

Chapter 4 – Earlham in 2040

This chapter outlines the projections, predictions, and expectations envisioned for Earlham in 2040. This chapter includes population projections, projections about future facility needs based on population and demographic changes, analysis of social and economic changes, and forecasts or predictions about the future of Earlham based on the data available and observable trends. This data will be helpful in developing the remaining chapters of this plan.

Population Growth

While the recent population trend has been a slight decline, this is not projected or predicted to continue. Before we proceed, it is important to understand the difference between a projection and prediction. A projection is simply a mathematical formula that uses current and historical information to project or extend into the future. For example, a simple projection would be that, if a population in 2010 is 1,000 and in 2020 is 1,500, then it is projected to be 2,000 in 2030 and 2,500 in 2040. A prediction is more subjective. It may take other factors that cannot be mathematically applied to say that an outcome is likely to occur. Ideally, a good plan will have both a projection and a prediction that is based on the projection and other factors. This plan contains both. There are several ways to project populations, and no way is necessarily the best. Using a few different methods can help with predicting the future because they show different possibilities, which can be “averaged” to come up with a composite projection. The following pages contain a few different projections.

Cohort-Component Method of Projecting Future Population

The cohort-component method breaks down the population trends over a certain period of time, such as two back-to-back decades, into age and sex cohorts. These data sets are then projected into future time periods of the same length, in this case 2030 and 2040. The individual components are then added together to come up with a total population. Census data from 2010 and 2020, along with standard birth and life tables, were used for the following projections.

Figure 4.1: Population Projection by Age and Sex in 2030 (2020 Estimate)

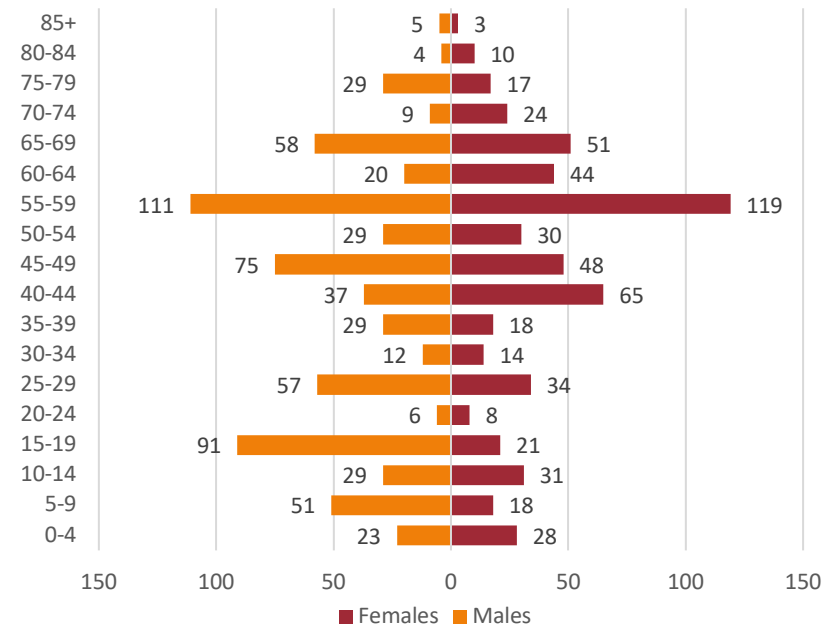
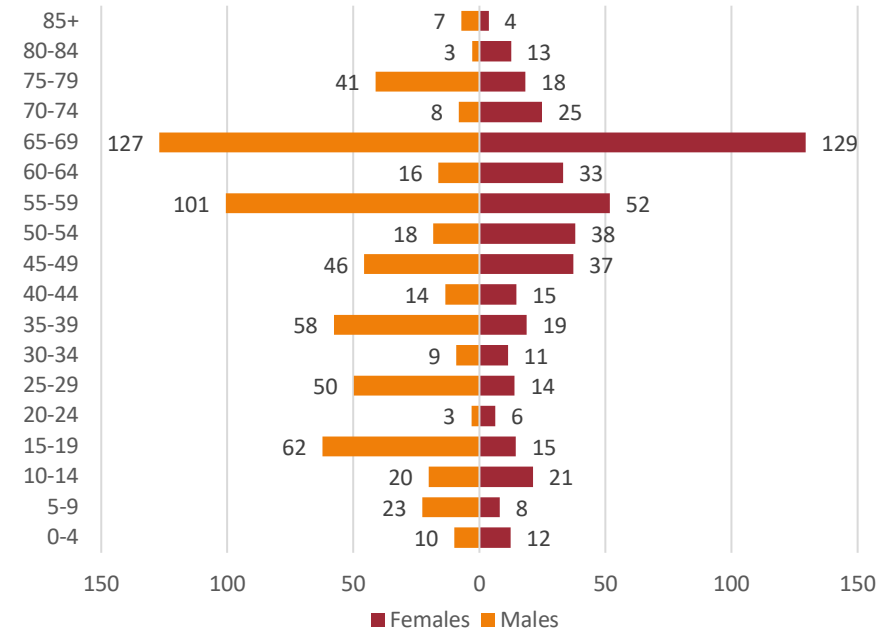


