Chapter Three
Strategies for Growth

To begin to meet the goals that we outlined in the previous chapter we have formulated the following five planning strategies. Each of them is a piece of a much larger whole and none of them can be understood in isolation. They all work together to move Fargo toward its goals.

- A City of Neighborhoods
- A Connected City
- A Sustainable and Safe Community
- A City of Diverse Uses and Types
- A Beautiful City

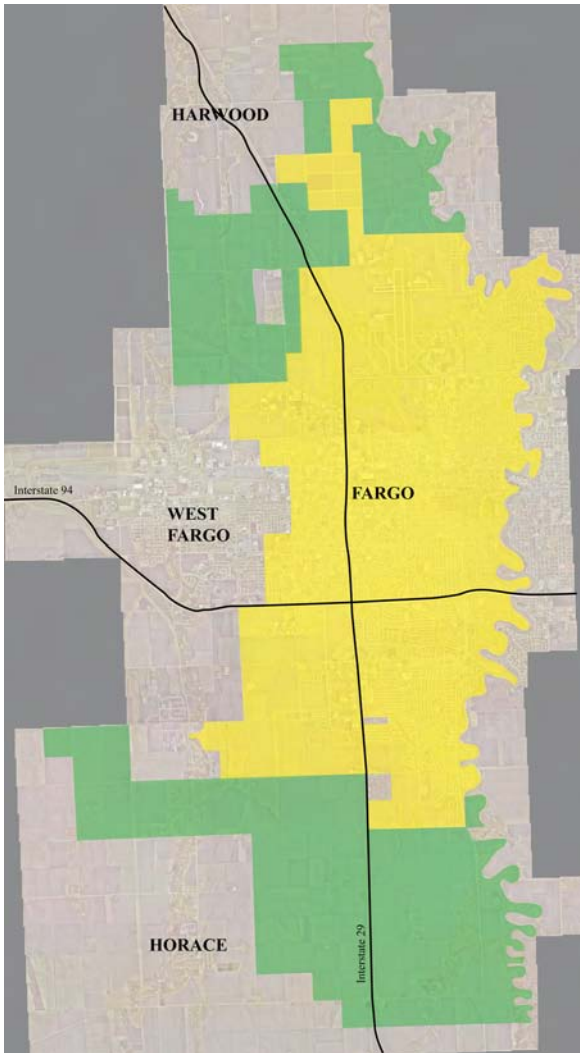
Each of these strategies will be explored more fully in the following pages but first it is important to set the context within which we see these strategies working. As stated earlier in this document, the growth plan is looking 50 years into the future to set goals and strategies for Fargo's long term growth. It is most appropriate to set those goals and strategies broadly for the entire extraterritorial area but much more specifically for the areas that will see growth pressure in the coming years.

The 2001 Fargo Growth Plan identified a little over five sections of land that would likely be developed within a five year period of time. Five years later a great deal of development has occurred within those five sections but some development, particularly the Osgood development has leapfrogged over land that has not been developed leaving large sections of land undeveloped within the city. These undeveloped parcels are now being developed and the city will eventually fill in. There is ample opportunity for Fargo to grow within its current city limits but there remains considerable pressure to extend development into the extraterritorial area of the city.

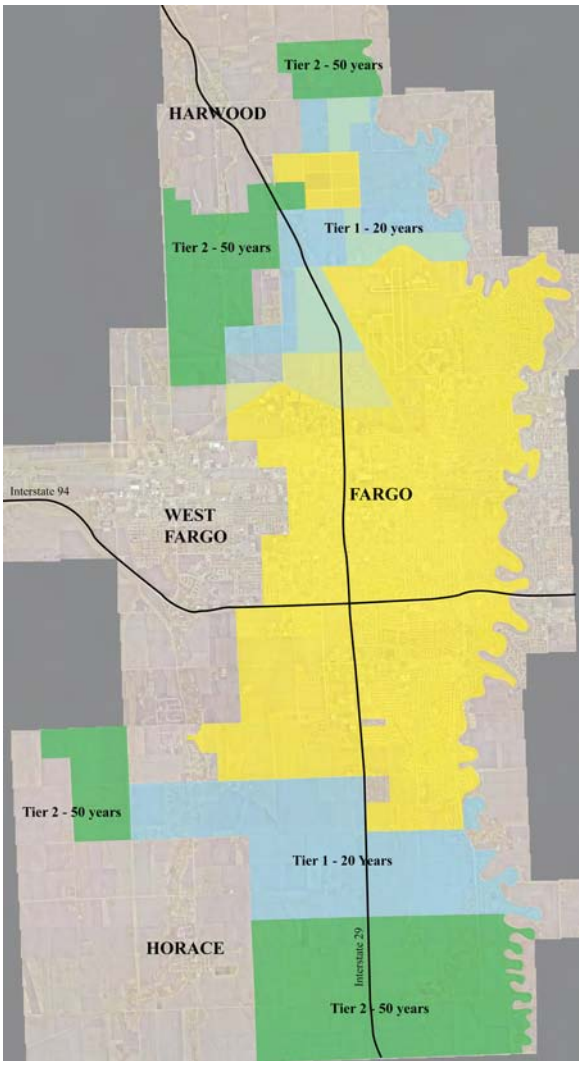
Over the past 35 years Fargo has grown by an average of 266 acres per year. These 266 acres per year are the land actually built on each year not the land annexed into the city. The annexation rate may vary from year to year. At our current land consumption rates it would take Fargo some 85 years to completely fill its extraterritorial area. However, population projections for the city of Fargo show our population growing to as much as 243,000 people in the next 50 years. More conservative estimates anticipate our population growing to 170,000 in that same 50 year period. If Fargo were to grow to 170,000 people in 50 years we would have to grow into an average of 160 acres of land each year. This would indicate an overall decrease in the growth rate of the city. If the higher population figures are more accurate we will need to grow into an average of 306 acres per year. This scenario indicates an increase in the rate of growth within the city. (More information about existing population statistics and growth projections are included in Appendix A)

This growth plan establishes the growth patterns for Fargo for the next 50 years. As mentioned above, we have found that all of our growth can be accommodated quite easily within the extra-territorial area of the city, which is shown in green on the adjacent map.

West Acres area in 1980



The City of Fargo (yellow) and its Extra-territorial area (green) in December of 2006.



Future growth areas for Fargo. Tier 1 is the "intended growth sector" while tier 2 is designated the "restricted growth sector".

Designating Growth Areas

It is important to plan for the larger population increase while being flexible enough to adapt to a slower rate of growth. To accomplish this, the growth plan update adopts a two tier approach to future growth within the City of Fargo. The land included in tier one, illustrated in the map on this page, is anticipated to be under development pressure within the next 20 years. Some of this area is already under pressure to be developed. We have therefore designated tier one as the "Intended Growth Sector" for the city of Fargo. While tier two has been designated as the "Restricted Growth Sector" of the ET area.

