FORM-BASED CODE STUDY

Grand Valley Area Of Michigan

Prepared For:

Grand Valley Metro Council

FARR ASSOCIATES
Architecture | Planning | Preservation

Meyer, Mohaddes Associates
a business unit of Iteris, Inc.











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Dock, Frederick, Brian Bochner and Ellen Greenberg, A Mulitiple-Dimensional Framework for Context Based Design of Major Urban Thoroughfares, Transportation Research Board 83rd Annual Meeting Compendium of Papers, Paper No. 04-3383, Washington, D.C., January 2004.

Duany Plater-Zyberk & Company, SmartCode v6.5, Miami Florida, 2003.

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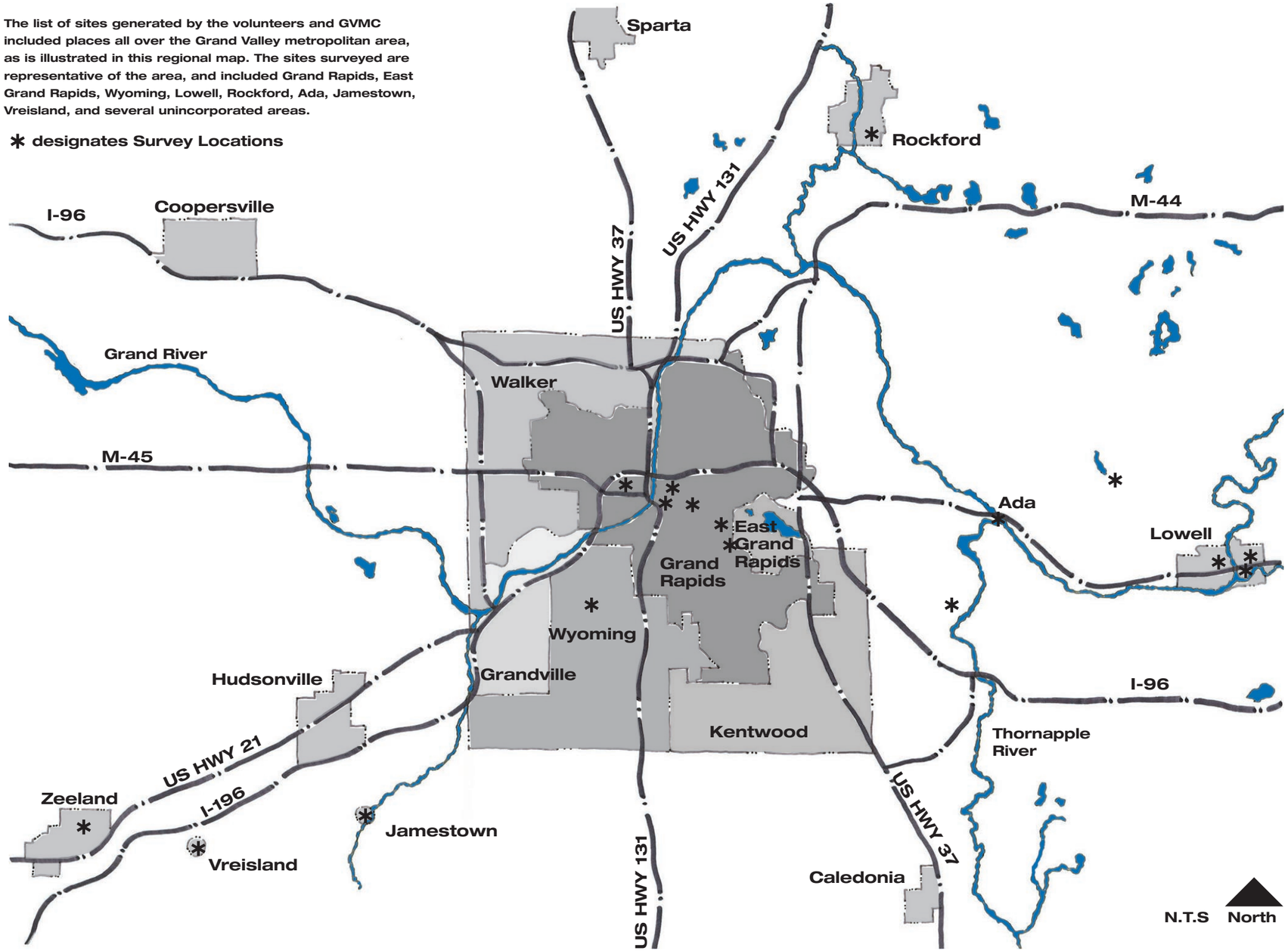
Introduction
Project Background

The list of sites generated by the volunteers and GVMC included places all over the Grand Valley metropolitan area, as is illustrated in this regional map. The sites surveyed are representative of the area, and included Grand Rapids, East Grand Rapids, Wyoming, Lowell, Rockford, Ada, Jamestown, Vreisland, and several unincorporated areas.

*** designates Survey Locations**



Project Intent

The purpose of the Grand Valley Form-Based Code Study is to examine, measure, and describe the development standards in the Grand Valley metropolitan area along a continuum of rural to urban development, known as the transect.
The result of this study is a template form-based code or a template development code that is not based on land use, like Euclidean or traditional zoning in the United States, but on the ultimate physical form of the building. The standards within this template are based upon the types of development found in each segment or zone of the transect, from rural to urban, in the Grand Valley metropolitan area. This code template is designed to be used by municipalities within Grand Valley to create their own form-based code to regulate development within their community.

Process

The code template is based upon the best examples of development in the Grand Valley metropolitan area. A list of best places was compiled by volunteers working with GVMC, included students, municipal staff, architects, consultants, and local residents. The volunteers submitted individual lists which were reviewed, culled, and discussed at a meeting between GVMC and the volunteers. A final list of the very best examples of development was generated at this meeting; it contained approximately 100 places.

The consultant team, comprised of Farr Associates and Meyer, Mohaddes Associates, Inc. (MMA), used this list to select approximately forty sites to survey. The selected sites were photographed, measured, and analyzed with the assistance of GVMC and a team of volunteers, many of which were involved in compiling the original list of best places. The sites included buildings, neighborhoods, commercial corridors, and roadways. Additional examples of good development, not on the original list, were discovered and also surveyed during this process.

The data gathered during the consultant team's site visits was compiled and studied in great detail. Each site and street was categorized into the groups based upon characteristics such as block size, lot size, lot coverage, location of the building on the lot, number of stories, pavement width, speed, on-street parking, and treatment of the pedestrian realm.

These development and design characteristics were used to create a set of building and street types. The form-based code template provides a set of regulations to facilitate the development of these types of buildings and streets.

Transect

A transect illustrates a type of development pattern that follows a continuum beginning with permanently preserved land, such as that land that is legally and perpetually preserved through easements, and ending with a highly developed and dense area, such as the central business district of a large city. There are six context zones (CZ) and an assigned district category within the transect; each has its own appropriate development patterns, forms, and uses. The transect is relative to the area on which it is being applied; different regions may have different development intensities within the same context zone. The six context zones are:

Context Zone 1 (CZ 1)
Preserve Zone - Permanently preserved as open space or natural areas, including national or state parks, property protected through conservation easements, legally protected wetlands and riparian corridors.

Context Zone 2 (CZ 2)
Rural Zone - Primarily agricultural uses and limited residential associated with the primary use. Natural areas and a corner or co-op store can also be found in this zone. Development in Context Zone 2 should be limited, concentrating development within the more urban zones, CZ 4, 5, and 6.

Context Zone 3 (CZ 3)
Urban Edge Zone - Typically larger lot residential development or conservation communities (smaller residential lots with large shared open space). A corner or co-op type store can also be found in this zone. Context Zone 3 is dependent upon access to the urban context zones, CZ 4, 5, and 6.

Context Zone 4 (CZ 4)
General Urban Zone - Traditional urban development consisting of small lot single-family, attached single-family, multiple-family, and mixed-use developments. Typically has walkable, complete neighborhoods with a mix of housing types and uses.

Context Zone 5 (CZ 5)
Urban Center Zone - Mixed-use, dense, and active commercial area. Typically, "Main street" in smaller towns are within Context Zone 5.

Context Zone 6 (CZ 6)
Urban Core Zone - High density core of development and employment in an area. The urban core zone occurs only within cities and includes the tallest buildings and the busiest streets.

For this template code, sample sites were surveyed, grouped based on like characteristics, then categorized based upon these six context zones. The resulting building and street types are also organized into the appropriate context zone in order to facilitate their development throughout the Grand Valley metropolitan area. Sample neighborhood plans for each context zone were created based upon the existing block and lot patterns of the surveyed sites to illustrate how the Building and street types relate to each other.

Starting the Coding Process

The first step of developing a form-based code is to identify and map the various existing context zones within the area. Some municipalities may cross multiple context zones; some may include only one or two within the larger community. Complete communities will have an appropriate mix of context zones, including places for people to live, work, and shop. For example, a community wholly consisting of context zone 3 would be considered a bedroom community and should consider development of a town center constituting an urban zone, most likely 4 or 5.

An in-depth community process should determine the proposed future growth of the different context zones within the limits of the municipality as well as surrounding areas. Defining growth areas as a context zone will help determine neighborhood configuration and appropriate building types as outlined in the template in the second half of this document.

Context Zone 1: PRESERVE ZONE

Context Zone 2: RURAL ZONE

Context Zone 3: URBAN EDGE ZONE

Context Zone 4: GENERAL URBAN ZONE

Context Zone 5: URBAN CENTER ZONE

Context Zone 6: URBAN CORE ZONE

Euclidean Zoning vs. Form-based Codes

Grand Rapids and the surrounding communities that make up the Grand Valley metropolitan area currently utilize Euclidean zoning to regulate development. However, a large percentage of the development in the area was constructed prior to its adoption and the domination of the automobile. It was these pre-Euclidean zoning sites that were on the volunteer's lists of great places in Grand Valley.

Traditional or Euclidean zoning was legitimized through the 1926 Supreme Court case involving the town of Euclid, OH. Traditional zoning codes and their associated maps divide a community into districts based on use. This focus on the ultimate use of a structure, rather than building form, has resulted over the years in developments that are out of sync or disconnected from the public realm (travelway and pedestrian realms) and from adjacent buildings and development. The Euclidean zoning code, in effect in Grand Valley and throughout the United States, makes it difficult to create active, walkable places with a mix of uses and housing types, like those traditional downtowns and neighborhoods found in many of our favorite locations across the country and the world.

A form-based zoning code, on the other hand, primarily focuses on the ultimate physical form of a building and how it relates to the street, as well as adjacent buildings. The regulation of uses is not ignored in a form-based code, but it is no longer the primary factor in guiding development. Form-based codes are based upon the types of development a community envisions and desires. This type of code reconnects the principals of design with planning and zoning, resulting in the development that communities' want, but current codes do not offer or allow. To this end, form-based codes include, not only regulations for Building and street types, but Regulating and Neighborhood Plans that illustrate how they relate to each other in a neighborhood setting, within the context zone, and within the larger community. In this template code, sample plans are included to illustrate these relationships in the Grand Valley area.

Key Criteria for Surveyed Sites' Categorization

Over forty different sites were surveyed for this project, representing a variety of building types, land use, and communities within the metropolitan area.

Context Zones 3 through 6 were the primary focus for the development of building types. Sites in Context Zone 2 were studied in order to create a base line to better categorize the remaining sites. These CZ 2 sites appear in the appendix, but did not result in the creation of specific building types assigned to it.

After the completion of the physical site survey, the key characteristics of each site were examined to determine general aspects of Grand Valley's context zones. These key characteristics are block and lot size, street characteristics, building height, building coverage, building siting, building coverage on the front property line, and use.

Block and Lot Size

Block and lot width determine the pattern of development and if an area is walkable or not. The regulating plan that guides the development of each parcel in a neighborhood in a form-based code is based upon block and lot size, which in turn designates the appropriate building types for development on a given parcel.

Street Characteristics

Characters such as curbs, sidewalks, and on-street parking help to define a site. Rural areas have ditches or swales rather than curbs, on-street parking, and sidewalks, which characterize a more urban environment.

Building Height

Height impacts not only the density of an area, but also an area's scale. Heights vary among the building types and context zones, becoming more intense as the density of the context zones increases.

Building Siting

The location of a building on a parcel is determined by the required distance from the property lines. This also varies within the density and intensity of the context zone.

Building Coverage

The area of each parcel covered by the principal and accessory buildings impacts the amount of open space and impervious area, as well, as the location of parking facilities.

Coverage of the Front Property Line

The relationship of a building's facade to the public realm impacts a pedestrian's journey along the sidewalk. Set-back buildings create gaps in the streetwall, or continuous row of building facades that help define the pedestrian realm, and alter the scale of the street.

Use

The use of a structure helps to determine the appropriate frontage types, parking needs, and to some extent the build-to line.

Using these characteristics, each surveyed site was placed into a context zone. From this clustering of sites building types were developed for each context zone. The relationship between the resulting building types and between these building types and other public spaces are illustrated in the sample Neighborhood Plans.

