Background

In the last decade, the City of Moorhead has experienced an increase in development activity that has heightened the need to look at the future of the community and plan for growth. In foreseeing the possibility to capture the benefit of increased growth, the City made significant investments in its infrastructure systems, specifically bonding to pay for the extension of a sanitary sewer system. The local school district also contributed to the community's investment and began construction of two new school facilities in 2003. In the fall of 2003, the City of Moorhead began the public process of updating its Comprehensive Plan to articulate the vision of the community and establish the framework to implement the vision. Over 200 people participated throughout the process and the plan was adopted in the summer of 2004. The plan resulted in a community vision built around the following key principles:

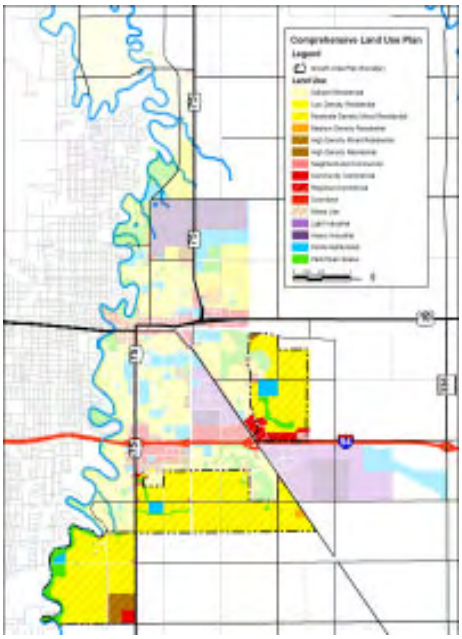
- Distinct and Diverse Neighborhoods
- Housing Variety and Adequacy
- Educational Excellence
- Park and Recreation Opportunities
- Plentiful Arts and Culture
- A Vibrant Downtown
- Retail Variety and Abundance
- A College Atmosphere
- An Enhanced Environment
- Quality Public Facilities and Services and;
- Connectivity

These principles are described in detail in the Comprehensive Plan.

Comprehensive planning takes a "big picture" look at community development. The process brushes the surface of many elements including housing, economic development, parks, transportation, community identity and others. Comprehensive planning is also a dynamic process. As areas are studied in more detail, changes to the plan are often warranted. In many cases, the Comprehensive Plan generates the idea to resolve an issue or to achieve a particular goal or vision.

Growth area planning is an initiative identified in the Comprehensive Plan. A key purpose of growth area planning is to establish a more detailed land use plan that illustrates how a larger area with multiple property owners develops to a mixed residential land use pattern with an overall gross density

Moorhead Metro Area

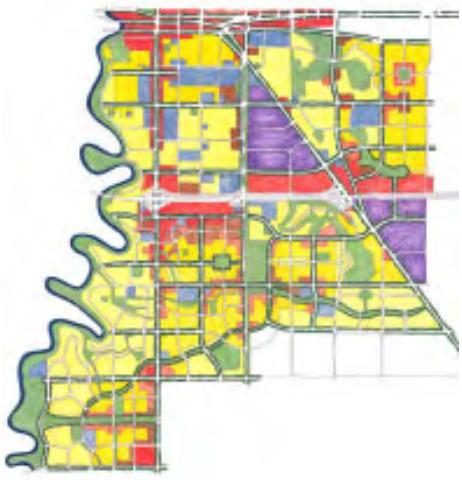


Moorhead Comprehensive Plan

Mixed Residential is a land use pattern identified in the Comprehensive Plan that is intended to encourage creative design patterns that integrate a variety of housing types, styles and price ranges. The Mixed Residential land use category strives to achieve a gross density of 5 units per acre.

The master planning process included meetings with property owners and developers on two occasions to gain insights into development interests.

Open Space Diagram



Concept Alternative

of 5 units per acre. This master plan illustrates a detailed land use pattern that generally achieves the 5 unit per acre target for each master plan district. Additionally, the Growth Area Plan matches these detailed land uses with appropriate levels of open space and needed infrastructure (sanitary sewer, storm water, transportation, etc.) to ensure that infrastructure systems are capable of meeting future growth demands.

Process

General directions for planning were established through the recently completed Comprehensive Plan, storm sewer plans, utility infrastructure plans, and regional transportation plans as provided by Metro COG. A kick-off meeting was held with staff from various agencies including the City of Moorhead, Clay County, Metro COG and Moorhead Public Service to fully understand the directions established within these plans and how they should influence the Growth Area Plans. Future service needs and development issues were identified at this meeting.

In conducting the Growth Area Plans, it was imperative that affected property owners and the development community both were integrally involved throughout the process. One-on-one meetings were held with property owners and prospective developers on two occasions. First, input was sought prior to any plans being drafted. The purpose of this was to inform property owners and developers of the initiative, get an idea of what individual property owners envisioned for their parcels and to understand property owners and developers constraints based on entitlements and on market place forces. The second set of meetings conducted was to present various alternatives and gain feedback and review of the alternatives. Using this information, a final master plan was generated and evaluated by City engineers to determine consistency with sanitary sewer and stormwater management facilities needs. Traffic modeling based on the final master plan was conducted through Metro COG to ensure that future transportation system impacts are fully understood and that future transportation infrastructure improvements can be adequately planned for.

Purpose

There are four key purposes of the Growth Area Plans.

1. to establish a more detailed land use plan that achieves the vision elements of the Comprehensive Plan and serves as a guide to developers
2. to identify a logical system of major roadways connecting growth areas of the community

3. to establish a network of park and open spaces that link neighborhoods, provide a landscape amenity, and offer passive and active recreation areas
4. to identify a system for storm water management facilities that serves as an amenity and an asset to the neighborhood

Relationship to the public realm

The Growth Area Plans are to serve as a road map guiding improvements in the public realm: streets, stormwater infrastructure, community or regional park facilities and the greenway infrastructure. What is illustrated in the Growth Area Plan for major roads (arterials and collectors), stormwater systems and park and open space systems is expected to reflect what will be built. The successful evolution of this area from farm fields to neighborhoods depends greatly on the commitment of the City to implement improvements to the public realm.

Relationship to the private realm

Each growth area contains a preferred master plan that illustrates a desired land use pattern. This land use pattern achieves the general densities identified in the Comprehensive Plan (5 units per gross acre) and fosters a greater mix of housing types. The land use pattern is designed to implement the many policies outlined in the Comprehensive Plan. Private development proposals are expected to achieve a design pattern consistent with the master plan. Some variations between proposed developments and the master plan are expected, however; development plans should still reflect approximately the same total unit count and general mix of housing types as envisioned by the master plan. If development plans differ from the master plan, they should be evaluated based on their application of the design principles, consistency with Moorhead's vision as outlined in the Comprehensive Plan and impact upon the City's infrastructure systems. The design principles are provided in order to reinforce the elements that comprise great communities.

Applicability

The Growth Area Plans are a direct outcome of the Comprehensive Plan and as such should be treated with the same controls as the Comprehensive Plan. When evaluating future development proposals, the Comprehensive Plan refers to the directions as provided in the Growth Area Plans. Future zoning actions should be based on the detailed land use patterns illustrated in the growth area plans. When evaluating the details of subdivision or plat designs, consistency with the design principles should be noted.