Figure 4.2: Population Projection by Age and Sex in 2040 (2020 Estimate)



It should be noted that the 2020 data is based on estimates provided by the Census Bureau, which are notably below the actual count made in 2020. However, the 2020 decennial Census did not break down population by age, so that data is not helpful for this kind of projection.

This population pyramid (Figure 4.1) shows by 2030 that the greatest concentration of the population will be aged 40 to 70, with only a few spikes among the younger ages. The very small population in the age 20 to 24 is an anomaly that will affect the next projection. This shows a total population in 2030 of 1,258 (675 males and only 583 females). The limited number of females in this method will also affect the next decade’s projection in the figure below.

Like Figure 4.1, this population projection for 2040 (Figure 4.1) is weighted toward the older population. Again, the population aged 20-24 is very limited. The total is 1,102 (626 male and only 476 female).

Clearly, any observation of the community tells us that these projections are flawed. There is no way that the trend is toward a 150-person loss per decade. Further, the estimate data for recent years (1,382 in 2020’s five-year estimate) is much lower than the actual count of 1,410 in 2020. Therefore, a new set of projections was prepared using the 2000 and 2010 Census data, as both of those had actual counts of persons by age levels. The flaw in this is that the data is aged, but it might paint a clearer picture of the future in Earlham’s case.

Figure 4.3: Population Projection by Age and Sex in 2030 (2000 and 2010 Official Counts by Age and Sex)