	Context Zone 1	Context Zone 2	Context Zone 3	Context Zone 4	Context Zone 5	Context Zone 6
Block & Lot Width	N/A	No discernible block pattern. Largest residential lots.	Loose grid pattern and/or curvy streets. Large lots.	Walkable blocks, predominately in a grid.	Compact, walkable blocks in primarily a grid pattern.	Very compact, walkable blocks, in primarily a grid pattern.
Street Characteristics	Few, if any streets exist, those that do may not be paved, have no sidewalk, curbs, or on-street parking. Swales may drain water in lieu of pipes.	No curb, sidewalk, or on-street parking. A path in lieu of sidewalk may exist.	Majority of rights-of-way have curb, sidewalk, and on-street parking.	All rights-of-way have curb, sidewalk, and on-street parking.	All rights-of-way have curb, sidewalk, and on-street parking.	All rights-of-way have curb, sidewalk, and on-street parking.
Building Height	N/A	1-2 stories	1-2 stories	1-3 stories	2-6 stories	6+ stories
Building Siting	N/A	Very large setbacks from property lines and between buildings	Large setbacks from property lines and between buildings	Little to no setbacks for commercial. Some setback for residential.	Little to no setbacks.	Little to no setbacks.
Building Coverage	N/A	Less than 25%	15-25%	40-95% for commercial & 30-75% for residential	90-100%	95-100%
Coverage of Front Property Line	N/A	N/A	N/A	50-100% for commercial	90-100%	100%
Use	Permanently preserved open space	Agriculture & Residential - single-family	Residential - single-family & Scattered Commercial	Commercial & Residential - single & multiple-family	Commercial, Office, & Residential - multiple-family	Commercial, Office, & Residential - multiple-family

Characteristics of the transect in the Grand Valley metropolitan area.

Conventional Street Design vs. Form-based Codes

The conventional approach to street design is based on a system of functional classification of streets within a larger network. Roadways are classified primarily on the basis of their regional traffic-carrying role and access characteristics. In urban areas, the functional classes of roadways include principal arterial streets (interstate, other access-controlled freeways, and other arterials with partial access control), minor arterial streets, collector streets, and local streets.

At a network level, the functional hierarchy is organized to link locals with collectors and collectors with arterials. In concept, arterials are intended to primarily carry regional traffic, while local streets are intended for neighborhood traffic. Collectors and minor arterials are intended to serve a mix of local and regional traffic.

Many roadways, particularly those that carry multiple modes, are multi-function in that they carry a mix of local and regional trips and pass through different types of urbanized environments. This mix of functions complicates the street design process in urbanized and newly urbanizing areas. The relationship between transportation and land use is highly complex, particularly along arterials because these streets are corridors of commerce and residence, as well as of movement.

Form-based coding provides a means to address some of these complexities, particularly for land use and urban form, by establishing definitions for and providing guidance about both form and function of land use. The street design process within this template code takes advantage of the enhanced level of specificity to consider both the form and function of surrounding land uses as part of the design of individual streets. This broader context-based approach to street design integrates design criteria for an expanded palette of street types with a set of place types that reflect both uses in the public right-of-way and the character of private development fronting on the roadway and in the larger area. The effectiveness of such a context-based approach is borne out by review of current efforts in other cities that suggests that a framework that pairs street type with place type gives better guidance than the single dimension arterial-collector-local approach now in use. Street design in this template code uses just such a context-based design framework that pairs a street typology (modes accommodated, purpose) with urban design (levels of activity, location of access, relation to street).

The urban design or context aspects of the street design framework uses the context zones recommended in the preceding section for the Grand Valley metropolitan area.

Rural Types (CZ 1 & 2)	Urban Types (CZ 3 -6)
Freeway Rural Highway	Freeway Expressway/ Parkway
	Boulevard Multi-way Boulevard Avenue Connector Street
Rural Road	Street Yield Street
Rear Lane Path	Mews/Court/ Woonerf Alley Passage

The street types reflect both urban and rural context zones.

Street Typology

The following street types may occur in the Transect.

- Freeway
- Expressway/Parkway
- Rural Highway
- Boulevard
- Multi-way Boulevard
- Avenue
- Connector Street
- Street
- Rural Road
- Yield Street
- Mews/Court/Woonerf
- Alley
- Rear Lane
- Passage
- Path

The typology reflects both urban and rural types as shown below and is organized vertically to reflect higher speed facilities that serve longer distance trips at the top. The types descend to reflect more local, lower speed and more pedestrian-scale facilities at the bottom.

The street types have been chosen to emphasize characteristics that serve a distinct function and can also be differentiated for a variety of place types. The street type names are intended to be distinct, such that the meaning of the name conveys the characteristics of the roadway - whether urban or rural, high speed, or low speed.

Definitions

The street type definitions incorporate elements of regional movement and concepts of carrying capacity and overall operations. This template code focuses on the street types prevalent in Context Zones 3 (urban edge) to 6 (urban core).

Boulevard

High-capacity thoroughfare in suburban environments designed to carry through traffic, serves longer trips and provide limited access to land. May be a high ridership transit corridors. Boulevards use access management techniques and medians are required. Boulevards serve as primary goods movement routes.

Multi-way Boulevard

Medium to high-capacity urban thoroughfare characterized by a central roadway for through traffic and parallel roadways for access to abutting property, parking, and pedestrian and bicycle facilities. These parallel roadways are separated from the through lanes by curbed islands with landscaping; these islands may provide transit stops and pedestrian amenities. Some Multi-way Boulevards feature a central landscaped median.

Avenue

Medium-capacity urban thoroughfare. Some Avenues feature a landscaped median curbed island. May serve as the main street of a commercial or mixed-use sector.

Connector Street

Low to medium-capacity thoroughfare designed to (1) connect residential neighborhoods with each other, (2) connect neighborhoods with commercial and other districts, (3) connect districts with each other, or (4) may serve as the main street of a commercial or mixed-use sector.

Street

Low-capacity thoroughfare in urban areas primarily serving abutting property.

Yield Street

Very low-capacity thoroughfare in rural and urban areas with narrow width requiring one vehicle to pull over to allow and oncoming vehicle to pass.

Mews/Court/Woonerf
Very low-capacity urban thoroughfare serving only abutting property. Typically, the pavement of a mew/court/woonerf is shared by pedestrian, bicycle and vehicular traffic, with no delineation to separate these users. A woonerf does not provide separate sidewalks.

Alley
Very low-capacity vehicular drive located to the rear of properties, providing access to parking, service areas, and rear uses such as in-law apartments, as well as an easement for utilities.

Passage
Pedestrian and/or bicycle facilities connecting streets, land uses, or parking areas.

The palette of street types is careful to differentiate between Boulevards, which are more suburban in character, and Multi-way Boulevards that are considered more urban.

Similarly, the term "main street" is not used in this palette since the characteristics of a commercial "main street" can be found along Avenues, Connector Streets, or Streets, depending upon the intensity of the commercial activity, the length of the commercial frontage, and the speed of travel on the roadway.

Streets are intended to be slower speed two-lane roadways that provide for local access. In suburban, general urban, and urban center zones, Streets may be predominantly (if not entirely) residential in character. In the urban center and the urban core, Streets can serve many different land uses, since aggregations of employment or commercial are allowed in these zones.

Network Considerations and Transitions
There is an underlying hierarchy for the thoroughfare types in urban and sub-urban zones that is based on the three basic types (Boulevard, Avenue, Street) existing in parallel, such that a network of Boulevards and Avenues overlays the grid of local streets and provides for longer distance and higher volume movements. In concept, Boulevards and Avenues are parallel networks that provide for different priorities of movement for transit, autos, and trucks.

Connector Streets are intended to provide for movement between centers within the local grid and tend to be perpendicular to Avenues rather than transitions between Avenues and Streets. As such, it is important to recognize that the thoroughfare types do not exist independent of the context zones that each thoroughfare is intended to support.

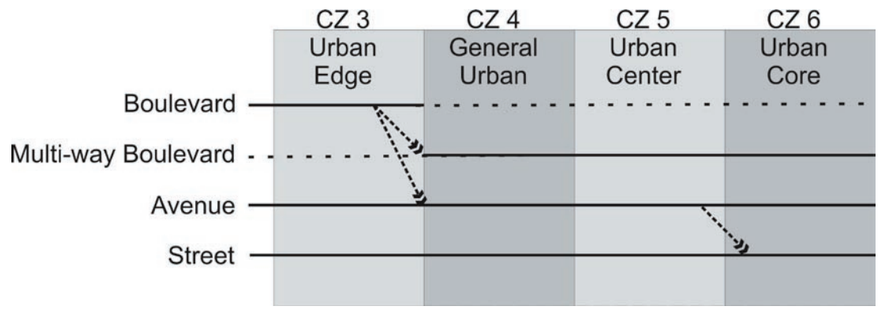
There are also transitions in street types as the urban form transitions to more intense places, particularly where some street types are only provisional in some contexts. These two transitions are illustrated to the right. The solid lines indicate context zones where the street types are permitted. The broken lines show provisional use. The diagonal lines show transitions.

One transition is for the Boulevard, which is a street type intended for the sub-urban context (Zone 3). The Boulevard is intended to transition to either a Multi-way Boulevard or an Avenue in the urban context zones depending upon the amount of priority needed for through movements. Where more priority for through traffic is appropriate, a Multi-way Boulevard is used. An Avenue is used where less priority is appropriate.

The other transition is for an Avenue as it transitions from an urban center to an urban core. While the roadway may remain an Avenue in the urban core, it may also become one or more local Streets in the urban core where the land use function that an Avenue serves expands to a grid of blocks in the core and the movement function is served by a grid of one or two-way streets.

Urban Street Type	General Characteristics	Appropriate Zones	Functional Classification
Boulevard	4-6 lanes, 35-45 mph with priority on through movement, limited curb parking, minimal driveway access, regional truck routes, should have a median	Urban Edge; provisional in General Urban, Urban Center, Urban Core	Principal and Minor Arterial
Multi-way Boulevard	4-6 lane with parallel access lanes, 25-35 mph, slower on access lanes, medians required	General Urban, Urban Center, Urban Core; provisional in Urban Edge	Principal and Minor Arterial
Avenue	4-6 lane, 25-35 mph, curb parking, limited driveway access, local truck routes, may have a median	Urban Edge, General Urban, Urban Center, Urban Core	Principal and Minor Arterial
Connector Street	2 lane, 25-30 mph, curb parking, more frequent driveway access, delivery trucks only, may have a median	Urban Edge, General Urban, Urban Center, Urban Core	Minor Arterial or Collector
Street	2 lane, 20-25 mph, curb parking, driveway access, delivery trucks only, no median	Urban Edge, General Urban, Urban Center, Urban Core	Collector or Local
Yield Street	1 lane, 15 mph, curb parking, driveway access, delivery trucks only	Urban Edge, General Urban; provisional in Urban Center, Urban Core	Local
Mews/Court/ Woonerf	1 lane, 5 mph or less, shared spaces, parking	General Urban, Urban Center, Urban Core; provisional in Urban Edge	Local
Alley	1 lane, 5 mph or less, shared spaces, no parking	Urban Edge, General Urban, Urban Center, Urban Core	Local
Passage	Pedestrianway	Urban Edge, General Urban, Urban Center, Urban Core	Local

Characteristics of the thoroughfare types.

