DPZ CODESIGN

MASTER PLAN REPORT

DOWNTOWN KIRKWOOD

Industrial Development Authority

Kirkwood, Missouri

REVISED MAY 2019- *03/12/18*

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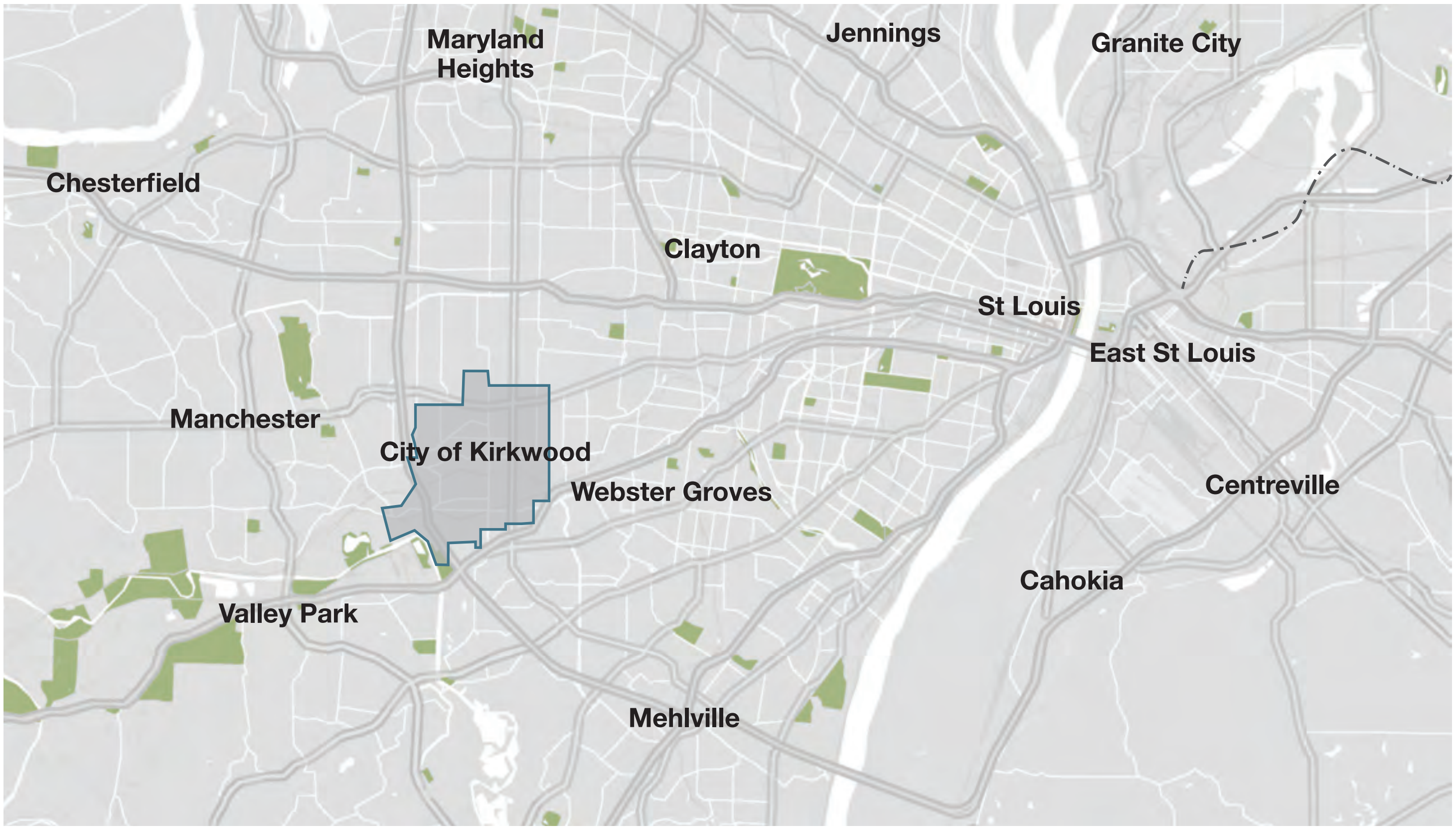
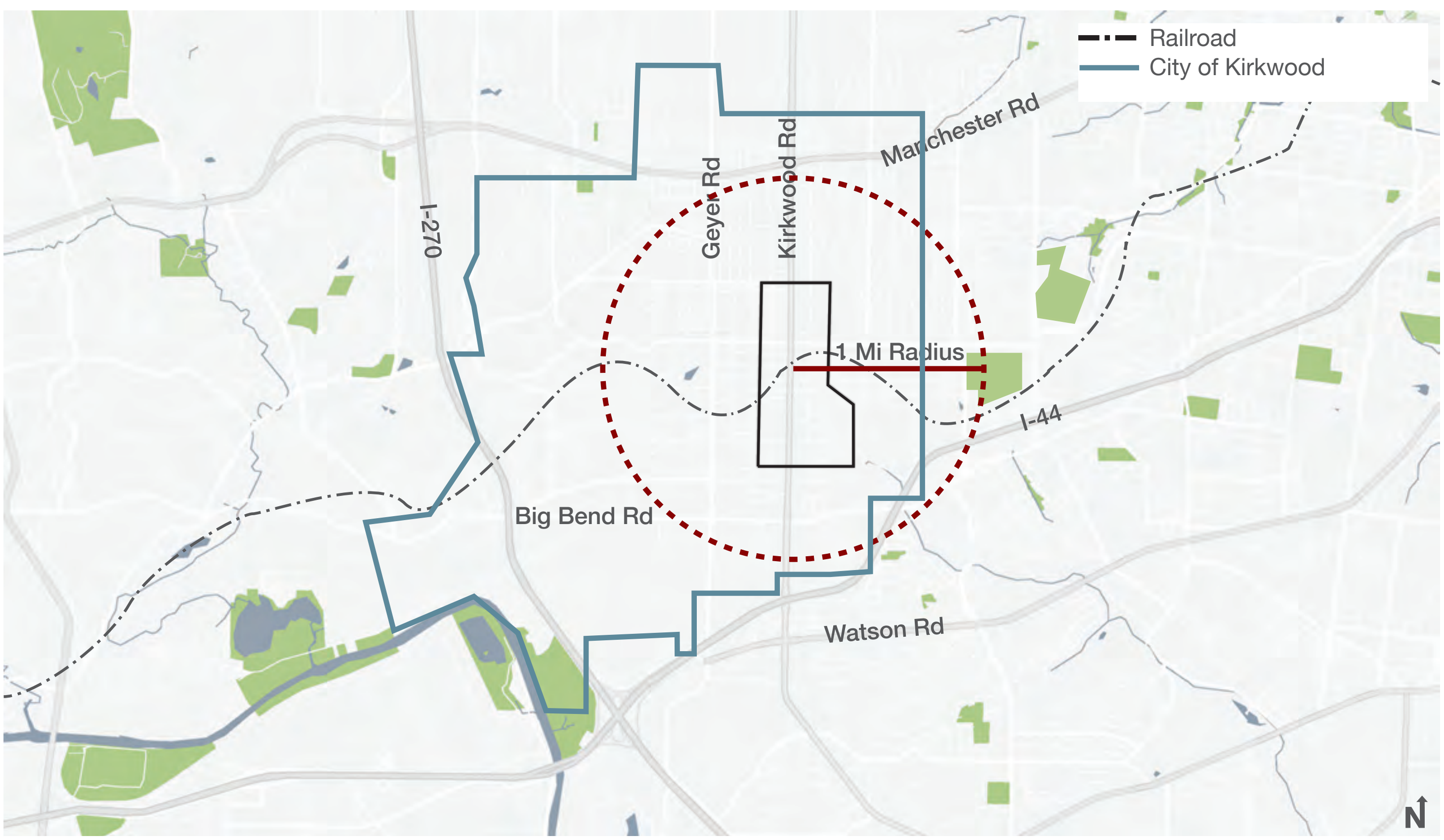
EXISTING CONDITIONS

CONTEXT

EXISTING CONDITIONS

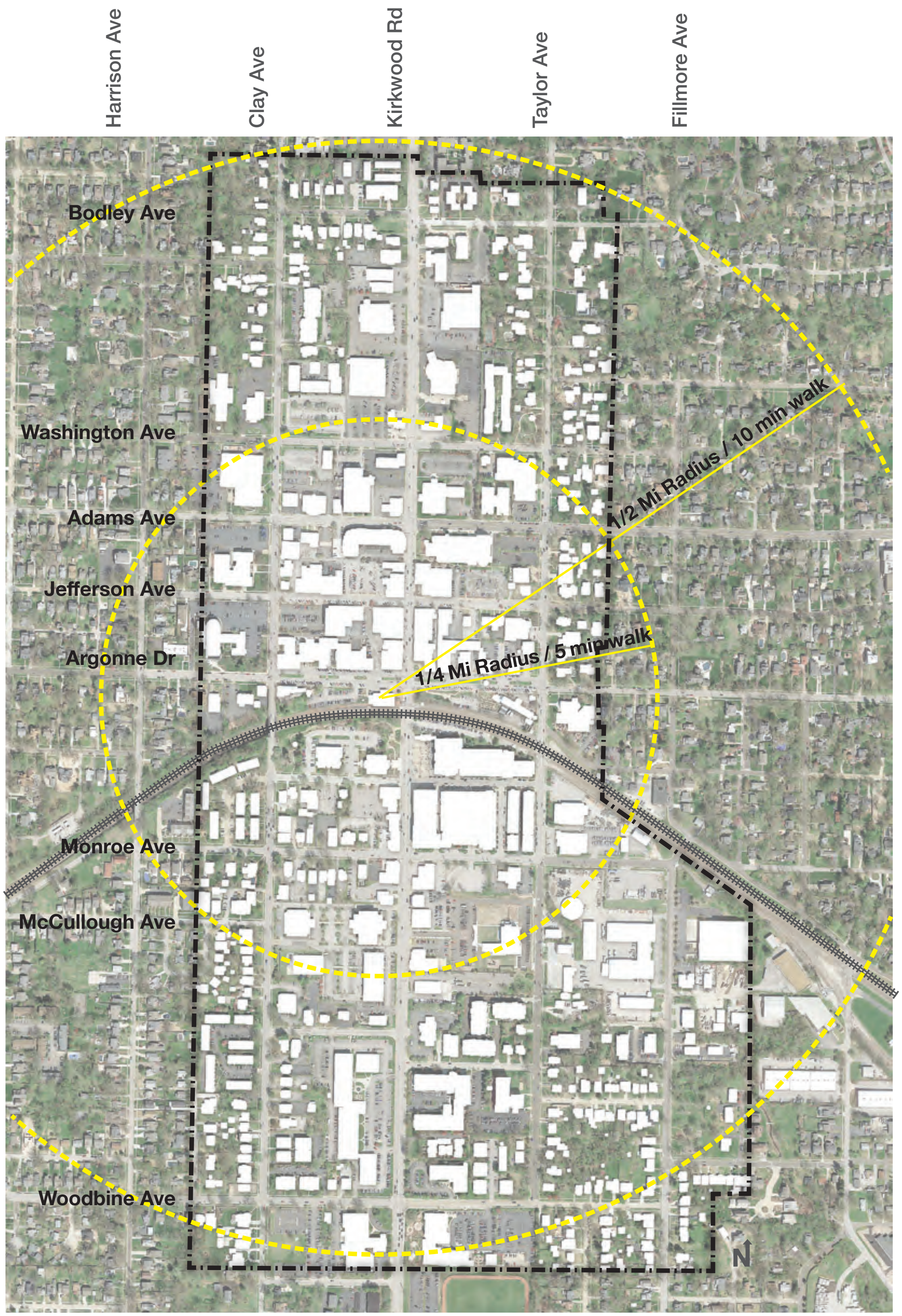
REGIONAL





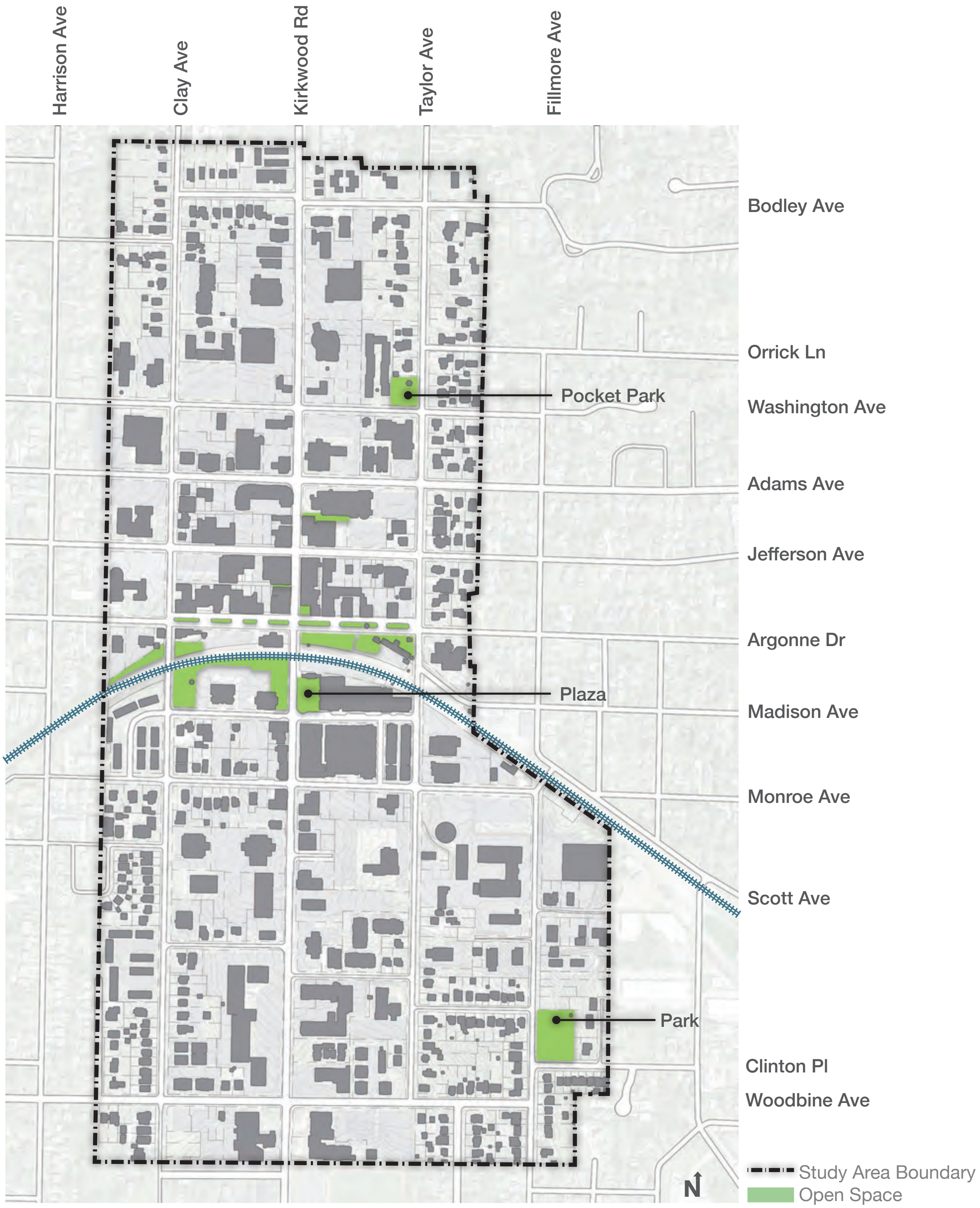
TRANSIT & PED SHED

The downtown study area, which comprises 275 acres, is bounded by 4 streets: Bodley on the north, Woodbine on the south, Clay on the west and Taylor on the east. The main north/south spine through the downtown is Kirkwood Rd, which is principally commercial in nature. The core of the downtown is centered around a train station, the 3rd busiest in the state, which is centrally located within the study area.



Kirkwood generally has a well-connected street grid throughout the downtown area, particularly around the train station, where the scale of the blocks are substantially smaller then the larger blocks to the north and south. The average block perimeter within the downtown core is 1,800 ft, whereas the average block perimeter of the blocks outside the downtown core measure 3,300 ft.

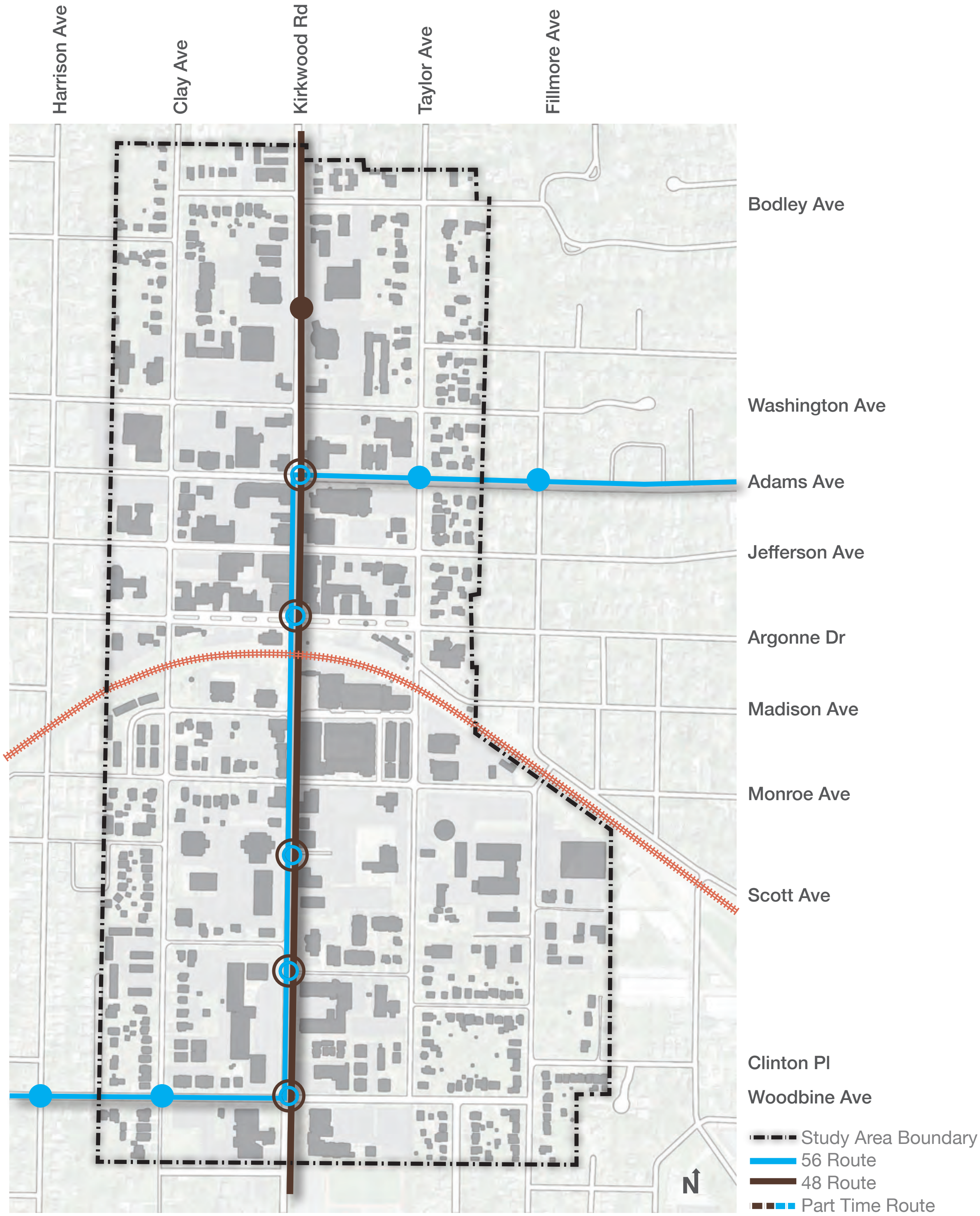
Open space is more prevalent in the downtown core, which illustrates the potential need for additional open space in the north and south extents of the downtown.



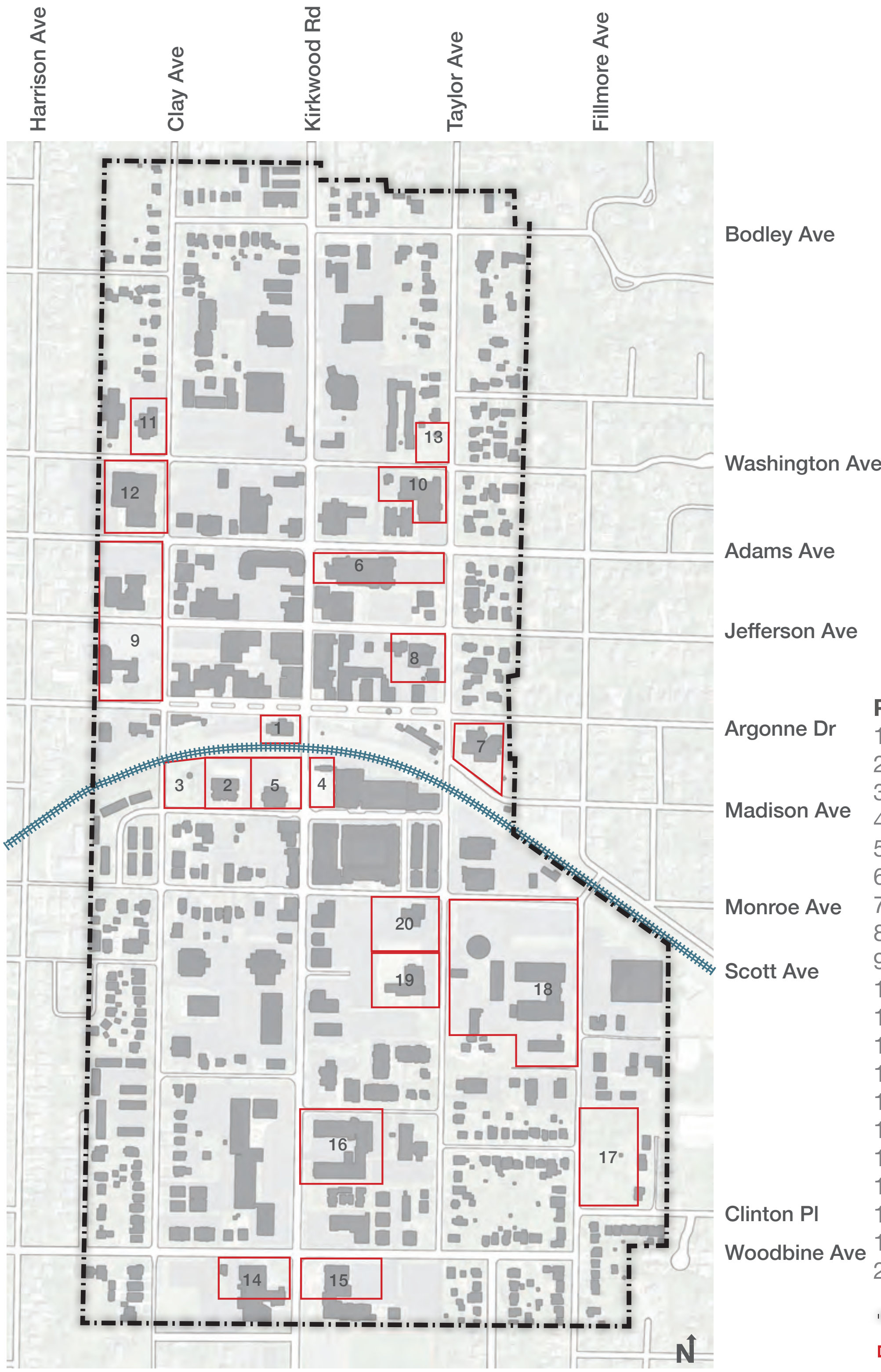
TRANSIT

EXISTING CONDITIONS

The downtown seems well served by public transportation down Kirkwood Rd as there are several stops and multiple lines serving the downtown area.



The downtown is equally well served with a number of public facilities distributed throughout the study area. Particularly, churches, and schools are well represented.



Public Facility Sites

1. Kirkwood Station
2. Police Department
3. McEntee Park
4. Plaza
5. City Hall
6. Presbyterian Church
7. Eliot Unitarian Chapel
8. Public Library
9. St. Peter's Catholic Church & School
10. Family YMCA
11. Christian Science Church
12. United Methodist Church
13. Walker Park
14. Concordia Lutheran Church
15. The Magic House
16. Bethesda Gardens
17. Fillmore Park
18. Public Works Facility
19. Greentree Community Church
20. University of Missouri Ext.

Study Area Boundary
Public Facility Sites

SURFACE PARKING

EXISTING CONDITIONS

The downtown has an over-abundance of land devoted to parking, with both surface and structured parking facilities. More information is provided in the "Parking Study" on page 105.

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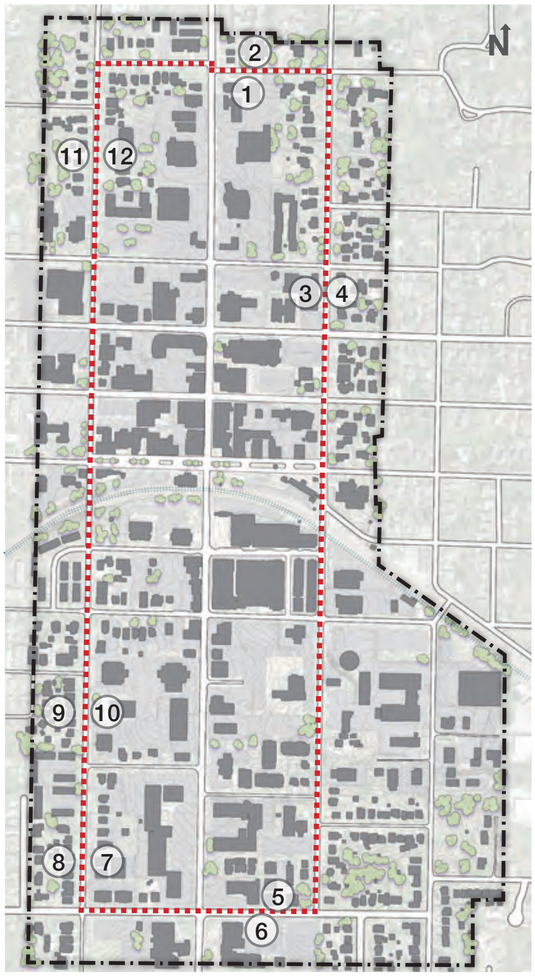
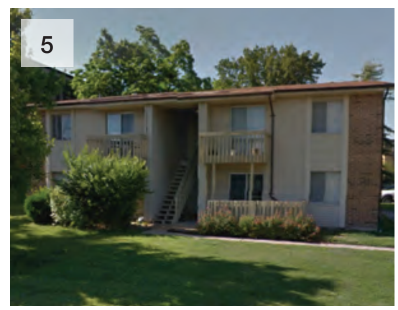




The image survey above looks at the 'edge' condition of the downtown to gain an understanding of the context of the downtown, especially in regard to how the commercial area transitions to residential.

IMAGE SURVEY

EXISTING CONDITIONS

KEY MAP

Additionally, images were taken to generally document the character of the downtown area, principally along Kirkwood Rd. They are included on the following page.

SITE PHOTOS

1. Kirkwood Train Station

2. Adams Ave & Kirkwood Rd

3. N Kirkwood Rd Strip Malls

4. S Kirkwood Rd Strip Malls

5. Single Family Housing

6. New Multi Family Building

IMAGE SURVEY

EXISTING CONDITIONS

ARGONNE DRIVE

Argonne Drive is a particularly unique street due to its pedestrian scale, active shopfronts, and general historic character. An additional image survey is provided to better capture the unique character found here.

West Argonne Drive "Main Street"

1. 131 W Argonne Dr

2. 150 W Argonne Dr

3. 123 W Argonne Dr

4. 113 W Argonne Dr

5. 150 E Argonne Dr

6. 150 E Argonne Dr

FRONTAGE SURVEY

EXISTING CONDITIONS

DEFINING FRONTAGE CRITERIA

A frontage analysis is a qualitative evaluation of a street's walkability and pedestrian-supportive design. The frontage survey on the following page utilizes the three categories described below to assist in determining the highest priority areas for improvements.

Good Frontage Characteristics

- continuous sidewalks
- pedestrian scaled buildings at the frontage
- active frontages
- street lighting
- minimal curb cuts
- the resultant is generally comfortable for pedestrians and is therefore conducive to walking

Fair Frontage Characteristics

- automobile scaled buildings
- removed from the frontage
- curb cuts present
- the resultant is generally less comfortable for pedestrians and is therefore less conducive to walking

Poor Frontage Characteristics

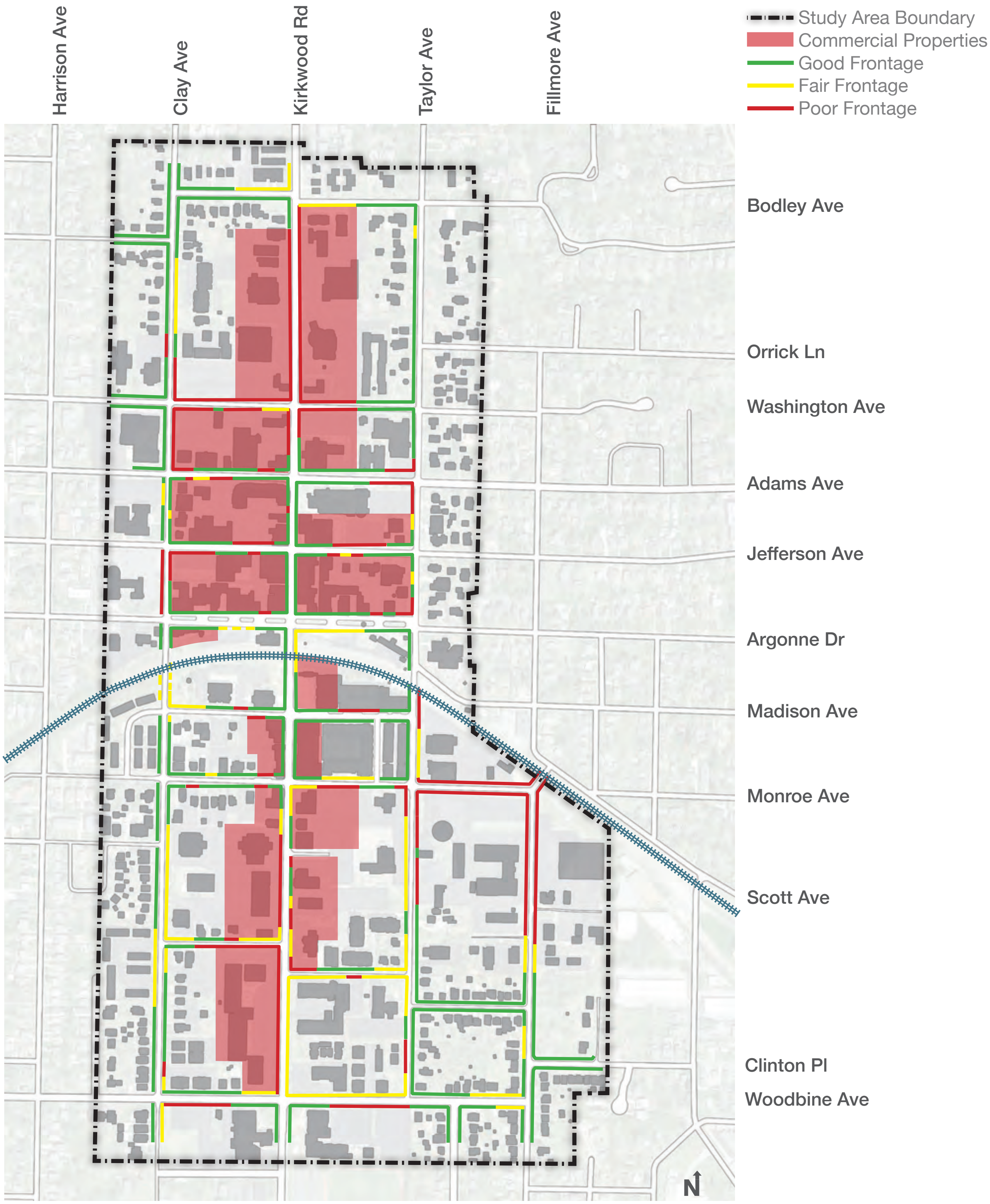
- no active frontage
- principally surface parking
- continual curb cuts
- inconsistent lighting
- the resultant is generally uncomfortable for pedestrians and is therefore more conducive to driving

A frontage analysis is an analysis based upon a streets present quality of public realm. This analysis will help determine the highest priority areas for implementation.

FRONTAGE SURVEY

EXISTING CONDITIONS

ANALYSIS MAP



POTENTIAL DEVELOPMENT SITES

EXISTING CONDITIONS

SHORT & MID-TERM

Short (1-5 years) and mid-term (5-10 years) development opportunities exist throughout the corridor. These are primarily parcels currently used as surface parking, older suburban-style commercial, former residences converted to businesses, and smaller/older office buildings.

1. Bodley Ave Parking Lot
2. N Kirkwood Rd Redevelopment
3. UMB Bank
4. N Washington Ave Parking Lot
5. Infill on W Adams Ave
6. Commerce Bank
7. W Jefferson Ave Infill
8. E Jefferson Parking Lot
9. E Argonne Parking Lots
10. W Argonne Infill
11. W Argonne Parking Lot
12. W Monroe Ave Parking Lots
13. W Monroe Ave Redevelopment
14. E Monroe Ave Parking Lots
15. Public Works Facility
16. W Clinton Pl Redevelopment
17. Bouyer Ln Infill
18. S Clay Ave Redevelopment
19. S Taylor Ave Redevelopment
20. W Woodbine Redevelopment
21. Concordia School Infill

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LONG-TERM

Long-term (10 years+) opportunities are plentiful; as the garden apartment complexes continue to age, they are prime candidates for redevelopment. Other opportunities include newer suburban-style commercial buildings that could transition to a higher and better use with greater future density Downtown.

1. US Bank Redevelopment
2. Global Foods Site
3. E Washington Apartments
4. Kirkwood Police Station
5. Montclay Ct Apartments
6. McCullough Ave Apartments
7. Kinder Care Redevelopment
8. McDonald's Site
9. E Clinton Pl Redevelopment
10. S Clay Apartments
11. S Taylor Apartments
12. W Woodbine Apartments
13. Concordia House

The following pages summarize the various plans and reports that have been conducted for the City of Kirkwood. This master plan effort attempts to pick up where the prior plans left off.

STREETS AND IMPROVEMENTS PLAN

1941

The 1941 Plan addressed three major elements that were of concern to citizens at that time: traffic circulation, housing values and a landscape plan for the recently completed City Hall. Traffic improvements called for the widening of major streets, the construction of an outer bypass on the west side of the city and the construction of viaducts to elevate Kirkwood Road over the existing railroad tracks at Argonne and Big Bend.

LAND USE & ZONING REPORT

1957

The 1957 Plan addressed the robust growth of post-World War II America. Kirkwood had annexed a substantial area of land since 1941 and the 1957 plan recommended numerous changes to the Zoning Code to handle this growth.

COMPREHENSIVE COMMUNITY PLAN

1962

The 1962 Plan for the first time established a thorough review of existing conditions within Kirkwood. This included a detailed analysis of population, land use, circulation, housing, the downtown area and public facilities. It also called for more multi-family residences to be established in the downtown area.

COMPREHENSIVE PLAN

1984

The 1984 Plan recognized that since the 1962 Plan downtown had rebounded, a number of large regional transportation routes had been built (I-270) and Meramec College had been founded and expanded. The plan also established major goals that resonate to this day: protecting residential neighborhoods, improving the Manchester Road corridor and promoting quality commercial development.

VISION 2015 PLAN

2003

The Vision 2015 Plan, developed in 2003, continued the work of the 1984 Plan in calling for the protection of residential neighborhoods, improving Manchester Road and promoting quality commercial development. The Vision 2015 Plan also placed a strong emphasis on urban design within the downtown area and collaboration amongst public and private entities.

EnVision 2035 Plan

2017

In 2015 the City saw the end of the 2003 Comprehensive Planning effort, "Vision 2015". This marked an opportunity for the City to reach out to City residents, business owners, and visitors once again to identify and capture the goals and aspirations for the community and to create a renewed vision for the City of Kirkwood.

Comp Plan Goals

- Establish land use controls
- Provide a document reflecting the vision and goals of the community
- Strike a balance between demands related to land and development
- Protect valued community resources
- Provide guidance for shaping physical appearance of the community and creating a distinctive sense of place

Guiding Principles

- Embrace diversity of housing and neighborhoods that supports citizens of all ages and socio-economic backgrounds
- Provide healthy lifestyle opportunities
- Support a well-maintained aesthetic infrastructure that accommodates multi-modal transportation
- Take a proactive, professional approach to economic development and enhancement of existing commercial and industrial areas

Housing Opportunities

- Improvement and expansion of sidewalk network
- Protection for historic structures
  - 55% of housing stock is over 50 years old and is not protected from redevelopment
- Protection of neighborhood character
  - Residential tear-downs are starting to threaten character of historic neighborhoods
  - Limited control on new construction design standards
  - Environmental damage from loss of vegetation and increased impervious surface
- Housing options to include:
  - Small affordable units within developments
  - Lower income housing options
  - Senior housing options

Housing Goals

- Develop design standards for new construction and additions that are appropriate and contextual
  - Establish more prescriptive design standards that address infill housing design standards, materials, and construction methods (FAR, building placement, attached garages, setbacks)
  - Encourage developers and property owners to rehabilitate existing structures and to use green building strategies
- Maintain quality housing through code enforcement and property maintenance efforts
  - Create opportunities to help residents with existing property maintenance issues
  - Establish vacant building registration/inspection program to prevent property maintenance issues
- Preserve historic buildings and neighborhoods
  - Strengthen city historic district and landmark regulations to preserve historic structures' architectural character
  - Strengthen current regulations to limit tear-downs of existing historic buildings and promote rehabilitation (increased demolition fee, create form-based code, use easements & covenants)
- Promote development of a variety of housing types to accommodate residents based on population age, abilities, and socio-economic needs
  - Support the development of senior-oriented housing and accessible home design
  - Encourage higher density residential/mixed-use in appropriate areas
- Preserve and enhance neighborhood retail and services within existing neighborhood center
  - Provide walkable connections between residential areas and neighborhood commercial areas
  - Review existing zoning regulations for identified neighborhood village retail areas

Mobility & Infrastructure Goals

- Improve the maintenance and reliability of Kirkwood's infrastructure and utilities with consideration of technological advances
  - Maintain and update a pavement conditions index for all city streets
  - Implement the recommendation of the Electric & Water Distribution Studies
  - Study the impact of infill and new construction on storm water issues throughout the community
- Become a more walkable and bikeable community
  - Enhance sidewalk connectivity between neighborhoods, parks, schools, and commercial areas
  - Identify key pedestrian routes for improved street lighting to promote safety
  - Consider adoption of a Complete Streets Ordinance
  - Improve major intersections and identified gateways with enhanced streetscaping elements
  - Implement Argonne Drive streetscaping improvements to improve appearance and walkability in the downtown area
  - Implement the recommendations of the Kirkwood Pedestrian and Bicycle Master Plan
- Promote efficient and safe movement of people and goods through Kirkwood
  - Adopt traffic/access management standards to promote safe movement through commercial areas
  - Install traffic calming elements at applicable locations
- Evaluate and update parking standards city-wide
  - Study the need of additional parking in the downtown area
  - Review the parking code and investigate the need for new parking standards to meet city-wide market demand, while protecting residential neighborhoods
  - Where feasible, create additional on-street parking to meet demand
    - Accomplished via road diets

Active Living & Environmental Goals

- Provide amenities that create opportunities for active & healthy lifestyles
  - Implement the recommendations of the Adopted Parks Master Plan
  - Promote and grow multi-generational fitness and health programs
  - Accomplishments: opening Walker Park in 2005, improvements to Kirkwood Park, opening Montfort Park in 2008, opening Avery Park in 2013, and renovation of Fillmore Park
  - Remaining goals: development of additional Greentree sports field, development of new Performing Arts Center in downtown, and development of new community center
- Maintain open space and natural areas
- Promote a thriving and healthy urban forest
  - Develop a master plan for addressing the preservation and expansion of the urban forest
- Increase sustainability in the community

Economic Growth & Vitality Goals

- Enhance Downtown with entertainment options
  - Support the development of a new downtown performing arts center
  - Attract a boutique hotel to serve the downtown area
- Support a balance of mixed-use residential development in the Downtown Area
  - Establish an adaptive re-use program for older buildings
  - Encourage mixed-use developments
- Encourage high quality commercial developments
  - Adopt stronger architectural regulations for no-residential developments
  - Consider expanding the existing facade improvement incentive program
- Foster business opportunities in Kirkwood
  - Create a method to identify and track under-performing properties in order to promote redevelopment
  - Evaluate appropriate incentives for desired businesses
  - Promote a supportive environment for start-up and small businesses
- Promote Kirkwood as a "Business-Friendly" community
  - Monitor and improve the City's business attraction and retention programs
  - Develop an online resource center for all business-related issues and questions
  - Create an Economic Development Strategy
  - Conduct a comprehensive process and fee study to ensure Kirkwood is competitive within the region

Future Land Use

- Suburban Residential
  - Single family Residential (1-2 du/ac)
  - Community Unit Plan Development (2-6 du/ac)
- General Residential
  - Single family residential (3-6 du/ac)
  - Attached residential: duplexes, townhouses, garden apartments
- Neighborhood Village
  - Attached residential: duplexes, townhouses, garden apartments
  - Neighborhood-scale retail & office
  - Live/Work Units
- Corridor Commercial
  - Attached residential: duplexes, townhouses, apartments
  - Live/Work units
  - Lodging
  - Regional/neighborhood commercial & office
- Downtown
  - Single family residential (3-6 du/ac)
  - Attached residential: duplexes, townhouses, apartments
  - Live/Work units
  - Lodging
  - Entertainment
  - Regional/neighborhood commercial & office
- Transition Mixed-Use
  - Single family residential (3-6 du/ac)
  - Attached residential: duplexes, townhouses, apartments
  - Live/Work units
  - Lodging
  - Entertainment
  - Regional/Neighborhood commercial & office
- Highway Commercial
  - Attached residential
  - Lodging
  - Entertainment
  - Regional/neighborhood commercial & office
- Light Industrial
  - Regional/neighborhood commercial & office
  - Light industrial

Future Land Status Quo Scenario

- Reflects existing zoning code and projects 20 years into the future
- Does not look at highest and best use
- Very limited change

Future Land Growth Scenario

- Create transition zone along N Kirkwood Rd between downtown and Manchester Rd corridor
- Minimization of general residential southeast of downtown to expand light industrial and transition area
- Extension of corridor commercial to western city limits along Manchester Rd corridor

Future Land Blended Scenario

- Maintain general residential along N Kirkwood Rd between downtown and Manchester Rd corridor
- Extension of corridor commercial to western city limits along Manchester Rd corridor
- Elimination of light industrial module southeast of downtown to expand transition mixed-use
- Elimination of three neighborhood village modules

Future Land Preferred Scenario

- Maintain three neighborhood village modules
- Limit light industrial southeast of downtown and incorporate transition mixed-use
- Extension of corridor commercial to western city limits along Manchester Rd corridor
- Establish gateways within Kirkwood to define modules
- Maintain general residential along N Kirkwood Rd between downtown and Manchester Rd corridor

Focus Area: Downtown Recommendations

- New development or infill development should be pedestrian-oriented to complement the historic building pattern of downtown. The pedestrian realm should be emphasized at all opportunities by enhancing street life through outdoor dining, public art, and attractive window displays.
- Promote increased residential density in the form of mixed-use and live/work units
- Pursue efforts to promote year-round use and extended hours at the Farmer's Market.
- When a new performing arts center is constructed Downtown, the City should formulate a plan to promote redevelopment of properties immediately adjacent
- Consider a reduction of traffic lanes on Kirkwood Rd between Adams Ave and Bodley Ave to create additional on-street parking and increase pedestrian facilities and amenities.
- Evaluate the potential for conversion of large surface parking lots north of Adams Ave and east of Clay Ave to multi-family or office use
- Evaluate the potential for a hotel within the downtown area.
- Consider expanding the boundaries of the Special Business District to extend the benefits of a more unified approach to streetscape, architecture, and policies to a broader array of businesses
- Pursue the creation of a Downtown Master Plan to help guide growth and development in the downtown area

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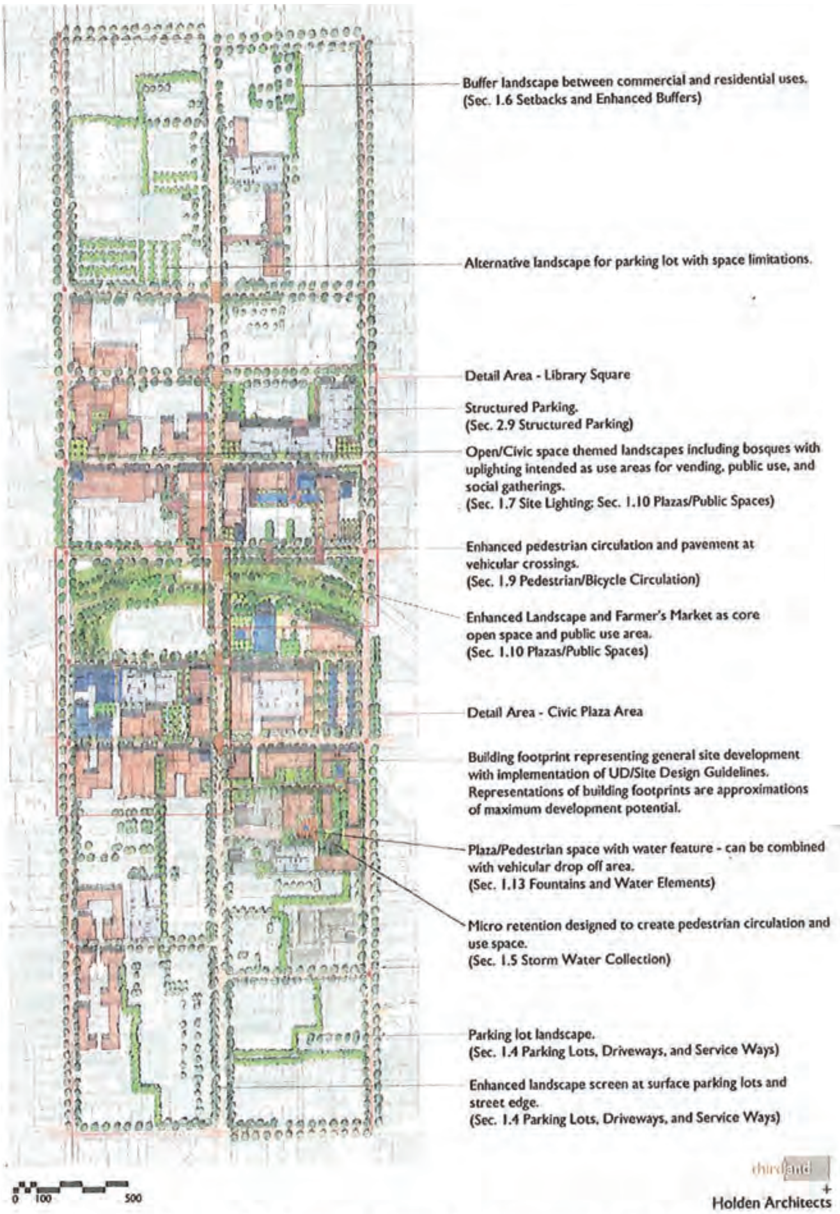
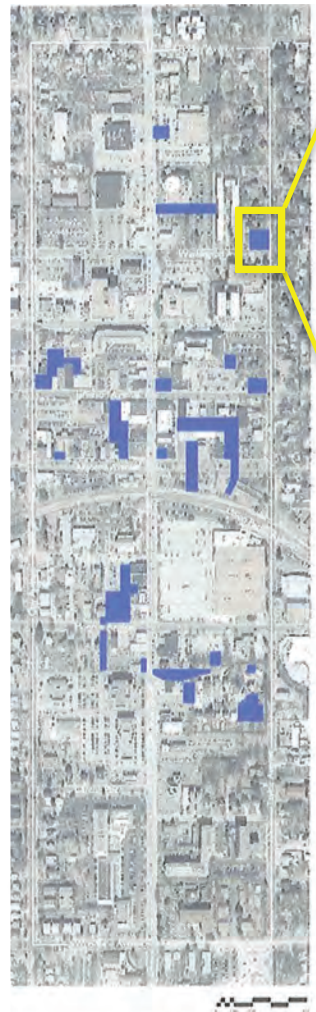


2003 Annotated Plan

Library Square Concept Plan (2003)

2016 Aerial

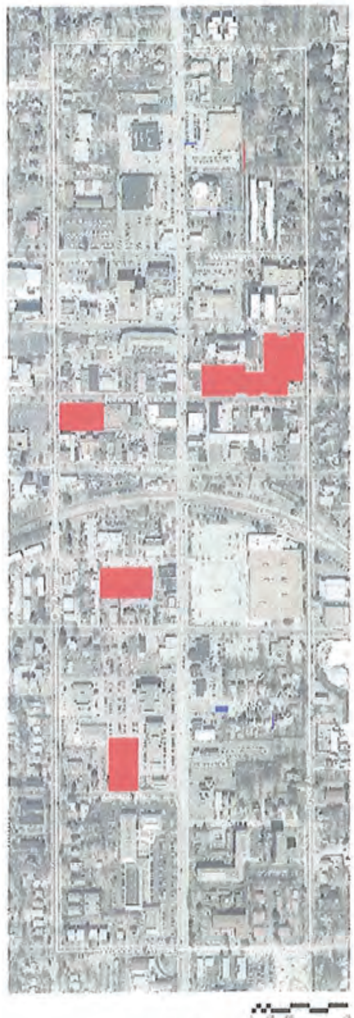
The following pages are extracted from the 2003 master plan to build on what was implemented, and better understand what was not adopted and why certain recommendations have not been realized yet. This will help inform this master plan effort in ensuring proposals have the opportunity to become implemented.



Plaza or Civic Spaces

Recommended Public Plazas/Civic Spaces

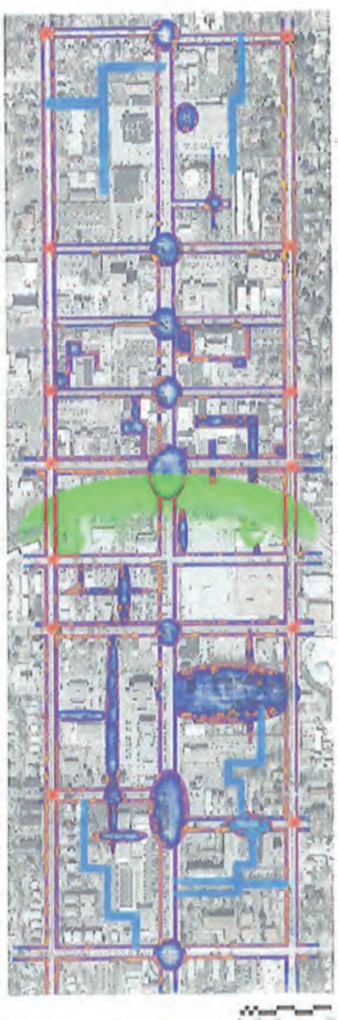
Figure 6 **Recommended Plazas/ Public Spaces**



Locations for Parking Structure

Recommended Parking Structure Locations

Figure 7 **Potential Parking Structure Locations**



Traffic Calming Measures and Devices

Public Circulation Ways and Nodes

Railroad and Depot Park and Landscape

Private Connections Linking to Public Circulation Ways

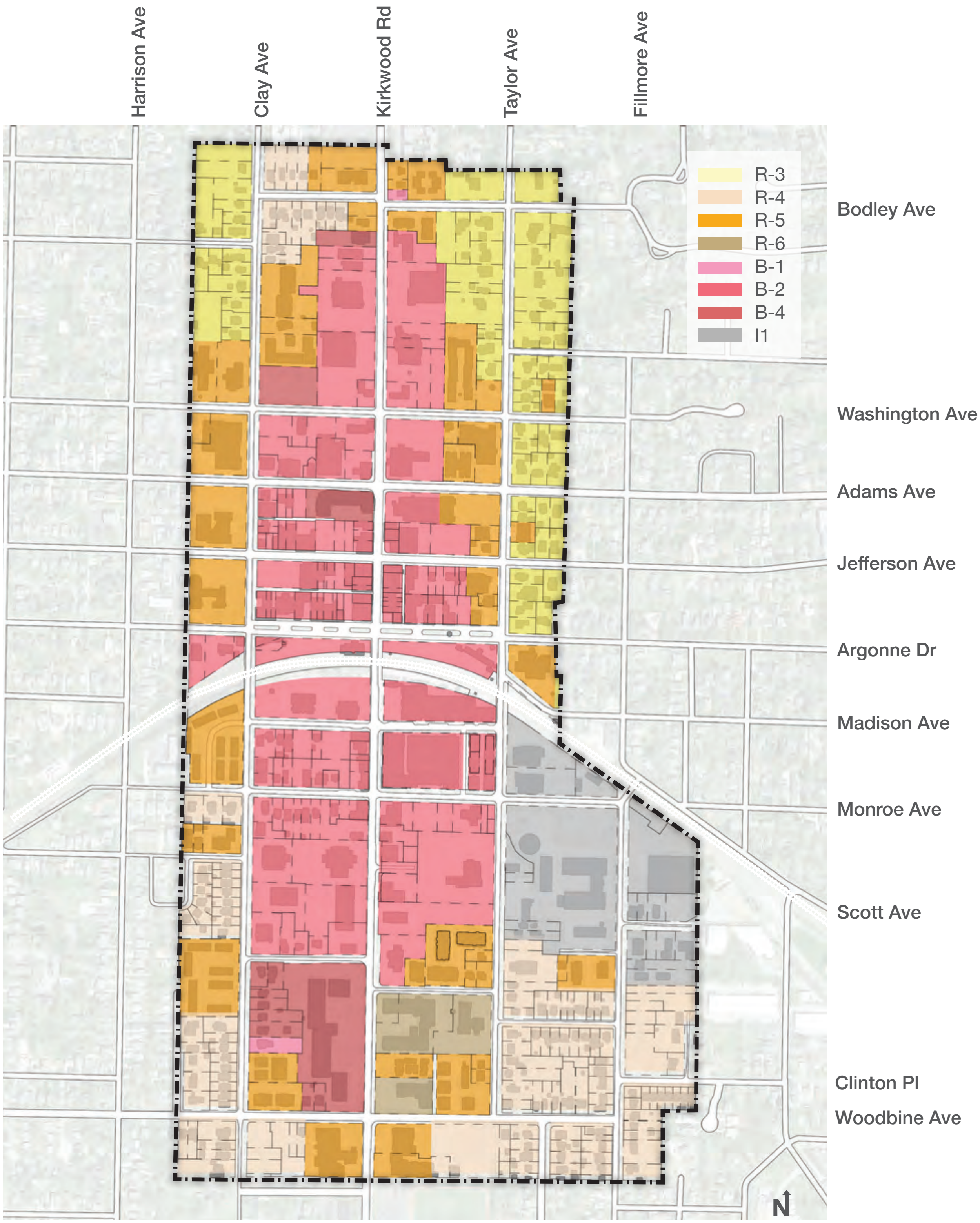
Pedestrian/Bicycle Circulation

Figure 5 **Pedestrian/Bicycle Circulation Plan**

MAP

The zoning across the downtown has a wide range of residential types as well as commercial types. The map below helps illustrate where the zoning categories are in relation to each other.

