CITY OF MERCED

RESIDENTIAL INFILL STUDY

May 2023

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1 EXECUTIVE SUMMARY

The City of Merced Multi-Family Residential Infill Study ("Infill Study" or "Study") was prepared by Precision Civil Engineering on behalf of the City of Merced. The purpose of the Infill Study is to identify properties within the Merced city limits that are most suitable for infill residential development.

The Study utilizes existing GIS databases provided by the City of Merced to first identify vacant or underutilized sites within the city limits that would allow residential development ("Infill Sites"), then conduct an analysis on the type of residential development permitted (i.e., single-family dwellings, duplex homes, and multi-family dwellings), maximum number of units allowed, and an Infill Score is assessed and calculated for each site. The Infill Score compares the suitability of development of the sites, utilizing information on the sites' proximity to existing infrastructure and amenities, as well as eligibility to impact fee incentives.

Overall, a total of 45,946 dwelling units has the potential to be built on the Infill Sites. The Infill Study provides the following recommendations for the City of Merced.

- Master plan sets developed for duplex homes should be designed with a size that would fit a 4,500-square-foot lot, since 75% of the parcels that permit duplex homes are 4,500 square foot or larger.
  Master plan sets developed for triplex homes or apartments should be designed for parcels with the size of 5,192 square feet, since half of the parcels that permit multi-family homes range from 2,630 sf. To 7,538 sf.
- Perform a Rezone or General Plan Amendment to ensure consistency of the 18 parcels. This would streamline the development process for property owners.
- Perform Rezone of 4 parcels to ensure consistency and permit residential development. This would streamline the development process and allow for up to 291 additional residential units.
- Increase allowed density or adopt incentives in areas with high infill scores to encourage development in areas with existing infrastructure and amenities.

1.1 Document Format

This Infill Study contains five (5) sections plus an appendix. Section **1 EXECUTIVE SUMMARY** provides an overview of the purpose and findings of the Study. Section **2 INTRODUCTION** provides the basis of the Study's regulatory background and an overview of the Project. Section **3 STUDY APPROACH** summarizes the steps of the Study's methodology in producing the Infill Inventory. The GIS data layers and full methodology used is further detailed in **APPENDIX: METHODOLOGY AND DATA USED**. Section **4 FINDINGS AND ANALYSIS** presents the statistics of the Infill Inventory and performs analysis for further recommendations on actions and policy implications in Section **5 CONCLUSION AND RECOMMENDATIONS**.

2 INTRODUCTION

The City of Merced Multi-Family Residential Infill Study ("Infill Study" or "Study ") was prepared by Precision Civil Engineering on behalf of the City of Merced. The purpose of the Infill Study is to identify properties within the Merced city limits that are most suitable for infill development, where "infill development" is defined as *"building within unused and underutilized lands within existing development patterns, typically but not exclusively in urban areas."* [1] The Study also informs the implementation of the City of Merced Duplex/Triplex Program by providing information on common lot sizes for properties that allow the development of duplex homes and multi-family homes.

Development of infill sites is critical to accommodating growth and increases sustainability both environmentally and socially compared to developing in areas without existing development. Infill development promotes compact development which reduces greenhouse gas emissions, improves air quality by reducing travel, reduces conversion of agricultural land and sensitive habitat, reduce construction costs, reduce maintenance costs of infrastructure, and create community vibrancy and social connection. [2]

Recent Efforts to Encourage Infill Development

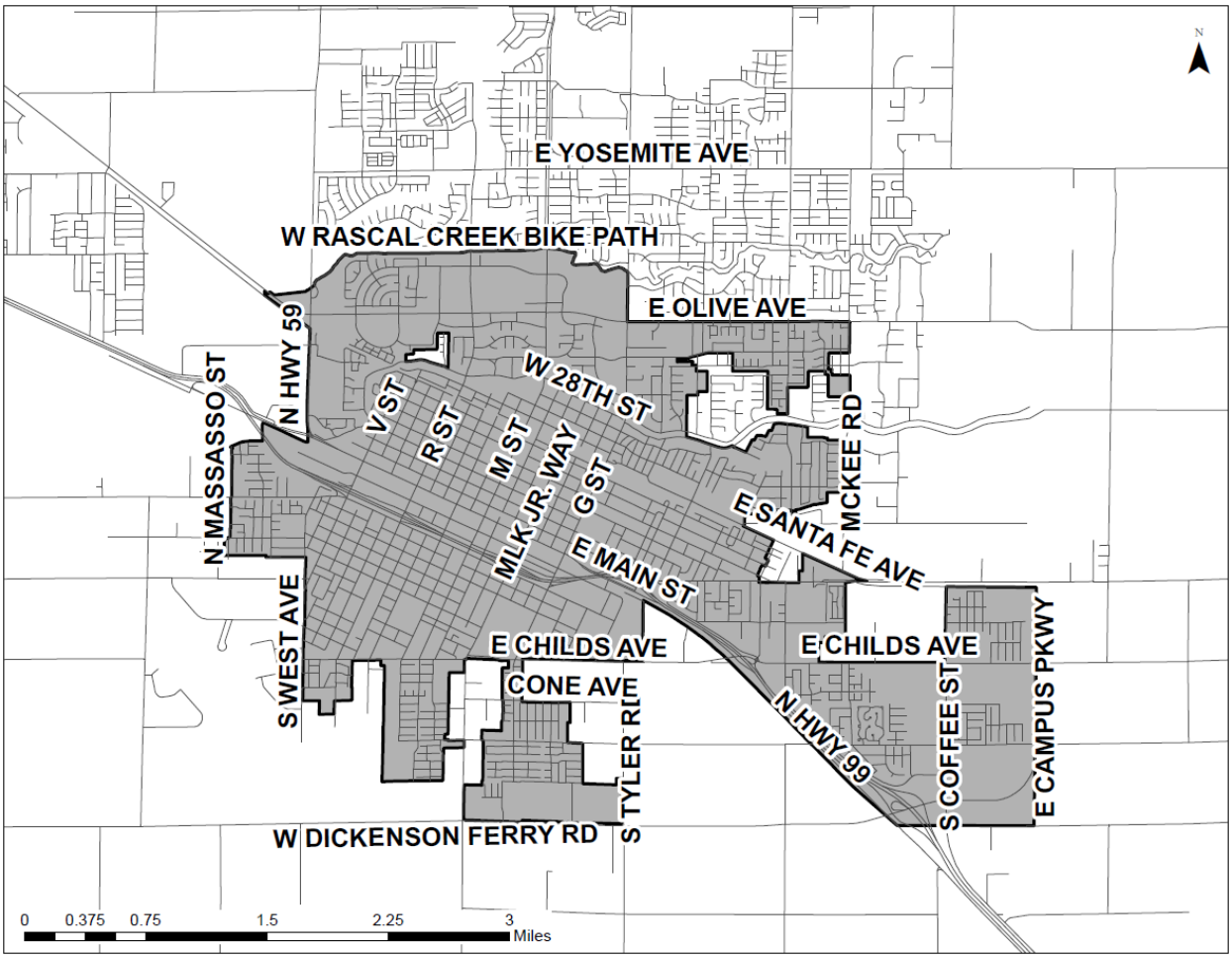
The City of Merced adopted changes to their Zoning Ordinance which went into effect on October 6, 2022. Some changes include *Chapter 20.08 Residential Zoning Districts* to allow duplex homes by right in R-1 zones; *Chapter 20.10 Commercial Zoning Districts* to conditionally permit multiple-family dwellings in B-P, business park zoning districts, and establish residential densities to commercial districts. Other changes include streamlining approval processes, removing outdated provisions, allowing exceptions in design standards. This update streamlines the permitting process, increases flexibility in development, and allows a mix of uses in commercial zones.

