City of Plymouth Planning Commission Sub-Committee Meeting Agenda

Monday, July 14, 2025 – 11:30 a.m.

City Hall Conference Room

City of Plymouth
201 S. Main
Plymouth, Michigan 48170

www.plymouthmi.gov
Phone 734-453-1234

1. CALL TO ORDER
   a. Roll Call

2. CITIZENS COMMENTS

3. APPROVAL OF THE MINUTES
   a. Approval of the June 16, 2025 meeting minutes

4. MSHDA GRANT DISCUSSION

5. ADJOURNMENT

Citizen Comments - This section of the agenda allows up to 3 minutes to present information or raise issues regarding items not on the agenda. Upon arising to address the Commission, speakers should first identify themselves by clearly stating their name and address. Comments must be limited to the subject of the item.

Meetings of the City of Plymouth are open to all without regard to race, sex, color, age, national origin, religion, height, weight, marital status, disability, or any other trait protected under applicable law. Any individual planning to attend the meeting who has need of special assistance under the Americans with Disabilities Act (ADA) should submit a request to the ADA Coordinator at 734-453-1234 ext. 234 at least two working days in advance of the meeting. The request may also be submitted via mail at 201 S. Main St. Plymouth, MI 48170, or email to clerk@plymouthmi.gov.

City of Plymouth Strategic Plan 2022-2026

GOAL AREA ONE - SUSTAINABLE INFRASTRUCTURE
OBJECTIVES **1. Identify and establish sustainable financial model(s) for major capital projects, Old Village business district, 35th District Court, recreation department, and public safety** **2. Incorporate eco-friendly, sustainable practices into city assets, services, and policies; including more environmentally friendly surfaces, reduced impervious surfaces, expanded recycling and composting services, prioritizing native and pollinator-friendly plants, encouraging rain gardens, and growing a mature tree canopy** **3. Partner with or become members of additional environmentally aware organizations** **4. Increase technology infrastructure into city assets, services, and policies** **5. Continue sustainable infrastructure improvement for utilities, facilities, and fleet** **6. Address changing vehicular habits, including paid parking system /parking deck replacement plan, electric vehicle (EV) charging stations, and one-way street options**

GOAL AREA TWO – STAFF DEVELOPMENT, TRAINING, AND SUCCESSION
OBJECTIVES **1. Create a 5-year staffing projection** **2. Review current recruitment strategies and identify additional resources** **3. Identify/establish flex scheduling positions and procedures** **4. Develop a plan for an internship program** **5. Review potential department collaborations** **6. Hire an additional recreation professional** **7. Review current diversity, equity, and inclusion training opportunities** **8. Seek out training opportunities for serving diverse communities**

GOAL AREA THREE - COMMUNITY CONNECTIVITY
OBJECTIVES **1. Engage in partnerships with public, private and non-profit entities** **2. Increase residential/business education programs for active citizen engagement** **3. Robust diversity, equity, and inclusion programs** **4. Actively participate with multi-governmental lobbies (Michigan Municipal League, Conference of Western Wayne, etc.)**

GOAL AREA FOUR - ATTRACTIVE, LIVABLE COMMUNITY
OBJECTIVES **1. Create vibrant commercial districts by seeking appropriate mixed-use development, marketing transitional properties, and implementing Redevelopment Ready Communities (RRC) practices** **2. Improve existing and pursue additional recreational and public green space opportunities and facilities for all ages** **3. Develop multi-modal transportation plan which prioritizes pedestrian and biker safety** **4. Improve link between Hines Park, Old Village, Downtown Plymouth, Plymouth Township, and other regional destinations** **5. Maintain safe, well-lit neighborhoods with diverse housing stock that maximizes resident livability and satisfaction** **6. Modernize and update zoning ordinance to reflect community vision** **7. Implement Kellogg Park master plan**

2025 Planning Commission Goals

1. Adopt the master plan
2. Complete “quick” zoning ordinance amendments (zoning audit)
3. Complete the multi-family/housing ordinance amendments (MSHDA Grant)
4. Work toward completing a residential compatibility ordinance

Approved MSHDA Grant activities:

Program Description

The City of Plymouth will update its Master Plan and relevant zoning ordinances. The Master Plan updates include: determining the existing and desired multi-family building types that work best in the existing context of the city, designing future land use regulations based on analyzing those results, and deciding the appropriate densities and building form.
Zoning ordinance updates include expanding the RT-1 zoning district to allow triplexes as a principal permitted use, or creating a RT-2 zoning district that allows a breadth of "missing middle" housing. The City of Plymouth will also clarify minimum lot sizes and maximum densities, and eliminate formulas based on the number of rooms used in areas with multi-family districts. New allowances will also be implemented. Examples include allowing smaller than 60-foot wide lots to continue when underlying plat and existing pattern of residential development supports it, and allowing detached accessory dwelling units in strategic locations. Another zoning update is creating a low density single-family zoning district with the appropriate lot width and size to protect the character of those neighborhoods planned for single-family low density. Finally, the City of Plymouth will update multi-family zoning districts to match density and housing types with the Master Plan.

Please describe how the completed activity will increase housing supply and affordability:

Outlining specific characteristics of multi-family housing options in the Master Plan will direct zoning amendments. Updating RT-1 increases the likelihood that two- or three-family housing will be constructed in locations where single-family redevelopment is occurring more frequently. Eliminating density formulas based on the number of rooms will allow greater housing density to be constructed and increases the permitted number of bedrooms per unit. Reducing lot sizes to match the original plat allows smaller, more affordable homes to be built. Accessory dwelling units increase the number of housing units available within the city for multi-generational and workforce housing. Retaining existing housing units in low-density single-family neighborhoods minimizes expensive, large-scale infill development.

Recommendations from the Zoning Audit:

In the next Zoning Ordinance update, consider expanding the RT-1 zoning district to allow triplexes as a principal permitted use or creating a RT-2 zoning district that allows a breadth of “missing middle” housing. Maximum densities should be clear and not use formulas (i.e., number of rooms based on site area) for a baseline.

In the next Zoning Ordinance update, the minimum lot size and maximum density should be clear, without formulas to determine a baseline. Those formulas could be used for exceptions if it were needed. Form-based regulations could eliminate the need for the sliding scales currently used.

The R-1 Zoning District has various lot widths, ranging from 40 feet to 120 feet. The R-1 Zoning District currently requires a minimum of 60 feet in lot width and 7,200 square feet in lot area. When larger parcels are redeveloped or transitioned to single-family that are adjacent to existing neighborhoods with non-conforming lot sizes, the current regulations do not allow for the continuation of the existing pattern. In the next Master Plan update, the Planning Commission may want to identify those areas where this mismatch could potentially occur and plan for either a form-based approach or a new single family residential zoning district. Ultimately, the zoning would be changed to allow for smaller than 60-foot wide lots to continue the existing pattern of residential development.

Change the regulations in footnotes (c), (d), (e), and (l) for multiple-family uses based on the design that has best worked in the City. Consider moving these out of the Schedule of Regulations to a more visible place. If using a form-based approach, a building form for townhouses and multiple-family buildings should be developed.

Consider using a build-to line for streets or blocks, rather than the averaging in footnote (o). The creation of those build-to lines would be time-intensive. Since the front yard averaging has worked well in neighborhoods, the build-to line may not be appropriate in the R-1 zoning
district.

Allowing payment in lieu of parking available in all districts.

Allow the Planning Commission to waive or reduce parking requirements in all districts.

Plymouth Planning Commission
Sub-Committee Meeting Minutes
Monday, June 16, 2025 - 12:00 p.m.
Plymouth City Hall 201 S. Main

City of Plymouth
Plymouth, Michigan 48170-1637

www.plymouthmi.gov
734-453-1234

1. CALL TO ORDER

Chair Saraswat called the meeting to order at 12:01 p.m.

Present: Commissioners Sidney Filippis, Zachary Funk, Joe Hawthorne

Also present: Planning and Community Development Director Greta Bolhuis

2. CITIZENS COMMENTS

There were no citizen comments

3. MSHDA GRANT DISCUSSION

The sub-committee discussed the following matters:

- The Building Code requirement to sprinkle stacked ranch units
- Residential compatibility ordinance
- Pattern Book Homes for 21st Century Michigan (MML resource)
- Certain allowances based on the size of the lot
- Incentive additional units
- Have an approved plan catalog for new construction
- Preserve existing duplexes and multi-family units
- Comm. Filippis will research permit-ready examples
- Deliverables include: 1. Amend the current formula for rooms. 2. Residential compatibility. 3. Underlying platting to allow for smaller lot sizes.

4. ADJOURNMENT

Hawthorne offered a motion, seconded by Filippis, to adjourn the meeting at 12:56 p.m.

There was a voice vote
MOTION PASSED UNANIMOUSLY

TABLE 5.17-2: TWO-FAMILY RESIDENTIAL DISTRICTS

District	Min. Lot Area per D.U.	Building Spacing	Required Setback				Max. Height	Lot Dimensions	
			Min. Front	Max. Front	Min. Side	Min. Rear		Min. Area	Min. Width
R2A	2,500 sq. ft.	[B]	25 ft. [A]	None	5 ft.	20 ft.	30 ft.	5,000 sq. ft.	40 ft.
R2B	4,250 sq. ft. [C]	[B]	25 ft. [A][B][D]	None	5 ft.	20 ft.	30 ft.	8,500 sq. ft.	60 ft.

Footnotes:

[A] Also see additional regulations in Section 5.18.5 (Averaging an Established Front Building Line).

[B] Where more than one residential *structure* is to be constructed on a *lot* in the R2 districts, or where *dwelling units* are served by a private street under the provisions of Section 5.21 , the following placement regulations shall also be applied:

(a) The minimum spacing between *buildings* shall be twice the minimum *front required setback* dimension of the zoning district in which the *lots* is located;

(b) A minimum *rear required setback* of 30 feet must be provided between the rear of a residential *structure* and the adjacent (nearest) *lot line*;

(c) A minimum *front required setback* of ten feet must be provided between all *structures* and the private street pavement.

[C] Except for fraternity houses, sorority houses, student cooperative housing, and group housings, for which minimum net *lot area* shall be 350 sq. ft. per occupant.

[D] Or the *established front building line* existing on the date this ordinance is adopted, whichever is larger.

TABLE 5.17-3: MULTIPLE-FAMILY RESIDENTIAL DISTRICTS

District	Min. Lot Area per D.U. (see Table Notes)	Min. Open Space (% Lot Area) and Active Open Space (per D.U)	Required Setback					Max. Height	Lot Dimensions	
			Min. Front	Max. Front	Min. Side	Min. Bldg Spacing	Min. Rear		Min. Area	Min. Width
R3	4,300 sq. ft.	65% 300 sq. ft.	15 ft.	40 ft. [A]	20 ft. plus [B]	20 ft.	30 ft. plus [C]	35 ft.	21,780 sq. ft.	120 ft.
R4A	4,300 sq. ft.	65% 300 sq. ft.	15 ft.	40 ft. [A]	20 ft. plus [B]	20 ft.	30 ft. plus [C]	35 or 45 ft. when [D]	21,780 sq. ft.	120 ft.
R4B	2,900 sq. ft.	55% 300 sq. ft.	15 ft.	40 ft. [A]	12 ft. plus [B]	20 ft.	30 ft. plus [C]	35 or 45 ft. when [D]	14,000 sq. ft.	120 ft.
R4C	2,175 sq. ft.	40% 300 sq. ft.	25 ft. [E]	None	12 ft. plus [B]	20 ft.	30 ft. plus [C]	30 ft.	8,500 sq. ft.	60 ft.
R4D	1,740 sq. ft.	50% 300 sq. ft.	15 ft.	40 ft. [A]	30 ft. plus [B]	20 ft.	30 ft. plus [C]	120 ft.	83,000 sq. ft.	200 ft.
R4E	580 sq. ft.	40% 150 sq. ft.	15 ft.	40 ft. [A]	10 ft. plus [B]	20 ft.	30 ft. plus [C]	None	14,000 sq. ft.	120 ft.

TABLE 5.17-3: MULTIPLE-FAMILY RESIDENTIAL DISTRICTS

DISTRICT	MIN. LOT AREA PER D.U. (SEE TABLE NOTES)	MIN. OPEN SPACE (% LOT AREA) AND ACTIVE OPEN SPACE (PER D.U)	REQUIRED SETBACK					MAX. HEIGHT	LOT DIMENSIONS	
			MIN. FRONT	MAX. FRONT	MIN. SIDE	MIN. BLDG SPACING	MIN. REAR		MIN. AREA	MIN. WIDTH
R6	10 times the *floor area* for each *dwelling unit*	None	40 ft.	None	20 ft.	None	30 ft.	15ft, 12 ft. for accessory structures	170,000 sq. ft.	100 ft.

Table Notes:

The maximum density of each district, or the maximum number of *dwelling units* per acre based on the minimum *lot area* per *dwelling unit* requirement for each district, is:

R3 ... 10 *dwelling units* per acre
R4A ... 10 *dwelling units* per acre
R4B ... 15 *dwelling units* per acre
R4C ... 20 *dwelling units* per acre
R4D ... 25 *dwelling units* per acre
R4E ... 75 *dwelling units* per acre

Footnotes:

[A] Maximum *front required setback* applies to new detached *buildings*; no maximum *front required setback* for *buildings* or additions to *buildings* constructed before January 16, 2011. For *lots* with more than one *front lot line*, maximum *front required setback* shall only apply to one *front lot line*.

[B] Plus 3 inches for each foot of *building height* over 35 feet and 1.5 inches for each foot of *building* length over 50 feet. (*Building* length is dimension of side parallel to the *side lot line* of a rectangle within which the *building* may be located.)