The following pages begin to dig into the specific zoning categories to gain a better understanding of each zone and its intent and formulaic characteristics.



RESIDENTIAL

Residential Districts
R- 1 Single-Family Residential District
R- 2 Single-Family Residential District
R- 3 Single-Family Residential District
R- 4 Single-Family Residential District
R- 5 Multiple-Family Residential District
R- 6 Multiple-Family Residential District

Business Districts
B- 1 Neighborhood Business District
B- 2 General Business District
B- 3 Highway Business District
B- 4 Planned Commercial District
B- 5 Planned Commercial Development District

Manufacturing District(s)
I- 1 Light Industrial District

The zoning categories represented in the study area are shown in bold, while the remaining categories are grayed out. The intent of each category is included below for reference.

R- 3 Single -Family Residential District

Purpose. This district seeks to encourage and preserve medium density detached single- family residential and allow for certain neighborhood facilities such as churches and similar places of worship, parks and schools that are not detrimental to the residential environment. The minimum lot size in this district is 15,000 square feet. The regulations set forth in this section or set forth elsewhere in this Code when referred to in this section are the district regulations in the R- 3 Single -Family Residential District.

R- 4 Single -Family Residential District

Purpose. This district seeks to encourage and preserve high density detached single-family residential and allow for certain neighborhood facilities such as churches and similar places of worship, parks and schools that are not detrimental to the residential environment. The minimum lot size in this district is 7, 500 square feet. The regulations set forth in this section or set forth elsewhere in this Code when referred to in this section are the district regulations in the R-4 Single -Family Residential District.

R- 5 Multiple -Family Residential District

Purpose. This district allows for multiple -family residential uses which provide a transition from single- family residential districts to commercial districts. The minimum lot size in the district is 7,500 square feet. The regulations set forth in this section or set forth elsewhere in this Code when referred to in this section are the district regulations in the R- 5 Multiple -Family Residential District.

R- 6 Multiple -Family Residential District

Purpose. The regulations set forth in this section or set forth elsewhere in this Code when referred to in this section are the district regulations in the R- 6 Multiple -Family Residential District. A building or premises shall be used only through the application of Article VIII, Section A- 820, “ Community Unit Plan Type C”.

BUSINESS & MANUFACTURING

B- 1 Neighborhood Business District

Purpose. This district seeks to encourage commercial services and shopping that serves the neighboring residential districts. The minimum lot size in this district depends on the type and density of use. A building or premises shall be used only for the following purposes and, except for motor vehicle off-street parking and loading facilities, all activities relating to any such use shall be conducted wholly within an enclosed building, unless (i) as specifically permitted herein; or (ii) upon City Council approval of a Special Use Permit specifying such outdoor use; or (iii) upon application approved by the City Council for a temporary unenclosed use that may be permitted from time to time after application is made to and approved by the City Council and after a finding by the City Council that the general welfare is not adversely affected. The regulations set forth in this section or set forth elsewhere in this Code when referred to in this section are the district regulations for the B- 1 Neighborhood Business District.

B- 2 General Business District

Purpose. This district seeks to encourage a business district with commercial services and retail facilities that complement each other and attract customers from outside the district. The minimum lot size in this district is dependent on the type and density of use. Within the B- 2 General Business District, the following regulations shall apply. Commercial uses, other than home occupations as defined in this code, are not permitted in residential units that were approved for residential use as part of a mixed-use development plan. Except for motor vehicle off-street parking and loading facilities, all activities relating to any such use shall be conducted wholly within an enclosed building, unless (i) as specifically permitted herein; or (ii) upon City Council approval of a Special Use Permit specifying such outdoor use; or (iii) upon application approved by the City Council for a temporary unenclosed use that may be permitted from time to time after application is made to and approved by the City Council and after a finding by the City Council that the general welfare is not adversely affected. The regulations set forth in this section or set forth elsewhere in this Code when referred to in this section are the district regulations for the B- 2 General Business District.

B- 4 Planned Commercial District

Purpose. This district seeks to encourage more intense commercial uses and multiple uses in one or more buildings on a single lot. The minimum lot size in this district is dependent on the type and density of use. A building or premises shall be used only for the following purposes and, except for motor vehicle off-street parking and loading facilities, all activities relating to any such use shall be conducted wholly within an enclosed building, unless (i) as specifically permitted herein; or (ii) upon City Council approval of a Special Use Permit specifying such outdoor use; or (iii) upon application approved by the City Council for a temporary unenclosed use that may be permitted from time to time after application is made to and approved by the City Council and after a finding by the City Council that the general welfare is not adversely affected. The regulations set forth in this section or set forth elsewhere in this Code when referred to in this section are the district regulations for the B- 4 Planned Commercial District.

I- 1 Light Industrial District

Purpose. This district seeks to encourage light industrial uses which create a minimal amount of nuisance outside the structure and which is not noxious or offensive by reason of the emission of smoke, dust, fumes, gas odors, noises or vibrations beyond the confines of the building and the premises upon which the building or buildings are situated. The minimum lot size in this district depends on the type and density of the use. A building or premises shall be used only for the following purposes and, except for motor vehicle off-street parking and loading facilities, all activities relating to any such use shall be conducted wholly within an enclosed building, unless (i) as specifically permitted herein; or (ii) upon City Council approval of a Special Use Permit specifying such outdoor use; or (iii) upon application approved by the City Council for a temporary unenclosed use that may be permitted from time to time after application is made to and approved by the City Council and after a finding by the City Council that the general welfare is not adversely affected.

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DIMENSIONAL ANALYSIS

	Principal Building								Accessory Structures		
Zoning Category	**Height (max.)**	**Lot Width (min.)**	**Front Yard (min.)**	**Side Yard (min.)**	**Encroachments**	**Rear Yard (min.)**	**Lot Coverage (max.)**	**FAR**	**Setbacks (behind principal building)**	**Lot Coverage (max.)**	**Height (max.)**
Residential Districts											
R-3: Single-Family	35 ft. / 2.5 stories	100 ft	40 ft. (applies to both sides for corner lots) established areas (>40%) = avg across the adjacent lots	12 ft. or not greater then 60% of the frontage for lots < 100 ft.	24” - 30”	35 ft. if on an alley 1/2 the alley width can count towards the rear yard	< 7,500 sq.ft. 30% > 7,500 sq.ft. 25% exceptions for 1.5 story	< 10,000 sq.ft. 0.35 10,000 - 20,000 sq.ft. 0.30 > 20,000 sq.ft. 0.25	5 ft. from any property line, 10 ft. from any building on the property	7%	24 ft. / 1.5 stories
R-4: Single-Family	35 ft. / 2.5 stories	60 ft	35 ft. (applies to both sides for corner lots) established areas 20 ft. established areas (>40%) = avg across the adjacent lots	8 ft. or 5 ft. for lots < 60 ft.	24” - 30”	30 ft. if on an alley 1/2 the alley width can count towards the rear yard	< 7,500 sq.ft. 30% > 7,500 sq.ft. 25% exceptions for 1.5 story	< 10,000 sq.ft. 0.35 10,000 - 20,000 sq.ft. 0.30 > 20,000 sq.ft. 0.25	5 ft. from any property line, 10 ft. from any building on the property	7%	24 ft. / 1.5 stories
R-5: Multi-Family	Single-Family: 35 ft. / 2.5 stories All Others: 35 ft or 3 stories	one-family: 60 ft. two-family: 100 ft.	35 ft. (applies to both sides for corner lots) established areas (>40%) = avg across the adjacent lots	MF, 2-Fam, TH’s: 12 ft. or 50% of the building height whichever is greater Others: 8 ft 5 ft. for lots < 60 ft.	24” - 30”	30 ft. if on an alley 1/2 the alley width can count towards the rear yard	40%	None	5 ft. from any property line, 5 ft. from any building on the property	7%	24 ft. / 1.5 stories
			additional standards for clustered development								
R-6: Multi-Family	Article VIII, Section A- 820, " Community Unit Plan Type C".										
Business Districts											
B-1: Neighborhood Business	25 ft.	None	35 ft. (applies to both sides for corner lots) established areas (>40%) = avg across the adjacent lots	none, unless abutting and ‘R’ district	None	25 ft. if on an alley 1/2 the alley width can count towards the rear yard	None	2.0	N/A	N/A	N/A
B-2: General Business District	40 ft. M-U: 60 ft.	None	established areas = avg across the adjacent lots	none, unless abutting and ‘R’ district R: 50% of building height (min 10 ft.)	None	none, unless abutting and ‘R’ district R: 50% of building height (min 10 ft.)	None	2.5	N/A	N/A	N/A
B-4: Planned Commercial District								2.5	N/A	N/A	N/A
Manufacturing Districts											
I-1: Light Industrial	35 ft. / 3 stories	None	35 ft. (applies to both sides for corner lots) established areas (>40%) = avg across the adjacent lots None along rail-lines	15 ft. Abutting R: 35 ft	None	20 ft. if on an alley 1/2 the alley width can count towards the rear yard Abutting R: 35 ft	None	None	N/A	N/A	N/A

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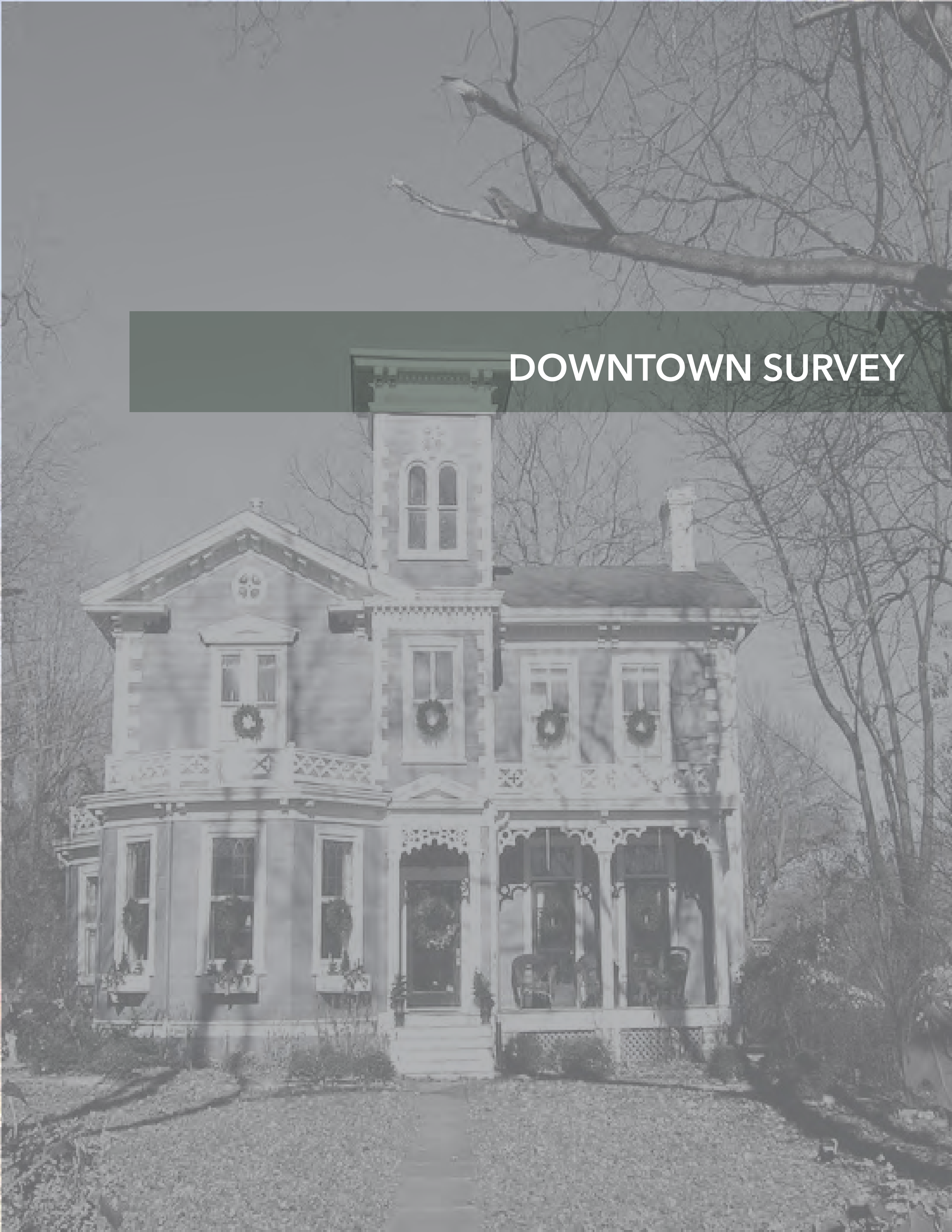
DOWNTOWN SURVEY



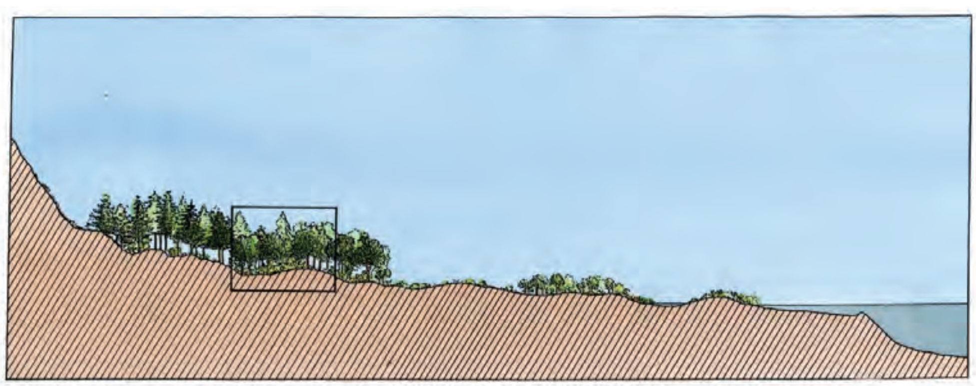
The Synoptic Survey is typically used for environmental analysis to determine the characteristics of a given site by discovering the habitats (or "communities") that it contains. The intention is to determine the values of each habitat in order to recommend the degree of protection and type of restoration it might require. Each functioning habitat is a symbiotic community of micro-climate, minerals, humidity, flora, and fauna.

The Synoptic Survey is a systematic visual inspection that identifies typical habitats: a wetland here, an oak hammock there, a rocky outcrop elsewhere. The most representative locales are then analyzed in depth by means of the Dissect and the Quadrat. The Dissect is a simultaneous analysis of the conditions above and below ground and involves borings to determine soil condition, water table, archeology, etc. The Quadrat involves taking a normative area (say 100 x 100 feet) where the component elements of flora and fauna are itemized and counted.

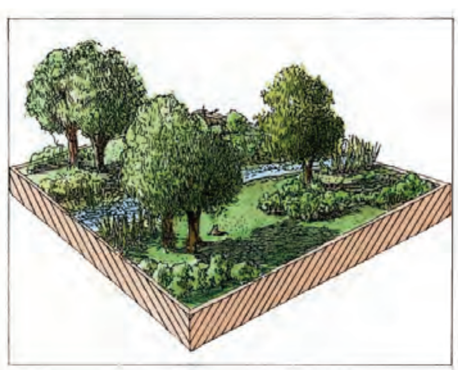
The concepts and methods that are used to analyze natural habitats - the Synoptic Survey, the Transect, the Dissect, and the Quadrat - can be extended to urbanized areas.

The following pages illustrate the analysis of the built form of each of the zoning categories within the downtown area. The results are used to analyze how the zoning is functioning within the downtown and if the built results are aligned with the intent of the zoning categories.

NATURAL QUADRAT & DISSECT DIAGRAM



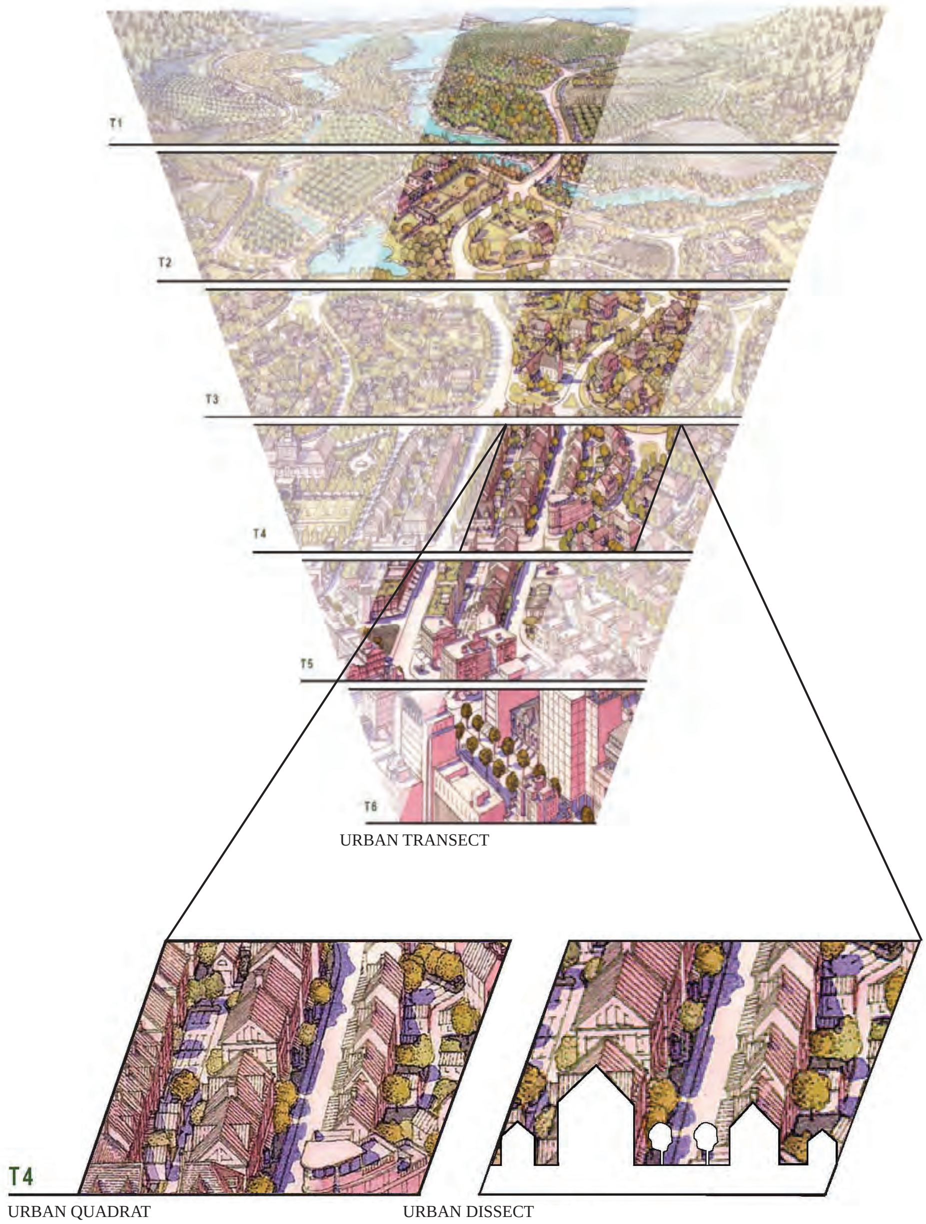
NATURAL TRANSECT



NATURAL QUADRAT

NATURAL DISSECT

URBAN QUADRAT & DISSECT DIAGRAM



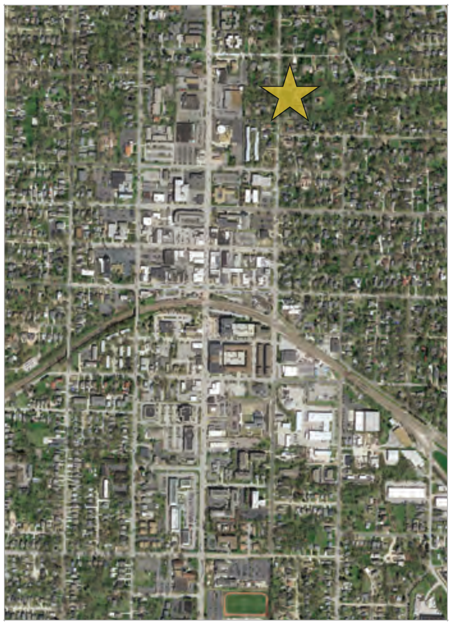
ZONING SURVEY

DOWNTOWN SURVEY

R-3 SINGLE-FAMILY RESIDENTIAL

Zoning: R-3

Quadrat

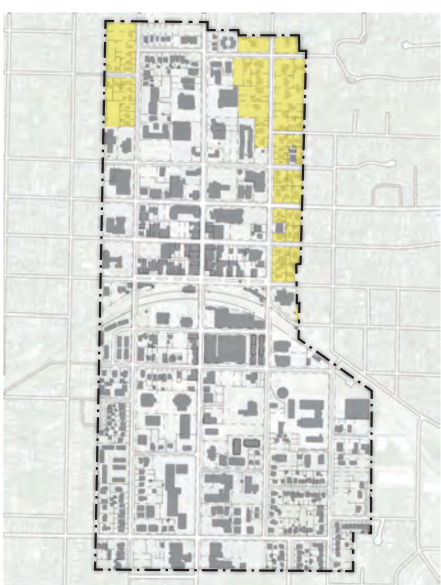


Block Perimeter	5200 ft.
Avg. Units/Acre	1.1

Disect *Address: 464 N Taylor Ave*

PUBLIC FRONTAGE	
Public Frontage	Pedestrian Street
Right-Of-Way Width	60 ft.
Travel Lanes	2
Parking	-
Pavement Width	24 ft.
Sidewalk Width	5 ft.
Planter Type	Strip
Planting Pattern	Random
Street Lighting	Cobra Head
Curb Type	Header

PRIVATE FRONTAGE	
Private Frontage	Common Lawn
Principal Building Ht	2
Outbuilding Height	1
Building Type	Single Family
Garage Access	Front-Loaded in Rear
Lot Width	146 ft.
Frontage Buildout	74 ft.
Front Setback	102 ft.
Side Setback	36 ft.
Front Encroachment	0 ft.
GRND Level Use	Residential
Upper Level Use	Residential



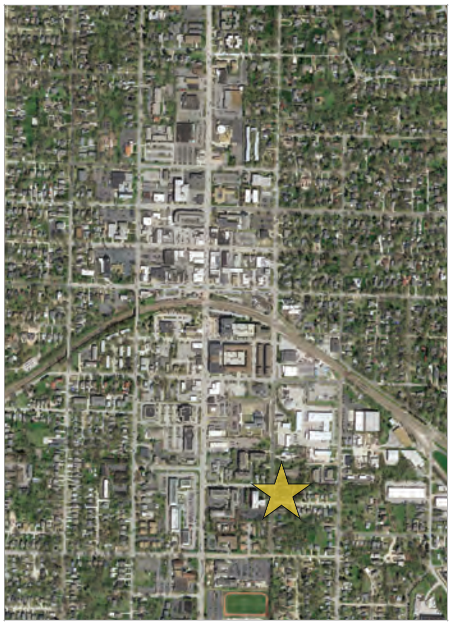
Summary

Generally the R-3 zoning is aligned with the pattern on the ground with the exception of the side setbacks. They are typically much greater then the minimum dimensions outlined in the zoning. Is the goal to retain the built character?

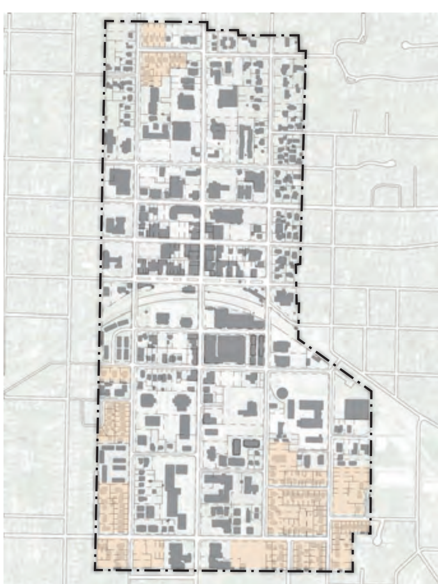
R-4 SINGLE-FAMILY RESIDENTIAL

Zoning: R-4

Quadrat



Block Perimeter	3400 ft.
Avg. Units/Acre	4.3



Disect *Address: 384 S Taylor Ave*

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	56 ft.
Travel Lanes	2
Parking	Parallel - 2-sides (UM)
Pavement Width	36 ft.
Sidewalk Width	5 ft.
Planter Type	Strip
Planting Pattern	Random
Street Lighting	Cobra Head
Curb Type	Header & Gutter

PRIVATE FRONTAGE	
Private Frontage	Common Lawn
Principal Building Ht	2
Outbuilding Height	1
Building Type	Single Family
Garage Access	Front-Loaded in Rear
Lot Width	70 ft.
Frontage Buildout	24 ft.
Front Setback	48 ft.
Side Setback	16 - 30 ft.
Front Encroachment	6 ft.
GRND Level Use	Residential
Upper Level Use	Residential

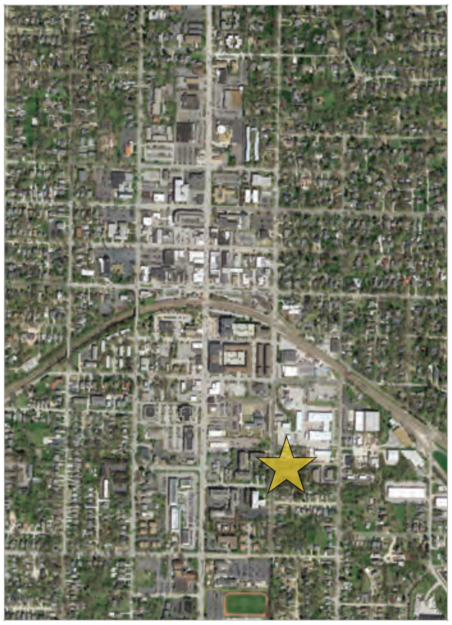
ZONING SURVEY

DOWNTOWN SURVEY

R-4 MULTI-FAMILY RESIDENTIAL

Zoning: R-4

Quadrat

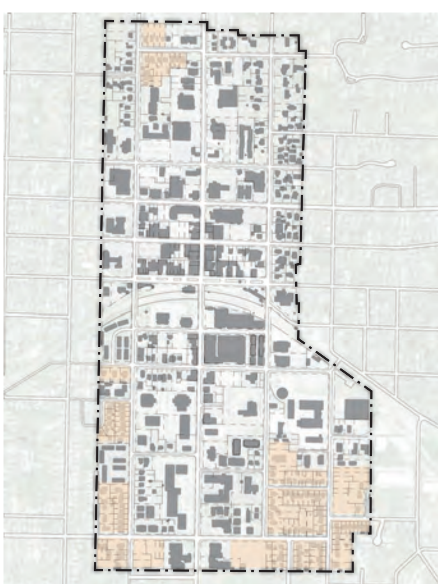


Block Perimeter	3400 ft.
Avg. Units/Acre	1.1

Disect *Address: 364 S Taylor Ave*

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	56 ft.
Travel Lanes	2
Parking	Parallel - 2-sides (UM)
Pavement Width	34 ft.
Sidewalk Width	5 ft.
Planter Type	Strip
Planting Pattern	Random
Street Lighting	Cobra Head
Curb Type	Header & Gutter

PRIVATE FRONTAGE	
Private Frontage	Common Lawn
Principal Building Ht	2
Outbuilding Height	N/A
Building Type	Apartment
Garage Access	Front-Loaded in Rear
Lot Width	135 ft.
Frontage Buildout	65 ft.
Front Setback	36 ft.
Side Setback	35 ft.
Front Encroachment	0 ft.
GRND Level Use	Residential
Upper Level Use	Residential



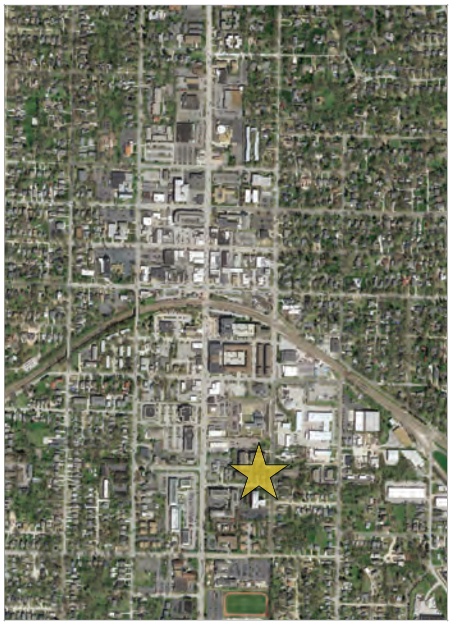
Summary

Generally the R-4 zoning is aligned with the pattern on the ground. Often the built form does not take full advantage of the site, for example, side setbacks are often greater then the minimums in the code. Also, it doesn't appear that R-4 allows multi-family, that it is primarily a single-family zone. Is the intention that small multi-family be introduced in R-4?

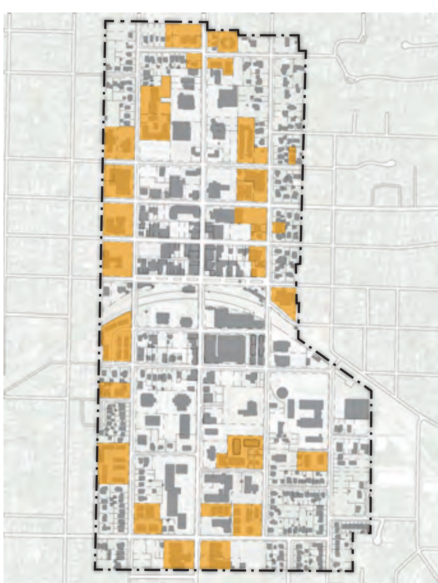
R-5 SINGLE-FAMILY RESIDENTIAL

Zoning: R-5

Quadrat



Block Perimeter	3150 ft.
Avg. Units/Acre	5.2



Disect *Address: 139 E Clinton Pl*

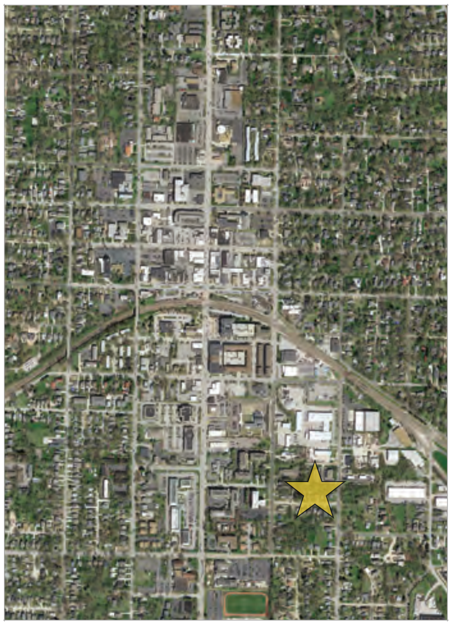
PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	36 ft.
Travel Lanes	2
Parking	Parallel - 1-side
Pavement Width	N/A
Sidewalk Width	24 ft.
Planter Type	Strip
Planting Pattern	-
Street Lighting	Cobra Head
Curb Type	Rolling

PRIVATE FRONTAGE	
Private Frontage	Common Lawn
Principal Building Ht	2
Outbuilding Height	N/A
Building Type	Single Family
Garage Access	Front-Loaded
Lot Width	62 ft.
Frontage Buildout	42 ft.
Front Setback	50 ft.
Side Setback	10 ft.
Front Encroachment	0 ft.
GRND Level Use	Residential
Upper Level Use	Residential

R-5 MULTI-FAMILY RESIDENTIAL

Zoning: R-5

Quadrat

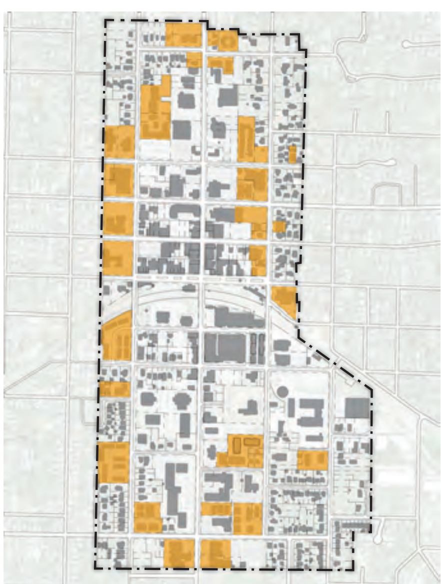


Block Perimeter	3150 ft.
Avg. Units/Acre	0.5

Disect *Address: 125 E Clinton Pl*

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	36 ft.
Travel Lanes	2
Parking	Parallel - 1-side
Pavement Width	N/A
Sidewalk Width	24 ft.
Planter Type	Strip
Planting Pattern	-
Street Lighting	Cobra Head
Curb Type	Rolling

PRIVATE FRONTAGE	
Private Frontage	Common Lawn
Principal Building Ht	3
Outbuilding Height	N/A
Building Type	Apartment
Garage Access	Alley Loaded
Lot Width	194 ft.
Frontage Buildout	154 ft.
Front Setback	36 ft.
Side Setback	10 - 30 ft.
Front Encroachment	0 ft.
GRND Level Use	Residential
Upper Level Use	Residential

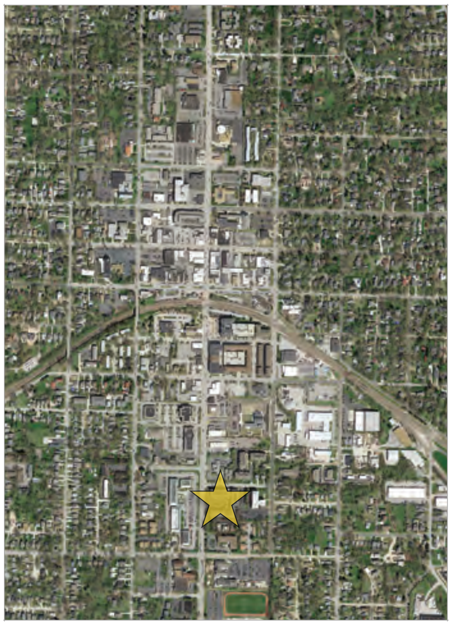


Summary
The R-5 built form is very closely aligned with the dimensional standards in the zoning code for both single-family and multi-family.

R-6 MULTI-FAMILY RESIDENTIAL

Zoning: R-6

Quadrat



Block Perimeter	2500 ft.
Avg. Units/Acre	0.43

Disect *Address: 420 S Kirkwood Rd*

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	58 ft.
Travel Lanes	4
Parking	-
Pavement Width	44 ft.
Sidewalk Width	7 ft.
Planter Type	-
Planting Pattern	-
Street Lighting	Cobra Head
Curb Type	Header

PRIVATE FRONTAGE	
Private Frontage	Parking Lot
Principal Building Ht	4
Outbuilding Height	N/A
Building Type	Apartment
Garage Access	Front-Loaded
Lot Width	315 ft.
Frontage Buildout	275 ft.
Front Setback	35 ft.
Side Setback	20 ft.
Front Encroachment	0 ft.
GRND Level Use	Residential
Upper Level Use	Residential

Summary

The R-6 zoning category is unclear and seems mostly ineffective. Built results don't appear to be very desirable or worth replicating.

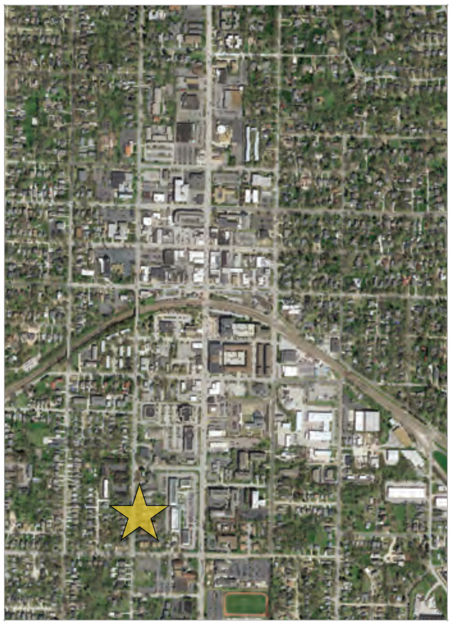
ZONING SURVEY

DOWNTOWN SURVEY

B-1 NEIGHBORHOOD BUSINESS DISTRICT

Zoning: B-1

Quadrat



Block Perimeter	2800 ft.
Avg. Units/Acre	2.3

Disect *Address: 430 S Clay Ave*

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	56 ft.
Travel Lanes	2
Parking	Parallel - 2-sides (UM)
Pavement Width	38 ft.
Sidewalk Width	4 ft.
Planter Type	Strip
Planting Pattern	Random
Street Lighting	Cobra Head
Curb Type	Header

PRIVATE FRONTAGE	
Private Frontage	Common Lawn
Principal Building Ht	2
Outbuilding Height	1
Building Type	Commercial
Garage Access	Front-Loaded in Rear
Lot Width	78 ft.
Frontage Buildout	38 ft.
Front Setback	48 ft.
Side Setback	20 ft.
Front Encroachment	0 ft.
GRND Level Use	Office
Upper Level Use	Office

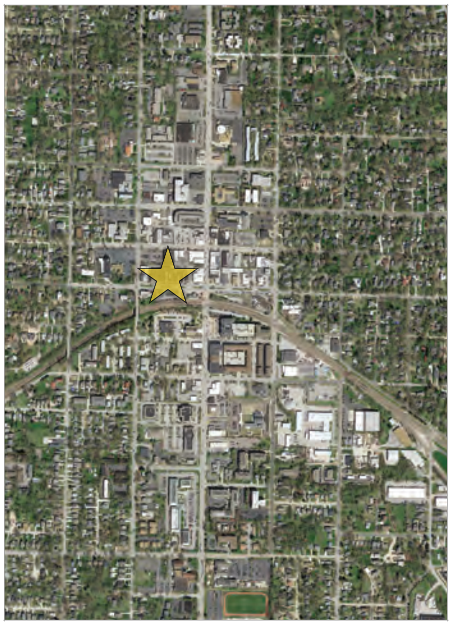
Summary

The built form seems aligned with the zoning code. The overall standards seem more suburban in nature but provide a reasonable transition to the residential districts.

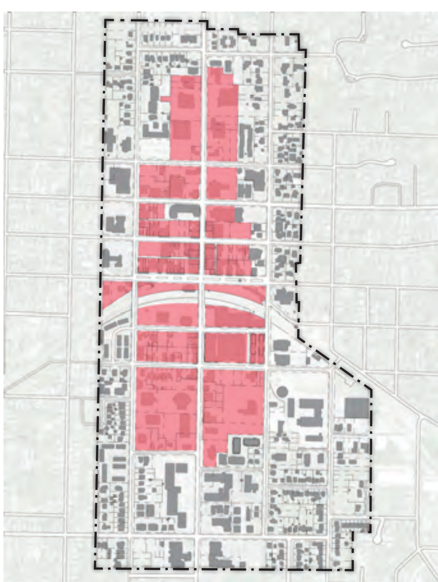
B-2 HISTORIC URBAN

Zoning: B-2

Quadrat



Block Perimeter	1800 ft.
Avg. Units/Acre	8.8



Disect *Address: 123 W Argonne Dr*

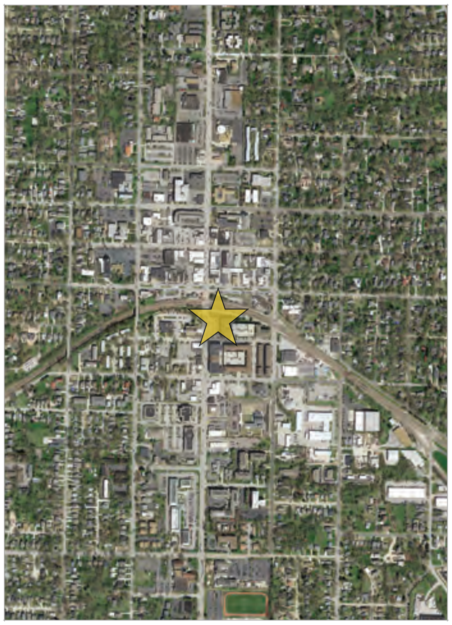
PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	98 ft.
Travel Lanes	2
Parking	Angle - 2-sides
Pavement Width	80 ft.
Sidewalk Width	9 ft.
Planter Type	Median
Planting Pattern	Random
Street Lighting	Cobra Head
Curb Type	Header

PRIVATE FRONTAGE	
Private Frontage	Shopfront
Principal Building Ht	2
Outbuilding Height	N/A
Building Type	Mixed-Use
Garage Access	N/A
Lot Width	30 ft.
Frontage Buildout	28 ft.
Front Setback	0 ft.
Side Setback	1 ft.
Front Encroachment	0 ft.
GRND Level Use	Commercial
Upper Level Use	Residential

B-2 NEW URBAN

Zoning: B-2

Quadrat

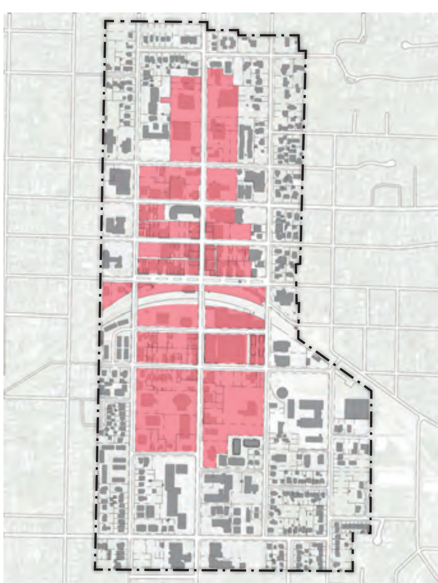


Disect *Address: 130 S Kirkwood Rd*

Block Perimeter	2050 ft.
Avg. Units/Acre	0.75

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	62 ft.
Travel Lanes	5
Parking	-
Pavement Width	50 ft.
Sidewalk Width	6 ft.
Planter Type	Tree Grate
Planting Pattern	Formal
Street Lighting	Post
Curb Type	Header

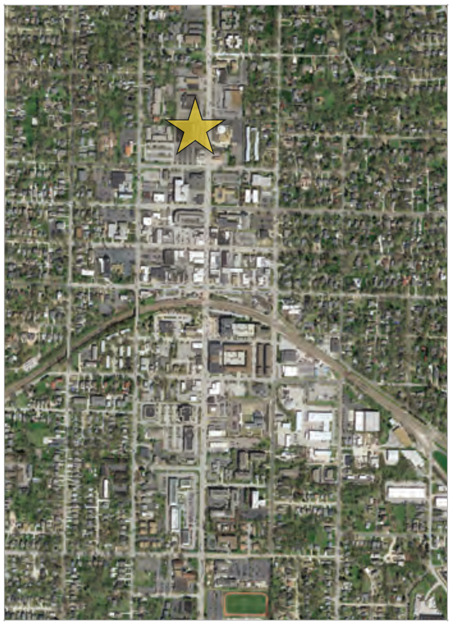
PRIVATE FRONTAGE	
Private Frontage	Shopfront on Plaza
Principal Building Ht	4
Outbuilding Height	N/A
Building Type	Mixed-Use
Garage Access	Side Loaded
Lot Width	190 ft.
Frontage Buildout	170 ft.
Front Setback	108 ft.
Side Setback	10 ft.
Front Encroachment	0 ft.
GRND Level Use	Commercial
Upper Level Use	Residential



B-2 SUBURBAN

Zoning: B-2

Quadrat

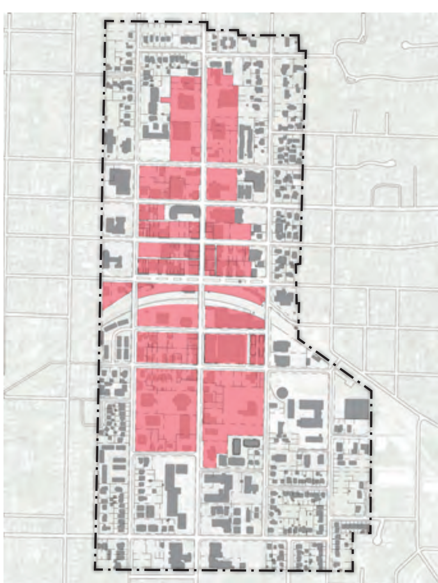


Block Perimeter	3400 ft.
Avg. Units/Acre	0.38

Disect *Address: 421 N Kirkwood Rd*

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	60 ft.
Travel Lanes	4
Parking	-
Pavement Width	44 ft.
Sidewalk Width	7 ft.
Planter Type	Tree Grate
Planting Pattern	-
Street Lighting	Cobra Head
Curb Type	Header

PRIVATE FRONTAGE	
Private Frontage	Parking Lot
Principal Building Ht	1
Outbuilding Height	N/A
Building Type	Commercial
Garage Access	N/A
Lot Width	410 ft.
Frontage Buildout	176 ft.
Front Setback	108 ft.
Side Setback	214 - 20 ft.
Front Encroachment	0 ft.
GRND Level Use	Commercial
Upper Level Use	-



Summary

The B-2 zoning category appears to have much greater flexibility within it but is also less predictable in its form. The goal with B-2 would be how to regulate the more urban form and preclude the suburban form. Minimum building height, maximum lot width, maximum front and side setback?

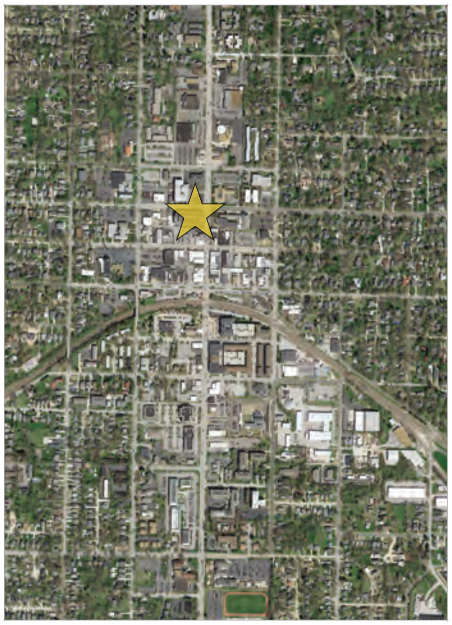
ZONING SURVEY

DOWNTOWN SURVEY

B-4 URBAN

Zoning: B-4

Quadrat

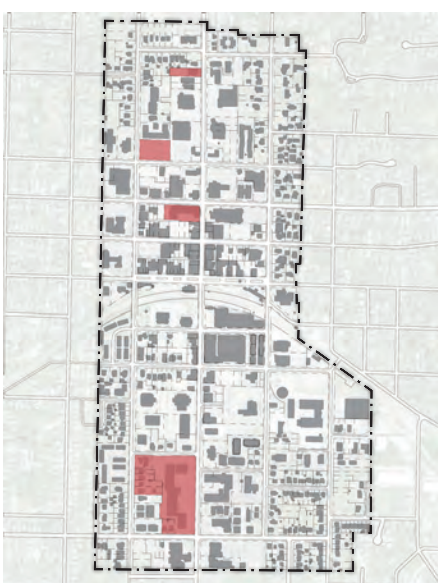


Block Perimeter	1850 ft.
Avg. Units/Acre	0.82

Disect *Address: 108 W Adams Ave*

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	60 ft.
Travel Lanes	2
Parking	Parallel - 2-sides (UM)
Pavement Width	42 ft.
Sidewalk Width	9 ft.
Planter Type	Tree Grate
Planting Pattern	Formal
Street Lighting	Cobra Head
Curb Type	Header

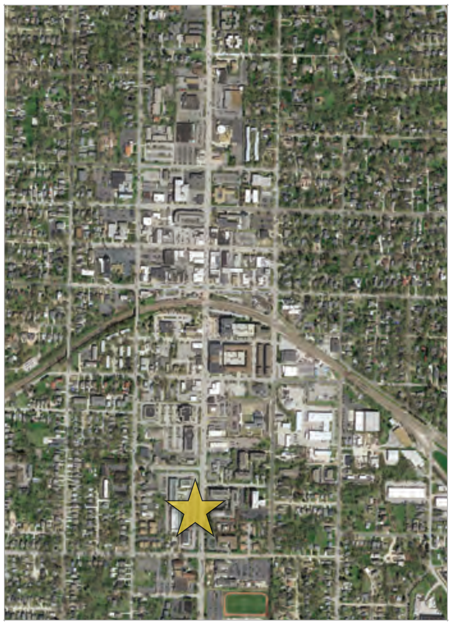
PRIVATE FRONTAGE	
Private Frontage	Shopfront
Principal Building Ht	3
Outbuilding Height	N/A
Building Type	Mixed-Use
Garage Access	Alley Loaded
Lot Width	340 ft.
Frontage Buildout	280 ft.
Front Setback	0 ft.
Side Setback	0 - 60 ft.
Front Encroachment	3 ft.
GRND Level Use	Commercial
Upper Level Use	Office



B-4 SUBURBAN

Zoning: B-4

Quadrat

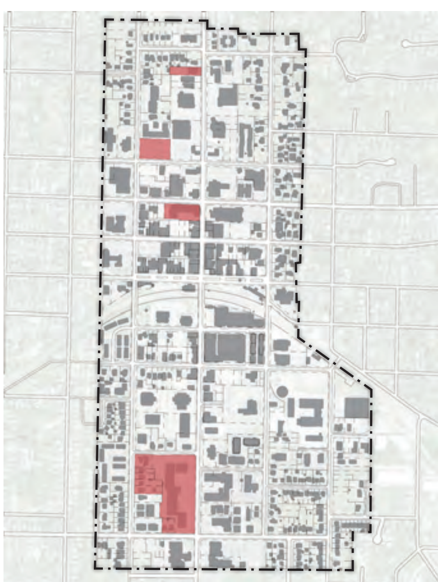


Disect *Address: 439 S Kirkwood Rd*

Block Perimeter	2800 ft.
Avg. Units/Acre	0.18

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	58 ft.
Travel Lanes	4
Parking	-
Pavement Width	44 ft.
Sidewalk Width	7 ft.
Planter Type	-
Planting Pattern	-
Street Lighting	Cobra Head
Curb Type	Header

PRIVATE FRONTAGE	
Private Frontage	Parking Lot
Principal Building Ht	2
Outbuilding Height	N/A
Building Type	Commercial
Garage Access	N/A
Lot Width	780 ft.
Frontage Buildout	630 ft.
Front Setback	0 ft.
Side Setback	90 ft.
Front Encroachment	0 ft.
GRND Level Use	Commercial
Upper Level Use	Commercial



Summary

The B-4 zoning category has very few dimensional standards, making it difficult to produce predictable results. Is the intent of this zone to be urban in form? How can adjustments be made to provide more predictable and desirable results? Minimum building height, maximum lot width, maximum front and side setback?