Growth Area Master Plan

The Growth Area Master Plan provides a framework for future development and supports the goals and objectives established in the City of Moorhead Comprehensive Plan. Fundamental qualities for new growth patterns established in the Master Plan include the following:

- Create pedestrian-friendly street networks that directly connect neighborhood destinations
- Create an accessible and integrated system of open spaces, parks and parkways
- Provide a mix of housing types, densities and costs
- Plan for growth on a regional level to be compact, diverse and transit supportive
- Create identifiable districts and centers
- Locate commercial, housing, jobs, parks and civic uses within walking distance of each other in neighborhood and community centers

Land uses have been carefully located within each district to include a mix of uses. In some cases the uses are concentrated along major transportation routes and near active open spaces to create a neighborhood or community center with greater diversity and density. These mixed-use centers contain a variety of land uses located within walking distance of each other. In other instances, land uses have been adjusted to lower densities and less use diversity to reflect a different neighborhood character. These areas are typically located along local street networks and key open spaces.

Road patterns have been established to be compatible with existing road patterns, to provide efficient movement and promote greater connectivity between land uses. Where opportunities exist, roadways have been integrated with open space systems in the form of parkways and greenways, or linear parks.

Parks and open spaces have been planned to provide the growth areas with an integrated hierarchy of open spaces, parks and parkways. Parks are well distributed throughout the growth districts and provide a variety of sizes, types and functions. Storm water systems should be well integrated with the open space system.

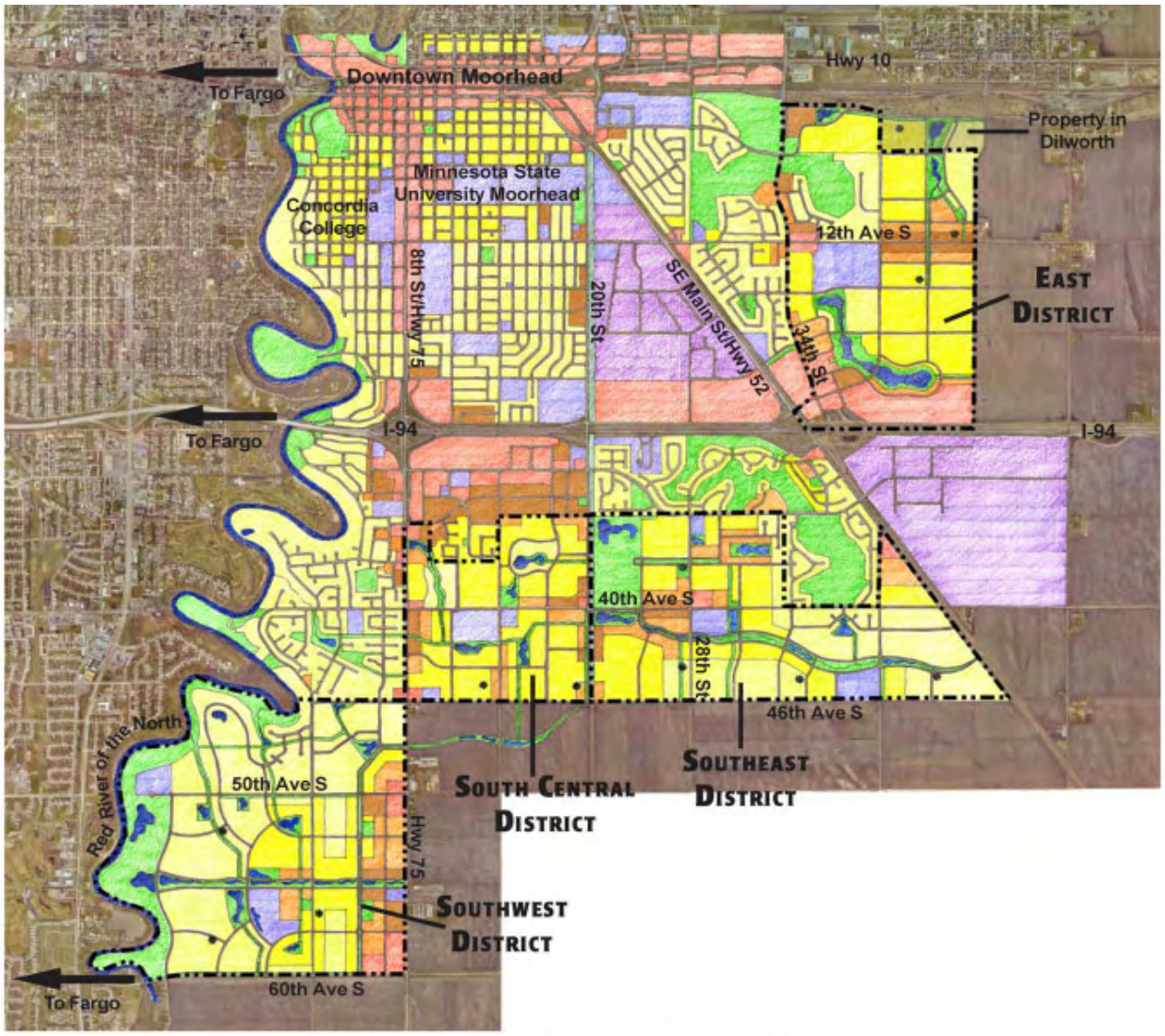
Development Summary

Master Plan Land Use	Acres
Low Density Residential	1,025
Low-Medium Density Residential	1,137
Medium Density Residential	330
High Density Residential	136
Commercial	90
Office	64
Public/Institutional	192
Park and Open Space	739
Grand Total	3,713

At full build out, the Growth Area Master Plan will result in an estimated 38,300 residents in roughly 16,400 new housing units.

This development pattern will result in a gross density of approximately 4.43 units per acre.

All but a portion of the Southwest District Growth Area is within the existing planned service boundary (current as of 2004). Approximately 31,300 residents can be accommodated in the service area with an additional 8,000 beyond the service area.



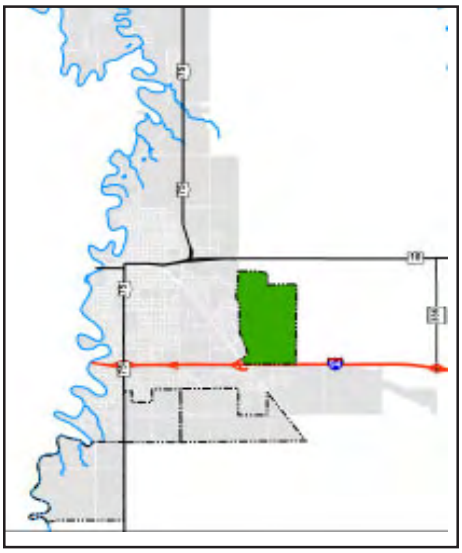
Moorhead Growth Area Plan

- 0-4 Dwelling Units Per Acre
- 3-5 Dwelling Units Per Acre
- 6-12 Dwelling Units Per Acre
- 12 + Dwelling Units Per Acre
- Commercial
- Public/Institutional
- Industrial
- Parks and Open Space
- Stormwater Ponds
- Neighborhood Park/Tot-Lot
- Growth Area District Boundary

HK Si Hoisington Koegler Group, Inc. December 6, 2004

NT

0 0.25 0.5 0.75 1 Miles



District Key Plan

Buildout of the East District Growth Area would result in a population increase of 9,400 and roughly 4,030 new households.