[C] Plus 1.5 inches for each foot of *building height* over 35 feet and 1.5 inches for each foot of *building* width over 50 feet. (*Building* width is dimension of side parallel to the *front lot line* of a rectangle within which the *building* may be located.)

[D] When *parking spaces* are below at least 35% of the *building*.

[E] Additional regulations in Section 5.18.5 Averaging an Established Front Building Line.

Ordinance No. ORD-21-20, July 25, 2021. Ordinance No. ORD-22-11, August 21, 2022.

4. C3 District

a. *Drive-through facilities* are permitted for any *principal use*, subject to *special exception use* approval pursuant to Section 5.29.5.

Ordinance No. ORD-20-27, December 20, 2020; Ordinance No. ORD-22-13, September 4, 2022.

D. Accessory Dwelling Unit (ADU)

1. An *ADU* is permitted on a *lot* that has one *single-family dwelling* as the *principal use.*

2. Minimum lot area and floor area requirements for accessory dwelling units:

TABLE 5.16-2: LOT AREA AND FLOOR AREA REQUIREMENTS FOR ACCESSORY DWELLING UNITS

LOT AREA	ADU FLOOR AREA
Less than 7,200 sq. ft.	Up to 600 sq. ft. permitted [A]
7,200 sq. ft. or greater	Up to 800 sq. ft. permitted [A]

3. An *ADU* is permitted as or within any legally conforming *accessory building.*

4. The total number of Persons residing in the primary *dwelling unit* and the *ADU* combined shall not exceed the limits specified in Section 5.16.1 A, except:

   a. That only two unrelated Persons plus their *offspring* living as a single *housekeeping unit* may occupy the *ADU*; or

   b. When a functional family is allowed by special exception use.

5. An *ADU* or *single-family dwelling* that is not owner-occupied shall be subject to periodic housing inspections as required by Section 8:511.

6. Leasing or rental of the *ADU* for less than 30 days is prohibited.

Ordinance No. 20-34, February 14, 2021; Ordinance No. ORD-21-14, June 27, 2021.

E. Manager's Dwelling Unit

1. M1, M1A, and M2 Districts

Limited to one *dwelling unit,* provided that it is specifically required to house a security guard or resident manager who is needed to properly carry on the business of the permitted use, and shall be used as a *dwelling unit* only by that security guard or resident manager and members of that Person's family.

F. Family Day Care Home

1. All Residential Zoning Districts

Must be licensed by the State of Michigan Department of Licensing and Regulatory Affairs.

5.16 Use Specific Standards

5.16.1 Residential Uses

A. Residential Occupancy

1. Purpose

This section is intended to reasonably regulate the number of Persons who can live in a residential *dwelling unit*. The City finds that occupancy limits are needed to provide density control; preserve and enhance residential neighborhoods as stable, quiet places for citizens to live and raise children; protect safety and welfare; and maintain property values. Such limits are also needed to ensure that there are adequate public and private facilities including adequate off-street parking, utilities, and adequate *lot area* to accommodate the residents of each *dwelling unit* without impairing the character of the neighborhood. The City also finds there are a number of residential living arrangements other than the traditional biological *family* arrangement. This section is intended also to accommodate those alternative living arrangements.

2. Limits on Occupancy of Dwelling Unit

A *dwelling unit* may be occupied by one of the following *family* living arrangements:

a. One or more Persons related by blood, marriage, adoption, or guardianship living as a single *housekeeping unit*, in all districts.

b. A maximum of four Persons plus their *offspring* living as a single *housekeeping unit*, in all districts.

c. A maximum of six Persons living as a single *housekeeping unit* in Multiple-Family and Mixed-Use Zoning Districts only.

d. A *functional family* living as a single *housekeeping unit* that has received a *special exception use* permit pursuant to Section 5.29.5.

3. Additional Standards for Functional Family

In addition to meeting the definition in Article VIII of this chapter and the *special exception use* standards of Section 5.29.5, a permit for a *functional family* is subject to the following standards and regulations:

a. Limited to Approved Functional Family Type

The permit shall apply only to the *functional family* type which obtained the permit and shall be limited to the number of Persons specified in the permit.

b. Contact Person

A contact Person shall be provided who will act as head of household in relating to the City.

4. Variance for Handicapped Person

The Zoning Board of Appeals may grant a variance from the standards of this

C. Civic Spaces Required.

Any Development Parcel Plan having an aggregate area of 80 gross acres or more, excluding any Special Districts, shall provide the following:

1. each Pedestrian Shed of which the area is a part shall contain at least one Main Civic Space of the Green, Square, or Plaza type conforming to **Table 154.507. B1 (Civic Space Types - Summary)**, within 800 feet of the geographic center of each Pedestrian Shed, unless topographic conditions, pre-existing Thoroughfare alignments or other circumstances prevent such location;
2. within 800 feet of every Lot in Residential Use, a Civic Space designed and equipped as a Playground conforming to **Table 154.507.B2 (Civic Spaces – Playground)** ;
3. each Civic Space shall have a minimum of 50% of its perimeter Enfronting a Thoroughfare, except for Playgrounds or Community Gardens; and
4. Civic Space meeting the requirements of Section 154.507.A.

D. Civic Spaces in or Adjacent to Special Districts.

Civic Space in addition to that required by Section 154.507.C may be permitted or required within Special Districts if approved by the City Commission.

E. Civic Buildings (CB) Required.

All Development Parcel Plans having an aggregate area of 80 gross acres or more, excluding any Special Districts, shall require the Owner to construct a Meeting Hall or a Third Place in proximity to the Main Civic Space of each Pedestrian Shed and having a corresponding Public Frontage equipped with a shelter and bench for a transit stop.

F. Civic Building Standards.

Any Civic Building provided or required pursuant to this Chapter should be located within or Adjacent to a Civic Space, or at the axial termination of a significant Thoroughfare.

G. Civic Buildings in Special Districts.

Civic Buildings may be permitted or required within Special Districts by the City Commission.

H. Maintenance of Civic Buildings and Civic Space.

Civic Buildings and Civic Space shall be owned and maintained by a property owners' association unless specifically dedicated to and accepted by the City. Any such property owner's association shall be organized under the laws of the State. The deed conveying a Civic Building or Civic Space to a property owners' association shall include covenants running with the land that permanently reserve it for Civic purposes and require the association to maintain and pay all expenses associated with such Civic Building or Civic Space.

SECTION 154.508. DISTRICT DENSITY

A. Density Calculations.

Any proposed Development Parcel Plan having an aggregate area of 80 gross acres or more, excluding any Special Districts, shall require compliance with the following District Density provisions:

1. All developable area within a specific District covered by the Development Parcel Plan shall be considered the Net Site Area.
2. Density shall be expressed in terms of Density Units per acre as specified for the area of each Character District by **Table 154.508.A1 (District Density)**.

TABLE 154.508.A1 DISTRICT DENSITY

	Density Units/ Net Site Area of District
CD-3L	4 units per acre, gross, max
CD-3	6 units per acre, gross, max
CD-4	15 units per acre, gross, max
CD-5	96 units per acre, gross, max
SD-H	Not Regulated
SD-I	Not Regulated
SD-RC	Not Regulated

3. For purposes of calculating District Density:
   a. the area shall include the Thoroughfares but not land assigned to Civic Zones;
   b. the quantities of the Principal Uses indicated on **Table 154.508.A2 (Density Equivalencies)** shall constitute the indicated number of Density Units or portion thereof.

TABLE 154.508.A2 DENSITY EQUIVALENCIES

The following quantities of Principal Uses are equivalent to the indicated number of Density Units

Category of Principal Use	No. of Density Units
1 Residential/Dwelling, each Dwelling Unit	1 Density Unit
1 Bed & Breakfast Dwelling	1 Density Unit plus .5 Density Units for each guest bedroom
Lodging Bedroom	.5 Density Unit
1500 sf. Educational/Institutional/ Civic	1 Density Unit
1500 sf. Medical	1 Density Unit
1500 sf. Retail/Personal Service or Business/Commercial	1 Density Unit
1500 sf. Office	1 Density Unit
3000 sf. Communication	1 Density Unit
3000 sf. Industrial	1 Density Unit
Agricultural (Any Amount)	0 Density Unit
3000 sf. Transportation	1 Density Unit
3000 sf. Utility	1 Density Unit
3000 sf. Recreation/Entertainment	1 Density Unit
Other (Any Amount)	0 Density Unit
Accessory Building/ Accessory Dwelling (Any Amount)	0 Density Unit

sf. = Building square feet

B. Maximum District Density.

1. The Maximum Density per Character District of a Development Parcel having in the aggregate an area of 80 gross acres or more, shall not exceed that set forth in **Table 154.508.A1 (District Density)**.
2. The Maximum Density for per Special District of a Development Parcel having in the aggregate an area of 80 gross acres or more shall not exceed that set forth in **Table 154.508.1 (District Density)**.

SECTION 154.509.

CHARACTER DISTRICTS

A Development Parcel Plan shall designate all Character Districts within it.

For Development Parcels having a gross acreage of 80 acres or more, excluding any Special Districts, Character Districts shall be assigned in accordance with Section 154.302.B.

SECTION 154.510.

SPECIAL DISTRICTS

Special District designations are for areas which, by their intrinsic size, Use, or Configuration, cannot conform to the requirements of the applicable Character District(s).

Special Districts shall not be used to avoid compliance with standards and requirements for Character Districts, and instead, shall be used sparingly.

Special Districts shall be assigned in accordance with Section 154.302.D.

SECTION 154.511.

SPECIAL REQUIREMENTS

A Development Parcel Plan may designate any of the Special Requirements set forth in Section 154.203.

TABLE 154.301.E CHARACTER DISTRICT DESCRIPTIONS

Character District	Description
	**CD-3L: Sub-Urban Large Lot** The CD-3L Sub-Urban Large District consists of primarily a low density single family detached Residential area in which the House is the predominant Building Type. It has medium to deep front Setbacks and medium to wide side Setbacks. Its Thoroughfares have curbs and may include sidewalks and/or street trees, and form medium to large blocks.
	**CD-3: Sub-Urban** The CD-3 Sub-Urban District consists primarily of a low density single family detached Residential area in which the House is the predominant Building Type. It has medium front Setbacks and medium side Setbacks. Its Thoroughfares have curbs and may include sidewalks and/or street trees, and form medium to large blocks.
	**CD-4: General Urban** The CD-4 General Urban District consists of a medium density area that has a mix of Building Types and Residential, Retail/Personal Service, Office and Business/Commercial Uses; there are medium, shallow or no front Setbacks and narrow to medium side Setbacks; it has variable private landscaping; and it has streets with curbs, sidewalks, and Thoroughfare Trees that define medium-sized blocks.
	**CD-5: Urban Center** The CD-5 Urban Center District consists of higher density Mixed Use areas. It has a tight network of Thoroughfares with wide sidewalks, street lights and regular Thoroughfare Tree spacing, defining medium-sized blocks. Buildings are set close to the sidewalks.

Illustrations are provided for illustrative purposes only.

City of Kalamazoo, MI
Tuesday, July 1, 2025

Appendix A. Zoning Ordinance

Chapter 5. Density/Intensity/Dimensional Standards

§ 5.1. Residential District Standards.

All development in the residential districts must comply with the standards in the following table unless otherwise expressly stated, or unless a different standard is required by an applicable overlay district.

Table 5.1-1 Residential District Standards
[Amended 3-19-2007 by Ord. No. 1822; 1-29-2019 by Ord. No. 1978]

Standards	RS-4	RS-5	RS-7	RD-8	RD-19	RM-15	RM-15C	RM-24	RM-36	RMU
Minimum Lot Size										
Lot Area (square feet)	10,000	4,500	6,250	6,250	4,000	4,000	5,000	5,000	4,000	5,500
Lot Area Per Dwelling Unit (square feet)	10,000	4,500	6,250	3,125	1,500	1,500	2,900	1,800	1,000	1,210
Lot Width (feet) [1]	75	33	50	50	33	33	40	50	33	44
Minimum Setback (feet)										
Front [2]	25	25	20	20	20	20	20	20	15	15
Rear — abutting RS/RD districts	25	25	20	20	20	20	25	25	25	25
Rear — abutting RM/C/M districts	25	25	20	20	20	20	20	20	20	20
Side (interior) — abutting RS/RD districts	8	5	5	5	5	5	15	15 [3]	5 [3]	15 [3]
Side (interior) — abutting RM/C/M districts	8	5	5	5	5	5	5	5	5	5
Minimum Outdoor Area										
Area (square feet per dwelling unit)	—	—	—	—	—	—	75	50	50	50
Minimum Dimension (feet)	—	—	—	—	—	—	7.5	5	5	5
Maximum Impervious Coverage										

Table 5.1-1 Residential District Standards
[Amended 3-19-2007 by Ord. No. 1822; 1-29-2019 by Ord. No. 1978]

Standards	RS-4	RS-5	RS-7	RD-8	RD-19	RM-15	RM-15C	RM-24	RM-36	RMU
(percent of lot area) [4]	45	45	50	55	60	60	60	60	70	60
Maximum Height										
(feet)	35	35	35	35	35	35	35	4 stories [5]	6 stories [5]	6 stories [5]

NOTES:

[1] Lot width is measured at the front setback line.

[2] Provided, however, that when 25% or more of all the frontage on one side of a street between two intersecting streets was, on April 22, 1954, built up with buildings, no building erected or altered after that date shall project beyond the average of the setback line so established, and provided, further, that no building shall be required to set back more than 40 feet in any case as a result of this provision.

[3] Buildings over 35 feet in height shall have a side yard setback of 15 feet.

[4] The Planning Commission is authorized to modify impervious cover limits for uses requiring special use permit approval.

[5] Additional building height may be allowed if reviewed and approved as a Planned Unit Development.