In addition, the City of Merced Administrative Policy and Procedure A-32 became effective on December 19, 2022. The Administrative Policy and Procedure A-32 updated and enlarged the Infill Development and Opportunity Zones within the central area of the city. This area, as shown in **Figure 2-1**, is eligible for a 50 percent reduction of the standard impact fee based on their impact on public facilities.

[1] Governor's Office of Planning and Research. Infill Development. Accessed on September 29, 2022, https://opr.ca.gov/planning/land-use/infill-development/

[2] Governor's Office of Planning and Research. Infill Development. Accessed on September 29, 2022, https://opr.ca.gov/planning/land-use/infill-development/

Figure 2-1 Infill Development and Opportunity Zones



Relationship to General Plan and Housing Element

The City of Merced General Plan Land Use Chapter identified policies and implementing actions to promote infill development, including conducting research to identify vacant land, as shown below:

Policy L-1.4 Conserve Residential Areas That Are Threatened by Blighting Influences.

Implementing Actions 1.4.b *Consider policies and programs to address the current inventory of un-built subdivision lots and foreclosed homes.* This action details that the city should consider developing incentives to spur development of undeveloped lots, such as reduced development fees and expedited development permit processing for infill areas/lots.

Policy L-3.2 Encourage Infill Development and a Compact Urban Form.

Implementing Actions 3.2.a *Encourage infill of vacant parcels.*

- *Conduct a survey of vacant lands through the Geographic Information System (GIS). Develop strategies and incentives for encouraging their development with appropriate uses, including expedited processing and reduced fees.*
- *Encourage infill projects that are determined to be compatible with existing development.*

- *Encourage growth to occur in and around activity centers, transportation nodes, underutilized infrastructure systems, and redevelopment areas.*
- *Work with landowners to re-designate vacant lands suitable for higher densities or for transit/pedestrian-oriented developments during general plan updates and periodic reviews.*

Implementing Actions 3.2.b *Encourage infill and redevelopment projects within the urban area that could enhance the effectiveness of the transit system.*

The City of Merced recognizes the city's need for infill housing in the Housing Element Update, adopted July 18, 2016. To ensure land availability for residential development, especially in infill areas, the Housing Element Update identifies the following actions:

Policy H-1.8 Ensure Land Availability

Action 1.8.a In-fill and Multi-family Lot Inventory. *Develop an inventory of available infill and multi-family lots. The inventory will include location, parcel sizes, amenities, and available infrastructure. The City will keep said inventory current and information will be made available to developers.*

Action 1.8.b Prioritize City efforts to encourage residential development by focusing on in-fill development and densification within the existing City Limits. *City staff will encourage development within the existing City Limits and especially within the City's Core Area. Staff will analyze vacant and underutilized land to identify constraints to in-fill development. Using the information found in the analysis, staff will develop an "In-fill Strategy." Staff will work with neighborhood and business groups, as well as with other interested organizations, to identify and address their concerns and preferences related to in-fill development.*

In addition, staff shall consider providing incentives such as reduced fees or priority permitting for in-fill developments, especially within the City's Core Area.

Consequently, this Study implements the General Plan and Housing Element Update to facilitate and provide insight on potential areas for infill within the City of Merced. This Study analyzes vacant parcels that are permitted for residential development, assessing their suitability for development by collecting data on each property's proximity to existing infrastructure and amenities. This Study uses GIS data layers owned and maintained by the City of Merced.

3 STUDY APPROACH

The full methodology and database utilized to conduct the Infill Study is provided in the Appendix. Generally, the following steps were taken to identify these suitable sites.

Step 1. Identify Residential Sites. Parcels within the city limits where residential uses are permitted either by-right or conditionally were selected from the "Tax Parcels" GIS layer provided by the City of Merced on December 21, 2022(i.e., "Residential Sites"). A total of 24,063 residential sites, or 96.1% of all city parcels, were identified to be zoned and planned for uses that allow residential development.

Step 2. Identify Residential Infill Sites. Residential Sites were further screened to identify vacant and underutilized parcels utilizing the data in the "Tax Parcels" layer that describes the current use of each parcel. Next, these parcels are overlaid and compared with the latest 2023 ariel imagery provided by the City of Merced to confirm current vacancy. A total of 1,081 parcels are confirmed as vacant as of 2023 (i.e., "Infill Sites"). These sites thus comprise the "Infill Inventory" of residential infill sites.

Infill Inventory Database: In an effort to provide additional useful information to the City, supplementary data were added to the Infill Inventory database. This includes data that describe the uses permitted, maximum permitted units, existing condition of infrastructure, proximity to amenities, and development incentives for each site. This information is populated into the database as described in *Step 3*, *Step 4*, and *Step 5*.

Step 3. Identify Permitted Uses. This step identifies the type of residential dwellings that are permitted on site, including single-family dwellings, duplex homes, and multi-family dwellings.

Step 4. Calculate Maximum Allowed Units. This step calculates the maximum number of units that could be developed on the parcel according to density caps set forth in the General Plan or the minimum lot size set forth in the Municipal Code, whichever is more restrictive. The calculated number is then rounded down to the whole number.

Step 5. Infill Scoring. To further assess the suitability of the residential infill sites for development, a set of criteria describes the infill site's readiness for development. Six (6) criteria identify whether the site is in proximity to existing infrastructure (i.e., water, sewer, sidewalks) and amenities (i.e., parks, bus stops, schools) and one (1) criterion identifies whether the site is within the City Central/Infill Development boundary, which is an area that is eligible for a 50 percent reduction in development impact fees. Then the "Infill Score" is calculated by averaging the seven (7) criteria. A higher Infill Score indicates that the site is more suitable for development, since existing infrastructure directly impacts the construction costs, existing amenities provide residents with higher quality of life and social well-being, and impact fee incentives lower development costs.

The next section presents the findings and analysis of the information collected for the Infill Inventory as described above.

