulate activity. Commercial frontages such as these should be kept and repeated. Frontages that should be avoided are ones where the building is set back more than 20 feet from street. This creates dead space that is not enjoyable for the pedestrian. Buildings should be



close enough to the sidewalk to encourage window shopping and street-side activity.

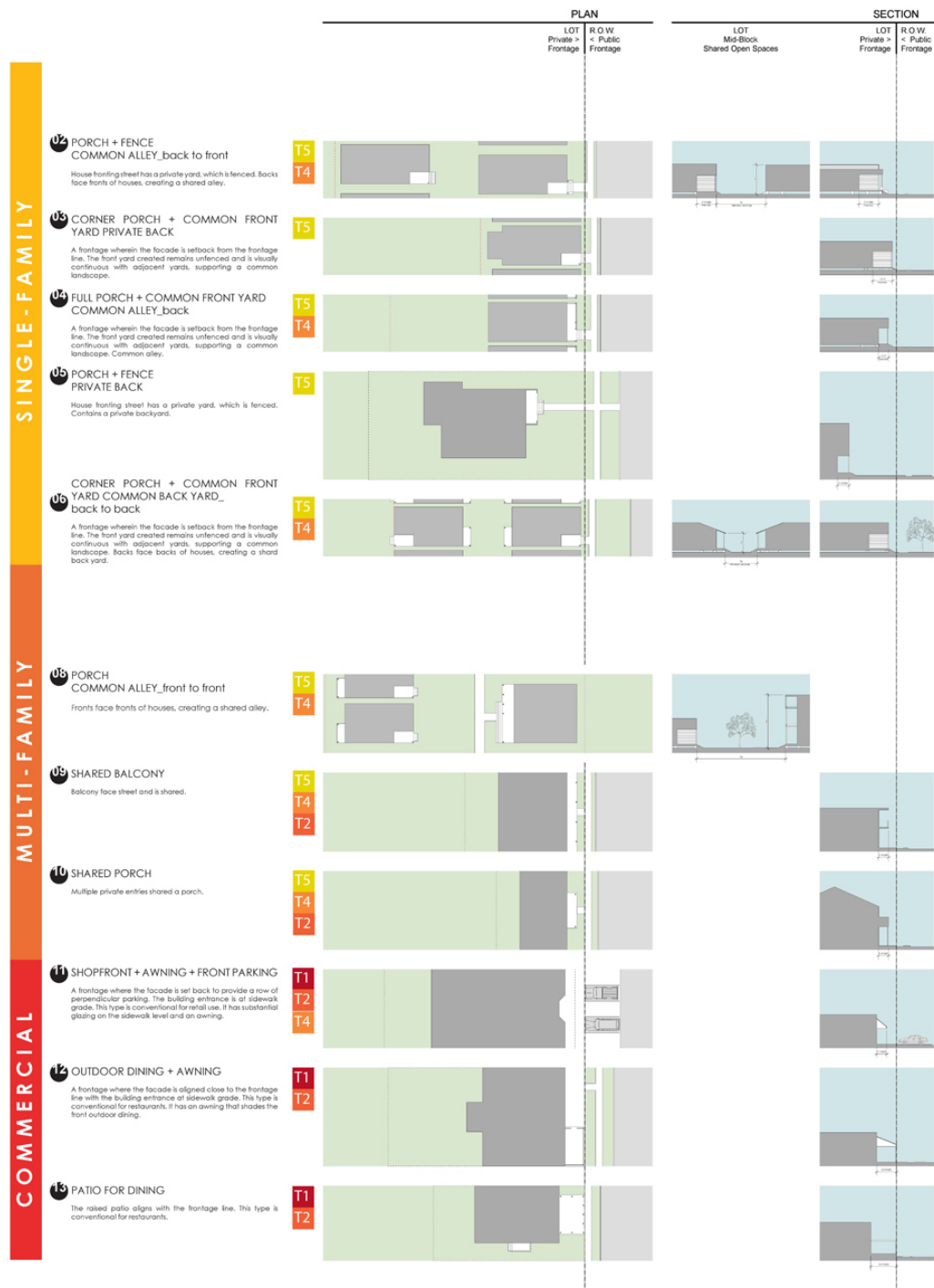
After studying the various frontage types, some were selected to be repeated in the proposed common frontages (Figure 49). The proposed common frontages are allocated with the different zone types, which correspond to the proposed regulating plan (Figure 41). Anyone who wants to build or develop buildings in the neighborhood must follow the Regulating Plan and corresponding Frontage Types in order to encourage positive growth. These guidelines ensure that new developments fit in with the neighborhood's character, while contributing to the community.