§ 5.2. Commercial and Manufacturing District Standards.

All development in the Commercial and Manufacturing districts must comply with the standards in the following table unless otherwise expressly stated.

Table 5.2-1 Commercial And Manufacturing District Standards
[Amended 3-19-2007 by Ord. No. 1822; 6-6-2022 by Ord. No. 2049]

	CMU	CNO	CN-1	CO	CN-2	CCBD	CBTR	M-1	M-2
Minimum Site Area for Rezoning to the District									
(square feet)	—	—	—	5,000	1 Ac	—	2 Ac	1 Ac	1 Ac
Maximum Site Area									
(square feet)	—	—	15,000		7 Ac	—	—	—	—
Minimum Lot Size									
Lot Area (square feet)	2,900	6,250	2,900	5,000	5,000	—	—	5,000	5,000
Lot Area per Dwelling Unit (square feet)	1,800	3,750	1,800	[1]	1,800	—	NA	NA	NA
Lot Width (feet)	—	50	—	[2]	—	—	—	—	—
Minimum Setbacks (feet)									
Front	—	15				—	50	—	25
Rear — abutting R district	15	25	15	15	15	—	50	25	50

Table 5.2-1 Commercial And Manufacturing District Standards
[Amended 3-19-2007 by Ord. No. 1822; 6-6-2022 by Ord. No. 2049]

	CMU	CNO	CN-1	CO	CN-2	CCBD	CBTR	M-1	M-2
Rear — abutting alley or C/M district	—	20	—	— [3]	—	—	50	—	25
Side (Interior) — abutting R district	15	15	15	15	15	—	25	25	50
Side (Interior) — abutting C/M district		6	—	— [3]	—	—	25	—	25
Maximum Height									
(feet)	50	50	35	65	35	[4]	50 [5]	—	—
Maximum Impervious Cover									
(% of lot)	65	60	65	70	75	100	70	80	80

NOTES:

[1] 900 square feet of lot area per multifamily unit, 4000 square feet of lot area per single-family or duplex dwelling unit.

[2] No requirement unless the lot is used for residential purposes, in which case the minimum lot width shall be 44 feet at the building line.

[3] No requirement unless the site is used for residential purposes, in which case a setback of five feet shall be required.

[4] See § 2.3G.4: CCBD Central Business District.

[5] Mechanical equipment on the roof of the building may not exceed 20 feet in height and must be screened. Mechanical equipment is not counted toward the maximum building height of the building. Maximum height of 30 feet for buildings located within 100 feet of R districts or lots containing residential use.

§ 5.3. Measurements, Computations and Exceptions.

A. Distance Measurements. Unless otherwise expressly stated, all distances specified in this Ordinance are to be measured as the length of an imaginary straight line joining those points.

B. Lot Area. The area of a lot includes the total horizontal surface area within the lot's boundaries, not including submerged lands, public access easements or rights-of-way. For nonconforming lots, see § 9.4: Nonconforming Lots.

C. Lot Width. Lot width is the distance between side lot lines measured at the point of the required front setback.

D. Setbacks.

1. Measurements. Setbacks refer to the unobstructed, unoccupied open area between the furthermost projection of a structure and the property line of the lot on which the structure is located. Setbacks must be unobstructed from the ground to the sky except as otherwise expressly allowed in this section. (See § 5.3D.5: Allowed Encroachments into Required Setbacks).

2. Front Setbacks.

h. Group Day Care Homes.

i. Family Foster Care Homes.

j. Accessory uses subject to the provisions of Section 18.04.

k. Home Occupations subject to the provisions of Section 18.15.

l. Essential public services.

m. Bed and breakfast accommodations in accordance with Section 16.03.

SECTION 5.03 SPECIAL LAND USES PERMITTED AFTER REVIEW AND APPROVAL

The following uses may be permitted by the Planning Commission pursuant to Article 18 and subject further to the following provisions:

a. All Special Land Uses permitted in the R-1 and R-2 District subject to the provisions provided therein.

b. Hospitals subject to Section 16.05.

c. Assisted Senior Living – Large Facility subject to Section 16.17. *(Rev. 5/18)*

SECTION 5.04 AREA, HEIGHT AND PLACEMENT REQUIREMENTS

Area, height and placement requirements unless otherwise specified are as provided in the following table and as further provided in Section 15.01, "Schedule of Regulations".

Minimum Lot Size		Maximum Building Height		Minimum Yard Setback in Feet				Minimum Landscaped Area
				Side yards				
Area In Sq. Feet	Width In Feet	In Stories	In Feet	Front	Least Side	Total Two	Rear	Percent of Lot Area
10,000	75	2 ½	30	25	15	30	35	40

Note: See Section 15.01, Schedule of Regulations and footnotes thereto for additional requirements and regulations.

ARTICLE 6

FOURTH DENSITY RESIDENTIAL DISTRICT (R-4)

SECTION 6.01 STATEMENT OF PURPOSE

The R-4 Residential District (High Density) is designed to provide sites for high density multiple dwelling structures, adjacent to high traffic generators commonly found in proximity of non-residential development. This District is further intended to serve the residential needs of persons desiring an apartment type of accommodation with central services as opposed to the residential patterns found in the R-1 to R-3 Residential Districts. This District is further designed so as to provide a zone of transition between high traffic generators and other residential districts through the requirements of lower coverage which, in turn, will result in more open space.

SECTION 6.02 USES PERMITTED BY RIGHT

The following provisions apply in all Fourth Density Residential Districts. In an R-4 District no person shall hereafter use any building, structure or land and no person shall erect any building or structure except in accordance with the following provisions:

a. All uses permitted by right in the R-3 District subject to the terms and conditions provided therein and subject further Section 15.01, "Schedule of Regulation".

b. Multiple family dwelling units in high rise structures (three stories or greater), subject to the following conditions:

   1) All such high rise structures shall be developed only on a site which can provide for the principal building and required yards, and all necessary accessory structures and uses, and required off-street parking.

   2) The entire area of the site shall be treated so as to service only the residents of the multiple family development, and any accessory buildings, uses, or services shall be developed solely for the use of residents of the main building. Uses considered accessory include: parking structures, swimming pools, recreation areas, pavilions, cabanas, and other similar uses.

c. Planned Unit Development pursuant to Article 20.

d. Bed and breakfast accommodations in accordance with Section 16.03.

SECTION 6.03 SPECIAL LAND USES PERMITTED AFTER REVIEW AND APPROVAL

The following uses may be permitted by the Planning Commission pursuant to Section 16.01 and subject further to the following provisions: *(Rev. 8.06)*

a. All Special Land Uses permitted in the R-1, R-2 and R-3 Districts subject to the provisions provided therein.

b. Business uses when developed as retail or service uses clearly accessory to the main use and within the walls of the main structure, and not readily viewable from the street. No identifying sign for any such business or service use shall be visible from any exterior view. Such businesses or service shall not exceed twenty five (25) percent of the floor area at grade level or fifty (50) percent of a subgrade level, and shall be prohibited on all floors above the first floor, or grade level.

c. This subsection shall be construed to permit an apartment hotel and/or residential hotel as provided in Article 26, "Definitions".

d. Child day care centers.

e. Mobile Home Parks and/or Developments subject to Section 16.10 and requirements with 1987 P.A. 96 as amended.

f. Continuing Care Retirement Community subject to Section 16.18. *(Rev. 5/18)*

SECTION 6.04 AREA, HEIGHT AND PLACEMENT REQUIREMENTS

Area, height and placement requirements unless otherwise specified are as provided in the following table and as further provided in Section 15.01, "Schedule of Regulations".

Minimum Lot Size		Maximum Building Height		Minimum Yard Setback in Feet Sideyards				Minimum Landscaped Area	
Area In Sq. Feet	Width In Feet	In Stories	In Feet	Front	Least Side	Total Two	Rear	Percent of Lot Area	Maximum Gross Floor Area Ratio
10,000	N/A	5	60	30	15	30	30	35	0.50

Note: See Section 15.01, Schedule of Regulations and footnotes thereto for additional requirements and regulations.

SECTION 15.01 SCHEDULE OF REGULATIONS (Rev. 4/21)

Symbol	Use District	Minimum Lot Size		Maximum Building Height		Minimum Yard Setback in Feet				Maximum Floor Area Ratio	Minimum Landscape Area Percent of Lot	Maximum Lot Area Coverage Percent of Lot	Minimum Floor Area
		Area	Width	Number of Stories	In Feet	Front	Side yards		Rear				
							Least Side	Total of Two					
R-1A	First Density Residential Districts	12,000 (1) (17)	100 (1)	2 ½ (20)	(20) (24)	30 (2) (3) (16)	8 (3) (20)	20 (3) (20)	35 (3)	N/A	35 (26)	30 (4) (27)	(15)
R-1B		7,200 (1) (17)(19)	60 (1)	2 ½ (20)	(20) (24)	25 (2) (3) (16)	7 (3) (20)	15 (3) (20)	25 (3)	0.36 (25)	35 (26)	30 (4) (19) (27)	(15)
R-2	Second Density Residential District	7,200 (1)	60 (1)	2 1/2 (5)	30 (5)	25 (2) (3)	5 (3)	15 (3)	25 (3)	0.36 (25)	25 (26)	35 (4) (27)	(15)
R-3	Third Density Residential District	10,000 (1) (6)	75 (1) (6)	2 1/2 (5)	30 (5)	25 (2) (3) (7)	15 (3) (7)	30 (3) (7)	35 (3) (7)	0.50 (9)	40 (26)	35 (4)	(15)
R-4	Fourth Density Residential District	10,000 (1)	N/A	5 (5)	60 (8)	30 (2) (3) (7) (8)	15 (3) (7) (8)	30 (3) (7) (8)	30 (3) (7) (8)	0.50	35 (26)	50 (4)	(15)
PBO	Professional/Business/Office	N/A	N/A	3	30	20	10	20	25	0.50 (9)	10	50 (4)	N/A
OR	Office/Research District	N/A	75	2	30	20	10	20	25	0.50	10	N/A	N/A
LCD	Local Commercial District	N/A	N/A	N/A	30	25	(10) (11)	(10) (11)	20	N/A	10	N/A	N/A
CBD	Central Business District	N/A	N/A	3	42	N/A	(10)	(10)	20 (12)	3.0 (9)	N/A	N/A	N/A
CBD-O	Central Business District – Overlay	N/A	N/A	3	42	10	(10) (21)	(10)	(21)	3.0 (9)	10	N/A	N/A
CSO	Cady Street Overlay	N/A	N/A	(22)	(22)	(22)	(22)	(22)	(22)	(22)	(22)	(22)	(22)
GCD	General Commercial District	N/A	N/A	2	30	20	10	20	20	N/A	10	N/A	N/A
RTD	Racetrack District	N/A	N/A	N/A	(13)	(14)	(14)	N/A	N/A	N/A	N/A	N/A	N/A
PR-1	Performance Regulated Industrial.	N/A	N/A	3	30	20/50 (23)	10	20	25/50 (23)	0.50 (9)	10	50 (4)	N/A
PR-2	Performance Regulated Industrial.	N/A	N/A	3	30	20/50 (23)	10	20	25/50 (23)	0.50 (9)	10	50 (4)	N/A

Please refer to Section 15.02 for applicable footnotes. *(Rev. 4/21)*

SECTION 15.02 FOOTNOTES TO THE SCHEDULE OF REGULATIONS

1. A public water supply and sanitary sewer system shall be available.

2. There shall be a front yard on each public street or private road side of a corner lot. No accessory building shall project beyond the front yard line on either street.

3. All required yards not used for accessory buildings and access driveways or sidewalks shall be landscaped.

4. Lot area coverage applies to all main and accessory buildings and structures. For the purposes of this section, in-ground or at-grade structures are not structures for computing allowable lot coverage.

5. Height provisions shall not apply to hospitals, universities, colleges and similar institutions of higher learning. Unless otherwise provided, one (1) foot of additional setback over and above the minimum height therein established shall be provided for each five (5) foot increase in height.

6. In R-3 Third Density Residential District, for residential uses other than Assisted Senior Living Facility, Congregate Care Retirement Community, or Convalescent/Nursing/Memory Care Facility, the total number of rooms of eighty (80) square feet or more (not including kitchen and sanitary facilities) shall not be more than the area of the parcel, in square feet, divided by sixteen hundred (1600). All units shall have at least one (1) living room and one (1) bedroom and there shall be not more than ten (10) percent of the units of an efficiency apartment type.

For the purposes of computing the permitted number of rooms in excess of eighty (80) square feet or more and the number of dwelling units per acre the following room assignments shall determine the room characteristics of the dwelling unit.

One Bedroom	-	2 rooms	Plans presented showing 1, 2, or 3 bedroom
Two Bedrooms	-	3 rooms	units and including a "den", "library" or other
Three Bedrooms	-	4 rooms	extra rooms shall count such extra rooms as a
Four Bedrooms	-	5 rooms	bedroom for the purpose or computing density.

In R-3 District, the area used for computing density shall be the total site area exclusive of any dedicated public right-of-way, either interior or bounding roads.

