All development places demands on the City or County, school districts, fire districts, utility districts, and others to provide new residents with services or facilities. This includes upgrading to meet the increased demand levels. Meeting these demands costs money at a time when government resources are scarce. When government simply reacts to every development proposal, it is placed in the position of responding to random development. It has been clear for the last 40 years that reactively serving scattered development is more costly than addressing planned compact growth. There are many competing projects for government funds, and this haphazard development style increases the risk of creating large budget deficits. Thus, it makes sense to have a plan that manages growth to keep government expenditures to a minimum, while meeting residents' needs.

The policies of the plan that address growth are called growth management policies. This Comprehensive Plan is designed to serve as a blueprint to guide the decisions of Paducah and to make recommendations for future growth in *McCracken County.*

6.1 THE GROWTH MANAGEMENT CHALLENGE

The greater part of the growth management challenge falls on McCracken County because there is a large land area and much of that area is either not served or existing services will be strained by the new development. This plan makes recommendations for growth outside the jurisdiction of the City of Paducah. Paducah has less vacant land, and existing infrastructure is almost-universally available to serve development. However, its problems are more likely to involve maintenance or replacement of old infrastructure. In both communities, the fiscal resources are not there to meet all needs for capital programs, maintenance, and operation; therefore, expenditures are prioritized and some needs go unmet.

6.1.1 McCracken County

Currently, 74.6 percent of McCracken County, excluding the City of Paducah, is either vacant or in rural uses. The County has accounted for all the area's population growth within the last two decades. While the vast majority of the County roads are paved, most are not built to current two-lane road standards with 12-foot lanes and shoulders that permit a breakdown to pull nearly completely off the road. Nor does road drainage meet current design

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Government provides the roads, sewers, water, schools, fire, police, and other services or infrastructure, all of which cost money. Land developers create new homes or businesses that require these services. Growth management is planning ahead to provide services in the most cost effective manner. If government simply reacts to each individual development, the costs rise due to inefficiency.

Du's/ac. means dwelling units per acre, a measure of density. The intuitive one-acre lot equals 1 du/ac., but neglects the fact that roads also must be part of a development. Further, it is rare that all lots are exactly the minimum size.

Gross density is the amount of dwelling units per acre that includes area for the street network. It seems intuitive to expect a density of 1.0 du's/ac from one - acre lots. However, streets, detention basins, larger lots in cul-de-sacs, and rigidity result in a lower density for subdivisions than lot size indicates.

standards. The roads have served farms for over 150 years and, as a result, these narrow roads were adequate when only farm service was needed. As they must serve increasing numbers of suburban residents driving modern automobiles, they will inevitably need to be brought up to a higher standard.

While the City and County created the joint sewer authority to provide sewer service to the rural areas, it should be noted that this effort is governed by the underlying policy that sewer service may be provided *where appropriate*. For the 20-year horizon of this plan, the vast majority of the County cannot be provided with services. In fact, the cost of extending systems is completely beyond the fiscal resources until well past 2025.

Further, the population forecast shows a maximum rate of growth of 2,829 dwelling units by the year 2025. In determining the area needed to support development, 25 percent of the development was anticipated to be at estate intensities having a gross density of 0.76 du's/ac. Suburban development is anticipated to be 60 percent of the development, averaging 2.00 du's/ac. The remaining 15 percent would be at urban densities averaging eight du's/ ac. Of that, only 902 acres (75 percent) would have to potentially be connected to a sewer system.

From a cost perspective, it would be most desirable to extend service only to that land actually needed for development. There is adequate vacant land within areas presently served (see **Figure 6.1, Developed Areas**), and it could be argued that no sewer extensions are needed. Practically speaking, however, it is likely that some additional land must be served. However, the costs increase as more and more land area is served by sewers far from existing population centers. The same basic rules hold for water supply and roads, as well.

As development leaps out into the rural areas, sewer and water lines serve fewer and fewer people per mile and the costs of maintenance increase. Along with water and sewer costs, school bus trips, policing needs, mail delivery, and many other governmental costs increase. Many of these service increases affect local government budgets, and there are very few State and Federal funds available to offset these higher costs. It needs to be understood that only a fraction of the annual budget for roads and other infrastructure is available for new facilities; for roads, a majority of the budget is in operations, maintenance, and personnel. This means that the availability of funds for new facilities is very limited. With a road system that is not built to higher standards, the cost of upgrading is high.