## Common Frontages | Existing



**Figure 48. Existing Common Frontages**  
Source: Author

## Common Frontages | Proposed



**Figure 49. Proposed Common Frontages.**  
 (Source: Author)

## Building Type Standards

The building type standards specify the “form and function of the allowed building types.”<sup>29</sup> Each building type is defined by the placement and arrangement of the building or group of buildings in order to produce desired spaces between buildings. Having building type guidelines are important because it ensures diversity in the building form, while preventing building types that do not belong with the existing fabric. This differs from typical zoning practices that regulate by density and Floor Area Ratio (FAR). Regulating by density and FAR encourages developers to build out to the maximum buildable envelope and apply an architectural skin that superficially fits in with the context. Ultimately, these developments lack the richness and character that exists in well developed neighborhoods. In contrast, a regulation of building types establishes a mix of building types that is essential in creating a rich urban fabric.

After recording the different building types that exist in Third Ward, a regulation of building types is proposed (Figure 50). Each type is keyed to their allowed zones in the Regulating Plan (Figure 41). Even though Third Ward primarily has single family homes, the density (in non-vacant areas) is higher than the average residential density in other neighborhoods in Houston. This is because many of the residential buildings are narrow shot-gun houses that fit in narrow lots of 25 feet in width. Rows of these houses are placed so close to each other to create a closer bond with neighbors.

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<sup>29</sup> Daniel O. Parolek et al., *Form-Based Codes* (New Jersey: John Wiley & Sons, Inc., 2008), 16.

## Building Types | Proposed



**Figure 50. Proposed Building Types.**  
(Source: Author)

## Chapter 7: Design Approach

### *Development of Urban + Neighborhood TOD*

After proposing the Urban and Neighborhood TOD nodes, the existing figure ground was studied and used as an underlay to propose future development (Figure 51).