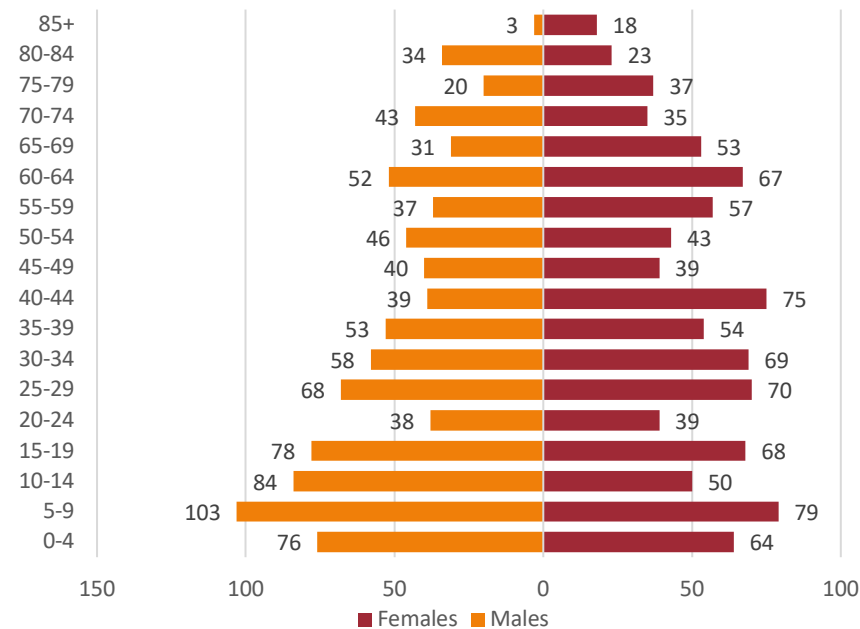
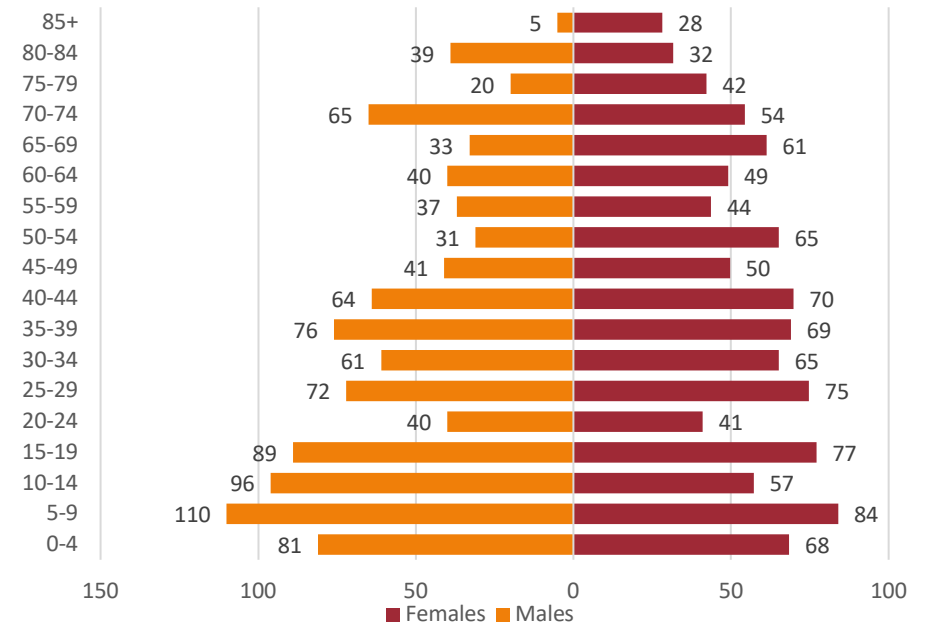


Figure 4.4: Population Projection by Age and Sex in 2040 (2000 and 2010 Official Counts by Age and Sex)



This pyramid (Figure 4.3) looks more realistic, based on past trends but not based on the total population count in 2020. While the first two sets of pyramids showed excessive loss, these show what is likely excessive or unrealistic gain. By 2030, according to the data used, the population will be 1,843 (903 males and 940 females). Unlike the original pyramid (Figure 4.1), this one has a much greater percentage of the population under the age of 30.

The pyramid in Figure 4.4 shows continued growth to 2,032 (1,000 males and 1,032 females) by 2040. The pyramid is very similar, but even more youth-heavy, to 2030 in Figure 4.3 and looks nothing like the one for 2040 in Figure 4.2.

Fortunately, there are other ways to project the population of a community. One additional popular method is used.

The Linear Regression Method

The linear regression model is simply the application of a mathematical “curve” or equation that projects the future population based on the “slope” created by change in population over specific population periods. The idea is to determine through a regression line what is the most accurate rate of growth for the future. The regression line can include any number of similar periods. In the following chart, each of the decades from 1970 through 2020 were used and projected two decades into the future. (While the COVID affected the 2020 Census process, it is believed to be more accurate than using estimates at that time).

Figure 4.5: Earlham Population Projection Through 2040 Using Linear Regression Analysis Over 50 Years