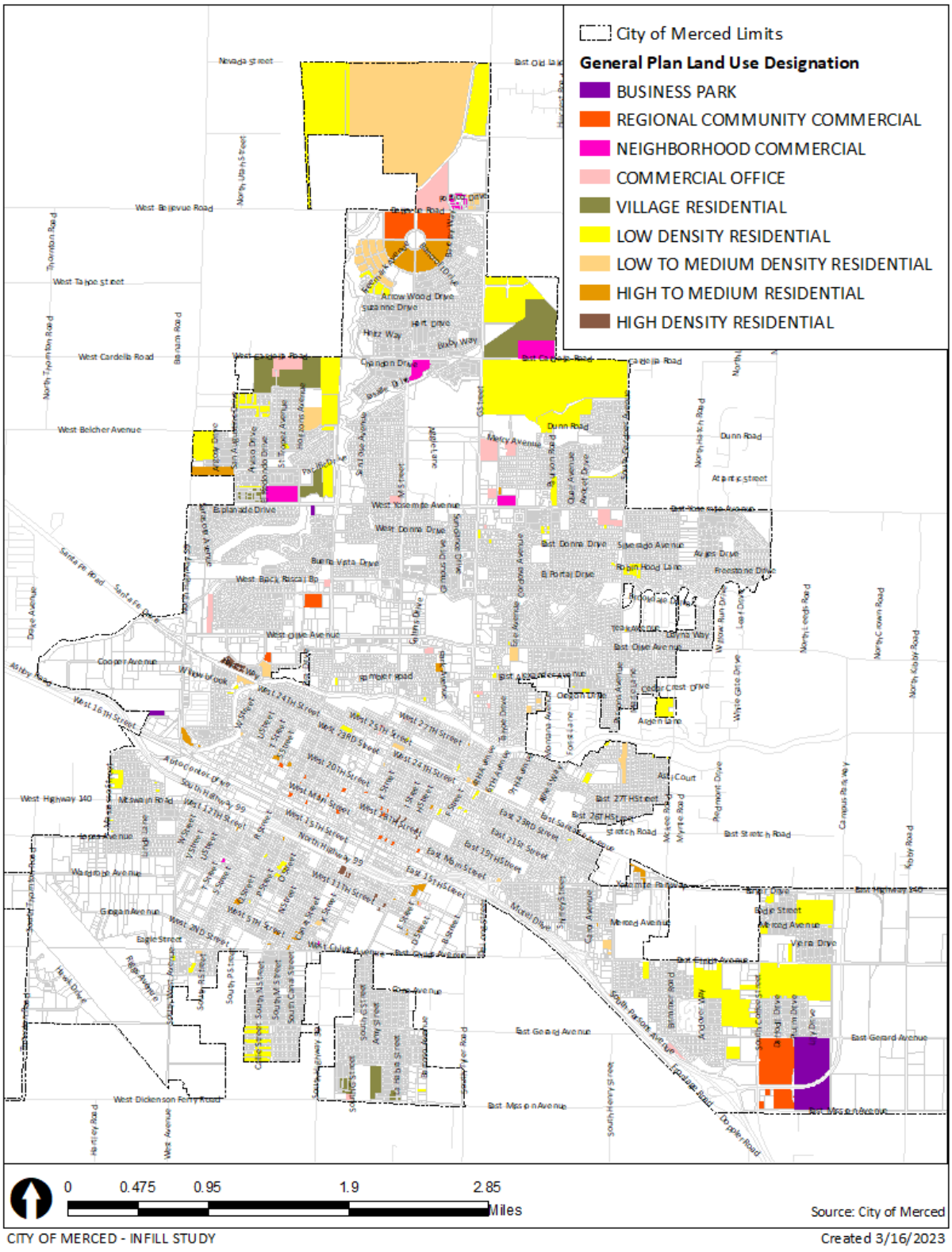
4 FINDINGS AND ANALYSIS

The Infill Inventory identified 1,081 Infill Sites, totaling approximately 1,778.2 acres. Of the 1,081 sites, 942 sites (81.6%) have an underlying residential land use designation, 134 sites (14.1%) have a commercial land use designation, and 5 sites (0.5%) have an industrial land use designation. In total, the sites comprise approximately 1,451.8 acres with residential land use designations, accounting for a majority of the total acreage. **Table 4-1** shows the number of Infill Sites and total acreages of each General Plan land use designation.

Table 4-1 Infill Sites by General Plan Land Use Designation

General Plan Land Use Designations	Parcels		Acreage	
	Number	% of total	Total	% of total
Residential Land Use Designations				
Low Density Residential (LD)	432	40.0%	847.2	47.6%
Low to Medium Density Residential (LMD)	268	24.8%	392.3	22.1%
High to Medium Density Residential (HMD)	38	3.5%	64.2	3.6%
High Density Residential (HD)	80	7.4%	8.3	0.5%
Mobile Home Park Residential (RMH)	0	0.0%	0.0	0.0%
Village Residential (VR)	124	11.5%	139.9	7.9%
Total Residential Sites	*942*	*87.1%*	*1,451.8*	*81.6%*
Commercial Land Use Designations				
Commercial Office (CO)	37	3.4%	85.1	4.8%
Neighborhood Commercial (CN)	68	6.3%	51.2	2.9%
Regional Commercial (RC)	29	2.7%	115.3	6.5%
Total Commercial Sites	*134*	*12.4%*	*251.6*	*14.1%*
Industrial Land Use Designations				
Business Park (BP)	5	0.5%	74.8	4.2%
Total Industrial Sites	*5*	*0.5%*	*74.8*	*4.2%*
Total Infill Sites	**1,081**	**100.0%**	**1,778.2**	**100.0%**

Figure 4-1 Infill Sites by General Plan Land Use Designation



4.1 Housing Types and Parcel Sizes

The permitted housing types of each zoning district and land use designation is shown in **Table 4-2**.

Table 4-2 Permitted Housing Types by Zoning

Housing Type	Zoning District	Land Use Designation
Permitted By-Right		
Single-Family Dwelling	R-1, R-2, R-3, R-4	LD, LMD, HMD, HD, VR
Duplex Homes	R-1, R-2, R-3, R-4	LD, LMD, HMD, HD, VR
Multi-Family Dwelling	R-3, R-4, C-C	HMD, HD, RC, VR
Conditionally Permitted		
Multi-Family Dwelling	R-2*, R-MH**, C-O, C-N, B-P	LMD, RMH, CO, CN, BP

**R-2 sites that are 15,000 square feet or larger are marked to permit multi-family development for the purposes of the Infill Inventory database. Other requirements are listed in the zoning ordinance; however, they are not considered here since more detail of the specific development would be required.*
***R-MH zones require a Minor Conditional Use Permit to develop multi-family dwellings. There are no R-MH zoned or RMH planned land use sites in the Infill Inventory*

The average parcel size is 71,654 square feet or 1.6 acres, ranging from 1,848 to 10,998,419 square feet or 0.0 to 252.5 acres. The middle 50 percent of the sites range from 3,894 sf. to 7,029 sf. with a median of 5,192 sf. or 0.1 acres.

Single-family dwellings and duplex homes are permitted in the same zone districts. As shown in **Table 4-3**, 87.1% of the parcels permit the development of single-family dwellings, 87.1% of the parcels permit development of duplexes, and 35% of the parcels permit development of multi-family dwellings. Quartiles 1 to 3 show the size of the middle 50 percent of the sites. These numbers can be utilized to give insight on the common lot sizes for duplex/triplex development to inform design of the City of Merced Duplex/Triplex Program.

Table 4-3 Permitted or Conditionally Permitted Housing Types

Type	Number of Parcels	Total Acreage	Parcel Size (sf.)		
			Q1	Q2 (Median)	Q3
Single-Family Dwelling	941	1,451.2	4,500	5,192	6,713
Duplex Homes	941	1,451.2	4,500	5,192	6,713
Multi-Family Dwelling	385	537.8	2,630	3,894	7,538
All Parcels	**1,081**	**1,778.2**	**3,894**	**5,192**	**7,029**

The geographical location of parcels permitted for single-family/duplexes and multi-family developments are shown in **Figure 4-2** and **Figure 4-4**. From the figures, we can see that multi-family developments are generally allowed in the downtown area, where duplex homes and single-family dwellings are not permitted. This is because downtown areas are commonly commercial land use designations, which permits residential uses as an accessory use or primary use. The largest parcels on the north side of the city permit the development of single-family and duplex homes. On the other hand, some of the larger sites on the northeast side of the city allows the development of multi-family development.