Gross Density in the East District is 4.80 units per acre.

East District Growth Area

Land Uses

Land uses located in the East District Growth Area consist of a mix of uses and densities. More intense land uses and densities are concentrated along Interstate 94 within the southern portion of the district, and along 34th Street South along the western edge of the district. Another area of higher density residential development is concentrated along 12th Avenue South near the existing Horizon Middle School site.

Due to good visibility and easy vehicular access, the area surrounding the intersection of 34th Street South and I-94 is planned for regional commercial and high-density residential uses. For similar reasons, the intersection of 34th Street South and 12th Avenue South is planned for commercial and higher density residential development.

A middle school serving the greater community and surrounding neighborhoods is located along 12th Avenue South just east of 34th Street South. Good access is provided to the school site. Higher density residential uses along 12th Avenue South east of Horizon Middle School, are consistent with the increased traffic expected due to school activities and surrounding residential neighborhoods. Residential densities transition from higher densities to moderate densities north and south of 12th Avenue South.

Large areas of moderate-density residential development are planned with the exception of a couple of sites: lower density residential is planned for the land adjacent to the central open space just south of the school site; and lower density residential areas are desired adjacent to and east of the golf course and to the very northeast of the East District Growth Area.

Development Summary

East						
Master Plan Land Use	Acres	Total Households	Multi-family HH	Single-family HH	commercial square footage	Total employment
Low Density Residential	84	338	-	338	-	-
Low-Medium Density Residential	358	1,792	358	1,433	-	-
Medium Density Residential	82	983	491	491	-	-
High Density Residential	51	1,020	1,020	-	-	-
Commercial	35	-	-	-	383,655	389
Office	64	-	-	-	696,089	2,579
Public/Institutional	54	-	-	-	350,157	275
Park and Open Space	112	-	-	-	-	-
Grand Total	840	4,132	1,870	2,262	1,429,901	3,242

Parks and Open Space

Two large central open space areas are planned for the East District Growth Area. The Horizon Shores project, planned for the southern portion of this district, is centered on a large, naturally shaped open space and lake feature.

Development to the east of the district will also be centered on a large open space and chain of ponds. A proposed north/south parkway street could potentially link the two large open space systems.

The property located to the north of the golf course also includes a park and pond site. This open space parcel is connected to the larger park and open space to the east by a 50 foot gas line/landscape easement running along 4th Avenue SW.

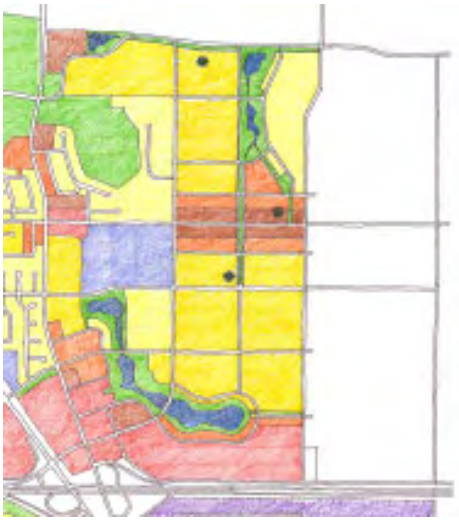
Streets

The road network is primarily on a grid layout except for the areas where 34th Street South and I-94 converge (the grid turns to become square with 34th Street South), and to the northeast of the district in the lower density residential area. Major redesign and reconstruction of the intersection at I-94 and 34th Street South is planned for in the Growth Area Plan. 34th Street South will be a minor arterial running north and south, while 12th Avenue South will become a collector street east of 34th and provide for east/west movement from this district to the downtown core. A central parkway spine running north and south has the potential to connect the two major open space sites.

Storm Water Drainage

A chain of storm water detention ponds are well integrated with parks and open space sites and are also concentrated within the two large central parks. The northwest area of the district also contains a storm water pond.

East District Growth Area - Vignette Study

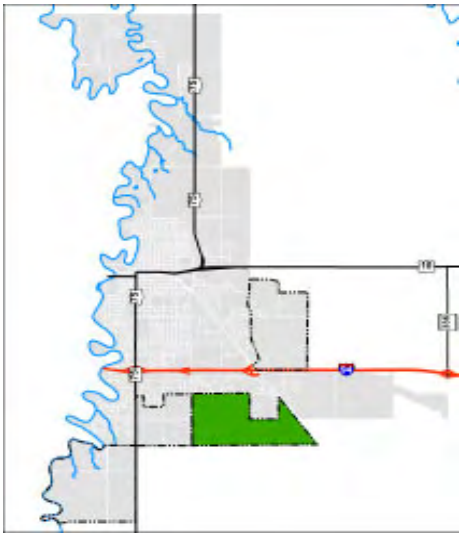


East District Growth Area

Horizon Shores Concept Plan

A public greenway/open space spine serves as a storm water infrastructure system central to development and an attractive parkway extending south, connecting to Horizon Shores.

A good example of "mixed residential" is illustrated above. This vignette illustrates a mix of apartment, condominiums and rowhouse or side-by-side townhome type units in a medium density (6 to 12 units per acre) and high density (12 + units per acre) configuration.



District Key Plan

Buildout of the Southeast District Growth Area would result in a population increase of 10,200 and roughly 4,400 new households.

Gross Density in the Southeast District is 4.45 units per acre.

Southeast District Growth Area

Land Uses

Land uses located in the Southeast District Growth Area consist of a mix of uses and densities. More intense land uses and densities are concentrated along 40th Avenue South at 28th Street South, along 20th Street South and the rail line, along the proposed parkway where it meets a large 80-acre regional park, and extended eastward to Highway 52 southeast.

A mixed-use center is envisioned near the intersection of 40th Avenue South and 28th Street South. The southeast quadrant of that intersection anticipates a civic use (church), and a neighborhood commercial site is anticipated for the northeast quadrant. West of 28th Street South, the center will include high density residential transitioning into medium density residential on both the north and south sides of 40th Avenue South.

Medium and moderate density residential uses are planned along the parkway for much of the district. Lower density residential areas are located further away from the mixed-use center, along 50th Street South to the south and near Highway 52 to the east.

Other civic uses anticipated within the district include another church site located at 28th Street South and Village Green Boulevard, and another civic site in the southeast quadrant along 50th Avenue South. This site has good access and is located along the proposed parkway.