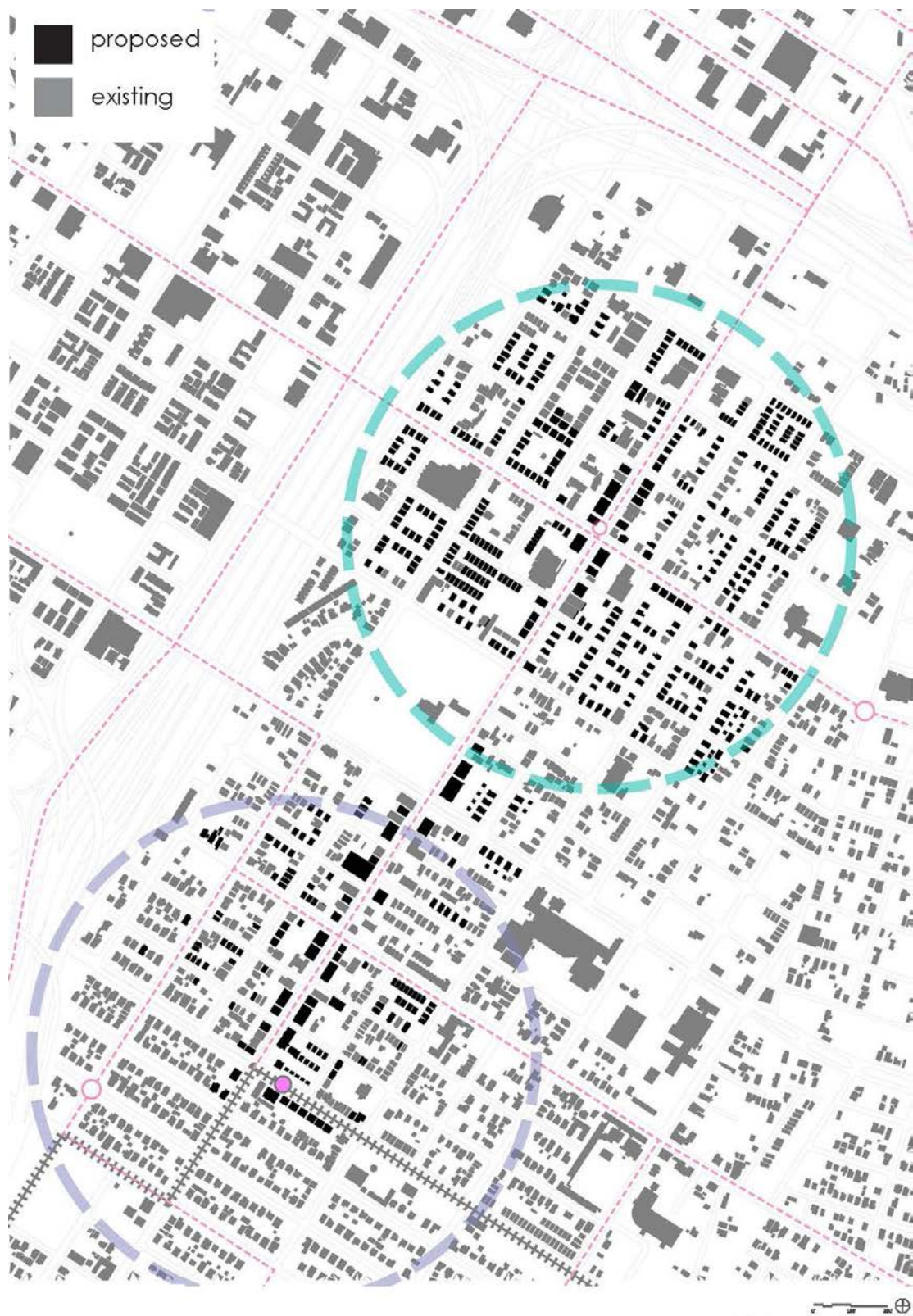
Third Ward's fabric consists of small individual buildings that give porosity to the neighborhood. Instead of seeing large uninterrupted building edges, pedestrians are able to see between buildings. Breezes are also able to flow through buildings. This porosity keeps the scale down to the human scale, creating a more intimate environment. Careful consideration must be used to ensure that new developments blend in with the existing fabric. There was no desire to demolish existing buildings in order to accommodate new development. Based on the proposed Regulating Plan (Figure 41), the neighborhood's fabric was filled in with building types that worked with its surroundings. Figure 52 shows the figure ground of the proposed developments against the existing buildings. Only a few shotgun houses were moved to nearby locations in order to provide room for mixed-use program required near transit. Figure 53 shows the figure ground of both the existing and proposed fabric to see whether proposed developments fit in with its surrounding. Once the proposed developments were established, an illustrative plan was created to show the added trees that help define the streets.