We should be able to accommodate most of the growth that is anticipated in the next 50 years within the existing city limits and the "Intended Growth Sector", tier one of the ET area. The ability to accommodate this growth is contingent on completing flood control projects in the city. If the City of Fargo were to develop all of the appropriate undeveloped land within its city limits at the current residential density, the city could grow to a population of 134,000 people. The existing average residential density throughout the city is just under 10 people per net developable acre, approximately 6.5 dwelling units per acre. At our current residential density the "Intended Growth Sector", tier one, could support an additional 69,800 people. If we plan to increase the average residential density within the newly constructed areas slightly to 12 people per net developable acre we could accommodate a population of 85,500 people in the intended growth sector. This change in density would mean that 1500 acres would not need to be developed with water, sewer, roads, and sidewalks saving the city and its citizens a considerable expense.

To encourage development in the intended growth sector it is important to discourage growth within tier two, the restricted growth sector, for the next 20 years or so. This does not mean that development will be eliminated from the restricted growth sector but that very careful consideration will be given to any proposals within tier two. The costs of extending infrastructure into tier two should not be undertaken lightly and should follow an orderly process of evaluation of the city's needs. As growth occurs in the intended growth sector the relative size of tier one and tier two should be reviewed and carefully adjusted. This review and extension should not occur until the existing city and a substantial percentage of the intended growth area are fully developed. The careful control of the restricted growth sector is paramount in creating an efficient and sustainable city with a high quality of life. The primary problem with building in Tier Two is that you are disconnected to the city. Although some people may be seeking a disconnected life-style, pursuit of that objective within the ET area of the city will not meet that goal over the long haul. All of the ET area will eventually be within the urban portion of the city. Any development that does occur in tier 2 should take into account the likely redevelopment of the property as the ET is urbanized. Efforts should be made to ensure that rural development plans ahead for future infrastructure so as not to preclude future development. The main focus of this growth plan is to create a community of neighborhoods that are interconnected. Growth that is too far out will not have good trails, parks, access to retail or many of the other quality of life

amenities associated with a vibrant city.

A City of Neighborhoods

Historically, Fargo has grown as a series of neighborhoods. Many cities throughout the United States have followed this same development pattern. The neighborhood is an excellent tool for use by city planners because a neighborhood is the place where we can feel connected; a place where we can be directly engaged in determining our own quality of life. The neighborhood is the unit of the city where we most often find a connection with other people and create real community.

The map to the right illustrates the existing neighborhoods in Fargo and the pattern of neighborhoods being proposed for the extra-territorial area of the city. The proposed neighborhoods have several characteristics that are important for the formation of quality spaces for living.

- Neighborhoods in Fargo are to be one mile square, bounded by arterial roadways.
- This creates a neighborhood where a person can walk from the center of the neighborhood to an edge in 10 minutes. Research tells us that people will choose to walk to a destination when the walk time is around five minutes. This fact means that we must make walking very easy if we are interested in enticing people to walk more within their neighborhood.
- Ideally, each neighborhood should have either a park or an elementary school at its center to give the neighborhood a unique identity and a place for people to gather.
- A majority of daily needs should be met within the neighborhood. This indicates a commitment to planning for neighborhood commercial and retail uses adjacent to each neighborhood.
- Each neighborhood contains four sub-neighborhoods of 1/2 mile diameter. Each of these sub-neighborhoods contains a small park at its center. These small parks can provide areas for people to meet but also could be used as storm water retention for the area.

The historical pattern of development of the neighborhood usually included a mix of housing developed over several years around an elementary school. The conditions that established this development process have changed rather dramatically since the mid twentieth century. The size of families has decreased substantially which has resulted in the inability of a traditionally sized neighborhood to generate enough children to fill an elementary school in each neighborhood. To fill an elementary school today it takes the population of three neighborhoods instead of one.

Neighborhoods are an important tool to help plan for the future of the city. They are also a great catalyst for the creation of community.

Existing Fargo neighborhoods outlined in dark brown. Proposed neighborhoods outlined in light brown.

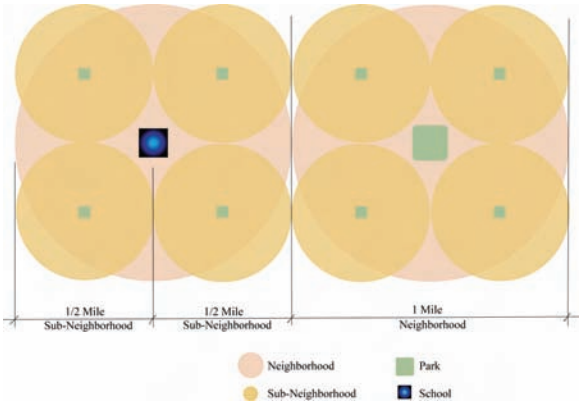
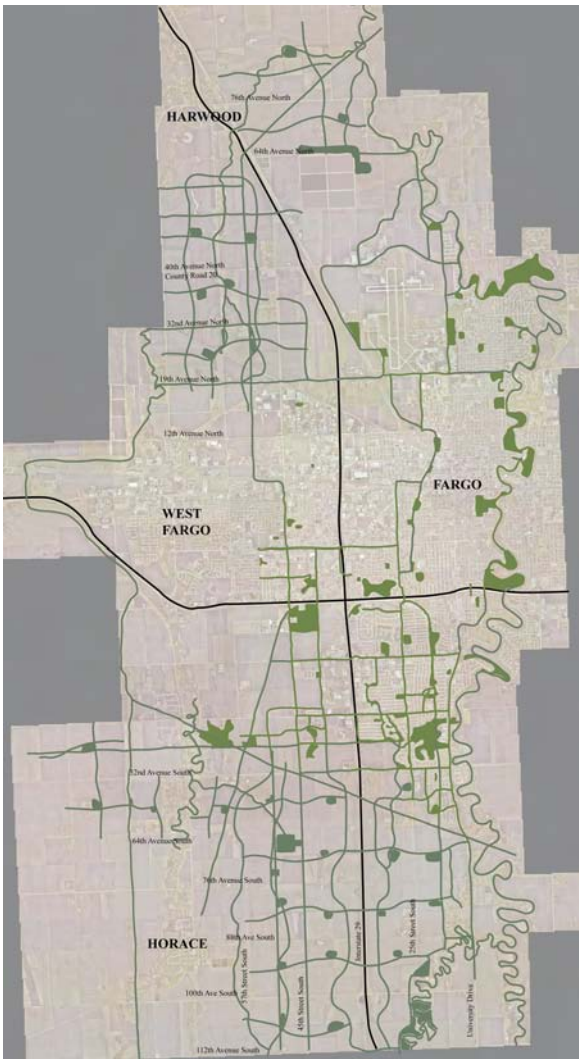


Diagram of neighborhood concept



Connecting proposed parks in the growth areas of Fargo.

A Connected City

A connected city is one that takes every opportunity to link the separate parts of the city together into a cohesive whole. This connectivity includes pedestrian walkways, bikeways, ski trails, transit routes, roads for automobiles, utilities and networks for the sharing of information. The creation of data and communication networks has mostly been done through private companies but the other systems of connection fall within the responsibility of the city government.