In R-3, R-4 Forth Density Residential District and PBO Professional and Business Office District, for Assisted Senior Living Facility, Congregate Care Retirement Community, or Convalescent/Nursing/Memory Care Facility, density and unit configurations are defined in Section 15.02 (Footnote 15), Section 5.02 and 16.17 through 16.18. *(Rev. 5/18)*

7. In an R-3 or R-4 District, front, side or rear yards need not refer to spacing between buildings for a planned development in cases of two (2) or more buildings on the same parcel. In such cases, the minimum distance between any two (2) buildings shall be regulated according to

	RESIDENTIAL DWELLING UNIT TYPE	MINIMUM FLOOR AREA IN GROSS SQUARE FEET, EXCLUSIVE OF GARAGE WHETHER ATTACHED OR NOT
1.	Single Family Detached Structures:.	
	1 Story	1,000 sq ft
	1 1/2 Story	1,400 sq ft
	Split Level	1,600 sq ft
	2 Story	1,600 sq ft
2.	Two Family Dwelling Structures:	800 sq ft per dwelling unit
3.	Row-Town House Structures:	
	Efficiency	600 sq ft
	1 Bedroom	750 sq ft
	2 Bedrooms	850 sq ft
	3 Bedrooms	950 sq ft
	Plus 100 sq. ft. for each additional bedroom.	
4.	Multiple Family Structures: R-3, R-4, CBD-O, CSO (Including parcels with CBD underlying zoning), PBO, SM-O	
	Efficiency	500 sq ft
	1 Bedroom	650 sq ft
	2 Bedrooms	750 sq ft
	3 Bedrooms	850 sq ft
	Plus 100 sq. ft. for each additional bedroom.	
5.	Multiple Family Structures: CBD	
	Efficiency	400 sq ft
	1 Bedroom	550 sq ft
	2 Bedrooms	650 sq ft
	3 Bedrooms	750 sq ft
	Plus 100 sq. ft. for each additional bedroom.	
6.	Senior Housing – Assisted Senior/Nursing/Memory Care:	
	Efficiency	350 sq ft
	1 Bedroom	450 sq ft
	Plus 80 sq ft for each additional bedroom.	

(Rev. 4/21)

16. The established front setbacks for construction within established R-1A and R-1B neighborhood areas shall be at least one foot more than the average front yard setback of surrounding buildings. The average setback and front building line shall be determined by examining existing buildings located on the same side of the street and within two hundred (200) feet of the subject parcel in both directions. For a one family residential project that meets the "front porch exception" standards listed in 18.11.8.1 or 18.11.8.2, the average front setback shall be calculated using the front wall of the surrounding buildings rather than the edge of any existing porches. In any case, the minimum average front yard setback for an incentive porch shall not be

Section 5.07. - Multiple family dwellings.

(1) Multiple family dwellings located within the R-3A district shall be subject to the following:

A. *Lot area and density.*

1. Every lot in the R-3A district on which a principal permitted use is erected shall provide a minimum lot area of 7,800 s.f. for the first living unit, and not less than 2,250 s.f. of lot area for each additional dwelling unit with one bedroom, and not less than 3,000 s.f. of lot area for each additional two-bedroom unit, and not less than 3,750 s.f. for each additional three or four bedroom unit. Every such lot shall have a minimum total area of one-half acre, and a minimum width of 100 feet; excepting, however, lots of record at the time this provision becomes effective which do not meet these minimum requirements.
2. The maximum density of dwelling units per acre in R-3A districts shall be as follows:
   (a) One-bedroom units: 12 per acre.
   (b) Two-bedroom units: ten per acre.
   (c) Three- and four-bedroom units: nine per acre.

B. *Yard requirements.*

1. Front, side and rear yards shall comply with section 4.05.
2. If more than one building shall be constructed on the same site, the following minimum distance between buildings shall be:
   (a) Seventy feet when front to rear, front to front, and/or rear to rear.
   (b) Twenty-five feet end to end.
   (c) Fifty feet end to front and/or end to rear.
3. No required yard space or minimum distance between buildings shall be used for required parking, drives or aisles, except that a maximum of 15 percent of these required distances between buildings and required yards may be used for parking, after the off-street parking requirements of this ordinance have been met.

C. *Maximum units per floor.* No more than eight dwelling units per floor may be built in a rectangular building and no more than 12 dwelling units per floor in a T or L shaped building. The intersecting building projection that forms the T or L shall be at least 20 feet long from the inside corner to the end wall.

D. *Modulation required.* Modulation is defined as a change in the vertical plane of the building facade. Building facades shall be modulated at least every 30 foot horizontally and at least every 20 feet vertically. Modulations shall measure at least three inches perpendicular to the building face.

E. *Undifferentiated facades prohibited.* Differentiation is defined as a visual relief or change in the surface of a building. Undifferentiated facades shall not exceed 20 feet horizontally or 15 feet vertically. Walls can be differentiated by:

1. Changes in siding texture;
2. Changes in surface texture;
3. Details such as trim and brackets;
4. Building projections such as bay windows, dormers, balustrades;
5. Change in color.

F. *Blank facades prohibited.* Blank facades shall not be visible from public rights-of-way or adjacent single-family properties. Blank facades can be alleviated through use of windows, architectural detail, modulation, or differentiation.

G. *Architectural compatibility.* All dwellings shall be aesthetically compatible in design and appearance with other residences in the vicinity.

H. *Floor area.* Each dwelling unit shall comply with the requirements set forth in section 5.02(3).

(2) Multiple family dwelling located within the R-3 district shall be subject to the following:

A. *Lot area and density.*

1. Every lot in an R-3 district on which a multiple-family dwelling is to be erected shall provide a minimum lot area of 7,800 s.f. for the first living unit, and not less than 2,000 s.f. of lot area for each additional efficiency unit or dwelling unit with one bedroom and not less than 2,750 s.f. of lot area for each two-bedroom unit, and not less than 3,500 s.f. for each additional three-bedroom unit.

2. The maximum density of dwelling units per acre in R-3 districts shall be as follows:
   (a) One-bedroom units: 18 per acre.
   (b) Two-bedroom units: 14 per acre.
   (c) Three- and four-bedroom units: 11 per acre.

B. *Yard requirements.*
   1. Front, side and rear yards shall comply with section 4.05.
   2. If more than one building shall be constructed on the same site, the following minimum distance between buildings shall be:
      (a) Seventy feet when front to rear, front to front, and/or rear to rear.
      (b) Twenty-five feet end to end.
      (c) Fifty feet end to front and/or end to rear.
   3. No required yard space or minimum distance between buildings shall be used for required parking, drives or aisles, except that a maximum of 15 percent of these required distances between buildings and required yards may be used for parking, after the off-street parking requirements of this ordinance have been met.

C. *Maximum units per floor.* No more than eight dwelling units per floor may be built in a rectangular building and no more than 12 dwelling units per floor in a T or L shaped building. The intersecting building projection that forms the T or L shall be at least 20 feet long from the inside corner to the end wall.

D. *Modulation required.* Modulation is defined as a change in the vertical plane of the building facade. Building facades shall be modulated at least every 30 foot horizontally and at least every 20 feet vertically. Modulations shall measure at least three inches perpendicular to the building face.

E. *Undifferentiated facades prohibited.* Differentiation is defined as a visual relief or change in the surface of a building. Undifferentiated facades shall not exceed 20 feet horizontally or 15 feet vertically. Walls can be differentiated by:
   1. Changes in siding texture;
   2. Changes in surface texture;
   3. Details such as trim and brackets;
   4. Building projections such as bay windows, dormers, balustrades;
   5. Change in color.

F. *Blank facades prohibited.* Blank facades shall not be visible from public rights-of-way or adjacent single-family properties. Blank facades can be alleviated through use of windows, architectural detail, modulation, or differentiation.

G. *Architectural compatibility.* All dwellings shall be aesthetically compatible in design and appearance with other residences in the vicinity.

H. *Floor area.* Each dwelling unit shall comply with the requirements set forth in section 5.02(3).

(3) Multiple family dwellings located within the R-2 district shall be subject to the following:

A. *Modulation required.* Modulation is defined as a change in the vertical plane of the building facade. Building facades shall be modulated at least every 30 foot horizontally and at least every 20 feet vertically. Modulations shall measure at least three inches perpendicular to the building face.

B. *Undifferentiated facades prohibited.* Differentiation is defined as a visual relief or change in the surface of a building. Undifferentiated facades shall not exceed 20 feet horizontally or 15 feet vertically.

   Walls can be differentiated by:

   1. Changes in siding texture;
   2. Changes in surface texture;
   3. Details such as trim and brackets;
   4. Building projections such as bay windows, dormers, balustrades;
   5. Change in color.

C.

Blank facades prohibited. Blank facades shall not be visible from public rights-of-way or adjacent single-family properties. Blank facades can be alleviated through use of windows, architectural detail, modulation, or differentiation.

D. *Architectural compatibility.* All dwellings shall be aesthetically compatible in design and appearance with other residences in the vicinity.

E. *Floor area.* Each dwelling unit shall comply with the requirements set forth in section 5.02(1).

(Ord. No. 675, §§ 5, 6, 12-15-03; Ord. No. 693, §§ 1—3, 7-10-06)

GREEN FACTORS

a. Covered rainwater cistern, with spigot

b. Composting drum near Kitchen

c. Solar panels on South-facing roof

THIS USED TO BE NORMAL

PATTERN BOOK HOMES FOR 21ST CENTURY MICHIGAN

CONTENTS

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michigan municipal league

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east arbor architecture

PIPER & GOLD PUBLIC RELATIONS

HOLD HARMLESS STATEMENT

This Pattern Book for new infill construction is focused on multi-unit housing solutions based on built historic precedents and primary documentary research. In presenting replicable, context-sensitive designs for use in creating new infill construction of duplexes and fourplexes, our goal is to enrich the urban fabric of neighborhoods within existing downtown-adjacent Michigan neighborhoods.

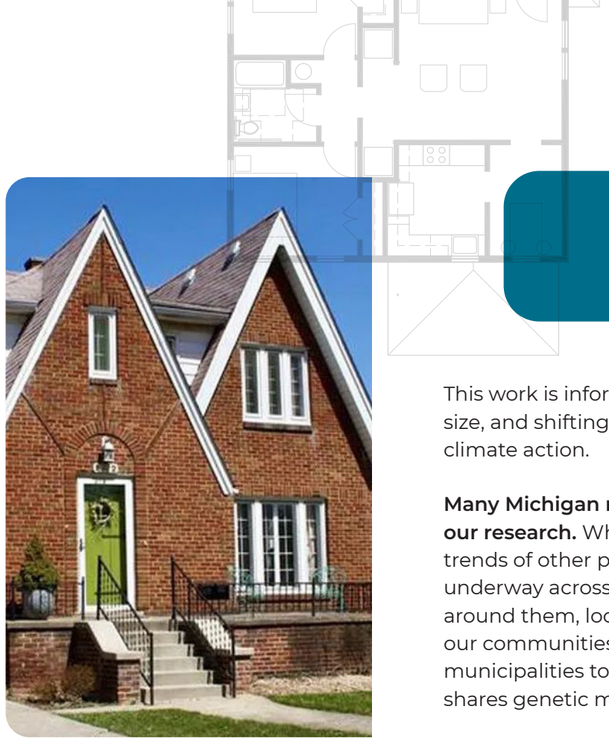
In championing infill and the concentration of new housing units within existing infrastructure, our focus is on vacant lots laid bare by blight removal or the utilization of lots never built upon. **The building concepts, sample interior layouts, and open-source construction documents presented in this publication are intended for construction on vacant parcels in existing neighborhoods or redevelopment sites.** In no way is this manual or the recommendations contained herein an endorsement for teardowns of existing historic housing units.

Visual and written recommendations are provided for housing form/massing, lot placement, and exterior finishes complementary to existing neighborhoods. Sample construction documents are presented without official seal. Surveying, Landscape Architecture, Structural Engineering, and Site Engineering are outside of the scope of this endeavor. Each building site and its accompanying circumstances are unique. Statewide public distribution necessitated cautionary omissions in the final set. These omissions must be addressed by design professionals familiar with the chosen site. **Verification of local conditions, including lot irregularities, soil conditions, snow loads, and numerous other factors, will need to be confirmed by professionals who will address the many regional variations.** In conclusion, it is incumbent on the groups or individuals who proceed with one or more of the model plans presented in this publication to conduct their own due diligence.

INTRODUCTION

Michigan has a rich housing stock, spanning in origin from the early nineteenth century to the present day, offering a diverse array of forms and styles. Many homes are “vernacular” styles, the common, everyday building language adapted to the climate of the Great Lakes region. Some examples echo national housing styles popularized by pattern books and mass marketing, with Victorian-era styles, pre-Depression kit homes, and post-World War II tract developments occupying a substantial portion of this portfolio and mid-century modern suburban homes currently enjoying a popular revival. Absent from this brief story is evidence of our multi-family homes once abundant in Michigan cities.

This manual touches upon the history of housing development in the United States and Michigan, including the duplexes and fourplexes commonly constructed until the mid-twentieth century. It offers models for intertwining smaller-scale housing options into the existing urban fabric. It is inspired by the patterns of historic precedents that worked well before Federal housing policy and local zoning ordinances shifted public opinion to the primacy of single-family housing.



THIS APPROACH IS FAR FROM REVOLUTIONARY.
IN FACT, IT IS A FORM OF REVIVAL.

This work is informed by the desires of Michigan’s increasingly diverse population, shrinking average household size, and shifting housing market demands influenced by aspirations for walkability, housing affordability, and climate action.

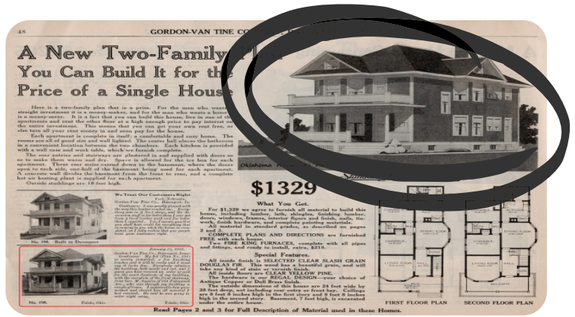
Many Michigan neighborhoods were built based on the pattern books and kit home manuals studied during our research. When considering what Michigan cities and villages will tolerate or embrace versus the current trends of other places, we place this work within the context of national trends and experiments presently underway across the United States. In breaking new ground while these (re)emerging trends are happening around them, local leaders and developers can rely on a menu of options tailored to our state’s landscape and our communities’ unique identities. Our approach of critical regionalism is calibrated to empower Michigan municipalities to feel like they can do this work without going off into left field, to build new in a manner that shares genetic material with the housing stock already familiar.