Parks and Open Space

The Southeast District Growth Area contains a variety of park and open spaces. A proposed 80-acre regional park would run north and south adjacent to the rail line. This park would be anticipated to help offset the potential

Development Summary

Southeast Master Plan Land Use	Acres	Total Households	Multi-family HH	Single-family HH	commercial square footage	Total employment
Low Density Residential	317.5	1,270	-	1,270	-	-
Low-Medium Density Residential	284.2	1,421	284	1,137	-	-
Medium Density Residential	100.6	1,208	604	604	-	-
High Density Residential	24.1	483	483	-	-	-
Commercial	9.3	-	-	-	101,604	103
Office	-	-	-	-	-	-
Public/Institutional	48.4	-	-	-	315,984	248
Park and Open Space	200.0	-	-	-	-	-
Grand Total	984.1	4,381	1,371	3,010	417,588	351

loss of some soccer fields currently located just to the north of I-94. In addition to active recreational uses, this park is anticipated to be balanced with passive park amenities.

Smaller, neighborhood parks and 'tot lot' parks are distributed throughout the district to support neighborhood needs.

A planned linear park/parkway will connect neighborhoods with parks and the mixed-use center. The parkway will gather storm water runoff and utilize detention ponds and, as envisioned, will also include bike and walking trails. The regional plan for the parkway is to ultimately connect several neighborhoods to the Southwest District and to the river park system.

Southeast District Growth Area

Streets

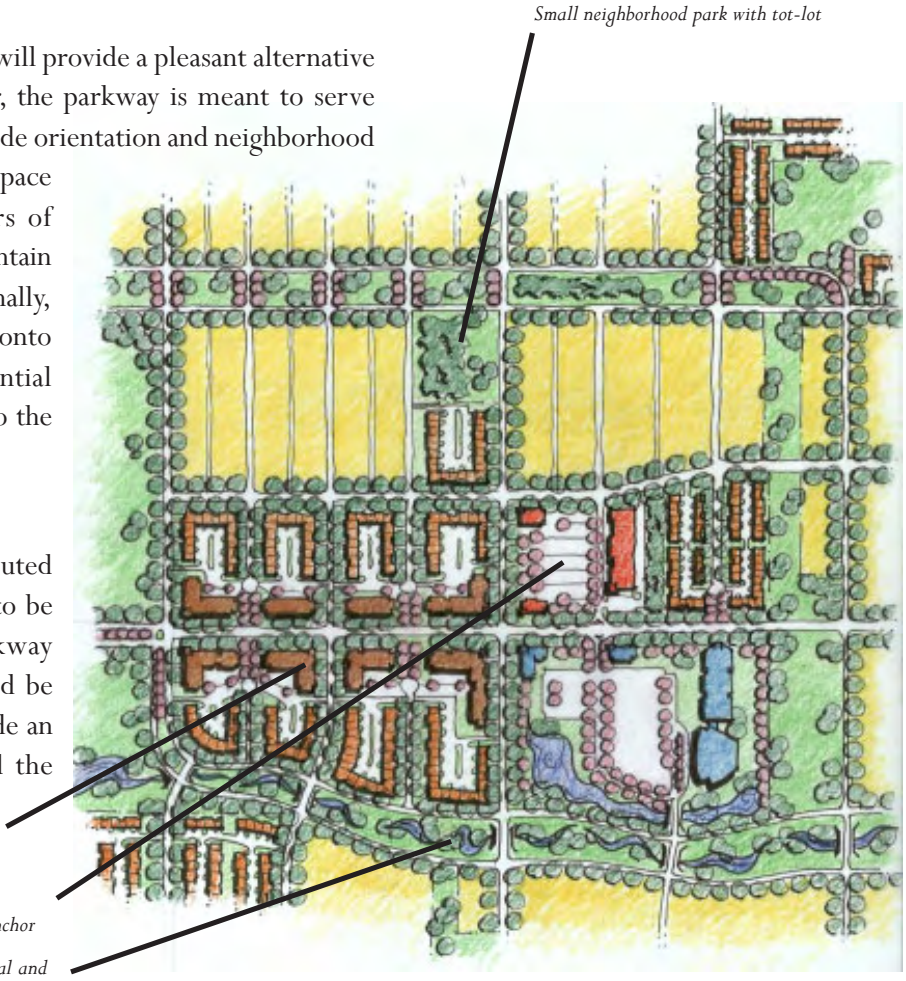
20th and 28th Streets South, along with 40th Avenue South, carry the highest levels of projected traffic in the district. Due to this fact, higher intensity development is concentrated along these corridors with a mix of uses intended to form a neighborhood center planned for the intersection of 28th Street South and 40th Avenue South.

The major parkway running east and west will provide a pleasant alternative to 40th Avenue South. As a local collector, the parkway is meant to serve primarily neighborhood residents, to provide orientation and neighborhood identity, and to play a key role in the open space system by connecting parks and centers of activity. In addition, the parkway should contain a chain of storm water detention ponds. Finally, a minimum of 30% of the lots must front onto the parkway, while other areas of residential development will be allowed to back up to the parkway.

Storm Water Drainage

Storm water drainage facilities are distributed throughout the district and are intended to be incorporated within the park and parkway system as much as possible. Ponds should be designed to be naturally shaped and provide an amenity for both the neighborhood and the greater community.

Southeast District Growth Area - Vignette Study



District Key Plan

South Central District Growth Area

Land Uses

Land use in the South Central District Growth Area consist of mixed-uses and varying densities. Small commercial sites are planned for at three intersections – two along Highway 75 and another at 20th Street South and 40th Avenue South. Higher density residential uses are planned for along Hwy 75 and 20th Street South, particularly where these two roadways intersect with 40th Avenue South.

Civic uses planned for this district include SG Reinertsen Elementary School, which exists at the center of this district along 40th Avenue South. Across the street from the school is a church site. Just to the north of the church site is a park. The need for a future fire station house is anticipated and located near the intersection of Hwy. 75 and 46th Avenue South.

Moderate single-family residential density uses are predominant within the district, however, two areas are planned for lower density residential – along an open space greenway in the northwest section of the district and surrounding a pond in the northeast section of the district.

Parks and Open Space

Parks and open spaces within the South Central District are neighborhood scale parks connected by public greenways. It is intended that these greenway features would maintain some form of public easement for maintenance and drainage needs.

The northwest section of the district contains a linear park bounded by lower density residential uses.

The northeast section of the district contains a park located at the intersection of 40th Avenue South and 14th Street South. This park is connected to a pond/park feature by a public greenway. The park/pond feature is surrounded by lower density residential uses. A greenway feature then connects the pond to 20th Street South and a future bikeway.

The areas south of S.G. Reinertsen Elementary School contain two neighborhood parks. Each contains storm water ponds and are connected by the public greenway. The two quarter sections to the south of this district contain a future extension of the parkway system, however, no land uses are planned for these quarter sections at this time as they are outside of the existing service area.

Streets

Streets in the South Central District are consistent with existing road patterns. Generally, they are organized in a grid pattern with a couple of exceptions. The roads in the northeast quarter section of the district break from the grid to circle a proposed pond and park site.