The transportation systems of the city are the first elements that we will define as we seek to create a more fully connected city. The transportation system has three main components; the pedestrian system, the transit system, and the traffic system. All three of these systems are related to the roads that allow us to move around the city. Since the 1950's the automobile has become the most important leg of this three legged transportation system. It is time to elevate the pedestrian and transit to an equal level of consideration as the automobile. Creating a walkable city helps save energy, helps people connect to one another, and helps increase our physical fitness. The pedestrian system for connecting the various parts of the extra-territorial areas is described below.

The map on this page illustrates the existing parks in the city of Fargo and the bike and walking paths that link those parks together. It also illustrates the proposed parks that lie at the center of each neighborhood and proposed paths to link each of them together. The paths are both bicycle and walking paths and are built along collector streets, utility easements, abandoned railroad easements, drains, rivers, and future flood protection. This allows residents to move freely to all parts of the city without an automobile. It certainly does not change the necessity for an automobile but it gives each of us options.

The Comprehensive Policy Plan addresses open space and greenways through one policy that states that the City of Fargo should establish standards for land use development as it relates to green space for all residential zoned properties. Establishment of parks and open space presents a challenge to the City of Fargo because parks are an integral part of the land use mix, yet the final decision to accept and maintain parkland rests with the Fargo Park District, a separate entity from the City government structure. The cooperation between the City of Fargo and the Fargo Park District has been excellent in the past and is continually improving. The Park District has identified the development of walking and biking paths as a primary goal for the next several years. This is fully supported by the goals and strategies of this growth plan update.

The Park District has stated that an appropriate amount of open space or parkland is roughly equivalent to 8-10 percent of the acreage of residential development. The growth plan update has set aside 10 percent of the developable land area as park and greenspace. This does not include that space set aside as links between parks and greenspace. The Park District has indicated a preference for parks that are a minimum of 10-15 acres in size. This size provides adequate space for a variety of uses within the park. This fits nicely for the parks at the center of each new neighborhood. The parks in each sub-neighborhood should be approximately 2 acres in size. These smaller parks are easier to site and allow a park within approximately 1/4 mile of each resident.

Two main goals have been identified for the park and greenway infrastructure in the growth areas of Fargo.

1. Provide regularly spaced parks and open spaces that are accessible to all neighborhoods.

- Continue to work closely with the Park District to stay apprised of their plans for parks, open spaces, and greenways.
- Require subdivisions adjacent to greenways and parks to have easements allowing easy access.
- Bring property owners in each neighborhood together on at least an annual basis to discuss park and open space expectations and facilitate coordination of the development of these facilities.
- Work to accomplish the park and greenspace goals set in the growth plan of 10 percent of property able to be developed.
- Locate parks such that no residential neighborhood is greater than 1/2 mile from a park or school playground and that no sub-neighborhood is more than 1/4 mile from a small park.

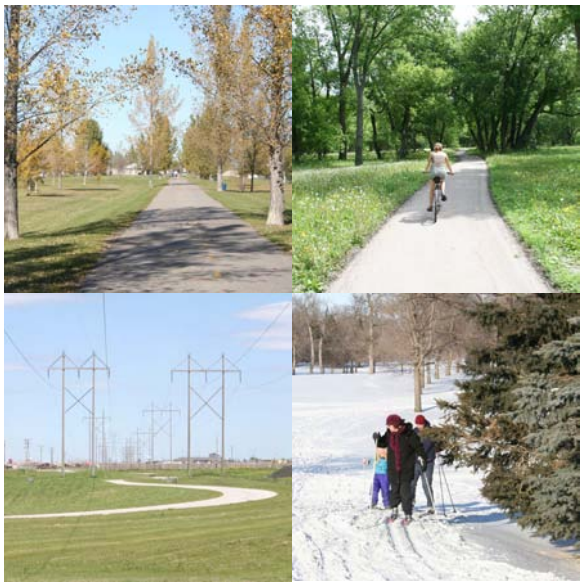
2. Use floodways, drainage ditches, and power lines as corridors for greenways with bicycle and pedestrian paths.

- Coordinate with River Keepers and other agencies that have knowledge and access to funding for land acquisition along the Red River.
- Coordinate with Southeast Cass Water Management District and adjacent property owners to create greenway corridors along county drainage ditches.
- Encourage retention of the natural grasses and plants that grow along the drainage ditches.
- Encourage retention of existing and newly planted wind-rows throughout the growth area.
- Work with the utility companies to help them identify the steps that need to be taken to establish bikeways and greenways along utility rights-of-way.

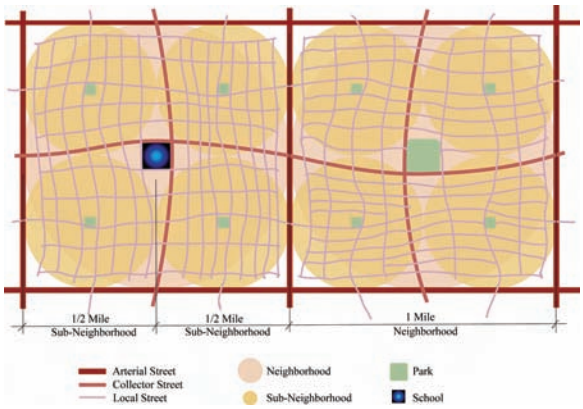
One of the most important functions of a growth plan is to ensure adequate continuity of arterial roadways and collector streets. Without the hierarchy of streets and roadways, development and growth would be stifled, because land cannot be fully developed without a transportation system. Transportation planning goes hand-in-hand with land use planning, because the locations and functions of existing and planned roadways determine the appropriateness and logic of surrounding future land uses.

The Fargo-Moorhead Metropolitan Council of Governments (Metro COG), coordinates with all of the local jurisdictions to prepare the Metropolitan Transportation Plan (MTP), the Transit Development Plan, and the Bikeway Plan.

The 2004 MTP created the existing Functional Class Map for the entire local community. This map shows the designations of primary arterials roadways, minor arterial streets, collector streets, and local streets. The MTP also provides a projected 2030 functional class system. The existing and planned functional classifications were used



Walkways and bikeways in utility easements, along river drainages, on the Milwaukee Railroad bed, and groomed as cross country ski trails.



A diagram illustrating the functional roadway classification related to the neighborhood concept.

as a basis for many of the land use decisions. For example, to the extent that it was possible and/or reasonable, low density residential land use was avoided as a future land use designation along most primary arterial roadways.