PART I

THIS USED TO BE *NORMAL*

THE GREAT URBANIZATION

During the early twentieth century, Michigan shifted from an agrarian economy to one heavily reliant on industrialization, particularly the auto industry. **People migrated to Michigan from all over the country for Ford's "$5 a day" deal and similar draws by other auto manufacturers, occupying all manner of "double houses" and "rooms to let."** Demand for safe, clean housing led to the creation of multi-family units and apartments.



During the early twentieth century, as part of the Great Migration and other pre-WWII demographic shifts, millions of workers and their families moved from the rural South to the industrial North.

The housing markets in growing city centers were strained by the need to accommodate the rapid growth of affordable housing.

Thousands of units were constructed quickly and densely to provide shelter and form community.

In Detroit and other automotive manufacturing cities across the state, six-unit buildings of “cold water flats” were built, so named because they had basic plumbing but not the luxury of hot water. These flats were constructed as large houses, often with wide, shared porches and common hallways. Still others were made from converted aging mansions. Such smaller-sized unit housing choices provided a sense of community among tenants and yet also offered privacy and affordability.

Out of necessity, most of these multi-family dwellings were located within walking distance from employers or the nearest streetcar. Many were used as flexible ways for families or extended relations to live together. Today, we would call them duplexes, triplexes, “quads” or fourplexes, and small apartment buildings.

People migrated to Michigan from all over the country for Ford’s “$5 a day” deal and similar draws by other auto manufacturers, occupying all manner of “double houses” and “rooms to let.” Demand for safe, clean housing led to the creation of multi-family units and apartments.

MAIL-ORDER SOLUTIONS

The kind of manufacturing that drew migrants to cities during this era also scaled up to meet the residential sector. Several mail-order companies, such as Bay City, MI-based Aladdin Homes and the Chicago department store Sears, Roebuck & Co., appeared in the market. **People could save up the cash to purchase or access financing through the manufacturer for an entire home, which would arrive on a railcar ready for construction by the buyer or locally hired skilled trades.** Casually and without fanfare, these manufacturers also offered a modest array of "two-family houses" or small apartment fourplexes alongside small cottages, mid-sized models, and spacious single-family homes.

In 1913, the Sears Model "No. 130" was described as "a four-family apartment house with four rooms for each family that can be built at a very low cost and will make an exceptionally good paying investment." The floorplan was neatly arranged as if two sets of mirrored shotgun houses were stacked upon one another with common wet walls, connected by a central hall, skinned with a confidence-garnering brick exterior, and accessed by a singular entry door on a shared porch.

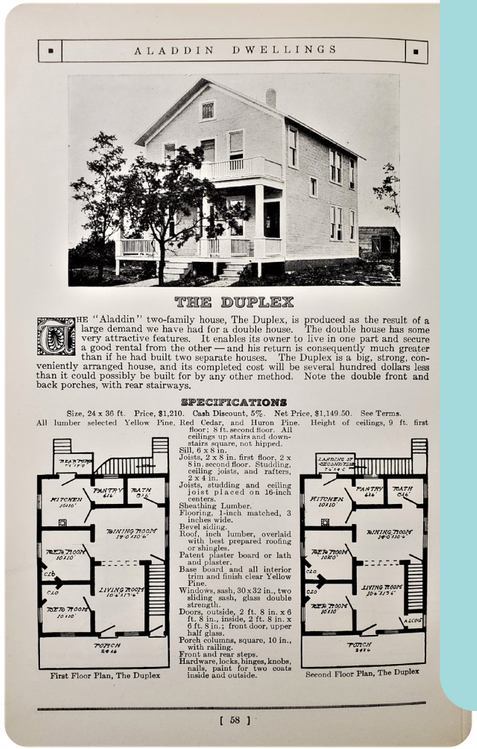
According to *Buying Home, Selling America: the House Catalog*, *1906-1966,* an exhibit on view at the Clark Research Library at the University of Michigan in 2021, there were many Michigan connections to the mail order housing industry. In the pre-Depression years, “evidence of Michigan’s building boom” could be found in house models and the companies designing them. Some models were laid out for lots only 30 feet wide. This narrow width is unusual in most towns, but typical in Detroit and other heavily urbanized cities, whereas the majority were envisioned for more expansive lots of 50 feet or more.

Aladdin Homes, based in Bay City, was a large kit home producer with model names like "The Detroit," "The Woodward,” and “The Michigan.” **The University of Michigan exhibit went on to state:**

Bay City, [Michigan,] situated at the mouth of the Saginaw River, was a hub of the mail-order house industry. This was not by chance, because Bay City was by the mid-19th century a national center of shipbuilding, home to and supported by an infrastructure of lumber yards, sawmills, and skilled workers. Three of the major national kit house companies, Aladdin company, Liberty Homes, and Sterling Homes, operated out of Bay City. Together these three companies sold almost four times as many homes as the Sears, Roebuck and Company.

A popular model offered by Aladdin Homes was simply named “The Duplex.” Created in response to significant demand for two-family houses, this floorplan enabled its owners to “live in one part [of the house] and secure a good rental from the other” with a “return which is consequently much greater than if [they] had built two separate houses.”

Once constructed, most duplexes or four-family homes blended seamlessly with their neighbors. While the value of accommodating two or four households in one urban lot was sold as a sound investment, the visuals of unobtrusively fitting into the residential landscape were accomplished with form, massing, and siting nearly indistinguishable from single-family homes.



ALADDIN DWELLINGS

THE DUPLEX

THE “Aladdin” two-family house, The Duplex, is produced as the result of a large demand we have had for a double house. The double house has some very attractive features. It enables its owner to live in one part and secure a good rental from the other—and his return is consequently much greater than if he had built two separate houses. The Duplex is a big, strong, conveniently arranged house, and its completed cost will be several hundred dollars less than it could possibly be built for by any other method. Note the double front and back porches, with rear stairways.

SPECIFICATIONS

Size, 24 x 36 ft. Price, $1,210. Cash Discount, 5%. Net Price, $1,149.50. See Terms.

All lumber selected Yellow Pine, Red Cedar, and Huron Pine. Height of ceilings, 9 ft. first floor; 8 ft. second floor. All ceilings up stairs and down-stairs square, not lipped.

Sill, 6 x 8 in.
Joists, 2 x 8 in. first floor, 2 x 8 in. second floor. Studding, ceiling joists, and rafters, 2 x 4 in.
Joists, studding and ceiling joist placed on 16-inch centers.
Sheathing Lumber.
Flooring, 1-inch matched, 3 inches wide.
Bevel siding.
Roof, inch lumber, overlaid with best prepared roofing or shingles.
Paint, plaster board or lath and plaster.
Base board and all interior trim and finish clear Yellow Pine.
Windows, sash, 30 x 32 in., two sliding sash, glass double strength.
Doors, outside, 2 ft. 8 in. x 6 ft. 8 in.; inside, 2 ft. 8 in. x 6 ft. 8 in.; front door, upper half glass.
Porch columns, square, 10 in., with railing.
Front and rear steps.
Hardware, locks, hinges, knobs, nails, paint for two coats inside and outside.

First Floor Plan, The Duplex

Second Floor Plan, The Duplex

[58]

WRITTEN OFF THE MAP

With the arrival of Euclidean zoning in many American towns by the mid-to-late 1920s and the connoted moral superiority of R1 neighborhoods, the ability to slide multi-family units into urban and suburban lots was written out of the playbook. In subsequent decades, the adaptation of larger single-family housing units to multi-unit housing has continued to occur naturally and sometimes covertly in both urban and suburban landscapes.

Despite their pragmatic approach, these kinds of functional adaptations to market needs are still, with rare exceptions, essentially outlawed. While some have been permitted to remain as non-conforming uses pre-dating current zoning code, others have been grudgingly allowed by zoning boards on a case-by-case basis. These factors, combined with loan products focused on single-family housing and the high cost of new multi-family construction unsupportable outside of the luxury market, have created a vacuum in housing choice options for a substantial portion of Michiganders.

WHAT WE NEED NEXT

Michigan's cities continue to grapple with vacant lots yielded from Recession-era blight demolitions, blank parcels never developed within municipal boundaries, and a lack of activity for creating by-right accessory dwelling units (ADUs). Such undercapitalized land assets present the opportunity to develop new housing units – and create future taxable revenue with increased density – while availing of municipal investments already sunk into public transit and non-motorized corridors, as well as standard roads, water lines, and sewer infrastructure.

Currently, most of Michigan's housing stock – approximately 70% – is single-family housing, the ideal of the post-World War II era. Meanwhile, the average household size continues to shrink – from 4.5 individuals in the 1960s to 2.5 individuals in the 2020s. The need for expansive, multi-bedroomed residences has waned. **With 47% of all housing units constructed prior to 1970, it's also clear that new construction has not kept pace with the kinds of housing types needed by our population.** Related to this shift is the demand for a specific type of housing – smaller (2,000 sf or less) missing middle – in the workforce price range of 80% to 120% of Area Median Income (AMI).

Parallel to these conditions, of pressing concern, is the **reality that household incomes have dropped or failed to realize net gains over time.** Meanwhile, demand for housing units within the affordable or attainable cost range has markedly increased. The need for varied and diverse housing options – beyond the default of single-family housing – is being expressed by an increasing number of households. Market appetite is far outpacing the current supply in cities. Reasons for the desirability of smaller scale, attainable housing are varied – from a pragmatic desire to keep housing overhead low to the struggle to find accommodations within reach for a broader range of income levels. Such lifestyle choices are also often attached to reliance on public transit (by need or by choice), limited funds for a new household, intentional downsizing, the establishment of multi-generational housing arrangements, or simply the desire to reduce a carbon footprint.

One option for what we need again is, in fact, hidden in plain sight, in the form of these multi-family housing solutions to age-old housing needs.

Michigan communities are also becoming more diverse, with heightened demand for a more comprehensive menu of housing choices fueled by economic mobility, intentionally inclusive public policies empowered by increasing demands for social justice, and the persistence and success of multi-ethnic households. These trends are in direct contrast to the history of redlining and racism still evident on our landscapes. In the early twentieth century, and even more visibly in the Post-World War II Era, the messaging of housing catalogs, both implicitly and explicitly, focused solely on the white householder. When people of color entered the housing market, they faced opposition, discouragement, and hostility. While unfair housing practices were legally challenged and rolled back by the Civil Rights Act of 1968 (Fair Housing Act), segregation and discrimination persisted for decades and remain visible on the landscape. They remain evidenced in marginalized communities and artificially stagnant housing markets in many Michigan communities. **Creating new multi-unit housing units within existing neighborhoods will contribute to the variety of housing choices, increase financially attainable options, and foster the persistence of residents of all backgrounds and socio-economic statuses.**

Two decades into the twenty-first century, a fraction of Michigan's historic multi-family units remain standing. It was not that these pragmatic housing solutions fell out of fashion; they were written off of the landscape by the perceived superiority of single-family housing. While the big house on a large lot may work for some, it is not the solution for everyone. **One option for what we need again is, in fact, hidden in plain sight, in the form of these multi-family housing solutions to age-old housing needs.** Shifting zoning up to allow for the kind of neighborhoods which already exist and function well could, perhaps, begin to allow the housing sector to respond to current needs.

PART II

ENABLING THE NEIGHBORHOODS *WE DESIRE*

"IN THE UNITED STATES, IT WOULD SEEM THAT DIVERSITIES OF STYLE AND STRONG CONTRASTS OF ARCHITECTURAL DESIGN ARE A PERFECTLY NATURAL OCCURRENCE."

– Calvert Vaux, architect and landscape designer, co-creator of New York's Central Park

In keeping with the philosophy of Michigan's Redevelopment Ready Communities program, this guide focuses on making the development you want in your community the development that's easy to do in your community. Many of our current zoning codes still show their roots in the suburban construction boom after World War II. These codes were focused on managing the rapid construction and first life cycle of large-scale, generally uniform residential subdivisions and shopping centers. **Unfortunately, these codes reinforced the standardization of homes within a neighborhood, limiting both diversity of choices and the ability to adapt homes over generations and discouraging the inclusion of duplex and quadplex homes.**

These codes were also applied retroactively to many existing traditional neighborhoods, where they were ill-suited to the range of home types already present, and to the fine-grained scale of these neighborhoods. **By preventing new construction of these options and pushing existing examples towards conformity, our codes have constrained the options available to residents.** Approaches to re-enabling our traditional neighborhood patterns can take three forms: neighborhood zoning repair, coding to permit desired home patterns, and pre-approved building plans.

NEIGHBORHOOD CODE REPAIR

A neighborhood repair approach can be taken in areas where the homes predate the codes currently regulating them. This strategy focuses on pruning back incompatible codes that have grown over and constricted the neighborhood over time. In addition to enabling infill construction of a range of home types that fit the history of the space, this approach has the added benefit of bringing existing examples back into conformity, making investments to preserve or rehabilitate those homes.

In communities with these older neighborhoods, the code repair option can be an easy first step: it prioritizes the existing built fabric of the community over the current regulations, and residents generally tend to like their neighborhood better than their zoning ordinance.

To identify the restrictions or pain points in your code that conflict with traditional patterns, use a mix of consultation with your building and zoning staff, neighborhood residents, and local builders or architects; a review of assessing and GIS parcel data; or a visual survey of properties in the neighborhood.