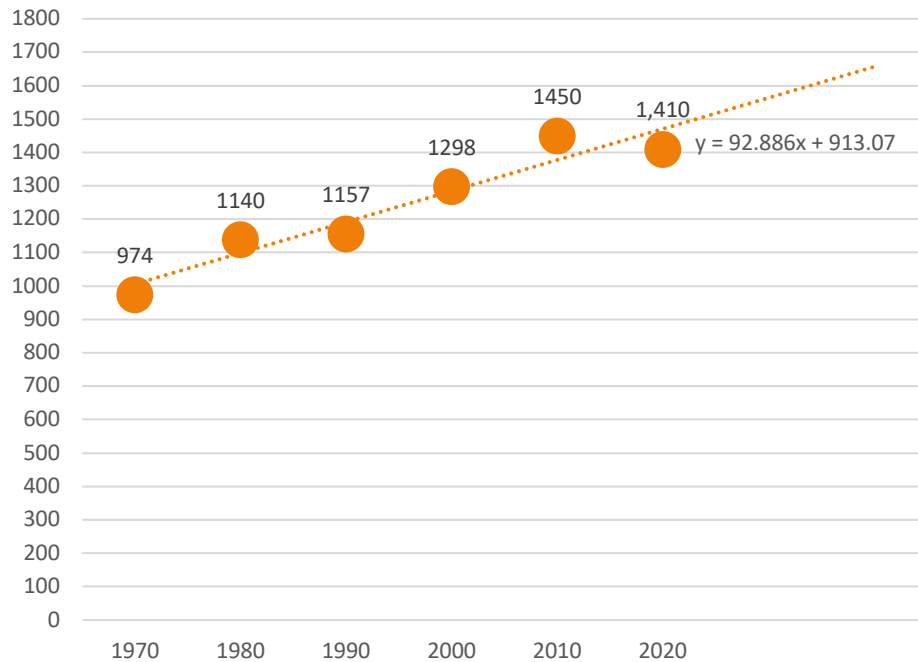
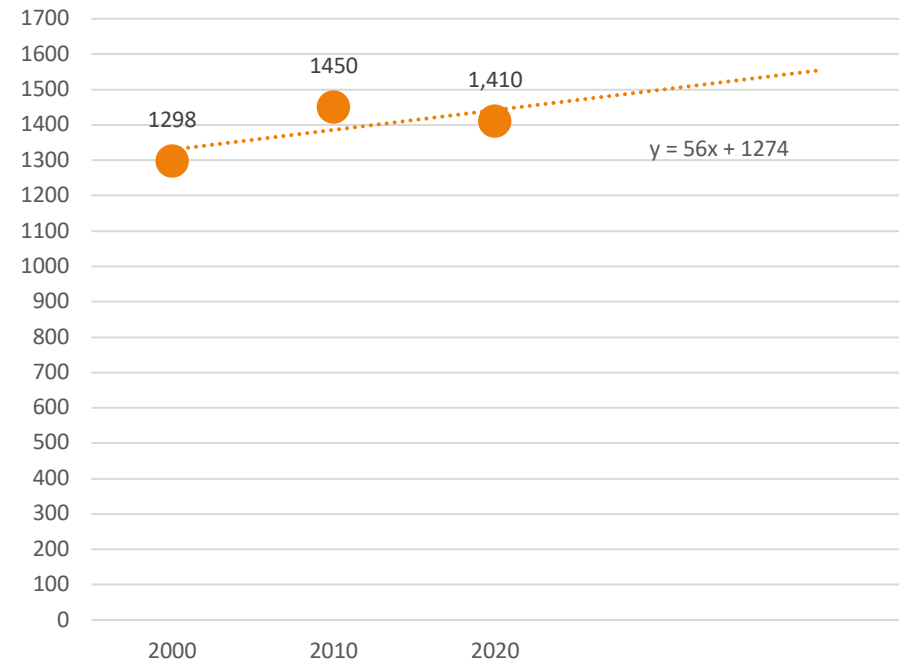


Figure 4.6: Earlham Population Projection Through 2040 Using Linear Regression Analysis Over 20 Years