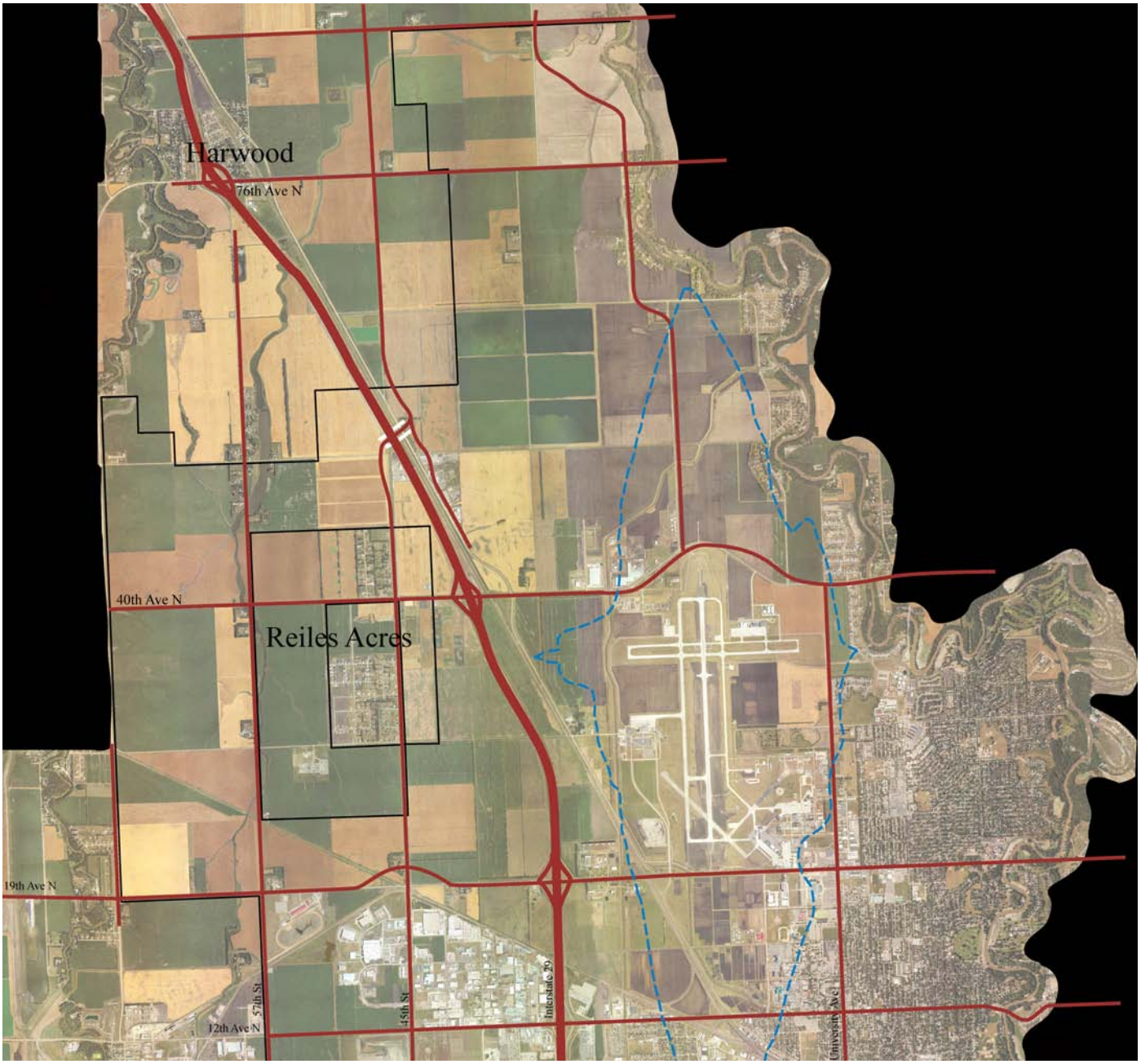
The functional classification of roadways also determines the extent to which access will be limited or allowed. For example, the Land Development Code (LDC) limits access points and intersections along primary arterial roadways to a minimum of 600 feet. This requirement, and others related to access management, had an effect on the sizing of various land use categories along the arterials. Blocks of commercial/office land use along an arterial roadway were generally sized to be large enough that they would have access to a full ingress and egress, and

potentially a signalized intersection. Commercial land uses located at major intersections were made large enough to not be dependent upon a full access driveway located too close to the intersection.

The hierarchy of streets, combined with access controls, allows for access to be taken to and from lower volume local and collector streets, ensuring that the arterial roadways retain their intended speeds and efficiency. The land use plans intentionally do not show street details beyond the arterial and collector level. This is due to the fact that the land use plans are intended to be a guide for development, showing the planned land uses and arterial and collector street connections and extensions. The characteristics of individual developments within that framework will be created and proposed to the City by the property owners and developers.

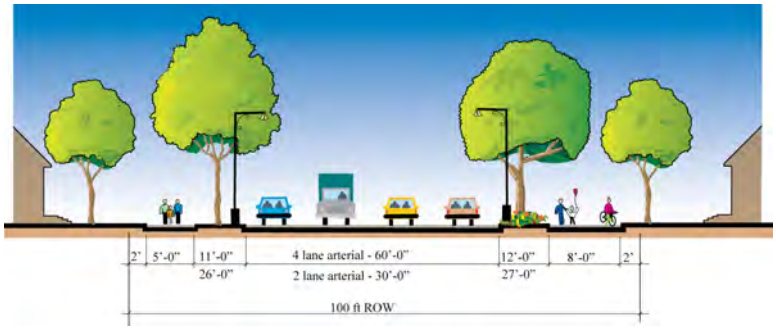
The Comprehensive Policy Plan includes policies related to access control, transit, bikeway planning, a balanced circulation grid, pedestrian planning, and a traffic/land use matrix. In one way or another, all of these policies have been taken into consideration in the formulation of this growth plan.

The transit system and the automobile rely on the road system in



Proposed arterial roads in the north ET area.

the city so we will look at the classification system of roads and how they are to be distributed. The growth plan identifies specific locations for arterial roadways, and defers to the metropolitan transportation plans and corridor studies to identify the proper amount of right-of-way that needs to be dedicated for future expansion or extension of these arterial roadways. We have included diagrams of each roadway classification to set basic parameters for the roadways and accompanying sidewalks and landscaping. The specific roadway width should be coordinated with transportation plans for the city. It is important to note that the character and quality of the city's transportation corridors can be as important as the need to move traffic freely.



A diagram illustrating the components of an Arterial Roadway.

Arterial Roadways

The mile line (section line) roads are designated as the arterial roadways in the functional class maps, and that designation has been consistently applied in the land use plans. Every arterial roadway is studied individually at some stage through a corridor study and project concept report to determine the needed right-of-way and capacity of the roadway. Realignment alternatives are examined at that time.

The arterial roadways within the growth plan are extensions of the system of arterials that exist on a one mile square grid along section lines. The adjacent maps illustrate the extension of these arterial roadways in the north extraterritorial area and the south extraterritorial area. The accompanying diagram illustrates the various sizes of the components of the arterial road. Please note the following:

Proposed arterial roads in the south ET area.

- Adequate future arterial street right-of-way should be acquired during the subdivision approval process to ensure their feasibility in future years.
- Right-of-ways for minor arterial streets should be a minimum of 100 feet wide unless otherwise specified by a corridor study. Generally any variation from this will be wider than 100 feet.
- The diagram illustrates a minor arterial. Right-of-way for a primary arterial such as 25th Street or 45th Street would need to be 200 feet to allow for additional lanes of traffic and potential expansion.
- The bike path shown would be designated for commuter bicycle traffic. Most bike paths are associated with collector streets.
- Participate with other local governments and MetroCOG in corridor studies and metropolitan transportation planning studies to ensure coordination between land use planning, transportation planning, and future development standards along major corridors.

Possible land uses compatible with freeway frontage.