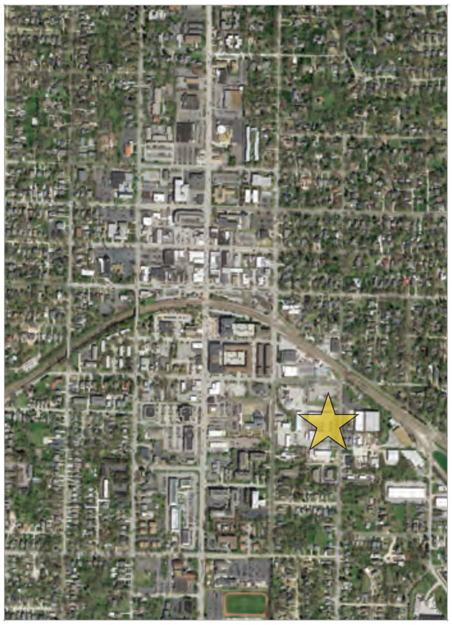
ZONING SURVEY

DOWNTOWN SURVEY

I-1 LIGHT INDUSTRIAL

Zoning: I-1

Quadrat



Disect *Address: 345 S Fillmore Ave*

Block Perimeter	3400 ft.
Avg. Units/Acre	0.27

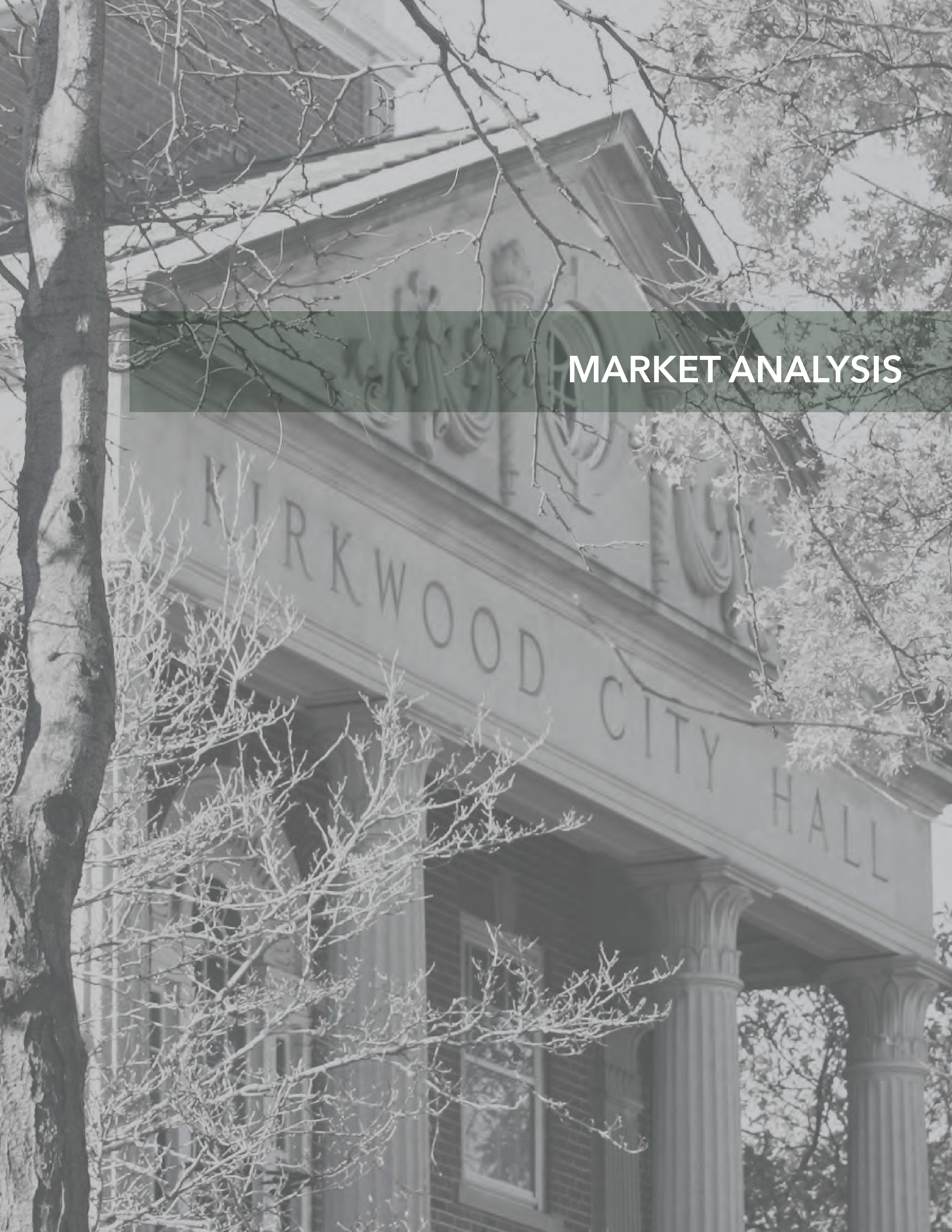
PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	50 ft.
Travel Lanes	2
Parking	Parallel - 2-sides (UM)
Pavement Width	38 ft.
Sidewalk Width	4 ft.
Planter Type	Strip
Planting Pattern	Random
Street Lighting	Cobra Head
Curb Type	Header

PRIVATE FRONTAGE	
Private Frontage	Parking Lot
Principal Building Ht	1
Outbuilding Height	N/A
Building Type	Industrial
Garage Access	N/A
Lot Width	400 ft.
Frontage Buildout	264 ft.
Front Setback	54 ft.
Side Setback	68 ft.
Front Encroachment	0 ft.
GRND Level Use	Industrial
Upper Level Use	-

Summary

Generally the I-1 districts functions just as the zoning code prescribes. Is the intention to allow the light industrial to become more urban and become more integrated with the downtown, allowing more redevelopment potential?

MARKET ANALYSIS



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STRENGTHS

- People - engaged residents, high incomes to support upscale and niche retail
- Excellent regional reputation
- Strong sense of place
- Successful farmers market
- Well-established small / local businesses
- Train station / Amtrak
- Access to interstates and St. Louis CBD
- Mix of housing densities
- Housing and infrastructure for residents to age in place

WEAKNESSES

- Perception that there is no parking hurts retailers
- Risk of stagnation
- Lack of amenities / businesses to attract millennials / younger customers
- Lack of housing products that appeal to empty nesters and millennials
- No quality hotels in Downtown or nearby
- Housing options for larger families are limited and expensive
- Inactive / under-used space throughout corridor, but particularly on "back sides"

SUMMARY

MARKET ANALYSIS

OPPORTUNITIES

- Theater development moving forward, creates "night out" demand
- Developers that are very interested in building new projects in downtown
- Multiple infill / small incremental development opportunities
- Capitalization on public / institutional facilities, destinations
- Housing demand is strong when product is available

THREATS

- Slow regional growth
- Hyper-competitive retail landscape nationwide
- Local parking regime doesn't favor retailers
- Competitors such as Central West End, Cortex, Maplewood attracting market share
- Lack of unique retail / experience-based shopping
- Perception of a lack of political will
- Resistance to change

GENERAL

- Kirkwood has a healthy downtown with a variety of businesses and housing types that serve its current residents well.
- Incremental, small-scale development (less than 2 acres) opportunities exist throughout downtown; together, they have the potential to make a large impact but would occur at a scale and pace (about 3-4 projects over 10 years) that leadership and citizens will likely find more palatable than large projects.
- Opportunities for large-scaled, mixed-used development are largely limited to the far north of the corridor
- Both customers and developers perceive an issue with the amount of parking Downtown.
- Kirkwood has a reputation among some developers as a hard place to get projects done; there is a perception that City leadership is resistant to change.
- Thoughtful messaging of the community-wide benefits of growth and development is often essential to gaining support for new projects.

DEMOGRAPHICS

- Kirkwood has ideal income demographics for supporting new retail.
- The St Louis MSA's slow growth translates to tough competition for new investment
- Downtown Kirkwood and its clientele are aging, but not necessarily being replenished with a younger generation of customers / residents.
- Between 2017 and 2022, the study are is expected to gain just 18 new residents. Study area growth rates are more similar to the region as a whole (slower) than the City of Kirkwood.
- Although Kirkwood's draw is family-friendly living, housing in the study area tends to favor those without children.
- Residents who live between 1/2 mile and 2 miles of Downtown have stronger spending power than those who live in Downtown, and those who live between 2 and 5 miles away.

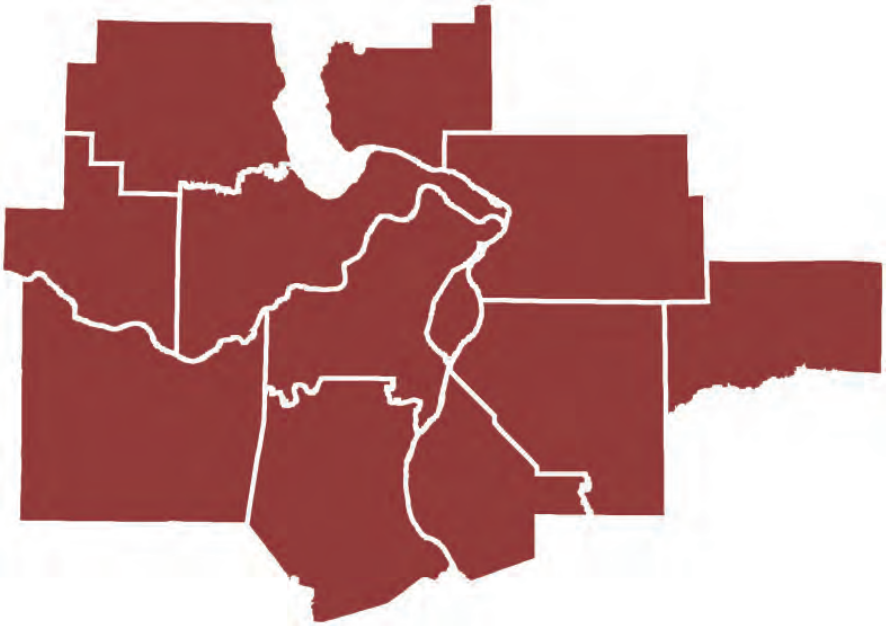
COMMERCIAL MARKET

- Restaurants and most retail shops currently in Kirkwood are largely successful; commercial spaces have low vacancy and rent at rates on the higher end of the regional spectrum.
- Non-chain, fast casual restaurants would likely do well Downtown.
- Downtown has a high percentage of low-traffic businesses/organizations, particularly health/human services. These do not represent highest and best use tenants, particularly in storefronts on Kirkwood Road.
- Additional chain retail is unlikely to net strong benefits to Downtown; these tenants are already accommodated both within and just outside the study area, and do not provide unique, highly attractive retail experiences.
- Traditional "Main Street" buildings are primarily found in about 1/3 of the corridor; the rest of the corridor's character could be substantially improved through thoughtfully designed new development.
- Parking is perceived as a major issue; additionally, some existing surface lots are occupying prime retail space.
- Residences converted to homes and smaller, older office buildings provide multiple small-scaled redevelopment opportunities.
- Small-scaled alternative work spaces such as co-working offices could be viable in Downtown Kirkwood.
- There is an obvious gap in hotel accommodations in the Kirkwood area; a boutique hotel would need to be purpose-built because there is no large-scale existing structure that could likely suit this need.

HOUSING MARKET

- Based on previous year's permits, forecasted housing growth Downtown is modest at 12 new households between 2017 and 2022. This number is more of a reflection of the historical lack of housing product in the area as opposed to a lack of demand.
- There is a demand for smaller one- and two-bedroom units with high-quality amenities that would appeal to younger people and empty nesters. Products that would do well include townhouses, small multi-family buildings, and cottage courts (a type not currently found in the study area).
- A more modern aesthetic for new housing would help attract younger households to the area, but would still need to integrate into the traditional character of Kirkwood.
- The large amount of housing currently accommodating seniors is unlikely to meet the needs of the aging boomers, who are trending towards being more active and demanding greater amenities.
- Older garden apartment complexes represent long-term redevelopment opportunities, but these affordable units need to be replaced with "missing middle" new units.

CURRENT POPULATION



St Louis MSA:
2,848,573

City of Kirkwood:
27,612

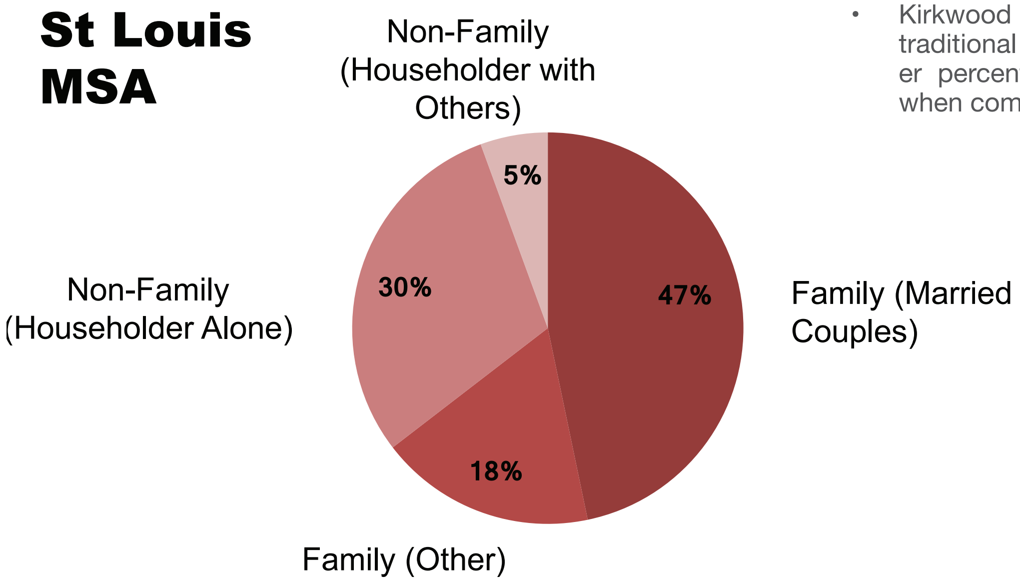
Study Area:
1,237

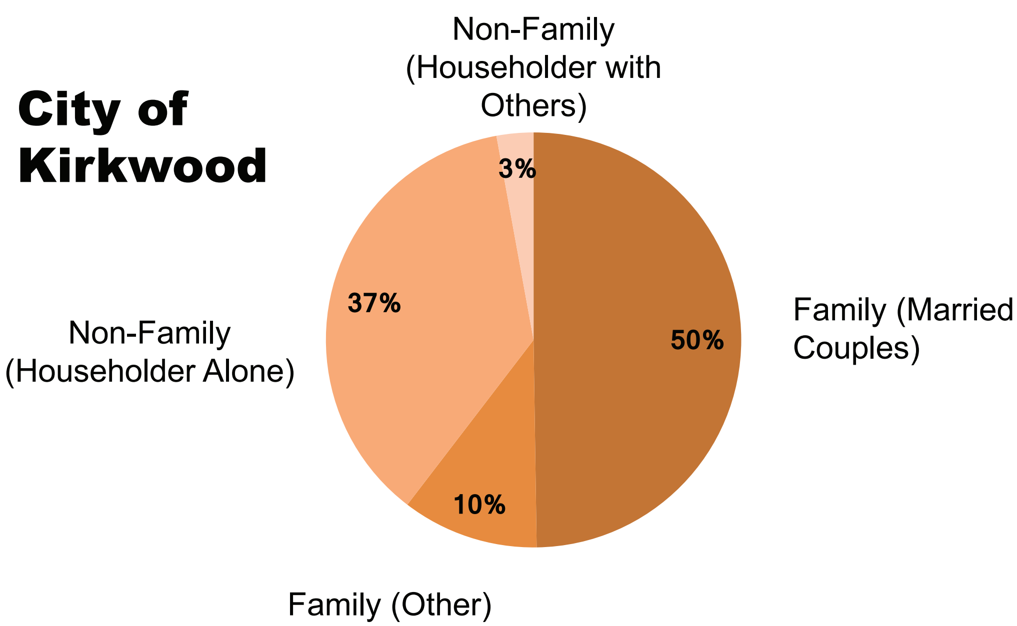
Source: US Census American Community Survey, 2015;
ESRI Business Analyst 2017

HOUSEHOLD TYPES

WHO IS THE MARKET?

- Kirkwood's households are 60 percent families, 37 percent householders living alone, and 3 percent non-family living with others.
- Kirkwood has a slightly higher percentage of traditional families, and a significantly higher percentage of single-person households when compared to the St Louis MSA.



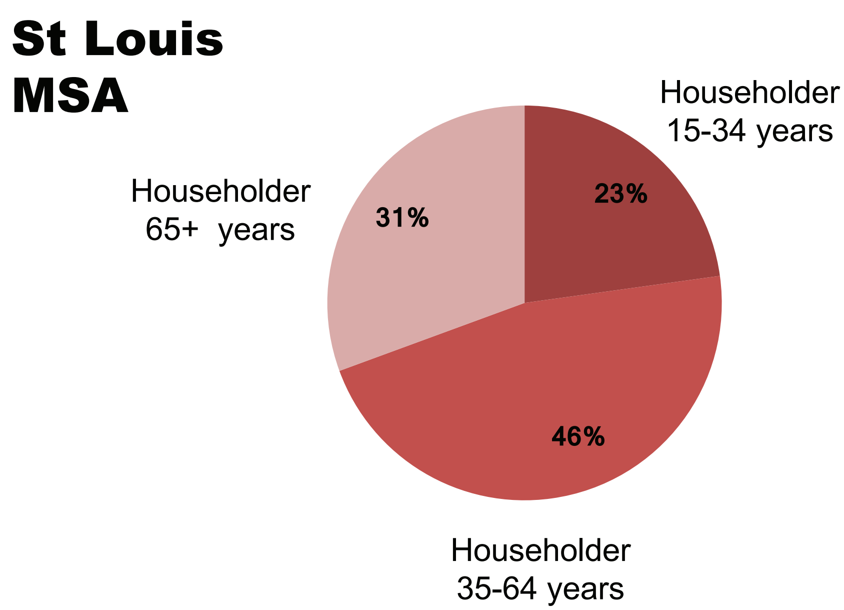


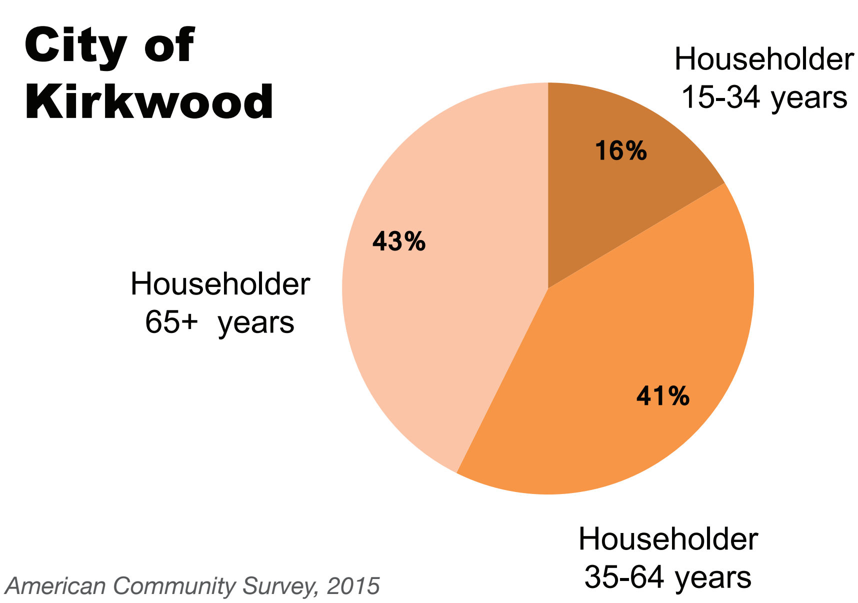
Source: US Census American Community Survey, 2015

NON-FAMILY HOUSEHOLDS & AGE

WHO IS THE MARKET?

- Median age in Kirkwood is relatively old at 44.0 years, compared to the MSA's 39.3.
- Families in Kirkwood are very similar in composition to the region as a whole: 62 percent of families are headed by someone aged 35-64.
- Kirkwood diverges from the region in terms of non-family household age composition. The city has a lower percentage of non-family householders aged 15-34. Kirkwood has a very high percentage of non-family householders aged 65 or older.



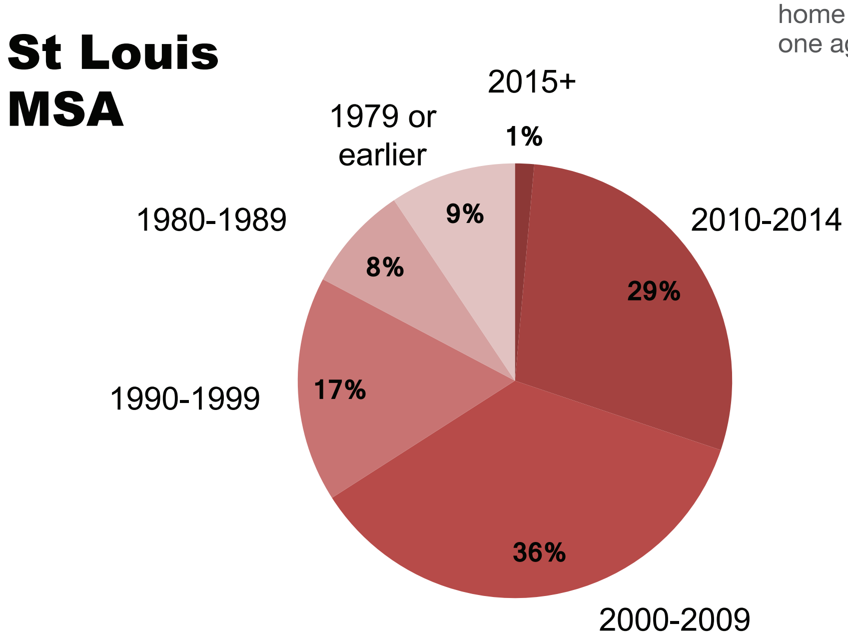


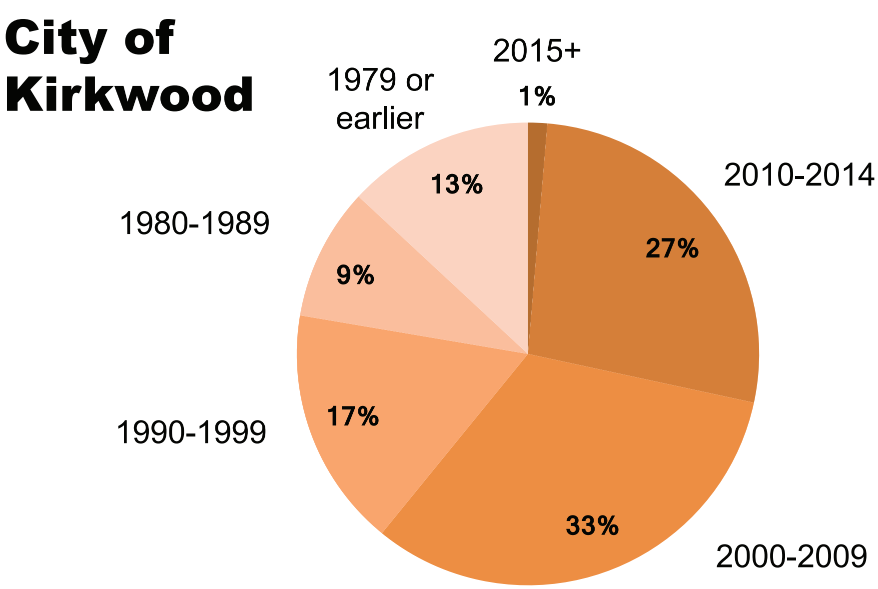
Source: US Census American Community Survey, 2015

HOUSEHOLD TENURE

WHO IS THE MARKET?

- Household tenure by age is fairly consistent between the region and Kirkwood.
- 1 out of 5 households in Kirkwood moved to their home between 2000 and 2009 and is headed by someone aged 35-64.
- 1 out of 8 households in Kirkwood moved to their home in 1979 or earlier, and is headed by someone aged 65 & up.



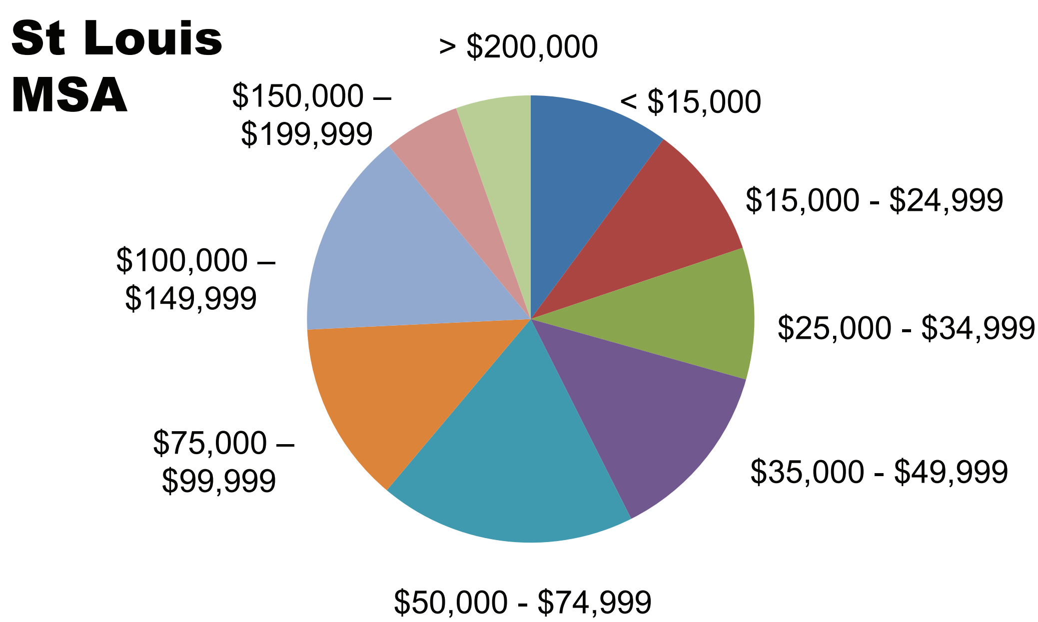


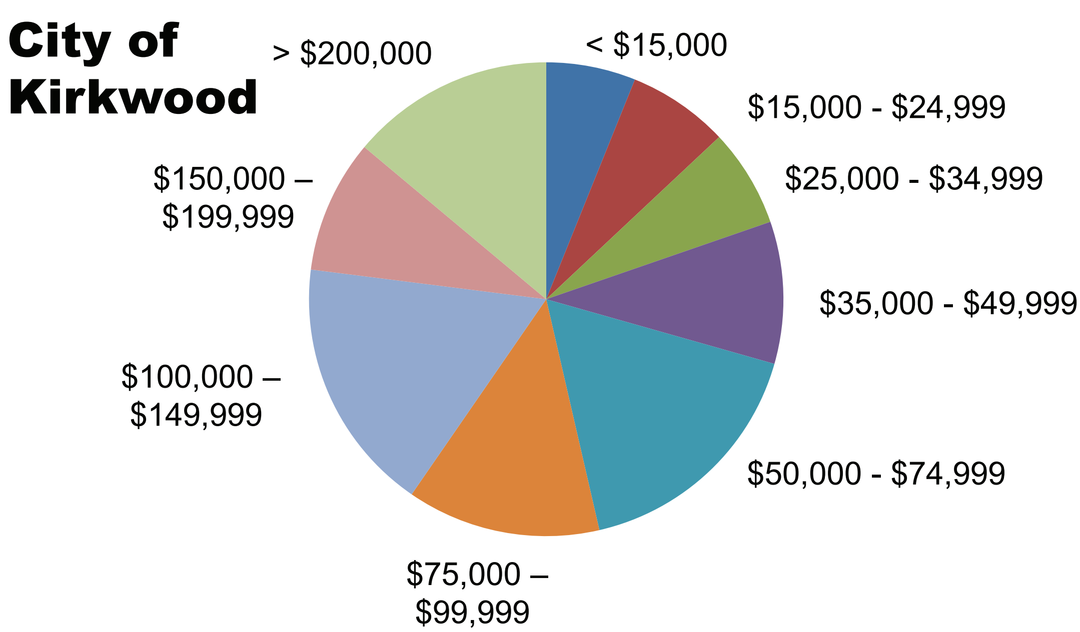
Source: US Census American Community Survey, 2015

HOUSEHOLD INCOME

WHO IS THE MARKET?

- Average household income in Kirkwood is $116,200, compared to the MSA's $80,538.
- In Kirkwood, over half of all households have an income of at least $75,000.



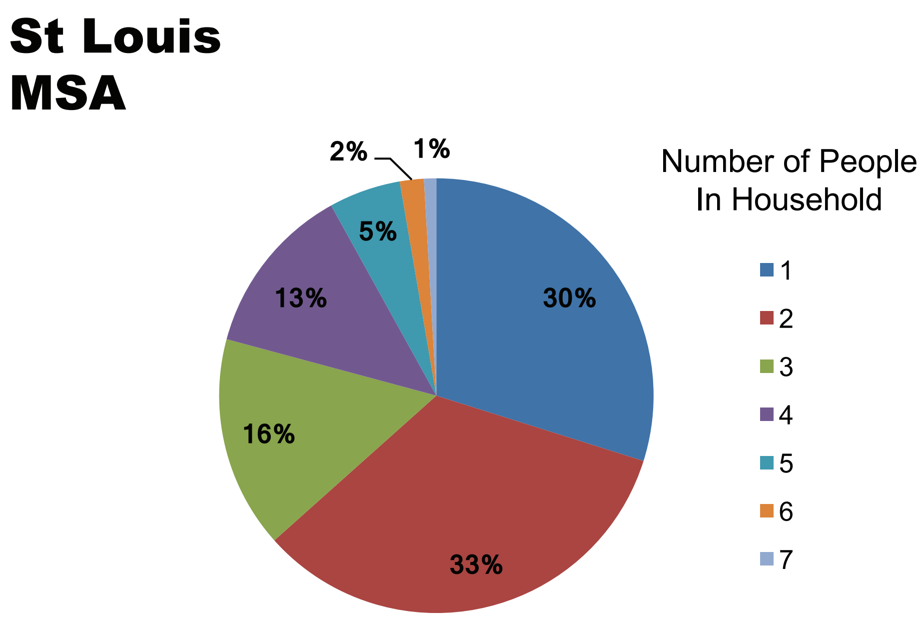


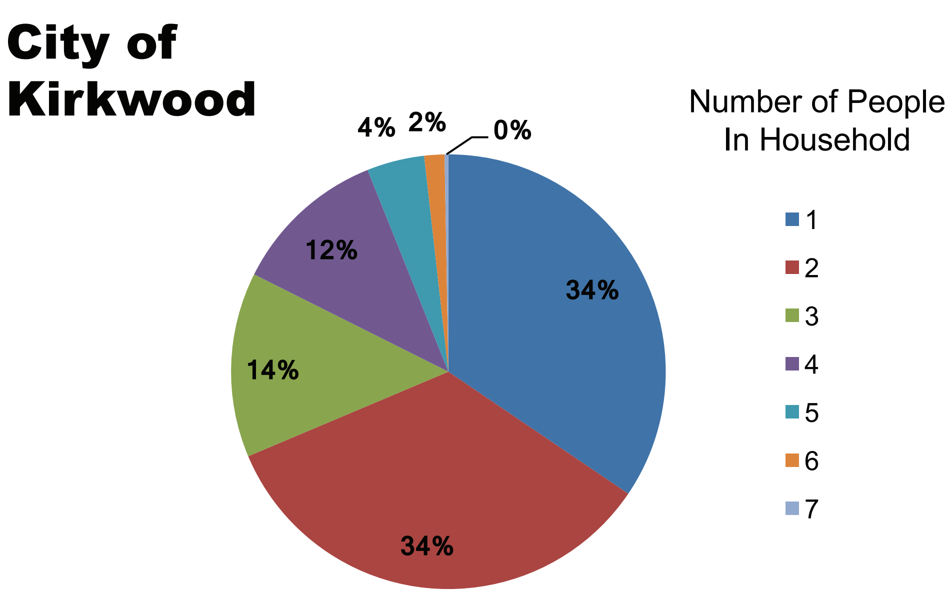
Source: US Census American Community Survey, 2015

HOUSEHOLD SIZE

WHO IS THE MARKET?

- Median household size in Kirkwood is 2.31, smaller than the MSA's 2.47.
- The distribution of household sizes in Kirkwood is similar to the region as a whole.
- 82 percent of households in Kirkwood have 3 people or less.
- 68 percent of households in Kirkwood have 1 or 2 people.



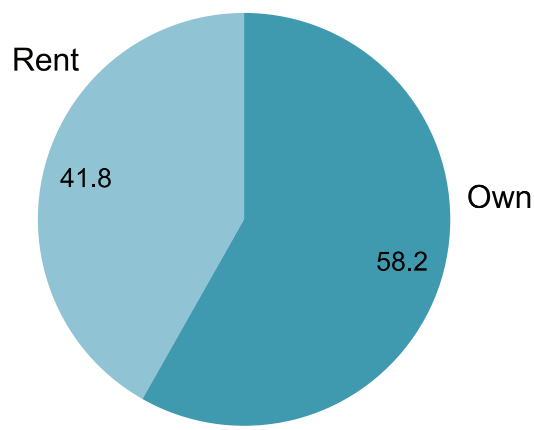


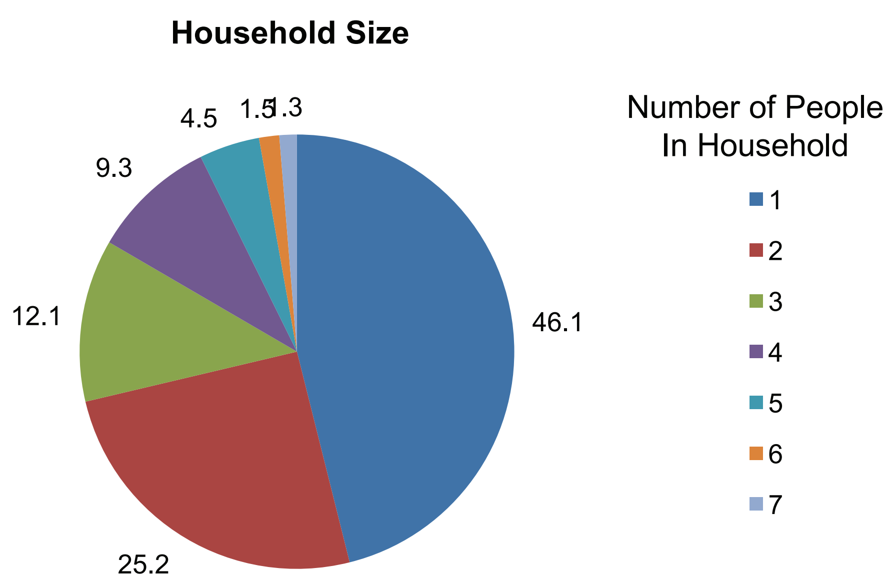
Source: US Census American Community Survey, 2015

STUDY AREA: OCCUPANCY TYPE BY HOUSEHOLD

WHO IS THE MARKET?

- Approximately 1,237 residents live in the study area.
- Median age is 46.5, significantly higher than the MSA and higher than the city.
- 53.8 percent have bachelor's degree or higher.
- Average income is $102,159 - higher than the MSA, but lower than Kirkwood as a whole.
- 23.8 percent of households have children.
- 39.4 percent of households have someone aged 65 or older.





Source: ESRI Business Analyst 2017

DEMOGRAPHIC PROFILES

4 COMMON TYPES OF HOUSEHOLDS IN DOWNTOWN KIRKWOOD

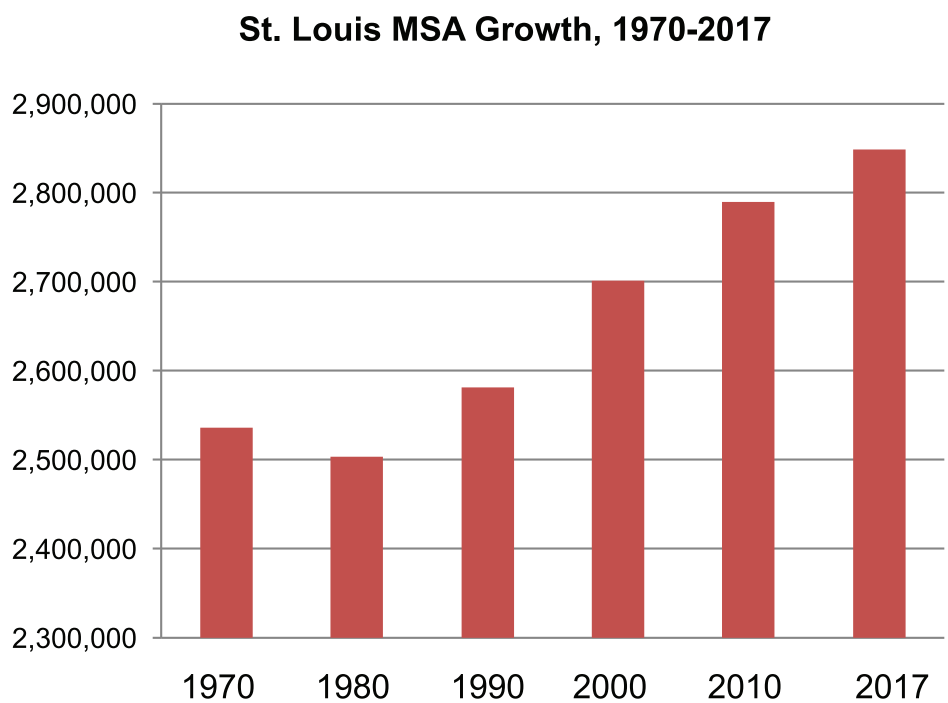
- **20% Fixed Income Retirees:** Lives alone on a limited income (less than $35,000), over 65 years of age
- **10% Middle-Income Empty Nester:** Lives alone or with a partner on a modest income ($35,000 - $75,000), aged 55+
- **10% Young Professionals:** Lives alone or with a partner, maybe one child, middle income ($50,000 - $100,000), aged 25-45
- **10% Established Professionals:** Lives alone or with a partner and / or an older child, higher income ($100,000 - $150,000), aged 45 - 64

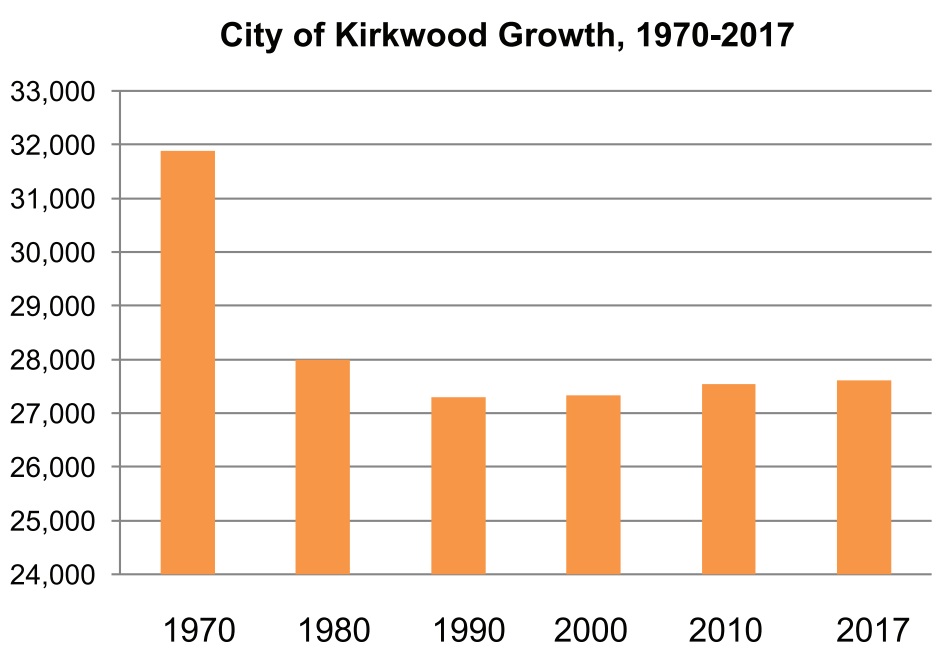
- **The most common type of household is an older retiree on a modest income**
- **The four most commons types of households total about 50 percent.**
- **Remaining 50 percent of households is a broad mix of ages and incomes.**

Source: ESRI Business Analyst 2017

REGIONAL GROWTH TRENDS

- As an MSA, St Louis has grown modestly; between 1980 and 2017 the region has added about 345,000 residents.
- The City of Kirkwood's population fell between 1970 and 1980, but has since stabilized and has remained relatively constant since 1990, with a small uptick in growth in 2000.



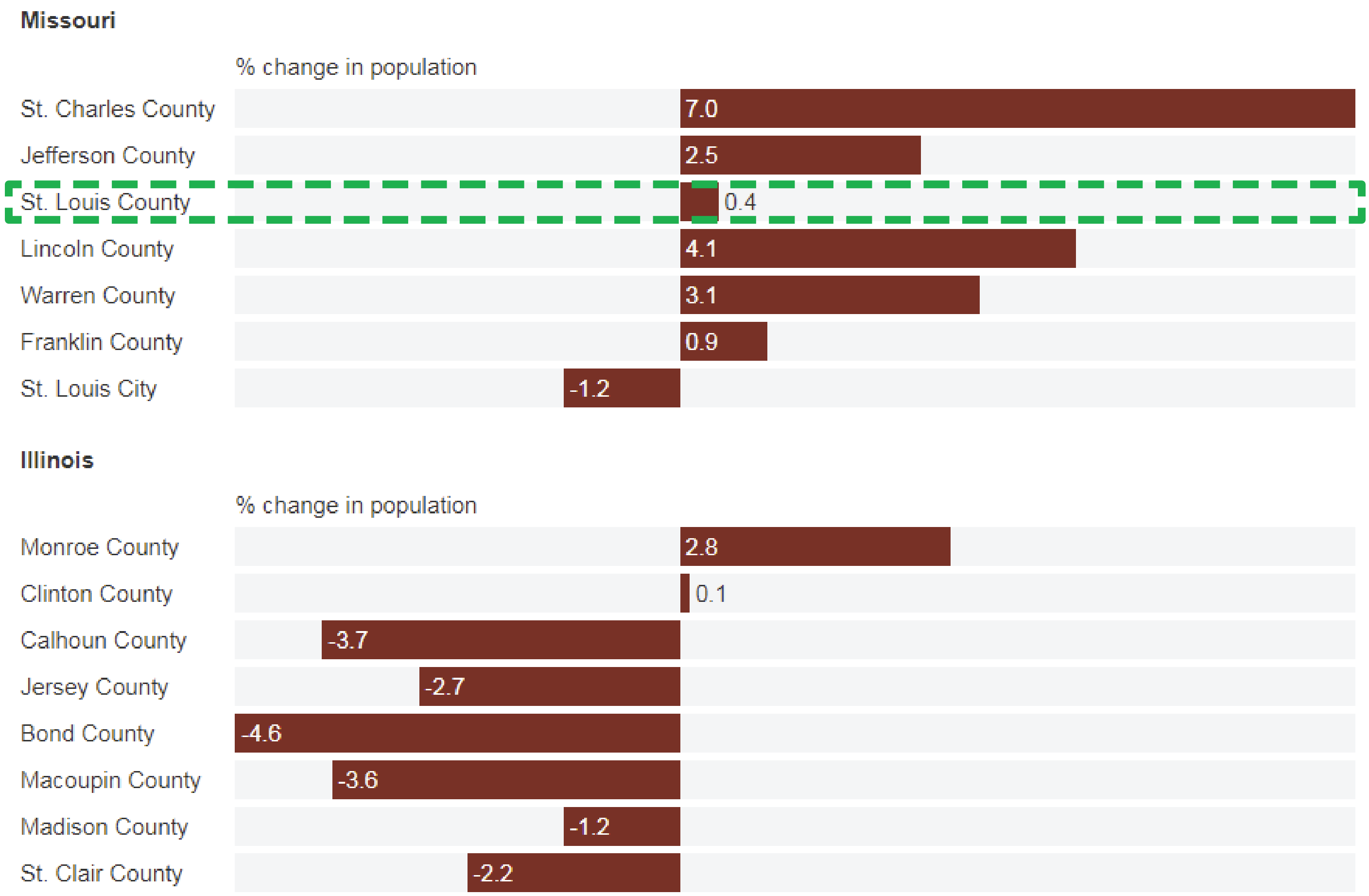


Sources: Federal Reserve Bank of St. Louis (FRED); City of Kirkwood Comprehensive Plan Vision 2015

- Between 2010 and 2016, Kirkwood grew by 69 residents
- The region's growth is fairly flat—suburban counties are growing modestly, more urban counties are flat or declining slightly; St. Louis County grew by 0.4 percent between 2010 and 2015.

St. Louis Metro Area Counties, Population Change, 2010-2015

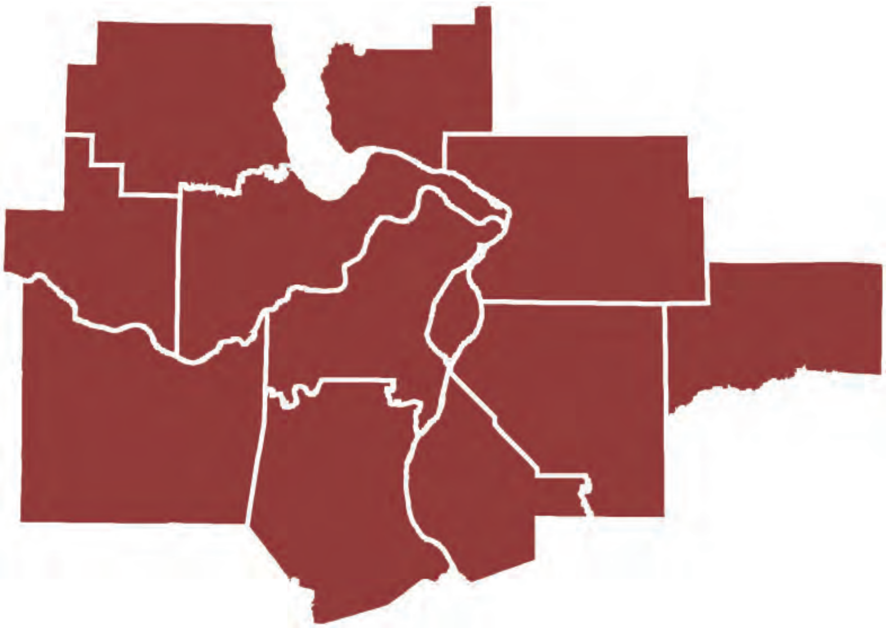
The Missouri side of the region has grown, while Metro East counties saw ebbing populations.



All values calculated as percent change.

Sources: US Census 2010 Census and 2016 Estimates; Moskop, Walter "It's slow growing for St. Louis as region slips down list of big metro areas" St Louis Post-Dispatch, Mar 24 2016

POPULATION FORECAST: 2022



St Louis MSA:
2,890,276
(annual growth of .29%)

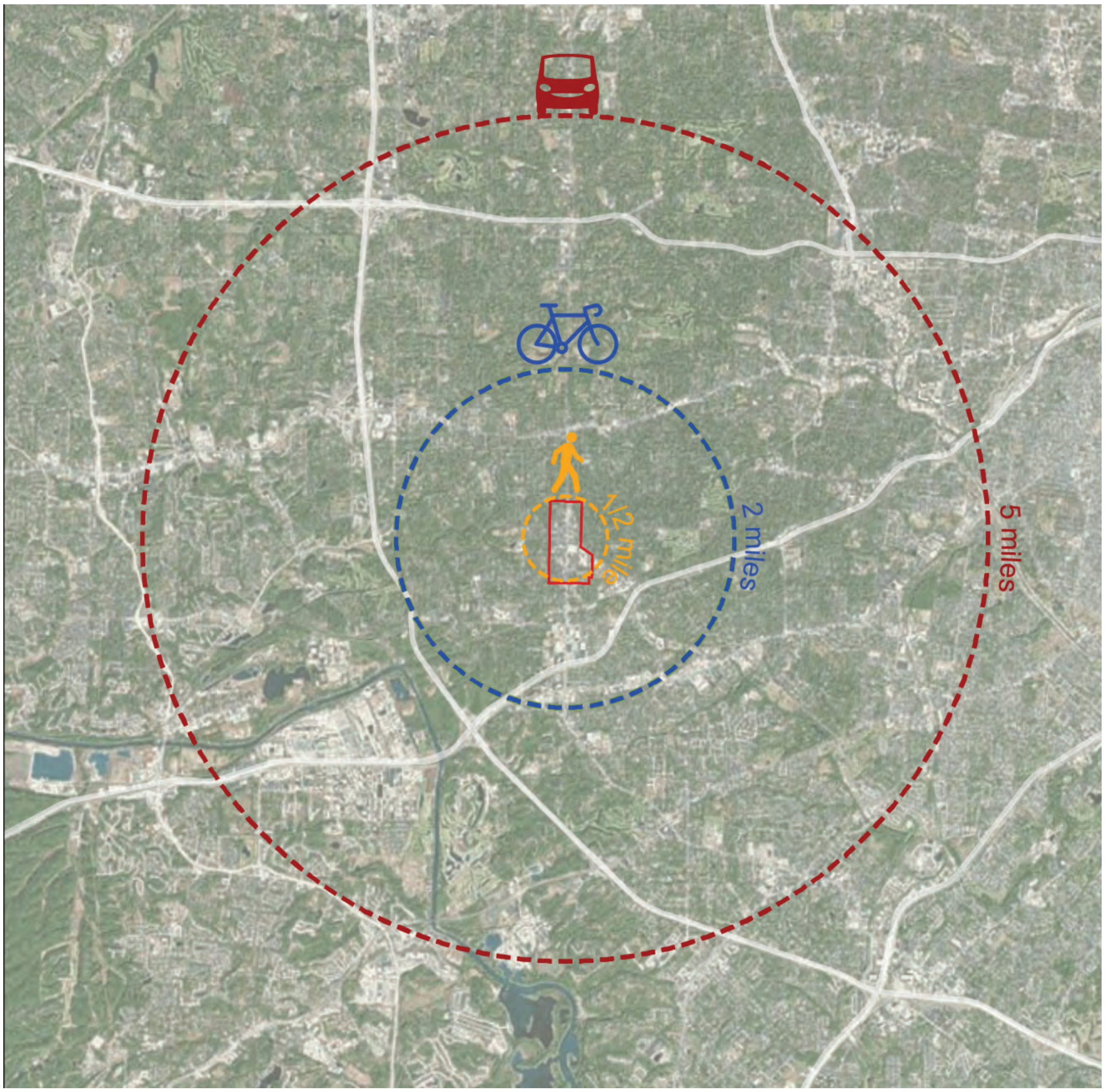
City of Kirkwood:
29,042
(annual growth of .38%)

Study Area:
1,253
(annual growth of .29%)

Source: ESRI Business Analyst 2017

return to TOC

MARKET GEOGRAPHIES



	Walk Shed:	0.5 Mile: 3,811 people
	Bike Shed:	2 Miles: 41,645 people
	Drive Shed:	5 Miles: 178,836 people

Source: ESRI Business Analyst 2017

HOUSEHOLDS BY AGE & INCOME

Households by Age + Income: Walk-shed (1/2 mile)

AGE	<25	25-34	35-44	45-54	55-64	65-74	75+
TOTAL	39	224	243	310	392	350	422
< $15,000	3	11	9	14	31	34	106
$15,000-$24,999	4	17	16	12	32	48	107
$25,000-$34,999	4	20	17	18	34	28	38
$35,000-$$49,999	12	42	25	32	41	54	59
$50,000-$74,999	9	67	72	57	67	71	62
$75,000-$99,999	4	27	29	43	45	40	17
$100,000-$149,999	3	21	38	65	75	40	18
$150,000-$199,999	1	11	23	33	38	15	8
$200,000+	1	9	14	35	30	20	7
Median	$45,660	$55,691	$66,528	$85,737	$70,716	$52,638	$24,708
Average	$58,493	$71,619	$90,023	$109,442	$93,340	$73,649	$42,124

WALK SHED HOUSEHOLDS

- Median Age: 46.7
- Average Household Size: 1.91
- Within 1/2 mile of the train station, the largest number of households are headed by someone 75+, about 1/2 of which have incomes under $25k
- There is a relatively high number of households making $100-%150k, as well as households making $50-$75k; there is a dip in the number of $75-$100k households.