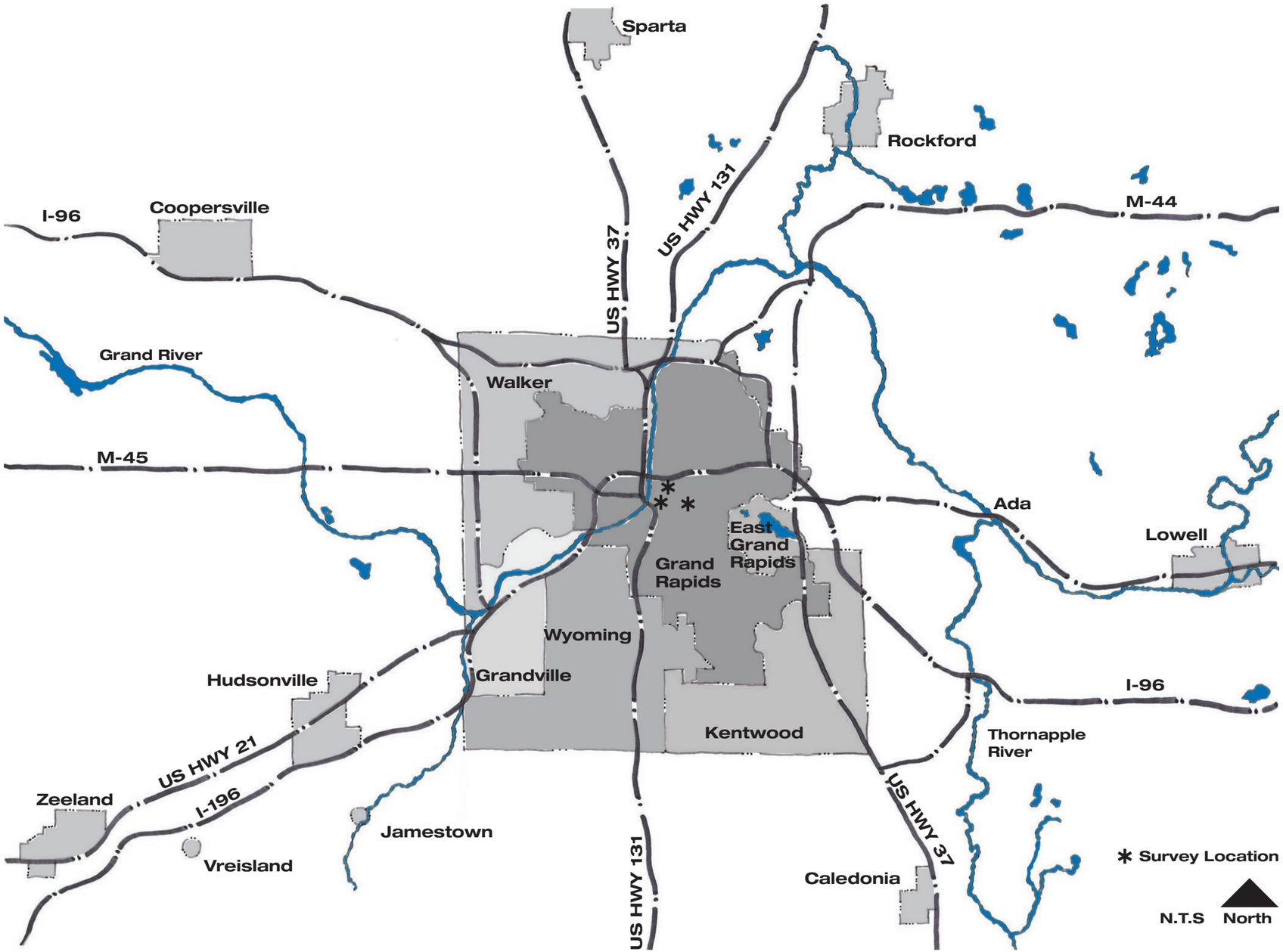


Street types as they transition between more intense land uses.

II. Site Surveys

Over forty sites were surveyed and documented during the site visit. The sites were first organized based upon their characteristics, such as block and lot size, building type, height, and orientation on the lot. The sites were then divided into the context zone in which the type of development the site represented would occur. At the beginning of each group of sites included is a short description on the context zone and the sites surveyed. Context Zones 3 through 6 were examined in this project and this chapter provides information on a small sample of the total sites surveyed. A complete list of the sites surveyed can be found in the appendix to this report. Street types were surveyed separately and are included in Chapter 3.

Site Surveys
Context Zone 6: Urban Core



Context Zone 6 is the densest of all the context zones. It is an active mixed-use area that frequently serves as the center of employment within a region. It is well served by transit and is accessible by many modes of transportation, including on foot or bicycle, automobile, and transit. Development in this context zone is compact and walkable.

Context Zone 6 is pedestrian friendly; its wide sidewalks include amenities such as benches, bicycle racks, trash receptacles, street trees, or planters. The ground story of each building has a high level of transparency to allow pedestrians to see into the stores, making their walking experience interesting and rewarding. The upper stories of the buildings contain commercial and residential uses with windows allowing workers and residents to see the activities on the street below. These "eyes on the street" help make the area safe and comfortable for pedestrians during the day and at night.

The buildings are built to the sidewalks leaving little to no gaps in the streetwall, or row of building facades. Parking is limited to shared parking lots or garages, to reduce the number of curb cuts or interruptions of the pedestrian flow and allowing maximum on-street parking. The buildings in this zone are the tallest that are found along the development continuum.

Surveyed Sites

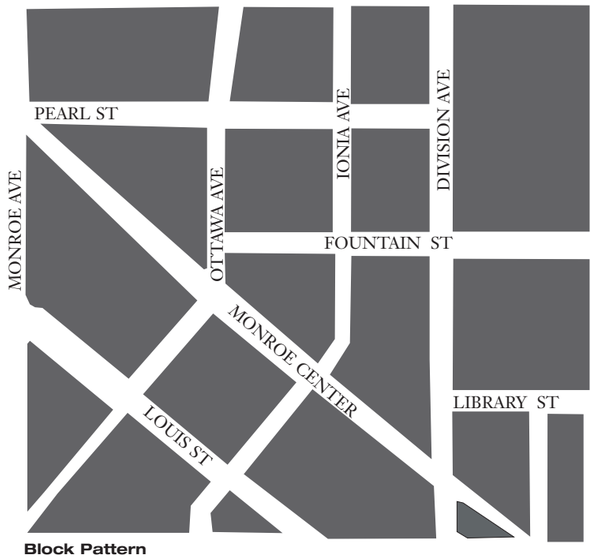
Downtown Grand Rapids serves as the center of the Grand Valley metropolitan area. It is a major employment and education center that is easily accessible from the expressway and is also served by transit (bus). The three areas surveyed in for this context zone are Ottawa Avenue, Monroe Center, and Ionia Street; all are included on the following pages.

Ottawa Avenue

Downtown Grand Rapids

Ottawa Avenue in downtown Grand Rapids is characterized by short, walkable, and irregularly shaped blocks. The grid pattern of these blocks is uniquely interrupted with angle streets. The buildings on Ottawa Avenue are primarily six or more stories tall and typically, have a storefront on the ground story facade. Together these buildings form a dense commercial area not found elsewhere within the regional transect.

Angled views of the building facades on Ottawa Avenue.



Block Pattern

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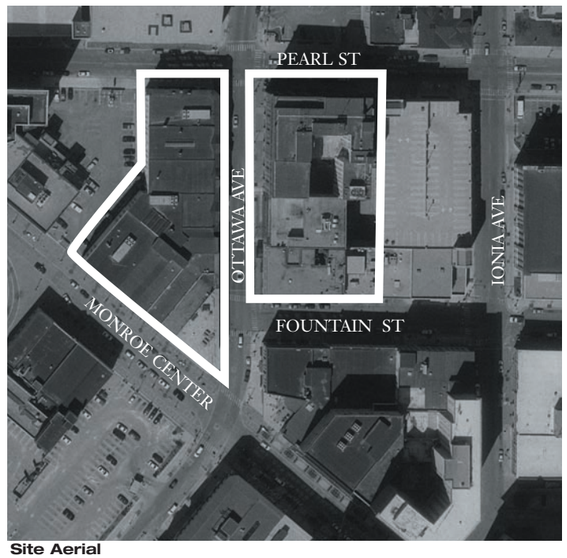
North



Site Aerial

scale: 1"=200'-0"
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North

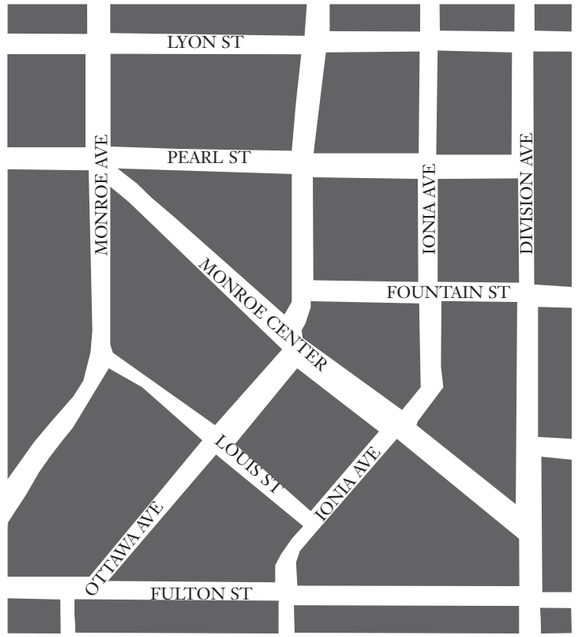
East and west sides of Ottawa Avenue NW, between Pearl Street NW and Fountain Street NW. The buildings are constructed without a front or side yard setback, creating a continuous streetwall.

Monroe Center NW

Downtown Grand Rapids

Monroe Center NW is an active business center for the region. One of the many diagonal streets in downtown Grand Rapids, Monroe Center NW is compact and walkable with commercial and office uses on the ground story and office or residential on the upper stories. Unlike other commercial centers in the region, this area is extremely dense with wider and taller buildings.

Monroe Center NW travelway and pedestrian realms.



Block Pattern

scale: 1"=400'-0"
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North

Site Aerial

scale: 1"=200'-0"
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North

Northeast and northwest sides of Monroe Center NW, between Ionia and Division Avenues. The majority of the entry ways into the buildings are recessed to prevent conflicts with passing pedestrians on the sidewalks.

Ionia Avenue

Downtown Grand Rapids

Ionia Avenue in downtown Grand Rapids also has an irregular block pattern that is a mix of a grid and angled streets. The blocks south of Fulton Street are as dense as the core of the downtown directly to the north. They are compact and walkable with a mix of uses. The area is active both during the work week and the weekends given the mixed-use nature of the buildings. Storefronts line the ground story of these buildings which are built up to the sidewalk with little to no side yard setbacks, creating not only an active pedestrian area, but also on interesting one.

One-point and angle view of Ionia Street.

Block Pattern

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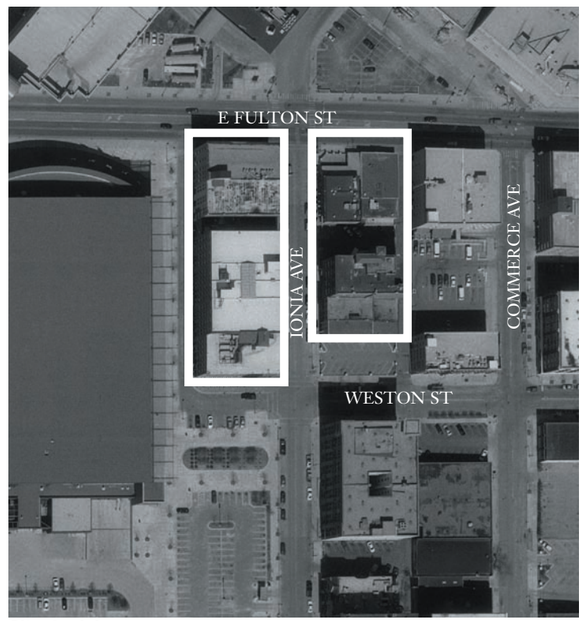
North

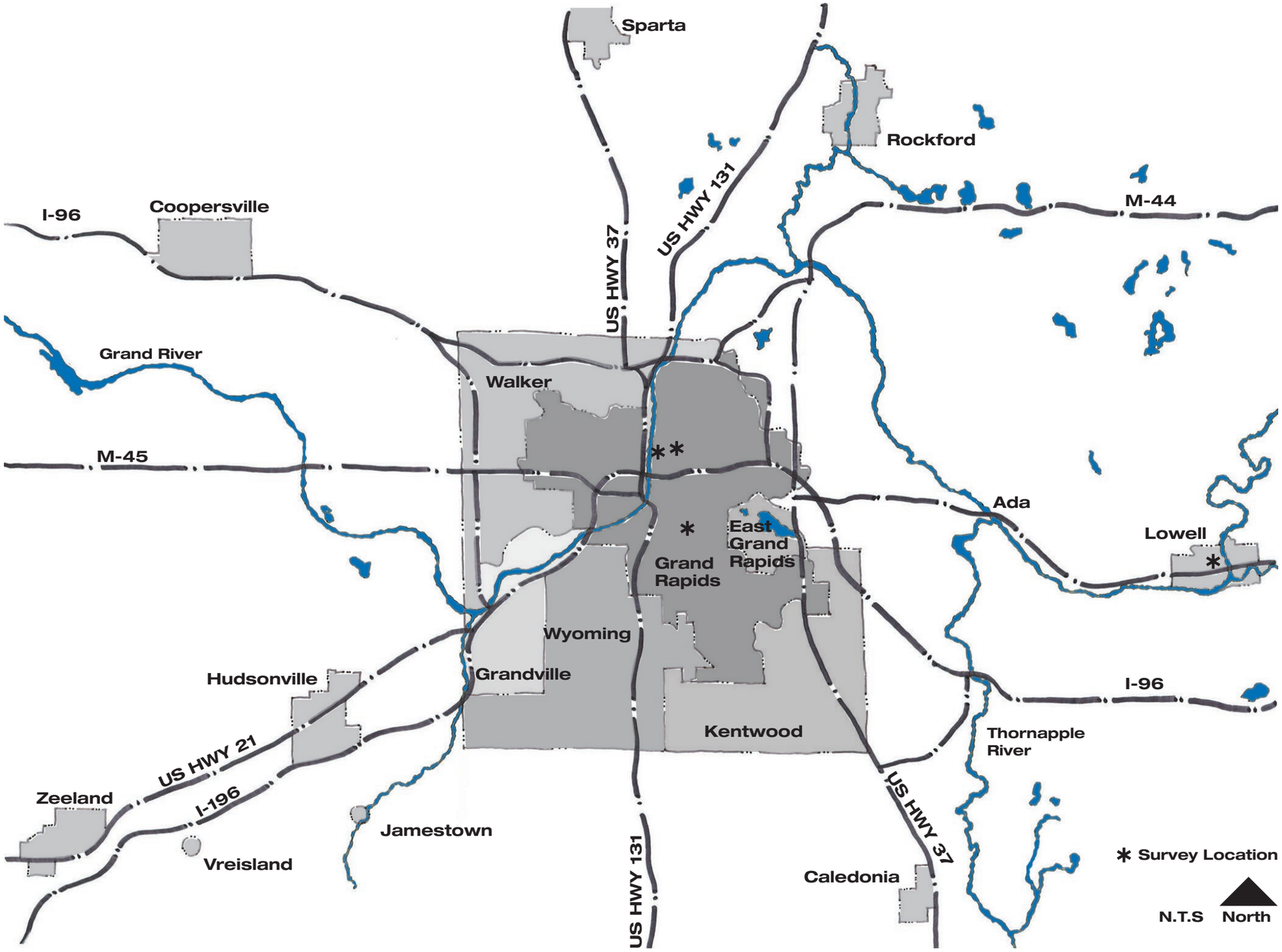


Site Aerial

scale: 1"=200'-0"
0 20' 40' 100' 200'
North

East and west side of Ionia Avenue SW, between East Fulton Avenue and Weston Street SW. The streetwall, or continuous row of building facades, is not interrupted with driveways to parking facilities or loading areas, which can be accessed from the alley along the rear of the buildings.