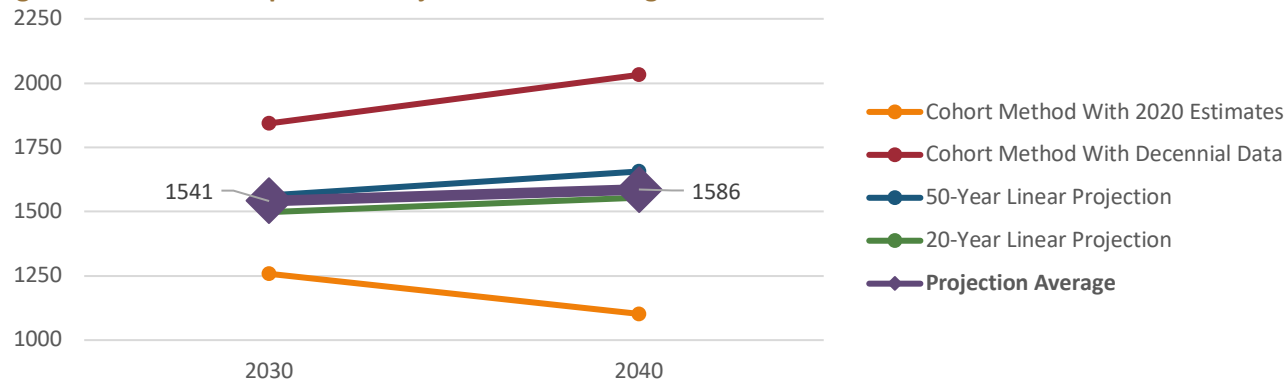
Using this method, the projection varies greatly by the length of time (number of decade periods) used. When going from 1970 to 2020, the projection results in the growth of around 9 people per year or 93 people per decade. The result is 1,563 in 2030 and 1,656 in 2040.

Because the Census shows somewhat stabilization of growth in recent years, another projection was done for only twenty years of data, from 2000 to 2020. Figure 4.6 shows the result. This regression line shows a 2030 population of 1,498 and a population in 2040 of 1,554. This is probably more realistic than Figure 4.5, based on circumstances in the community in the past ten years (modest growth, few new housing starts).

Summarized Population Projections

While there are no perfect ways to project populations, it may make the most sense to combine the results and come up with an average that can be used for forecasting throughout the remainder of the plan. The shows the results of this process with the averages labeled. Figure 4.7 shows the combined projections and then an average projection.

Figure 4.7: Earlham Population Projections and Averages



The average of the four methods used is 1,541 in 2030 and 1,586 in 2040. This represents a population growth of nearly 5 people per year through 2040.

Predicting the Future Population

With Earlham's location, growth is almost certain. The level of growth will depend mostly on the City's desire to grow. During the early planning meeting, community leaders and stakeholders achieved a consensus desire to preserve the community's heritage and values. Leaders were not dismissive of growth but wanted growth to be manageable and planned. There are some ways this plan will lay out to plan and manage growth:

- Use zoning and other land use regulations proactively to ensure the growth and development that occurs is what is desired.
- Use tools to protect and, if needed, redevelop existing properties.
- Annex land wisely and carefully.
- Be proactive with both county governments about how they manage (or fail to manage) growth.
- Engage proactively farmers and property owners around the fringe of the city to facilitate planned growth.

Doing these things can accommodate growth levels that make sense. The following predicted future population range assumes the above and the following:

- No boundary changes in the city (annexation will naturally lead to more growth than anticipated).
- No major school consolidation.
- No unexpected changes in employment patterns (new or closing industries, for example).
- Earlham will continue to be primarily a "bedroom" community.
- Lots available in town remain available for new development.
- The plan's recommendations are followed.

Predicted population in 2030: 1,600

Predicted population in 2040: 1,800

What a population projection cannot show is the likely prediction that slow growth seen today in the next ring of suburban towns (Earlham, Dexter, Redfield, etc.) will be replaced by accelerating growth by 2030 and beyond. This is already now occurring just five miles east in DeSoto, mostly in the past ten years. This trend is most likely to be noticed after 2025 to even 2030. Of course, things can change if the economy continues to evolve and people do not need to live close to an office in the metro. Another factor that may be considerable is the Exit 104 and 106 areas. Leaders have witnessed the explosive commercial/industrial growth of the DeSoto exit. As that area continued to build out, the potential exists to move farther west, which may also drive more population growth. These factors, and others, will be explored in the following plan chapters.