Households by Age + Income: Bike-shed (2 miles)

AGE	<25	25-34	35-44	45-54	55-64	65-74	75+
TOTAL	275	1,800	2,623	3,171	3,766	2,914	2,689
< $15,000	29	73	84	118	194	183	391
$15,000-$24,999	25	122	113	87	229	263	529
$25,000-$34,999	33	170	174	163	284	184	296
$35,000-$$49,999	81	338	287	317	376	468	488
$50,000-$74,999	57	535	835	576	645	692	494
$75,000-$99,999	24	277	362	500	521	383	166
$100,000-$149,999	17	146	390	704	797	403	175
$150,000-$199,999	3	79	236	347	402	151	84
$200,000+	5	60	141	358	317	188	66
Median	$42,557	$56,375	$67,224	$89,449	$80,988	$60,249	$37,949
Average	$54,191	$70,858	$90,022	$112,542	$101,148	$83,019	$53,815

BIKE SHED HOUSEHOLDS

- Median Age: 44.1
- Average Household Size: 2.38
- Younger median age, larger average household size than walk-shed
- Lower proportion of residents 75+
- Many households making $100-$150K

Source: ESRI Business Analyst 2017

Households by Age + Income: Drive-shed (5 miles)

AGE	<25	25-34	35-44	45-54	55-64	65-74	75+
TOTAL	2107	9,540	11,218	13,099	15,941	12,112	11,901
< $15,000	425	534	447	578	938	817	1511
$15,000-$24,999	223	781	587	403	1070	1087	2518
$25,000-$34,999	268	1074	842	805	1380	883	1455
$35,000-$49,999	578	2014	1406	1488	1698	2054	2146
$50,000-$74,999	351	2759	3655	2531	2792	2703	2151
$75,000-$99,999	138	1267	1521	1986	2122	1532	699
$100,000-$149,999	91	625	1468	2735	3178	1666	766
$150,000-$199,999	8	279	802	1271	1542	605	371
$200,000+	26	207	448	1302	1221	764	284
Median	$37,394	$51,990	$62,795	$82,667	$75,820	$58,642	$37,393
Average	$44,447	$63,048	$83,238	$106,739	$97,123	$82,367	$53,741

DRIVE SHED HOUSEHOLDS

- Median Age: 44.0
- Average Household Size: 2.32
- Older householders than bike-shed, but slightly younger than walk-shed
- Household size significantly larger than walk-shed
- Largest percentage of households headed by someone aged 55-64, but also significant number of households headed by younger person (under 35)

Source: ESRI Business Analyst 2017

RETAIL EXPENDITURE BY STORE TYPE

	Walk-shed		Bike-shed		Drive-shed	
	Avg. Amount Spent	SPI	Avg. Amount Spent	SPI	Avg. Amount Spent	SPI
Apparel and Services	$2,866	134	$3,247	150	$3,054	141
Computers	$289	140	$321	154	$302	145
Entertainment & Recreation	$4,202	135	$4,733	152	$4,419	142
Food	$10,961	131	$12,187	146	$11,516	138
Financial	$51,369	140	$58,270	162	$54,822	149
Health	$811	133	$905	149	$841	139
Home	$21,614	134	$25,265	158	$23,191	145
Household Furnishings and Equipment	$1,660	137	$1,879	155	$1,752	145
Household Operations	$2,214	135	$2,514	151	$2,349	142
Insurance	$7,718	134	$8,726	154	$8,112	142
Transportation	$7,662	127	$8,699	144	$8,192	135
Travel	$2,239	145	$2,547	164	$2,347	151

- All “sheds” have higher than-average spending (an SPI over 100) than the US-wide average
- Retail types with particularly high expenditures include computers, financial services, travel, and household furnishings/equipment
- The bike-shed has the highest spending of the three

SPI = Spending Potential Index. The SPI compares the average expenditure made locally for a product to the average amount spent nationally. An index of 100 is average. An SPI of 120 shows that average spending by local consumers is 20 percent above the national average. (ESRI)

Source: ESRI Business Analyst 2017

EMPLOYMENT BY INDUSTRY

	Walk-shed	Bike-Shed	Drive-Shed
Employed Pop.	**1,831**	**21,664**	**94,349**
Agriculture/Mining	0.3%	0.6%	0.4%
Construction	3.9%	4.1%	4.3%
Manufacturing	9.6%	8.2%	9.2%
Wholesale Trade	5.2%	3.9%	3.4%
Retail Trade	7.4%	9.3%	9.3%
Transportation/Utilities	1.3%	2.1%	2.3%
Information	1.7%	2.0%	2.1%
Finance/Insurance/Real Estate	8.1%	10.7%	10.4%
Services	60.7%	57.3%	56.5%
Public Administration	1.9%	1.8%	2.1%

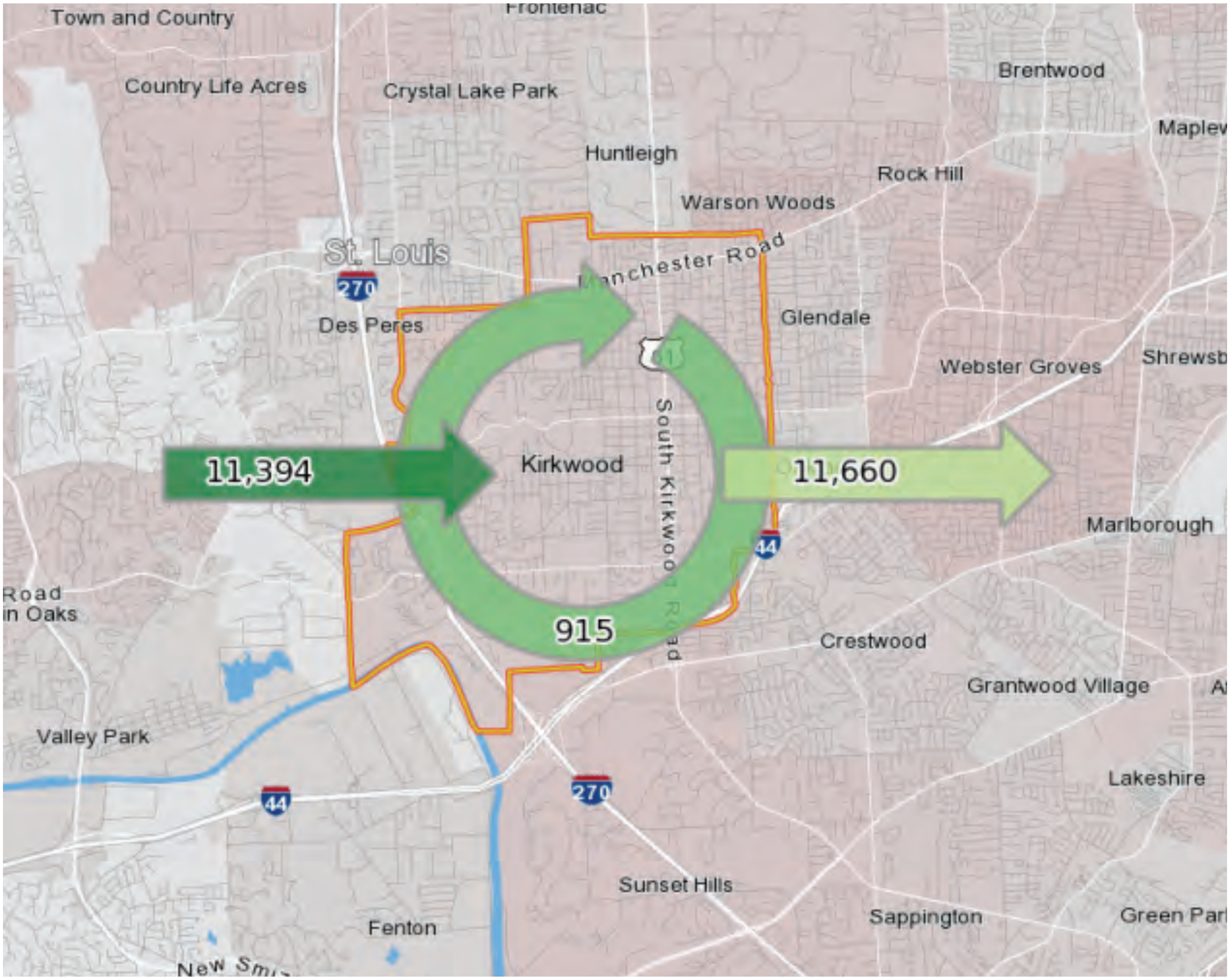
- All three market areas are dominated by the services sector.
- The walk-shed has the lowest percentage of persons employed in retail, suggesting that people who live in Downtown Kirkwood are not the ones who work in its retail stores
- Similarly, the percentage of walk-shed residents is also lower in finance/insurance/ real estate, despite the large number of these businesses in Downtown

Source: ESRI Business Analyst 2017

DEMOGRAPHICS

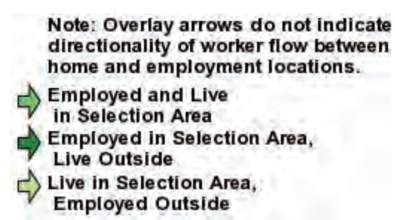
MARKET ANALYSIS

COMMUTING

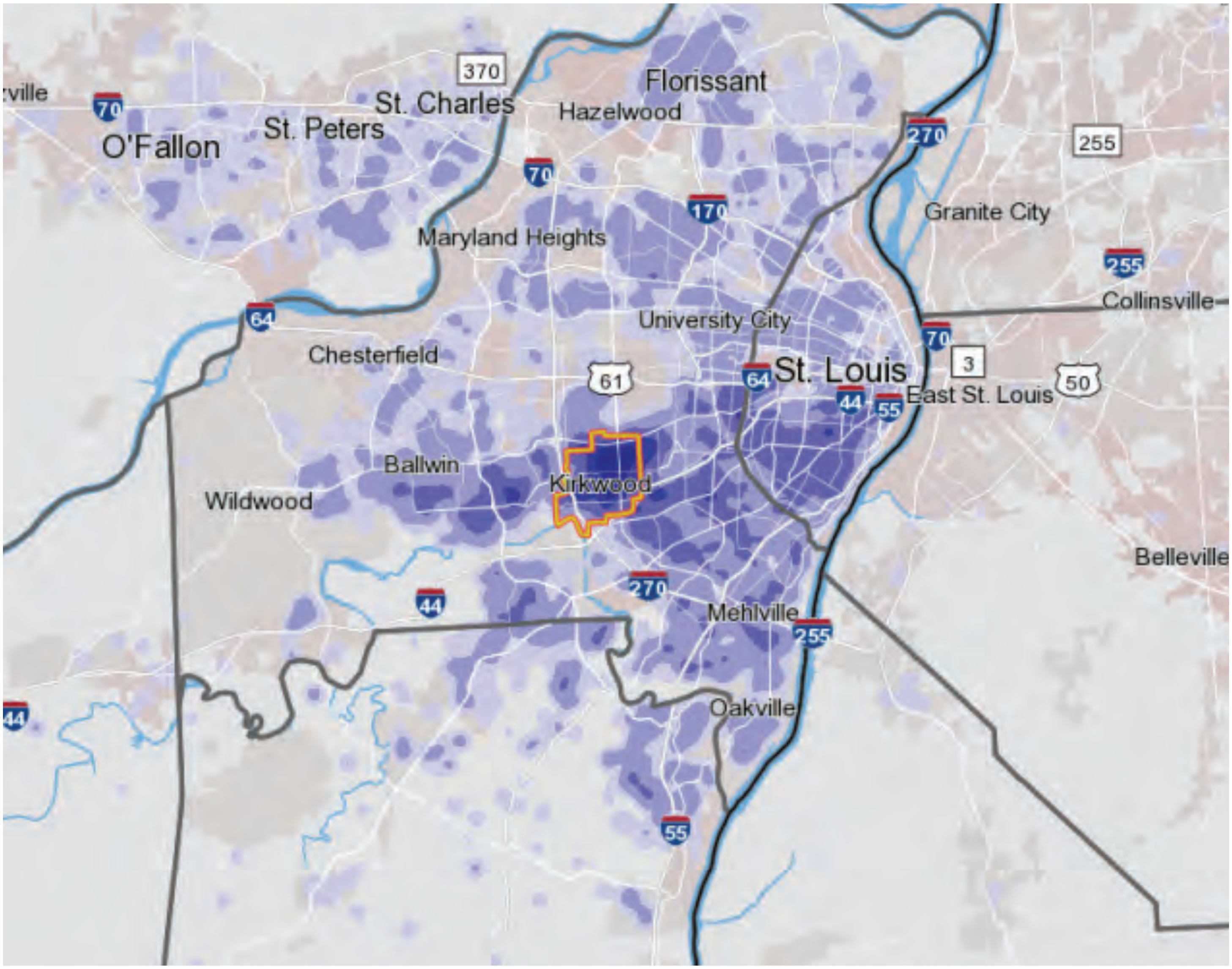


INFLOW / OUTFLOW OF WORKERS IN CITY OF KIRKWOOD

- The amount of workers who live in Kirkwood but commute elsewhere is approximately the same as the amount of people who work in Kirkwood but live elsewhere.
- About 915 people both live and work in Kirkwood.
- Higher income workers commute out to professional jobs in St. Louis, while lower income workers commute in to staff retail and service jobs.



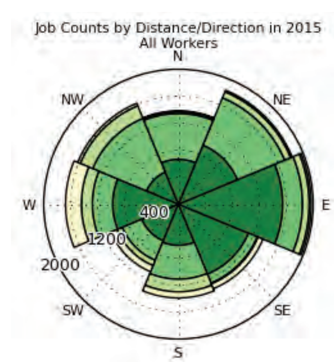
Source: US Census, Longitudinal Employer-Household Dynamics (LEHD)



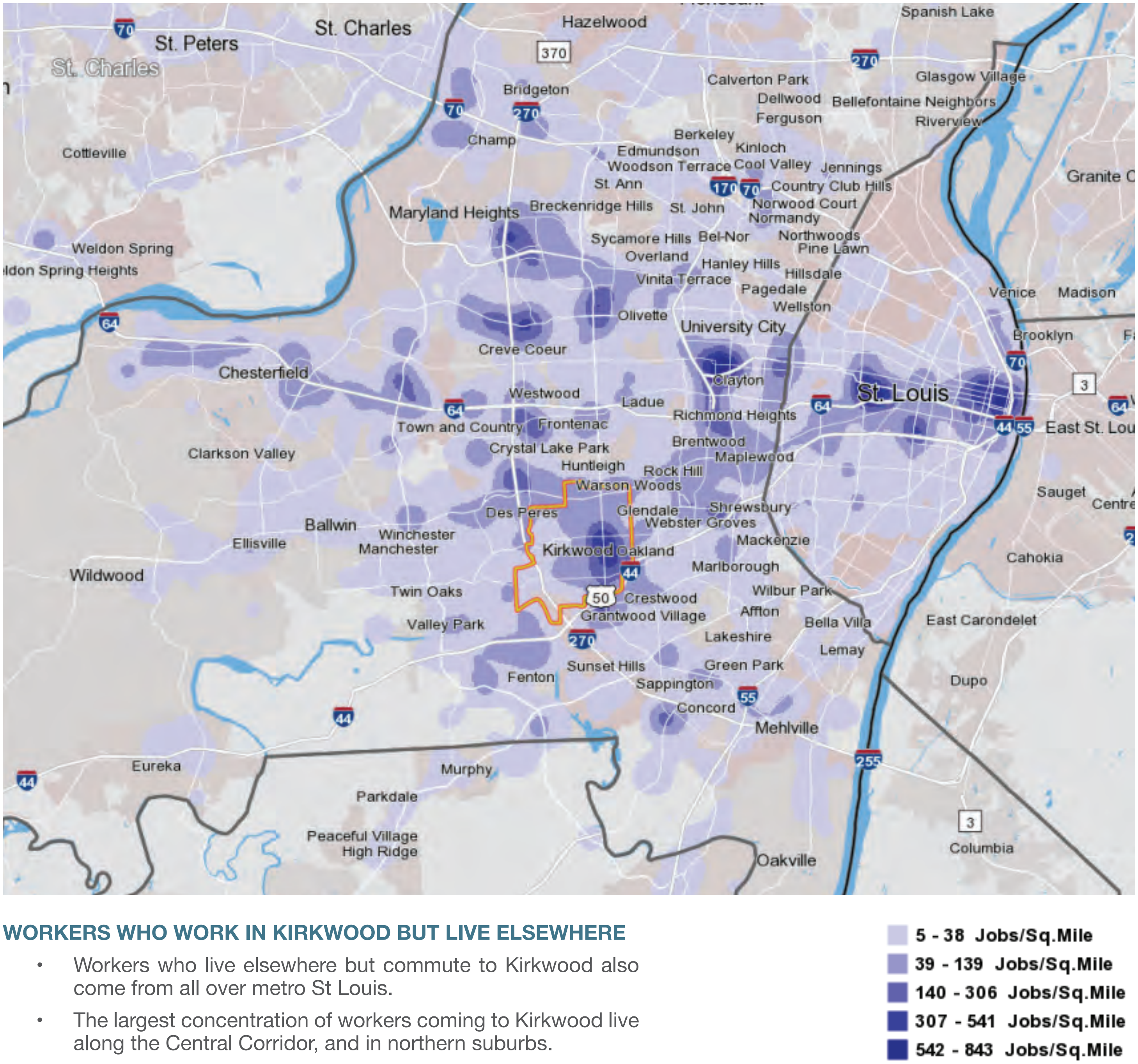
WORKERS WHO LIVE IN KIRKWOOD BUT WORK ELSEWHERE

- Workers who live in Kirkwood commute to destinations all over metro St Louis.
- Kirkwood's location within the metro and its easy access to the interstate system enables its residents to commute to work locations in every direction.

5 - 13 Jobs/Sq.Mile
14 - 38 Jobs/Sq.Mile
39 - 79 Jobs/Sq.Mile
80 - 137 Jobs/Sq.Mile
138 - 212 Jobs/Sq.Mile

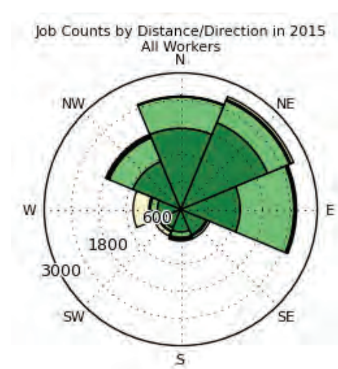


Source: US Census, Longitudinal Employer-Household Dynamics (LEHD)



WORKERS WHO WORK IN KIRKWOOD BUT LIVE ELSEWHERE

- Workers who live elsewhere but commute to Kirkwood also come from all over metro St Louis.
- The largest concentration of workers coming to Kirkwood live along the Central Corridor, and in northern suburbs.



Source: US Census, Longitudinal Employer-Household Dynamics (LEHD)

FINDINGS

- If Downtown Kirkwood continues to grow at its current rate, the area is expected to gain 18 new residents between 2017 and 2022.
- Although Kirkwood's draw is family-friendly living, housing in the study area tends to favor those without children.
- Kirkwood has a very high proportion of non-family households headed by someone aged 65+. The City is aging.
- Household stability in Kirkwood is very strong: over 1 out of 5 households in Kirkwood have been there since 1989 or earlier.
- Study area growth rates are more similar to the region as a whole (slower) than the City of Kirkwood.
- The strongest buying power comes from those who live within the bike-shed (approximately ½ to 2 miles of the train station).
- A significant number of people commute to Kirkwood from Central Corridor communities; there could be an opportunity to offer housing for these workers in Downtown and increase local expenditures.

DOWNTOWN BUSINESS PROFILE

- Total Businesses: 386
- Total Employees: 3,493
- Residential Population: 1,237
- Employee/Residential Population Ratio: 282: 100
- Rental rates in Downtown Kirkwood are typically between $18 - 30/SF.
- Vacancy rates are not tracked but reported to be low.

	Businesses		Employees	
	#	%	#	%
Construction	22	5.7%	204	5.8%
Manufacturing	9	2.3%	154	4.4%
Wholesale Trade	11	2.8%	94	2.7%
Retail Trade	51	13.2%	341	9.8%
Furniture/Home Furnishings	3	0.8%	12	0.3%
Electronics/Appliances	2	0.5%	14	0.4%
Bldg/Gardening Materials	5	1.3%	30	0.9%
Food and Beverage Stores	3	0.8%	56	1.6%
Health & Personal Care Stores	8	2.1%	64	1.8%
Gasoline Stations	1	0.3%	9	0.3%
Clothing/Accessories	11	2.8%	70	2.0%
Sport Goods, Hobby, Books, Music	5	1.3%	30	0.9%
General Merchandise	1	0.3%	6	0.2%
Misc.	11	2.8%	43	1.2%
Non-store Retailers	2	0.5%	3	0.1%
Transportation/Warehousing	8	2.1%	126	3.6%
Information	9	2.3%	55	1.6%
Finance/Insurance	38	9.8%	180	5.2%
Central Bank/Credit	9	2.3%	72	2.1%
Securities, Commodities, Other Financial	10	2.6%	45	1.3%
Insurance Carriers/Funds/Trusts	18	4.7%	63	1.8%
Real Estate	20	5.2%	161	4.6%
Professional/Scientific/Tech	39	10.1%	203	5.8%
Legal Services	8	2.1%	38	1.1%
Administrative/Support/Waste Management	16	4.1%	84	2.4%
Educational Services	10	2.6%	96	2.7%
Health Care/Social Assistance	48	12.4%	630	18.0%
Arts, Entertainment, Recreation	6	1.6%	75	2.1%
Accommodations and Food Services	27	7.0%	519	14.9%
Other Services	38	9.9%	261	7.5%
Automotive Repair	1	0.3%	7	0.2
Public Administration	20	5.2%	270	7.7%
Unclassified	13	3.4%	38	1.1%

Of all Businesses Downtown...

- 18.0 percent are health care/social assistance
- 14.9 percent are restaurants/food services
- 7.7 percent are public administration
- Only 9.8 percent are retail/trade

Source: ESRI Business Analyst 2017

	Businesses		Employees	
	#	%	#	%
Construction	22	5.7%	204	5.8%
Manufacturing	9	2.3%	154	4.4%
Wholesale Trade	11	2.8%	94	2.7%
Retail Trade	51	13.2%	341	9.8%
Furniture/Home Furnishings	3	0.8%	12	0.3%
Electronics/Appliances	2	0.5%	14	0.4%
Bldg/Gardening Materials	5	1.3%	30	0.9%
Food and Beverage Stores	3	0.8%	56	1.6%
Health & Personal Care Stores	8	2.1%	64	1.8%
Gasoline Stations	1	0.3%	9	0.3%
Clothing/Accessories	11	2.8%	70	2.0%
Sport Goods, Hobby, Books, Music	5	1.3%	30	0.9%
General Merchandise	1	0.3%	6	0.2%
Misc.	11	2.8%	43	1.2%
Non-store Retailers	2	0.5%	3	0.1%
Transportation/Warehousing	8	2.1%	126	3.6%
Information	9	2.3%	55	1.6%
Finance/Insurance	38	9.8%	180	5.2%
Central Bank/Credit	9	2.3%	72	2.1%
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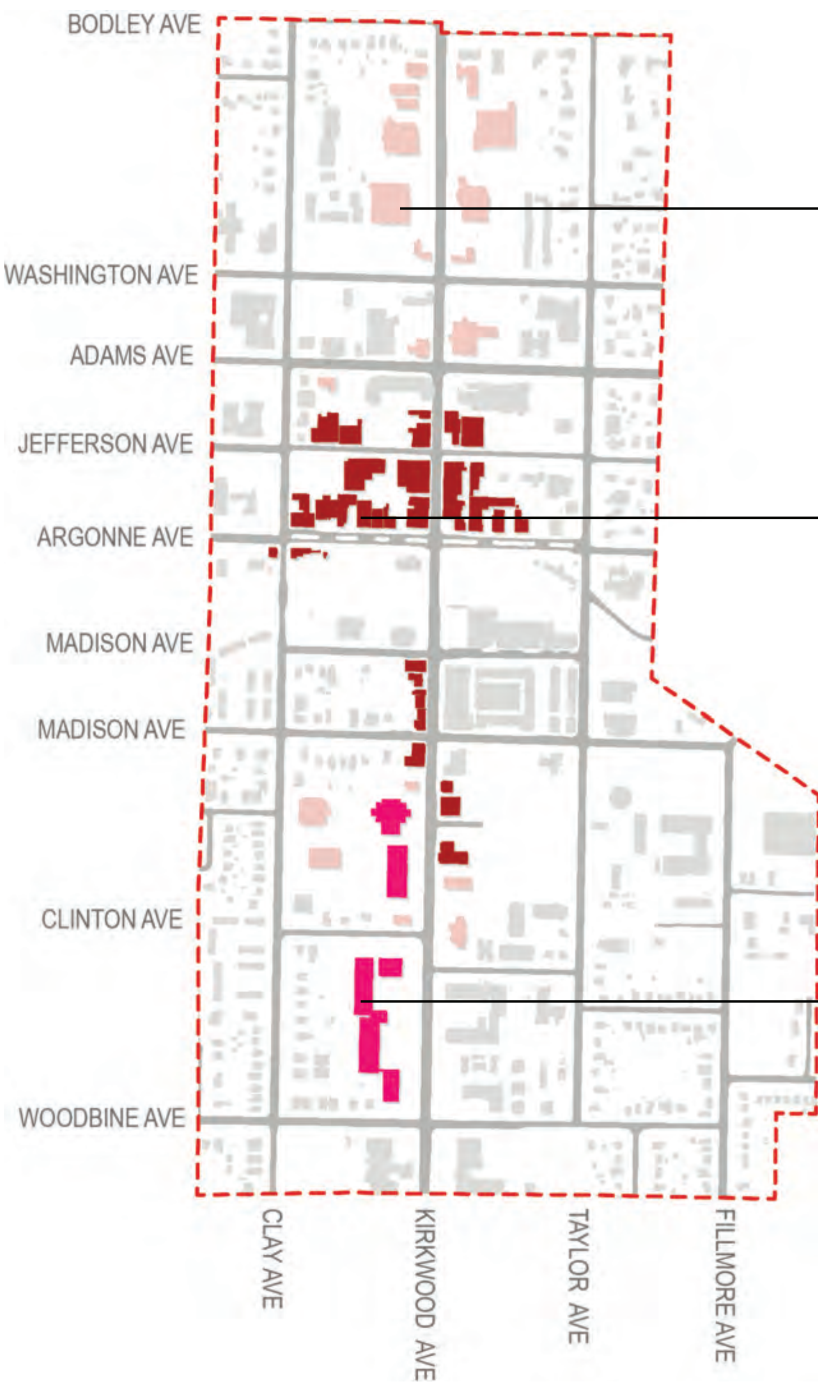
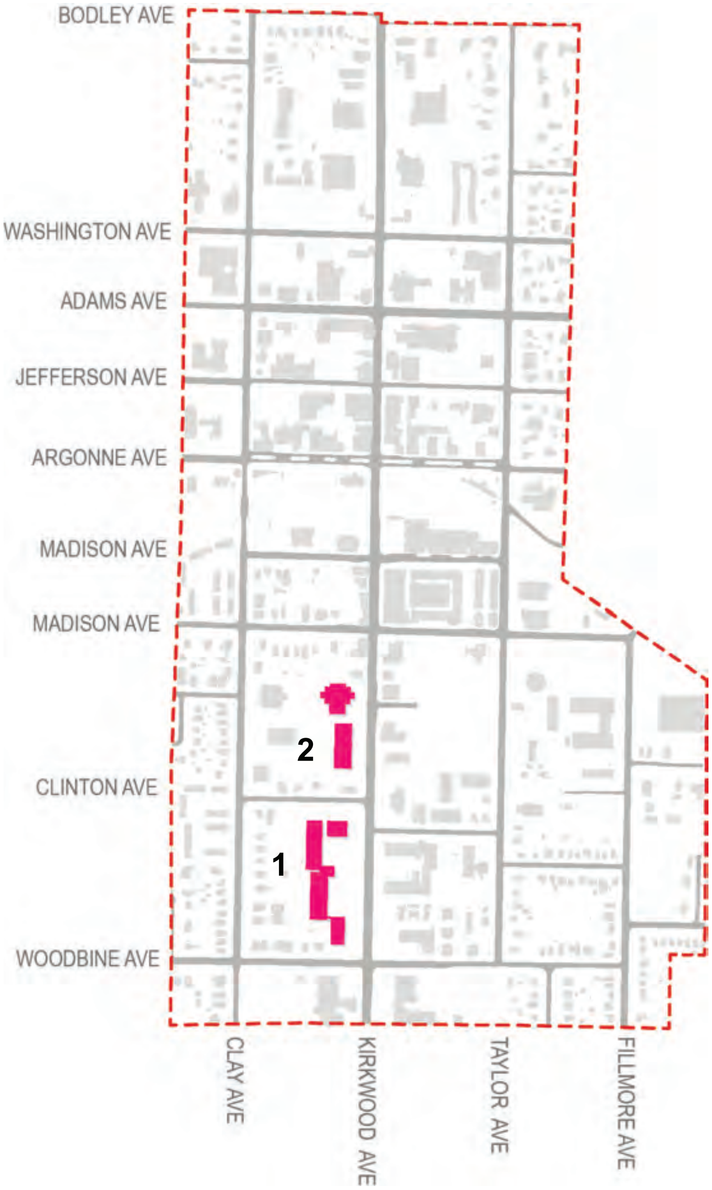
Source: ESRI Business Analyst 2017

COMMERCIAL BUILDING TYPOLOGY I



- **Stand-alone Suburban Strip:** 1-story, stand-alone structures with dedicated parking, non-historic, primarily retail, large footprints
- **Traditional Storefront:** Classic Main Street-type, no setback, no (or limited) attached/ dedicated parking
- **Upmarket Shopping Center:** Large shopping center with multiple storefronts on first floor, office space above; dedicated parking lot; upmarket/ modified version of strip mall

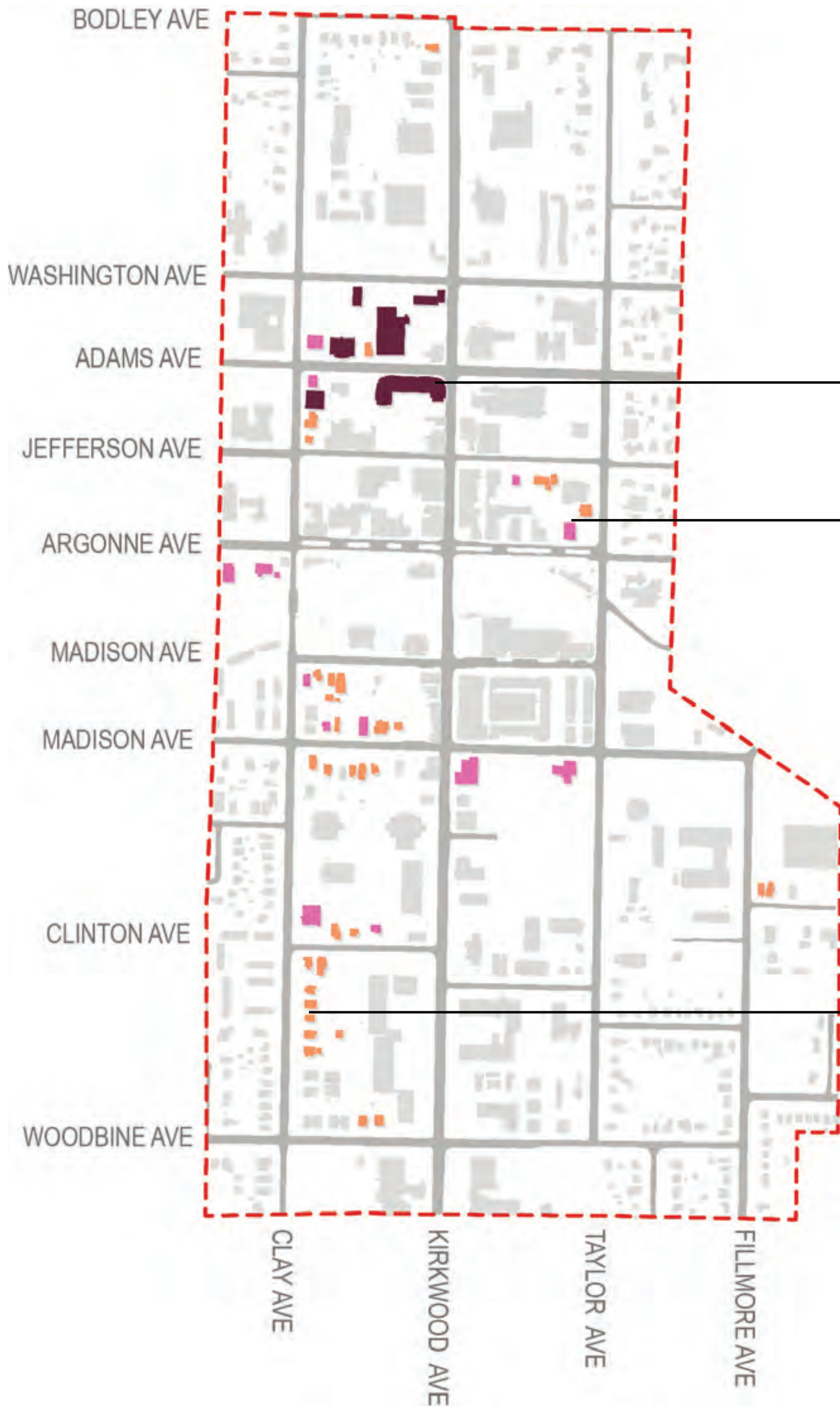
MAJOR SHOPPING CENTERS



	1.Woodbine Center	2. Pioneer Place I and III
		
Square Feet	67,450	100,000
Rent/SF	$20-24	“Negotiable”
% Occupied	96%	96%
Key Tenants	Qdoba, First Watch, Ginger Bay Salon, Coldwell Baker Gundaker	PNC Bank, BJH Healthcare, US Post Office, Starbucks, Kindercare, US Sports Medicine

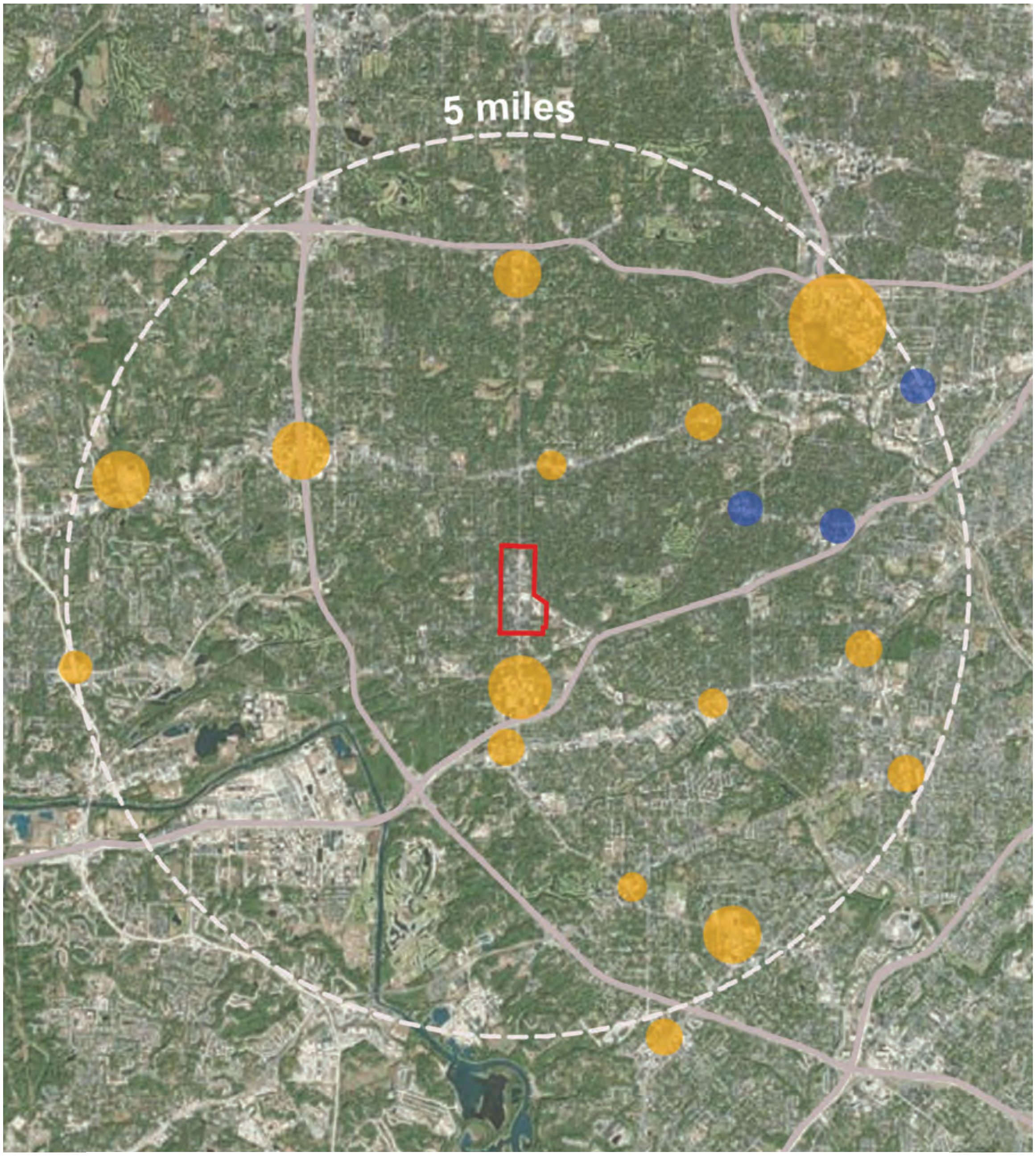
Sources: Balke Brown Transwestern; Novus Companies

COMMERCIAL BUILDING TYPOLOGY II



- **MIxed Use:** 2-3 story buildings, senior living in the upper 2 stories, few/no retail storefronts, no/little setback from street
- **Transitional Office/Services:** Small, stand-alone office building, mostly from the 1960s-1980s, some setback, parking at side or back, 1-2 stories
- **Converted House:** Residences, typically historic, that have been converted into offices

BEYOND DOWNTOWN KIRKWOOD

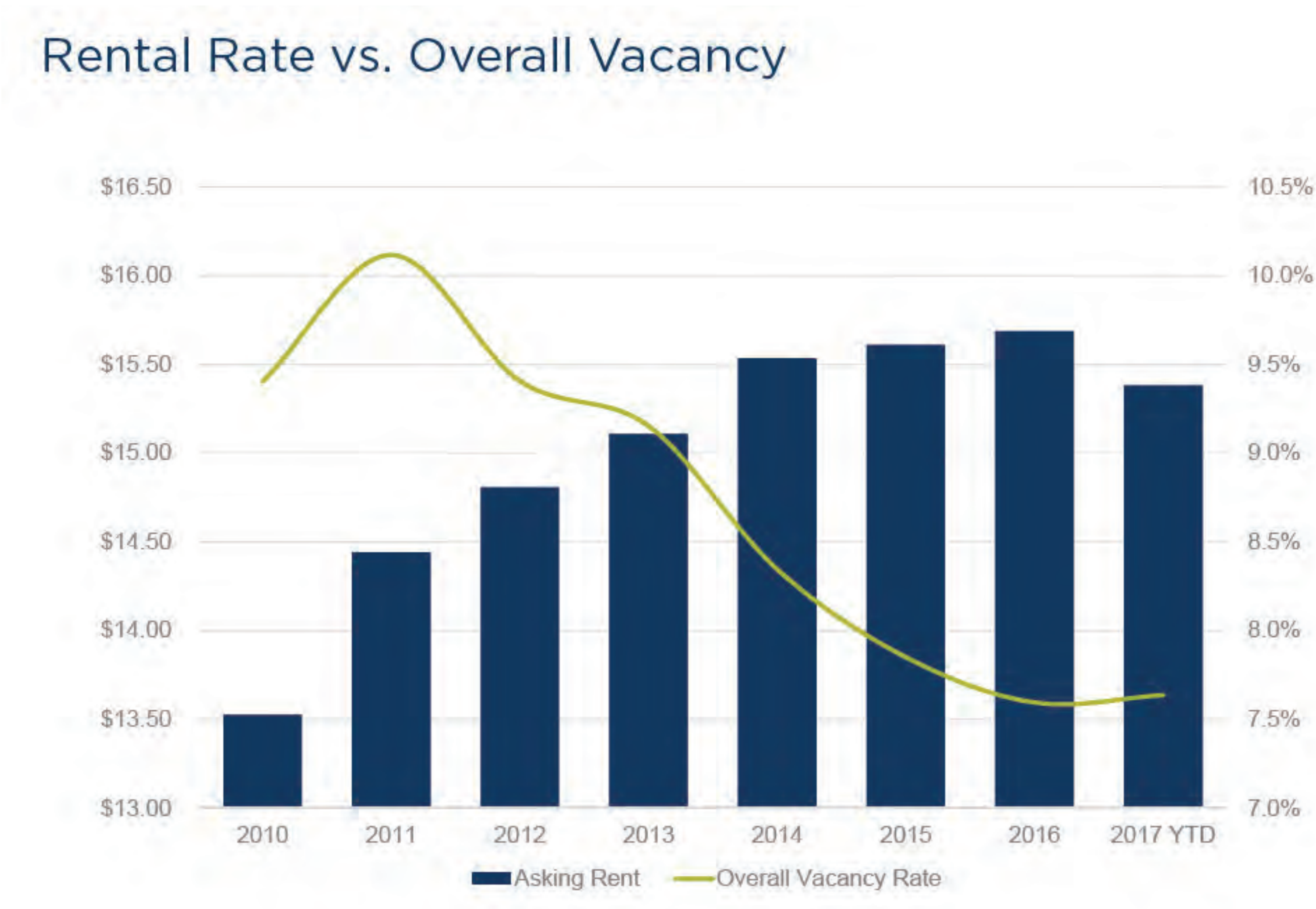


Suburban-Style Commercial

Main Street-Style Commercial

- An enormous amount of “big box” chain retail is within 1 mile of Downtown Kirkwood; Downtown cannot compete with the size of these retailers, but needs to differentiate itself by its shopping experience and unique products.
- Multiple other walkable, Main Street-like communities are within 5 miles of Downtown and compete for the same businesses and customers.

REGIONAL RETAIL TRENDS



Source: Cushman Wakefield Marketbeat St Louis Retail Q2 2017

- Retail vacancy rates are falling; between Q2 2016 and Q2 2017, fell to 7.6 percent
- Top performing products in Q2 2017 were Neighborhood + Community Centers and Unanchored Strip Centers

REGIONAL RETAIL INVENTORY BY SUB-MARKET

SUBMARKET	TOTAL BLDGS	INVENTORY (SF)	OVERALL VACANCY RATE	OVERALL CURRENT NET ABSORPTION (SF)	OVERALL YTD NET ABSORPTION (SF)	UNDER CNSTR (SF)	OVERALL AVERAGE ASKING RENT (NNN)
City	66	2,813,000	11.5%	-22,000	-135,000	-	$17.81
Illinois	440	14,101,000	8.1%	137,000	103,000	-	$12.26
Mid County	176	6,242,000	4.4%	29,000	54,000	-	$21.08
North County	290	9,589,000	12.1%	115,000	82,000	-	$12.26
South County	408	13,816,000	6.3%	-96,000	-34,000	-	$15.25
St. Charles	394	10,863,000	7.5%	-28,000	-55,000	270,000	$18.20
West County	345	11,233,000	5.8%	-96,000	-35,000	40,000	$20.36

	TOTAL BLDGS	INVENTORY (SF)	OVERALL VACANCY RATE	OVERALL CURRENT NET ABSORPTION (SF)	OVERALL YTD NET ABSORPTION (SF)	UNDER CNSTR (SF)	OVERALL AVERAGE ASKING RENT (NNN)
Neighborhood & Community Centers	1,101	44,945,000	8.5%	111,000	120,000	270,000	$14.76
Lifestyle Centers	51	1,893,000	4.3%	32,000	33,000	-	$18.61
Power/Regional Centers	267	13,334,000	4.7%	-150,000	-171,000	17,000	$15.86
Unanchored Strip Centers	700	8,482,000	8.3%	47,000	-1,000	23,000	$17.36
ST. LOUIS TOTALS	**2,119**	**68,654,000**	**7.6%**	**40,000**	**-19,000**	**310,000**	**$15.33**

Tables are not reflective of U.S. MarketBeat
Source: Costar

Source: Cushman Wakefield Marketbeat St Louis Retail Q2 2017

REGIONAL RETAIL TRENDS

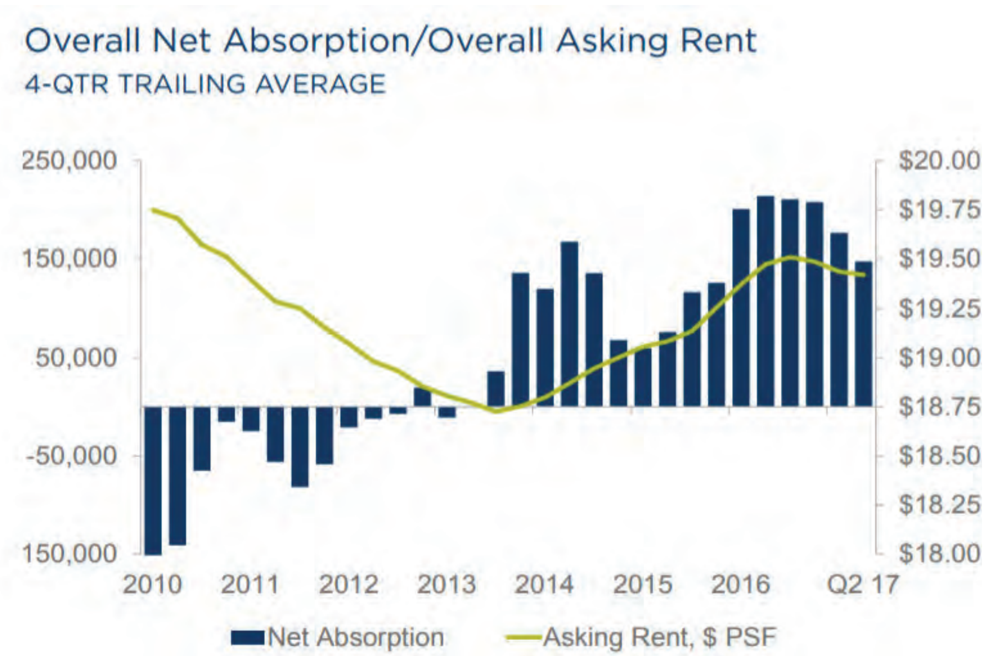
- eGrocery business is on the rise, in particular the need for locations for "last mile" delivery platforms through existing retail locations.
- Grocery stores are modernizing/upgrading facilities
- The eGrocery trend could be an opportunity for existing enterprises like the Farmers Market to market, package, and deliver goods to a broader regional audience.

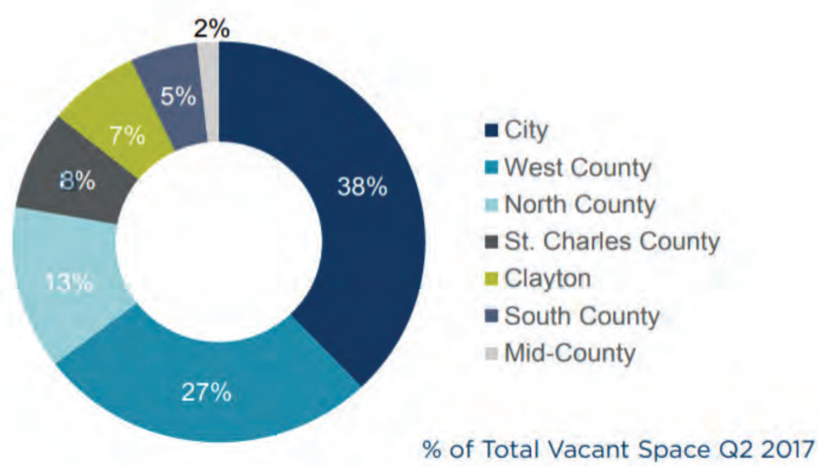
- Growth in discount high-fashion sector; "Bricks-to-Clicks", and European Fashion
- Closure of major retailers' under-performing brick-and-mortar locations
- Unique retailers Downtown like Sammy Soap are poised to continue their success, particularly those where customers typically want to experience the product in person

Source: Cushman Wakefield Marketbeat St Louis Retail Q2 2017

REGIONAL OFFICE TRENDS

- As of Q2 2017, unemployment in the St Louis region is down, as is office vacancy
- Office vacancy rate region-wide is 11.9 percent; approximately 2.45M SF of office is currently under construction
- Of all Class A space, suburban products have the lowest vacancy (6.9 percent) and have very few large blocks (over 50,000 SF) available
- West County and Clayton office growth has been particularly notable
- South County (Kirkwood's sub-market) has a very low amount of Class A space available



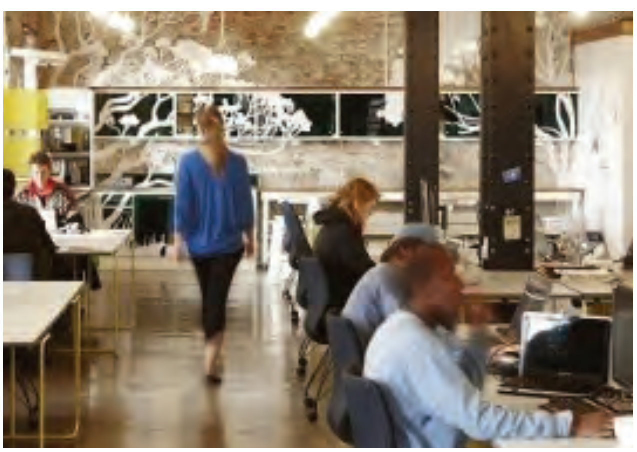


Source: Cushman Wakefield Marketbeat St Louis Retail Q2 2017

INNOVATION SPACE

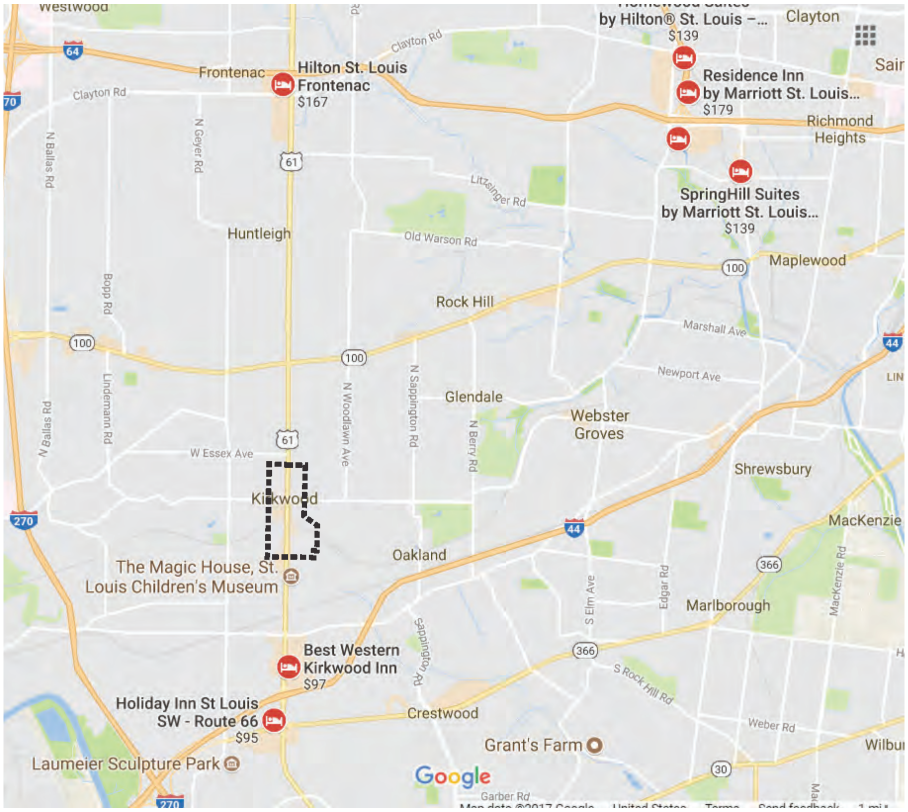
- "Buildings and interiors used in the innovation economy ranging from incubators to research institutions to innovation centers to start-up spaces." (Brookings Institute)
- Key characteristics: flexible space; ability to accommodate variety of disciplines; space that fosters collaboration; shared support services/amenities
- Co-working spaces are the fastest growing type of space in the US
- At full build-out, St Louis' Cortex Innovation Community is expected to generate $2 billion in development and 13,000 jobs

Source: Brookings Institute "Innovation spaces: The new design of work" by Julie Wagner and Dan Watch; Monday, April 10 2017; Cortex Innovation Community (cortexstl.com)



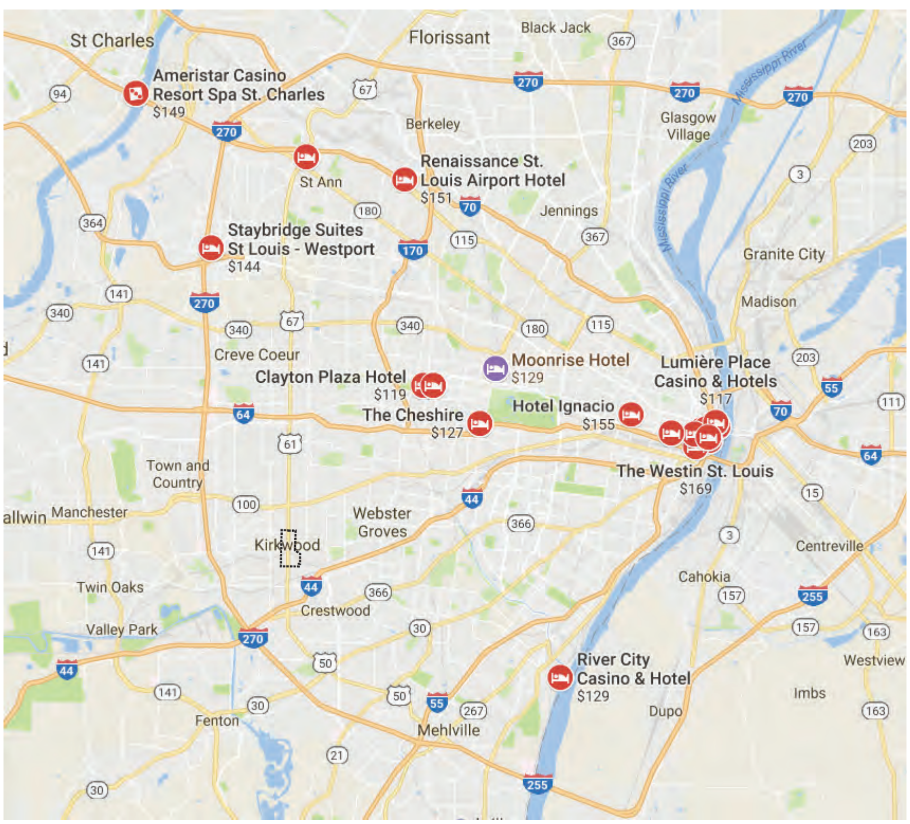
- Downtown Kirkwood currently lacks large buildings primed for rehabilitation/renovation into innovation spaces.
- Smaller scaled co-working spaces could be a fit for the area's demographics, which have a sizable amount of people working from home. These could function in vacant storefronts and even in underused parts of the Downtown area's churches as "proof of concept" projects.
- Longer term, the larger churches could have potential for adaptive reuse into unique innovation space should they ever come onto the market.