Site Surveys
Context Zone 5: Urban Center



Context Zone 5, on the development continuum, is the next most dense area. It can be located in close proximity to zone 6 or it can be its own commercial center or node. An active mixed-use area, it attracts patrons to its retail and services from throughout the region. It is served by transit and is very walkable. Given the mix of retail, commercial, and residential uses these areas are very active both on the weekends and weekdays.

The ground story of each building has a high level of transparency to allow pedestrians to see into the stores, and those working or shopping to see out. The upper stories contain office or residential units also with a good level of transparency, which allows for more "eyes on the street." Context Zone 5 is a very comfortable pedestrian environment as a result; it is safe and provides an interesting pedestrian journey.

The buildings in this zone are also built up to the sidewalk with no gaps in the streetwall. Parking is usually limited to on-street parking and shared parking lots or garages, to limit the number of curb cuts or interruptions of the pedestrian flow. The area is alley served, which provides another entrance into the parking facilities at the rear of the lots.

Surveyed Sites

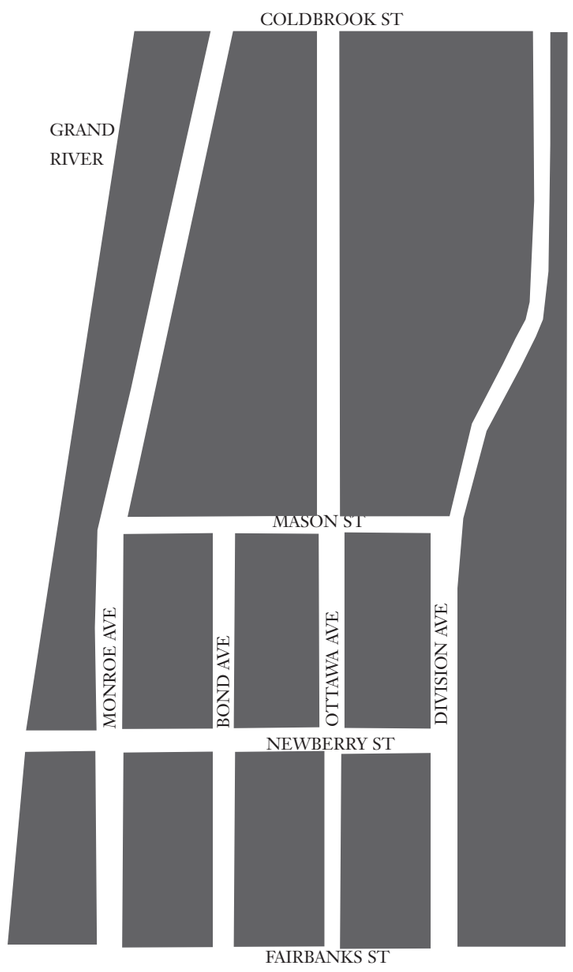
Sites within Grand Rapids and in the greater Grand Valley area were surveyed. In Grand Rapids, the sites included Monroe Avenue NW, a former industrial section of the city that has been converted to offices and apartments, and Division Street (Heartside) which is directly south of downtown. Outside of Grand Rapids, Main Street in downtown Lowell was surveyed as it is a larger satellite city of Grand Rapids with a greater density than many of the other surrounding cities. Creston Center in northern Grand Rapids was also surveyed and is included in the appendix.

Monroe Avenue NW

Grand Rapids

The long blocks along Monroe Avenue NW are a result of traditional industrial development. Because of the scale of these blocks, the walkability within the area is limited. The blocks are dominated by a few wide buildings, rather than many narrow ones previously used for manufacturing and production but converted to mixed-use buildings house residential, commercial, and office uses. Unlike the other Context Zone 5 buildings, the buildings in this area do not have traditional storefronts on the ground story facade, but often contain commercial uses on first floor such as galleries or offices.

Building facade along the boulevarded Monroe Avenue.



Block Pattern

scale: 1"=400'-0"
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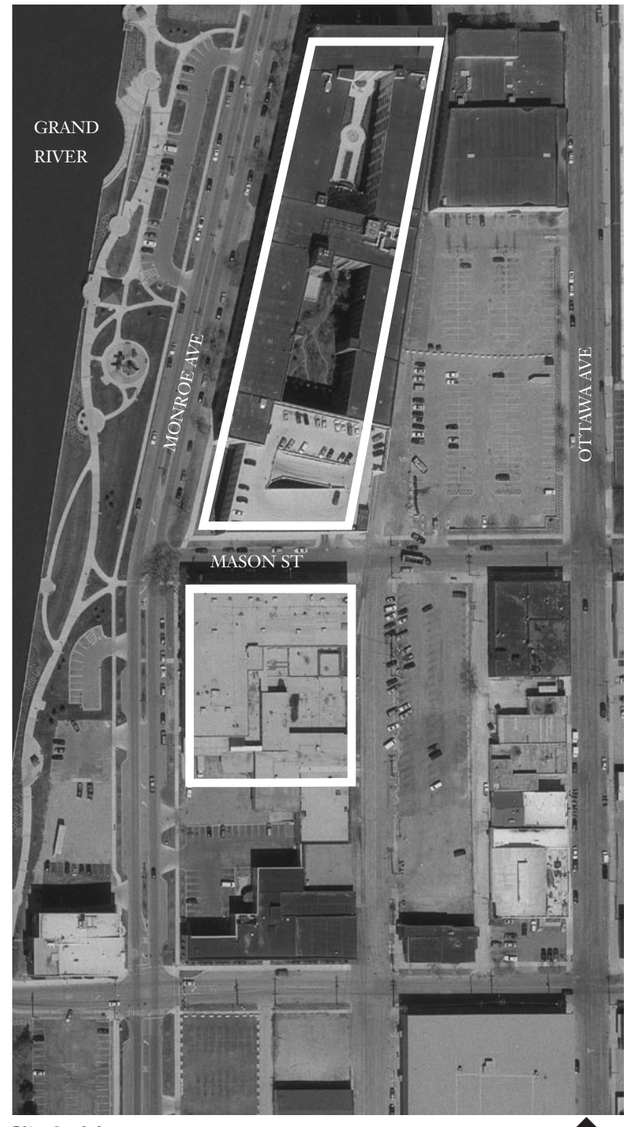
North



Site Aerial

scale: 1"=200'-0"
0 20' 40' 100' 200'
North

East side of Monroe Avenue NW, between Walbridge Street NW and Mason Street NW. This building, which houses commercial, office, and residential uses, does not have a traditional store front facade.

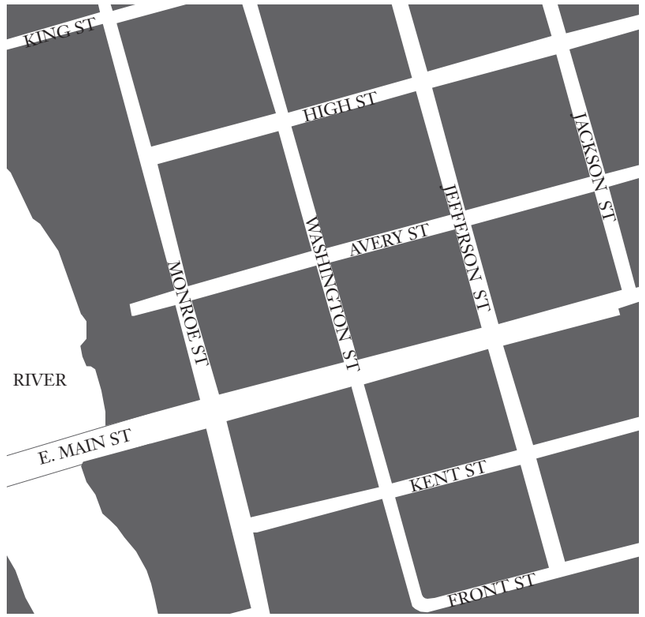
Main Street

Downtown Lowell

Downtown Lowell has walkable, compact blocks along its main street. Together with the residential blocks surrounding downtown, a consistent grid pattern is formed. Unlike Monroe Street NW or Division Avenue, Main Street in Lowell functions as its own independent commercial node. It attracts patrons from an area beyond the adjacent neighborhoods. The two and three story buildings have commercial on the ground story and residential on the upper floors. The buildings have little to no front yard or side yard setbacks, creating a continuous streetwall along the pedestrian realm.

The north and south views of Main Street SE, west of Monroe Street SE.

North and south sides of Main Street SE, west of Monroe Street SE. The shops and restaurants in Lowell attract people from beyond the immediately adjacent neighborhoods.



Block Pattern

scale: 1" =400'-0"
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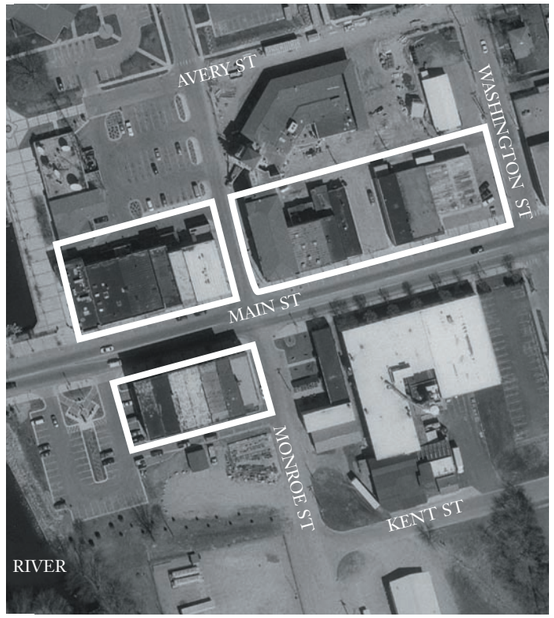
North



Site Aerial

scale: 1" =200'-0"
0 20' 40' 100' 200'
North

Plainfield Avenue NE

Creston Center, Grand Rapids

The angle of Plainfield Avenue creates irregularly shaped, long blocks. The larger block pattern formed by Plainfield Avenue is not typical for Context Zone 5. The commercial center on Plainfield Avenue serves as the center of the Creston Center neighborhood. The majority of the buildings in the center are traditional storefront buildings with commercial uses on the ground floor and residential or office uses on the upper stories. The majority of the buildings are two stories, but three and four stories buildings can also be found along the corridor.

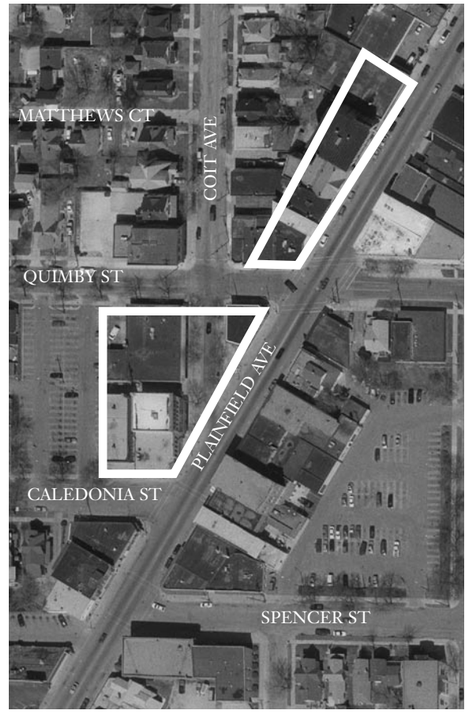
Plainfield Avenue in the Creston Center neighborhood.

West side of Plainfield Avenue NE, north of Quimby Street NE.

West side of Plainfield Avenue NE, south of Quimby Street NE.