The district is bound on east and west edges by arterials and on the south by a collector street. Highway 75 South, an arterial street, is located along the west edge of the district and carries heavy volumes of traffic. 20th Street South, another arterial borders the east edge of the district. The major east/west route through the site is 40th Avenue South. 46th Avenue South, a collector street running east/west borders the south edge of the district. Highway 75 South, 20th Street South and 40th Avenue South should be improved with streetscape treatments, including boulevard trees, landscape plantings, lighting, furnishings, etc.

South Central District Growth Area

The parkway concept extends south from 40th Avenue South along the west side of 20th Street South. This green strip represents an enhanced streetscape or median.

Storm Water Drainage

A series of storm water detention ponds are well integrated with parks and parkways within the district and should support the detention needs of each neighborhood. The landscape easements should be utilized as much as possible to collect storm water runoff and divert the runoff to ponds in surface swales.

Buildout of the South Central District Growth Area would result in a population increase of 6,750 and roughly 2,900 new households.

Gross Density in the South Central District is 5.39 units per acre.

Development Summary

South Central						
Master Plan Land Use	**Acres**	**Total Households**	**Multi-family HH**	**Single-family HH**	**commercial square footage**	**Total employment**
Low Density Residential	40.5	162	-	162	-	-
Low-Medium Density Residential	298.8	1,494	299	1,195	-	-
Medium Density Residential	63.6	763	381	381	-	-
High Density Residential	23.9	479	479	-	-	-
Commercial	10.1	-	-	-	109,445	111
Office	-	-	-	-	-	-
Public/Institutional	36.1	-	-	-	235,681	185
Park and Open Space	64.5	-	-	-	-	-
Grand Total	537.4	2,897	1,159	1,738	345,126	296

District Key Plan

Buildout of the Southwest District Growth Area would result in a population increase of 11,760 and roughly 5,050 new households.

Gross Density in the Southwest District is 3.74 units per acre.

Southwest District Growth Area

Land Uses

Land uses located in the Southwest District Growth Area consist of a mix of uses and densities. More intense land uses and densities are concentrated along Highway 75 South and internal to the district along a proposed linear greenway/parkway.

Due to good visibility and access, and consistent with the Comprehensive Plan, the corridor along Highway 75 South between 50th Avenue South and 60th Avenue South is planned for a mix of uses and higher density residential. The intersections of 50th Avenue South and 60th Avenue South along Highway 75 South are planned for commercial/retail use. The intersection at 50th is envisioned as a neighborhood retail center. Commercial development at the intersection at 60th Avenue South is seen as a community retail center that may be able to draw a customer base from the larger region due to its proximity and access to Fargo.

Adjacent to the two centers, the Growth Area Plan calls for more dense residential development, each centered on a neighborhood park. Between the two centers an east/west parkway runs along an existing power line easement. Higher density residential and civic sites are located along this central greenway spine. Civic uses planned for this district include a potential school site adjoining the central greenway at the center of the district. Adjacent to the school site is a medium density area.

The west portion of the district yields to lower density residential uses, responding to greater floodplain concerns closer to the river.

Development Summary

Southwest						
Master Plan Land Use	Acres	Total Households	Multi-family HH	Single-family HH	commercial square footage	Total employment
Low Density Residential	582.7	2,331	-	2,331	-	-
Low-Medium Density Residential	196.1	980	196	784	-	-
Medium Density Residential	83.6	1,003	501	501	-	-
High Density Residential	36.7	733	733	-	-	-
Commercial	35.6	-	-	-	387,684	393
Office	-	-	-	-	-	-
Public/Institutional	54.3	-	-	-	354,666	278
Park and Open Space	362.0	-	-	-	-	-
Grand Total	1,350.9	5,047	1,431	3,617	742,350	671

Parks and Open Space

The Southwest District contains a diverse set of parks and open space sites equally distributed throughout the district. The largest of the parks is a proposed regional-scaled park located along the river. This large park contains the potential Trollwood perfomring arts center with additional land area for passive and active recreation uses.

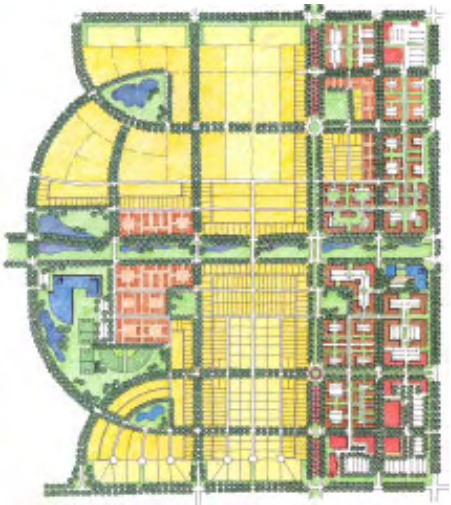
This regional park connects to neighborhoods to the east via the linear greenway/parkway spine along the existing power line easement. The linear open space is generous enough in size to accommodate the 80 foot power line easement, linear ponds and trails along the corridor. It is also a potential site for the collocation of a needed future transmission line for Moorhead Public Service.

Smaller, neighborhood parks are located central to residential neighborhoods and connected to the parkway system directly or by way of public greenways. These parks may contain 'tot-lot' play areas and should function as active and passive gathering areas for nearby residents.

Streets

The street system in the Southwest District is compatible with existing road patterns and proposed land uses. The roads on the east side of the district, where more intense land uses are planned, are organized on the grid system for more efficient movement of higher traffic counts. To the west, where uses are not as mixed and densities are lower, the road system loosens up from the grid pattern.

The parkways that intersect with each other in the district are important connector roads and will play a significant role in shaping and defining different neighborhoods within the district. They are intended to be faced with lots as much as possible to create a unified streetscape effect along the parkways. A minimum of 30% of the lots should front onto the parkway.



Storm Water Drainage

A series of storm water detention ponds are well integrated with parks and parkways within the district and should support the detention needs of each neighborhood. The parkways and landscape easements should be utilized as much as possible to collect storm water runoff and divert the runoff to ponds in surface swales.

Southwest District Growth Area

Enlargement illustrating a linear greenway central to development serving neighborhood park needs and storm water drainage.

Enlargement illustrating a mixed use center at the corner of Highway 75 South and 60th Avenue South. Community commercial fronts Highway 75 and 60th and is separated from lower density by an attractive parkway with street furniture and boulevard trees.

Southwest District Growth Area - Vignette Study illustrating the mixed-use center in the context of a larger development pattern. An east/west greenway along a power line easement provides an attractive connection to the Red River of the North with a potential school site adjacent to the greenway.

Design Principles

The following principles are intended to provide guidance for various levels of planning and design within the growth area districts identified for the City of Moorhead. The objective of these principles is to provide continuity to the design and patterning of urban systems including roadways, trails, parks and open space, infrastructure and land use development, whether mixed-use or residential. They should be viewed as a tool to guide future development in the City of Moorhead, consistent with the vision and goals established within the Comprehensive Plan.

The design principles focus on the five major components of future development anticipated within the future growth areas – mixed-use centers, residential areas, parks and open space, streets and trails, and storm water drainage systems.

Mixed-Use Centers

- Provide commercial, civic, employment and residential uses.
- Centers should be served by arterial and collector streets.
- Design centers to be pedestrian-friendly.