HOTELS



THREE+ STAR HOTELS

- There are no hotels within the Downtown study area
- The closest hotels (3 stars or above) are chains located at exits along major interstates
- Considering the small households and unit sizes within Downtown, there is no convenient place for residents' guests to stay



FOUR+ STAR HOTELS

- Four-star hotels are even further away than three-star hotels
- This class of hotel is almost non-existent south of I-64
- A small, four-star hotel in Downtown Kirkwood would not only serve area residents' visitors, but visitors to multiple areas of the south/west St. Louis metro

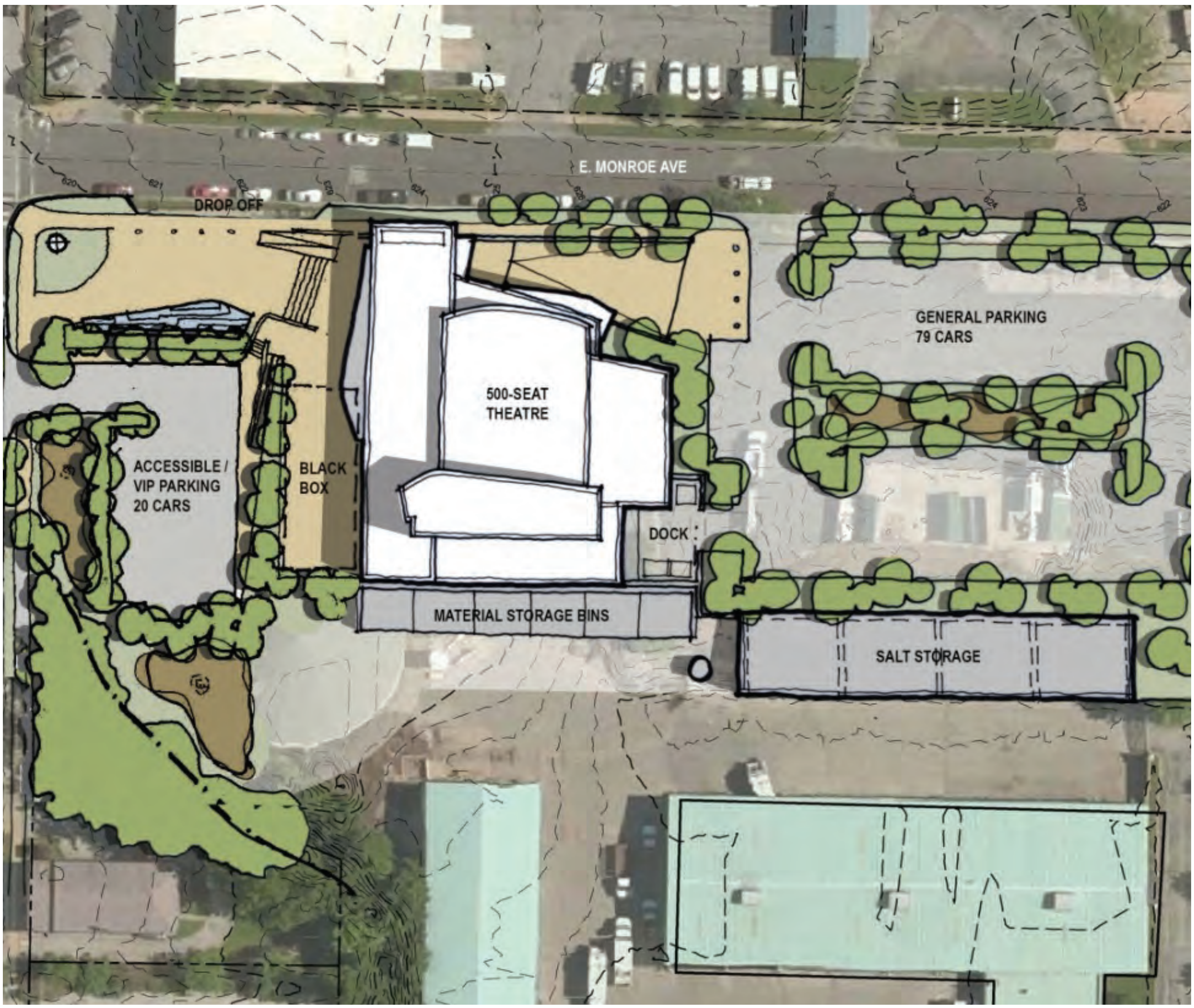
BOUTIQUE HOTELS

- Most boutique hotels in St Louis are in historic structures that have been rehabbed into hotels
- The few that are purpose-built have unique, modern designs, such as the Moonrise Hotel in the Loop
- Recent surge of boutique hotel development downtown
- The ideal location for a boutique hotel in Downtown Kirkwood is close to the train station, but there are currently few large-lot development opportunities in its immediate vicinity

return to TOC

NEW THEATER

- The construction of the Kirkwood Performing Arts Center in the southern half of the study corridor is expected to draw additional visitors to Downtown
- Although additional visitors to Downtown is positive, the demand for parking will likely outstrip what is currently planned and will further stress the parking situation



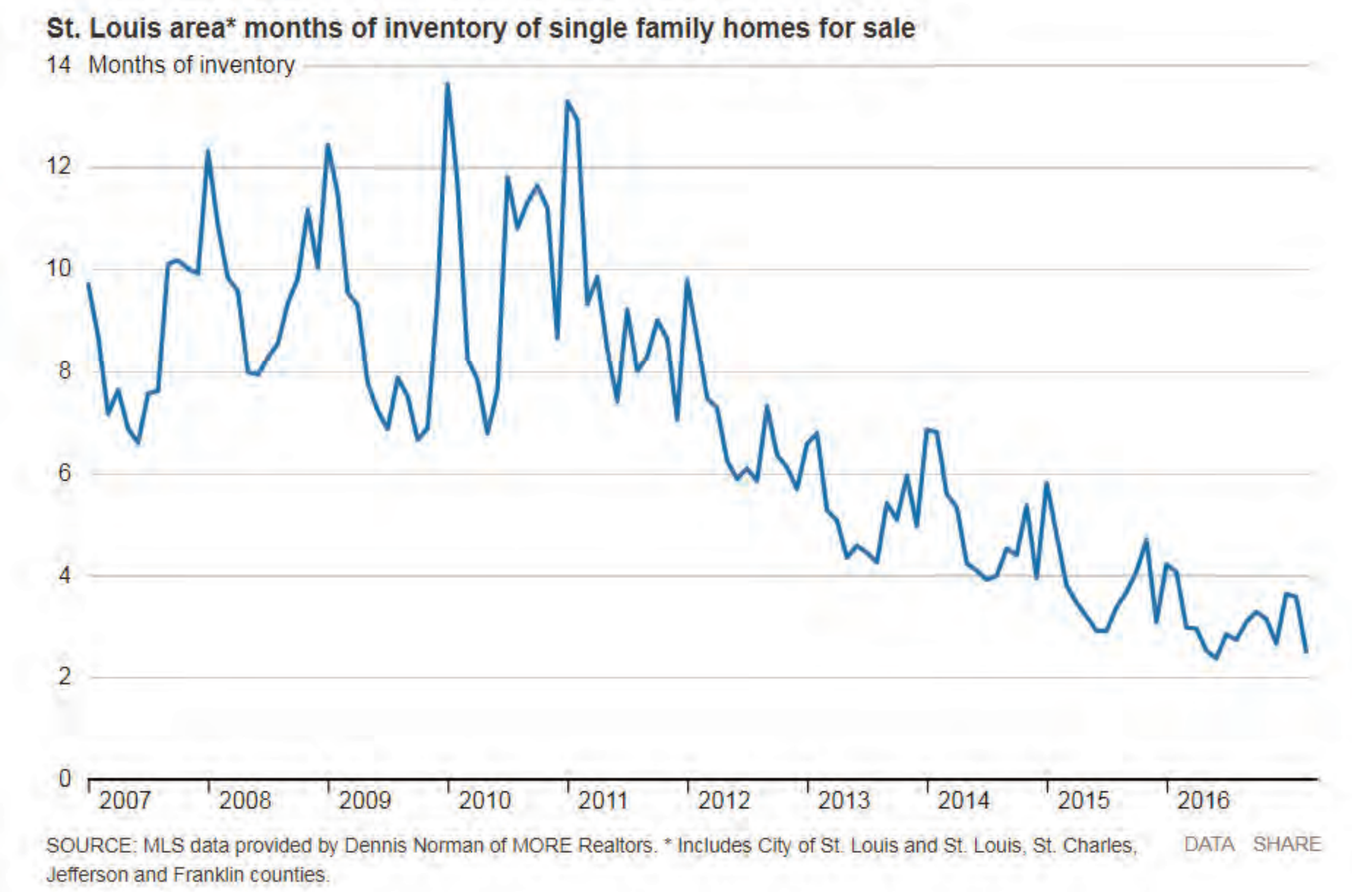
FINDINGS & OPPORTUNITIES

- Current restaurants and retail businesses are generally doing well; commercial space vacancies are low and rents are high compared to regional numbers.
- The ratio of workers to residents in Downtown Kirkwood is about 3:1; ideally, this ratio would be lower. If more residents worked Downtown, the need for parking would decrease, and the area could be lively beyond weekend nights.
- Downtown has a high percentage of low-traffic businesses/organizations, particularly health/human services. These may not represent highest and best use tenants.
- The small and sometimes irregular footprints of many existing Downtown buildings limit the type and size of retail that can be successfully accommodated.
- There is a desire for fast casual restaurants and special experiential retail opportunities that cannot be found online.
- Traditional “Main Street” buildings are primarily found in about 1/3 of the corridor; this character could be continued throughout Downtown with thoughtfully designed new development.
- The two shopping centers, the Woodbine Center and Pioneer Place, have low vacancy rates and are generally successful in providing space to regional and national chain tenants.
- There is a large number of small office buildings Downtown; although many are in good shape, in the long term these represent opportunities for smaller scaled redevelopment.
- Parking is perceived as a major issue; there are also parking lots in prime areas, such as near the train station, that are not the highest and best use of land.
- Regionally there is an uptick in retail development; trends in retail are primarily technology-based, such as the growth in eGrocery services and the “bricks-to-clicks” approach online retailers are taking. eGrocery trends could be applied to widen the customer bases of the Global Foods Market and the Farmers Market.
- Attracting a wider variety of restaurants and promoting businesses and activities that allow these residents to park once or not at all – will support stronger retail sales in the Downtown overall.
- Suburban Class-A Office Space has been doing particularly well in the St. Louis region recently; there is a lack of this type of space in Kirkwood’s sub-market. Regionally there is a shortage of Class-A office space available in very large blocks (over 50,000 SF).
- Innovation space is a nation-wide trend being played out in St Louis, such as the development of Cortex. Smaller scaled, alternative work spaces such as co-working offices, could be tested in Kirkwood by taking advantage of under-used institutional space in churches.
- There is an obvious gap in hotel accommodations in the Kirkwood area, particularly at the four-star level. Many in the community desire a boutique hotel, but this would need to be purpose-built because there is no large-scaled existing structure that could likely suit this need.
- The development of the new theater will be a positive for Downtown, but parking must be fully addressed.

return to TOC

REGIONAL HOUSING TRENDS

Regional Inventory of Single Family Homes

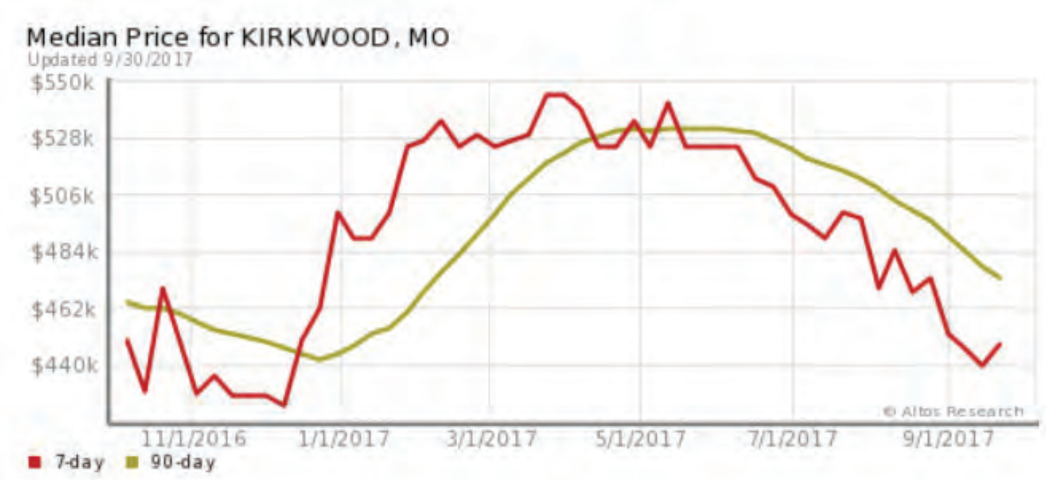


Source: Moskop, Walter "Buyers Struggle to find homes in red-hot St. Louis housing market" April 17, 2017, St Louis Post-Dispatch online

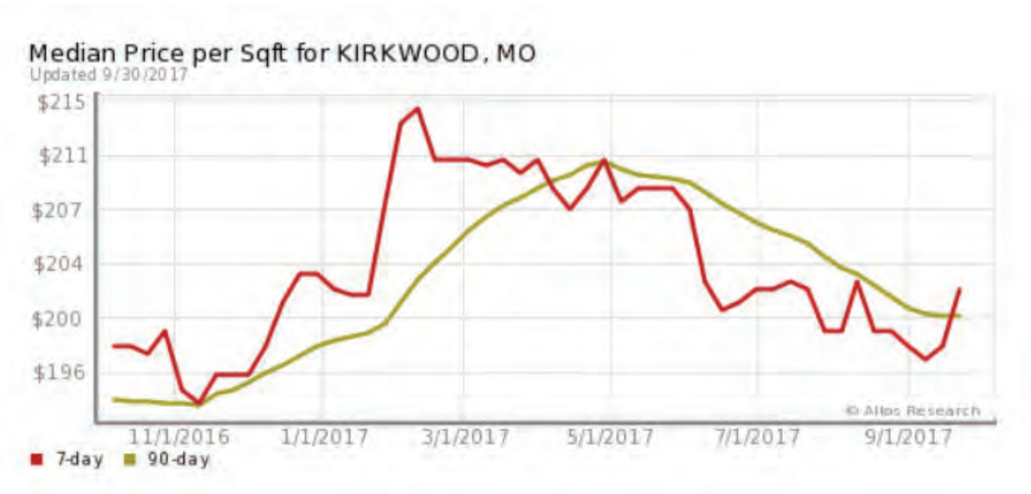
- Regionally, the housing market is hot with a low inventory of single family homes for sale
- Most developers within the more urbanized parts of the region are focused on developing housing as part of large, mixed-use projects

KIRKWOOD HOUSING TRENDS

Median Price in Kirkwood



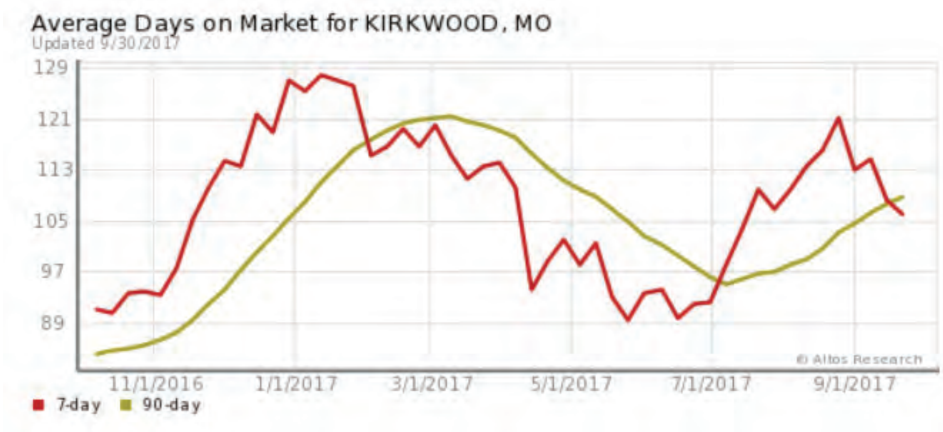
Median Price per Square Foot in Kirkwood



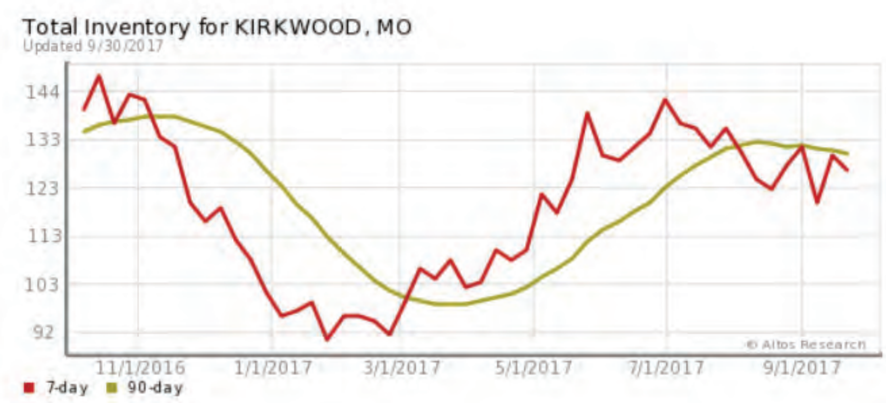
Source: Altos Research

- As of September 24, 2017, the median single family home price was $474,450
- Median price per square foot was $200

Average Days on Market in Kirkwood



Total Inventory in Kirkwood



Source: Altos Research

- The average property in Kirkwood as of September 24, 2017 had been on the market for 109 days
- There were 131 properties on the market (as of September 24)

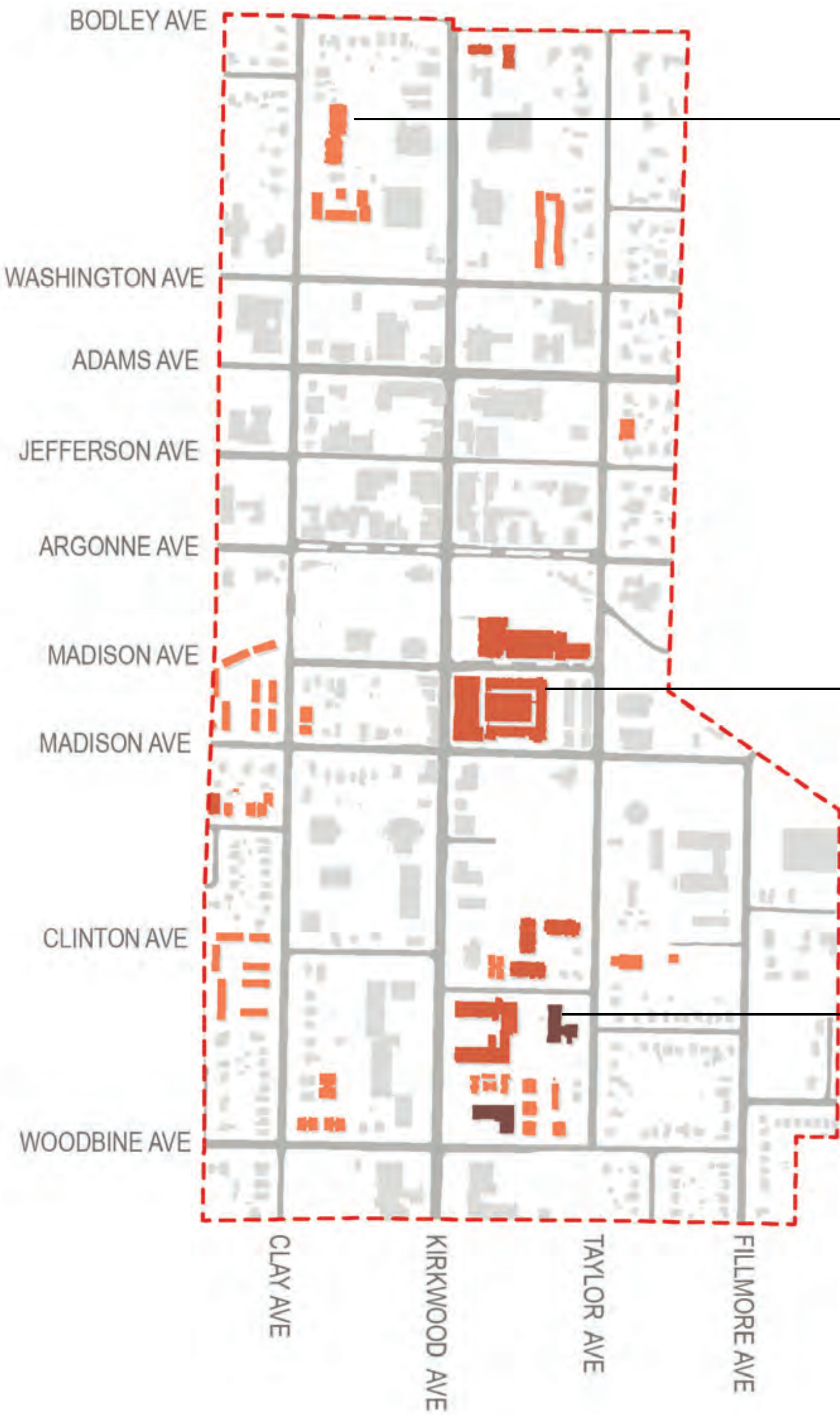
DOWNTOWN KIRKWOOD TRENDS

- As of September, 2017, there were approximately 40 homes that had recently (since 2014) sold in Downtown Kirkwood:
  - 3 Single-Family
  - 3 Townhouses
  - 34 Multi-Family
- On average, each spent about 75 days on the market, though most were on the market for 2 months or less
- The average year the structure was built was 1990 (median was 2004)
- Average price per square foot was $174 (median was $161)

Source: Zillow.com

return to TOC

HOUSING TYPOLOGY I



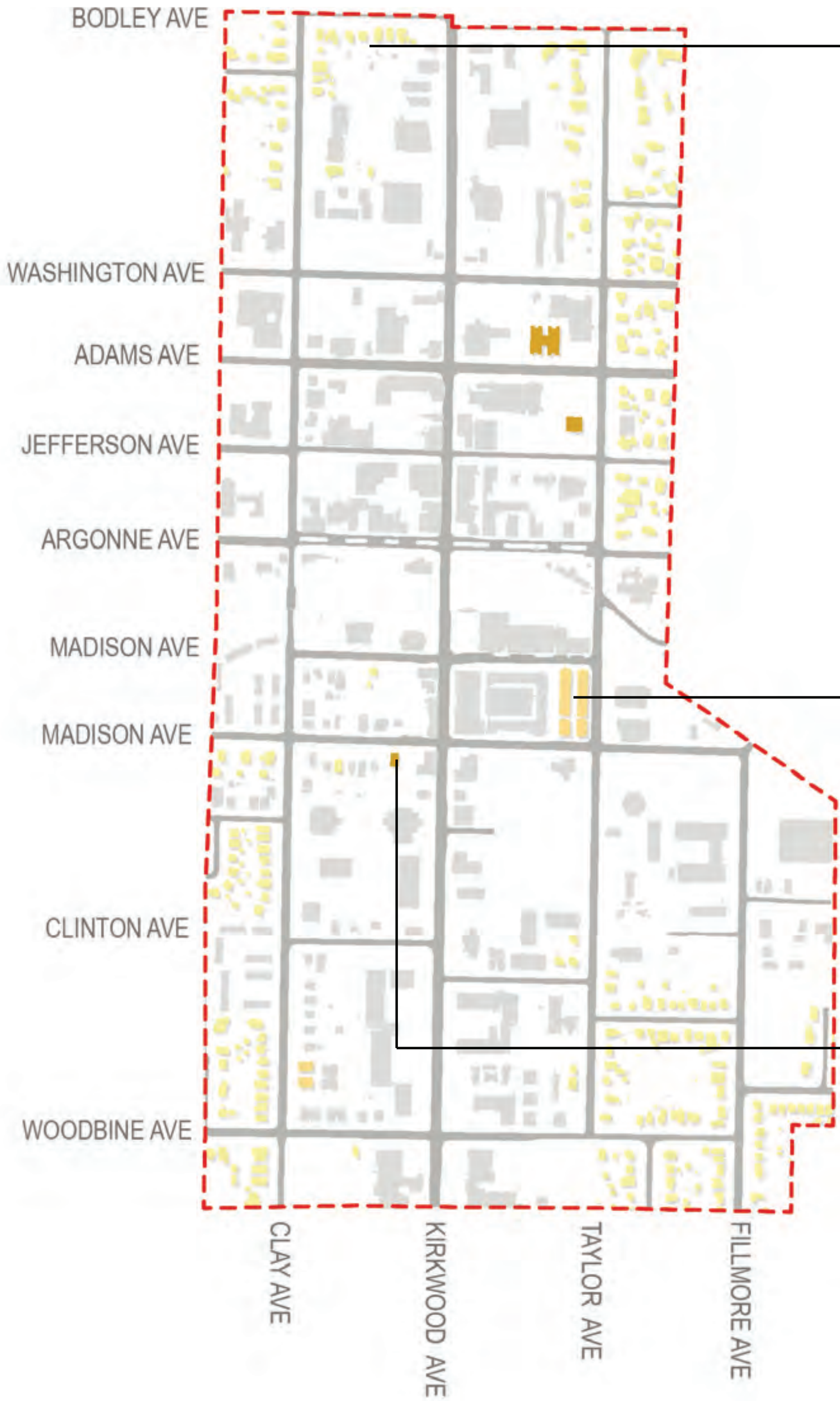
- Garden-Style Units: Low-rise, usually 1- or 2-story apartments/condos building built between 1960 and 1980, few amenities
- Multi-Family Mid-Rise: Newer construction, 3-4 stories, higher quality, more amenities
- Senior Mid-Rise: Mid-rise (3+stories) senior “towers” at the south end of the study area, built before 1990s

STATION PLAZA

- Approximately 95 percent occupied
- One bed/one bath units:
  - 727-864 SF
  - $1,200-$1,425
- Two bed/two bath units:
  - 1,166-1,473 SF
  - $1,775-$2,325
- Ground-floor commercial space not on plaza has largely been unsuccessful

Source: Kirkwood Station Plaza Apartments Leasing Office

HOUSING TYPOLOGY II



- Single-Family Detached: Single family, mostly built pre 1945 on edges of study area
- Townhouses: Recently constructed, high-end single-family attached homes
- Small Multi-Family Buildings: Primarily older (pre 1960s), stand-alone buildings with approximately 6 to 30 units

CURRENT DOWNTOWN CUSTOMERS

~50% High End, Owners	~50% Older, Value Oriented
• **Affluent empty-nesters**; college-educated; on the cusp of retirement; as consumers, quality-focused; urbane lifestyle but prefer to live outside the hustle and bustle; primarily couples. *Housing type: single family, townhomes (own)* • **Urban professionals** (married couples and singles), high education and high earnings in white collar jobs *Housing type: high-end condos and single-family, townhomes (own)*	• **Active Adults and Seniors**; singles and married couples who are nearing the end of their careers/are retired, interested in active lifestyles; somewhat affluent *Housing type: townhomes, multi-family (own)* • **Frugal Retirees** (married couples and singles), some education, lower affluence, more oriented towards home-based activity. *Housing type: multi-family (rent)* • **Singles on a Budget**. Single people who are just starting careers or winding down, lower income: *Housing type: multi-family (rent)*

Source: ESRI Business Analyst 2017

APPROVED PROJECTS

- Only significant residential project underway is The Madison:
  - 12 condo units
  - $500K-$800K
  - 3.5 stories
- Non-residential projects approved/underway:
  - Sugar Shack addition
  - Kirkwood Performing Arts Center

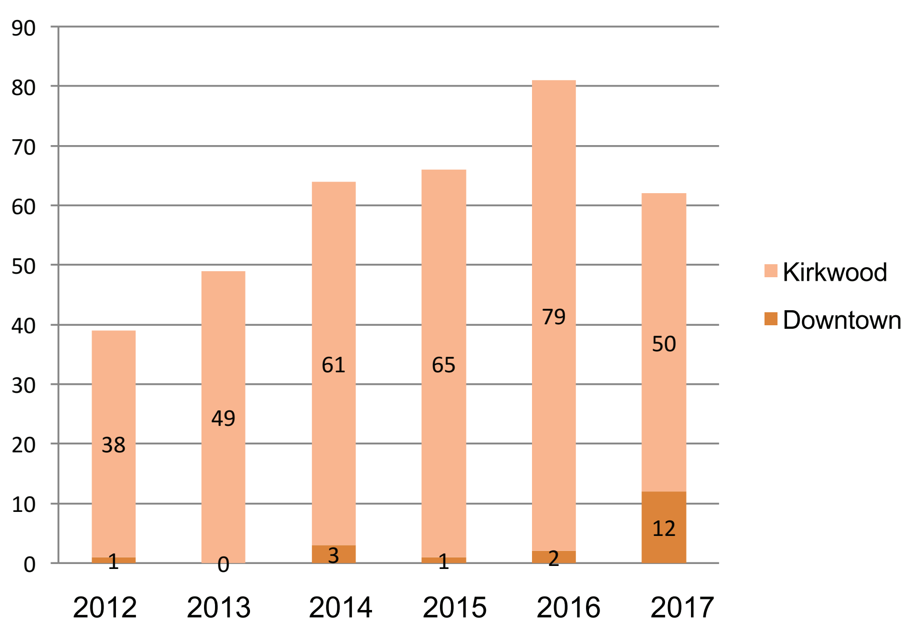
Source: City of Kirkwood

HOUSING FORECAST

Household Growth Based on Recent Growth Rates

HOUSEHOLDS	St Louis MSA	Kirkwood	Downtown
2000	1,039,873	11,770	819
2010	1,109,665	11,894	869
2017 Estimate	1,132,171	12,246	889
2022 Forecast	1,147,486	12,445	901
2017-2022 annual rate	0.27%	0.32%	0.27%
2017-2022 new households	15,315	199	12
Approx. new households per year	3,107	40	2.4

Number of New Residential Units Permitted in Kirkwood, 2012-2017



Source: ESRI Business Analyst 2017,
City of Kirkwood; HUD SOCDS Permitting Database

- If growth continues its existing pattern Downtown Kirkwood is expected to only gain 12 new households between 2017 and 2022. This is exactly the same number of units being built in The Madison.
- **This low amount of growth likely reflects the lack of available housing product as opposed to demand for living in Downtown Kirkwood.**
- Between 2022 and 2040, another 42 households will be added to Downtown.
- Building permit data for the City of Kirkwood bears similar numbers: since 2012, the annual number of new residences built Downtown ranged from 0 to 3; in 2017, this number jumped to 12 with the development of The Madison.
- In the past five years, Downtown Kirkwood on average captured about 5.5 percent of all of Kirkwood's new residential builds.

2012-2017 New Residential Permits

	2012	2013	2014	2015	2016	2017	TOTAL	AVG.
St Louis County	809	768	1,062	2,234	1,635	1,043	7,551	1,259
Kirkwood	38	49	61	65	79	52	344	57
Kirkwood share of County	4.70%	6.38%	5.74%	2.91%	4.83%	4.95%		4.92%
Downtown	1	0	3	1	2	12	19	3
Downtown share of Kirkwood	2.63%	0.00%	4.92%	1.54%	2.53%	23.26%		5.81%

Scenario 1: Trend Line 2018-2022

	2018	2019	2020	2021	2022	TOTAL	AVERAGE
St Louis County	1,072	1,101	1,130	1,161	1,192	5,655	1,131
Kirkwood	53	55	57	59	60	284	57
Kirkwood share of County	4.97%	4.99%	5.02%	5.04%	5.07%		5.02%
Downtown	2	13	2	13	2	32	6
Downtown share of Kirkwood	3.76%	23.66%	3.53%	22.21%	3.31%		11.27%

- On average, the City of Kirkwood captures about 5 percent of St. Louis County new residential builds. Downtown captures about 6 percent of all City of Kirkwood new residential builds.
- If this rate of capture continues, and the recent pattern of Downtown development continues or increases a small amount, Downtown could expect a few single-family residence builds per year (primarily tear-downs) and one small multi-family project every other year or so.

Source: City of Kirkwood; HUD SOCDS Permitting Database

- This modest growth is not a foregone conclusion. The best way to capture new households is to build upon the positive characteristics of Kirkwood—its Main Street character, safety, walkability, and strong sense of community—and encourage the development of housing products that are in high-demand within the region such as townhouses and high-amenity multi-family buildings.
- There is also an opportunity to address the “missing middle” housing: infill, 6-12 unit projects would be attractive to smaller, entrepreneurial developers and meet a clear need for housing in the area.

return to TOC

HOUSING FORECAST: CAPTURING MORE GROWTH

Scenario 2: Higher Capture from County

	2018	2019	2020	2021	2022	TOTAL	AVERAGE
St Louis County	1,072	1,101	1,130	1,161	1,192	5,655	1,131
Kirkwood	80	83	85	87	89	424	85
Kirkwood share of County	7.50%	7.50%	7.50%	7.50%	7.50%		7.50%
Downtown	27	28	28	29	29	140	28
Downtown share of Kirkwood	33.74%	33.42%	33.10%	32.77%	32.44%		33.09%

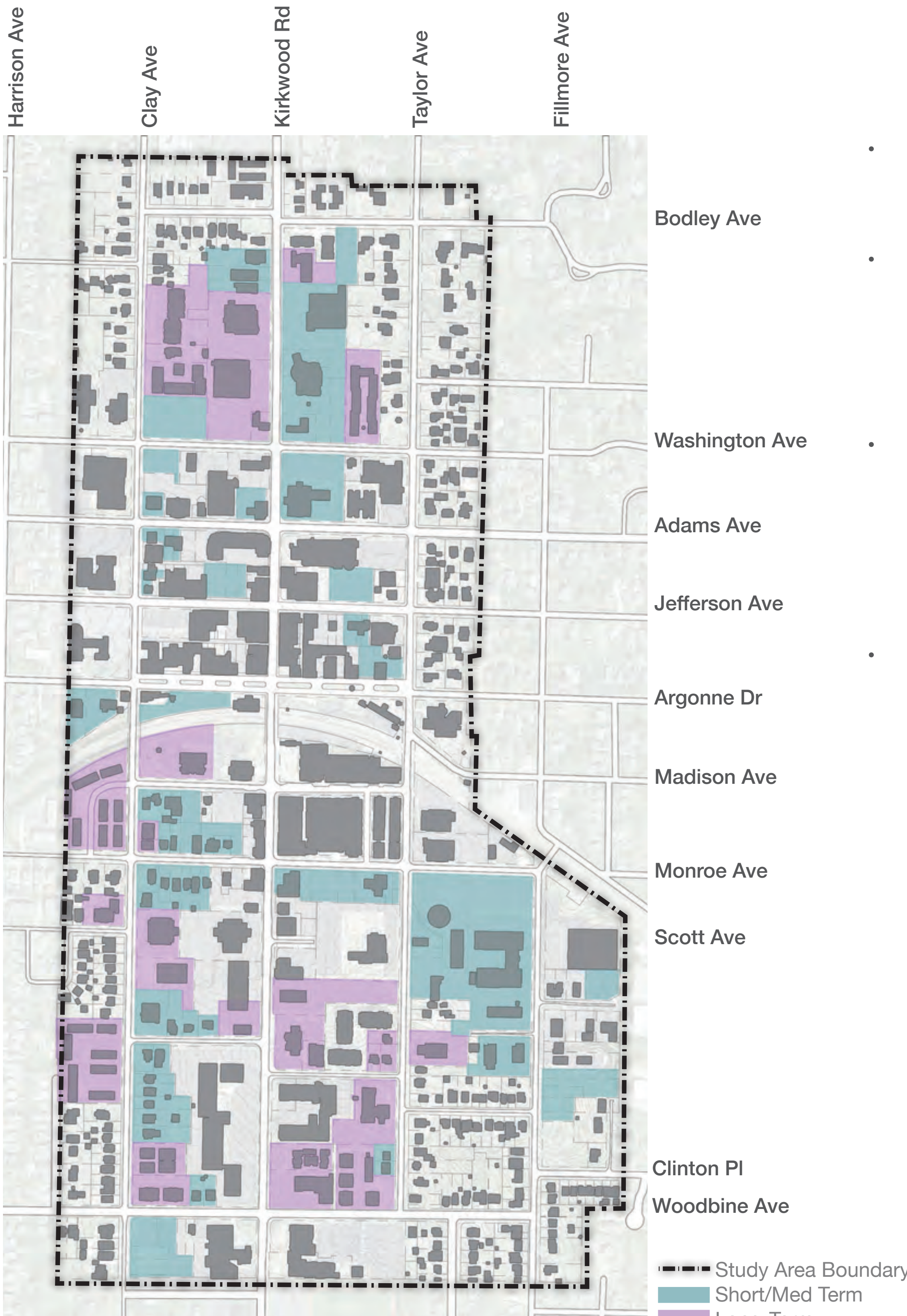
Scenario 3: Higher Capture from County and City

	2018	2019	2020	2021	2022	TOTAL	AVERAGE
St Louis County	1,072	1,101	1,130	1,161	1,192	5,655	1,131
Kirkwood	80	83	85	87	89	424	85
Kirkwood share of County	7.50%	7.50%	7.50%	7.50%	7.50%		7.50%
Downtown	40	41	42	44	45	212	42
Downtown share of Kirkwood	50.00%	50.00%	50.00%	50.00%	50.00%		50.00%

- If high-demand housing product was built in Downtown Kirkwood, it's feasible that the City of Kirkwood's capture rate could go up from 5 percent to about 7.5 percent of all county new residential builds.
- Assuming Downtown nets this new capture, this would average out to about 27-29 new residential units per year 2018-2022, which would be about 33 percent of all Kirkwood's new residential builds. (Scenario 2)
- A more aggressive scenario would be that Downtown captures a higher percentage new growth in the county and a greater percentage (50 percent) of other Kirkwood new residential builds (Scenario 3).

Source: City of Kirkwood; HUD SOCDS Permitting Database

CAPACITY



- Downtown Kirkwood has the capacity to accommodate growth via multiple redevelopment opportunities.
- The map at left is a high-level, "windshield" look at parcels that have redevelopment potential based on their current uses and conditions. It does not account for ownership or willingness to sell.
- Short- to medium-term (0-10 year) redevelopment opportunities include parcels that are currently vacant, surface parking, industrial, older suburban-style buildings, or are smaller/older commercial buildings. These total 39 acres.
- Longer term (10+ years) opportunities are garden apartment communities that will near the end of their built lives and newer suburban-style buildings current in good condition. These total 33 acres.

RECOMMENDED HOUSING TYPES

- Smaller multi-family buildings will help maintain the “Main Street” character of Kirkwood, and appeal to households of multiple ages.
- Depending on the exact location within the corridor and the type of housing product, target densities of 15 to 25 du/acre are recommended.
- Townhouses were commonly noted as highly desired in the area.
- Cottage Courts are ideal for small families and empty nesters who don’t need a lot of space, but will want a house with outdoor space.
- Although maintaining Kirkwood’s traditional architectural character will be important, modern styles will likely be more successful at attracting younger households to the area.

FINDINGS & OPPORTUNITIES

- The housing market region-wide is strong, and homes in the study area have averaged only 2.5 months on the market in the past few years.
- Although there is a substantial amount of housing Downtown, much of it is reserved for seniors. This housing is typically older (built prior to 1990), and is unlikely to meet the needs of the aging boomers, who are trending towards being more active and demanding greater amenities.
- There is a lack of new, “missing middle” multi-family housing in the corridor. “Missing middle” units are primarily in garden-style complexes built in the 1970s and 1980s. Although these are generally well maintained, they are aging and will be reaching the end of their usable lives in the next 10-20 years. These older garden apartment complexes represent long-term redevelopment opportunities.
- Historic growth rates predict 12 new households are forecasted for Downtown between 2017 and 2022, but there is an opportunity to capture additional growth and development by offering regionally scarce housing products.
- There are few housing options for affluent empty-nesters, which will be a growing demographic in the area. Housing types suitable for this type of household include townhouses and small court-style single-family homes.
- Millennials and other young, affluent households are primarily choosing other communities. If Downtown Kirkwood wants to attract more of this demographic, a more modern, amenity-laden type of multi-family housing will need to be developed.
- Downtown Kirkwood has an opportunity to capture additional growth by providing “missing middle” housing in smaller multi-family projects that enhance the area’s walkability and offer enough amenities to be appealing to today’s consumer.

- Remove code and procedural barriers to developing smaller multi-family housing projects that will address demand for “missing middle” homes and townhouses. These include:
    - Permitting additional building types such as small multi-family (up to a maximum 6 units) within R5, irrespective of density or number of units.
    - Reduce minimum lot widths to allow for right-sizing of lots for small multi-family building types;
    - Reduce side yard requirements;
    - Increase lot coverage; and
    - Reduce parking requirements.
- Actively recruit unique retail to the corridor, particularly businesses that offer special shopping experiences and/or successful integration of eCommerce into their business models.
- Attract more non-chain, fast casual restaurants where people can grab a quick meal without table service.
- Address parking from a holistic perspective, and consider transitioning surface lots in prime areas into higher and better uses.
- Encourage developments that integrate the existing character of Kirkwood with more modern elements that are attractive to younger consumers.
- Test the potential market for co-working space in Kirkwood by doing a pilot project in a currently under-used space.
- Commission an in-depth retail market study.

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PARKING STUDY

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Parking, both on and off street, can play a major role in the success of downtown development and redevelopment activities. Parking serves as a means of permitting users and patrons of businesses, public venues, and office spaces the ability of quick and easy access to multiple destinations. Parking demands can vary widely based on the mix of uses and activities that are occurring at any one point in time. Appropriate parking solutions, or lack thereof, can have many implications including economic health of a downtown area, air quality, traffic congestion, and safety issues.

The City of Kirkwood is undertaking an update to the Downtown Kirkwood Master Plan. Part of the update to the Downtown Kirkwood Master Plan includes a parking study. The purpose of this study is to conduct the analysis of the current and future parking supply and demand to determine the sufficiency of the parking system through an inventory of the existing system, the identification of deficiencies, and the identification of possible improvement solutions. This memo includes the evaluation of the existing parking system and the identification of recommended possible improvements.

STUDY AREA

The study area encompasses an approximate 20 block area within Downtown Kirkwood bounded approximately by the following streets:

- Bodley Avenue to the north;
- Taylor Avenue and Fillmore Avenue to the east;
- Woodbine Avenue to the south; and
- Clay Avenue to the west.

The study area is approximately one mile long from the south to the north and approximately a quarter mile wide from the east to the west. The study area contains many important community points of interest including City Hall, the Kirkwood Train Station, the Kirkwood Farmer's Market, Kirkwood Station Plaza, the Magic House, and multiple restaurants, shops, offices, churches, and industrial buildings. The study area also contains some undeveloped, underutilized, and vacant lots.

METHODOLOGY

The following methodology was used in the development of this parking study:

- Assemble Existing Conditions Information. This task included the collection of existing parking information including:
  - Location of on-street parking locations including restrictions, if any
  - Location of no-parking zones
  - Location of off-street parking by property parcel and restrictions, if any
  - Number of available off-street parking spaces, including accessible spaces
  - Cost of parking, if any, and
  - Off-street parking occupancy during typical weekday and weekend
- Conduct an analysis of on and off-street parking areas. This task included the review of all on and off-street parking spaces both during weekday during business hours and weekend evening hours. Inventory and occupancy levels were noted as were any parking restrictions that may be in place that affect parking.
- Input from the city and residents was collected at the Downtown Kirkwood Master Plan Charrette held during the week of October 16, 2017.
- Following the input was received, and recommendations have been provided in this section.

This section serves to document the existing parking characteristics of the Downtown Kirkwood Study Area. These characteristics will provide a foundation for the analysis of current parking supply and needs for the Study Area. The location and inventory of existing off-street and on-street spaces were documented and the occupancy of each was observed. Each off-street and on-street parking area was assigned a unique ID number for the purposes of this study. The type and parking restrictions for on-street parking were also documented.

PARKING INVENTORY

A weekday physical inventory was conducted to count all off-street parking spaces in the study area. Inventory counts were classified by:

- On or Off-Street Parking;
- Surface or Garage;
- Public or Private; and
- Restricted or Non-Restricted.

Parking inventory counts identified a total of 5,820 off-street spaces in the 20 block study area.

This count includes 1,200 public spaces, 2,665 private unrestricted spaces, and 1,919 private restricted spaces. The average total demand for these spaces during the day is approximately 2,447 spaces and approximately 1,953 spaces during the evening. Therefore, there is an approximate surplus of 3,373 spaces during the day and 3,867 spaces during the evening. The following Figures identify the locations of off and on-street parking spaces, respectively. Actual parking counts are located on the following pages.

The majority of the parking supply in the Study Area is off-street parking. These spaces are entirely located on surface lots with the exception of two parking garages: both located at Kirkwood Station Plaza with one north of Madison Avenue and the other south of Madison Avenue. There is opportunity for the redevelopment of some of the surface parking lots that may reduce the number of surface lots in the future.

On-street spaces are a mix of predominately parallel parking spaces (parallel to the curb or travel lane) with a small number of locations where diagonal parking is established (spaces are angled to the curb, travel lane, or building). None of the on-street spaces are metered. Following recommendations of this study during the Charrette the city has striped parallel on-street parking spaces in addition to the diagonal on-street parking spaces. Some of the on-street and off-street parking is restricted to 2 hours for part of the day.

The on-street parking space count included 374 striped parking spaces and an estimated 638 not striped parking spaces. Estimated demand for these spaces during the day is approximately 406 spaces. Therefore, there is an approximate surplus of 606 on-street spaces during the day.

The following Figures identify the location of on and off-street parking spaces within the Study Area.

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EXISTING PARKING UTILIZATION & OCCUPANCY

Parking supply typically operates at peak efficiency when parking occupancy is no greater than 90% of the supply. When parking occupancy exceeds this level, patrons will typically experience delays and frustration, or give up all together, while searching for a space. Therefore, the perception of the parking supply may be seen as inadequate even though there are spaces available in the parking system although the space may not be as close to their destination as desired. There are several factors that affect parking utilization and perception including:

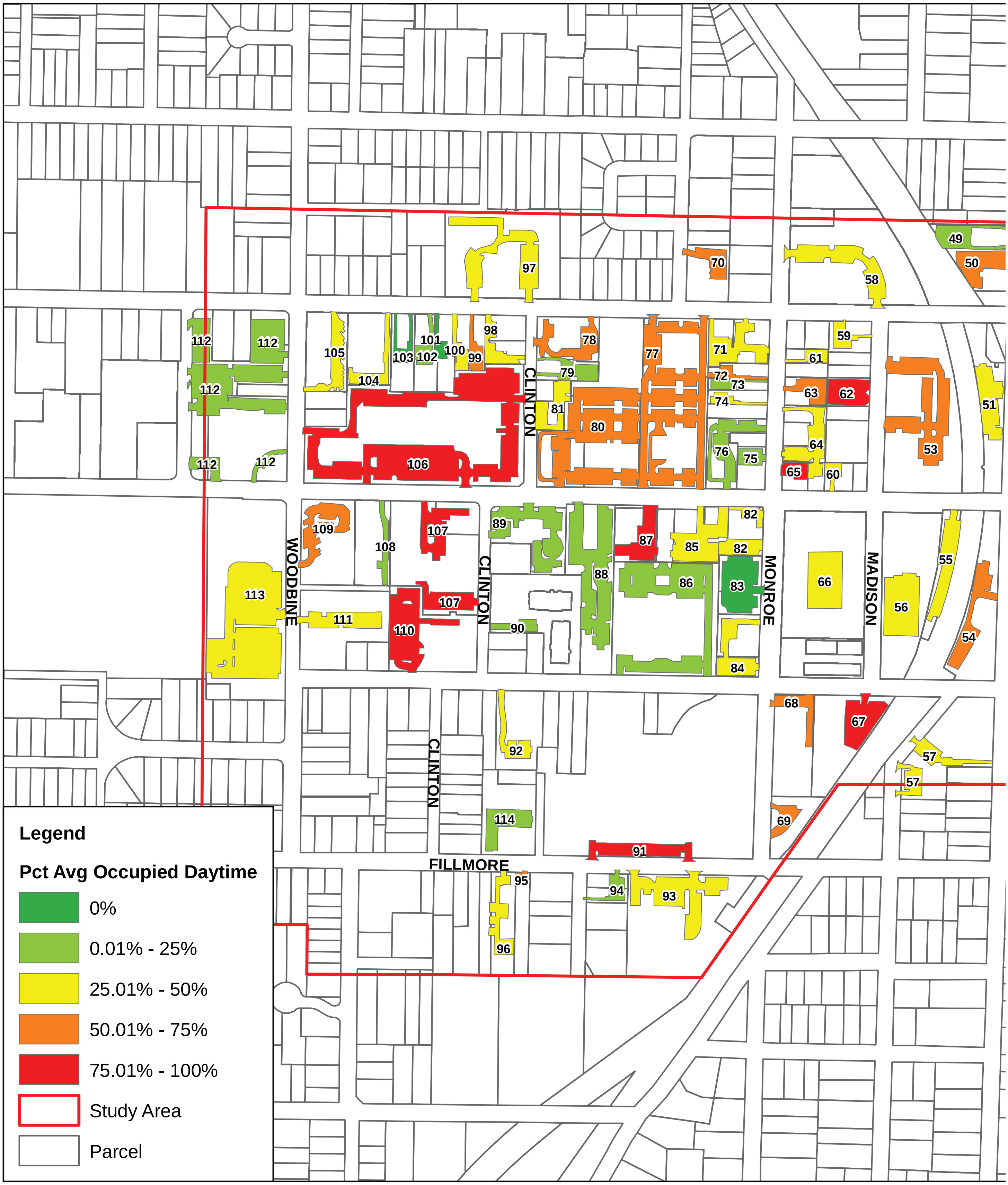
- **Capacity of the Parking System** – Large, scattered surface lots operate less efficiently than a more compact facility, such as a parking garage or structure, which can offer large amounts of consolidated parking in strategic areas. Furthermore, it is easier to find available spaces in a centralized parking garage than in a widespread parking system spanning several blocks.
- **Type of users** – Monthly or regular parking patrons (e.g. business owners and employees of downtown businesses) can typically find available spaces more efficiently than the infrequent visitor because such patrons are familiar with the layout of the parking system and typically know where the spaces will be available when they are parking. Furthermore, if monthly or regular parking patrons are paying monthly or annual fees to park, they know that there will be space available for them in the lot or garage for which they are paying. In downtown Kirkwood however, a majority off-street parking is free unless such lot is reserved for public vehicle use or is a fenced private lot.
- **On-street versus off-street parking** – On-street parking spaces are almost always less efficient than off-street spaces due to the time it takes patrons to find the last few vacant spaces in the system and the effort it takes to parallel park causing traffic delay and safety issues. At a national level, on-street spaces are typically not striped or are signed in a confusing manner, thereby leading to lost spaces and frustrated parking patrons. In the downtown Kirkwood Study Area, on-street parallel parking is not striped nor is it metered, leading to potential inefficiency in parking vehicles on the street. In a few instances, there is signage limiting on-street parking hours to 2-hour parking limits in a few select locations, most notably in the central part of the Study Area. Enforcement of this parking restriction is unknown.
- **Special Events** – Special events can have a dramatic impact on the on and off-street parking system. These events have the characteristic of drawing large amounts of people (sporting events, performances, conventions, public festivals, etc.) over a relatively short period of time into a specific location.

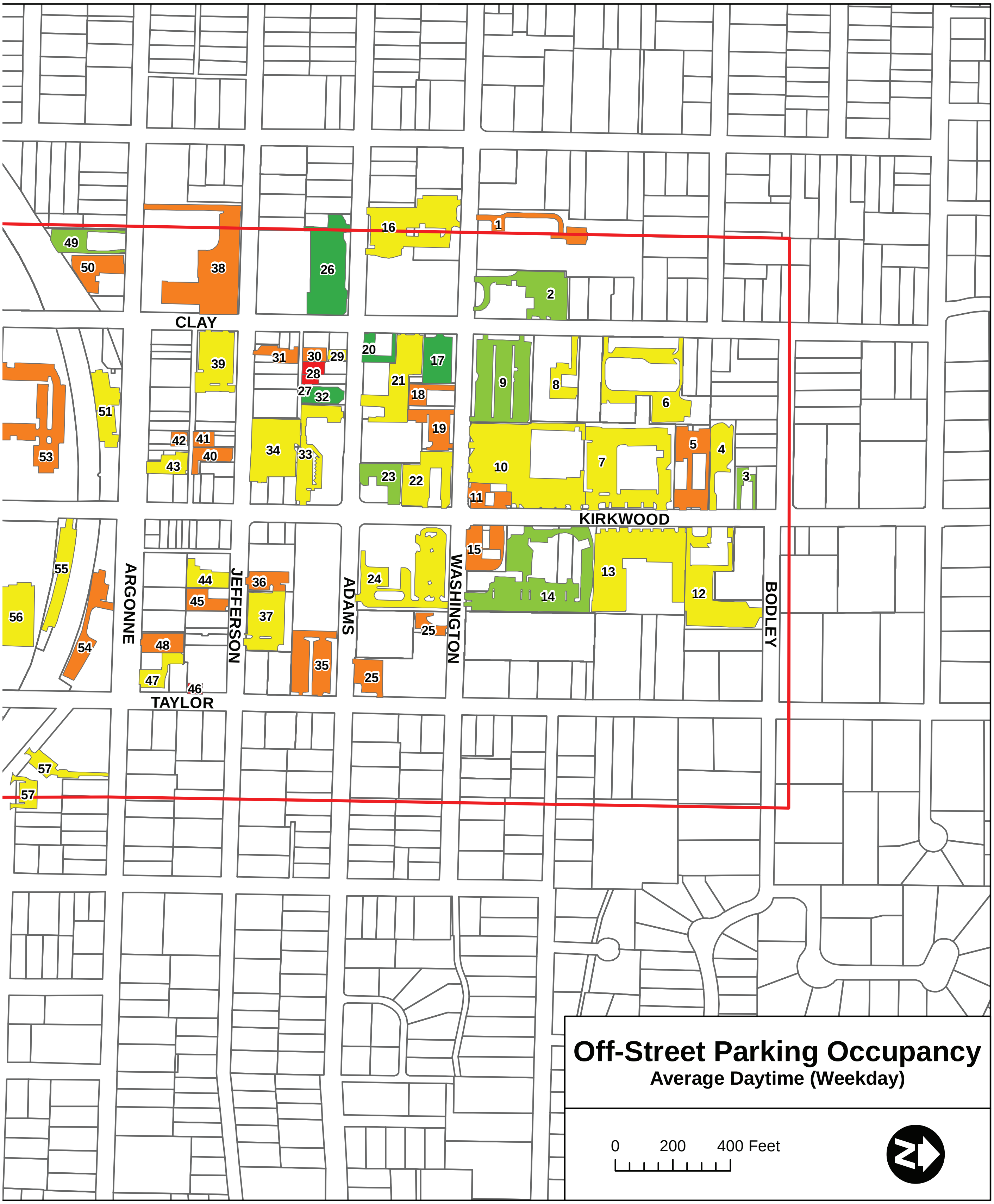
To identify the parking patterns in the study area, all off-street parking spaces located in the study area were observed for occupancy. Occupancy counts were taken for all off-street parking spaces on September 12th, 2017, September 29th, November 8th, and November 11th, 2017. On September 12th and November 8th the counts were conducted between 8:00 a.m. and 4:00 p.m. to represent a typical weekday. On September 29th and November 11th the counts were conducted between 5:00 p.m. and 8:00 p.m. to represent a typical evening. These dates were representative of a typical weekday and weekend evening in downtown Kirkwood, exclusive of holiday or special event occurrences. The goal of these counts were to identify a typical representation of the parking utilization during a working day and weekend evening in the Study Area.

The following Figures identify the utilization of off-street parking areas during a typical weekday and typical weekend evening. Appendix A identifies the utilization rates for both on and off-street parking spaces.