Block Pattern

scale: 1"=400'-0"
0 40' 80' 200' 400'
North



Site Aerial

scale: 1"=200'-0"
0 20' 40' 100' 200'
North

Site Surveys
Context Zone 4: General Urban

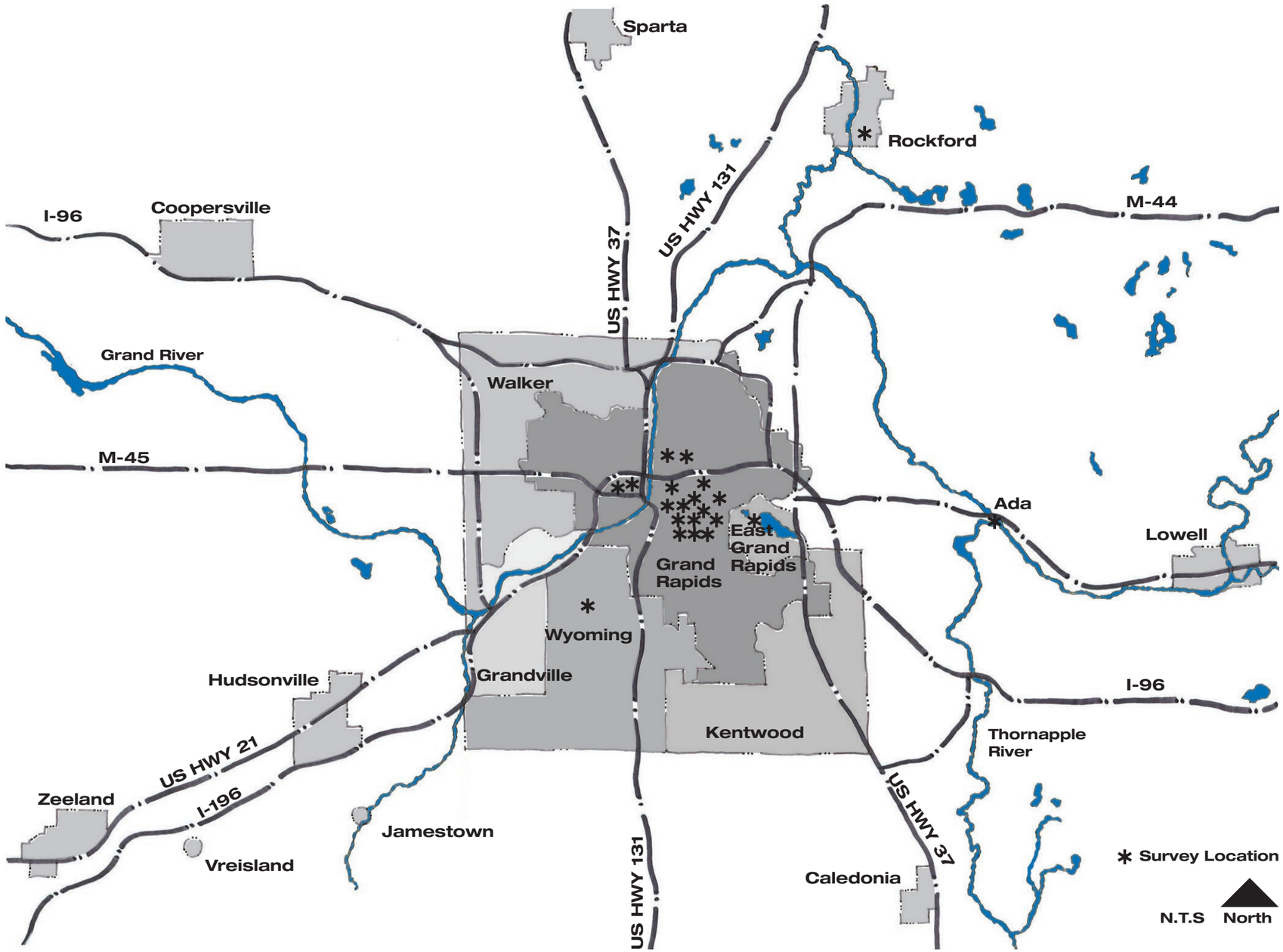
Context Zone 4 includes smaller scale mixed-use and residential development in walkable neighborhoods, including both single and multiple-family. The mixed-use commercial areas are located adjacent to residential development, serving these areas within walking distance. Commercial districts in Context Zone 4 are active on the weekends and in the evenings. The zone is served by transit, but it is not as frequently as in the more intense zones.

The ground story of each mixed-use building has a traditional storefront with a high level of transparency to allow pedestrians to see into the stores, and those working or shopping to see out. The upper stories, containing residential units, also have a good level of transparency, which allows for more "eyes on the street." The buildings are constructed up to the street with little to no space between the buildings.

The residential structures in this zone can serve as both single-family dwellings, and multiple-unit buildings. These buildings all have an appropriate level of transparency and the ground story is raised above grade to provide privacy. The structures are slightly set back from the sidewalk with some space between the buildings, have small front yards, porches, and small spaces between.

Surveyed Sites

Context Zone 4 sites were found throughout the Grand Valley metro area, including Grand Rapids, Ada, Rockford, and East Grand Rapids. The sites range in use, but share many of the same characteristics, including height, location on the lot, and transparency. Key surveyed sites are included here with additional sites in the appendix.



East Fulton Street

Grand Rapids

This active mixed-use commercial area has walkable blocks. The commercial uses face the primary street and residential uses exist behind the commercial uses on the secondary streets. The commercial buildings serve those residents living within walking distance.

The two story buildings have storefront facades on the ground story, with large display windows and recessed entries. Above the display windows is a horizontal band delineating the stories. The structures are capped with a cornice and parapet. These details provide additional interest for a passing pedestrian, making the area pedestrian friendly and active.

Views of East Fulton Street.

Block Pattern

Site Aerial

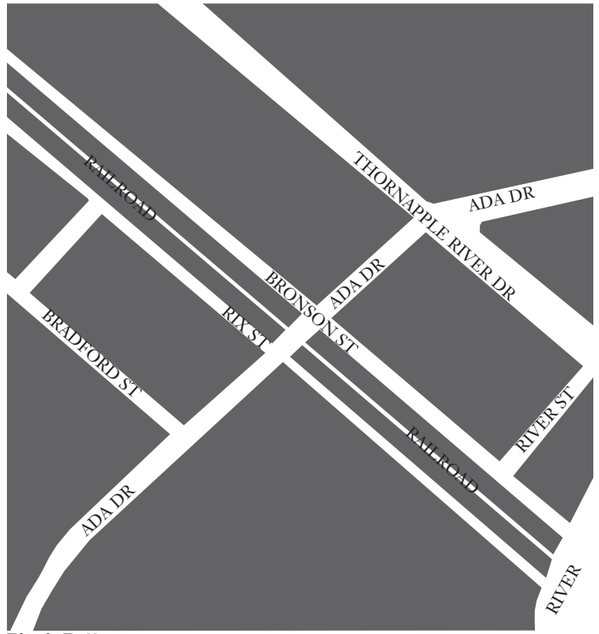
South and north sides of East Fulton Street, between of Diamond Avenue SE and Congress Avenue SE. The buildings share many characteristics, including large storefront display windows, recessed entries, and in many cases, a separate entrance for the upper story uses.

Ada Drive

Ada

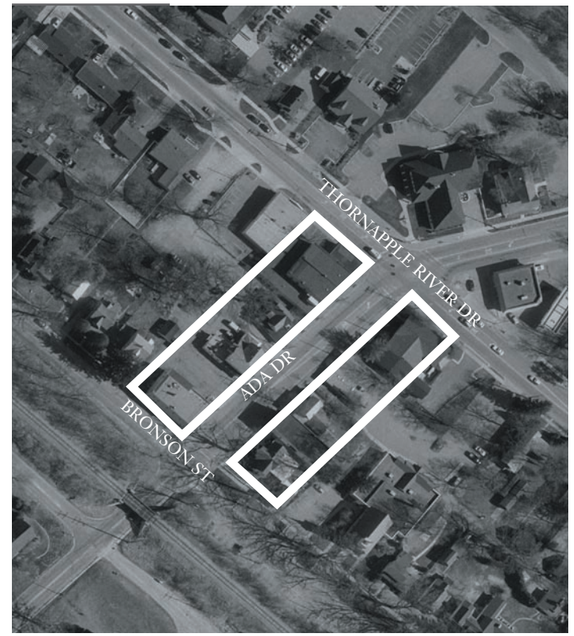
The commercial and mixed-use development in Ada differs from that in many of the other commercial Context Zone 4 sites. First, the blocks are much longer than in other areas. Second, the buildings include both traditional mixed-use structures and houses that contain commercial uses. These buildings are not built to the sidewalk, but have small setbacks in the front and side yards that are frequently landscaped. The front windows of these buildings have been expanded to serve as display windows, but they are smaller than the traditional storefront display windows. The facade elements also differ, including the roof line and the size of the upper story windows.

Views of Ada Drive from Bronson Street; several of the buildings along this main street are set back from the street.



Block Pattern

scale: 1"=400'-0"
0 40' 80' 200' 400'
North



Site Aerial

scale: 1"=200'-0"
0 20' 40' 100' 200'
North

Ada Drive in downtown Ada is a mix of traditional mixed-use buildings and residential structures that are used for commercial purposes.

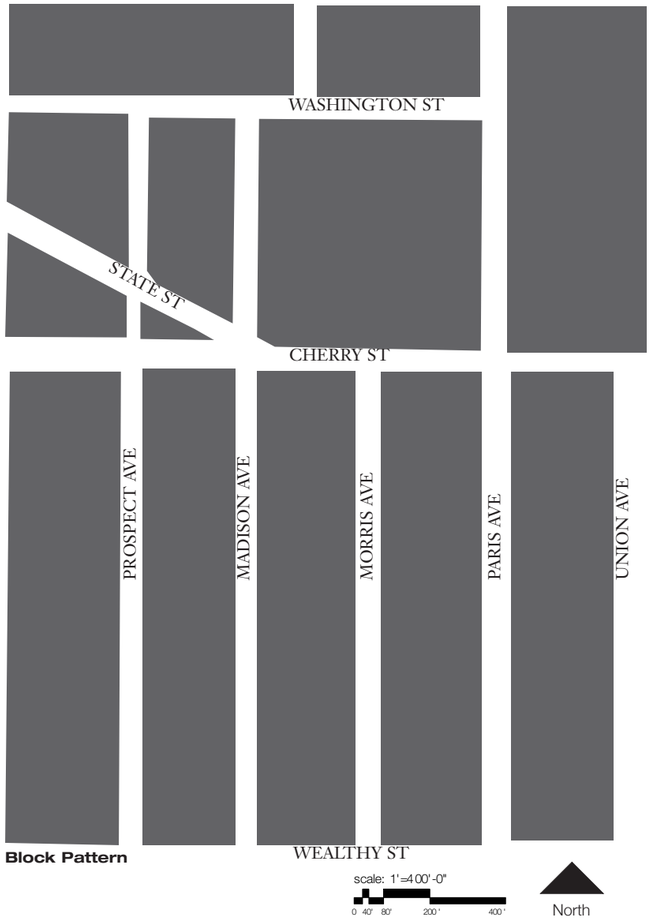
Cherry Street at Madison Avenue

Grand Rapids

This courtyard apartment building can be found on a variety of street types, including the primary street on the edge of Context Zone 4, adjacent to Context Zone 5, and the quieter residential secondary streets. This building has ground story commercial uses accessed through a storefront facade on streets closer to downtown.

The structure is built to the sidewalk along the street frontages with the exception of the courtyard space, which is approximately one-third the building's width.

Cherry Street and Madison Avenue courtyard apartment buildings with commercial uses on the ground story.



Block Pattern

scale: 1"=400'-0"
0 40' 80' 200' 400'
North

Site Aerial

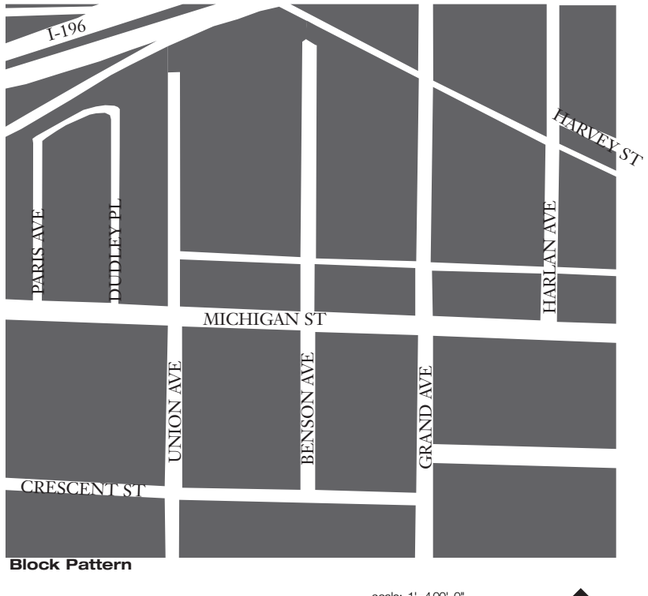
scale: 1"=200'-0"
0 20' 40' 100' 200'
North

Michigan Street

Grand Rapids

The block pattern in and around Michigan Street is a traditional grid pattern; the blocks to north no longer exist. This area was cleared for a new development in the near future that includes medical offices.