## Figure Ground | Existing



**Figure 51.** Existing Figure Ground showing Urban + Neighborhood TOD nodes.  
(Source: Author)





**Figure 52.** Proposed Figure Ground at Urban + Neighborhood TOD nodes.  
(Source: Author)



## Figure Ground | Proposed



**Figure 53.** Final Figure Ground at Urban + Neighborhood TOD nodes.  
(Source: Author)





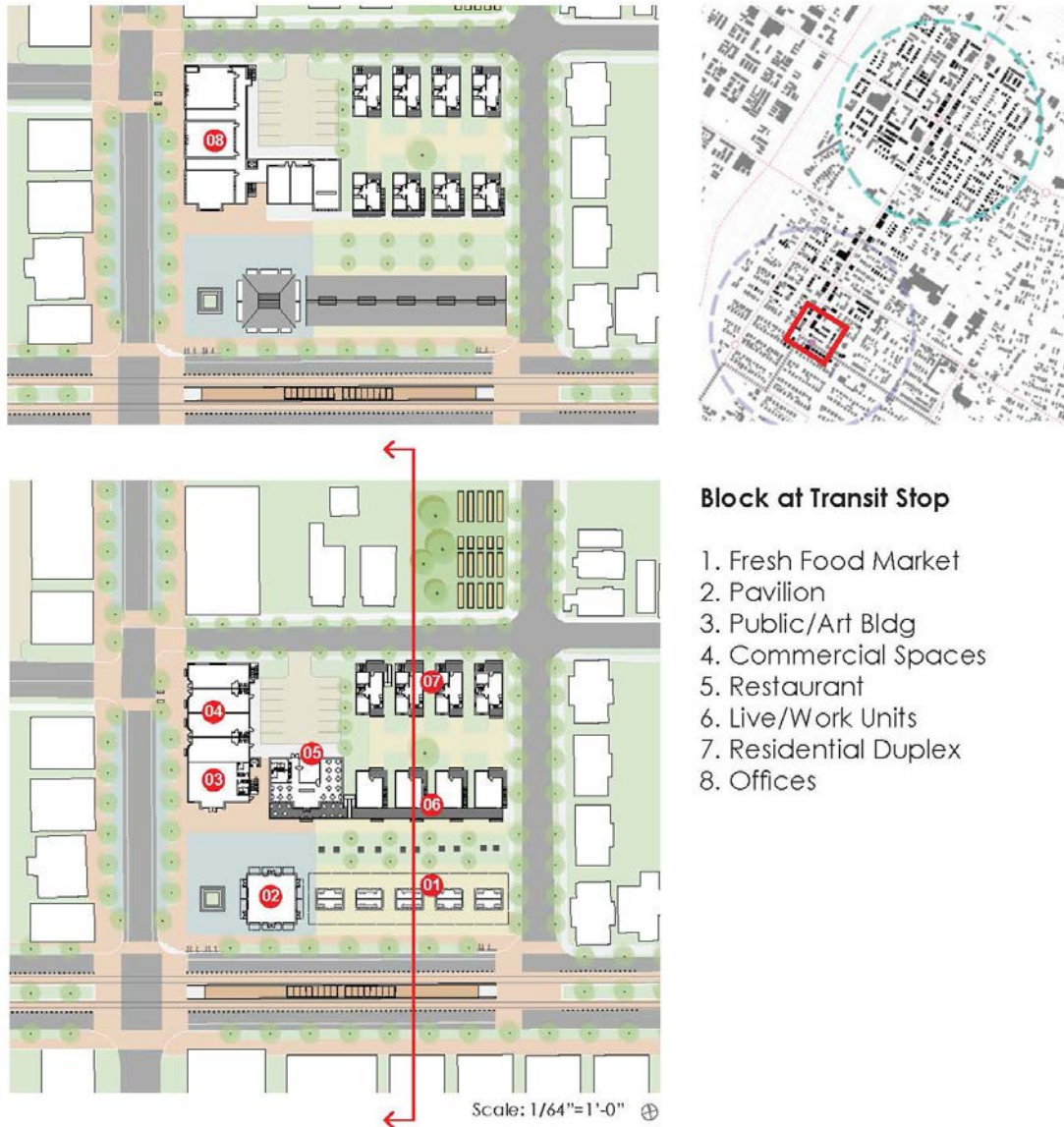
**Figure 54.** Proposed Urban Fabric.  
(Source: Author)

### *Further Development of Block at Transit Stop*

The block at the transit stop was then chosen to be further developed (Figure 55), since it becomes the landmark that identifies the community. It is important that the transit node clearly represents Third Ward, so that visitors will readily sense the unique character of the community and understand why it should be preserved.

The corner plaza marks the beginning and serves as the introduction to the commercial street, Dowling. This plaza is reinforced by a pavilion where community and social events occur. To follow the commercial pattern, commercial spaces with offices above fronts Dowling Street. Facing Alabama street is a fresh food market that is broken into five parts to maintain the porosity that is characteristic of Third Ward. It allows pedestrians to walk through the market into the public outdoor space, which is sandwiched between live/work units and the fresh food market. The live/work units are ideally owned by owners who are trying to start their own business, such as running a boutique of clothes or craftwork. These commercial spaces are on the ground floor to stimulate activity, while the residential units are on the second floor. The commercial spaces and the markets form an intimate public outdoor space. This becomes a place where people can hang out, eat, and socialize. The concept of the shared backyard is used as precedence to create a similar communal space but for the public. This important space allows visitors to experience what Third Ward values most—community. Northeast of the live/work units are residential duplexes. The backs of both the duplexes and live/work units

create a shared backyard that is used by only the residents. The section through the block is shown in Figure 56, which labels the different types of outdoor spaces.