Arterial Roadways and Land Use

The Comprehensive Policy Plan includes a matrix of various types of residential and commercial land uses along the hierarchy of roadways, generally stating a preference for placing non-residential uses along arterial roadways. It also provides goals regarding the distance between the edge of the roadway and adjacent structures, with the greatest distance recommended between low density residential and high volume arterial roadways.

One of the primary focuses of the land use plan is to eliminate residential development along interstate highways and major arterial roadways as much as possible. However, it is important to recognize there is a limit to the amount of industrial and commercial land use that can be incorporated into a land use plan. Therefore both low-medium density residential and medium-high density residential land use categories are shown along some of the outlying arterial roadways.

- When residential land uses are planned along arterial roadway corridors, three main concerns come to light:
  - The impact of traffic noise on the quality of life of adjacent property owners.
  - Objections from property owners when it is necessary to expand the roadway.
  - The need for sound mitigation if noise is sufficient to warrant it.

When building next to a freeway or a major arterial the following three goals are important:

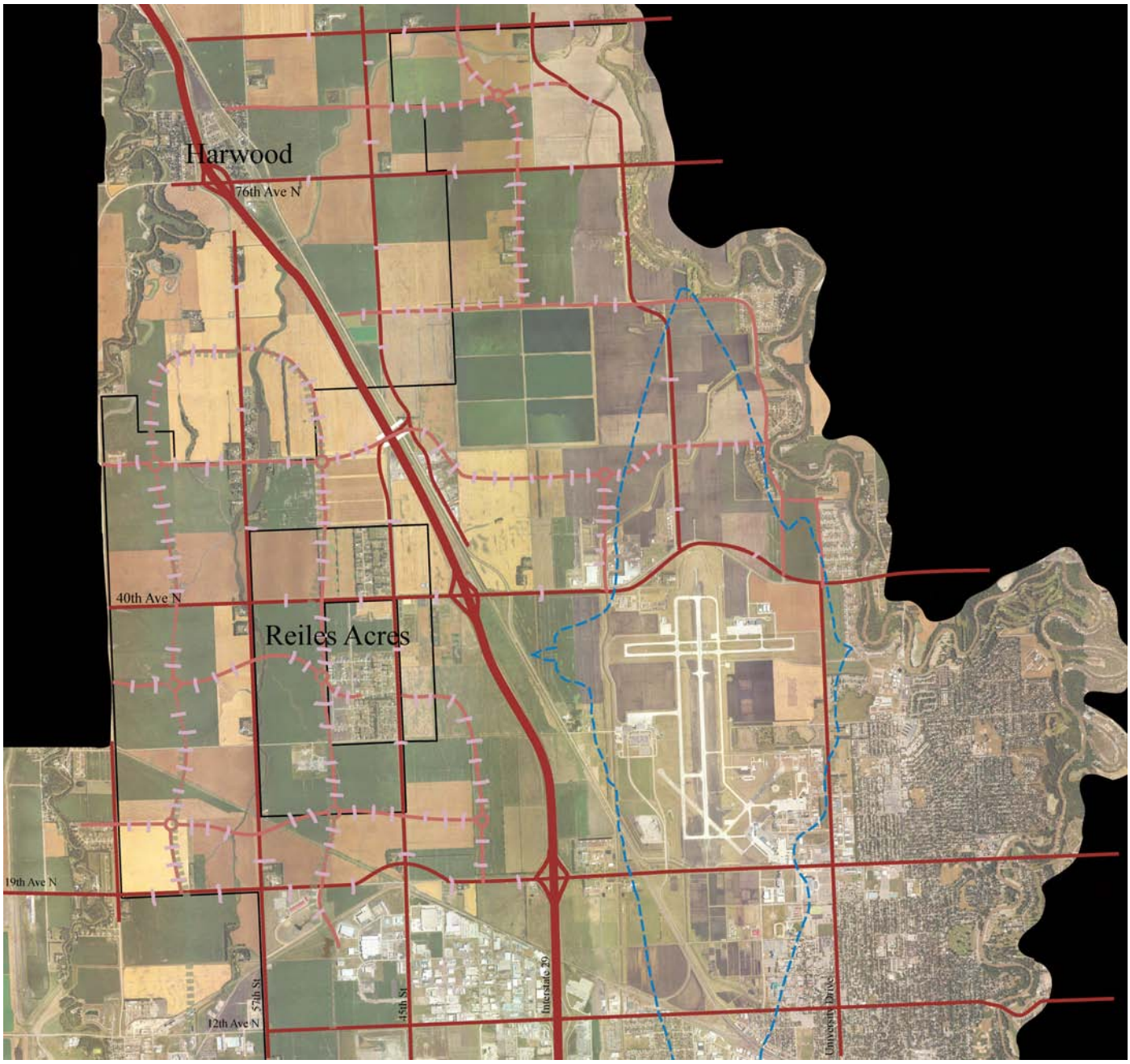
- Avoid planning residential land uses along interstate highways and major arterial roadways where ever possible.

- Plan for industrial, commercial, office, or certain public uses along interstate highways to take advantage of visibility and provide a transition between highway noise and residential areas. These uses could include public facilities such as water treatment plants or wind based power generation. Since the freeways are a prominent gateway into the city, the uses along the freeway become even more critical.

- Where residential land use is planned along arterial streets, work with developers to provide deep lots along the arterial streets and provide extra buffering as part of the development's amenity plan.

Collector Streets

The next functional road classification identified by MetroCOG and delineated in this growth plan is that of collector streets. Collector streets are more



Proposed collector streets and local intersections in the north ET area.

flexible in their location than arterial streets but it is important to identify the number and approximate location of collector streets in the growth areas of the city. Although the arterial streets carry a majority of the through traffic in any given part of the city, it is vitally important that the collector streets have a high degree of continuity across arterial roadways and other natural and man-made barriers such as rivers, drainages, and freeways. The collector street system is the secondary system for moving people throughout the city and into the countryside beyond. There are occasions when arterial streets are unable to carry the traffic they were designed for, such as during construction projects, during natural disasters or other emergencies. It is at this time that the collector street system must absorb traffic moving throughout the city.