The large residential structures on Michigan Street are set back from the street and from each other. They occupy slightly larger lots than many of residential buildings in Context Zone 4, but are in scale with surrounding single family uses. These buildings house multiple units, which are accessed from an elevated front porch or stoop.



Block Pattern

Site Aerial

The setbacks from the front and side property lines are small and have a minimal amount of landscaping.

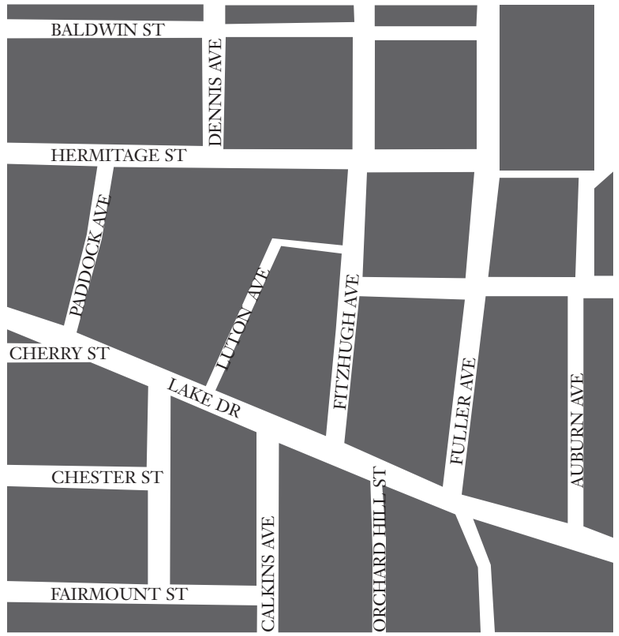
Large residential buildings along Michigan Street between Benson and Union Avenues. The entrances to the buildings are on the front facade from raised porches and stoops.

Fitzhugh Avenue

Grand Rapids

The blocks on which these rowhouses are found are short and easily walkable. The blocks house a mix of structures containing single and multiple-family residences. The rowhouses are two stories in height and are slightly set back from the street with landscaping in the front yard. The units and their individual lots are deeper than they are wide and the primary entrance is on the front facade from a raised porch, which gives the residences some privacy.

One-point and angled view of Fitzhugh Avenue.



Block Pattern

scale: 1"=400'-0"
0 40' 80' 200' 400'
North

Site Aerial

scale: 1"=200'-0"
0 20' 40' 100' 200'
North

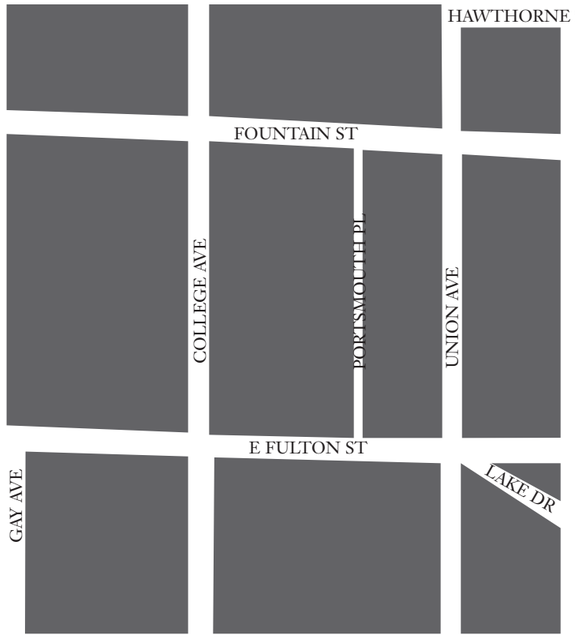
These two-story rowhouses, on the east side of Fitzhugh Avenue SE south of Hermitage Street SE, have a porch on the front facade that serves as the primary entrance for the units.

Portsmouth Place

Grand Rapids

Blocks in a grid pattern form the area around Portsmouth Place. The street itself is unique in its alley-like narrowness. The structures, housing residential uses, are only slightly set back from the street and each other. The main entrance to the structure is on the front facade, accessed from a raised porch or stoop.

The structures are only slightly set back from the narrow, alley-like street, as can be seen in these views of Portsmouth Place.



Block Pattern

Site Aerial

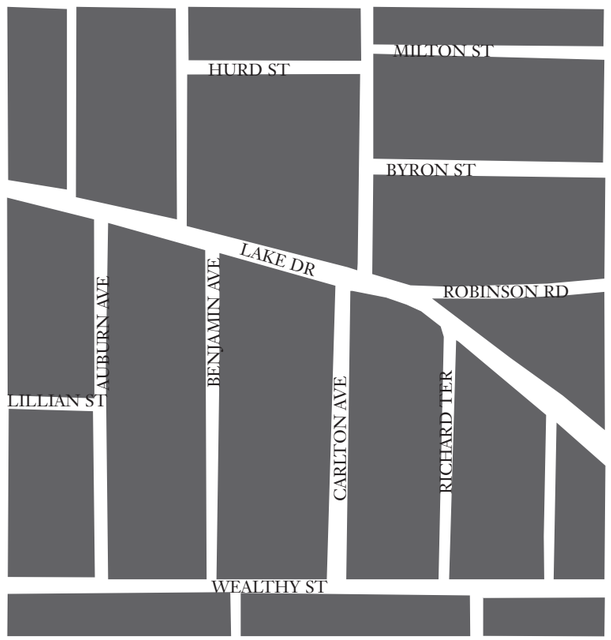
East side of Portsmouth Place NE, between Fountain Street NE and Fulton Street. The side yard setbacks, like the front yard setbacks, are minimal.

Benjamin Avenue

Grand Rapids

Benjamin Avenue is part of a long residential block. The block is walkable, but is not as compact as others in Context Zone 4. The structures on this street are set back from the street and each other, built to a similar setback line along the street. The buildings have a porch or stoop on the front facade with the primary entrance to the residence. This entrance, typically a porch, is slightly raised offering some privacy to the residents. The driveways to the private garages located in the rear of the lots are frequently shared by two adjacent lots.

One-point view down Benjamin and a view of the pedestrian realm.



Block Pattern

Site Aerial

Benjamin Avenue SE between Lake Drive SE and Wealthy Street SE has residential structures that are set back from the street and each other.

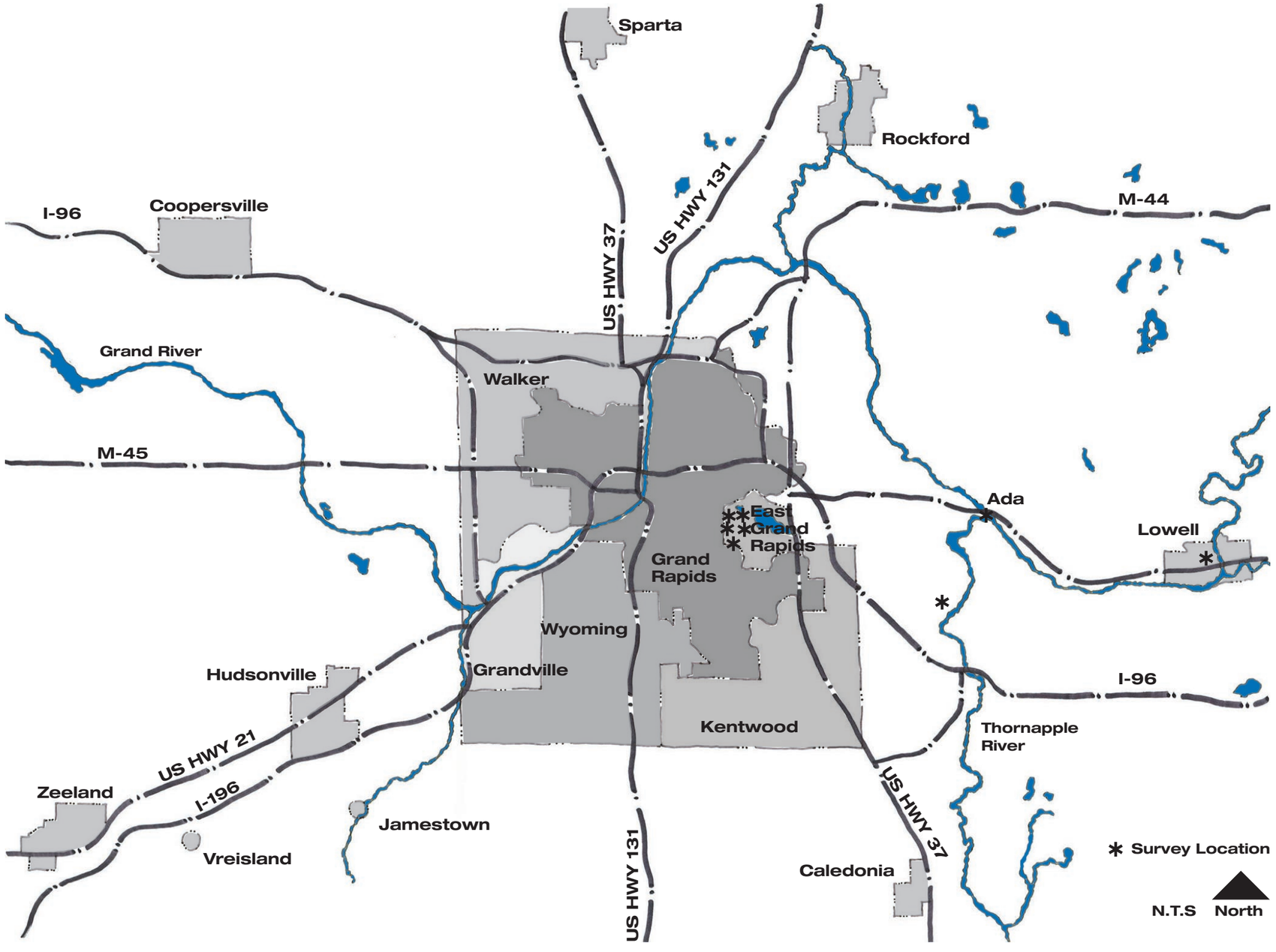
Site Surveys
Context Zone 3: Urban Edge

Context Zone 3 is primarily a residential zone. The lots are wider and deeper than those in Context Zone 4 and the buildings are generally larger and set further back from the street and each other. The large setback makes the area appear very green, as the yards are frequently landscaped. The blocks in this zone are long, may not have a sidewalk system, and do not have alleys, making them less walkable. The block pattern is generally not as linear as the other zones and can include a mix of a grid and curvy streets.

Scattered commercial uses can be found in Context Zone 3, but they are isolated. Context Zone 3 is a residential zone, specifically a single-family residence zone. The structures share many of the characteristics of residential in other zones, such as transparency and facade type. Driveways, which are frequently shared between lots, access the private garages found in the rear yards.

Surveyed Sites

Several sites were surveyed for this context zone. These sites were in Grand Rapids, East Grand Rapids, Ada, and unincorporated areas.



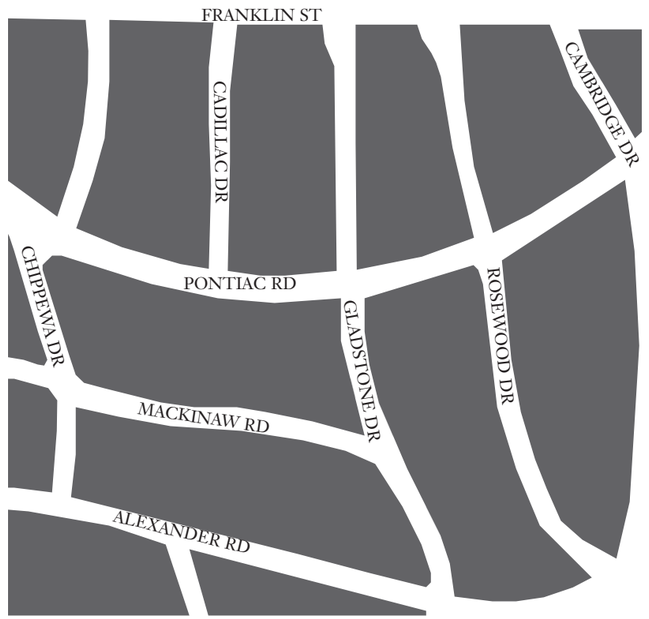
Gladstone Drive

Ottawa Hills, East Grand Rapids

The block pattern in this area is looser than the more intense context zones. The blocks are deeper and longer, up to a quarter of a mile long. The street system is a mix of straight and curvy streets.

The buildings are set back from the street and each other. The one and half to two story structures house single-family residences, accessed through an entrance off the front facade. Private garages, located in the rear of the lots, are accessed from driveways onto Gladstone Drive.

Views of the travelway and pedestrian realms on Gladstone Drive.