Figure 4-2 Parcels that Permits Single-Family Dwellings

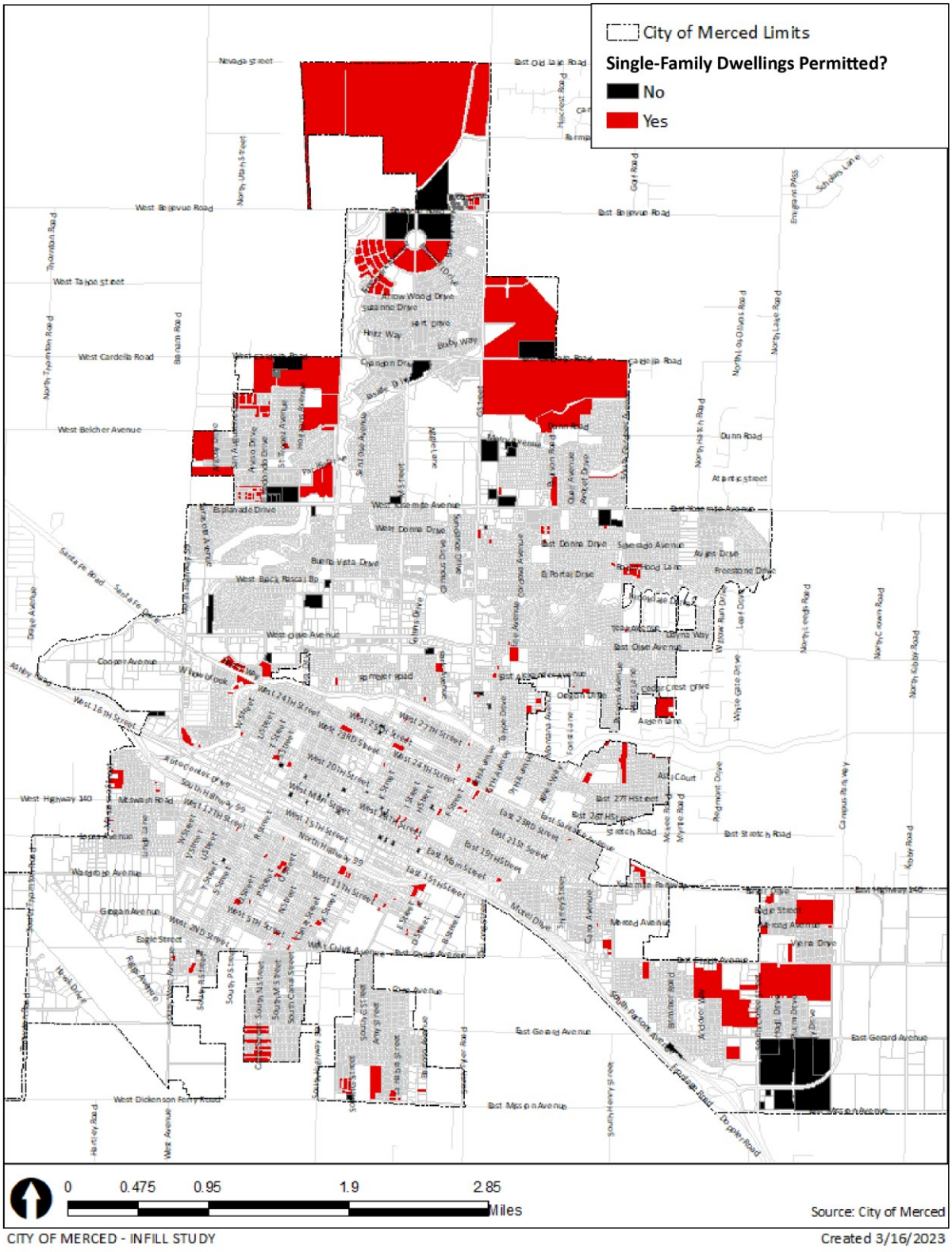


Figure 4-3 Parcels that Permits Duplex Homes

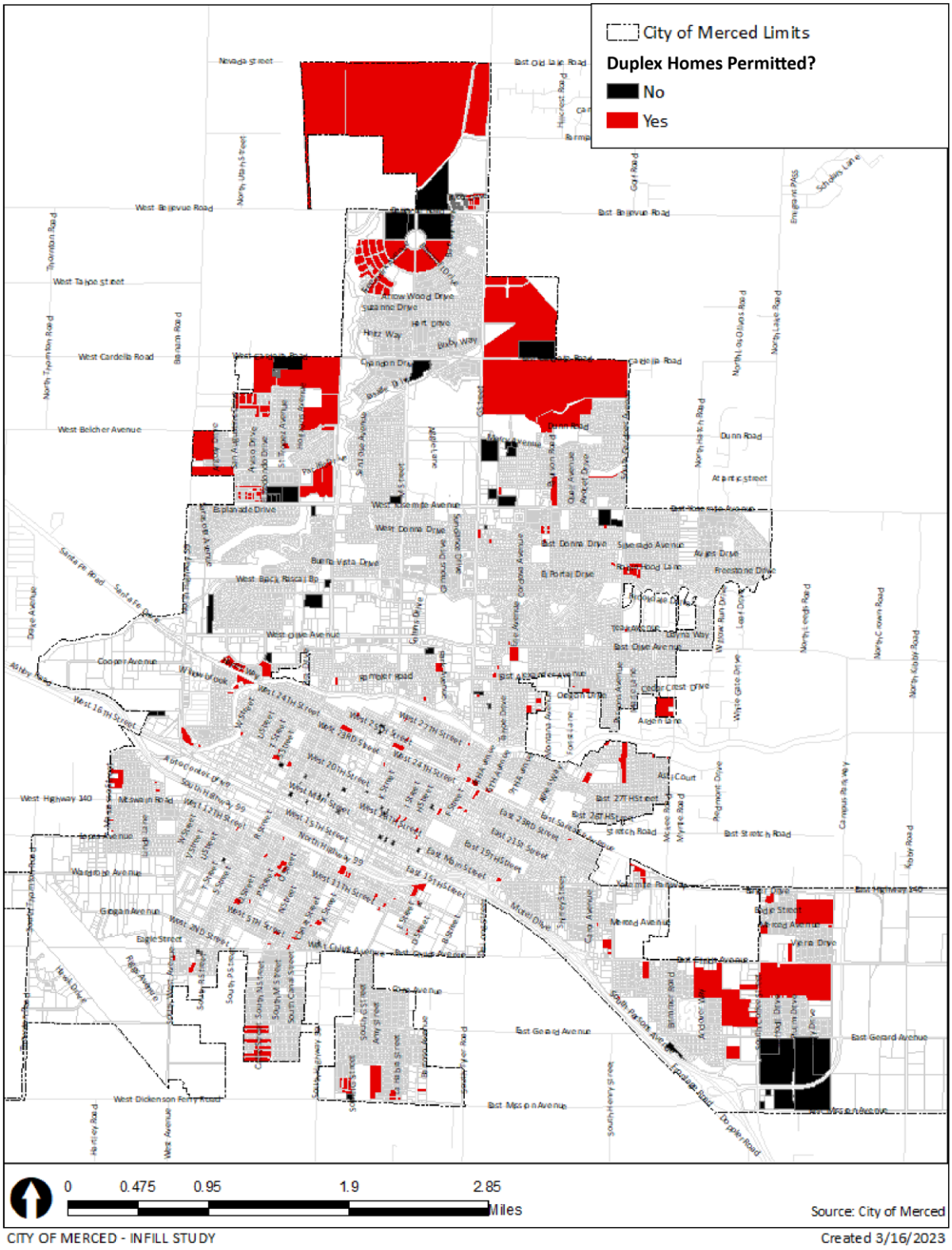
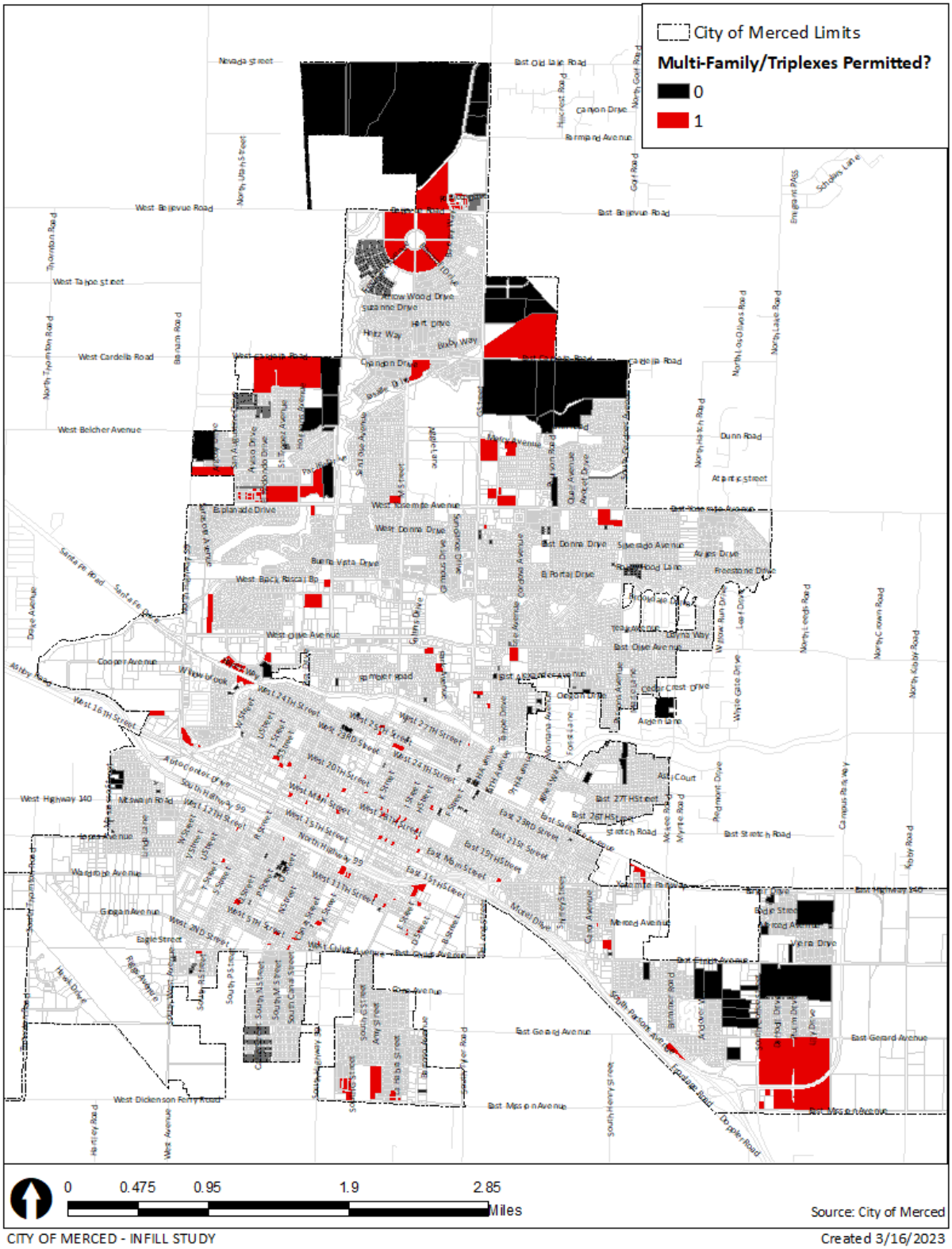


Figure 4-4 Parcels that Permit Multi-Family Dwellings



4.2 Maximum Allowable Units

A total of 45,946 dwelling units could be built on the Infill Sites if we consider maximum density permitted. 725 parcels would only permit up to one (1) unit on its site. Parcels permitted for duplex homes could accommodate 15,345 units, and parcels permitted for multi-family development could accommodate 36,291 units. If all subject parcels were built to the maximum density permitted, 45,946 units could be built citywide.

4.3 Infill Scoring

Table 4-4 lists the seven (7) criteria used to calculate the infill score. The table also includes the number and percentage of parcels that meet the criteria as described. To sum up the parcels' availability of existing infrastructure, proximity to amenities, and applicable development cost incentives, the infill score consolidates this information. This data gives us an understanding of parcels close to existing development patterns. For instance, a score of 100% indicates that the parcel is within 100 feet of water and sewer infrastructure, connected to existing sidewalks, close to schools, parks, and bus stops, and within the area eligible for development incentives.

Table 4-4 Description of Infill Scoring Criteria

Criteria	Description	Parcels	
		Number	% of total
Existing Infrastructure			
Water	Sites within 100 feet of an existing water main	562	52.0
Sewer	Sites within 100 feet of an existing sewer main	566	52.4
Sidewalks	Sites within 6 feet of an existing sidewalk	465	43.0
Existing Amenities			
Parks	Sites within ½-mile of an existing park	818	75.7
Schools	Sites within ½-mile of an existing school	566	52.4
Bus Stops	Sites within ½-mile of an existing bus stop	525	48.6
Development Incentives			