Housing Demand Projections

A projection of future housing needs is vital when the population is growing. Factors that should be considered, even when no growth is projected, include:

- The average household size (number of people living together in a house) is likely to continue to slowly decline.
- The evolving preferences for senior care, such as more in-home care rather than institutionalization, and people living longer make it more likely that people will stay in their homes longer.
- Increasingly popular options such as accessory dwelling units (sometimes called “granny pads”) means two or more households might live on a single-unit lot.
- An increasing number of affluent older people are selling their homes and living in RVs so they can travel.
- There is a shifting preference toward rental housing, especially in markets like Earlham that have rapidly growing housing prices.

In order to project future demand, a chart like the following can be used to consider assumptions, such as no annexation, reasonable changes in household sizes, and impacts of continually aging housing stock. To reach 1,800 persons by 2040, Earlham will need to produce additional housing on a consistent basis. A rough projection calculation is in the following figure.

Figure 4.8: Projection of Future Housing Demand

Values	2020 Actual	2030 Projected	2040 Projected
Total population	1,410	1,600	1,800
Total institutionalized (not in households)	0	0	0
Total population in households	1,410	1,600	1,800
Average household size	2.62	2.55	2.50
Occupied units/raw demand	565	627	720
Flexibility factor for new trends	---	0.01	0.02
Total raw demand	565	633	734
Vacancy rate of livable units (current and ideal)	4.1%	5.0%	5.0%
Total demand with vacancy cushion	588	665	771
Total occupied units in 2020	565	565	565
Dilapidated units and added replacement need	0	2	4
Total livable housing units available	565	563	561
Total surplus (+) or shortage (-) of housing	---	-102	-210

Based on the data provided, a shortage of 210 housing units is projected, if nothing else is produced. The future housing chapter will outline what kinds of housing are likely to be needed and how the shortage should be addressed.

Commercial and Industrial Demand Projections

Like housing, commercial and industrial demand projections are common. In a town that might be characterized as a “bedroom” community, commercial and industrial development and major employers may be less vital, but employment growth is important to ensure people will not just move but stay in Earlham. If a community is only used for residential, there is nothing to keep them in the area if they could live anywhere in our modern economy. People still need services close to home. Therefore, growth in employment and businesses is important. Based on the projected/predicted population growth, Earlham should add about 25 retail and service jobs, 25-50 professional/office jobs, and 50-75 manufacturing jobs. The preponderance of manufacturing jobs is largely because there are few today in the area. Manufacturing is vital to anchor families to the community. High-growth/low-intensity manufacturing, processing, and distribution centered around I-80 and the railroad and perhaps supporting agriculture would provide employment options for residents within the city. This type of growth will reduce the imbalance of worker outflows shown in Chapter 3.

Another thing to consider is that much of Earlham’s population is prime working age, most often with families. While this is a great asset, keeping them here when our society is more mobile can only be done with local employment options. Perhaps a great example is a person who works from home or an office in Des Moines and the spouse who works at a local business. This scenario is more plausible with more employment options. Without these, projections and predictions may not be met.

Therefore, there is a projected shortage of land for commercial and industrial development, but most of that land can be made up by repurposing existing buildings or removing deteriorated structures and better using already developed areas. Growth to the north of town and along the railroad can also be accomplished. Zoning and other land use policies can help accomplish this.

Infrastructure, Facilities, and Services Demand Projections

Infrastructure development is vital for allowing population growth. Managing growth is important to reduce unnecessary or premature infrastructure development.

Overall, the central infrastructure, such as water, gas, electric, and sewer plants and supply sources are more than adequate to meet needs through 2040. There are sections of some of these systems that are not able to meet future needs, which are now being addressed by the City and private suppliers. These shortages are much less notable in Earlham than in many rural communities.

However, infrastructure issues will be enhanced with new growth. With growth to 1,800 people by 2040, infrastructure will be required for some areas of new housing, commercial, and industrial. Therefore, Earlham’s greatest need in the next twenty years will shift from maintenance to responsible expansion of capacity and new infrastructure, especially storm water management. Large projects like water towers, new sewer lagoons, and new water plants are not projected. However, almost all development in Earlham will require road extensions, new water mains, new sewer mains, and storm water management projects.