The maps, on this page and the next, show the arterial streets (in dark red), the collector streets (in pink), and the local street intersections (in light pink). The collector streets are allowed to meander much more than the arterial streets. We have used this meandering street to better define appropriate land use areas within the growth areas of the city. The meandering street also helps to reduce the speed on the collector street system. Planners should work with property owners and developers in advance of development

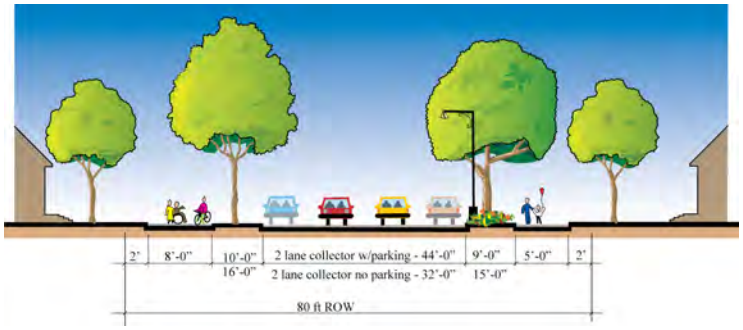
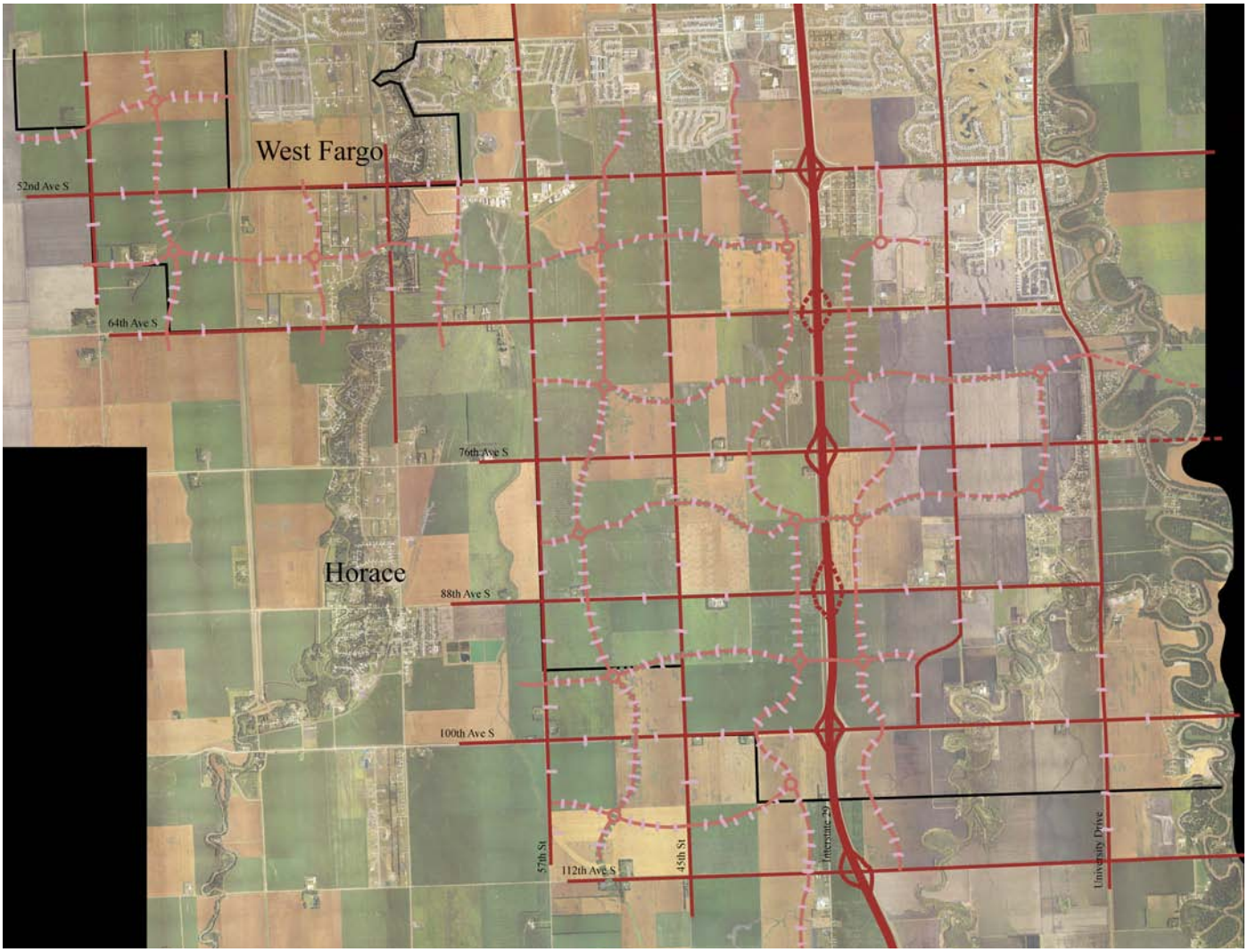


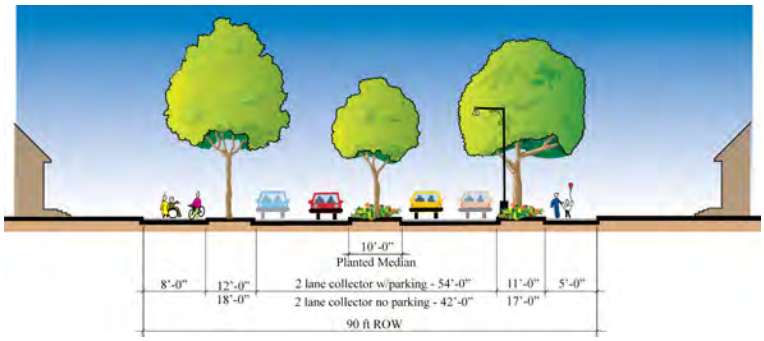
Diagram of the collector streets.



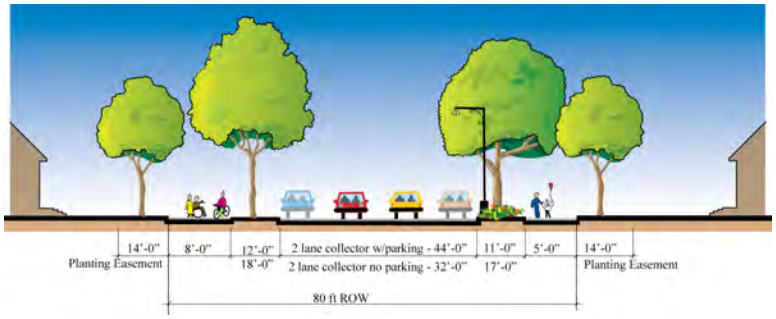
Proposed collector streets and local street intersections in the south ET area.

to communicate the planned collector roads and to foster coordination between owners of adjacent properties. The diagram of the collector streets shows some of the characteristics of collectors and establishes basic right-of-way dimensions. It should be noted that a bicycle way, in the form of a widened sidewalk, has been included on all collector streets. The collector streets have several characteristics throughout the growth areas:

- Collector streets are a slower speed system of streets providing a secondary level of connectivity throughout the city.
- The collector street system approximates a half mile grid between the arterial street system.
- Collector streets are designed to meander to slow traffic, help define land use areas more appropriately and to create a more pleasant experience for residents and visitors alike.
- Collector streets have sidewalks, boulevards, and street trees on both sides of the street to increase livability along the collectors and to encourage walkability throughout the city.
- One of the sidewalks along the collector is widened to 8 feet to accommodate bicycle movement, particularly to schools and neighborhood commercial areas.
- Collector street to collector street intersections should be developed using a roundabout. These are shown on the accompanying maps and in the adjacent diagram. Roundabouts allow traffic to move smoothly through the area with a yield at



A parkway street with trees in a planted median in the middle of the street.



A parkway street with double rows of trees on each side of the street.