Block Pattern

scale: 1"=400'-0"
0 40' 80' 200' 400'
North

Site Aerial

scale: 1"=200'-0"
0 20' 40' 100' 200'
North

The east side of Gladstone Drive SE, between Franklin Street SE and Pontiac Road SE is characterized by large setbacks and landscaped front and side yards that make the street appear very green.

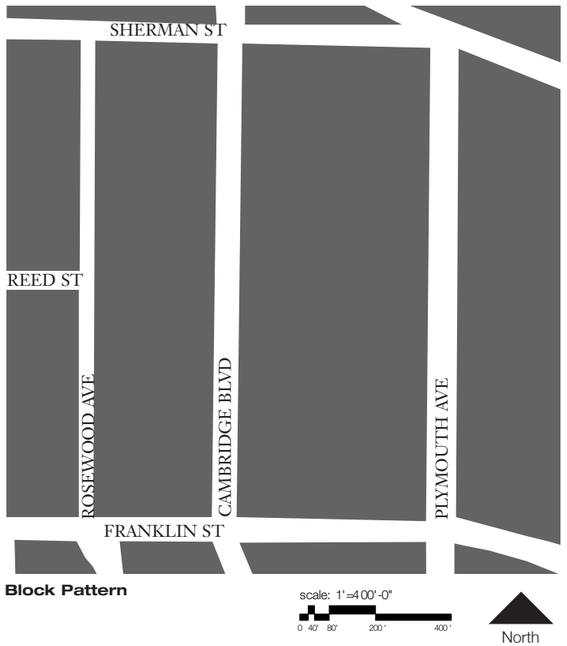
Cambridge Boulevard

East Grand Rapids

The block pattern surrounding Cambridge consists of long, fairly straight blocks to the north and more curvy blocks to the south. Sidewalks and on-street parking exist, but are not always found in this area.

The structures on Cambridge Boulevard house solely single-family residences. The buildings are accessed from an entrance on the front facade or through a driveway to a private garage in the rear of the lot. The front and side yards are well landscaped, often limiting the view of the building from the street.

View of the landscaped median and parkway on Cambridge Boulevard.



Block Pattern

scale: 1"=400'-0"
0 40' 80' 200' 400'

North

Site Aerial

scale: 1"=200'-0"
0 20' 40' 100' 200'

North

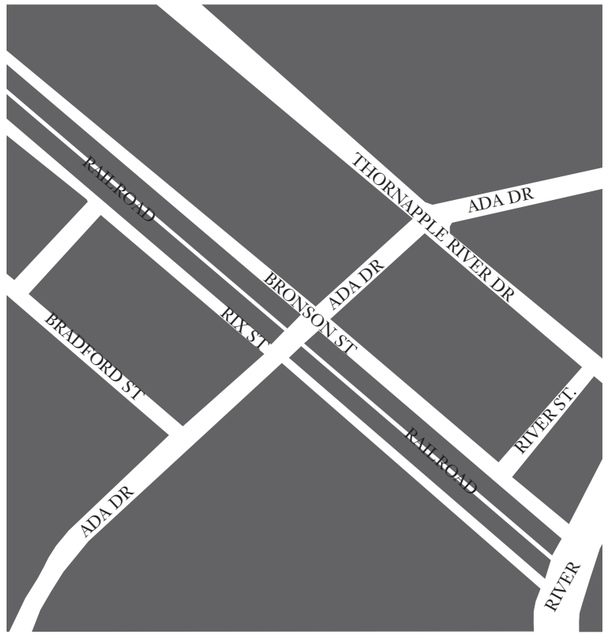
East and west sides of Cambridge Boulevard SE, between Sherman Street SE and Franklin Street SE. The driveways to the privates garages are frequently shared between to adjacent lots.

Bronson Street

Ada

The blocks in downtown Ada are very long. Unlike most of Context Zone 3, the blocks in downtown Ada have access to a short alley system, limiting the number of curb cuts onto Bronson Street. The mix of small and larger homes are on large lots, allowing for setbacks in the front and side yards. Landscaping in the front frequently hides residential buildings from full view of the street.

Views of Bronson Street southeast of the downtown.



Block Pattern

scale: 1"=400'-0"
0 40' 80' 200' 400'
North

Site Aerial

scale: 1"=200'-0"
0 20' 40' 100' 200'
North

Bronson Street in Ada has large residential lots with buildings that are set back from the street.

Site Surveys
Summary Table: Neighborhood Scale Measurements

The tables on the following four pages summarize all of the sites surveyed for the creation of this form-based code template. Those sites not detailed in this chapter can be found in the Appendix.

Neighborhood Scale Measurements

The tables to the right describe the surveyed site information used to help create the Sample Neighborhood Plans for each context zone outlined in the beginning section of Chapter 4: Form-Based Code Template. The tables organize the surveyed sites by context zone and proposed building type. Each of the major table headings are detailed below. Further information on these topics can be found in the Sample Definitions within Chapter 4.

Block Length

Block size was not a stated criteria used to select the surveyed sites, which were nominated because they were "good" urban areas. However, block size plays an important role in creating an area's urban character. For example, walkability, or perceived walkability, is directly related to block size. If the blocks are too long, they could deter pedestrians from using a route.

This document's recommended block lengths were developed in two steps. First, as shown on these tables, the existing block sizes were examined and block lengths that were too long were disregarded. General maximum block lengths are listed by site to establish sizes of walkable blocks in the Grand Valley area. Appropriately, the table illustrates that the length of a block decreases in size as an area becomes more intensely developed. For example, CZ 6, the densest, mixed-use area in the transect, has the smallest block length and CZ 3, a primarily large-lot residential zone, has the largest block length.

Secondly, in Chapter 4, the form-based code template portion of this document, these lengths were reviewed against accepted measurements for walkable communities around the country and adjusted accordingly to recommend block lengths for each context zone sample neighborhood plan.

Block Depth

The measurement of block depth is inclusive of alleys, where

Table of Neighborhood Scale Measurements

		Block Depth		Block Length			Lot Width			
Context Zone	Site Name Organized by Proposed Building Types	Approximate Existing Range	Longest Existing Block Depth	Approximate Existing Range	Comments	Longest Existing Block Length	Existing Range	Most Common	Access	Comments
CZ6	DOWNTOWN SITES									
	Ottawa Street	260	260	400-410		410	25,40,50,65,70,100,140	25		Blocks are irregularly shaped.
	Monroe Center	260	260	580	angled street, too long	n/a	25,40,50,65,70,100,140	25		Blocks are irregularly shaped.
	Ionia Street	220	220	290,400		400	20,25,30,45,50,90,100, 135	55	Alley	West block was truncated by arena, block depth assumes its original depth to be the same as the east block.
CZ5	STOREFRONT SITES									
	Division Avenue - Heartside	230,285	285	390		390	18,20,22,30,40,45,50,75,90	20, 30		Alley vacated on west block accounts for deep lots.
	Plainfield Avenue- Creston Center		390	530,415, 390	angled street	530	30,35,45,65,70,90	45,65		Angle of Plainfield Avenue requires allowance of a longer maximum block length
	Main Street - Lowell	260	260	330		330	20,25,40,45,50			
CZ4	MAIN STREET SITES									
	Rockford	300,320	320	320		320	20,25,30,40,50,65,75	20, 30		Northeast block at Courtland and Main is extremely deep.
	Bridge-Lexington-Stocking		260	260	square blocks	260	20,25,40,65,100			West side of Grand Rapids characterized by square blocks.
	Wealthy Street - Eastown	380,220	380	500, 600	600 is angled	600	40,60,100	40		Blocks are irregular
	E Fulton Street	275,250,380	380	520,340, 790	790 is too long	520	20,25,30,35,50,70	20		Good example.
	Cherry Street at Diamond Avenue	235	235	660, 1000	1000 too long, angled st	660	20,30,40,45,65,75	20	Partial Alley	Parking provided in rear adjacent lots to increase lot depth to 120
	Wealthy & Diamond (Bazzani Bldg)	295	295	570		570	50,150	50	Driveway	
CZ4	COTTAGE SHOPS									
	Wealthy Street - Downtown EGR	300	300	680	too long	n/a	20,40,45,50,75	45	Driveway	20' wide lots are actually Main Street Buildings
	Ada Drive, Ada (Commercial)	350	350	560,1430	1430 is too long	560	40,45,50,60,75,100	50	Alley	Very deep block.
	Virginia & Diamond	330	330	620		620	50	50	Driveway	
CZ4/5	COURTYARD SITE									
	Monroe Avenue NW	320,400, 470	470	650	too long	n/a	250,310,570			Industrial past - long blocks and buildings.
	Cherry Street & Madison Avenue Apts	625	n/a	625		625	125	125		Odd square block
	Morris Avenue (Multiple Family)	270	270	1210	too long	n/a	120	120	Driveway	Very long blocks.
CZ4	ROWHOUSE SITE									
	Fitzhugh Townhouses	260	260	330	common size	330	15	15		
CZ4	APARTMENT BUILDING									
	Michigan Street	300	300	390		390	50	50	Driveway (former alley?)	
	Wealthy at Diamond (MF Residential)	300	300	580		580	50	50	Driveway	

Context Zone	Site Name Organized by Proposed Building Types	Block Depth: Approximate Existing Range	Block Depth: Longest Existing Block Depth	Block Length: Approximate Existing Range	Block Length: Comments	Block Length: Longest Existing Block Length	Lot Width: Existing Range	Lot Width: Most Common	Access	Comments
CZ4	**COTTAGE SITES**									
	Robey Place	130	130	780	Street dead ends, too long	n/a	30,50	30	Driveway	Lots are 30' except for 1 double lot. Block is long in length.
	National Avenue	260	260	260	All	260	30, one 60	30	Driveway	West side of Grand Rapids characterized by square blocks.
	Portsmouth Place	210	210	780	Too long	n/a	40	40	Driveway	
	Quimby Street - Creston Center	220	220	1120	Too long	n/a	25,30,50	30	Alley	Block length is extremely long.
	Lafayette Avenue - Creston Center	260	260	580		580	30,35,40,50	35	Driveway	
	Page - Creston Center (no montage)	200	200	580		580	50	50		
	Baldwin Avenue	260	260	330		330	30	30	Alley, driveway	Squarish blocks
	Belden Avenue - Wyoming	210	210	over 850'	Too long	n/a	40, some 50	40	Driveway	Need Aerial
CZ4	**MANOR SITE**									
	Morris Avenue (Single Family)	270	270	1210	Too long	n/a	45,50,60	50	Driveway	Very long block.
	Diamond Avenue, S. of Cherry	235	235	660		660	40,one 55	40	Driveway	
	Benjamin Avenue	235	235	860	Too long	n/a	45,60,65,70	45	Driveway	
CZ3	**ESTATE SITE**									
	Seminole - Ottawa Hills, EGR	340	340	800,500		800	80,85,90, 100,110	80,90	Driveway	
	Pinecrest - EGR	260	260	1400?	Too long	n/a	75	75	Driveway	Blocks are too long.
	Gladstone - Ottawa Hills, EGR	260	260	580-640	Irregular	640	60,80,110, 120,170	80	Driveway	
	Cambridge - EGR	490,310	490	1250	Too long	n/a	90	90	Driveway	Blocks are too long.
	San Lucia Drive - EGR	720	720	1100	Too long	n/a	100,170,235,240		Driveway	Blocks are too long.
	Thornapple River Drive	570	570	1000	Too long	n/a	100,110	100	Driveway	Blocks are not walkable.
CZ3	**RURAL COTTAGE SITE**									
	Monroe Street - Lowell (Residential)	350	350	330		330	65,80	65	Driveway	
	Bronson Street - Ada (Residential)	315	315	550		550	50,65,70,85	65	Alley	
CZ2	**No Building Types defined**									
	Bailey Drive								Driveway	
	Vreisland								Driveway	
	Jamestown								Driveway	
	DECLINED SITES									
	Cherry and College Apartments	630		1250	too long		300		Driveway	

they exist. Block depth tends to be the shorter of the two block measurements, unless the block is square, and it helps to define the block's lot depths. During the survey process, it was noted that particularly in Context Zone 4, the commercial areas were often located on the shorter ends of the block, making these areas more accessible to the neighborhood and more walkable.

Lot Width

While lot width can be considered a characteristic of building type or sites, it is an indicator of the scale of development within a neighborhood as well. A lot's width can directly impact an area's appearance, as it is related to building width, sideyard setback, and streetwall continuity. Context zones contain different lot widths, depending on the appropriate building type and intensity of development.

Access

Parcel access, whether directly from the street or off an alley, plays a key role in determining the number of conflicts between pedestrians and vehicles and, therefore, can determine the walkability of an area. Exclusive use of alleys minimizes the number of conflict zones, typically to two or three locations where the alley crosses the sidewalk. Providing a driveway for each parcel creates a conflict for pedestrians at each parcel. Unfortunately, the Grand Valley area does not contain a large number of blocks with alleys. Fortunately, however, many of the driveways within both the commercial and residential areas are as narrow as 8'-0", reducing the area of conflict and slowing the vehicular traffic down significantly to negotiate the turn. Additionally, in commercial and residential areas, driveways are often shared between multiple parcels, further reducing the number of driveways required.