COMMON PROBLEMS TO LOOK FOR IN YOUR CODE, AND POTENTIAL NEIGHBORHOOD-SCALE FIXES, INCLUDE:

MINIMUM LOT WIDTH AND AREA

Traditional neighborhoods include a mix of lot sizes, many of which are smaller than current minimums in zoning. Consider reducing lot width and area minimums in the code to match the smaller lots in the neighborhood. Alternately, if your code declares that all originally platted lots are considered conforming, make sure that language does not include an adjacent-ownership restriction or limit the property's use to a single unit detached house.

SETBACKS

Post-war front and side setbacks are often inappropriately large for traditional neighborhoods and a frequent source of variance requests or denied permits. Review side setbacks against existing homes to determine whether smaller setbacks are more appropriate to existing neighborhood patterns. Allow new construction to match the front setback of existing homes by setting a build-to zone based on adjacent homes, such as the average of the existing front setbacks on the block +/- five feet.

DENSITY AND DWELLING SIZE

Lot size, height, setback, and lot coverage standards address building bulk, and building and fire codes handle health and safety concerns within buildings. Remove redundant standards that limit housing flexibility without improving development character, such as per-lot density standards (including minimum lot area per unit) and minimum per-unit floor area requirements.

PERMIT A MIX OF HOME TYPES

Use neighborhood precedents to consider what home types to permit by-right, such as ADUs, duplexes, fourplexes, or small townhome blocks. Re-enable these traditional uses throughout the neighborhood, on particular street frontages, or on corner lots.

FIX PARKING REQUIREMENTS

Zoning standards often cause parking to dominate a parcel, especially for multi-home development. To prevent unnecessary excess parking, eliminate residential parking minimums, or reduce them to 1 off-street parking space per home.

Focus standards on the location, not amount, of parking to support the neighborhood: require parking access via alleys or side streets, where parcels have access to these; prohibit front yard parking; and require that the front façade of garages be set back at least 20 feet from the front façade of the home.

PERMIT ADDITIONAL RESIDENTIAL BUILDINGS ON LARGER PARCELS

In some cases, a parcel may be large enough to host two or more of the pattern home buildings offered here. Depending on the site, these may be side-by-side twins or mirror images; a front/back pair; or a "duplex court" of three or more buildings arranged in a U-shape around a central green shared.

Identify barriers to these arrangements in your code, such as requirements of only one residential structure per property, prohibitions against placing one residential structure behind another on a site, or build-to language that would require all homes to be within a certain distance of the front lot line (versus only the frontmost home).

CODING TO SUPPORT DESIRED PATTERNS

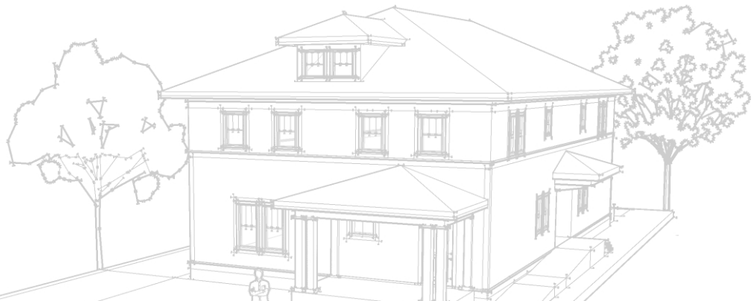
Each duplex and fourplex home pattern presented in this guide can be used as a target for code updates in any neighborhood. Building these may be the next step after code repair in a historic neighborhood to encourage compatible infill on individual vacant lots or can be applied to any area where additional home types are desired. We have examined many of the same code standards discussed in the repair approach addressed in the Users' Guide to Code Reform, but with specific targets of desired new-build home types in mind, rather than relying only on existing buildings.

The home patterns are presented with dimensional information that can be used to "stress test" an existing code—to identify and correct obstacles in the current zoning before a homebuilder encounters them. This can be a valuable exercise for local staff to perform with the Planning Commission and ZBA or with neighborhood residents to show precisely why the existing code needs adjustment, rather than simply presenting changed numbers.

In North America, a duplex is a building divided into two separate living spaces. Most duplexes are built with the two homes side by side, although you can also live in a duplex with apartments on two floors. The Latin duplex means "twofold," from duo, "two," and -plex, "to intertwine." The word was coined in the U.S. around 1922.

In that step of updating the code, the goal is to establish the desired home patterns as permitted / by-right construction that can be approved administratively in the same fashion as a single-unit house. Removing only some barriers while still requiring the home to receive variances, special land use approval, or a similar step does not achieve the goal of making desired development easy.

Additionally, this stress test process should be focused on the purpose of enabling identified home types. **While there may be the temptation to add new constraints or limitations simultaneously, that brings the risk of trading off old barriers for new, rendering additional homes non-conforming.**



To stress-test a local zoning code:

1. **Select the home patterns desirable in a particular neighborhood.**

2. **Identify several sample parcels in that neighborhood.** Ideally, these would include a few different parcel sizes and corner and mid-block options, as well as parcels with and without alleys, if these exist. A focus on currently vacant parcels or side lots is reasonable, but the process should also consider whether these represent the neighborhood as a whole.

3. **Attempt to site each of the home patterns on each sample lot in a sketch plan,** documenting any points at which the existing zoning standards would block construction or require a variance or other discretionary approval.

4. **Amend the code to remove those barriers.**

OFFER PRE-APPROVED BUILDING PLANS

Some communities are taking the step of pre-approving specific building plans for neighborhood construction. **Under this approach, the municipality offers a library of construction plans that have already undergone review by the local code official and designates areas where those specific plan sets may be used.** This designation may be simply highlighting neighborhoods with compatible zoning and dimensional standards or may potentially be written into the zoning code. For example, the city of Bryan, TX, specifically lists their pattern buildings as permitted uses in an overlay district applied to the area where this development is desired.

A builder may then use one of the pre-approved plansets for their project rather than incurring the time and financial expenses of having new plans drawn up and reviewed by code officials.

This does not completely eliminate code review, but it does provide significant savings—both on the developer's side and in the municipal administration of plan review.

Some steps still remain for review:

1. **The builder may still need to have their individual copy of the plans stamped by an architect;** this can either be an individual builder's responsibility or a service the municipality contracts with a designated architect to provide.

2. **The placement of a pre-approved building on a specific site must still have setbacks, etc., verified.**

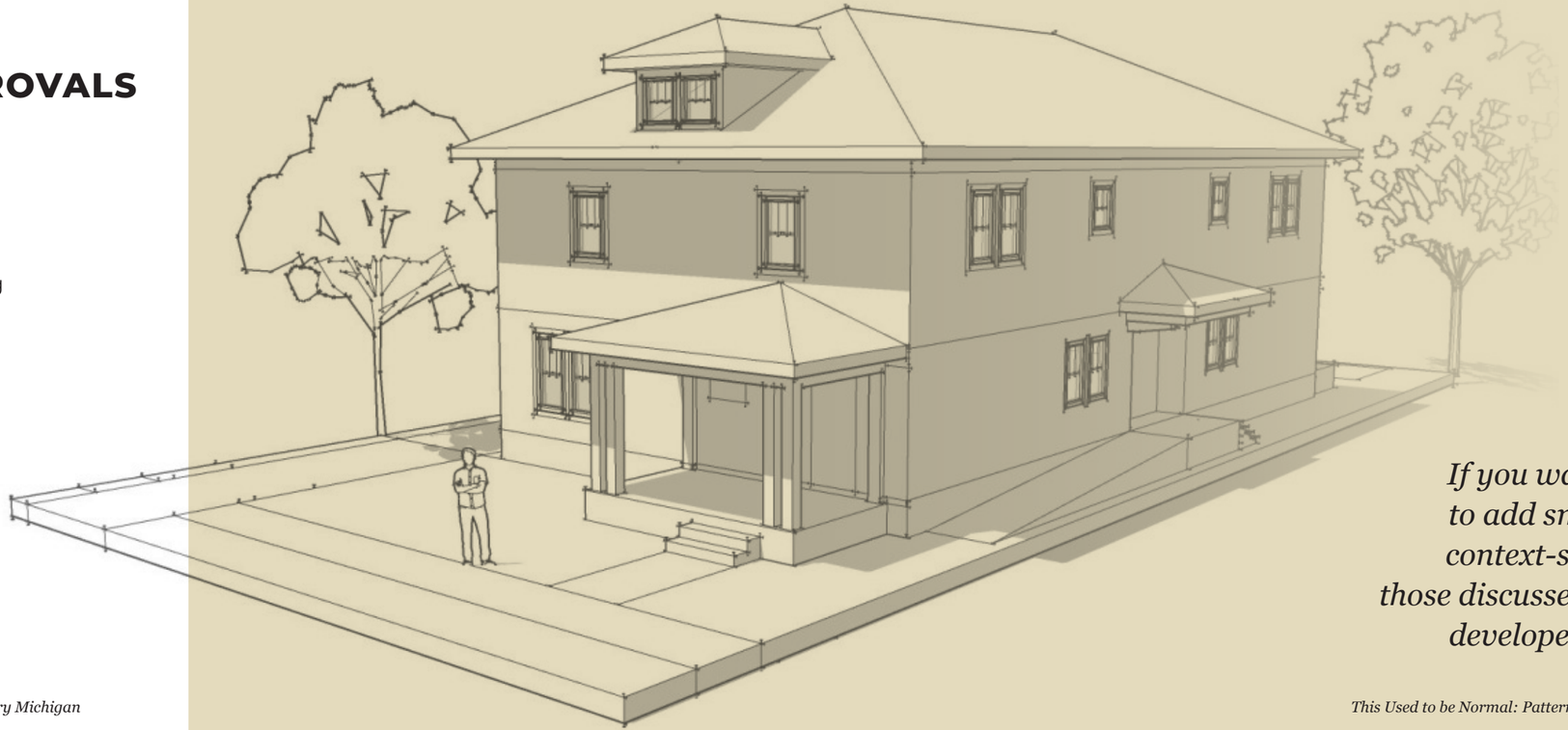
3. **Controls like wetland or steep slope protections or stormwater management requirements should be maintained.**

In addition to the patterns included in this guide, **communities may also consider adopting plans created independently by other municipalities** (such as those linked in the "Additional Resources" section) or having their own prepared.

PROVIDE BY-RIGHT ADMINISTRATIVE APPROVALS

Regardless of what combination of the above methods is used, the desired homes should be able to receive approval through an administrative process, without the need to seek variances from the ZBA, site plan reviews by the Planning Commission, or any action by the local elected body. All of those processes add both time and uncertainty to the task of creating new homes, which reduces the number of homes built, increases the cost of every new home created, and cuts smaller, neighborhood-scale developers out of the process.

Again: Every additional review process or body engaged keeps your community further from that goal.



If you want your neighborhoods to add small-scale, fine-grained, context-sensitive new homes like those discussed here, make it easy for developers to build those homes.

EYES ON THE PRIZE

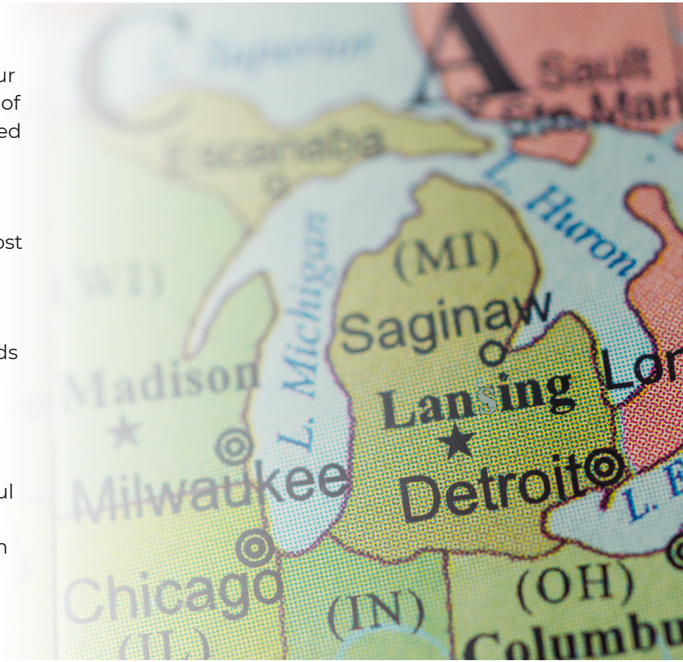
Thoughtfully designed landscapes don't occur by accident. Walkability is central to contemporary conversations on community and economic redevelopment in neighborhoods of all sizes across the state. This is also true in peer communities around the United States. The ability to easily pop into the local craft brewery, bike to the market, or for your kids to walk to school is prized by those who are also in the market for newly constructed housing options. Well-managed population density leads to sought-after communities with a strong economic core that improves property values over time. The drawback is that when cities invest in residential construction in their downtown areas, it is often compounded by a costly permitting and site plan approval process that adds significantly to the cost of construction of higher-density housing units.

Many of the same reasons that Michigan is ill-equipped to handle growth are the very same reasons that the costs of new construction are so high in this state compared to others. Michigan's classic strategy over the past decades has been to expand outwards with new greenfield construction on an auto-oriented landscape – whether we're growing on net or not.

Michigan has expanded its developed land area by 50% in 30 years, a greater than 5:1 ratio of infrastructure expansion to population growth.

Adding infrastructure so much faster than growing our population of people to pay for it means that the cost of that infrastructure is drastically increased. Unsupported and often unnecessary outward expansion directly impacts the cost of doing business in Michigan. The growing scarcity of land leads to increased costs for buildable lots, which, in turn, increases the baseline cost to build new.

Making small changes to enable the introduction of gentle density in our already developed neighborhoods is a thoughtful and low-cost strategy to concentrate reinvestments in our communities and utilize infrastructure already in place. Layering in additional housing units and relying upon the precedents of form, massing, height, lot placement, and other careful design elements can accomplish what was done decades ago: welcoming in more neighbors, hidden in plain sight.