Infill Development and Opportunity Zones	Sites within the city's Infill Development and Opportunity Zones per the Administrative Policy and Procedure A-32.	448	45.1

Existing infrastructure directly reduces the cost of construction. In addition to this, development in proximity to existing amenities provides residents with increased quality of life and social well-being. According to the City of Merced Administrative Policy and Procedure A-32, impact fees in the identified Infill Development and Opportunity Zones shall be reduced by 50 percent. This infill development area is within the central area of the City generally bounded on the north by West Rascal Creek and East Olive Avenue, on the south by Childs Avenue and West Dickenson Ferry Road, on the east by East Campus Parkway, and on the west by North Massasso Street and Highway 99, as shown in Figure 2-1. A reduction in impact fees would lower the costs of development and consequently, encourage the construction of affordable housing. The following points summarize the results of each infill criteria.

Water: Approximately 52.0% of the sites are within 100 feet of an existing water main. Approximately 46.9% of sites (441 parcels) that permit duplex homes and 73.5% of sites (283 parcels) that permit multi-family dwellings are located near existing water infrastructure.

Sewer: Approximately 52.4% of the sites are within 100 feet of an existing sewer main. Approximately 47.5% of sites (447 parcels) that permit duplex homes and 68.3% of sites (263 parcels) that permit multi-family dwellings are located near existing sewer infrastructure.

Sidewalks: Approximately 43.0% of the sites have access to existing sidewalks as of 2016. Approximately 39.1% of sites (368 parcels) that permit duplex homes and 68.6% of sites (264 parcels) that permit multi-family dwellings have access to existing sidewalks as of 2016.

Parks: Approximately 73.7% of the sites are within 0.5-mile of a park. Approximately 73.7% of sites (693 parcels) that permit duplex homes and 95.6% of sites (368 parcels) that permit multi-family dwellings are within 0.5-mile of a park.