Residential Areas

- Provide a range of densities consistent with the Growth Area Master Plan densities.
- Locate higher densities near mixed-use centers and busy streets.

Parks and Open Spaces

- Provide a variety of park types and sizes throughout the growth areas.
- Provide connectivity between parks and open spaces.

Streets and Trails

- Provide a street network that is compatible with existing roadways.
- Provide pedestrian sidewalks and bike trails within the street ROW and within the public greenways.

Storm Water Drainage Systems

- Integrate the storm drainage systems with open space and street systems.

Storm Water Drainage

Storm water runoff is anticipated to increase as development proceeds into the growth areas. Where possible, storm water should be kept on the surface and treated on-site to reduce expensive storm drainage system costs. Storm water drainage systems are encouraged to be integrated with the open space system to create a valuable amenity for neighborhoods.

Retention and detention ponds should be treated as potential neighborhood amenities by utilizing organic patterns in their design and integrating them with parks and open spaces. Landscape corridors and parkways that meander through neighborhoods and contain storm water systems are encouraged.

The storm water systems within the master plan were designed consistent with the engineering parameters established by the South Moorhead Storm Water Management Plans completed in 2004 by Houston Engineering. The storm water detention facilities will provide the required runoff detention for anticipated future development as envisioned in the Master Plan. The proposed layout of the ponds are still conceptual and shall be adjusted as necessary for future development planning. The Master Plan illustrates enough storm water capacity designed to handle a 100 year 24 hour event, or 5.26 inches of rain in a 24 hour period.

Create neighborhood amenities with storm water

Integrate storm water ponds with open space

Parks and Open Space

Provide regional parks for active and passive recreation

Parks and open spaces bring tremendous amenity value and identity to our neighborhoods and the community as a whole. As quality of life issues become more important when people decide to settle into the City of Moorhead, parks and open spaces become critical to planning within the growth areas. Major parks and open space corridors provide neighborhood identity, social and recreation sites, wildlife habitat and trail connections to destinations within the community. Parks, parkways and open spaces can shape and enhance growth area development. They are an important consideration in the planning of future development within the growth areas.

Location, Size and Frequency of Parks and Open Spaces

Parks and open spaces should be distributed throughout the growth areas and serve a variety of purposes. A system consisting of large open spaces, community and neighborhood parks, plazas and parkways is envisioned within the growth areas.

Natural open space areas provide wildlife habitat

Major passive open spaces should be located where natural features can be conserved, such as along the Red River valley corridor. These areas can provide the community with large, passive recreational spaces and important wildlife habitat. Parks and plazas should provide a public focus area for each neighborhood. They provide the places for social gathering and recreational activity within the community. Parkways play an important role in shaping neighborhoods and should be considered a key component to the park and open space system.

Parks must be accessible by foot and bicycle within each neighborhood to promote walkable neighborhoods and greater use of the park system. Small (1-4 acre) parks should be located within short walking distance from each residence. These parks may contain active and passive uses and are great sites for neighborhood "tot-lot" play areas. Medium-sized (5-10 acre) parks should be located near schools and mixed-use centers. These parks may contain more active recreational facilities such as baseball and soccer fields. Village greens, squares or plazas may be used to create a prominent public space within mixed-use centers. The character of these open spaces should vary based on size, purpose and specific functions of the spaces.

Village greens or squares provide places for social gathering

Connectivity

Parks and open spaces provide tremendous amenities for neighborhoods. They become even more valuable if they are connected to each other and other community destinations by means of trails and greenway corridors.

Ideally, the park and open space system should be well integrated with the street system. Parkways provide an ideal form of connecting parks and open spaces with neighborhood centers and major transportation corridors (bikeways/roadways). A comprehensive system of bike and walking paths should be integrated along linear parks, parkways and open spaces to encourage alternate modes of transportation throughout the community.

Major civic facilities, parks and schools should be connected by linear parkways, open spaces and trails.

Design Criteria

Parks should be designed to contain both active and passive uses and to accommodate anticipated levels of intensity of use. They should be designed to provide comfort, safety, and an interesting place for neighbors to gather and participate in active recreation.

Natural features provide visual relief and establish a unique character for the community. Sensitive environmental features, such as the river corridor, should be conserved for open space and wildlife habitat. Fencing and piping of creeks, streambeds, ditches and ponds should be avoided and channelization should be minimized.

Community buildings and civic facilities should be located near or adjacent to parks, parkways and open space systems.

Integrate storm water with open space

Fredrick Law Olmsted and the Boston Park System. Zaitzevsky

Design an integrated park and open space system

Linear parks connect open spaces

Residential street character

Design pedestrian-friendly streets

Provide street trees and sidewalks

Minimize setbacks

Streets and Trails

The City of Moorhead has an established hierarchy of street types based on carrying capacity, road widths and design speeds. Each street type also has certain cross sectional requirements and desired character traits. The proposed pattern of primary and minor arterials and collector streets within the growth areas should work with existing road patterns and enhance new neighborhood growth. A connected roadway system that limits dead ends is encouraged throughout the growth areas. Integration with the park and open space system is also encouraged to connect the open space system with other land use destinations.

Streets should capitalize on view corridors, surrounding land uses and help to orient residents and visitors. Wherever feasible, shade trees should be required on streets. Tree species and planting techniques contribute to a unified street identity, provide a continuous canopy and protect the pedestrian by providing a natural barrier between moving traffic and pedestrians. Sidewalks should also be required on both sides of all streets to encourage pedestrian activity.

With the exception of arterial streets, all other streets are encouraged to include on-street parking. In addition to providing much needed parking supply, on-street parking tends to slow traffic, create more street activity and protect pedestrians from moving traffic.

Intersections should be designed to provide safe and visible pedestrian crossings and reduce accidents. Intersection design that reduces the pedestrian crossing distance is encouraged.

The following is a breakdown of the various street and trails anticipated and their characteristics.

Arterial Streets

Arterial streets are intended to allow for the efficient conveyance of cars for regional traffic. The appearance of transportation corridors or streetscapes along arterial streets contributes greatly to the community image. The desire to provide a good community image emphasizes the need to design arterials with canopy trees, enhanced landscaping, lighting and banner poles at gateways, and bikeway lanes. As indicated in the Comprehensive Plan, key streets that may be candidates for streetscape improvements include Highway 75, 34th Street and Main Avenue SE. As a result of the Growth Area Plan study, 20th Street South and 40th Avenue South (east of Hwy. 75) were identified as good candidates for improved streetscape treatment.

Collector Streets

Collector streets are designed to carry moderate levels of local traffic smoothly, yet maintain compatibility with bicycle and foot traffic. Collectors connect mixed-use centers with other local destinations. On-street parking should be provided where feasible to calm traffic, particularly through mixed-use center areas where pedestrian traffic is encouraged. Collectors should also include bicycle lanes and become primary routes for bike traffic.

In certain circumstances, home sites should be allowed to front on collectors to minimize the walling off of collector streets from neighborhoods. Many 'Grand Avenues' across America are fronted by beautiful homes. In many of these instances, these become streets that entire neighborhoods identify with such as, Summit Avenue in St. Paul, Minnesota. When this is achieved, driveway cuts need to be minimized by providing alley access to garages behind the homes.