Site Surveys
Summary Table: Building Type Site Measurements

Building Type Site Measurements

The tables to the right describe the surveyed site information used to help create the Building Type Standards outlined in Chapter 4: Form-Based Code Template. The tables organize the surveyed sites by context zone and proposed building type. Each of the major table headings are detailed below. Further information on these topics can be found in the Sample Definitions within Chapter 4.

Front Setback

During the survey process, the distance each building was located off the front property line was measured. Within most sites, front porches encroached into the front setback. The most common setbacks were noted. Consistent setbacks create a defined streetwall and are key to the character of the area, especially in areas with narrow lot widths. During the development of the building type standards, consistent setbacks within a context zone signalled the need for establishing a build-to zone, that would maintain that consistency by requiring the building facade to be located within a defined zone from the front property line into the site.

Percent of Building Built to the Front Property Line

This measurement determines the level of streetwall and enclosure created by the buildings along a street. The survey measurements show that Downtown Sites in Context Zone 6 has the highest percentage of building occupying the front line, compared to lower levels for the Cottage Shop sites in Context Zone 4. Streetwall continuity is not as important to residential neighborhoods, although it certainly helps define the character of the streets. With smaller lot widths and narrow side yard setbacks in residential areas, houses tend to fill the site, creating a streetwall.

Interior Sideyard Setback

An interior sideyard of a lot is located directly adjacent to another lot and not a public right-of-way. A sideyard located along a right-of-way is referred to as a corner sideyard. When surveying existing areas, the space between buildings was measured because the side lot line was often not visible. From this measurement, a recommended sideyard build-to zone or setback was calculated for each building type.

Table of Building Type Site Measurements

		Front Setback			Interior Sideyard Setback		Site Coverage of Buildings			Building Height (in stories)		Transparency*				
Context Zone	Site Name Organized by Proposed Building Types	Range of Front Setbacks	Most Common Front Setback	% of Building Built to Front Property Line	Range of Space Btwn Bldgs	Estimated Range of Side Yard Setback	Average BuildingWidth	Average Building Depth	Average Site Coverage	Existing Heights per Site	Existing Range	Average % of Ground Floor*	Average % of Upper Floor*	Base Type	Cap Type	Comments
CZ6	**DOWNTOWN SITES**															
	Ottawa Street	0	0	100%	0	0	96	116	98%	4,6,7	4-7	29,29	32,36	Storefront	Flat	Lots are irregularly shaped.
	Monroe Center	0	0	100%	0	0	74	132	98%	3,4,13	3-13	30,30,31	29,34,64	Storefront	Flat	Missing height data, heights estimated.
	Ionia Street	0	0	98%	0	0	51	94	96%	2,5,6,7	2-7 (mostly 5-7)	45,50	37,41	Storefront	Flat	
CZ5	**STOREFRONT SITES**															
	Division Avenue - Heartside	0	0	98%	0	0	46	67	60%	2,3	2-3 (mostly 2)	32,41	24,36	Storefront	Flat	
	Plainfield Avenue- Creston Center	0	0	90%	0, 3,5,10	0-5	55	55	89%	1,2,3	1-3 (mostly 2)	28	21	Storefront	Flat, pitched	
	Main Street - Lowell	0	0	98%	0	0	26	84	85%	2,3	2-3 (mostly 3)	37,38	20,30	Storefront	Flat	
CZ4	**MAIN STREET SITES**															
	Rockford	0	0	82%	0,12	0-6	38	78	77%	1,2,3	1-3 (mostly 1)	31	23	Storefront	Flat	
	Bridge-Lexington-Stocking	0	0	92%	0,5	0-2.5	54	77	62%	1,2,3	1-3	20,29,37	28,31	Storefront	Flat, pitched	
	Wealthy Street - Eastown	0	0	92%	0,5,10	0-5	76	75	94%	2	2				Flat	
	E Fulton Street	0	0	100%	0	0	31	76	75%	1,2	1-2 (mostly 2)	34,36	16,29	Storefront	Flat	
	Cherry Street at Diamond Avenue	0	0	93%	0-5	0-5	34	60	88%	1,2	1-2 (mostly 1)	25,39	24,29	Storefront	Flat	
	Wealthy & Diamond (Bazzani Bldg)	0	0	95%	15 for driveway	0-7.5	57	67	42%	2	2	40	35	Storefront	Flat	Large rear parking lot impacts coverage. Driveway to parking lot is the space between the buildings.
CZ4	**COTTAGE SHOPS**															
	Wealthy Street - Downtown EGR	0-15	0-15	83%	0-10	0-5	36	79	70%	1,1.5,2	1-2 (mostly 1)			Modified storefront, porch, enclosed porch	Pitched & Flat	Assume that flat roof, 0 setback buildings are Main Street BT
	Ada Drive, Ada (Commercial)	0,0,5,0,15,0,5,5,15	5, 15	60%	5,6,9,15,20	0-10	56	54	45%	1, 2	1-2 (mostly 2)			Modified storefront, porch, enclosed porch	Pitched & Flat	Assume that flat roof, 0 setback buildings are Main Street BT
	Virginia & Diamond	5, courtyard is 60 deep on corner		50%	0-5	0-5	80	45	55%	2	2			Modified storefront	Flat	Highly modified "L" shaped building, a bit of an anomaly
CZ4/5	**COURTYARD SITE**															
	Monroe Avenue NW	9,7	9	75%	0	0	332	163	84%	4,5.5 (basement)	4-5.5	26	30	Stoop	Flat	former industrial buildings modified for commercial, office, and residential.
	Cherry Street & Madison Avenue Apts	0 at commercial; 5 residential leg; courtyard is 188 deep		63%	5	2.5	40	242	67%	4	4	22	28	Storefront & Stoop	Flat	U-shaped courtyard building with one leg on corner. One leg has storefront on a portion.
	Morris Avenue (Multiple Family)	12; courtyard is 60 deep		55%	15, Corner side yard is 20-25	7.5	100	75	60%	3	3			Stoop	Pitched	Upper floor under eaves, partial footprint
CZ4	**ROWHOUSE SITE**															
	Fitzhugh Townhouses	20 (porch encroaches 7)	20	n/a	0 btwn THs; 8 btwn adj SF	0-4	16	60	76%	2	2	19	17	Porch	Flat	The total length of the townhomes combined is 92'. Setback matches Manor house because scale of a block of townhomes is closer to a large manor house
CZ4	**APARTMENT BUILDING**															
	Michigan Street	12	12	n/a	10	5	40	70	37%	2	2	18	21	Two story porch	Parapet	
	Wealthy at Diamond (MF Residential)	14	14	n/a	8	4	40	50	28%	2.5 w/garden unit	2-2.5			Two story porch	Parapet	Rear parking lots impact coverage.

Context Zone	Site Name Organized by Proposed Building Types	Front Setback: Range of Front Setbacks	Front Setback: Most Common Front Setback	Front Setback: % of Building Built to Front Property Line	Interior Sideyard Setback: Range of Space Btwn Bldgs	Interior Sideyard Setback: Estimated Range of Side Yard Setback	Site Coverage of Buildings: Average BuildingWidth	Site Coverage of Buildings: Average Building Depth	Site Coverage of Buildings: Average Site Coverage	Building Height (in stories): Existing Heights per Site	Building Height (in stories): Existing Range	Transparency*: Average % of Ground Floor*	Transparency*: Average % of Upper Floor*	Base Type	Cap Type	Comments
CZ4	COTTAGE SITES															
	Robey Place	5 to porch	10	n/a	8-12'	0-4	25	33	43%	2	2	23	17	Porch	Pitched	Second story is always under the eaves.
	National Avenue	10,15,20,40	10,15	n/a	5-10'	2.5-5	23	47	47%	2	2	23	21	Porch, enclosed porch	Pitched	
	Portsmouth Place	11,13,14,15,16,20 include r.o.w?	11,16	n/a	3,19,22,22,6,15, 15,19,10,12	1.5-11	34	49	44%	2, 2 plus attic	2-2+attic	28	26	Porch	Pitched	
	Quimby Street - Creston Center	20,20,10,9,6,9,3,6	6,9,20	n/a	11,10, 4.5,8, 17,5.5,3,17	2.5-8.5	22.5	37	35%	1-2	1-2 (mostly 2)	23	17	Porch, enclosed porch	Pitched	Same houses as Robey.
	Lafayette Avenue - Creston Center	11,17,20,22	20	n/a	15,12,11,12,25,1 7.5,5,13,14,23,1 6	2.5-13	23	46	27%	2	2	18	18	Porch, enclosed porch	Pitched	Lot depth was expanded by vacated alley, which impacts the coverage.
	Page - Creston Center (no montage)	4,11,12	10		15,22,5,23	2.5-12										
	Baldwin Avenue	10 (not all have porches)	10	n/a	10	5	22	41	39%	2	2	20	17	Most have porches	Pitched	
	Belden Avenue - Wyoming	20 (porches encroach)	20	n/a	8	4		30-50		1-1.5	1-1.5			Porch, enclosed porch	Pitched w/dormers	
CZ4	MANOR SITE															
	Morris Avenue (Single Family)	20,25,30	25	n/a	9-10	4.5-5	36	59	33%	3	3	22	23	Porch	Pitched	Some portion of the footprint up to 3 stories, under roof or in tower
	Diamond Avenue, S. of Cherry	10,15,20,25	20	n/a	11,11.5,14,15, 18.5,20	5.5-10	32	48	39%	2 plus attic	2-2+attic			Porch	Pitched w/dormers	Narrow driveways serve as the space between buildings.
	Benjamin Avenue	15,20	20	n/a	8,10,12,15,20	4-10	44	61	42%	2 plus attic	2-2+attic	24	29	Porch	Pitched	
CZ3	ESTATE SITE															
	Seminole - Ottawa Hills, EGR	60,70	60,70	n/a	20-30	10-15	59	39	18%	2, one 1	1-2 (mostly 2)			Mostly stoops	Pitched	Garages on front facades, set back some, small percentage
	Pinecrest - EGR	30,40	34	n/a	20-30	10-15	41	42	20%	2, one 1	1-2 (mostly 2)			Mostly stoops	Pitched, one flat	Few garages on front, still small part of façade
	Gladstone - Ottawa Hills, EGR	25-50	25	n/a	25-35	13-18	53	39	24%	2, one 1	1-2 (mostly 2)			Stoops	Pitched	
	Cambridge - EGR	45-60	45	n/a	20,30,40,45	10-23	55	52	18%	2, one 1	1-2 (mostly 2)			Stoop, one porch	Pitched	
	San Lucia Drive - EGR	90,115,125	90	n/a	35,90,60	16-45	92	45	7%	1,2	1-2			Stoops	Pitched	Garages on front, really large scale homes
	Thornapple River Drive			n/a						1,2	1-2			Stoops	Pitched	Garages on front
CZ3	RURAL COTTAGE SITE										1					
	Monroe Street - Lowell (Residential)	30, 40	30,40	n/a	10,25,35,45	5-23	36	49	18%	1,2	1-2			Mostly stoops	Pitched	
	Bronson Street - Ada (Residential)	40	40	n/a	15,20,25,40	7.5-20	35	154	21%	1,1.5,2	1-2			Mostly stoops	Pitched	
CZ2	No Building Types defined															
	Bailey Drive			n/a												
	Vreisland			n/a												
	Jamestown			n/a												
	DECLINED SITES															
	Cherry and College Apartments	30	30	n/a	35	16	200	110	19%	7	7					Coverage is low as a result of a large rear parking lot.

Site Coverage of Buildings

Site coverage is the relationship of building footprint to site area and can help determine the intensity of a context zone. In Context Zone 6, buildings occupy close to 100% of the site. In Context Zone 3, with deeper front yards, wider sideyards and larger backyards, the site coverage is closer to 15%. This measurement does not include impervious surfaces, such as driveways or patios.

Building Height

During the survey process and within the template code, height was measured down to the half-story and whether a story or half-story was accommodated in the basement or under the roof eaves was noted. As is evident in the summary table, building height is correlated with context zone intensity.

Transparency

Transparency is the degree to which a facade has clear transparent windows on each story. The level of transparency on the ground story of a building is directly related to its base type, with Storefronts being the most transparent. Survey measurements for transparency were taken for the entire facade; note that when establishing transparency standards for building types, percentage of transparency in the code applies only to the section of the facade that relates most to pedestrians, from 2'-0" to 8'-0" up from the sidewalk.

Base Type

Base types determine the way a building's ground floor relates to the public way. During the survey process, a series of typical base types were identified including a Storefront, Arcade, Shopfront, Porch, Enclosed Porch, Porch with a visible basement, Stoop, and Stoop with a visible basement. The type that occurred most often on a site during surveying is noted on the table. Allowable base types were then designated for each building type within the template code.

Cap Type

Similar to base types, cap types signify the type of roof dominant in an area, as well as the treatment of an additional story within the roof. The cap type that occurred most often within a survey site is noted on the table and the allowable cap types for each building type are designated within the template code.