Schools: Approximately 52.4% of the sites are within 0.5-mile of a school. Approximately 47.2% of sites (444 parcels) that permit duplex homes and 61.6% of sites (237 parcels) that permit multi-family dwellings are within 0.5-mile of a school.

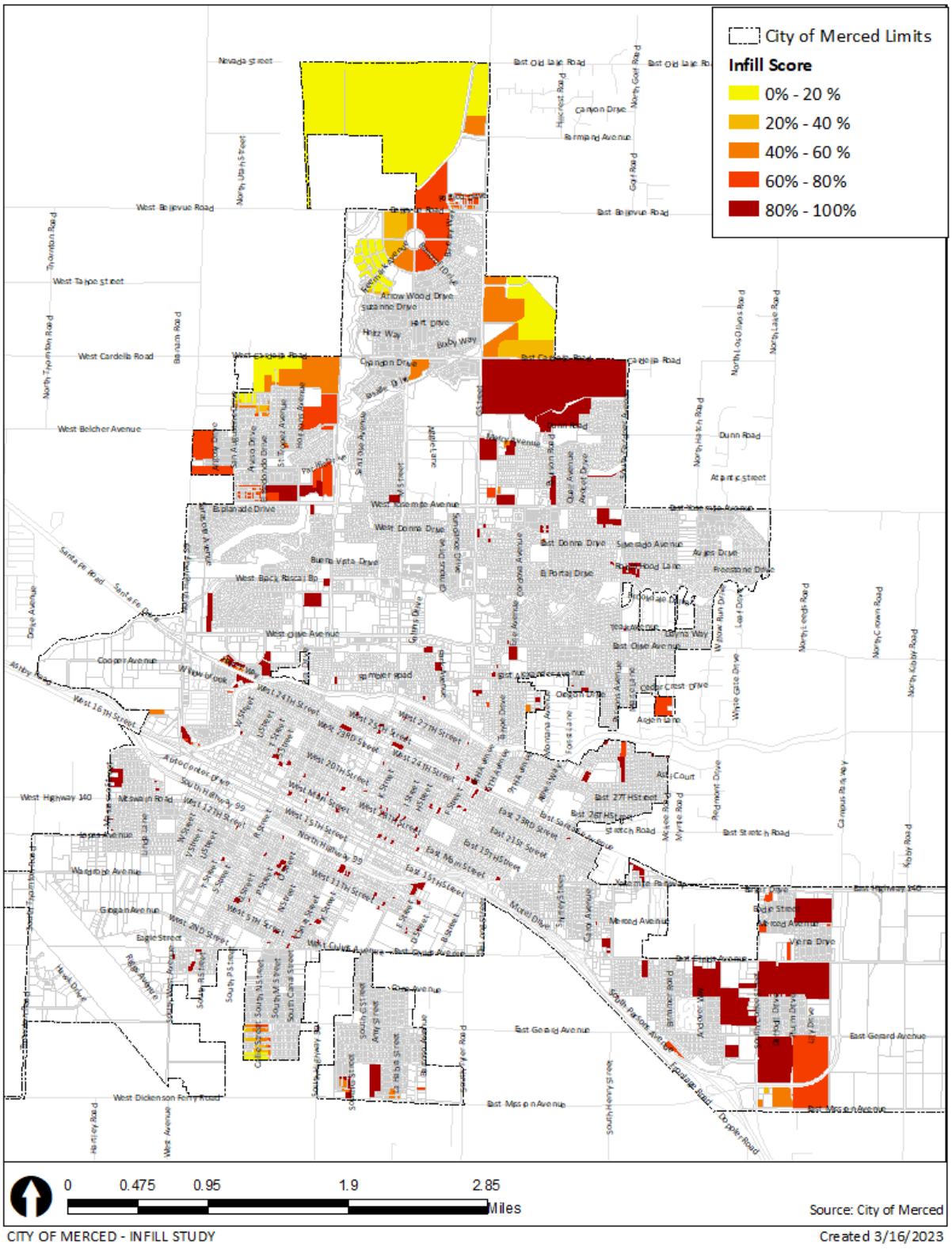
Bus Stops: Approximately 48.6% of the sites are within 0.5-mile of a bus stop. Approximately 49.8% of sites (469 parcels) that permit duplex homes and 71.2% of sites (274 parcels) that permit multi-family dwellings are within 0.5-mile of a bus stop.

Development Incentives: There are 448 parcels, totaling 424.8 acres within the city's Infill Development and Opportunity Zones. These sites have various land use designations, including BP, CN, CO, RC, LD, LMD, HD, HMD, RC, VR. This area has the potential to develop up to 19,978 units if permitted to the highest density. 144 of the 448 parcels eligible for the development incentive are also within proximity to existing infrastructure and amenities, meaning a 100% infill score. 73 of the 448 parcels also have a high infill score of 85.7%, with only one (1) infill criteria missing.

Overall, the majority of multi-family sites are in areas that have existing infrastructure and amenities, with an average infill score of 70.7% and a median infill score of 71.4%. A high infill score indicates availability of existing infrastructure and amenities, less development costs, maximized use and efficiency, and increased quality of life. On the other hand, around half of the sites permitting duplex homes are in areas that lack water, sewer, sidewalks, schools, and bus stops. The average infill score for sites permitting duplex homes is 49.6% with a median of 57.1%. Overall, there are 101 parcels with an infill score of 0.0%, meaning that the parcel is in an area without existing infrastructure, amenities, or development incentives.

Figure 4-5 shows the infill score map. From the map, we can see that higher scores are located within the downtown and southern areas of the city. Scores become lower as sites near city limits. Contrary to this trend, we identify an outlying area with a high infill score that is at the city limits, at sites northeast portion of the city, located southeast of G street and East Cardella Road. This area is primarily planned for low density residential development. However, with its high suitability and ripeness for infill development, possible increase in density could be permitted or possible incentives could be developed to promote development in this area.

Figure 4-5 Infill Score



4.4 Other Opportunities

The Infill Study identified 18 infill sites that currently have inconsistencies between the planned land use designation and zone district. Table 4-5 lists the 18 properties that would need to go through a Rezone or General Plan Amendment (GPA) for consistency before development. With this type of site, the City has an opportunity to go through the Rezone or GPA process for consistency, which would reduce discretionary action for developers.

Table 4-5 Parcels with Inconsistent Zoning and Land Use Designation

Accessor's Parcel Number (APN)	Planned Land Use Designation	Zoning District
030-015-01	CO	R-1-6
032-232-11	CN	R-2
032-090-11	HD	R-1-6
033-210-62	LMD	R-1-6
007-143-10	LMD	R-1-6
033-044-07	LMD	R-1-6
033-044-19	LMD	R-1-6
033-044-09	LMD	R-1-6
033-044-11	LMD	R-1-6
033-044-06	LMD	R-1-6
033-044-12	LMD	R-1-6
033-060-24	LMD	R-1-6
033-044-10	LMD	R-1-6
059-256-02	LMD	C-N
059-256-01	LMD	C-N
030-294-06	HMD	C-O
006-050-68	CO	RP-D
006-050-72	CO	RP-D

Besides the sites identified in the Infill Inventory, there are 4 parcels that currently have a planned land use designation that allows residential development but have a zone district that does not permit residential development. Rezoning these parcels to be consistent with the land use designation would allow for the potential development of 291 residential dwelling units.