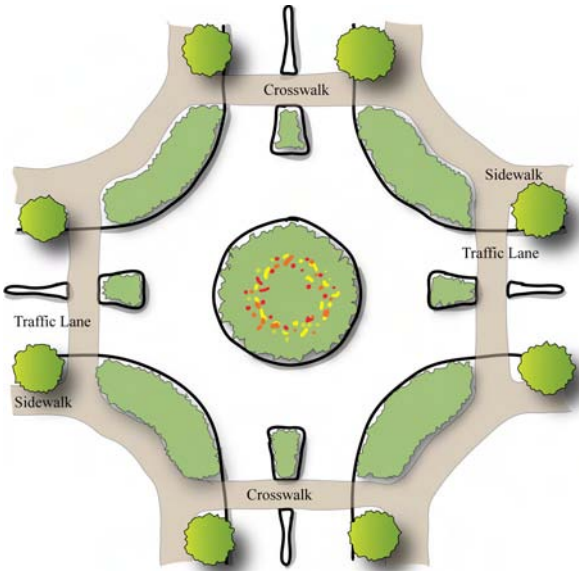
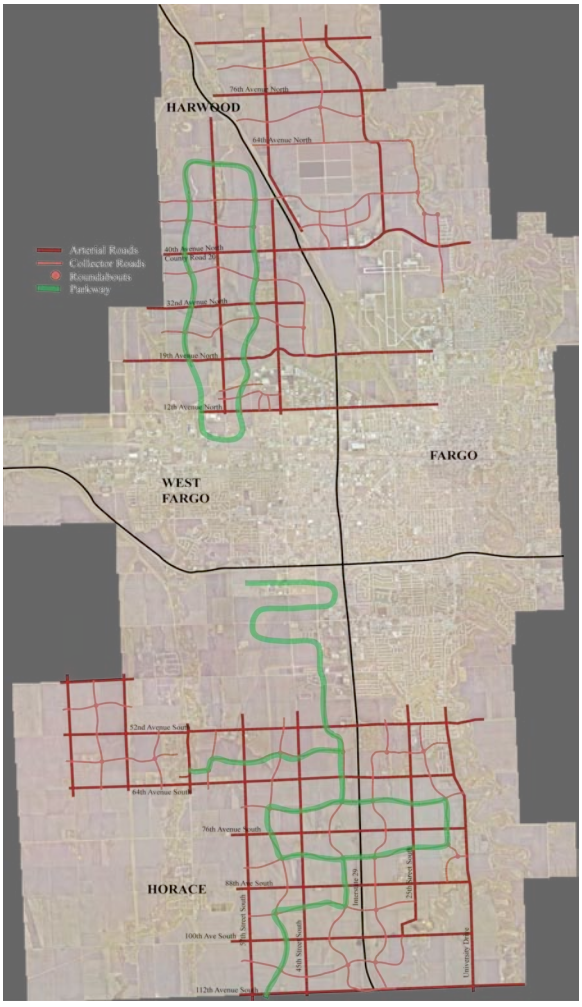


Diagram of a typical roundabout at the collector/collector intersections.

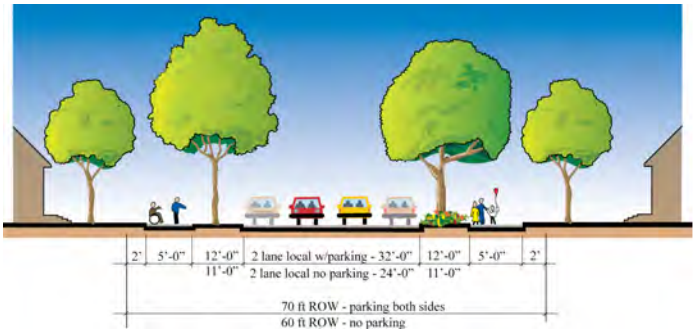


Map showing collector streets designated as parkway streets (in green).

the intersection while also slowing the speed of the traffic. Roundabouts can also enhance the walkability of the neighborhood.

A limited number of collector streets have been designated as parkway streets to provide an additional amenity to the growth areas of Fargo. Parkway streets include either a planted median with trees or a double row of trees on each side of the street. This designation provides a variation in the street design within the city and concentrates trees and greenery in areas somewhat removed from the naturally green areas of the rivers. The diagrams below illustrate the two variations of a parkway street. The top diagram shows trees planted in the middle of the street in a 10 foot wide planted median. The bottom diagram shows a double row of trees planted on each side of the street. The row of trees closest to the street are planted in the boulevard which is within the city's right-of-way for the street. The second row of trees is planted in a negotiated easement with each property owner along the parkway.

The continuation of the parkway concept into the older parts of the city should be encouraged in the future, especially as these existing roadways are replaced and updated.

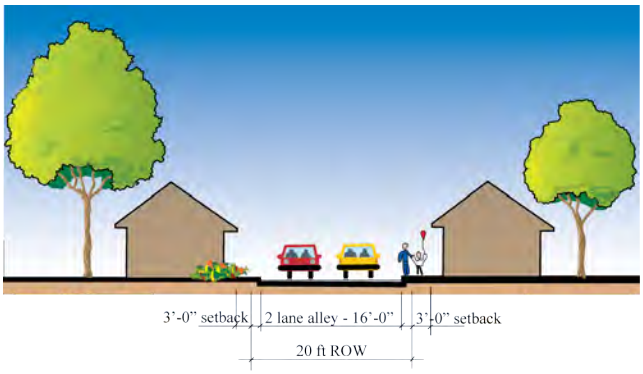


A diagram of the characteristics and dimensions of local streets.

Local Streets

The growth plan purposefully does not show the layout of local streets. Local streets are to be proposed for each individual neighborhood development and approved during the land platting approval process. The maps of the previous pages show the potential location of intersections of local streets with collectors and arterials. The number of intersections on an arterial is limited and is so indicated on the maps. These are not specific locations but indications of the number of streets and intersections anticipated.

The diagram below indicates the dimensions and characteristics of local streets. Local streets carry the smallest number of cars at the slowest speeds of any of our road classifications. All local streets should include boulevards and street trees as illustrated.



A diagram of the characteristics and dimensions of an alley

Alleys

Alleys are not defined in the Functional Classifications of the MTP. They are a tradition in the historic neighborhoods of Fargo and serve as excellent service drives as well as gathering and socializing spaces for individual blocks. Alleys are not required throughout the city but they are to be allowed in any part of the city. Recent developments have rediscovered the functionality and desirability of the residential alley. Please refer to the standards section of this growth plan for areas in which alleys may be required.

In new growth areas that do have alleys, garage access for vehicles is encouraged to be oriented toward the alley. Services should be distributed from the alleys as well.

A Safe and Sustainable City

An important part of a high quality lifestyle is living in a safe and sustainable city. Many of the planning approaches being used in

this growth plan improve safety and sustainability. Land use patterns and the connectivity of the city increase the day to day safety of our surroundings. One way to judge the safety of a city is how safe the children are in their day to day activities. If it is easy and safe for children to walk to school or walk to the neighborhood store for a quart of milk then it is safe for everyone.