A popular publication, *Planner’s Estimating Guide: Projecting Land-Use and Facility Needs*, provides analysis for future needs of many kinds of public facilities and services, such as EMS, fire, and libraries. In Chapter 3, the plan covers how current facilities do or do not meet current demand. A cursory review of the City’s facilities tells that growth of nearly 400 persons will not directly result in a large expansion in public facilities and staffing needs. Probably a total of 1 new FTE staff person capacity will be needed. Spacing needs will mostly relate to preferences. Providing more room for fire, EMS, and police operations makes sense as the town grows. This is especially true, as some facilities, such as libraries, fire stations, and community centers, serve a population exceeding the boundaries of the city, and rural population growth, especially north of the interstate, is likely to outpace Earlham’s growth. Personal and business preferences may create

demand for facilities beyond what the raw figures show. With this in mind, it is anticipated that a net growth of 5,000 SF of public facility space will be needed to support Earlham by 2040. This does not include non-City needs, such as Earlham Schools, which will also figure into the future land use demand.

The Planner’s Estimating Guide also provides estimates for future recreational land and facility needs. Chapter 3 contains an analysis of existing facilities and needs. Like other amenities, changes in demand are likely to changes in preferences and demands for open space and recreation close to home or office. Additionally, growth in the city as a whole may result in further development of the existing spaces, especially Gendler Park. A few acres in total of mini or neighborhood parks would be needed if there are large development areas away from existing parks.

Land Use Demand Projections

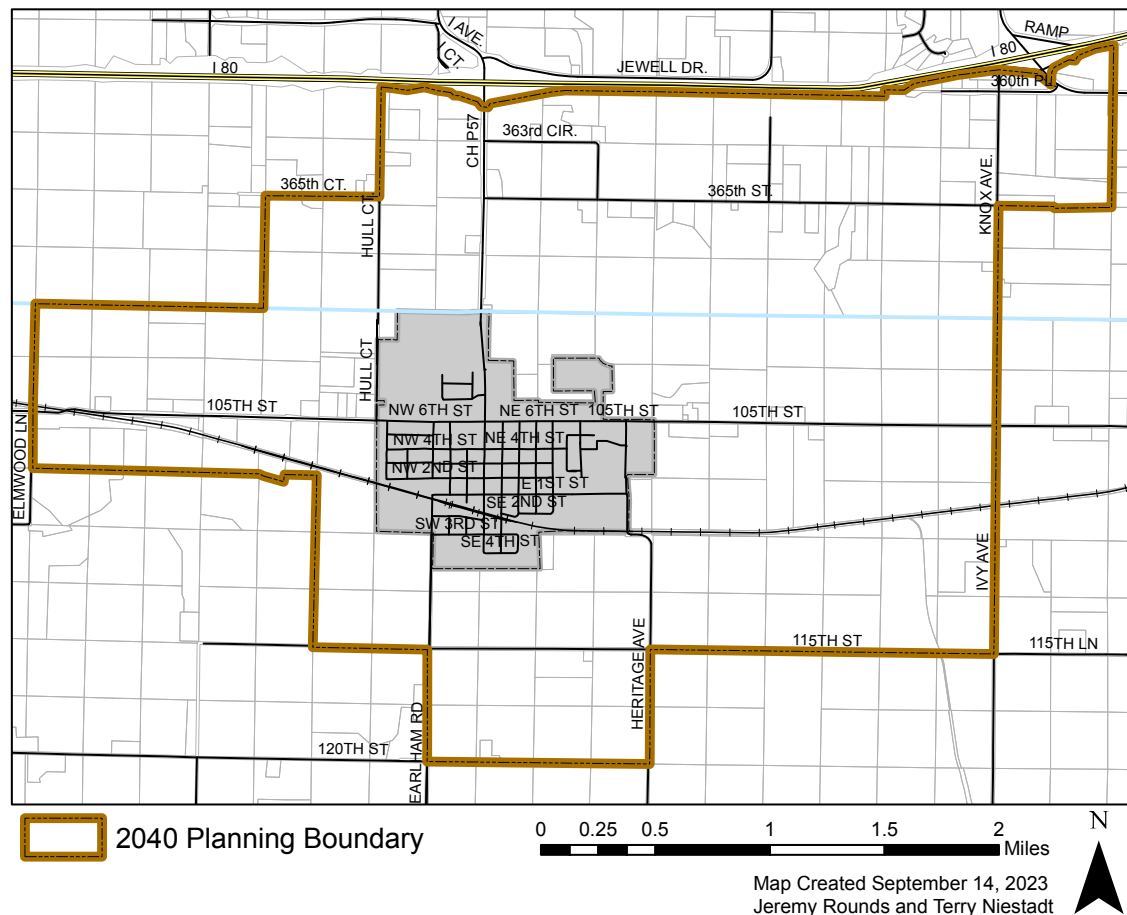
The aforementioned planning guide recommends that any community with a planning horizon (2040) population of less than 100,000 have an excess buildable land factor of 30% overall, with some exceptions for certain land use types. What this means for Earlham is that, if a net increase of 25 acres is needed for residential uses, applying this factor would increase the 25 acres to 32.5 acres. The guide also identifies that the average percent of land of major cities that is vacant is 37% and that the developable percentage is 31%. What this identifies is that the city boundaries should obtain about 30% of its land that remains undeveloped in order to capture unforeseen development and provide market choices.