Table 4-6 Opportunity Parcels for Rezone

APN	Planned Land Use Designation	Zoning District	Acreage	Square Footage	Max Units
059-240-81	CN	C-SC	5.7	250,235	207
059-330-07	LD	A-T-5	5.6	242,475	33
031-152-15	RC	P-PD	0.2	7,500	34
031-152-14	RC	P-PD	0.1	3,750	17
Total			**11.6**	**503,960**	**291**

5 CONCLUSION AND RECOMMENDATIONS

Overall, a total of 45,946 dwelling units could be built on the Infill Sites. A summary of policy or action implications and recommendations for the City of Merced according to the above analysis include:

- Master plan sets developed for duplex homes should be designed with a size that would fit a 4,500-square-foot lot, since 75% of the parcels that permit duplex homes are 4,500 square foot or larger.
- Master plan sets developed for triplex homes or apartments should be designed for parcels with the size of 5,192 square feet, since half of the parcels that permit multi-family homes range from 2,630 sf. To 7,538 sf.
- Perform a Rezone or General Plan Amendment to ensure consistency of the 18 parcels. This would streamline the development process for property owners.
- Perform Rezone of 4 parcels to ensure consistency and permit residential development. This would streamline the development process and allow for up to 291 additional residential units.
- Increase allowed density or adopt incentives in areas with high infill scores to encourage development in areas with existing infrastructure and amenities.

6 APPENDIX: METHODOLOGY AND DATA USED

The Infill Inventory was produced using existing data provided by the City of Merced. The Infill Inventory includes both spatial and non-spatial data to describe the "where" and "what" of the Infill Sites. The data layers used are listed in **Table 6-1**. Steps 1 through 5 below demonstrate detailed methodology that was used to develop the Infill Inventory.

Table 6-1 Existing Data Layers

Layer Name	Data Type	Details
Tax Parcels	Polygon	This layer includes the APN, Zoning, Land Use Designation, etc., for each parcel within the City of Merced. This layer was provided by the City of Merced on December 21, 2022.
City Sidewalks	Polyline	
City Parks	Polygon	
Bus Stops	Point	
City Schools	Point	
Water Mains	Polyline	
Sewer Network	Polyline	
Infill Development and Opportunity Zones	Polygon	This layer delineates the boundary of Infill Development and Opportunity Zones with the 50 percent impact fee reduction per the Administrative Policy and Procedure A-32 effective December 19, 2022.

Step 1. Identify Residential Parcels

From the "Tax Parcels," layer we select the parcels within the city limits that have a zoning designation that allows for residential development **AND** parcels within the city limits that have a planned land use designation that allows for residential development. **Table 6-2** shows the zone districts and land use designations included in the selection and indicates where duplex, multi-family, and single-family dwellings are allowed (i.e., P = Permitted, C = Conditionally Permitted, M = Minor Use Permit) according to the Zoning Ordinance. The "Select by Attributes" query in Arc GIS for the "Tax Parcels" layer is as follows.

SELECT * FROM Tax Parcels WHERE:

("ZONE" = 'R-1-5' OR "ZONE" = 'R-1-6' OR "ZONE" = 'R-1-10' OR "ZONE" = 'R-1-20' OR "ZONE" = 'R-2' OR "ZONE" = 'R-3-1.5' OR "ZONE" = 'R-3-2' OR "ZONE" = 'R-4' OR "ZONE" = 'R-MH' OR "ZONE" = 'RP-D' OR "ZONE" = 'C-C' OR "ZONE" = 'C-N' OR "ZONE" = 'C-O' OR "ZONE" = 'B-P' OR "ZONE" = 'U-T' OR "ZONE" = 'P-D') AND ("GeneralPla" = 'HD' OR "GeneralPla" = 'HMD' OR "GeneralPla" = 'LD' OR "GeneralPla" = 'LMD' OR "GeneralPla" = 'RMH' OR "GeneralPla" = 'VR' OR "GeneralPla" = 'RC' OR "GeneralPla" = 'CN' OR "GeneralPla" = 'CO' OR "GeneralPla" = 'BP')

A total of 24,063 parcels were selected out of the 25,043 parcels (96.1%).

Table 6-2 Districts and Designations that Allow Residential Use

Zoning District	Land Use Designation	Duplex	Multi-Family	Single-Family
Residential				
R-1-5, R-1-6, R-1-10, R-1-20	Low Density Residential (LD)	P	-	P

R-2	Low-Medium Density Residential (LMD)	P	C	P
R-3-1.5, R-3-2	High-Medium Density Residential (HMD)	P	P	P
R-4	High Density Residential (HD)	P	P	P
R-MH	Mobile Home Park Residential (RMH)	M	-	-
Commercial				
C-O	Commercial Office (CO)	-	C	-
C-N	Neighborhood Commercial (CN)	-	C	-
C-C	Regional/Community Commercial (RC)	-	P	-
B-P	Business Park (BP)	-	C	-
Special Use				
U-T	varies			
P-D [3]	varies	Permitted land uses shall conform to the applicable General Plan designation, provided that such land uses are shown on the Official Site Utilization Plan for the particular P-D zone as approved by the City Council, and except that in the RP-D zoning district, only residential land uses shall be permitted.		
RP-D	varies			
-	Village Reserve (VR)	P	P	P

Step 2. Select Vacant Parcels

From these 24,063 identified parcels that allow residential uses, parcels that are vacant or underutilized, including agricultural lands, were selected from the column that describe each parcel's use in the "Tax Parcels" layer. The "Select by Attributes" query in Arc GIS for the 24,000 residential parcels in the "Tax Parcels" layer is as follows.

SELECT * FROM 24063 WHERE:

"USENAME" = 'Agriculture' OR "USENAME" = 'Orchard' OR "USENAME" = 'VAC LAND MAJ MULT RES' OR "USENAME" = 'VAC LAND MINOR COMM' OR "USENAME" = 'VAC LAND RES' OR "USENAME" = 'Vacant' OR "USENAME" = 'Government Land' OR "USENAME" = ' '

A total of 2,266 parcels, or 9.4%, were selected out of the 24,063 parcels. Next, these sites were overlaid and compared with the latest ariel image provided by the City of Merced, which is the 2023 ariel image. Some screening criteria includes:

[3] For P-D zoning district, permitted uses are established in the *Municipal Code Chapter 20.20.020*: *"In all Planned Development zoning districts, permitted land uses shall conform to the applicable General Plan designation, provided that such land uses are shown on the Official Site Utilization Plan for the particular P-D zone as approved by the City Council, and except that in the RP-D zoning district, only residential land uses shall be permitted."*

- Parking lots with improvements are categorized as non-vacant and are screened out. However, parcels that are used for parking purposes but without improvements (i.e., stall markings, paving, landscaping, etc.) will be categorized as vacant.
- Parcels that have paved trails and/or are identified as parks in the "City Parks" layer are categorized as non-vacant and are screened out.
- Parcels that are used for rights-of-way, trails, or are dedicated for landscaping for existing development are categorized as non-vacant and are screened out.

As a result of the aerial screening, a total of 1,081 parcels from the 2,266 parcels were identified as vacant in the 2023 imagery. As such, these 1,081 parcels make up the final sites in the Infill Inventory. **Table 6-3** shows the number of parcels in the Infill Inventory categorized by zoning and land use designations.