As an example, single use developments, such as all single family homes, tend to have people of like background, economic level, and schedule living in them. Consequently, people tend to leave the area at the same time and return at the same time. This leaves the neighborhood devoid of people for large periods of time which is not safe. Safety is best served by having people present. People that can see that the children are getting to school and that the elderly are getting help if they need it. If the land use throughout the city is mixed then people tend to be present almost 24 hours a day making it much safer.

Sustainability is a major focus within planning and architecture here at the beginning of the 21st century. "Sustainability" in this context refers to an attitude and associated practices that keep our planet alive and viable for the future. These attitudes and practices apply to all aspects of our planet; people, animals, plants, environmental processes, etc. Many, many decisions made by planners impact our ability to sustain our culture and planet. As an example, to continue to allow our city development to sprawl across the countryside negatively impacts the city, our culture and our environment in several ways. Sprawl forces people to utilize their cars more resulting in increased pollution as well as consumption of fuel. It also isolates people from each other and increases the amount of time spent in a car rather than time engaged in more pleasurable pursuits. Sprawl forces the city to increase its development and maintenance of streets, sewers, water systems, police protection, and fire protection increasing the cost of living for everyone.

The simple act of encouraging mixed use neighborhoods with small commercial areas adjacent to residential areas can have significant impact on the sustainability of the city. Provided that residential areas are conveniently connected to the commercial areas by sidewalks and paths, residents will often choose walking or bicycling for short trips. If these connections are not made, people will still need to or choose to use their vehicles, even for short trips. The land use plans for Fargo's Growth Area reflect collector street corridors with bicycle and pedestrian facilities, as well as bikeway corridors along drainage ditches, rivers, railroad right-of-ways purchased by the Park District, and continuation of existing bikeway and pedestrian corridors that have already been established. These facilities are supported through inclusion in the Metropolitan Bicycle and Pedestrian Plan.

Whether a person has a home occupation, telecommutes, or simply is not employed outside the home, the convenience of commercial, recreational, and open space uses means these people have support services close to home. They can further their objective of enjoying the convenience of working at home because they can run their most basic errands and carry out a certain amount of business within their neighborhood.

A stay-at-home parent has more opportunities to meet other parents and go on outings with children in an environment where commercial

Sprawl in Phoenix. Fargo, unfortunately, is not much different.

A Mixed-Use project under construction in Fargo.

Neighborhood commercial in Salt Lake City.

and recreational uses are available within walking distances. In response to this, the land use plans included in the Growth Plan interspersed commercial sites throughout residential areas, and strongly encourages neighborhood commercial and office sites to be included as subdivision applications for development are considered.

Consider the fact that every time you start your car for any little errand it costs you three to five dollars. If it is easy to choose to walk to handle some of those errands it can save each individual a significant amount of money over a lifetime.

Increasing the density of development within the City of Fargo would substantially improve our economic sustainability as well as our environmental susceptibility. Increasing our residential density from the current average of 10 people per developable acre to an average of 12 people per developable acre would save approximately 1300 acres of land from the cost of development. It would also save countless gallons of gasoline use since travel distance would be shorter and the city would be more conducive to walking.

Flooding near the Wild Rice River in the spring of 2006.

Sustainability and Disaster Preparedness

Sustainability also includes acknowledgement and respect for the natural forces of our environment. Disaster preparedness is essential inorder to sustain growth in a flood prone area. Factoring for the wind and weather of Fargo is also a smart and sustainable way to develop. During the 1980s and early 1990s the majority of the southerly growth took place between the Red River and I-29. This resulted in a much more linear north/south shape of the city and began to raise concerns about providing utilities and emergency services in a long linear fashion.

By 1996, the City of Fargo had already begun to take steps toward directing growth west of I-29 and south of I-94. Roadway and utility extensions were being planned into this area. Land use planning of the area was started, and some rezoning and subdivision activity occurred.

The flood of 1997 exacerbated concerns over southerly growth between the Red River and I-29. The effects of overland flooding and river flooding combined to make this area very vulnerable. As a result of that disaster, and other concerns that the City had already tried to address, the following land use planning and development related steps have been taken to improve the City's disaster preparedness. There are certainly many other disasters that require community preparedness, however, the efforts listed below are primarily focused on flood protection since this is a predictable type of disaster, the impacts of which can be reduced through land use planning and related policies and implementation measures.

Directing Growth Based on Ability to Provide Flood Protection

One of the reasons for directing growth west of I-29 and for encouraging zoning and infill development in other more established portions of the City is that these areas are less prone to overland flooding, and less affected by Red River flooding than are the areas east of I-29. Much of the overland flooding that affected the southerly portion of Fargo during the 1997 flood was the result of breakouts of water from the Wild Rice River and the Sheyenne River south of the Sheyenne Diversion.

Fargo has approximately 3,800 acres of land either annexed or

within the extraterritorial area west of I-29, east of the Sheyenne River, south of I-94, and north of 52nd Avenue South. This land is much less prone to both overland and river flooding because water that breaks out of both the Sheyenne River and the Wild Rice River runs toward the Red River without affecting this area. There is very little risk for the area to be affected by overland flooding due to elevation features and to the fact that the portion of the Sheyenne River that lies directly west of this area is protected from flooding by the Sheyenne Diversion.

Therefore, the City's planning and engineering efforts of the mid to late 1990's focused on designing, funding, and constructing roads and utilities into this area. With a number of these projects completed by 2001 we have seen significant amounts of development interest by property owners in this area. As a response to the development pressure, this update of the growth plan has included substantial area south of 52nd Avenue South and west of I-29.

The presence of utilities and roadway corridors has encouraged growth to occur in an area that is less susceptible to both overland and river flooding. The planned levee system adjacent to the Wild Rice River also impacts the possibility of development between I-29 and the Red River, allowing for a more compact and comprehensive approach to flood protection and development.

A photograph in the Osgood development which is contained in the focused development area of Fargo.

Land Use Planning Relative to the 100 Year Flood Plain and the Floodway

The goals and objectives of this plan focus on orderly, compact urban growth rather than leapfrog development. Orderly development, growing outward from the edges of the urbanized area facilitates the City's ability to plan for and provide protection during disasters such as flooding. It is more cost effective when more property value can be protected through the use of a single flood protection project rather than smaller unconnected or temporary dikes.

There are two flood related issues currently being addressed that will affect the existing designation of the 100 year flood plain. They include the remapping of the flood plain in the Fargo-Moorhead metropolitan area, and the consideration of a flood protection channel/ levee system south of Fargo that would provide protection from overland flooding. Both of these efforts have been underway since 1997 and final decisions have yet to be made. Once the 100 year flood plain has been identified and a decision has been made regarding a southern flood protection system, it will be important to review the land use plans to determine if changes are needed.

The floodway was placed on the land use maps and extended out approximately 100 feet in each direction to set up a realistic expectation about the extent of undeveloped property along the Red River. The proposed flood protection along the Wild Rice River has also been shown on the land use maps.

Drainage ditches have also posed flooding threats within the City and its extraterritorial area. To take advantage of these corridors as open spaces and to provide space for flooding, flood protection, and future drain expansion if necessary, greenways have been shown along the edges of all official drainage ditches.

Area Wide Storm Water Retention

The City of Fargo has established a storm water retention policy that requires all developments to have either area-wide storm water