PART III

DESIGN & FINANCIAL CONSIDERATIONS

CRITICAL REGIONALISM FOR MICHIGAN

When approaching the idea of home, we acknowledge that housing comes in many formats. Referencing the broad array of manuals available for Accessory Dwelling Units (ADUs) and the need already met in that sub-set of housing formats, the design problem for this project has centered specifically on Duplexes and Fourplexes.

Grounding in block-level context is critically important when building new housing that blends seamlessly within a single-family format dominated landscape. How a house presents itself visually is of eminent importance for its lasting impact on the landscape. How does a building touch the sky? How does it connect to the ground? How is it accessed from the street? Are there easily comprehensible entries, and does it invite sociability?

In the case of this project, we also asked: Does it look like it's in Michigan?

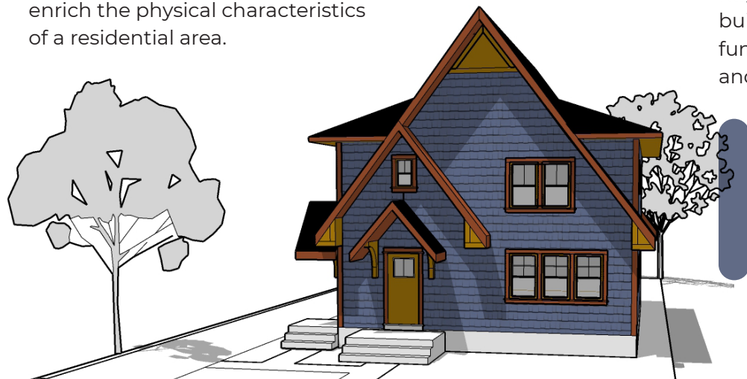
For each model shown in this manual, several optional skins of varying styles are presented for customization on the building site. The design team's intention has been to illustrate a selection of options and design choices that can be applied to each floor plan. For those exterior appearances, the design team set forth intent on authentic emulation of historic pattern books and kit homes. This work is also done with a healthy dose of respect for the building traditions found in existing neighborhoods; a contextual approach is often called critical regionalism. The idea of critical regionalism in architecture is rooted in the modern tradition, and it is tied to geographical and cultural historical context. **In observing these elements, we identified key components which make a dwelling functional, comfortable, and visually compatible with the common housing types in this region.** We have employed a progressive approach to design that seeks to mediate between the global and the local languages of architecture.

We also acknowledge that the current housing stock was created through historic design influences and shifts in building technology. At the turn of the twentieth century, manufacturing led to streamlining house construction. The Victorian Era and its complex hallmark, Queen Anne/Folk Victorian, gave way to more restrained derivations, including the balloon-framed Free Classic, built with more readily available dimensional lumber milled with industrial equipment. Ornamentation slimmed down or disappeared. Commonly seen in an upright and wing or gable-fronted or gable-dominant ell format, this housing form was so ubiquitous that it was thus named “The Michigan” by Aladdin Homes in 1914.

While Tudor Revivals, Craftsman Bungalows, Georgians, and Dutch Colonial Revivals made a heavy showing in Michigan neighborhoods during the early decades of the twentieth century, with a few notable exceptions, a relatively small number of exotics, such as Mediterranean Revivals or Art Deco style made their way into Michigan’s middle-class domestic architecture. In contrast, Midwest born and bred, the Prairie style is native to the region.

These dominant styles and related forms have colored the plans presented in this manual.

The models presented here are intended primarily as discrete infill for vacant lots laid bare by blight removal or lots never built up. They can also be built as part of a more significant undertaking for many new housing units constructed at once. In either case, the construction of these new housing units will enrich the physical characteristics of a residential area.



In considering the existing conditions of neighborhoods in Michigan communities, the design process for these models has also given careful deference to the Secretary of the Interior’s Standards for Rehabilitation. This set of guidelines is recognized at the national level as the measure by which most historic district commissions evaluate alterations to historic properties or new infill in designated districts. To be clear, if a lot is selected for building one or more of the models presented in this manual and is located in a local historic district covered by a local ordinance, the design review process is conducted at that community level by the local historic district commission.

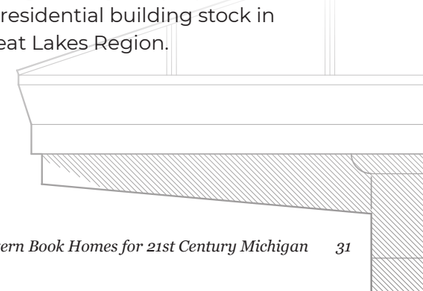
Regardless of the local historic district status of future building sites, the design process has held close to the fundamental principles of compatible building form and careful lot placement.

> *Per Secretary’s Standard #3, “Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.”*

The models outlined in this manual are artifacts of their time. Once constructed, they will be visibly new construction that reflects historic antecedents.

> *Per Secretary’s Standard #9, “New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.”*

The models in this manual echo current housing forms, size, scale, and massing. Once built, they will increase density and strengthen walkable, downtown adjacent neighborhoods. In doing so, they will perpetuate visual cues consistent with residential building stock in Michigan and the Great Lakes Region.



HACKING THE COSTS OF CONSTRUCTION

The need for more housing units of all types remains palatable in nearly every Michigan community and is hindered by increasing costs.

New construction is expensive in not only the case of private housing but also in the public and corporate housing sectors. According to the Michigan Statewide Housing Plan, affordability remains a significant barrier in Michigan. Before the Covid-19 Pandemic, 48% of Michigan renters and 18% of homeowners paid more than 30% of their monthly income for housing. Between January 2013 and October 2021, the average sales price for a home in Michigan increased by 84%. During that same period, the asking rent for a Michigan apartment increased by 20%, with the highest increases registered in mid-market properties most likely to contain affordable units.

Rising and fluctuating costs of materials create uncertainty. Even when new housing options are approved and encouraged, the most desirable housing choices come with a high price tag that pushes costs into the luxury market. The scarcity of a skilled labor force to build and rehab housing also comes into play, with insufficient capacity to meet demand. And, with a few notable exceptions, attempts to increase the labor force are faced with struggling or stagnating trades and apprenticeship programs. Nevertheless, current housing market reports show that the supply and demand curve remains in full effect. When supply is low and demand is high, then prices increase. Thus, in Michigan, we have an increased unmet need for skilled labor and supply chain challenges for material, leading to higher construction costs.

This is not a new problem to address. Land and materials costs, labor supply, and the permitting and site plan approval process add significantly to the construction cost of higher-density housing units.

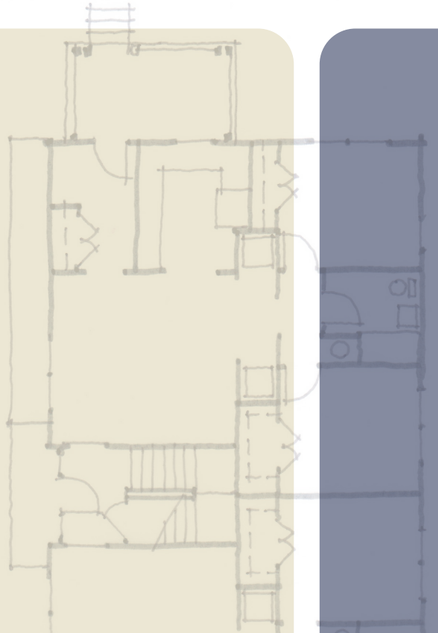
These three core variables create barriers to success for the kinds of projects ostensibly needed by Michigan residents. The trick is understanding exactly what the costs are and the impacts contributing to this high-cost environment in Michigan, then addressing what can be changed head-on.

DESIGNING-IN COST REDUCTIONS

The models in this publication embody a pragmatism focused on attainable building costs. However, the plans and materials proposed are not cheap. **Early on, design sacrifices were made to generally keep costs down where possible and focus resources on maximizing square footage and efficiency of the layout.**

1. REDUCED PARKING MINIMUMS

The site plans presented in this publication provide minimal parking accommodations. Working in coordination with our best practices zoning recommendations, off-street parking is offered for only one car per unit. If the chosen lot has alley access, a rear-loaded access point would be preferable, not only for design considerations and lot maximization but also to reduce the cost of concrete in pouring parking pads. Similarly, no garages are depicted in these site plans. While garage(s) can most certainly be constructed at the discretion of local implementors, either during initial construction or as a later site addition, this type of structure does not figure into our designs, and substantial costs are saved as a result.



2. BUDGET-CONSCIOUS FOUNDATIONS

None of our presented designs are depicted on a basement foundation. While basements are common in Michigan, their excavation and construction are additional costs that can be reduced by choosing a raised foundation of concrete blocks. This alternative provides height comparable to adjacent existing housing without incurring the price of a full basement. It also creates an accessible crawl space that can be insulated for energy efficiency and can house separate HVAC units if additional storage space is desired in each unit. Of course, a basement can be built at extra cost if desired.

3. MODEST INTERIOR FEATURES

Fireplaces and built-in shelving, traditionally associated with many pattern book and kit homes from the pre-World War II era, are missing from these models. Such features are nice to have and, in some cases, can be fitted into the space at a later date, and they are not necessary at the initial outset in setting up functional living spaces.

OTHER COST CONTAINMENT STRATEGIES

The cost for constructing these models can be somewhat contained through the following strategies.

1. SAVVY LAND ACQUISITION & READY ZONING

Keeping costs within an attainable range is predicated on the expectation of low or no-cost land acquisition, the reduction of permitting fees, and the preparation or identification of likely development sites by implementing zoning updates, as discussed in Part II of this guide. Municipalities can reduce or eliminate land costs by utilizing vacant lots created by blight removal, brownfield remediation, or historic undercapitalization. Sale by the municipality, landbank authority, or non-profit entity for little or no cost could substantially reduce the overall project costs.

2. OPTIONAL FINISH LEVELS

Housing units can be constructed at various finish levels. A pared-down building gets built. It can be upgraded over time. Cheapest is not best, however, and guidance is offered in the Options Sheet on choosing durable exterior and interior detailing of moderate quality that will be a wise investment in the long run.

3. INCREMENTAL EXPANSION

Getting the core block of the building constructed is the first step to providing the basics of shelter. Like the existing neighborhoods these models seek to emulate, contextually sensitive and naturally occurring additions of additional bedrooms, bathrooms, and other living spaces are entirely valid options. Such incremental growth is typical of many housing types, persisting because they break down the cost of construction over time and can be initiated as household needs grow and change.

4. LOCAL INCENTIVES FOR CREATIVE FINANCING PACKAGES

Despite the cost containment strategies outlined here, due to rising materials and labor costs, the average total capital outlay to build these models still far exceeds the attainability range for residents of nearly every community in Michigan. In the face of such discouraging odds, community leaders can take action to reduce overall project costs by partnering with non-profit and private developers and employing their toolkit of financial incentives at the local level. Local leaders can also lend their endorsement of projects and advocate with lenders to utilize or create loan products that enable this form of new housing creation.

By layering additional incentives within the developer's complex capital stack, the overall per-unit cost can be reduced, thus reducing the minimum sales or rental price point. These tools include, but are not limited to, the use of the following:

- **Tax Increment Financing (TIF)**
- **Brownfields & OPRA (obsolete property rehabilitation act)**
- **Local Bonds & Millages**
- **CDBG (community development block grants)**
- **Strategic Funds**
- **Neighborhood Enterprise Zones**
- **Community Land Trusts**

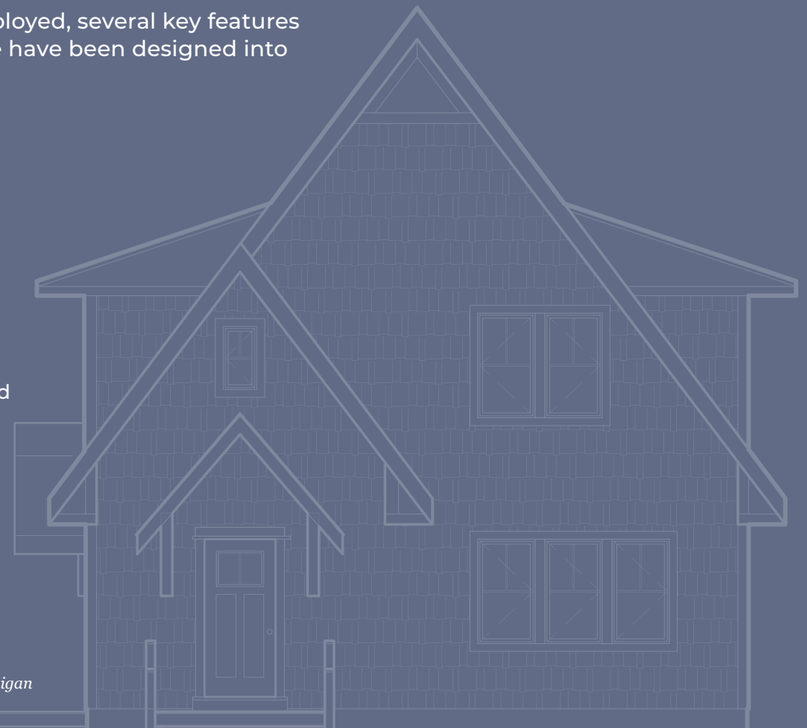
By placing housing as a high priority and leveraging multiple tools in both zoning and creative financing, community leaders can assist builders and developers with bringing the costs of construction closer to the range of attainability for Michigan households. In the end, an investment in creating new housing units is a win for local tax revenues. More importantly, it has a lasting impact on a community's ability to welcome and retain residents.