Parkways

Parkways are unique types of streets that are a combination of roadway and linear park space. Many great cities contain parkways of unique distinction. They tend to become landmarks and corridors that help to shape and enhance surrounding neighborhoods. Parkways may be fronted with homes across the street or may back onto home sites. Minnehaha Parkway in Minneapolis, Minnesota is a good example of this, where both conditions are realized. Parkways are envisioned to be an integral component of the open space system within the Growth Area Plan.

Parkways provide neighborhoods with a valuable natural amenity and connect parks, open spaces, mixed-use centers and areas of higher density residential development. They should include trails and bike paths whenever feasible. They should also integrate storm water runoff swales and ponds when possible to reduce infrastructure costs of storm drainage systems.

Local Streets

Local streets are designed to carry low volumes of local traffic. Where feasible, local street widths should be minimized without compromising safety, on-street parking, bike access and/or snow storage capacity. Narrower streets slow traffic and reduce accidents. They also tend to reduce infrastructure costs, which can in turn be allocated for pedestrian amenities. Local streets are encouraged to require a dense canopy of shade trees. On-street parking is highly encouraged and should be required on local streets.

While cul-de-sac streets may be appropriate in some circumstances, they tend to decrease traffic efficiency and close neighborhoods off. While this is desirable in some areas, it should not be encouraged in most growth areas.

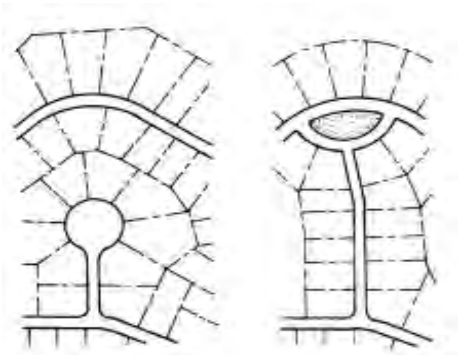
The American Landscape. Zapatka

Provide parkways and boulevards

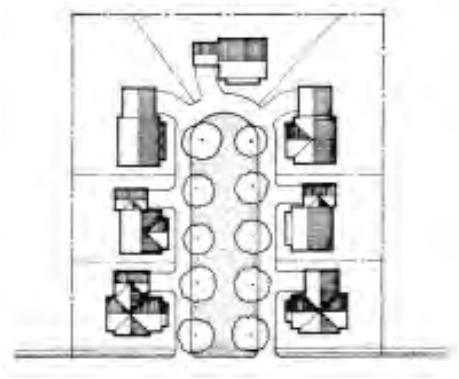
Parkways connect open spaces

Parkways can be designed as linear parks

Local street with on-street parking



Provide alternatives to the cul-de-sac



Crossroads, Hamlet, Village, Town. Arendt. PAS 487/488

An alternative to the cul-de-sac offering a common green for storm water simply as a site amenity.

Alternative solutions to the cul-de-sac that achieve the desired effects without decreasing traffic efficiency are encouraged.

Alleyways

Where possible, alleys should serve residential and commercial uses. In commercial areas, alleys keep the service vehicles to the rear and off the streets and sidewalks. Alleys are particularly useful on lots that face parks or collector streets, by minimizing curb cuts and reducing the visual impact of garages on the street. Alleys provide an opportunity to create a more 'social' street in residential neighborhoods by reducing curb cuts and garage doors and getting more livable spaces in the home closer to the street.

Bike Paths

Bike paths provide an alternative mode of transportation for local residents and should be encouraged. Bike routes should be incorporated into a comprehensive path system and integrated with streets and greenway corridors. They should connect various destinations around the city along an interconnected system.

Residential Areas

A range of permissible densities and a diversity of housing types, consistent with the Growth Area Master Plan, is encouraged. As stated in the Comprehensive Plan, the goal is to strive for an average gross density of five dwelling units per acre in future growth areas. Residential densities should strike a balance between creating a core of development around mixed-use centers and transit stops and blending in with surrounding neighborhoods and natural features. Higher density residential development makes sense near mixed-use centers and along arterial circulation systems. Lower density residential development makes sense near potential flood zones and further from major centers of development. Development that strives for a range of housing types, densities and price levels is desirable.

Mixed-Use Centers

The purpose of creating zones for mixed-use centers is to concentrate uses that capitalize on excellent accessibility and visibility near major circulation routes, but also to provide neighborhoods with a mix of shopping and employment uses within walking distances from their homes. Mixed-use centers should occur at a variety of sizes, scales and use dependant on their function and program (i.e. in Downtown, Camtown or as a neighborhood node). The goal is to focus development potential into pedestrian oriented patterns that can be served by transit and limit urban sprawl.

Location

Generally, mixed-use centers should be spaced ½ mile to one mile apart, depending on the function and uses contained within them, and distributed to serve different neighborhoods. This distance helps to ensure viability and success for each center by limiting competition between them. One mile spacing relates to the market area necessary to support a typical grocery store – often an anchor of a neighborhood center (roughly 30,000 sq. ft.).

Mixed-use centers should be accessible from both local and arterials streets. Local street access should be encouraged wherever possible to create street and sidewalk vitality.

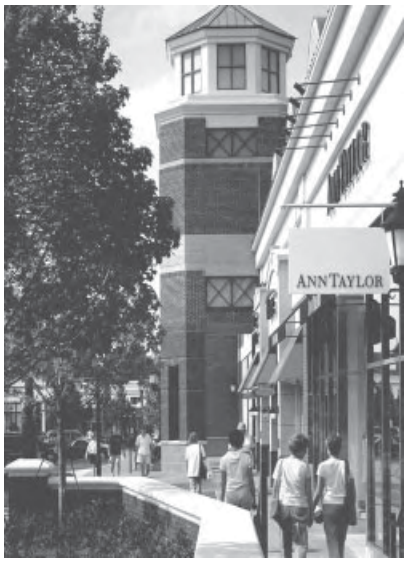
Mix of Uses

Centers of development activity should integrate retail with civic facilities, employment, higher density residential and transit uses. Providing a diverse mix of uses within walking distance for residents and employees will help ensure economic and social sustainability of the centers anticipated within the Growth Areas by extending their hours of operation during the course of a day. Vertically mixing uses within buildings is encouraged but should be considered a bonus to basic horizontal mixing of uses. Ground level uses that stimulate pedestrian activity are highly encouraged.

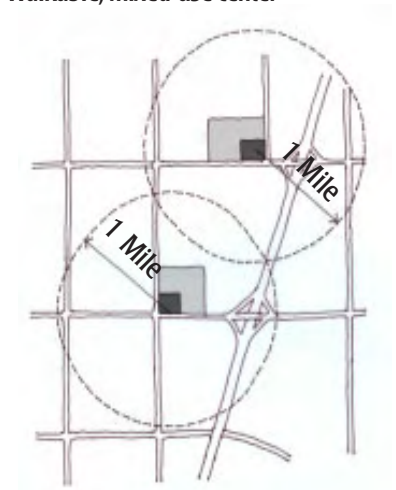
Design Criteria

The configuration of shops should balance pedestrian and automobile comfort with visibility and accessibility. While anchor stores may orient to arterial streets for better access and visibility, smaller shops should orient themselves to pedestrian-friendly streets or plazas. Wherever feasible, buildings should front streets with parking and service located to the rear of the building. When economically feasible, parking should be structured in mixed-use zones. Taller buildings are encouraged to provide visual interest, a more urban character, street security at night and to concentrate pedestrian activity.