Earlham, as identified in Chapter 3, has very few developable infill lots. Unless density increases (conversion of single-family to apartment buildings, for example, significant conversion of farmland will be required. The main limiting factor will likely be the lack of willing land sellers for development. As long as farmland continues to grow in value, this challenge will remain.

Therefore, given the growth needs and need to provide around 30% of land in the city undeveloped (mostly agricultural) land, and to allow for even greater planned growth, a planning boundary was created as outlined in Figure 4.9 (right). This boundary is the area where the City will focus its efforts to plan for the future, not necessarily consistent with the statutory two-mile planning boundary. The future land use and other following chapters consider

development within this boundary, not necessarily limited to the current boundary of the city.

Figure 4.9: Proposed Future Land Use Planning Area



About 5,075 acres are in this area but outside of the city's boundary, well more acres than needed to accommodate projected/predicted growth. This does not mean that the city should necessarily annex this entire area or, for that matter, any of it. However, as the town grows in a managed or planned way, expanding the boundaries can make development easier and provide options. The land use chapter outlines land use needs in greater detail and policies that should be in place to properly develop Earlham to meet long-term needs.

The following chapters detail strategies to meet these demands and other goals of the City of Earlham. The future land use chapter considers these factors without unnecessarily or prematurely developing more land that is currently used for green space or agriculture.

Social Trends and Changes

Finally, when considering the changes Earlham may face, it is important to understand the social trends that may result in new or different housing, economic, quality of life, and land use needs by 2040. Consider the following generalities:

- The “American Dream” appears to be changing and is not always two parents, two children, and a white picket fence. Homeownership is being put off and people are willing to pay for a quality place to rent long-term and fewer people are marrying or waiting longer to marry.
- Younger and more affluent people want to live in a quality walkable downtown area with a high-quality nightlife.
- People value sense of place over rate of pay in increasing numbers when deciding where to work and live.
- Employers and entrepreneurs tend to seek places to invest that have a great quality of life as much or more than low taxes.
- Younger generations value technology and rapid changes brought by it.
- Younger generations tend to reject traditionally held values and social structures.
- Younger generations are more likely to want to be part of a mission or activity rather than merely the status of being part of an organization.
- Older generations increasingly seek to live in their homes longer, meaning they demand services close to home and greater handicap accessibility.
- Institutional living arrangements are falling into disfavor, in part due to cost but also due to the desire and ability to live independently longer.
- Multiple generations and family arrangements can be found in many households.
- COVID has driven the previously started trend toward micro-entrepreneurism (i.e., “side hustles” or the “gig economy”) and remote work, which can be advantageous to rural Iowa communities.

Each future plan topic area considers these trends as part of the strategies for the future development of Earlham.