DAYTIME OFF-STREET PARKING OCCUPANCY

PARKING STUDY




Off-Street Parking Occupancy
Average Daytime (Weekday)
0 200 400 Feet
CLAY
KIRKWOOD
TAYLOR
ARGONNE
JEFFERSON
ADAMS
WASHINGTON
BODLEY
1
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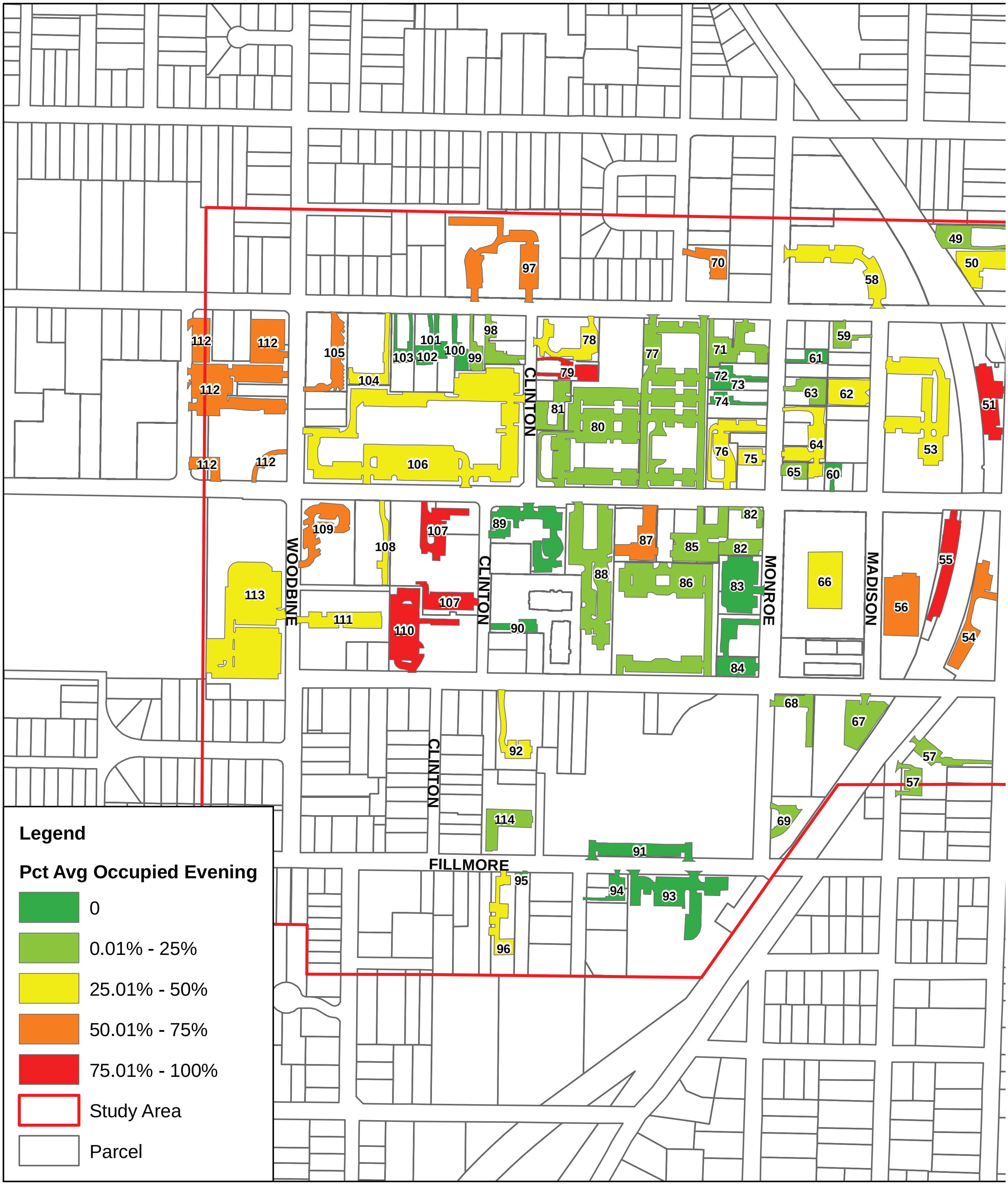
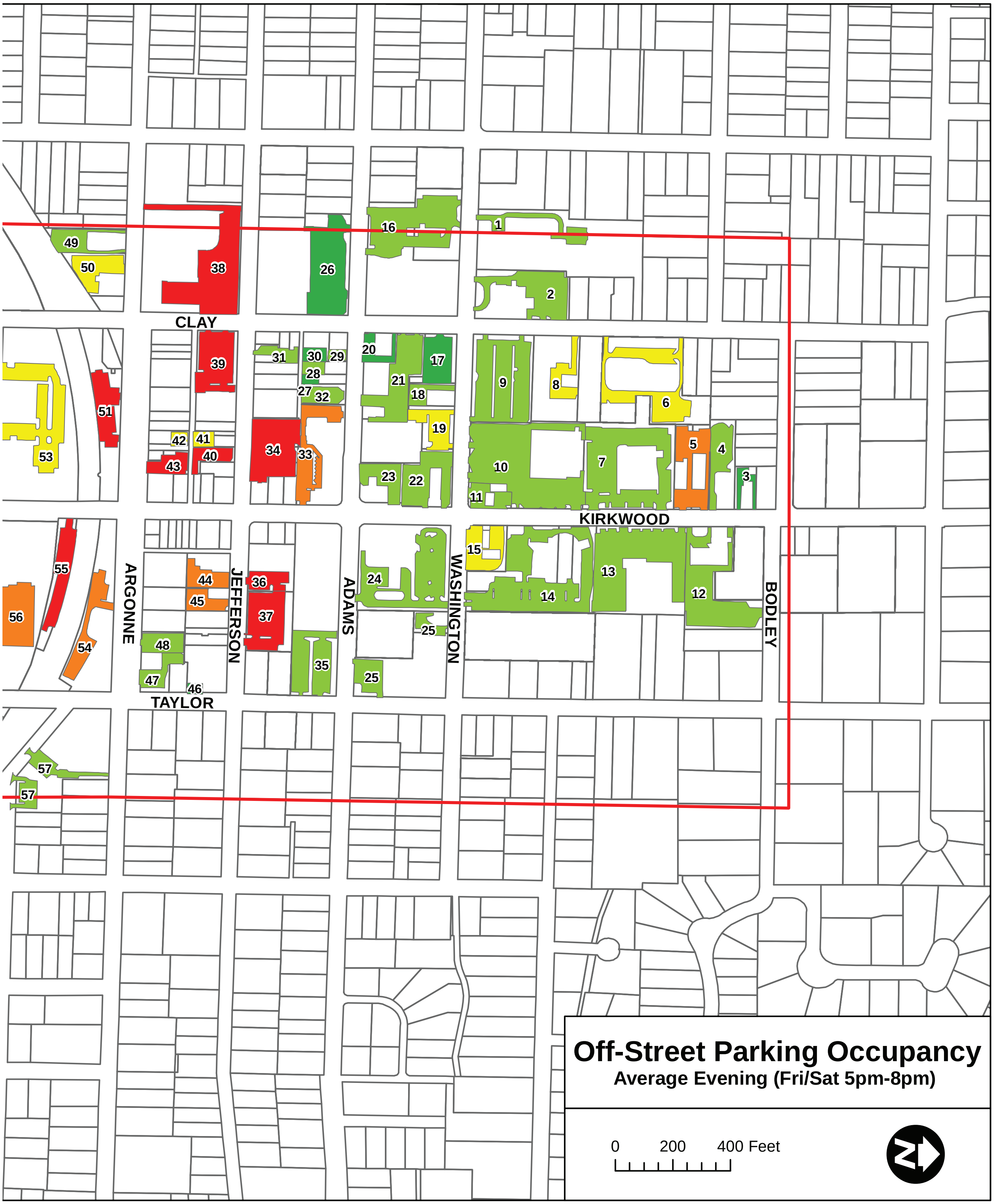
EVENING OFF-STREET PARKING CAPACITY

PARKING STUDY

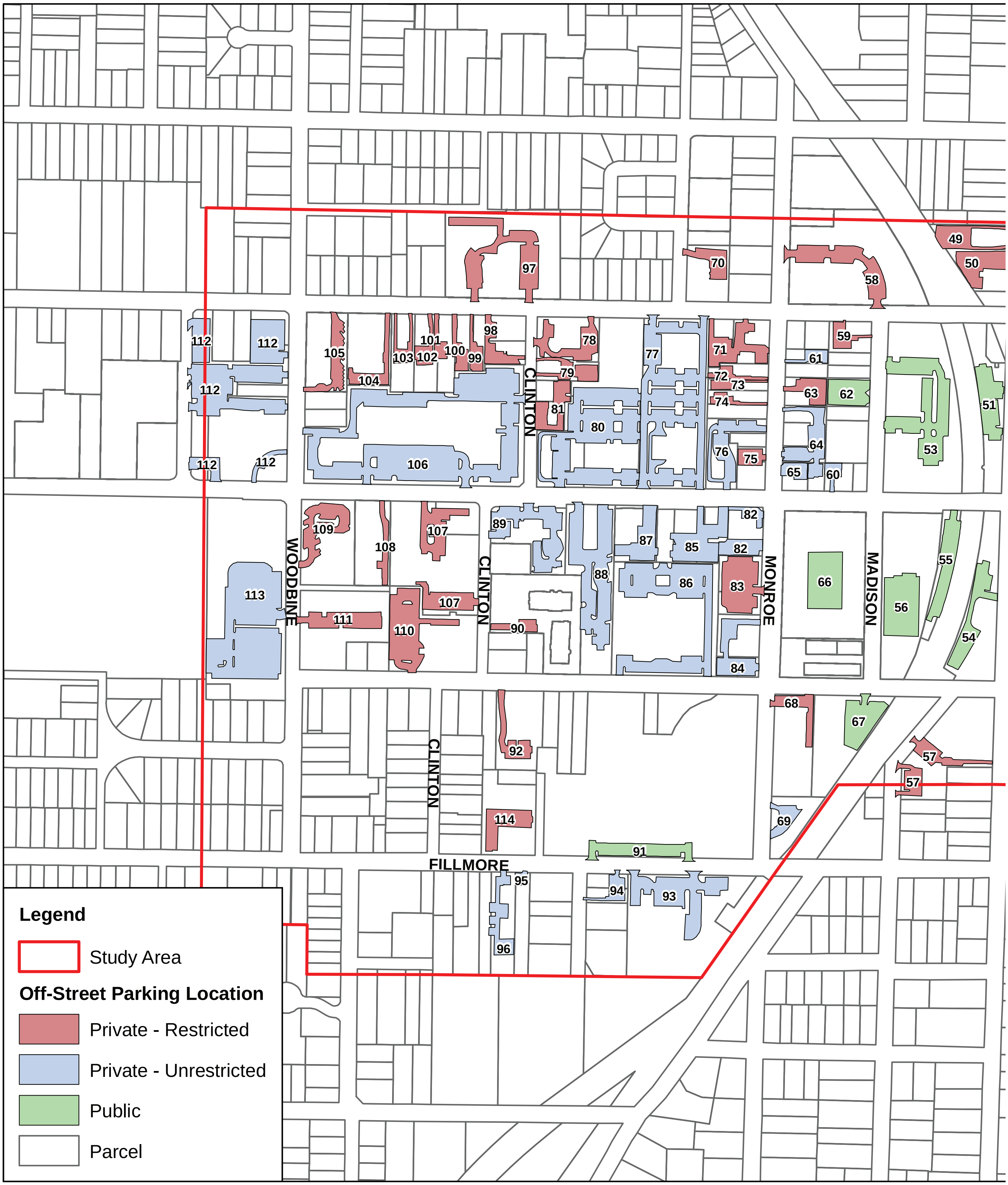




Off-Street Parking Occupancy
Average Evening (Fri/Sat 5pm-8pm)
0 200 400 Feet
CLAY
KIRKWOOD
TAYLOR
ARGONNE
JEFFERSON
ADAMS
WASHINGTON
BODLEY

OFF-STREET PARKING LOCATIONS

PARKING STUDY



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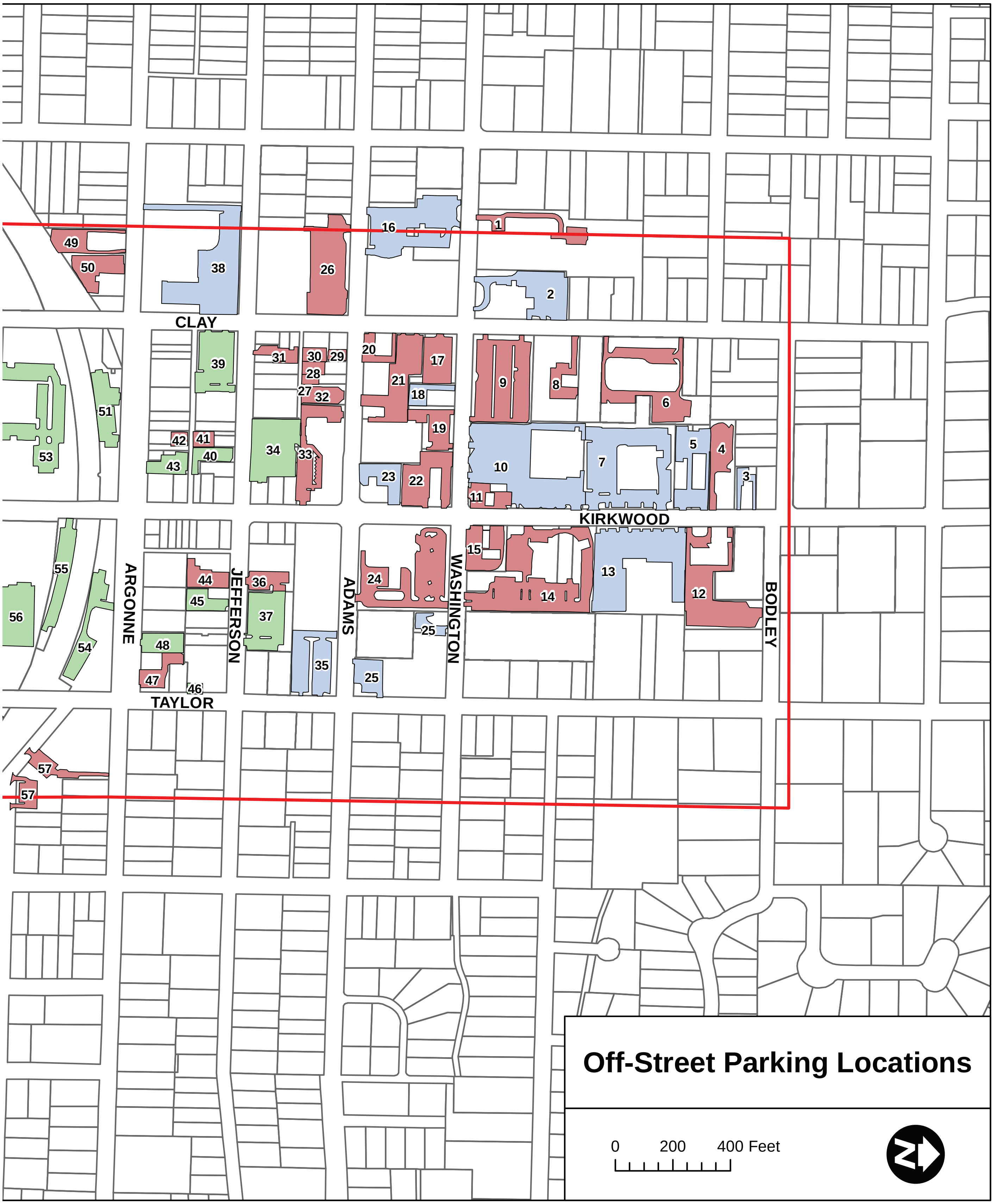

Off-Street Parking Locations
0 200 400 Feet
CLAY
KIRKWOOD
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ARGONNE
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WASHINGTON
BODLEY
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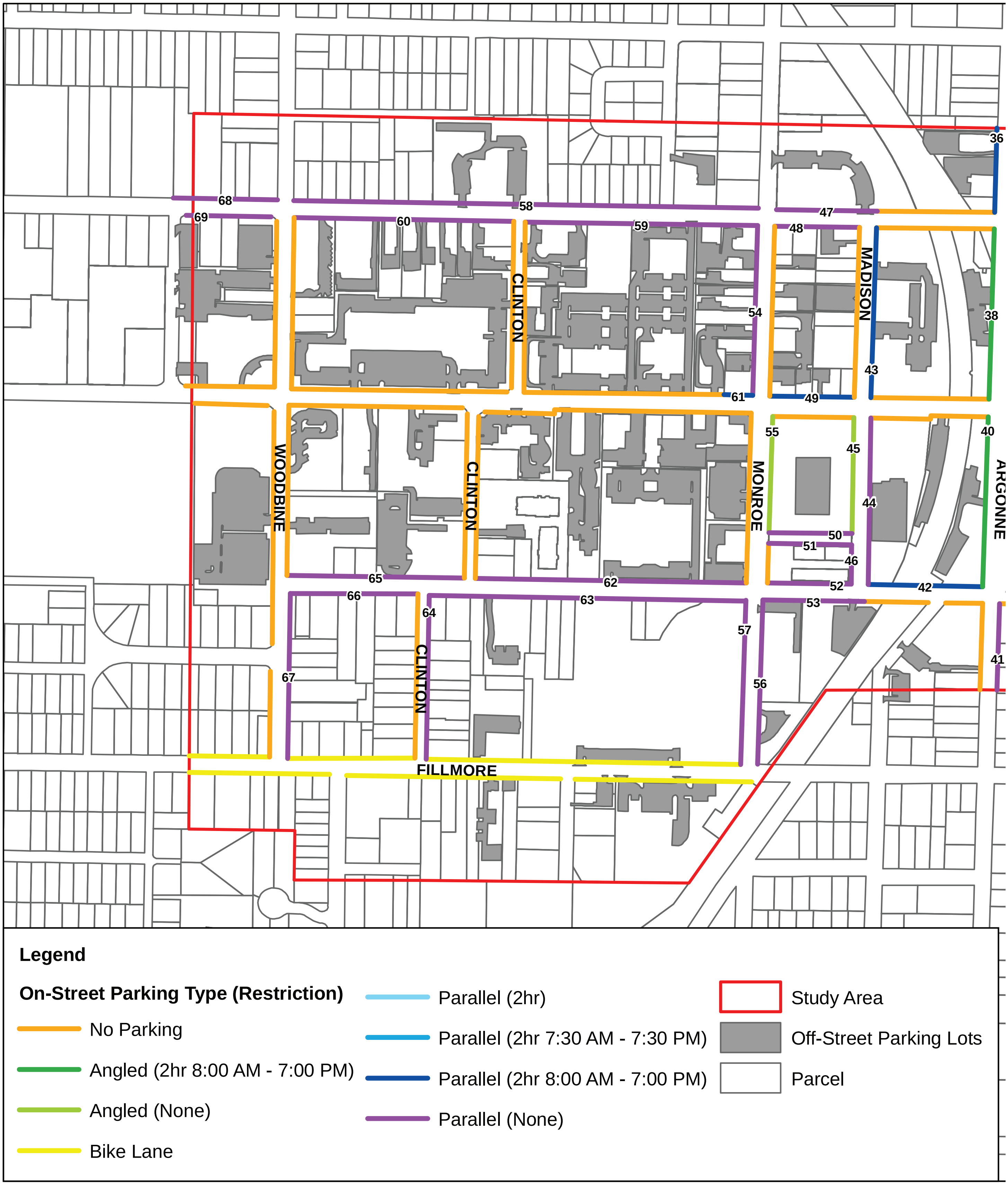
WOODBINE
CLINTON
CLINTON
CLINTON
MONROE
MADISON
ARGONNE
FILLMORE
36
38
40
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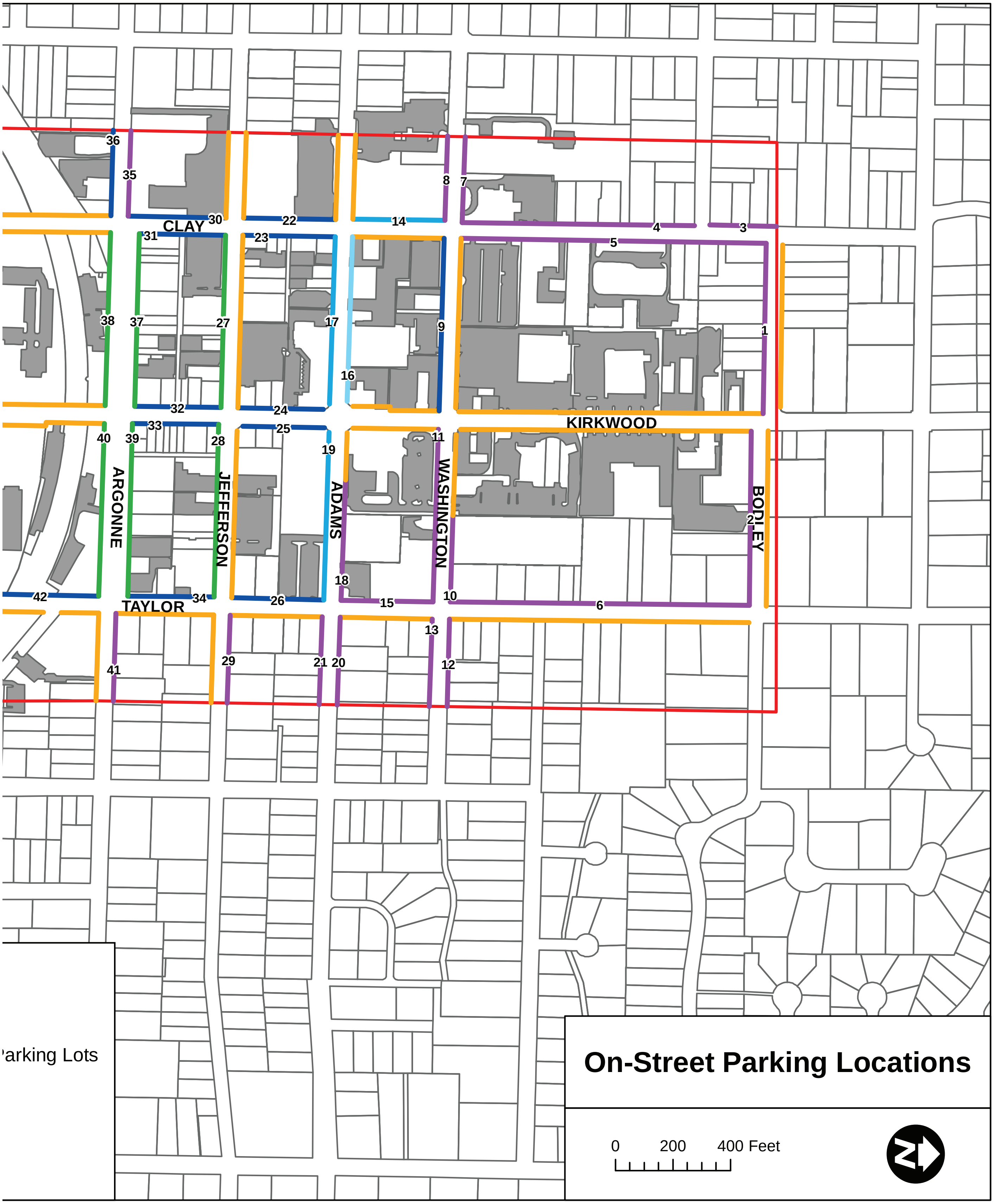
68
69
Legend
On-Street Parking Type (Restriction)
No Parking
Angled (2hr 8:00 AM - 7:00 PM)
Angled (None)
Bike Lane
Parallel (2hr)
Parallel (2hr 7:30 AM - 7:30 PM)
Parallel (2hr 8:00 AM - 7:00 PM)
Parallel (None)
Study Area
Off-Street Parking Lots
Parcel



CLAY
KIRKWOOD
TAYLOR
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JEFFERSON
ADAMS
WASHINGTON
BODLEY
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33
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41
42
arking Lots
On-Street Parking Locations
0
200
400 Feet

- On and off-street parking spaces are well distributed throughout the Study Area. Parking inventory counts identified a total of **5,820 off-street spaces** and **1,012 on-street spaces** in the 20 block study area.
  - The off-street spaces include **1,200 public spaces, 2,665 private unrestricted spaces**, and **1,919 private restricted spaces**.
  - Total demand for these spaces during the day is approximately 2,447 spaces and approximately 1,953 spaces during the evening.
  - The total amount public parking is 2,212 which represents between 90% and 113% of the demand.
- At peak periods on typical weekdays, there is sufficient parking supply to meet the demand of the Study Area with an approximate surplus of 3,373 parking spaces. Results of the occupancy count indicate that 42% of the available off-street parking spaces are being used during the typical working day. Heaviest usage for off-street parking during the daytime is occurring primarily at the southern end of the study area and only at specific locations in the rest of the study area as shown in the Off-Street Parking Occupancy Typical Daytime (Weekday) Figure.
- At peak periods on typical weekend evening, there is also sufficient parking supply to meet the demand of the Study Area user with an approximate surplus of 3,867 parking spaces. Results of the occupancy count indicate that only 34% of the available off-street parking spaces are being used during the typical weekend. Heaviest usage for on-street parking was observed to occurring on Argonne Drive and Jefferson Avenue in the evening. Heaviest usage for off-street parking in the evening is also occurring primarily along Argonne Drive and Jefferson Avenue. Multiple lots were observed to be at or near capacity in this area as shown in the Off-Street Parking Occupancy Typical Evening (Friday 5pm-8pm) Figure. An event was occurring at the Concordia Lutheran Church on September 29th, 2017 during the evening when the counts were collected resulting in high occupancy levels for the church and surrounding parking lots.
- Off-street parking areas are a mix of publicly available spaces and privately owned lots with approximately 21% of the spaces being public, 46% of the spaces being private unrestricted and 33% of the space being private restricted.
- While there are currently a few areas where off-street parking levels reach 75-100% occupancy, a majority of the supply of parking spaces remain underutilized and unoccupied during the weekday day and evenings; some spaces and lots that were observed that were not utilized at all.
- Not all on-street parking spaces are marked or striped, which leads to an inefficient use of on-street parking. Typically, on-street spaces in a downtown area are metered or striped to ensure a specific number of spaces per block front. Vehicles were observed parked on-street with 8-10 feet between vehicles which prevents additional vehicles from parking on the block in an efficient manner. Following recommendations of this study during the Charrette the city has striped parallel on-street parking spaces in addition to the diagonal on-street parking spaces.
- There are locations with restrictions to on-street parking. Most of the on-street parking in the Core Study Area has a 2-hour time limit parking restriction. Limiting time for parking serves to generate turnover to provide for a more efficient parking system overall. Few other locations in the study area have restricted on-street parking.
- The City of Kirkwood does not currently institute a paid parking program; that is, public available (and much private but unrestricted available) off-street and on-street parking are free of charge to the user. Paid parking, through meters or paid parking garages, typically generates revenue for the municipality to assist in the development and maintenance of off-street parking areas and generates turnover in parking spaces; although many parking divisions are not financially self-sustaining. Furthermore, free parking is generally seen as subsidized by residents and business owners who pay taxes in the City.

Parking is a fundamental component of downtown infrastructure. Lack of parking is not currently an issue within the Study Area, users can find ample available spaces both on and off street but the ability to find parking in the desired location can be an issue. Parking recommendations are not a one size fits all solution. Recommendations should be provided that permit a variety of options for short and long term parking improvements. The following recommendations are proposed to ensure that there are adequate parking spaces currently and in the future.

- **Zoning Code adjustments.** The City should consider waiving parking requirements for certain types of building such as liner buildings less than 24 feet deep. The City should also consider removing surface parking as a permitted use in B2 for downtown.
- **On-Street Parking Modifications.** In addition to the on-street parking that the City has already striped, additional locations to consider striping on-street parking include Argonne Dr west of Clay Ave, Madison Ave between Kirkwood Rd and Clay Ave, Taylor Ave between Madison Ave and Monroe Ave, and Monroe Ave between Taylor Ave and Fillmore Ave. Where feasible, some locations with existing parallel parking could be considered for conversion to angled parking to increase the number of spaces per block front.
- **Negotiate shared parking agreements.** The City already has a few locations where there is currently shared parking agreements but additional locations could be added to open additional parking to the general public. The City could enter into agreements with private parking lot owners for the use of their parking spaces. This could be accomplished through a simple agreement, a lease, or a requirement during the permitting process.
- **Regulate parking (time, use and duration).** The City has already put a lot of thought and effort into the existing parking restrictions and they seem to be effective. The City should consider expanding the parking meter system currently in use at the Amtrak parking lot to other lots that would allow parking for longer than 2 hours for a fee.
- **Better signage for parking.** The City currently has a wayfinding system of signage for the City's public parking lots. The signage could be improved as the current signage is small and can be hard to see especially in the evenings when it is dark. The City could also consider a parking management system that could be used to notify where available parking is located.
- **Employee remote parking.** In locations such as Argonne Dr and Jefferson Ave, the City could work with businesses to develop a remote parking location for employees. There are currently underutilized lots only a few blocks from these locations that could be used by employees to reduce the demand for parking in the immediate area.
- **Subsidized ride-sharing.** The City could consider subsidizing a ride-sharing company for rides to, from, or within the study area. This would allow for patrons and employees to use the ride-sharing company to get to and from the study area without the need for a parking spot or park in one location and easily move through the study area.

- **Improve transit.** The City is currently testing an electric cab system that provides free rides on Thursday and Friday evenings and all day Saturday. This allows people to park and easily get to and from their desired location.
- **Adjust parking ratios.** The City should be more flexible with required parking ratios to work with property owners on the actual needs of the property. The City could allow property owners to propose alternatives to meet the parking requirements like shared parking, remote parking, valet parking, and other parking options. The City could also lower the parking ratios for office, retail, and restaurants in the Study Area and permit off-site parking as an alternative.
- **Improve walking and biking environment.** Continuing to improve the walking and biking facilities, such as accessibility, continuity, lighting, and wayfinding signage, in the study area will encourage the broader use of parking throughout the study area. This would encourage people to park at one spot to visit multiple locations or to use alternative modes of transportation like biking to access the study area.
- **Bike Parking.** The City should provide locations for bike parking at the existing city parking lots. The City can also work with property owners to allow bike parking to be provided for a possible reduction in required parking spots. Bike parking typically requires less space than providing parking spots for vehicles.

Conclusion

There is an overall impression that available parking in the Study Area can be hard to find. This study found that there is an adequate amount of parking throughout the Study Area for the typical demands, but there are locations that experience constrained parking at certain times and days. Kirkwood needs to continue to work with the property owners to improve the perception and usage of the available parking within the study area.

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MASTER PLAN

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Over the course of 4 days, the DPZ team along with Jacobs conducted an intensive 4-day Charrette where the team walked the downtown, studied potential infill sites and tested various design proposals in an open studio where the public could walk through and ask questions as the week progressed.

The charrette began on Monday with a site tour and client briefing with City staff and key stakeholders. The schedule below shows the various meetings and presentations that occurred over the course of the week. At the end of the week, a Final Presentation was given which summarized the design work and analysis that occurred up to that point.
This report illustrates the final recommendations by our team which is based on the final charrette work and public comments provided to the City following the charrette.

This includes a recommended master plan, a parking managment plan and a proposed framework plan, which will help the City codify and prioritize future master plan recommendations. Following the framework plan are a series of 'Code Hacks' which are code recommendations for the City to adopt early on to help spur on development, without the immediate need for a full Code rewrite.

Start Time
9:00 AM

Time Blocks
30m

DPZ CODESIGN

Kirkwood

Workshop Schedule: October 16-20, 2017

TIME	MON 16TH	TUE 17TH	WED 18TH	THU 19TH	FRI 20TH
9:00 AM	Studio Setup *Design Team*	Private Team Debrief *Design Team*	Private Team Debrief *Design Team*	Private Team Debrief *Design Team*	Next Steps City Staff
9:30 AM					
10:00 AM	Area & Precedent Tour Team & City Staff	Meeting #1 Market Analysis	Meeting #3 Transportation & Parking	Studio Work	
10:30 AM					
11:00 AM		Studio Work	Studio Work		*Team Departure*
11:30 AM		Meeting #2 Planning & Zoning	Meeting #4 Developers		
12:00 PM					
12:30 PM	Client Briefing Project Background and Overview *(working lunch)*	*Lunch in Studio*	*Lunch out*	*Lunch in Studio*	
1:00 PM					
1:30 PM		Studio Work (*Studio Closed*)	Studio Work	Studio Work (*Studio Closed*)	
2:00 PM	Studio Work				
2:30 PM					
3:00 PM					
3:30 PM					
4:00 PM					
4:30 PM					
5:00 PM					
5:30 PM		Opening Presentation		Final Presentation	
6:00 PM					
6:30 PM					
7:00 PM					
7:30 PM					

INITIAL REDEVELOPMENT SITES

Based on the initial analysis by Jacobs, this map was created to identify an initial approach to redevelopment over the next 20+ years. Sites were identified based on overall utilization of the site and age and use of the particular buildings. Sites were categorized into short term, 5 years, and long term, 10 - 20 years.

REFINED REDEVELOPMENT SITES

The initial redevelopment map was used as a base line, and each site was further studied on the site tour, and adjusted following stakeholder feedback. The map shown here was created to further refine the prior map and to illustrate which buildings were indeed likely to either redevelop or remain long term. Only buildings within the redevelopment area were analyzed. The buildings shown in red would likely follow the redevelopment timing as suggested on the prior page.

THOROUGHFARE HIERARCHY

An early analysis was conducted based on the quality of street frontage in downtown. The analysis was further extended to define a hierarchy of streets in downtown. An A-grid and B-grid system was laid over the downtown streets. The proposed A-grid streets are those that should prioritize the pedestrian over cars, the frontage should be consistent and active, sidewalks should be uninterrupted with curb cuts to alleys. B-grid streets are less rigorous, with the understanding that service and car priority activities need to occur. These streets have curb cuts and may have less consistent frontages with buildings that are set back with 1-bay of parking between the building and the sidewalk.

Furthermore, understanding that the downtown study area that spans from Woodbine to Bodley is an expansive area (3 independent neighborhoods), a phasing of interventions is proposed. The phase 1 area was identified based on neighborhood size, structured around a 1/4 mile (5-minute walk), or pedestrian shed. The obvious center of the proposed pedestrian shed is the Train Station which is the clear center of the historic downtown. The pedestrian shed also covers the historic block grid, confirming the area identified is the best place to focus initial redevelopment.

The phase 1 hierarchy is illustrated with a solid line and the phase 2 hierarchy is illustrated with a dashed line.

Examples of A-grid and B-grid precedent streets are shown below. They are included here for illustrative purposes and are not intended to imply or suggest architectural character or detail.

THOROUGHFARE HIERARCHY MAP

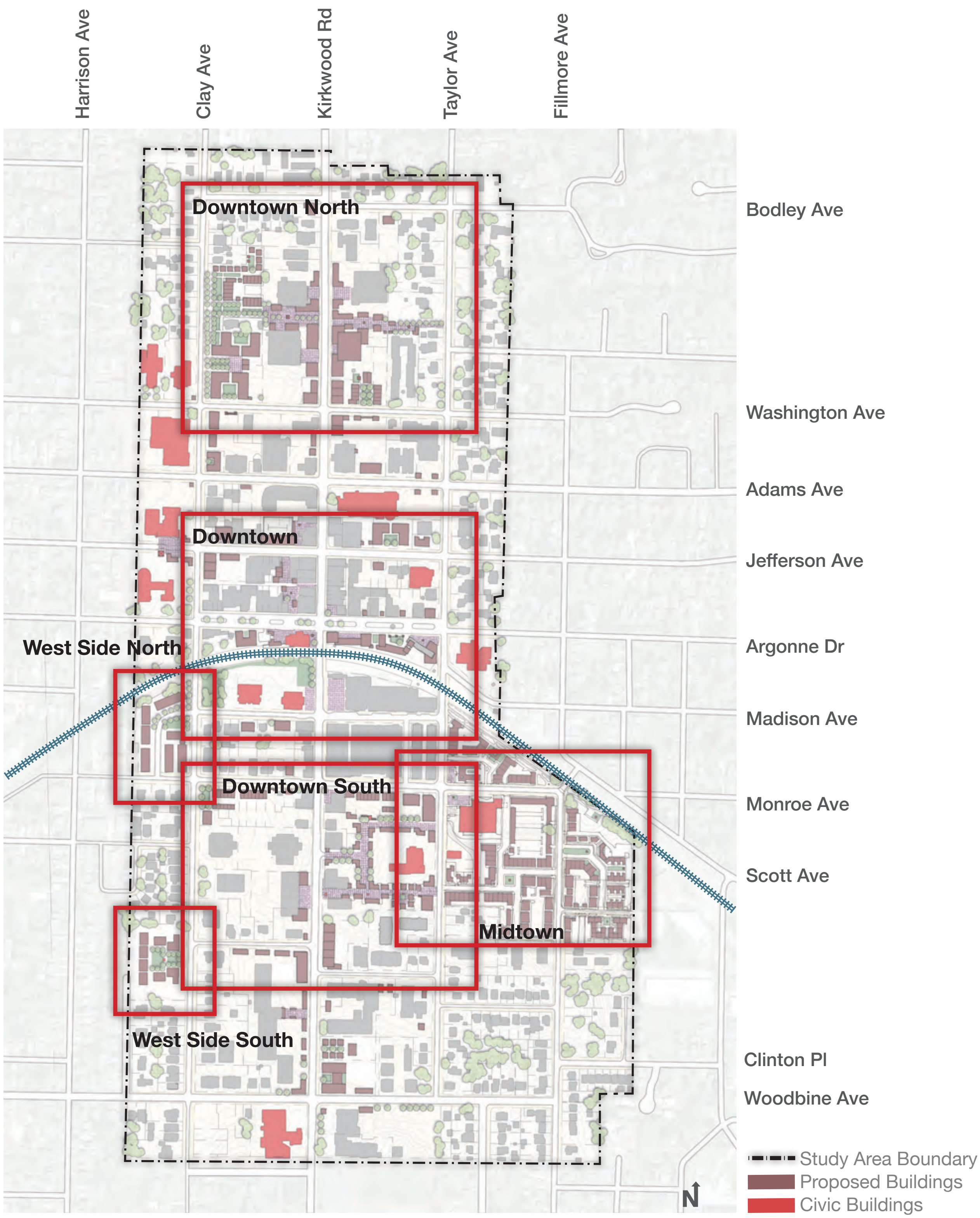
REVISED JUNE 2018

ILLUSTRATIVE PLAN

The illustrative master plan envisions the development of downtown Kirkwood, respecting property lines, historic buildings, taking into account the marketing studies, restitching the downtown back together, through a series of strategies that are proposed on the following pages.

KEY PLAN

The following pages will show in greater detail the different areas outlined below.



DOWNTOWN NORTH ANNOTATED

Public attached green fronted by townhouses

A series of semi-private squares shaped by small multi-family buildings

A cluster of small single-family tower houses, fronting a shared green

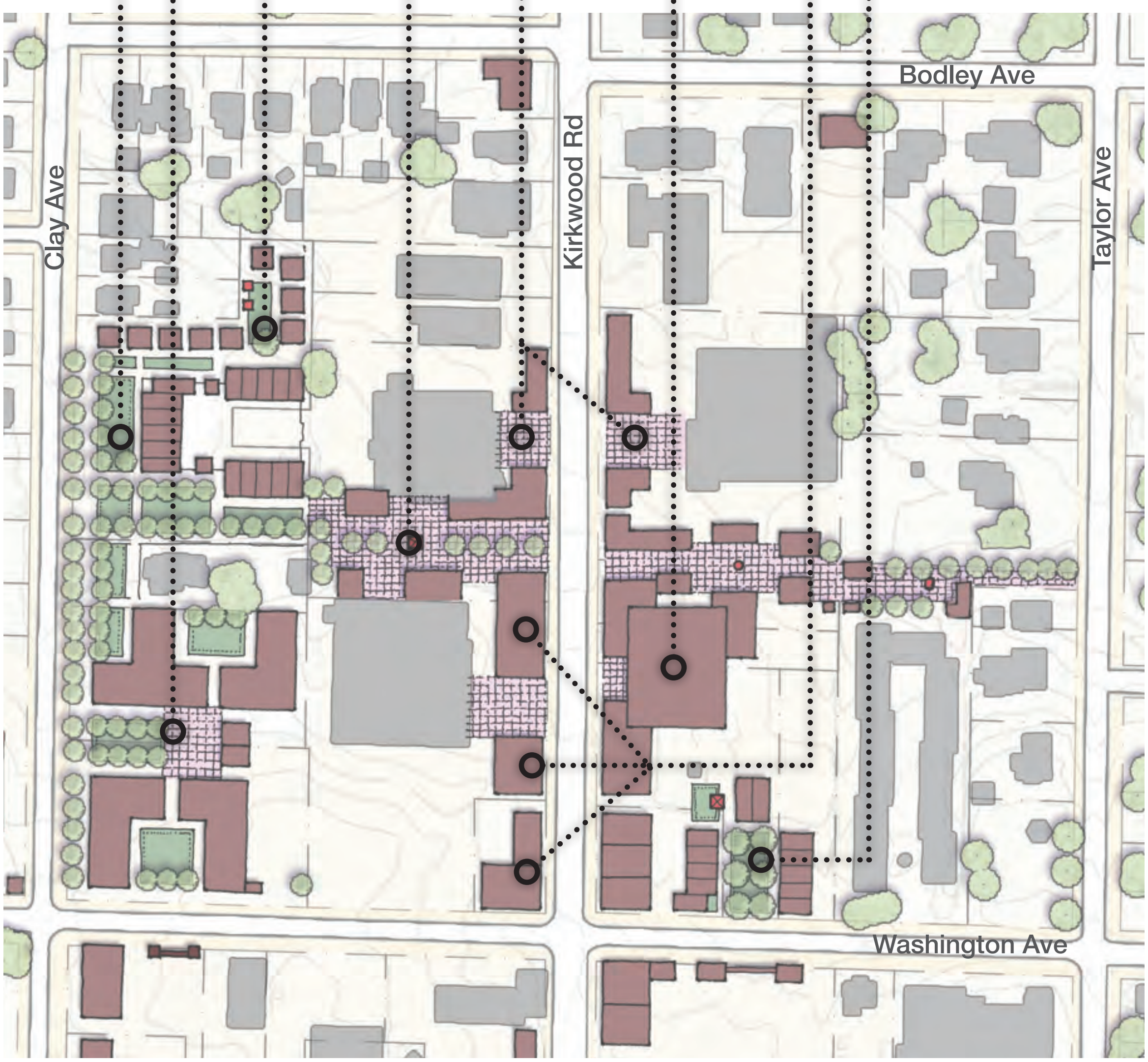
A formalized pedestrian passage helping to break the massive scale of the block to be more pedestrian friendly and connecting residents more easily to the retail in this neighborhood.

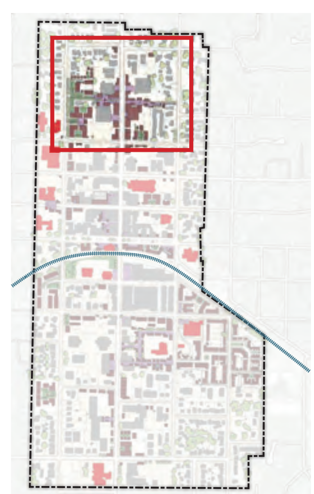
A formal plaza at the entry of the Global Foods and Alpine Shop. Adding liner buildings along Kirkwood Rd and relocating parking in the rear of the lot will help Kirkwood Rd maintain its pedestrian priority character.

A big box grocer is proposed in the prior location of the UMB Bank which will help to support and feed off of the Global Foods

Liner Buildings placed along Kirkwood Rd to help create a consistent pedestrian frontage

A townhouse court similar to the one directly to the east.





DOWNTOWN ANNOTATED

Small mixed-use infill buildings, with a narrow liner on Jefferson Street.

Potential sites for a Boutique Hotel, a much needed resource in the downtown.

A proposed parking structure to help alleviate parking demand on the north side of the tracks, lined with a mixed-use 3 to 4 story building.

A pedestrian passage connecting the Train Station to the proposed parking structure, lined with cool micro-breweries and restaurants.

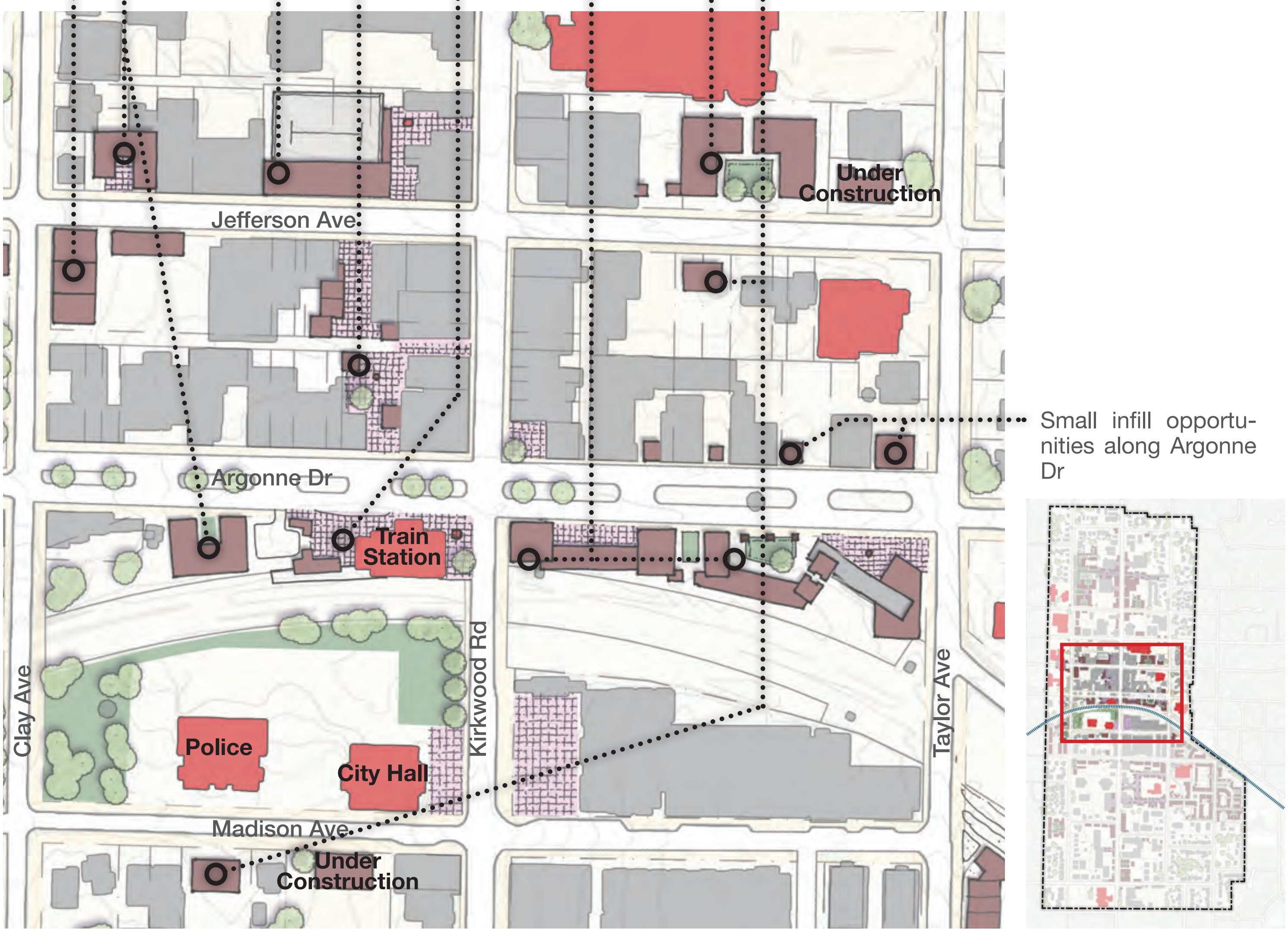
A formalized plaza at the train station with drop-off and pick-up. Parking for the Train Station would be located at the proposed parking structure on Jefferson Ave.

Redevelop and grow the current farmers market, with a public green, restaurants that could use the produce from the market and other related retail. A multi-story building is needed at the corner of Kirkwood Rd.

Small, multi-family courtyard building

Infill of a small 6-pack building

Small infill opportunities along Argonne Dr



DOWNTOWN SOUTH ANNOTATED

Infill of a small 6-pack building.

A row of townhouses proposed beside the historic 'Sweet Peace Yoga' facing Monroe Ave, with detached garages in the rear.

Townhouses or more preferably, Live/Work units facing Monroe Ave.

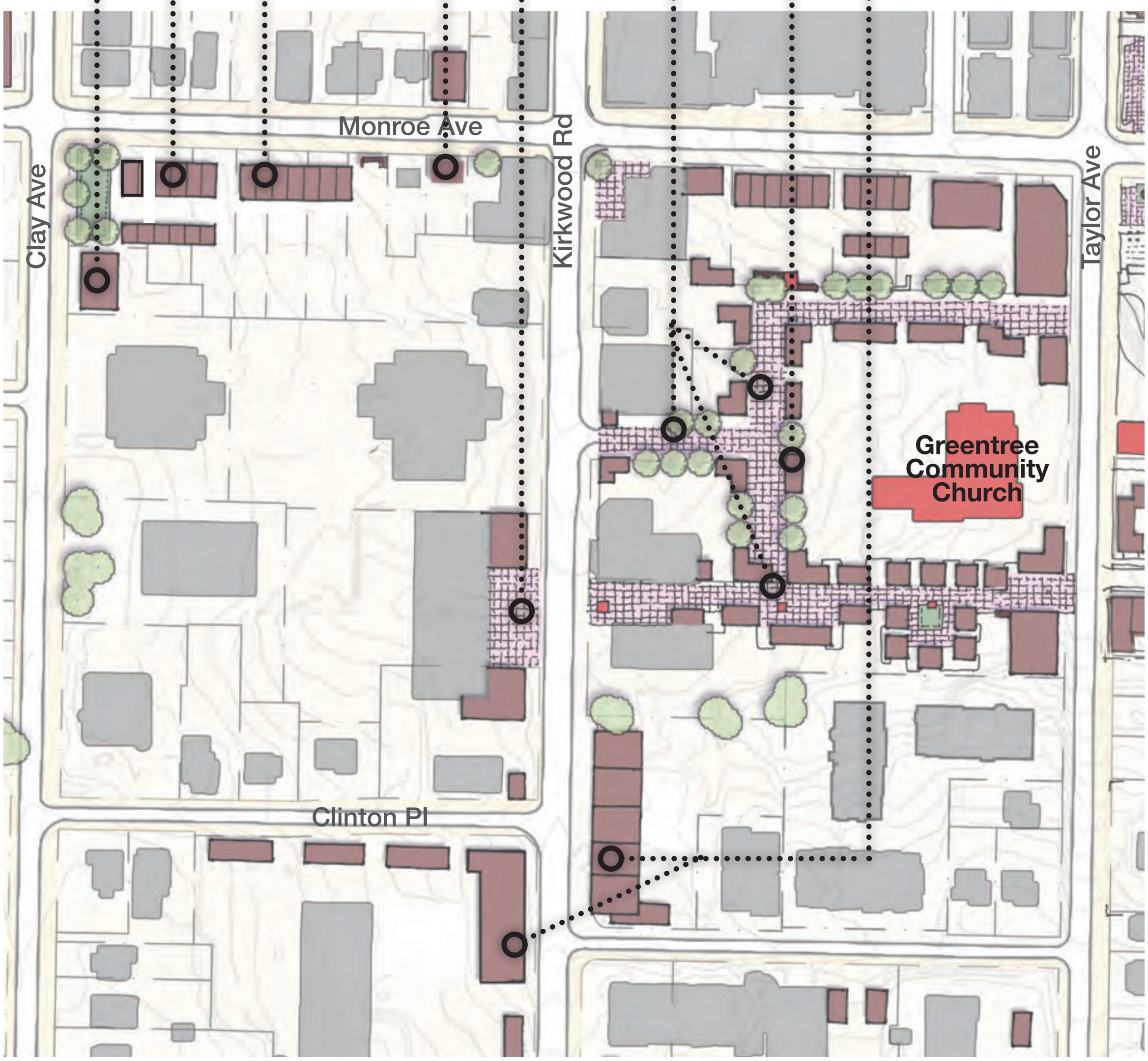
A small mixed-use, infill building, capping a parking lot.

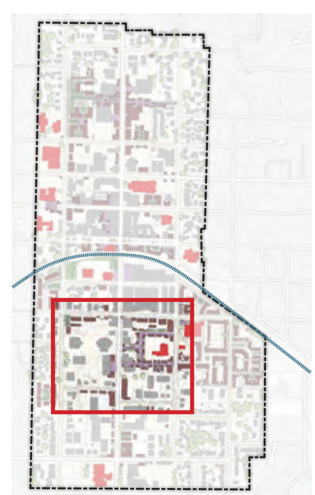
Liner buildings, expanding or moving Starbucks, and Sushi Bistro closer to the street.

Pedestrian passage breaking down the scale of the over-sized-block, creating direct connections to the proposed, performing arts center.

Liner Buildings fronting the pedestrian passage, shielding the surface parking lots, and creating a special precinct with a sense of enclosure for the community church.

A series of small mixed-use buildings fronting Kirkwood Rd, Lining a large parking lot.





MIDTOWN ANNOTATED

Small, one-story liner buildings shielding parking and forming a pedestrian passage to Kirkwood Rd.

Tower House court, also helping to form the cross-block pedestrian passage.