Where residential uses are included, higher densities - 10 to 25 dwelling units per acre, depending on the size and scale of the center development - are recommended. Land uses and residential densities should carefully transition to those in the surrounding neighborhood.



Walkable, mixed-use center



Mixed-use center proximity relationship

Do

Don't

Rural By Design. Arendt

This page intentionally left blank

List of Appendices

Appendix 5
Development Summary and Planning Assumptions

A key purpose of the Growth Area Plan is to establish a more detailed land use plan that illustrates how a larger area with multiple property owners develops to a mixed residential land use pattern with an overall gross density of 5 units per acre. The master plan illustrates a detailed land use pattern that generally achieves the 5 unit per acre target for each master plan district. Several assumptions were generated to establish development projections for the growth areas.

Density estimates were established based on an understanding of development patterns prevalent in the marketplace and based on desired development patterns evaluated during the planning process. Commercial floor area ratios (FAR) establish an estimated percent of a parcel occupied by gross leasable square feet. These percentages were based on a sampling of commercial typologies.

To arrive at estimates for a split between single family and multi-family housing units, an assumed percentage was applied to each land use category. These percentages were generally based on draft zoning district language for districts that would be applicable to the relevant land use pattern. The draft zoning language indicates densities for certain zones, establishes a general intent for the zone and provides standards that regulate an appropriate mix of housing types. The following represent development intensity and housing unit split assumptions:

Land Use Pattern	Planning Assumptions	
	Density/FAR	% Multi-Family
Low Density Residenital	4	0%
Low-Mid Density Residential	5	20%
Mid Density Residential	12	50%
High Density Residential	20	100%
Commercial	0.25	-
Institutional	0.15	-
Industrial	0.25	-

The following table illustrates the relationship of the master plan residential land use designations to the proposed zoning district language:

Residential Land Use Patterns	Applicable Zoning Designation (based on proposed zoning districts)
Low Density Residential	RLD-1 and RLD-2
Low-Mid Density Residential	RLD-2 and RLD-3
Mid Density Residential	RMD-1 and RMD-2
High Density Residential	RHD

RLD=Residential Low Density
RMD=Residential Mid Density
RHD=Residential High Density

To arrive at population estimates, an average persons per household for single family homes and persons per household for multi-family homes was developed based on US Census data sources. This ratio was used to estimate population based on total households. The following ratios reflect this assumption:

	Persons per HH
Total Average SF/MF	2.33
SF	2.69
MF	1.97

To arrive at employment estimates, FM-COG provided a ratio for employment estimates based on service jobs, retail jobs and civic/ institutional jobs. This ratio was applied to the land use patterns based on an understanding of the nature of the commercial areas as depicted in the Growth Area Plans. The following are employment estimate assumptions:

The following tables summarize development projections for each district and a final total growth area summation:

Employment	Jobs Per Acre	Commercial	Office
Retail	11.04	80%	
Service	40.34	20%	100%
Schools/Service	5.13		

Total Development Summary for All Districts

Master Plan Land Use	Acres	Total Households	Multi-family HH	Single-family HH	commercial square footage	Total employment
Low Density Residential	1,025	4,100	-	4,100	-	-
Low-Medium Density Residential	1,137	5,687	1,137	4,550	-	-
Medium Density Residential	330	3,956	1,978	1,978	-	-
High Density Residential	136	2,714	2,714	-	-	-
Commercial	90	-	-	-	982,387	996
Office	64	-	-	-	696,089	2,579
Public/Institutional	192	-	-	-	1,256,488	986
Park and Open Space	739	-	-	-	-	-
Grand Total	3,713	16,457	5,830	10,628	2,934,964	4,561
Gross Density	4.43					
Gross Population	38,346					

East						
Master Plan Land Use	Acres	Total Households	Multi-family HH	Single-family HH	commercial square footage	Total employment
Low Density Residential	84	338	-	338	-	-
Low-Medium Density Residential	358	1,792	358	1,433	-	-
Medium Density Residential	82	983	491	491	-	-
High Density Residential	51	1,020	1,020	-	-	-
Commercial	35	-	-	-	383,655	389
Office	64	-	-	-	696,089	2,579
Public/Institutional	54	-	-	-	350,157	275
Park and Open Space	112	-	-	-	-	-
Grand Total	840	4,132	1,870	2,262	1,429,901	3,242
Gross Density	4.92					
Gross Population	9,627					

South Central						
Master Plan Land Use	Acres	Total Households	Multi-family HH	Single-family HH	commercial square footage	Total employment
Low Density Residential	40.5	162	-	162	-	-
Low-Medium Density Residential	298.8	1,494	299	1,195	-	-
Medium Density Residential	63.6	763	381	381	-	-
High Density Residential	23.9	479	479	-	-	-
Commercial	10.1	-	-	-	109,445	111
Office	-	-	-	-	-	-
Public/Institutional	36.1	-	-	-	235,681	185
Park and Open Space	64.5	-	-	-	-	-
Grand Total	537.4	2,897	1,159	1,738	345,126	296
Gross Density	5.39					
Gross Population	6,751					

Southeast						
Master Plan Land Use	**Acres**	**Total Households**	**Multi-family HH**	**Single-family HH**	**commercial square footage**	**Total employment**
Low Density Residential	317.5	1,270	-	1,270	-	-
Low-Medium Density Residential	284.2	1,421	284	1,137	-	-
Medium Density Residential	100.6	1,208	604	604	-	-
High Density Residential	24.1	483	483	-	-	-
Commercial	9.3	-	-	-	101,604	103
Office	-	-	-	-	-	-
Public/Institutional	48.4	-	-	-	315,984	248
Park and Open Space	200.0	-	-	-	-	-
Grand Total	984.1	4,381	1,371	3,010	417,588	351
Gross Density	4.45					
Gross Population	10,208					

Southwest						
Master Plan Land Use	**Acres**	**Total Households**	**Multi-family HH**	**Single-family HH**	**commercial square footage**	**Total employment**
Low Density Residential	582.7	2,331	-	2,331	-	-
Low-Medium Density Residential	196.1	980	196	784	-	-
Medium Density Residential	83.6	1,003	501	501	-	-
High Density Residential	36.7	733	733	-	-	-
Commercial	35.6	-	-	-	387,684	393
Office	-	-	-	-	-	-
Public/Institutional	54.3	-	-	-	354,666	278
Park and Open Space	362.0	-	-	-	-	-
Grand Total	1,350.9	5,047	1,431	3,617	742,350	671
Gross Density	3.74					
Gross Population	11,760					