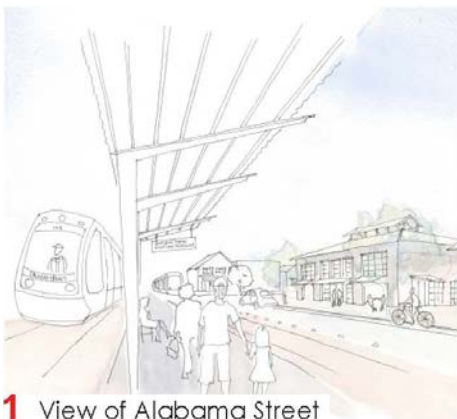
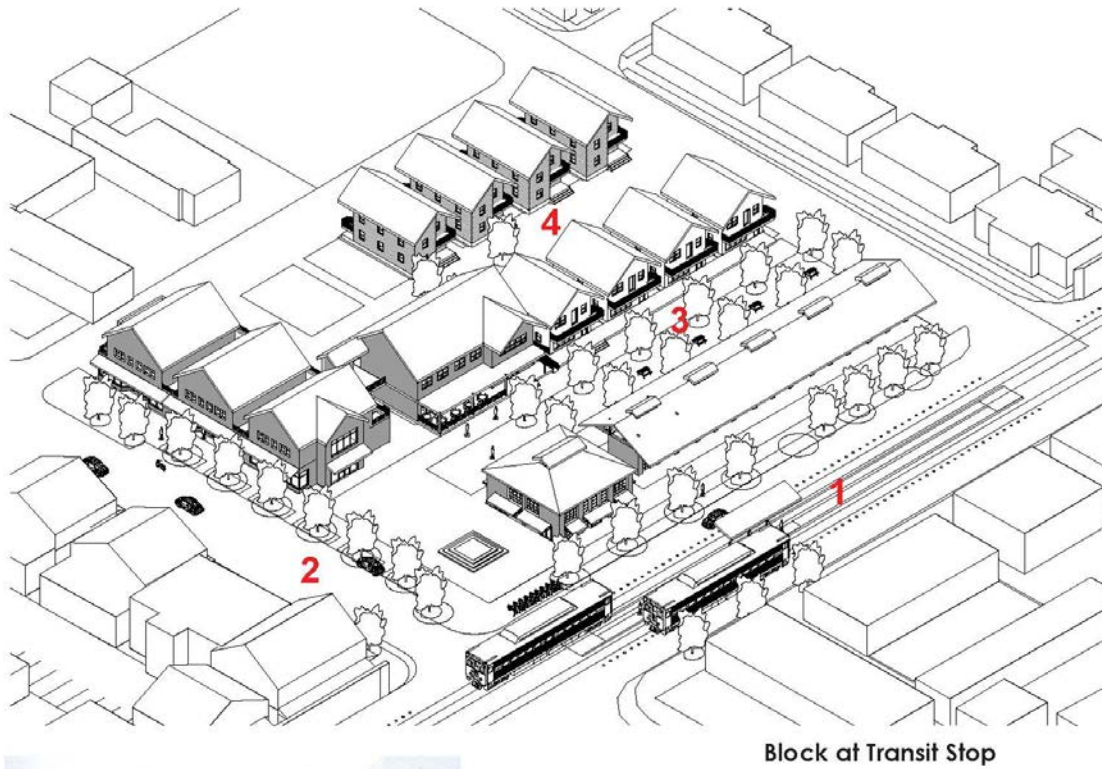
**Figure 55.** Floor Plans of block at transit stop.  
(Source: Author)



**Figure 56. Section through block at transit stop.**  
(Source: Author)

In Figure 57 and Figure 58, perspectives are shown at key aspects of the urban transit node. These are keyed to the axonometric of the proposed development. Perspective 1 is a view from the light-rail transit stop looking towards the pavilion. Perspective 2 is a view of Dowling Street. Perspective 3 is a view of the public outdoor space sandwiched between the market and live/work units. Perspective 4 is a view of the shared backyard between the duplexes and live/work units.





**1** View of Alabama Street



**2** View of Dowling Street

**Figure 57.** Perspectives at transit node.  
(Source: Author)



3

Public Outdoor Space



4

Shared Backyards

**Figure 58.** Perspectives at transit node.  
(Source: Author)

## Chapter 8: Conclusions

Transit-oriented developments can give Third Ward residents accessibility to outside resources and amenities, while bringing in economic support from visitors. In order to maintain the history and culture of the Third Ward community, developments must be designed to fit the neighborhood contextually and culturally. By applying Form-based codes to transit-oriented developments, it can encourage positive infill that respects the neighborhood's existing fabric. In order to develop a successful Form-based code, it is essential to visit, observe, and document existing conditions and select those that positively facilitate the community. Third Ward's social infrastructure that makes up the soul of the community must be preserved to strengthen its community's own identity and "sense of place" against the pressures of gentrification.



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