Mixed-Use buildings, holding the corner adjacent to the future Performing Arts Center

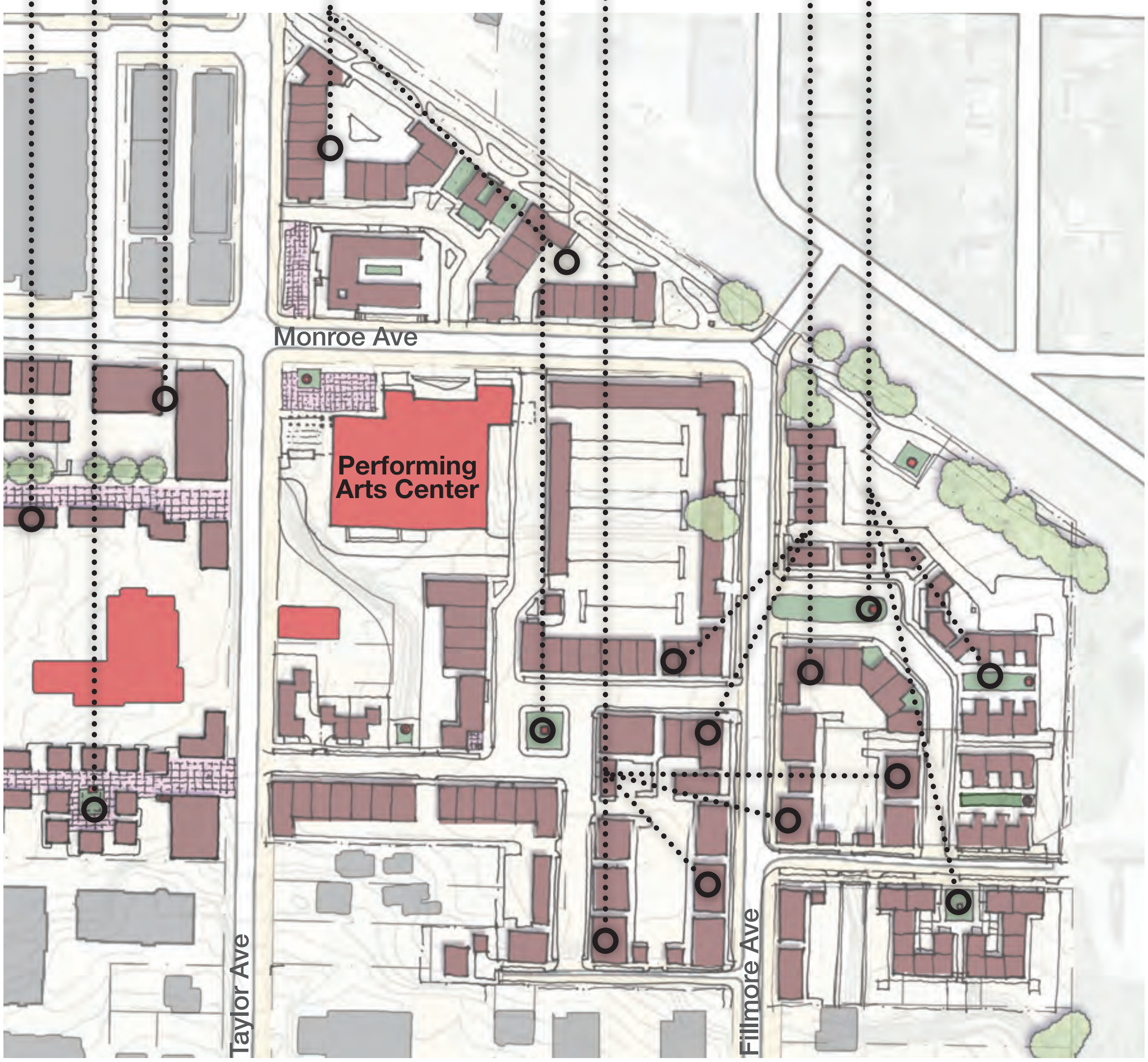
Townhouse block, framing a potential boutique hotel

Turbine square fronted by Live/Work units, connecting the pedestrian passage and the Performing Arts Center

Small multi-family buildings (6-pack units)

Townhouses

A series of residential greens fronted by a variety of attached, small, residential building types



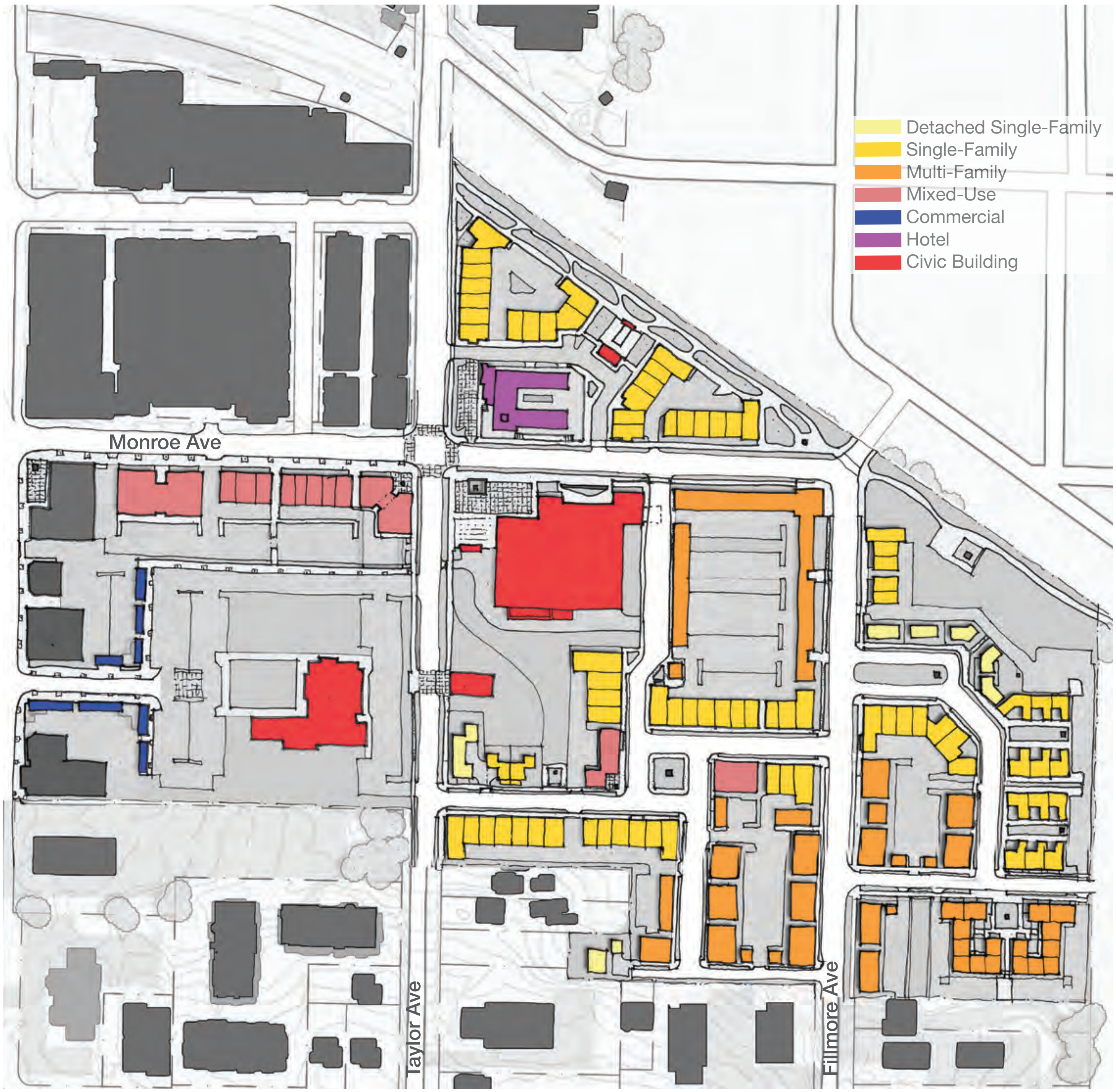
MIDTOWN DETAIL PLAN

A unique opportunity for the downtown's revitalization receiving City support is the creation of a $20 million Performing Arts Center on City-owned land at E. Monroe, between Taylor and Fillmore Avenues. Currently serving the Public Works Dept, home to the City's recycling center, and surrounded by industrial uses, this site re-imagined as a theatrical venue could help catalyze the southeast quadrant of the downtown into an entertainment and arts district. Only a block away from Kirkwood Rd., it would make for an ideal location for a variety of arts-related retail and small restaurants and cafes to serve event patrons and visitors. This arrival of this venue is also an opportunity to expand the range of housing in the surrounding area to serve a broader, multi-generational demographic and provide greater affordability. The Post Office across from the PAC, could be re-purposed as a boutique hotel wrapped by a new townhouse complex with units similar to those across Taylor Ave. A new park along the rail tracks could be enhanced at this location as a complement to the regional bike route.

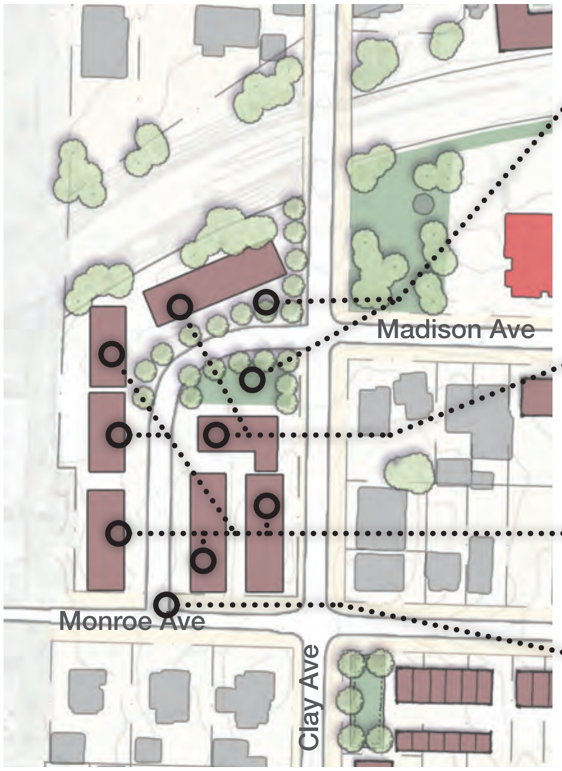
BUILDING TYPE PLAN

The proposed infill units focus on mixed-use, smaller footprint and multi-family alternatives designed around shared gathering and recreational spaces that reinforce a sense of community. The typologies include live-works, townhouses, liner apartments, and smaller multi-plexes. Intended as a direct response to resident input during the charrette, this District's residential component is meant to balance the predominance of large single-family homes, and in the process address the issue of affordability for young professionals and seniors on fixed-incomes.

The PAC parking lot is envisioned as a courtyard surrounded by liner buildings. The ground floor of these liners as seen from the perimeter sidewalks appear to be habitable space with windows, but they actually house parking spaces below that open to the parking lot. The two or three levels of apartments above could be market-rate rentals, or City-sponsored senior housing, or perhaps artist-in-residence studios.



WEST SIDE ANNOTATED

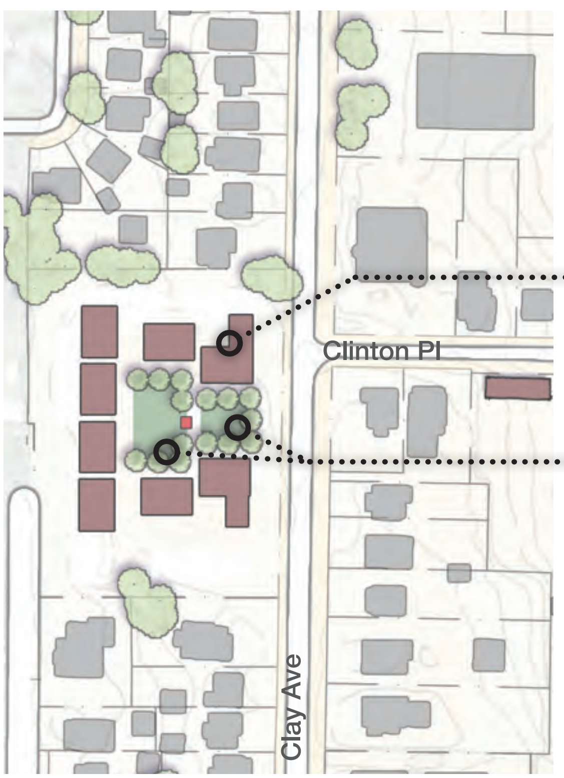


Public attached green fronted by stacked townhouses

22 stacked townhouses

25 Townhouses

Re-establish Montclay Court as a public street with parallel parking & street trees



8 buildings of small multi family apartments (4-6 units per building) with parking behind

A series of semi-private squares shaped by small multi-family buildings

PROPERTY OWNERSHIP

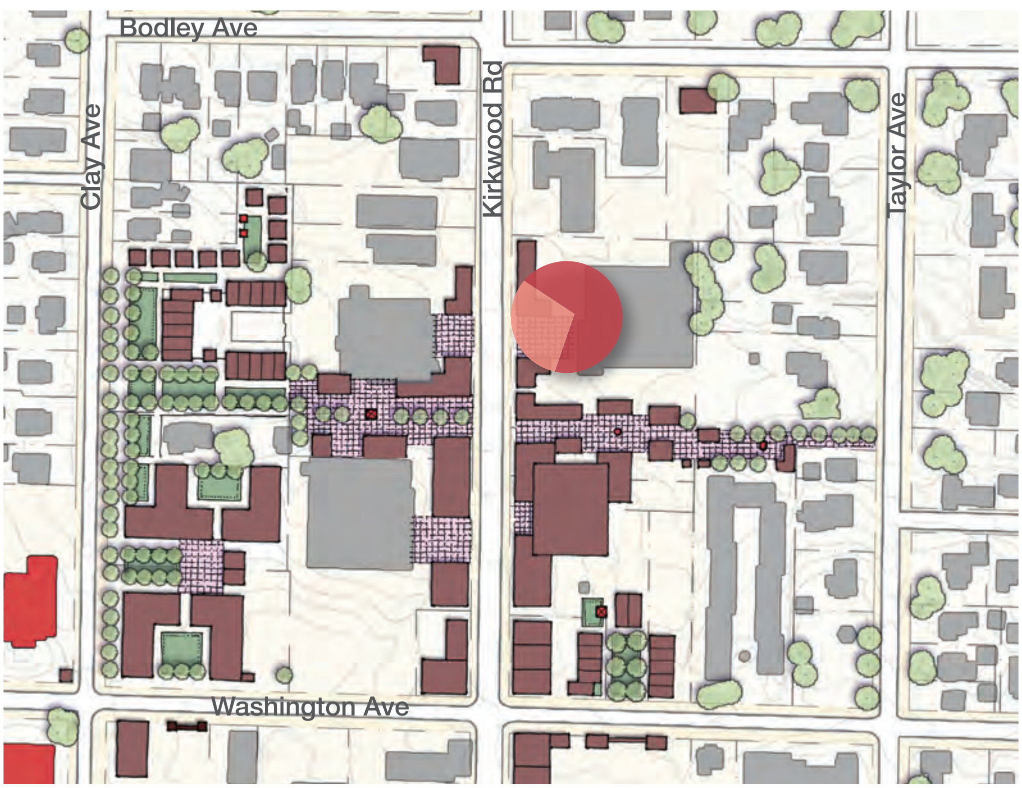
The proposed master plan is visionary in that it makes numerous suggestions for development on private property. The plan does however respect parcel lines so it does not require property owners to work together in order for the master plan to become a reality.

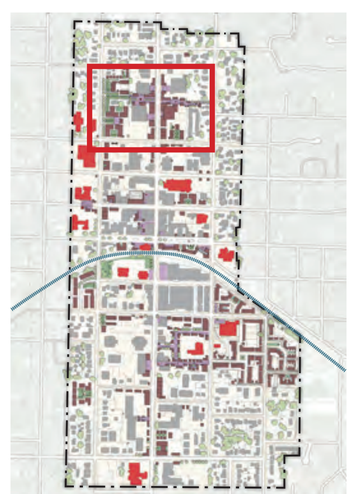
OPEN SPACE

There is very little 'meaningful' open space in downtown Kirkwood. The master plan envisions breaking down the scale of the larger blocks on the north and south with pedestrian passages to provide cross-block passages, making walking easier, more enjoyable with more direct connections. A series of small pocket parks and courtyards are envisioned throughout the downtown, located intentionally and shaped by buildings to create more thoughtful spaces.

LINING KIRKWOOD RD

The above illustration shows what the cross block passage might look like as it connects Taylor Ave to Clay Ave, across Kirkwood Rd, with buildings lining the big box stores, while providing a formal plaza at their entrance.





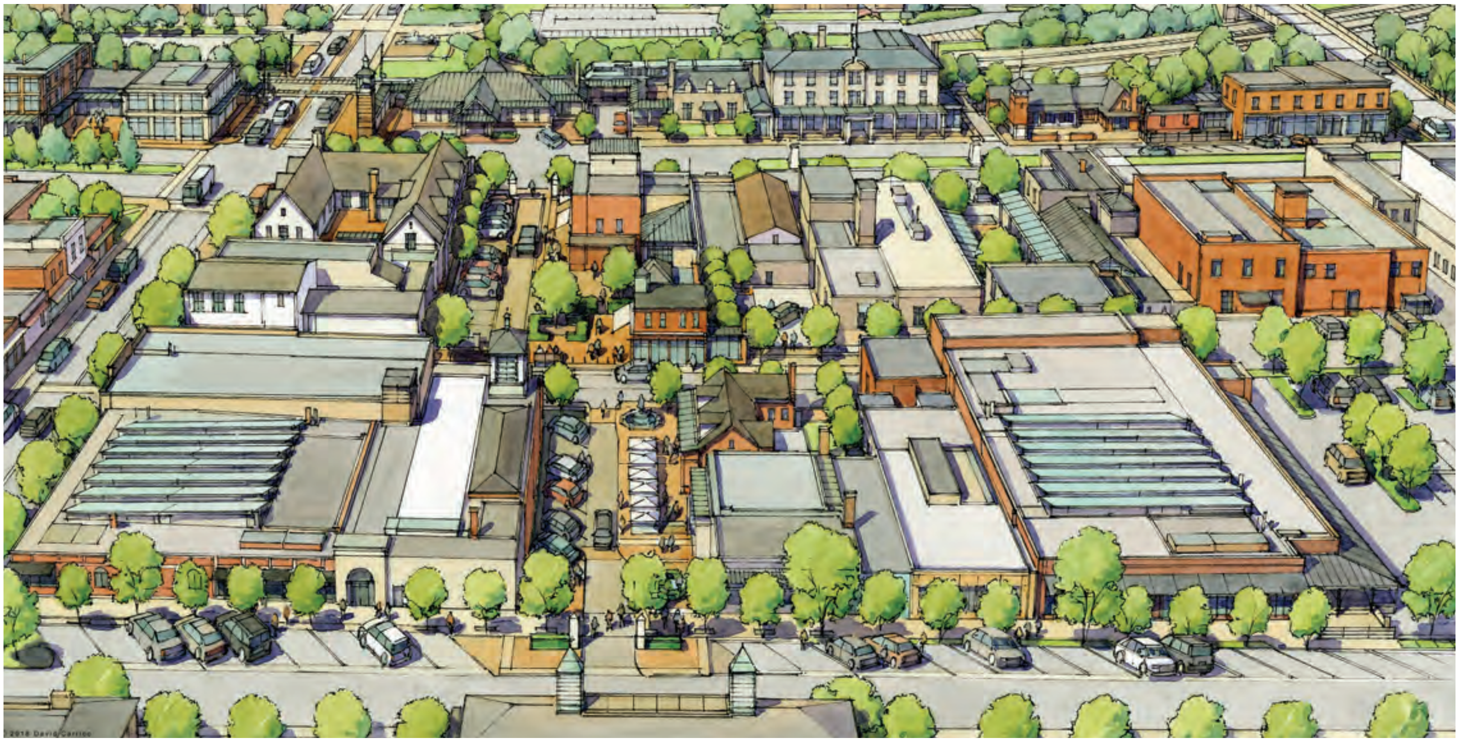
THE 'KIRK-WALK'

There is one very particular pedestrian passage that is envisioned to connect proposed parking structure on Jefferson Ave. with the newly renovated Train Station on Argonne. The master plan suggests a Boutique hotel on the west side of the train station with valet parking in the proposed parking structure.

This passage has been coined the 'Kirk-walk' given its civic importance. It is envisioned to be lined with small incubator retail uses along it to help activate the space.

This page shows similar instances from Georgetown and Bethesda, MD that have proven to be very successful in creating interesting pedestrian experiences.

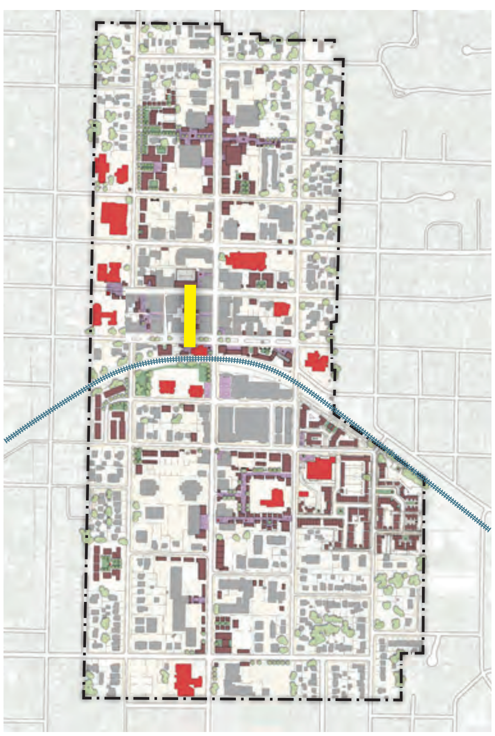
THE 'KIRK-WALK' ILLUSTRATION



(above) Illustration of the 'Kirk-walk'

(right) Proposed plan of the 'Kirk-walk', connecting Jefferson to Argonne.

(bottom) Key plan showing the location of the 'Kirk-walk' in yellow.

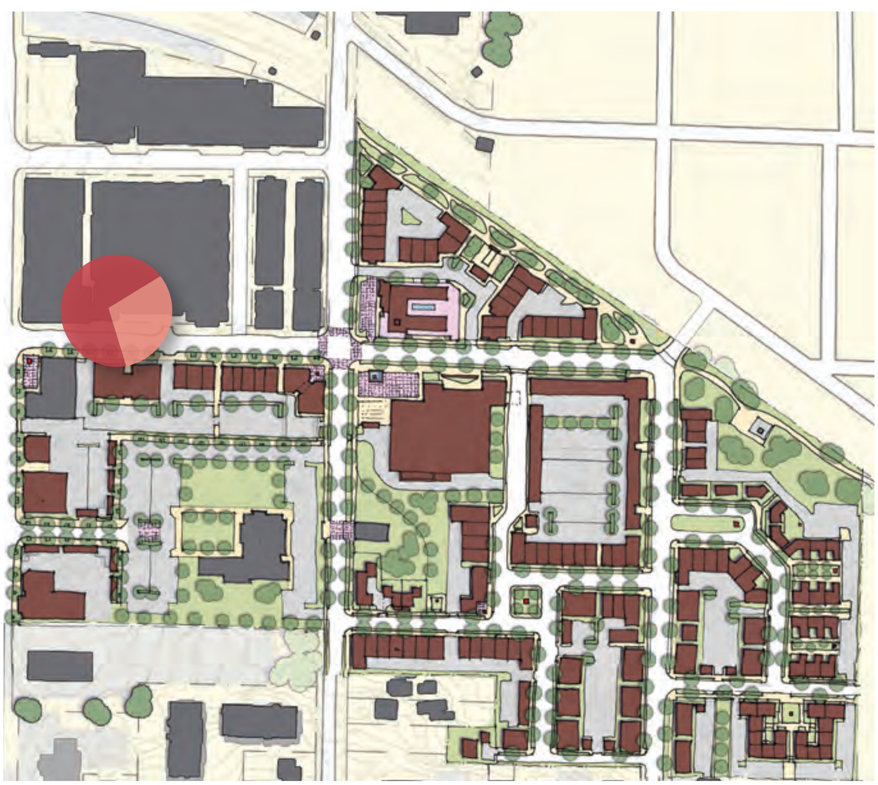


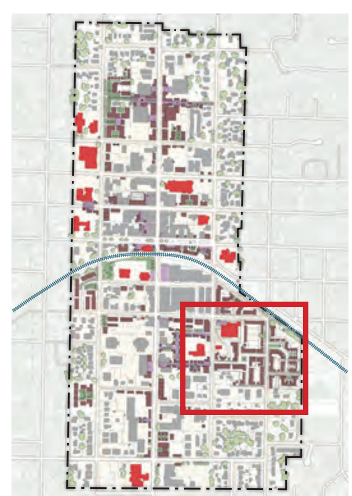
ENVISIONED CHARACTER

MASTER PLAN

MIDTOWN (ENTERTAINMENT) DISTRICT

The above illustration frames the view towards the future Performing Arts Center, the anchor to the east side of downtown Kirkwood.





Kirkwood, like most cities has a good collection of building types which range from small single-family types to larger multi-family and commercial types. They primarily reside in the historic areas of the city and are less prevalent in the areas which have been redeveloped since the 1940's.

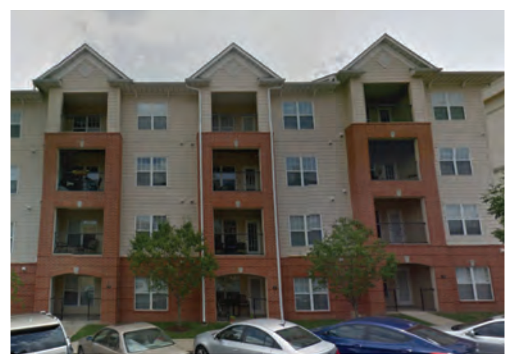
One of the goals of the downtown is to provide a wide-range of housing types to help promote diversity and aging in place.

Typically, the 'missing middle' housing types are forms that are compatible in scale to single-family homes, but accommodate multiple families within one building. This helps meet the demand for people looking to live an urban lifestyle and not be confined to living in large multi-story apartment buildings, or multi-story complexes.

In Kirkwood there are two primary building types as represented on the prior page. These are illustrated below, with the addition of some newly built townhouses, attempting to fill some of the 'missing middle' gap.

The following page shows some of the historic 'missing middle' housing from St. Louis, that should be employed in Kirkwood's future downtown development. Some of these types exist within the study area as isolated examples. They need to be made more of the rule than the exception.

?



detached single-family

large multi-family (mid-rise)

attached single-family

ST. LOUIS EXAMPLES

12th Street Mansion Apartments

39th Street Small Multi-Family

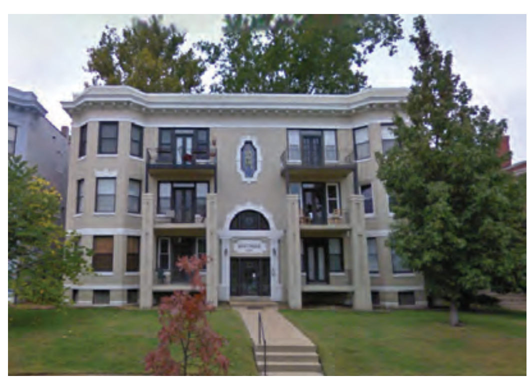
Alfred Avenue Semi Detached 2 Family

Botanical Avenue Semi Detached 2 Family

Klemm Street Small Multi-Family

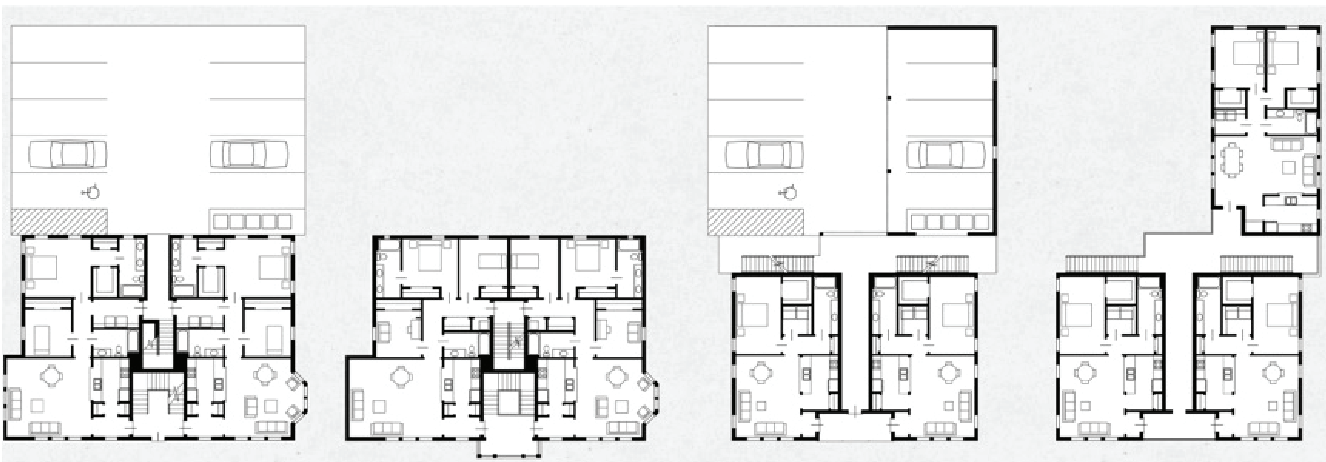
Lafayette Avenue Small Multi-Family

Lindenwood Avenue Mansion Apartments



Waterman Boulevard Small Multi-Family

MANSION APARTMENTS

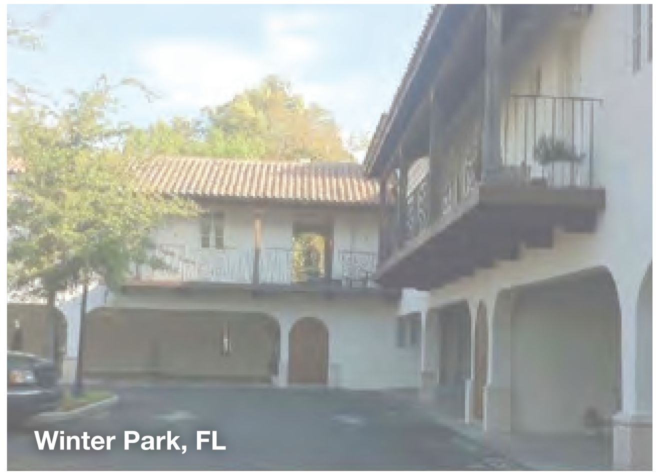



Habersham, Beaufort, SC


Habersham, Beaufort, SC

LINER BUILDINGS


Winter Park, FL


Winter Park, FL


Winter Park, FL


Atlanta, GA


Atlanta, GA

LIVE / WORKS


Atlanta, GA


New Town, St Charles, MO


East Beach, Norfolk, VA


Habersham, Beaufort, SC


Kentlands, Gaithersburg, MD

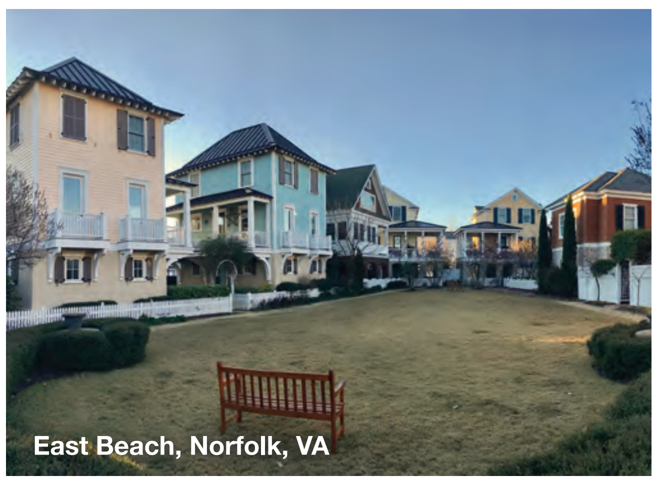
COTTAGE COURTS


Kentlands, Gaithersburg, MD


Carlton Landing, OK


Lakelands, Gaithersburg, MD


New Town, St Charles, MO


East Beach, Norfolk, VA

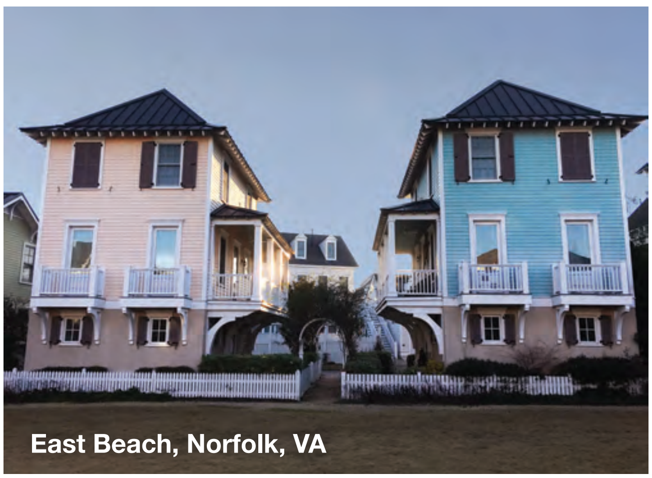
SENIOR COURTS

Carlton Landing, OK

TOWER HOUSES


Kentlands, Gaithersburg, MD


Gaithersburg, MD

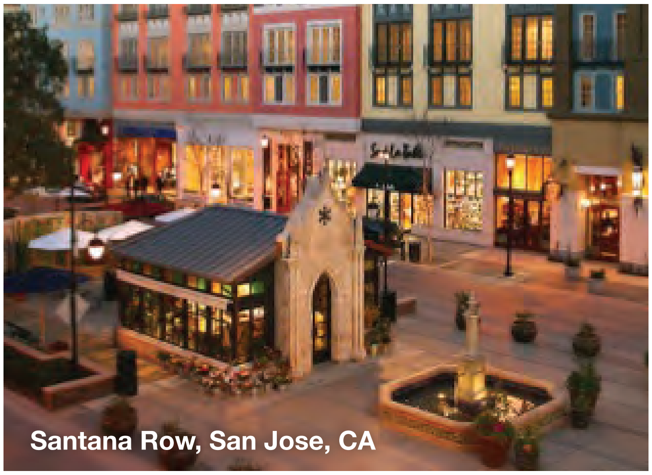

East Beach, Norfolk, VA


Lakelands, Gaithersburg, MD


Lakelands, Gaithersburg, MD


Lakelands, Gaithersburg, MD

INCUBATOR RETAIL


Santana Row, San Jose, CA


Santana Row, San Jose, CA

Atlantic Station, Atlanta, GA


J. Crew pop-up shop, Prince St, New York City

Birchbox pop-up shop, The Grove LA

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RETHINKING STREETS

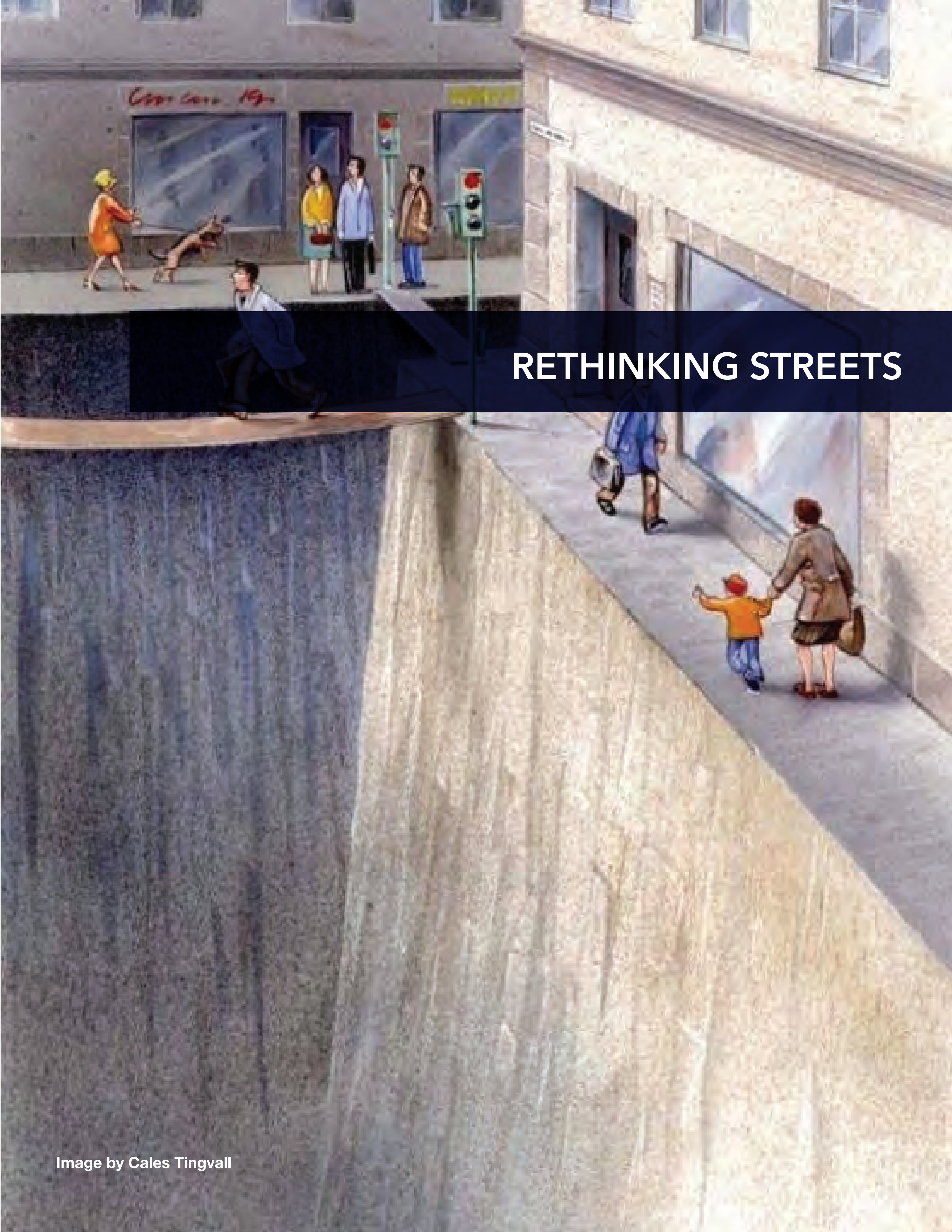

Image by Cales Tingvall

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Downtown Kirkwood has a well established street grid, which works well. Streets are well proportioned and the character of the streets change with the surrounding context.

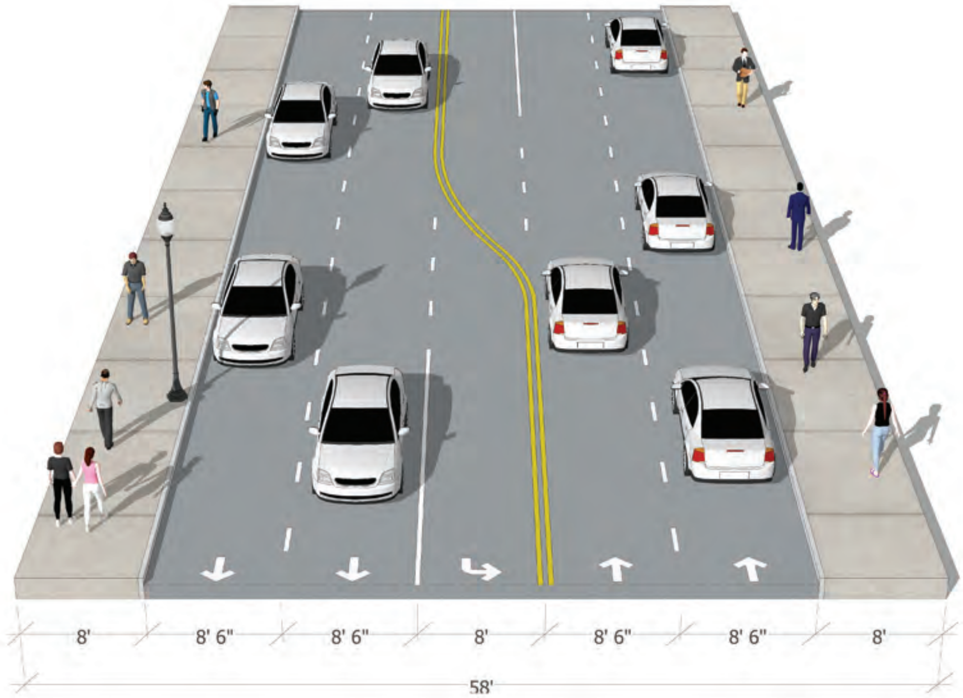
The following pages include street sections which are included to provide options, primarily to show ways to add or restructure on-street parking in places where it is more critical to better serve retail and in more intense pedestrian areas.

STREET SECTION ANALYSIS

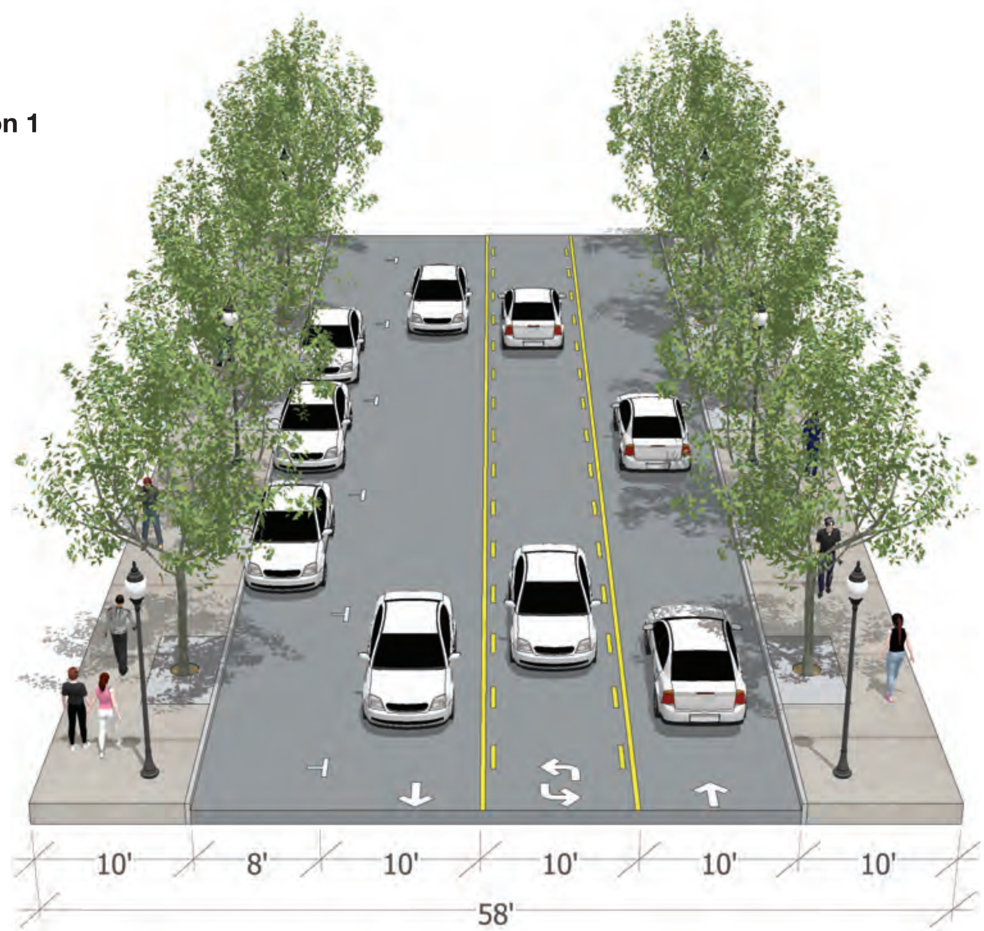
RETHINKING STREETS

KIRKWOOD ROAD (NORTH & SOUTH)

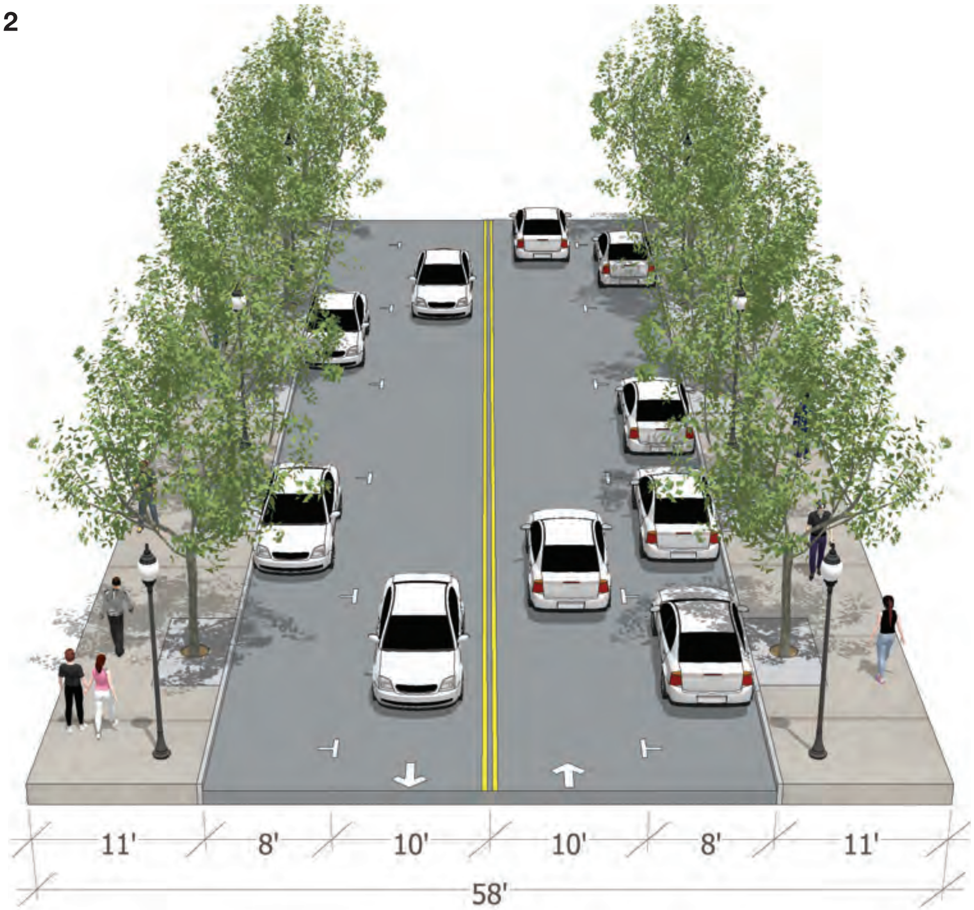
Existing Section



Proposed Section 1



Proposed Section 2

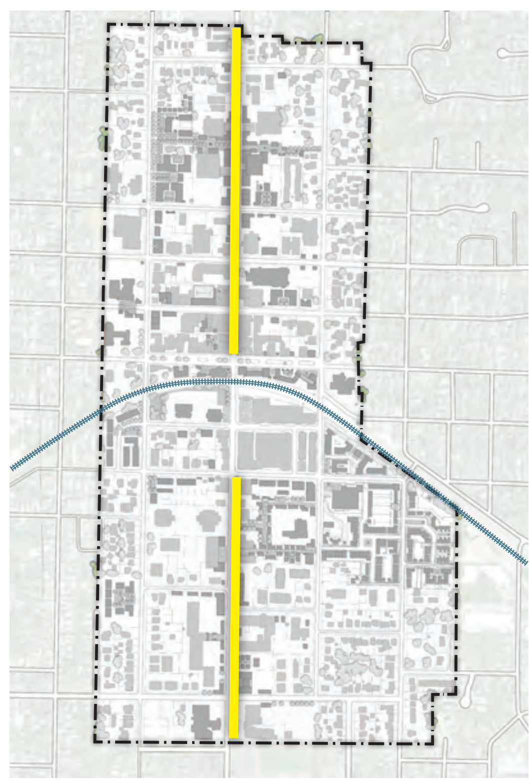


Proposed section 2 characteristics

- Remove the center left-turn lane.
- Convert the two outside lanes to parking.
- Increase the sidewalk width by 3 feet on both sides to allow for continuous street trees.
- During rush hour the outside lanes could convert to travel lanes and back to parking once rush hour ends.

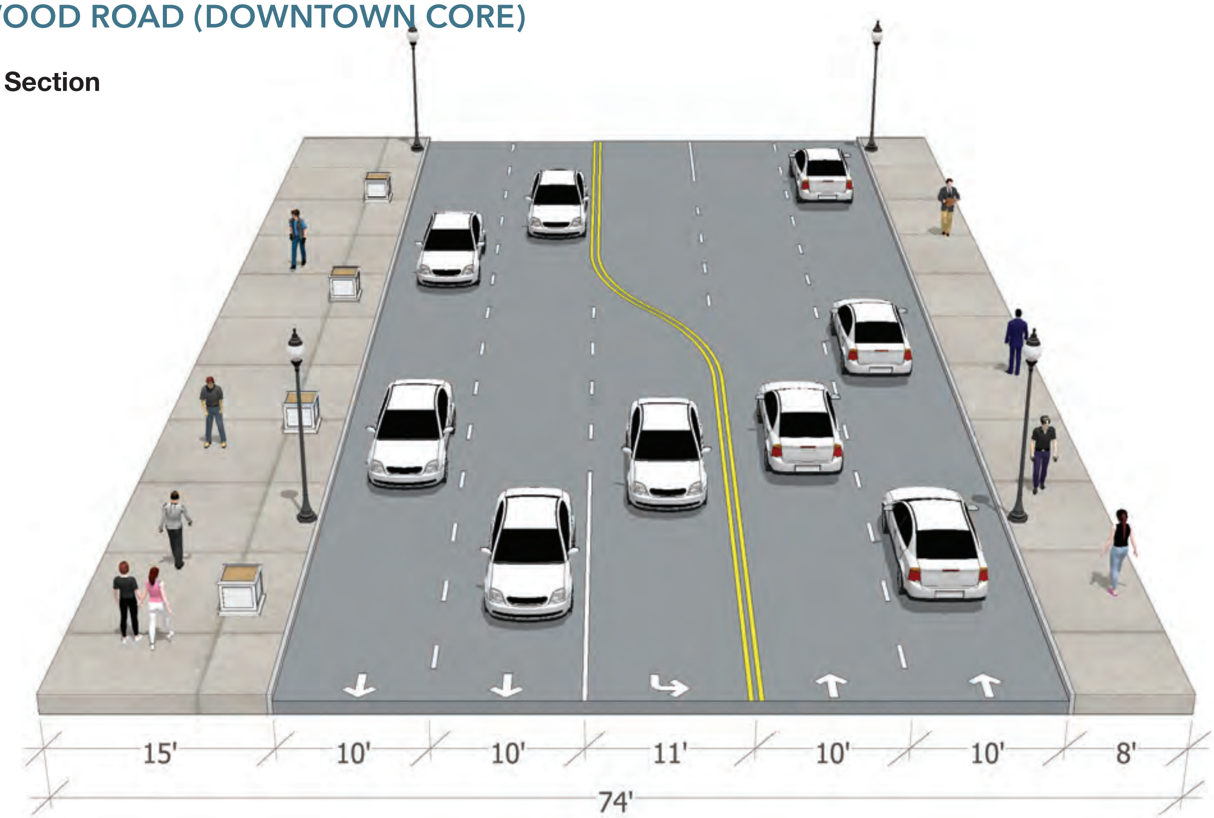
Proposed section 1 characteristics

- Convert the left turn lane to a full center lane, which could be used as a convertible lane during rush hour.
- Convert one lane to parking
- Increase the sidewalk width by 2 feet on both sides to allow for street trees.

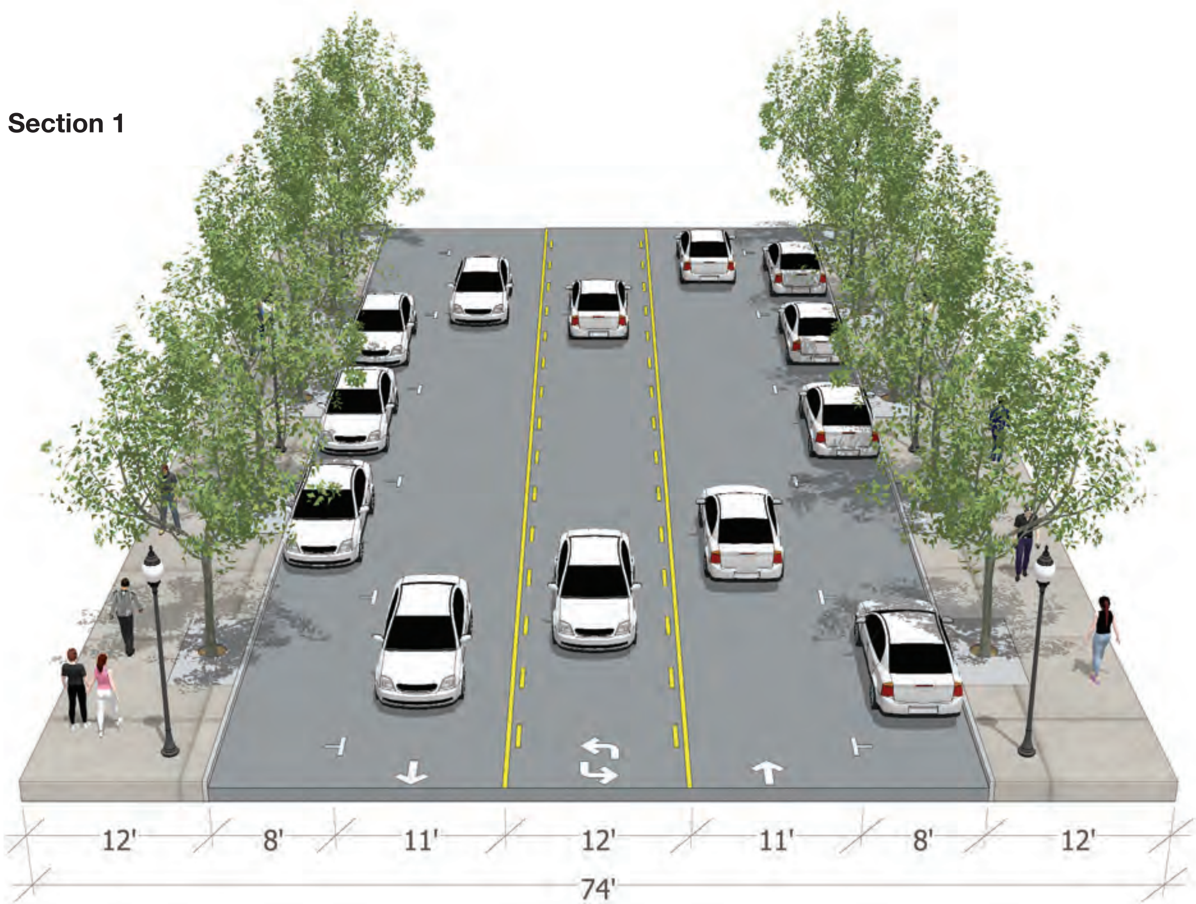


KIRKWOOD ROAD (DOWNTOWN CORE)

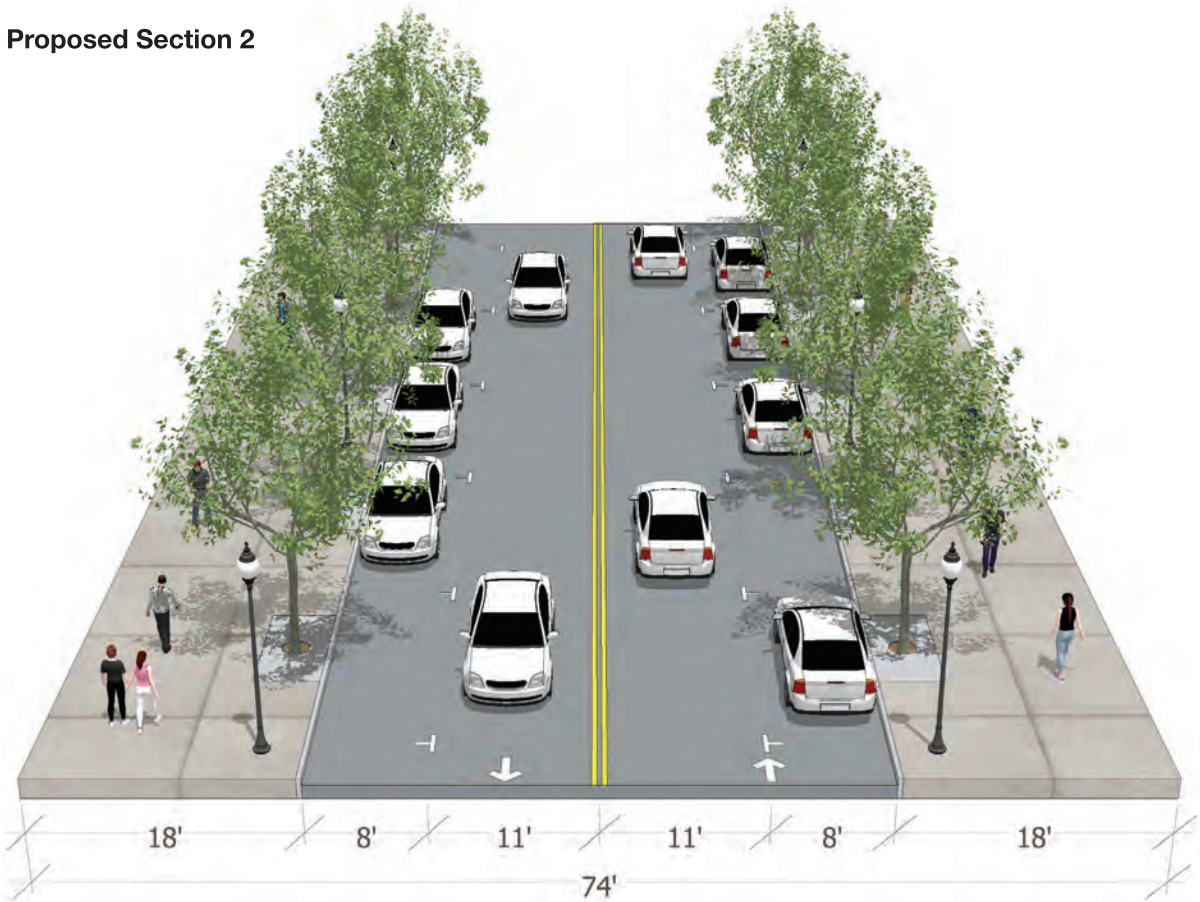
Existing Section



Proposed Section 1



Proposed Section 2

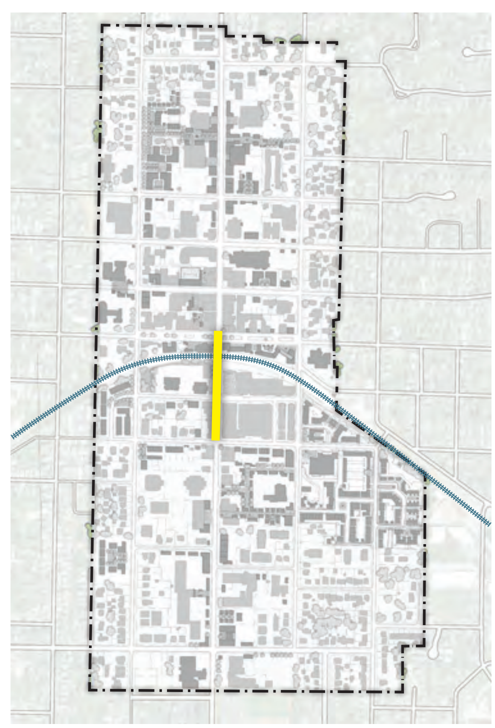


Proposed section 2 characteristics

- Remove the left turn lane
- Convert outer lanes to parking.
- This section only has two travel lanes, however the outer lanes could be convertible lanes, to be utilized during rush hour. Also, at key intersections the last few parallel spaces of one outer lane could deleted in favor of creating a permanent center turn lane.
- The sidewalks in this option are also 10 feet wider than the existing section, promoting a high quality pedestrian realm.