Table 6-3 Infill Inventory

Zoning District	Land Use Designation	Number of Parcels	Notes
Residential			
R-1-10	LD	8	
R-1-5	LD	261	
	VR	1	
R-1-6	CO	1	Requires discretionary action
	HD	1	Requires discretionary action
	LD	59	
	LMD	10	Requires discretionary action
R-2	LMD	10	
	CN	1	Requires discretionary action
R-3-1.5	HMD	28	
R-3-2	HMD	2	
R-4	HD	16	
Commercial			
C-C	RC	19	
C-N	CN	2	
	LMD	2	Requires discretionary action
C-O	CO	13	
	HMD	1	Requires discretionary action
B-P	BP	2	
Special Districts			
P-D	CN	65	
	CO	21	
	HD	63	
	HMD	7	
	LD	77	
	LMD	182	
	RC	10	
	VR	122	
	BP	3	
RP-D	CO	2	Requires discretionary action
	LD	25	
	LMD	64	

	VR	1	
U-T	LD	2	
Total		**1,081**	-

Next, to aid future search and provide additional information about the Infill Sites, new attributes are added in the database to describe the uses permitted, maximum permitted units, existing condition of infrastructure, proximity to amenities, and incentives for development for each parcel. These data are populated into the database in Steps 3, 4, and 5 to complete the Infill Inventory.

Step 3. Identify Permitted Uses

Three (3) fields in the inventory describe the types of residential uses that are permitted on each parcel, including duplex homes, multi-family dwellings, and single-family dwellings. **Table 6-4** describes the method to determine whether different types of housing are permitted on each parcel.

Table 6-4 Permitted and Conditionally Permitted Housing Types

Field	Description	Determination
DUPLEX	This field describes whether duplex homes are allowed. Data is presented as "1" – permitted and "0" – not permitted.	• Duplex homes are permitted for R-1, R-2, R-3, and R-4 zoning districts and U-T, P-D, or RP-D districts that have a LD, LMD, HMD, HD, or VR land use designation.
MULTI	This field describes whether multi-family dwellings are allowed. Data is presented as "1" – permitted and "0" – not permitted.	• Multi-family dwellings are permitted for R-3, R-4, and C-C zoning districts and P-D or RP-D districts that have a HMD, HD, RC, or VR land use designation. • Per Municipal Code Chapter 20.08.020 A., development of multi-family dwelling requires a conditional use permit in the R-2 district under conditions. For the purposes of the inventory, multi-family dwellings are marked as permitted in the R-2 district if the parcel is 15,000 sf. or greater. • Per Municipal Code Chapter 20.10.020 A., multi-family dwellings are conditionally permitted in C-O, C-N, and B-P districts. Since there is no specified conditions set forth in the Code, all C-O, C-N, B-P districts and P-D or RP-D districts that have a CO, CN, BP land use designation is marked permitted for multi-family dwelling in the inventory.
SINGLE	This field describes whether single-family dwellings are allowed. Data is presented as "1" – permitted and "0" – not permitted.	• Single-family dwellings are permitted for R-1, R-2, R-3, and R-4 zoning districts and U-T, P-D, or RP-D districts that have a LD, LMD, HMD, HD, or VR land use designation.

Step 4. Calculate Maximum Allowed Units

The MAX_UNIT field calculates the maximum number of units that could be developed on the parcel according to density caps set forth in the General Plan or the minimum lot size set forth in the Municipal Code, whichever is more restrictive, as shown in Error! Reference source not found.. The calculated number is rounded down to the full number. One (1) unit is calculated for parcels that have a MAX_UNIT

of zero (0) under the Calculation Formula since all legal parcels would be allowed one (1) unit even if it does not meet minimum lot size standards.

This field allows users of the inventory to get a rough understanding of the approximate number of units that could be built on site. However, users should keep in mind that development standards (i.e., setbacks, height, etc.), parking requirements, site restrictions, and possible dedications are not considered in this calculation, which could result in less units to be built in implementation.

Table 6-5 Maximum Allowed Units Calculation

Zoning District/ Land Use Designation	General Plan (Density)	Municipal Code (Min Lot Area)	Calculation Formula
R-1-10/ LD	2 – 6 du/ac	10,000 sf. per du	*Max Units = [parcel sf.] / 10000*
R-1-5/ LD		5,000 sf. per du	*Max Units = [parcel acreage] * 6*
R-1-6/ LD		6,000 sf. per du	*Max Units = [parcel acreage] * 6*
R-2/ LMD	6 – 12 du/ac	3,000 sf. per du	*Max Units = [parcel acreage] * 12*
R-3-1.5/ HMD	12 – 24 du/ac	2,000 sf. per du	*Max Units = [parcel acreage] * 24*
R-3-2/ HMD		1,500 sf. per du	*Max Units = [parcel acreage] * 24*
R-4/ HD	24 – 36 du/ac	1,000 sf. per du	*Max Units = [parcel acreage] * 36*
P-D, RP-D, U-T	Calculate according to respective land use designation		
P-D, RP-D / VR	7 – 30 du/ac	N/A	*Max Units = [parcel acreage] * 30*
C-C / RC	12.1 – 36.0 du/ac; up to 200 du/ac with CUP	N/A	*Max Units = [parcel acreage] * 200*
C-O / CO	12.1 – 24.0 du/ac; up to 36.0 with CUP	N/A	*Max Units = [parcel acreage] * 36*
C-N / CN		N/A	*Max Units = [parcel acreage] * 36*
B-P / BP		N/A	*Max Units = [parcel acreage] * 36*

Step 5. Infill Scoring

Six (6) fields assess a parcel's proximity to existing infrastructure and amenities and one (1) field identifies whether the parcel is within the Infill Development and Opportunity Zones, which is an area that is eligible for a 50 percent reduction of development impact fees per the Administrative Policy and Procedure A-32.

Table 6-6 Determination for Infill Criteria

Field	Description	Determination
INFRA_WA	This field describes whether existing water mains are in place. Data is presented as "1" – existing water infrastructure in place and "0" – no water infrastructure in place.	Parcels that are within 100 feet of an existing water main is classified to have existing water infrastructure in place.
INFRA_SE	This field describes whether existing sewer network are in place. Data is presented as "1" – existing sewer infrastructure in place and "0" – no sewer infrastructure in place.	Parcels that are within 100 feet of an existing sewer network is classified to have existing sewer infrastructure in place.
INFRA_WALK	This field describes whether the property is connected to an existing sidewalk.	Parcels that are within 6 feet of an existing sidewalk is classified to be connected to existing sidewalks. 6

	Data is presented as "1" – connected to existing sidewalk and "0" – not connected to existing sidewalk. **Sidewalk data is last updated in 2016*	feet is used due to the width of the sidewalk.
PROX_PARK	This field describes whether the parcel is within 0.5 mile of a city park. Data is presented as "1" – within 0.5 miles and "0" – not within 0.5 miles.	-
PROX_SCH	This field describes whether the parcel is within 0.5 mile of a school. Data is presented as "1" – within 0.5 miles and "0" – not within 0.5 miles.	-
PROX_BUS	This field describes whether the parcel is within 0.5 mile of a bus stop. Data is presented as "1" – within 0.5 miles and "0" – not within 0.5 miles.	-
CITY_CORE	This field describes whether the parcel is within the Infill Development and Opportunity Zones. Data is presented as "1" – within Core boundaries and "0" – not within Core boundaries.	-

Lastly, an infill score is calculated to quantify and compare between properties. The infill score is calculated by averaging the three (3) fields depicting existing infrastructure, three (3) fields indicating proximity to public amenities, and one (1) field describing whether there is an incentive available. As such, Infill Scores range from 0 to 1. The scores are presented as percentages in this Study.