ELEMENTS OF DIGNITY AND COMFORT

In contrast to the cost reduction measures deployed, several key features that contribute daily to residents' quality of life have been designed into these models.

SEPARATE ENTRIES

Covered entry for each unit to shelter from the elements, provide a landing place for residents and guests, and create a separation between exterior and interior with a natural rain/snow/wind sifting. For each model shown, a formal entry has been planned for at least one unit from the front of the home, supporting visual fit with neighboring residences.



ACCESSIBILITY

The patterns presented are all stacked flats rather than side-by-side or townhome units. This allows the first-floor units to be fully accessible without stairs, adding much-needed options for residents with mobility-limiting conditions or seeking aging-in-place options. All doorways are compatible with universal design standards. Where possible, accommodations have been made to leave open the optional installation of ramps at outdoor entrances and grab bars in bathrooms.

FIRE SEPARATION

The unit is built with complete fire separation, including rated walls in both duplex and fourplex. The fourplex includes the addition of sprinklers in compliance with current IBC: while this could be avoided with townhome-style units, that interior layout did not address other design constraints.

SOUND BAFFLING

Sound buffering between units has been accomplished by careful stacking of service areas. Firewalls/fire separations have been created and enhanced with additional insulation.

SEPARATE HVAC UNITS

The design team placed the highest value on the assurance of complete air circulation separation for comfort and code compliance and the ease of individual billing ability per unit.

IN-UNIT WASHERS/DRYERS

Nearly standard in all contemporary new construction is the amenity of a clothes laundry. Each unit has an individual, not community shared, washer/dryer unit.

INTERIOR AND EXTERIOR MATERIALS SELECTIONS

The design process and considerations endeavored to set forth a menu of options to visualize a few floorplans with a variety of interchangeable skins. While the level of detail presented is more complex, the user can peel back finish levels to result in a more pared-down version of the design without sacrificing the bones of the building.

Generally, materials selections are provided at a grade level that will not adversely affect the attainable cost approach of the model yet still have fidelity to the core belief that durable, repairable materials will last longer and be a better investment over time. Alternate exterior materials are illustrated on the Options Sheet but are not detailed comprehensively within the drawing set. Given other design sacrifices made in the modeling process, it is implied that the cheapest materials should be avoided. More explicitly, cladding choices such as HardiPlank clapboards or shingles, stucco, and/or masonry veneer are far preferable to vinyl or other low-end finishes due to their durability, repairability, and environmental impact. Roofing should be dimensional asphalt shingles.

Similarly, the construction documents generally assume interior selections from a mid-range list for counters, floors, trim, and molding types.

PRICING ASSUMPTIONS

During the programming phase, it was determined that, given the construction cost at the time of publication in mid-2022, the residential units would be market-rate products, possibly reaching attainable pricing in some markets with simplified details and careful material selection.

While it is possible to reduce or increase costs due to variances in materials choices, fluctuations in labor costs, or other financing constructs, we established a baseline for the sake of estimation. We used a unit cost of $250/sf for mid-grade materials, resulting in building costs of approximately $500,000 for the Duplex and $915,000 for the Fourplex. We remain sensitive to fluctuating materials and labor costs – these numbers are current estimates as of May 2022.

Duplex

	ESTIMATE	ACTUAL	UNIT COST	COSTS
UNIT AREA	1,000 SF	999 SF	$249,500	
BUILDING AREA	2,000 SF	1,998 SF	$250/SF	$499,500

Fourplex

	ESTIMATE	ACTUAL	UNIT COST	COSTS
UNIT AREA	900 SF	833 SF	$228,750	
BUILDING AREA	3,600 SF	3,660 SF	$250/SF	$915,000

PART IV

SCHEMATICS

BUILDING ASSUMPTIONS

Our goal was to coordinate the appearance of the buildings with the anticipated context of single-family, detached residences. The buildings have been designed to reflect construction details found in the Great Lakes region. We composed or detailed the buildings where feasible to suggest that the building has developed over time to fit its neighborhood's context.

Schematic designs were developed with a basement or partial lower level for mechanical equipment. However, accommodations have been anticipated for slab-on-grade or crawl space construction with in-unit mechanicals.

- **The Options Sheet notes where barrier-free entry ramps may be located within the 50'x100' design parcel.** The assumption of rear-yard parking includes ramps aligned for convenient access from that direction.

- **Some items are indicated as blanks for local calibration—some aspects of the plans cannot be one-size-fits-all, especially in a state with 400 miles of north-to-south variability in climate.** This calibration includes items such as footing depth, R-value of insulation, and roof truss sizing for snow load—individual communities may opt to perform this calibration once for their local copy of the construction plans rather than leaving it to be repeated by each builder.

Duplex

The duplex pattern was organized with one primary door on the front façade, facing the street, for the first-floor home. The secondary door is located on the side but near the front of the building and is also oriented toward the street. It is detailed to offer equal dignity to the upstairs resident.

The table shows how this pattern may interact with various standards found in zoning codes, including the minimum values needed to enable this home on different lot sizes, including lots both smaller and larger than the design assumption.

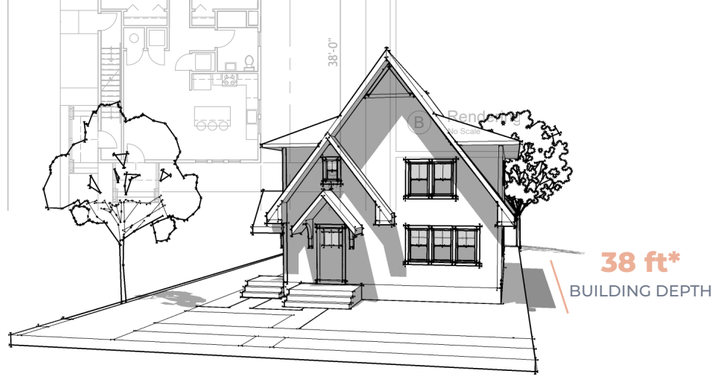
As noted in the zoning recommendations section, some standards may be found in local zoning ordinances that are redundant with the form and placement standards discussed here, that conflict with the goal of enabling housing, and that are too abstract to provide meaningful regulatory value. We recommend that FAR (floor area ratio) and dwelling unit density standards in particular be avoided in neighborhood contexts, or removed where they currently exist.

28 ft*
BUILDING WIDTH

2
HOMES

1,998 ft²
TOTAL FLOOR AREA

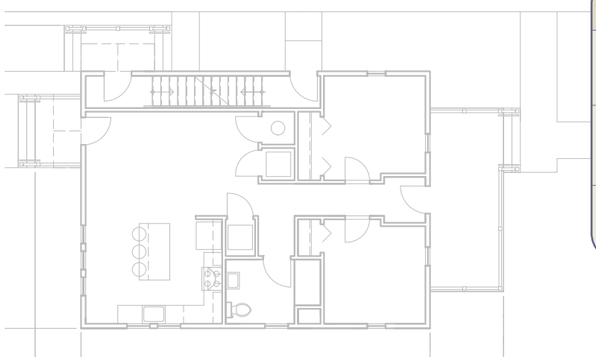
1,064 ft²
TOTAL FOOTPRINT



38 ft*
BUILDING DEPTH

Duplex Pattern

Building Coverage by Lot Depth	Density (units per net acre)
40 FT LOT WIDTH	
100 ft: **27%** 110 ft: **24%** 120 ft: **22%**	100 ft: **22** 110 ft: **20** 120 ft: **18.5**
50 FT LOT WIDTH	
100 ft: **22%** 110 ft: **20%** 120 ft: **18%**	100 ft: **17.5** 110 ft: **16** 120 ft: **15**
60 FT LOT WIDTH	
100 ft: **18%** 110 ft: **16%** 120 ft: **15%**	100 ft: **15** 110 ft: **13.5** 120 ft: **12.5**



Lot Width	Side setbacks needed to enable	Parking locations
40 FT	• Both sides total of < 12 ft • One side < 4 ft • Allow un-enclosed porch to encroach in wider side setback.	• Rear-load (alley) • Side-load (corner lot) • Side yard 8 ft. max width driveway
50 FT	• Both sides total < 22 ft	• Rear-load (alley) • Side-load (corner lot) • Side yard driveway
60 FT	• Both sides total < 32 ft	• Rear-load (alley) • Side-load (corner lot) • Side yard driveway

Fourplex

The fourplex building features a front-facing entrance in the front main unit to fit with the expected neighborhood setting and presents a façade similar to nearby single-unit houses. The primary entrance for other units is on the side façade, allowing a central stairway to access all of the homes in the building.

The table shows how this pattern may interact with various standards found in zoning codes, including the minimum values needed to enable this home on different lot sizes, including lots both smaller and larger than the design assumption. Note that while the duplex pattern can easily be fit on a 40-foot-wide lot, the dimensions of the fourplex pattern make it difficult to place on such a parcel.

Fourplex Pattern

4 HOMES

3,660 ft² TOTAL FLOOR AREA

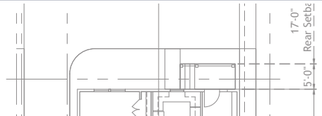
1,911 ft² TOTAL FOOTPRINT

56 ft* BUILDING DEPTH

Lot Width	Side setbacks needed to enable	Parking locations
40 FT	• Both sides total < 6 ft	• Rear-load (alley) • Side-load (corner lot)
50 FT	• Both sides total < 16 ft • One side < 6 ft if from driveway is needed	• Rear-load (alley) • Side-load (corner lot) • Side yard driveway
50 FT	• Both sides total < 26 ft	• Rear-load (alley) • Side-load (corner lot) • Side yard driveway

34 ft* BUILDING WIDTH

Building Coverage by Lot Depth	Density (units per net acre)
40 FT LOT WIDTH	
100 ft: **48%** 110 ft: **44%** 120 ft: **40%**	100 ft: **44** 110 ft: **40** 120 ft: **36.5**
50 FT LOT WIDTH	
100 ft: **38%** 110 ft: **35%** 120 ft: **32%**	1100 ft: **35** 110 ft: **32** 120 ft: **29.5**
60 FT LOT WIDTH	
100 ft: **32%** 110 ft: **29%** 120 ft: **27%**	100 ft: **29.5** 110 ft: **26.4** 120 ft: **24.5**



Ⓐ Rendering
No Scale

SITE ASSUMPTIONS

Single Site Infill

The duplex and fourplex patterns included in this manual were prepared with an assumption of 50' x 100' lots as a common lot size in traditional neighborhoods around the state. With careful attention to setbacks, the duplex will fit on a 40' wide lot.

A minimum side setback of 5 feet allows a 50' parcel to have a front-loading driveway on the wider side of the lot leading to rear parking if alley access is unavailable. Where possible, rear access via an existing or new alley reduces the paving needed on the site, decreasing construction cost and stormwater runoff and heat absorption.

The provided plans can be mirrored to place the site entrance towards either the left or right lot line. Ideally, the site plan should provide the home with a larger setback on the side with the door for entry access from a driveway or to a larger side yard. This deeper side yard should be placed facing south or west, depending on lot orientation, to maximize natural light availability to the homes.

While specific measures were undertaken to simplify the building footprints, some adjustments, including site grading, may be necessary to accommodate the building. As with other local variations, the local design professional will need to undertake these adjustments.

Tackling Larger Sites

While this guide focuses on a single-parcel infill as the primary use case, these patterns could also be used on larger lots, whether they are a few adjacent infill parcels on a block or a larger site. Having a handful of similar homes in a row is itself a typical historical building pattern and provides some opportunities that a one-off site lacks:

- Use shared vehicle access points to minimize the amount of space consumed by driveways and curb cuts or create new side street or alley access points.
- Maximize usable green space by mirroring or rotating buildings relative to each other so that entries relate to each other and face a well-designed common yard area.
- Employ incremental construction of homes rather than building all at the same time. This method may allow a homeowner-developer to live in the first building and construct the others as financing allows or provide opportunities for the use of these patterns in cooler local housing markets where only a few homes can be absorbed at a time.

Consider adding architectural variations, such as through color, finish materials, or entry design, when using more than two or three of the same building on a site.

ADDITIONAL RESOURCES

CONTEMPORARY BUILT EXAMPLES IN THE US

Bryan, TX, https://www.bryantx.gov/midtownpatterns

Chattanooga, TN, https://www.incrementaldevelopment.org/chattanooga

Norfolk, VA, https://www.norfolk.gov/DocumentCenter/View/66555/MissingMiddlePatternBook

Seattle, WA, "ADUniverse" https://aduniverse-seattlecitygis.hub.arcgis.com

Fayetteville, AR, https://www.3vdevelopment.net

DESIGN RESOURCES

Building Technology Heritage Library of the Association for Preservation Technology, Int., https://archive.org/details/buildingtechnologyheritagelibrary

Flintlock Lab, http://www.flintlocklab.com

Incremental Development Alliance, https://www.incrementaldevelopment.org

Missing Middle Housing, https://missingmiddlehousing.com

Secretary of the Interior's Standards for Rehabilitation, https://www.nps.gov/tps/standards/rehabilitation.htm

BOOKS

The Color of Law: A Forgotten History of How Our Government Segregated America by Richard Rothstein. Liveright Publishing Corporation, 2017.

America's Favorite Homes: Mail-Order Catalogues as a Guide to Popular Early 20th-Century Houses by Robert Schweitzer and Michael W. R. Davis. Wayne State University Press, 1990.

Houses by Mail: A Guide to Houses from Sears, Roebuck and Company by Katherine Cole Stevenson and H. Ward Jandl. John Wiley & Sons, 1995.

Building the Dream: A Social History of Housing in America by Gwendolyn Wright. MIT Press, 1983.

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east arbor architecture

PIPER & GOLD
PUBLIC RELATIONS

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