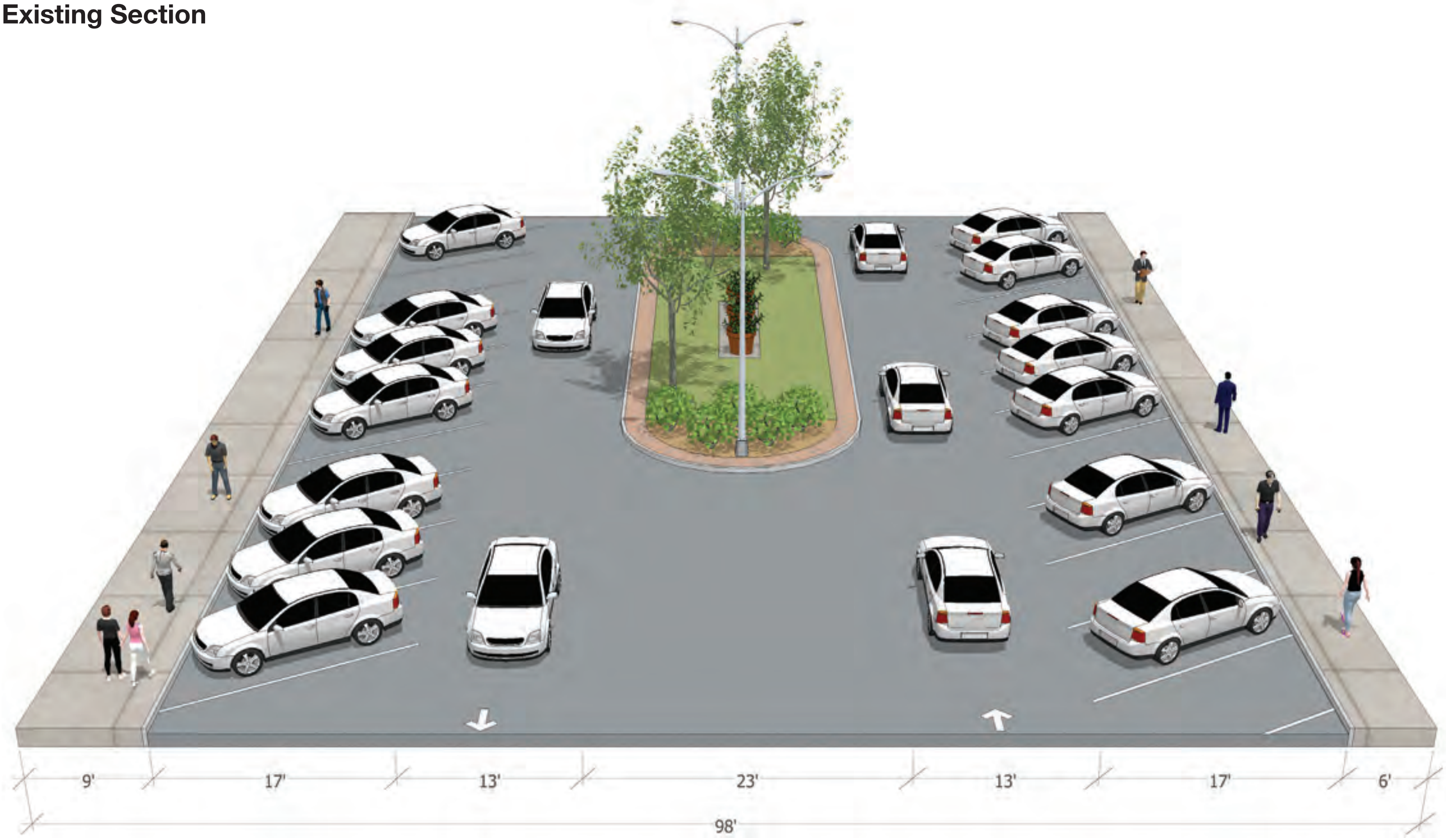
Proposed section 1 characteristics

- Convert the left turn lane to a full center lane, which could be used as a convertible lane during rush hour.
- Convert outer lanes to parking.
- Increase the sidewalk width by 4 feet on both sides to allow for continuous street trees.

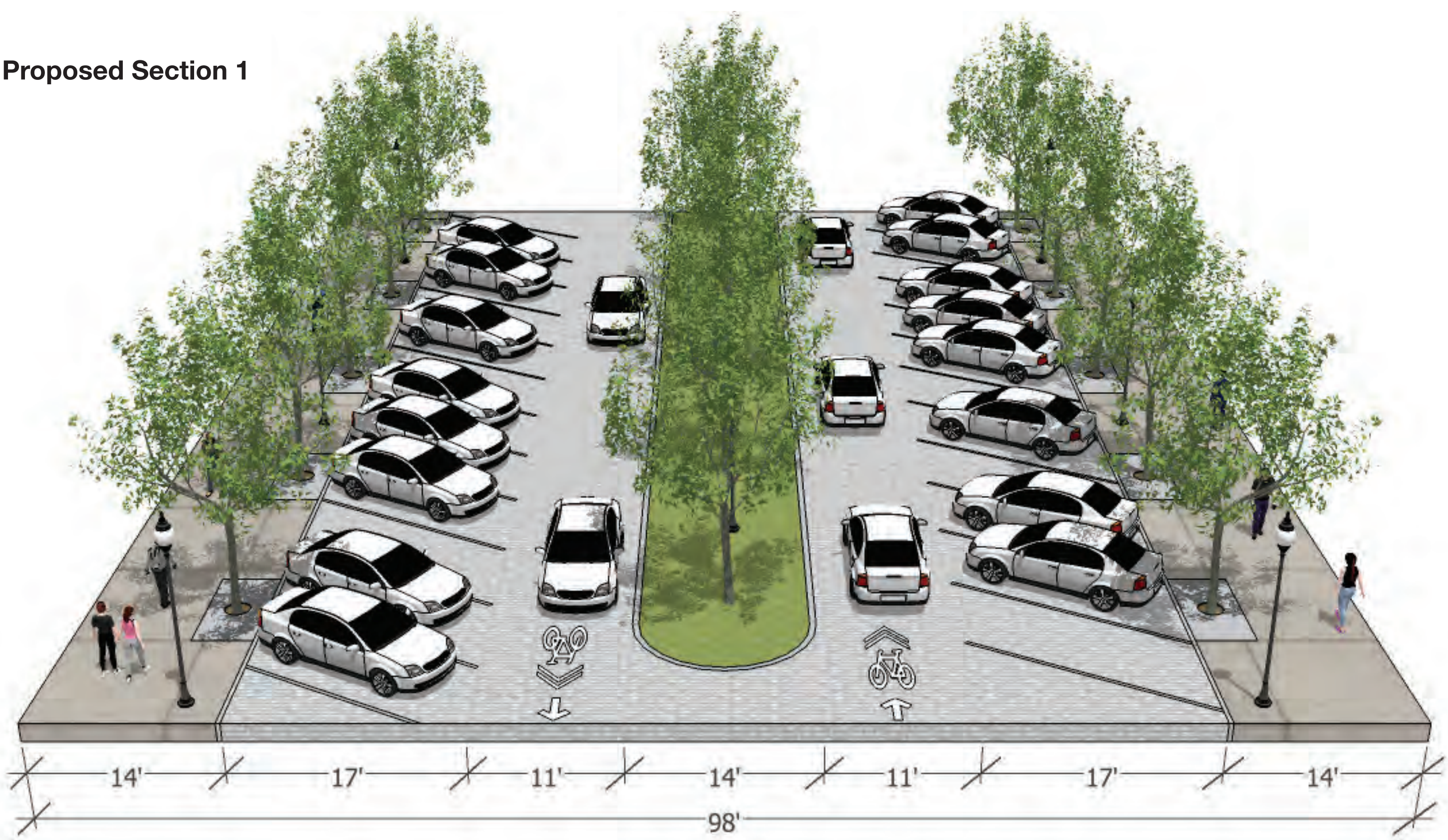


ARGONNE DRIVE

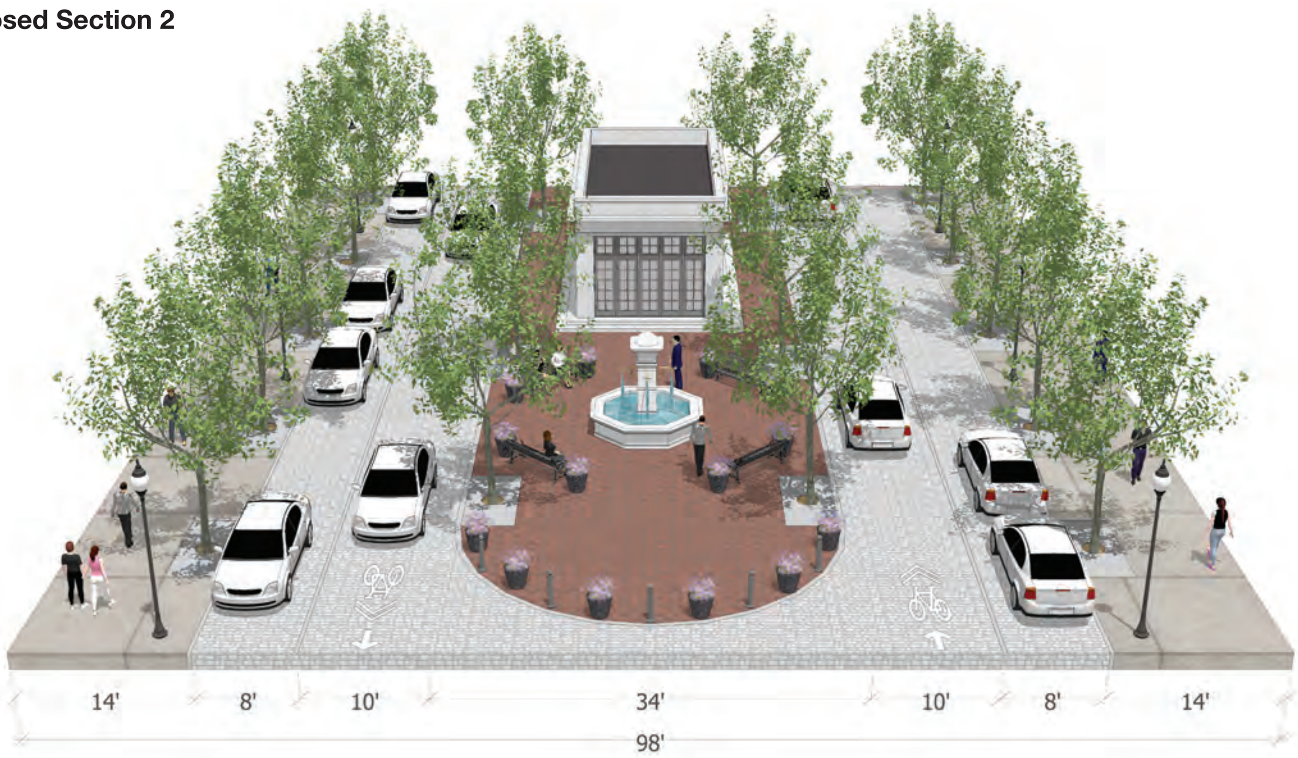
Existing Section



Proposed Section 1



Proposed Section 2



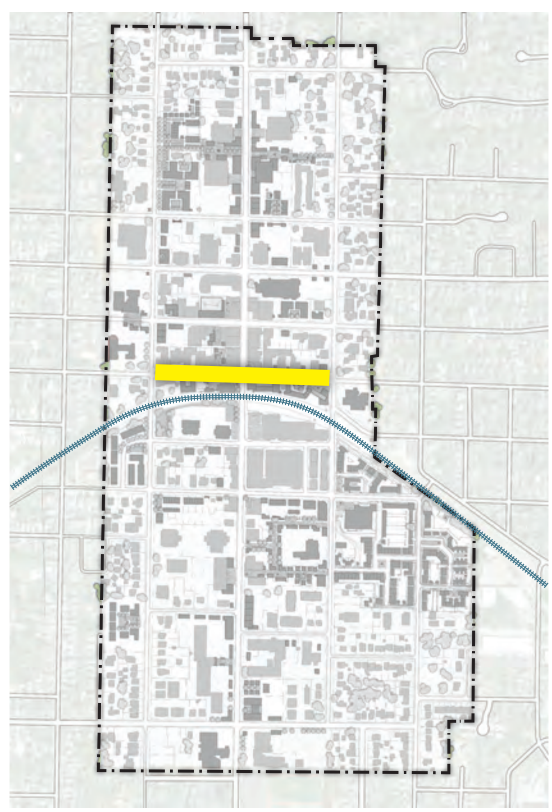
98’

Proposed section 2 characteristics

- Remove the angled parking and replace it with parallel parking
- The median is widened to allow it to be used by pedestrians. It may also permit a small ‘jewel’ building to be located within it.
- The sidewalks in this option are thus permitted to be 3x wider than the existing section.

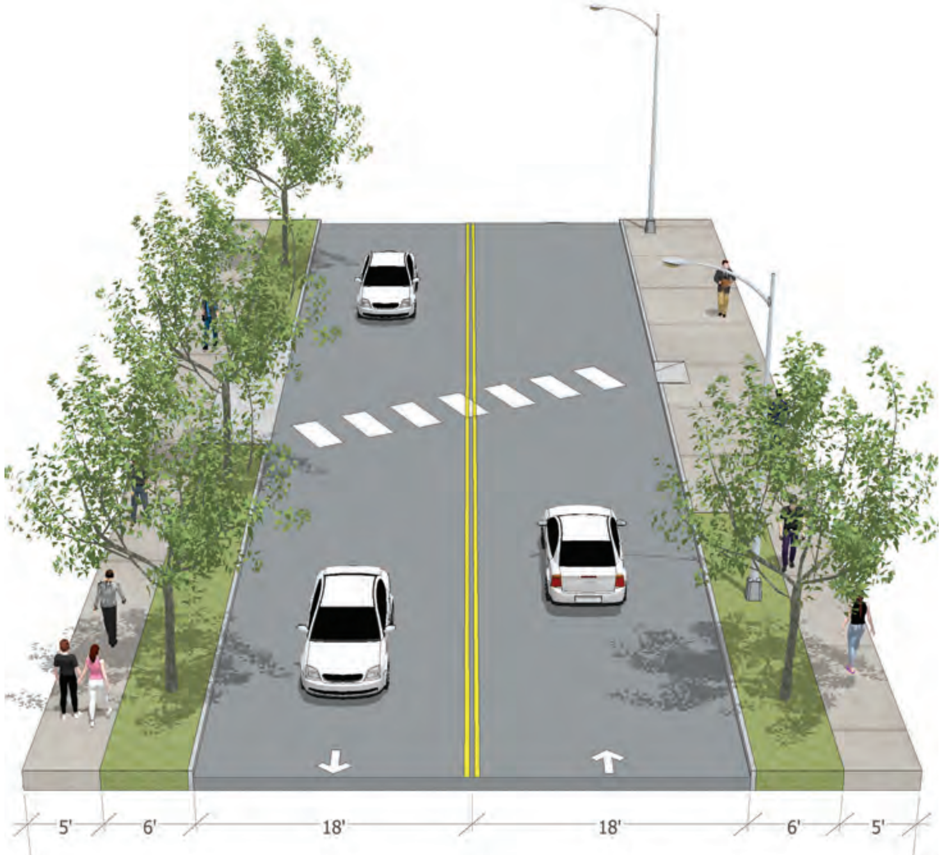
Proposed section 1 characteristics

- Angled parking is re-striped to become reverse-in parking instead of head-in which has been proven to be safer and more efficient.
- Narrow travel lanes, as they are currently too wide.
- Narrow the median to allow a 3x wider sidewalk, which is heavily used as opposed to the median.
- The wider sidewalks allow for street trees to be planted continuously.



JEFFERSON AVENUE @ ST. PETER'S CATHOLIC CHURCH

Existing Section



Proposed Section 1

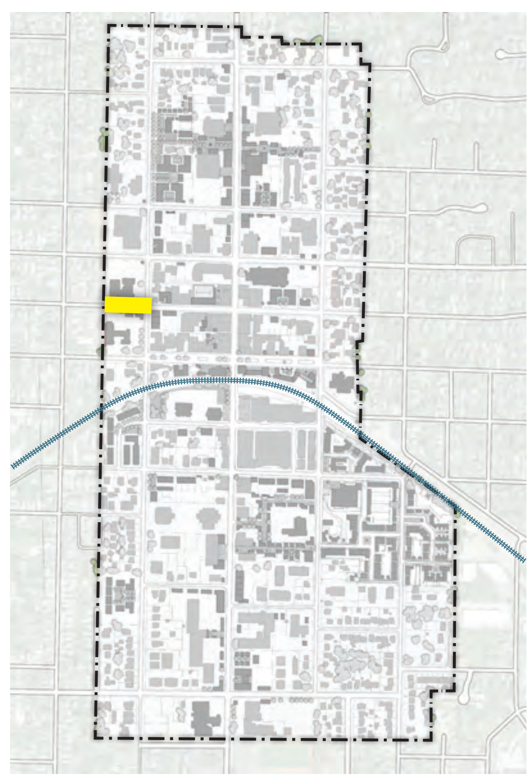
Proposed Section 2

Proposed section 2 characteristics

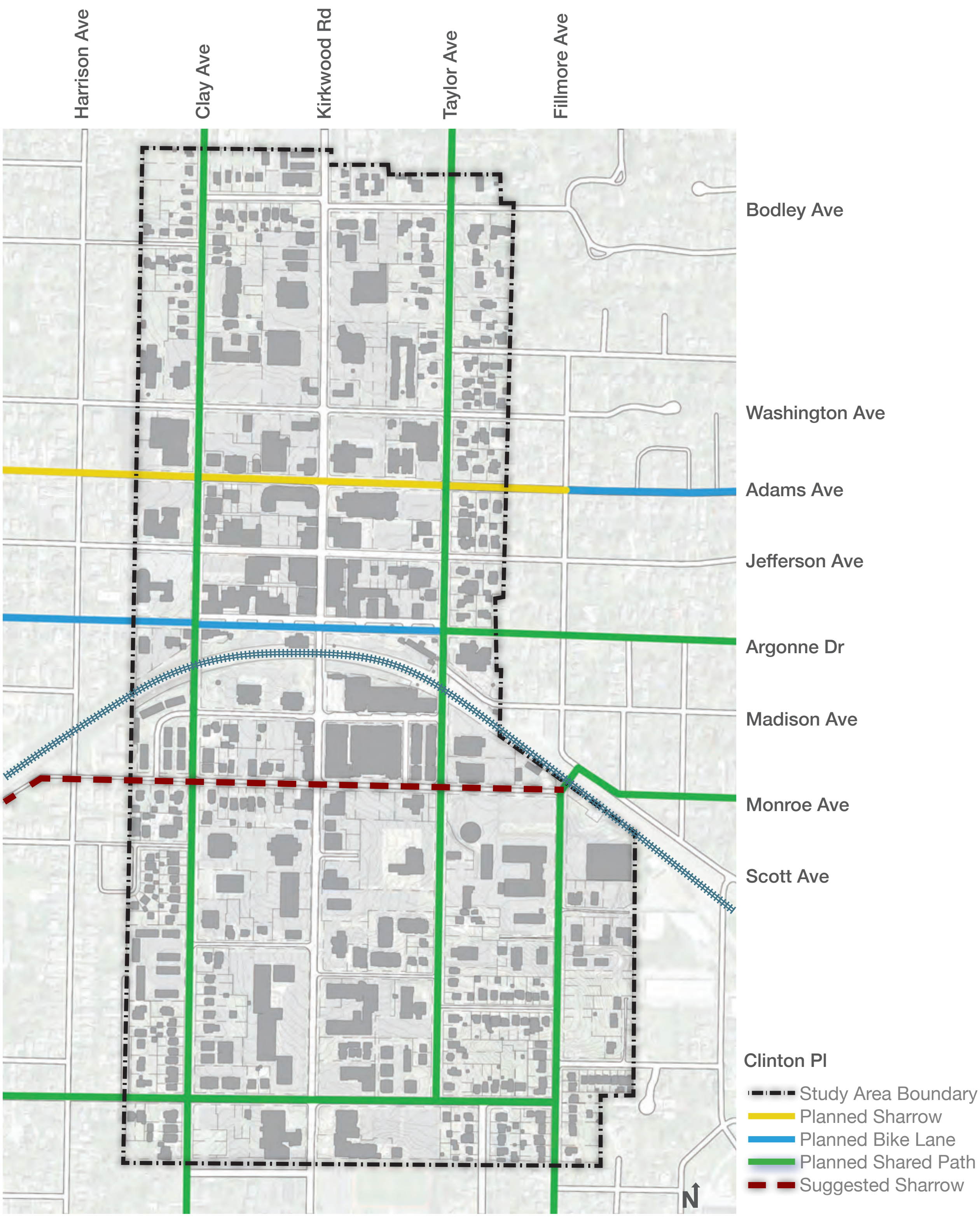
- Narrow the very wide lanes to slow traffic.
- Add angled parking on one side of the street to act as a buffer to pedestrians and slow through traffic.
- Implement a raised table (pavered) crossing to help slow cars and give ample space to pedestrians for a safer crossing. The crossing distance would be reduced by more than double. The raised table area in between the angled spaces could be detailed as a plaza with seating.
- Widen the sidewalk and narrow the planter strip to give space to the very narrow sidewalk.

Proposed section 1 characteristics

- Narrow the very wide lanes to slow traffic.
- Add parallel parking on both sides of the street to act as a buffer to pedestrians
- Implement a raised table (pavered) crossing to help slow cars and give ample space to pedestrians for a safer crossing. The crossing distance would be reduced by more than double.
- Widen the sidewalk and planter strip to be more useful.



There is a clear need and desire to provide alternate modes of transportation throughout the downtown. This plan shows the upcoming improvements, and specifically bike lanes, that are planned to be introduced to the downtown, with a suggested extension along Monroe Ave.



FRAMING DEVELOPMENT

The Framework Plan, depicted on the following page, provides standards to guide future development within downtown Kirkwood.

The Framework Plan is intended to serve as a priority list for downtown Kirkwood's next generation of improvements and needs to be carefully reviewed by all property owners. Projects that meet the structure of the Framework Plan by-right, should receive expedited review process and should not be subject to the public hearing process.

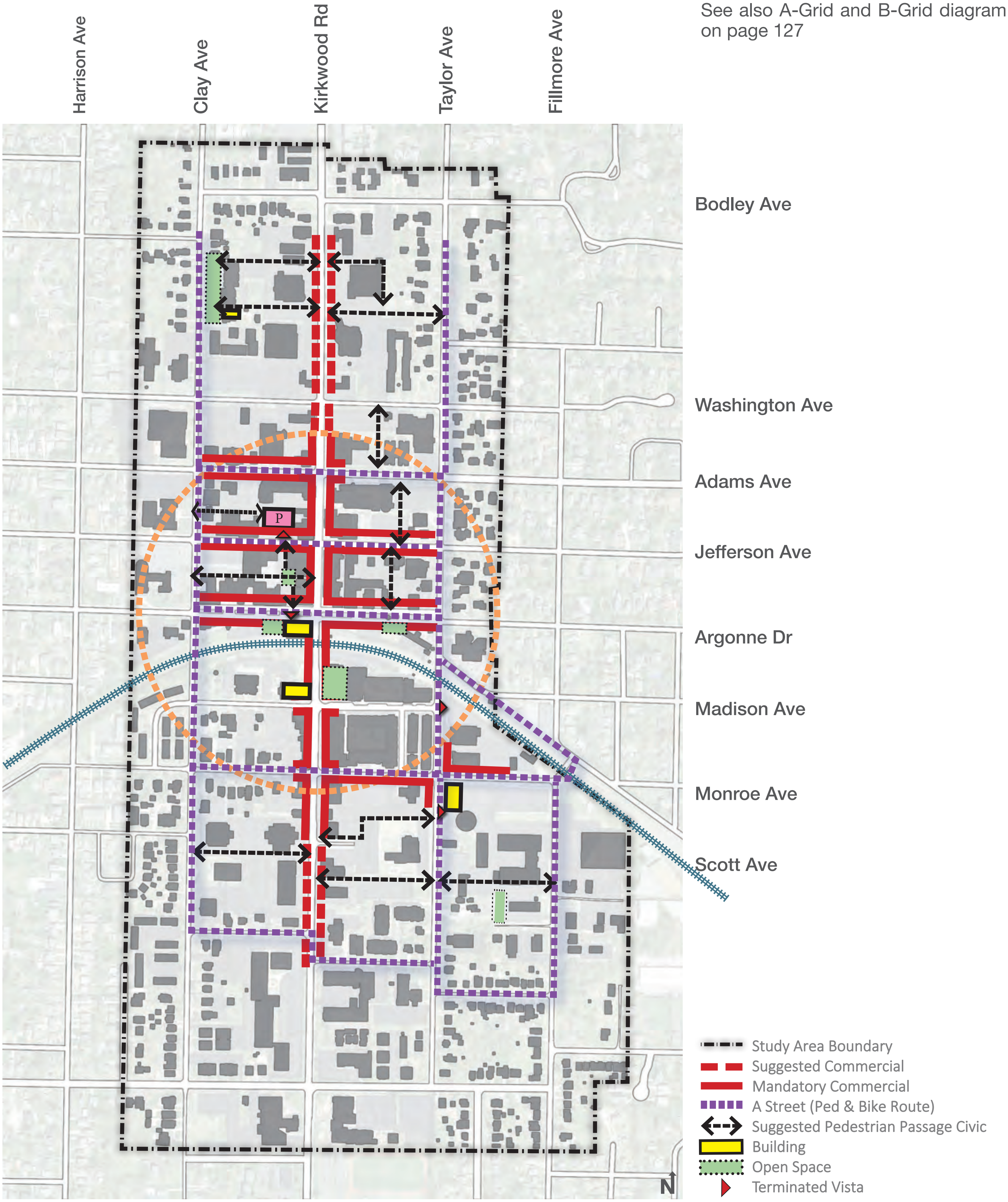
Alternatively, property owners (over a certain threshold of acreage) should be permitted to deviate from certain standards of the Framework Plan and develop their own plan. That would subject property owners to the regular permit process. It requires additional details such as coordinating across property lines to ensure connectivity and access to open space.

Alternatively, if the City wants to approve a Framework Plan definitively and not permit deviations from it, that too is possible.

The Framework Plan depicts the following:
1. Suggested pedestrian connections and trajectory;
2. Designation of A Streets;
3. Open space location;
4. Suggested public parking location;
5. Required commercial at grade; and
6. Suggested commercial at grade.

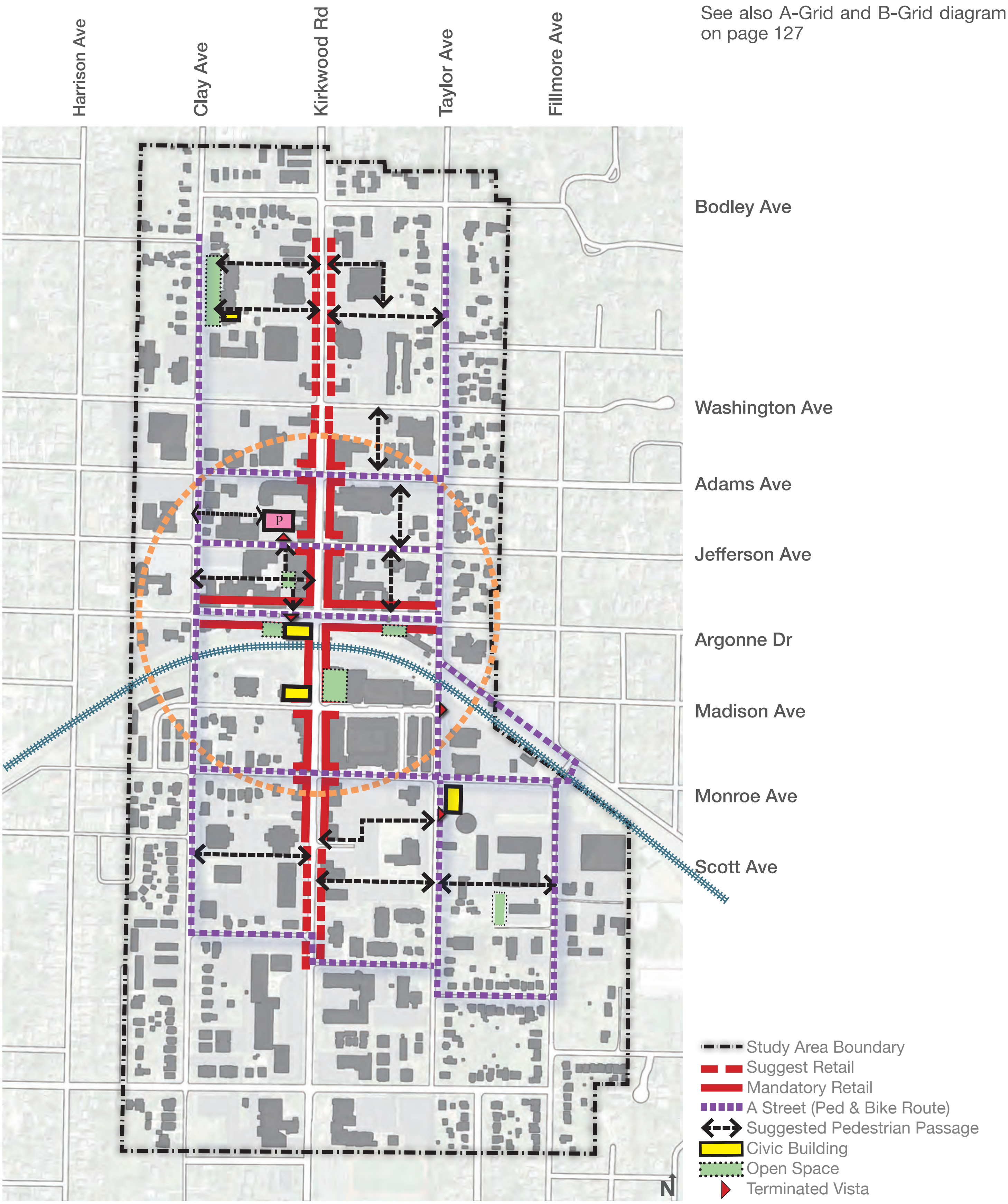
While the Framework Plan helps to guide future development and the Master Plan provides a long term vision for downtown Kirkwood, there are other steps that can be taken to help stimulate development. The following pages identify the top 10 code 'hacks' that the city should focus attention on as an interim step.

See also A-Grid and B-Grid diagram on page 127



 REVISED MAY 2019

See also A-Grid and B-Grid diagram on page 127



1. Waive the minimum parking requirements for liner buildings less than 24 feet in depth.

2. Remove surface parking as a permitted use in B2 for downtown and let form take precedent over use.

(38) Motor vehicle parts stores, retail sales only with no on-site installation of motor vehicle parts or accessory items

(39) Offices, general

(40) Offices, medical and dental

(41) Office supplies and equipment sales and service

(42) Outpatient facilities for the treatment of alcohol and other drug abuse

~~(43) Parking lots~~

(44) Parks or playgrounds, publicly owned

(45) Paint and wallpaper stores

(46) Pet shops, including grooming and supplies

(47) Pharmacies

3. Measure height in stories, not feet, and reconsider height measurement for roofs.

4. Reduce parking ratios according to Tables 1.1, and 1.2, encourage shared parking, according to Table 1.3, and permit off-site parking within 500 ft.

Offices, general	Five (5) spaces per one thousand (1,000) square feet of useable area of the building
Offices, medical and dental	Seven (7) spaces per one thousand (1,000) square feet of useable area of the building
Physical fitness facilities	One (1) space for every five (5) customers computed on the basis of maximum servicing capacity at any one time plus one (1) additional space for every two (2) persons regularly employed on the premises
Retail, indoor	Five and one-half (5 ½) spaces per one thousand (1,000) square feet of usable area plus one (1) space for every vehicle used directly in the conduct of such business
Retail, outdoor	Two (2) spaces for each person employed on the premises based on maximum seasonal employment plus one (1) space for each vehicle used in the conduct of the business
Restaurants Too High!	Twenty (20) spaces per one thousand (1,000) square feet of seating area plus two (2) parking spaces for every three (3) employees on the maximum shift plus one (1) parking space for every vehicle used in the conduct of the business

The following pages summarize the current parking requirements and organize them into general groups of similar use and parking requirements. Table 1.1 includes the existing uses in blue, organized under proposed categories and sub-categories. These categories allow for a consolidated minimum parking requirement to be calibrated for downtown Kirkwood.

Building on that is a proposed Shared Parking Strategy as per Table 1.3.

PROPOSED PARKING REQUIREMENTS ANALYSIS

Table 1.1 Existing Uses and Parking Ratios Consolidated

Existing Land Use	Existing Parking Requirements	Proposed Parking Requirements
Residential		
Three or More Family Dwellings	2 spaces/du for 1499 sf or less, 2.25 spaces/du for 1500 or more, 1 space/3 units visitor	1 space / unit
Two-Family Dwellings	2 spaces/du	1 space / unit
Single-Family Dwellings	2 space/du	1 space / unit
Hotel & Lodging		
Motels / Hotels	2 spaces/room, additional spaces for accessory uses	0.5 space per room
Dormitories or Group Living Facilities	1 space/4 beds	1 space for every 4 beds
Commercial		
General Retail		
Barber Shop	3 spaces/chair	3 spaces per 1,000 sq.ft.
Beaty Shop	3 spaces/chair	3 spaces per 1,000 sq.ft.
Dry Cleaner, Drop Off / Pick Up	5 spaces/1000 sf, 9x60 ft drive thru lane	3 spaces per 1,000 sq.ft.
Laundromat	1 space/2 washing machines	3 spaces per 1,000 sq.ft.
Physical Fitness Facilities	1 space/7 customers at max capacity, 1 space/vehicle used in conduct of business	3 spaces per 1,000 sq.ft.
Retail, Indoor	5.5 spaces/1000 sf, 1 space/vehicle used in conduct of business	3 spaces per 1,000 sq.ft.
Retail, Outdoor	2 spaces/employee, 1 space/vehicle used in conduct of business	3 spaces per 1,000 sq.ft.
Post Offices & Similar Parcel Services	7.5 spaces/1000 sf, 1 space/vehicle used in conduct of business	3 spaces per 1,000 sq.ft.
Specialized Retail		
Funeral Homes	1 space/vehicle used in conduct of business, 1 space/2 employees, 1 space/3 seats in chapel, 5 spaces/parlor	1 space / employee + 1 space / 5 seats
Food Service		
Restaurants	20 spaces/1000 sf of seating area, 2 spaces/employee, 1 space/vehicle used in conduct of business	10 spaces / 1,000 sq.ft.
Restaurants, Drive Thru/In	32 spaces/1000 sf of seating area, 2 spaces/employee, 1 space/vehicle used in conduct of business, 9x160 ft drive thru	10 spaces / 1,000 sq.ft.
Office		
Offices, General	5 spaces/1000 sf	4 spaces per 1,000 sq.ft.
Financial Institution	5 spaces/1000 sf, 9x60 ft drive thru lane	4 spaces per 1,000 sq.ft.
Auto Related		
Motor Vehicle Service Station	3 spaces/employee on shift, 1 space/vehicle used in conduct of business, min. 4 per service station	1 space / employee + 3 spaces / 1,000 sq.ft. of retail space
Food / Gas Store	5.5 spaces/1000 sf, 1 space/vehicle used in conduct of business, each double fuel pump shall count as 1 space, min. 5 spaces	1 space / employee + 3 spaces / 1,000 sq.ft. of retail space
Convenience / Gas Store	5.5 spaces/1000 sf, 1 space/vehicle used in conduct of business, each double fuel pump shall count as 1 space, min. 5 spaces	1 space / employee + 3 spaces / 1,000 sq.ft. of retail space
Motor Vehicle Service Station with Repair	1 space/employee, 1 space/vehicle used in conduct of business plus 5 spaces/ service bay	1 space / employee + 3 spaces / 1,000 sq.ft. of retail space
Medical		
Offices, Medical & Dental	7 spaces/1000 sf	5 spaces per 1,000 sq.ft.
Animal Hospital	7 space/1000 sf	5 spaces per 1,000 sq.ft.
Hospitals	1 space/patient bed, 1 space/	5 spaces per 1,000 sq.ft.
Group Homes	1 space/4 beds	5 spaces per 1,000 sq.ft.
Medical & Dental Clinics	7 spaces/1000 sf	5 spaces per 1,000 sq.ft.
Nursing Home	1 space/4 beds	5 spaces per 1,000 sq.ft.

return to TOC

Table 1.1 Existing Uses and Parking Ratios Consolidated		
Existing Land Use	**Existing Parking Requirements**	**Proposed Parking Requirements**
Recreation		
Arcades	1 space/5 customers at max capacity, 1 space/2 employees	1 space / 6 fixed seats + 0.5 space / employee OR 5 spaces / 1,000 sq.ft. for unfixed seats
Athletic Fields	20 spaces/field or 1 space/4 seats	1 space / 6 fixed seats + 0.5 space / employee OR 5 spaces / 1,000 sq.ft. for unfixed seats
Bowling Alleys	1 space/5 customers at max capacity, 1 space/2 employees	1 space / 6 fixed seats + 0.5 space / employee OR 5 spaces / 1,000 sq.ft. for unfixed seats
Recreation Centers	1 space/5 customers at max capacity, 1 space/2 employees	1 space / 6 fixed seats + 0.5 space / employee OR 5 spaces / 1,000 sq.ft. for unfixed seats
Skating Rinks	1 space/5 customers at max capacity, 1 space/2 employees	1 space / 6 fixed seats + 0.5 space / employee OR 5 spaces / 1,000 sq.ft. for unfixed seats
Stadiums	1 space/3 seats at max capacity	1 space / 6 fixed seats + 0.5 space / employee OR 5 spaces / 1,000 sq.ft. for unfixed seats
Swimming Pools	1 space/5 customers at max capacity, 1 space/2 employees	keep existing
Education		
Day Care Center	1 space/employee, 1 space/classroom	0.5 space per employee
Learning Center	7 spaces/1000 sf	4 spaces per 1,000 sq.ft.
School, Elementary	1 space/employee, 1 space/classroom	Assembly per Assembly use; 0.5 space / employee + 1 space for every 20 students
School, High School	1 space/3 seats of auditorium, gym, or stadium, 1 space/employee, 2 spaces/ classroom or 1 space/employee, 25% of sophomore class, 35% of junior class, 50% of senior class	Assembly per Assembly use; 0.5 space / employee + 1 space for every 5 students
School, Middle	1 space/3 seats of auditorium, gym, or stadium, 1 space/employee, 2 spaces/ classroom	Assembly per Assembly use; 0.5 space / employee + 1 space for every 5 students
School, Technical or Vocational	1 space/4 seats of auditorium, gym, or stadium or 1 space/employee, 20 spaces/ classroom	Assembly per Assembly use; 0.5 space / employee + 1 space for every 5 students
School, University	1 space/4 seats of auditorium, gym, or stadium or 1 space/employee, 20 spaces/ classroom	Assembly per Assembly use; 0.5 space / employee + 1 space for every 3 students
Assembly		
Libraries	7.5 spaces/1000 sf, 1 space/vehicle used in conduct of business	4 spaces per 1,000 sq.ft.
Museums	7.5 spaces/1000 sf, 1 space/vehicle used in conduct of business	4 spaces per 1,000 sq.ft.
Auditoriums	1 space/3 seats at max capacity	1 space / 6 fixed seats + 0.5 space / employee
Theaters	1 space/3 seats at max capacity	1 space / 6 fixed seats + 0.5 space / employee
Churches & Places of Worship	1 space/3 seats	1 space / 6 fixed seats + 0.5 space / employee

Table 1.1 Existing Uses and Parking Ratios Consolidated		
Existing Land Use	**Existing Parking Requirements**	**Proposed Parking Requirements**
Industrial		
Wholesale Business	2 spaces/employee, 1 space/vehicle used in conduct of business, 1 space/200 sf of office	no minimum
Distribution Warehouse	1 space/vehicle used in conduct of business, 2 spaces/employee, 1 space/200 sf office	no minimum
Freight Terminals	1 space/vehicle used in conduct of business, 2 spaces/employee, 1 space/200 sf office	no minimum
Industrial Plants	1 space/vehicle used in conduct of business, 2 spaces/employee	no minimum
Repair Shops - Plumbing, Electrical, Roofing	4 spaces/1000 sf, 1 space/vehicle used in conduct of business	no minimum
Warehouses	1 space/vehicle used in conduct of business, 2 spaces/employee, 1 space/200 sf office	no minimum
Airports & Helipads	1 space/200 sf of lobby, 2 spaces/3 employees, 1 space/vehicle used to conduct business	no minimum
Bus Passenger Terminals	1 space/100 sf of lobby	no minimum

After reviewing the existing parking ratios by individual use and then consolidating similar uses into categories, the following table (Table 1.2) was created to simplify, and reduce parking requirement for downtown Kirkwood. These parking requirements could be further reduced by encouraging shared parking where appropriate according to Table 1.3 Shared Parking.

Note: Consider permitting on-street parking, only along lot perimeter, to count towards the minimum parking requirements outlined in this table. It is worth tracking the first few projects that take advantage of this on-street parking provision to ensure there are no unintended spillover parking problems along adjacent properties and that these more efficient parking ratios are functioning as intended.

Cities around the country are significantly reducing and adjusting parking requirements through a combination of transportation demand strategies that reflect their demographics, geographic and physical conditions and parking management abilities. These proposed parking ratios are based on adjusted current parking demands in downtowns that are mixed use, compact, connected and walkable. Kirkwood fits that model. Recognizing that too much parking is as harmful as too little parking is necessary for most downtowns to thrive. While more cities are implementing maximum parking requirements and removing minimum parking requirements altogether to address issues of affordability and land efficiency, this might be too aggressive for Kirkwood in the short-term.

Table 1.2 Minimum Parking Requirements	
Uses	**Downtown Kirkwood Parking Requirements**
Residential	1 space / unit 0.5 spaces / adu
Hotel & Lodging	0.5 space / room
Commercial	*see below*
General Retail	3 spaces / 1,000 sq.ft
Specialized Retail	1 space / employee + 1 space / 5 seats
Food Service	10 spaces / 1,000 sq.ft
Office	4 spaces / 1,000 sq.ft
Auto-Related	1 space / employee + 3 spaces / 1,000 sq.ft. of
Medical	5 spaces / 1,000 sq.ft
All Other	3 spaces / 1,000 sq.ft
Recreation & Assembly	1 space / 6 fixed seats + 0.5 space / employee OR 5 spaces / 1,000 sq.ft. for unfixed seats
Education	*see below*
Education (Elementary)	Assembly per Assembly use; 0.5 space / employee + 1 space for every 20 students
Education (High)	Assembly per Assembly use; 0.5 space / employee + 1 space for every 5 students
Higher Education	Assembly per Assembly use; 0.5 space / employee + 1 space for every 3 students
Industrial	no minimum
All Other	1 space / 1,000 sq.ft

SHARED PARKING REDUCTION

The shared parking table determines the space usage at different times of the day for each day of the week and each use listed. All uses have a time of day they are at 100% occupancy. The shared use table determines the highest parking occupancy across all uses and times, which becomes the new requirement.

Shared parking reductions are available for multiple uses on:
1. Single or multiple adjacent sites under single ownership,
2. Multiple connected sites with a Shared Use Parking Agreement sharing parking facilities, and
3. City, or SBD managed facilities.

The number of minimum required parking spaces may be reduced according to Table 1.3 as follows:
1. In Column A, enter the minimum required parking spaces for each use;
2. For each following column (time of day and day of week), multiply the amount in Column A by the percentage listed in that column.
3. Enter the sum of each column in the bottom row.

The revised minimum required parking is the highest value in the bottom row of the table.

Table 1.3 Shared Parking Table *[sample - req. mins. to change as needed]*

Use Utilizing Shared Parking	Req. Parking / Min. Standard	Mon - Fri 8am-6pm		Mon - Fri 6pm-12am		Mon - Fri 12am-8am		Sat - Sun 8am-6pm		Sat - Sun 6pm-12am		Sat - Sun 12am-8am	
Residential	25	60%	15	100%	25	100%	25	80%	20	100%	25	100%	25
Hotel & Lodging	40	70%	28	100%	40	100%	40	70%	28	100%	40	100%	40
Commercial	*see below*												
Food Service	30	70%	21	100%	30	10%	3	70%	21	100%	30	20%	6
Office, Industrial	20	100%	20	20%	4	5%	1	5%	1	5%	1	5%	1
All Other	10	90%	9	80%	8	5%	1	100%	10	70%	7	5%	1
Recreation & Assembly	0	60%	0	100%	0	100%	0	80%	0	100%	0	100%	0
All Other	0	70%	0	100%	0	100%	0	70%	0	100%	0	100%	0
Total Req. Spaces	**125**	**93**		**107**		**70**		**80**		**103**		**73**	

5. Reduce side setbacks to incentivize middle missing housing in R5.

(3) Side yard:

a. Multiple family dwellings, two family dwellings and attached row dwellings shall have a side yard of not less than twelve (12) feet or 50% of the building height, whichever is greater.

b. On lots used for a church or similar place of worship, there shall be a side yard on each side of a building having a width of not less than thirty (30) feet.

c. All other uses not identified in paragraph a or b above shall have a side yard on each side of the building of not less than eight (8) feet.

d. When a lot of record having a width less than sixty (60) feet is to be used for a single-family detached dwelling, the side yard requirement on each side of the building shall not be less than five (5) feet.

- Multi-family dwellings of up to six units shall have a minimum side yard of five feet.
- Attached single-family dwellings (row houses) are permitted a zero side yard. End and corner units shall have a minimum side yard of five feet.

6. Remove the minimum required unit size and the maximum number of units per floor tied to height from R5.

(5) Dwellings, Single-family detached

(6) Multiple family dwellings (~~3,000~~ square feet per dwelling unit) with not more than:

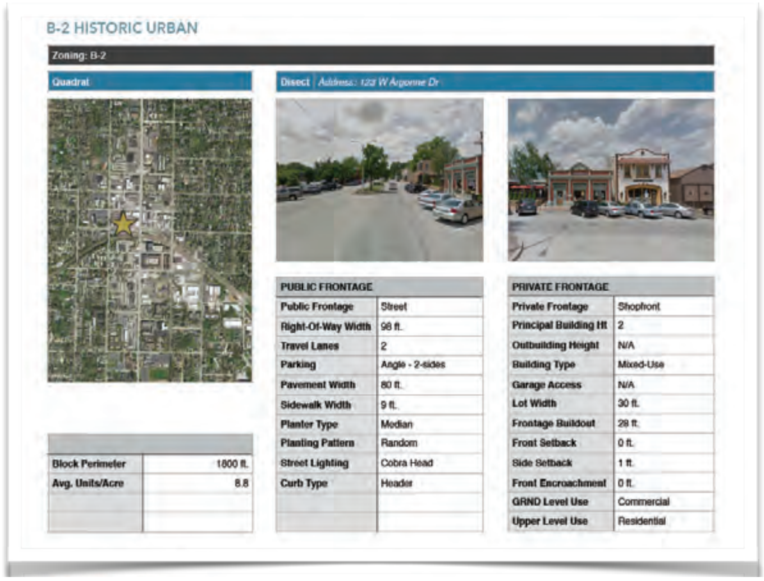
a. Four (4) dwelling units per building for one story buildings;

b. Eight (8) dwelling units per building for two-story buildings; and

c. Twelve (12) dwelling units per building for three story buildings.

?

7. Establish maximum lot widths in R5 and minimum frontage occupation in B2.


B-2 HISTORIC URBAN

Zoning: B-2

Quadrat

Disect | Address: 123 W Argonne Dr

Block Perimeter	1800 ft.
Avg. Units/Acre	8.8

PUBLIC FRONTAGE	
Public Frontage	Street
Right-Of-Way Width	98 ft.
Travel Lanes	2
Parking	Angle - 2-sides
Pavement Width	80 ft.
Sidewalk Width	9 ft.
Planter Type	Median
Planting Pattern	Random
Street Lighting	Cobra Head
Curb Type	Header

PRIVATE FRONTAGE	
Private Frontage	Shopfront
Principal Building Ht	2
Outbuilding Height	N/A
Building Type	Mixed-Use
Garage Access	N/A
Lot Width	30 ft.
Frontage Buildout	28 ft.
Front Setback	0 ft.
Side Setback	1 ft.
Front Encroachment	0 ft.
GRND Level Use	Commercial
Upper Level Use	Residential

8. Increase maximum lot coverage in R5 to include desired building types such as townhouses.

Article IV Residential Districts

440.8: ***Percentage of lot coverage.*** The coverage of all buildings, including accessory buildings, shall not be more than forty (40) percent. **50%? 60%?**

440.9: ***Dwelling standards.*** Each building erected, converted, or reconstructed in this district shall have a minimum floor area as follows:

(1) One family dwellings, two family dwellings, and row dwellings, one story in height, 850 square feet per dwelling unit, measured from the outside of the exterior walls, but excluding cellars, basements, open porches, breezeways, carports and garages, common entrances and halls.

(2) One family dwellings and two family dwellings and row dwellings more than one story in height: 600 square feet per floor, but excluding cellars, basements, open porches, breezeways, carports, and garages, common entrance and halls.

(3) Multi-family dwellings: 600 square feet per dwelling unit measured from the outside of the exterior walls, but excluding cellars, basements, open porches, breezeways, carports and garages, common entrance and halls.

9. Regulate retail at grade by the Framework Plan. This may mean revising building height “bonus” and use mix for mixed-use buildings.

Article V Business Districts

Revise

c. Minor revisions to the final site plan may be approved by the Director of Public Works if such revisions satisfy the intent of the approved site plan.

510.6: ***Height.*** No building other than a church or similar place of worship shall exceed in height that height which for that particular building will create a maximum floor area ratio in excess of two and one-half (2 ½) or 40 feet whichever is the lesser except when the building is part of a mixed-use development, the height shall not exceed 60 feet when approved by the Planning and Zoning Commission or City Council as part of a site plan review. Architectural features may be permitted above the height limitations provided that the space above the maximum height is not occupied, not used for storage, and is approved by Planning and Zoning or the City Council as part of a site plan review.

REWORD TO SAY '... EXCEPT FOR MIXED-USE BUILDINGS OR WHEN THE BUILDING IS PART OF A MIXED-USE DEVELOPMENT, THE HEIGHT SHOULD NOT EXCEED 60 FEET'

Remove

For mixed-use development consisting of multiple buildings, a minimum of twenty (20) percent and maximum of forty (40) percent of the total gross floor area of all buildings shall be provided as commercial use. If a commercial use is provided in a building, the entire ground story shall be provided as commercial uses only and residential uses only shall be provided on the second and above stories.

Remove the measurement by FAR as this doesn't provide a predictable result.

Suggest measuring height by stories to allow more generous floor to ceiling height. The current limit of 40 feet would translate to 4 stories and 60 feet to 6 stories.

10. Calibrate ARB regulations to the A/B grid proposed by the Framework Plan.

Preferred elements are those the City finds to be highly compatible with, and contributing to, the existing character and quality of life in the single family zoning districts and for achieving the preferred character of residential infill development. Appropriately incorporating these elements into a project significantly increases the likelihood that the project will be viewed favorably by the Architectural Review Board.

Discouraged elements are those the City finds to be potentially incompatible with, and detracting from, the existing character and quality of life of the single family zoning districts and the preferred character of residential infill development. Incorporating discouraged elements into a project decreases the likelihood that the project will be viewed favorably. Because discouraged elements have the potential to be disruptive to the existing character of a neighborhood, applicants shall demonstrate how their use in the context of their total project design is consistent with:

image courtesy of JW Fuller Construction

DPZ CODESIGN