In order to be fiscally responsible, while at the same time encouraging the County to grow, there is a need to manage growth to provide maximum service at minimal cost. This means promoting and encouraging new development in areas near existing infrastructure. Responsible growth will result in lower costs to the County. With limited fiscal resources, the result of being unable to meet all the growth needs because the development is uncontrolled means substandard service. Whether the result is driving on a road that cannot take the traffic loads or having too low water pressure because lines, pumps, or storage facilities are inadequate, citizens must "pay" in terms of lower service.

6.1.2 Paducah

The City is seeking to end years of population decline. Currently, limited new development is occurring in the City and newly developed areas are being annexed. However, there are numerous redevelopment opportunities in the City and will be more in the future. For instance, a major improvement of the City's waterfront (see riverfront redevelopment plan) will make that area attractive to higher intensity residential development. This is an appropriate goal since higher density residential development near downtown with waterfront access is desired by the real estate market. The need for new or extended facilities is reduced in the City since nearly all the land within City limits is currently served by utilities. For both the City and County, infill development is cost effective because no extensions are needed.

A "Fix-It-First" infrastructure policy allows municipal and county governments to more efficiently direct budgetary spending towards existing infrastructure and established population centers. An example of this type of policy is found in many State Departments of Transportation that direct funds towards the maintenance backlogs in existing communities, rather than focusing on new road construction in their

The City faces a problem now that is still some years away from becoming a pressing need in the County – the upgrading of existing infrastructure that has passed its useful life. Water and sewer lines that are over fifty years old will need to be replaced in coming years. Water and sewer lines have fixed capacities and, in older lines, may need replacement to increase the ability to serve outlying areas. In both the City and County, parts of the system will need to be replaced or duplicated because their capacity has been exceeded.

Infill development is generally very desirable because it does not require extensions of service or upgrading of capacity. It may also have the advantage of being able to use funds allocated for maintenance and replacement to both replace deteriorated lines and provide for growth. When a project does double duty, it reduces the competition for scarce resources. Due to the fiscal challenges that infrastructure extensions pose for annual budgets, this "Fix-It-First" policy should be considered an imperative

standard, rather than an ideal goal. The costs associated with unbridled low-density expansion simply demand that future development is directed towards location-efficient infill projects instead of ever expanding fringe sites.

The City has neighborhoods that have declined over the years. It is far better to seek redevelopment than to let them get rundown and become a blighting influence. Once neighborhoods are designated for redevelopment, it becomes a priority area to upgrade existing infrastructure. These public utility upgrades will spur private investment. Funds are scarce in the City, as well and should be leveraged with private funds in redevelopment areas. Thus, while growth takes on a very different form in the City, it, too, shares a need to manage growth to do a better job of serving citizens – present and future.

6.2 GROWTH MANAGEMENT STRATEGY

The basics of a growth management strategy (today also called smart growth and sustainable development) have been known for 40 or more years. The logical planning solution, first developed in the late 1960s and still valid today, is to identify an urban growth area. The planning framework involves four areas – the developed area, developing area, holding zone, and protection areas, as shown in Figures 6.1 through 6.4.

6.2.1 Developed Area

The developed area has existing infrastructure and planning issues are primarily infill and redevelopment. The developed area includes land that is vacant or in agricultural use in both the City and County. These sites would be smaller, and less than 20 to 25 percent of the developed area should be vacant. Both City and County benefit from encouraging infill development because it is highly cost efficient. **Figure 6.1, Developed Areas**, illustrates the developed area for a hypothetical community. Most of Paducah and all of Lone Oak are part of the developed area. The developed area is only 16.5 percent of unincorporated McCracken County's land area.

6.2.2 Growth Area

An area or areas on the fringe of the developed area should be identified as the growth area[1] where new growth is to be encouraged. There is a boundary, most frequently referred to as an urban growth boundary, which limits zoning and infrastructure expansion. The size of the growth area should be on the order of 10 to 20 years of development potential. The number of years should be determined in conjunction with a capital program.

Some communities might be planning a number of growth areas to be phased in over 20 years, while others might have a single growth area that would last for most of the planning period. **Figure 6.2, Growth Area**, shows the area designated for future expansion. This should be the area where the communities have planned expansions of roads, water, and sewer. In McCracken County, it should also include planned expansion of low-density, one-acre lot development. This growth area amounts to 30.2 percent of the unincorporated land area.

Figure 6.3, Protection Area
Floodplains and steep slopes define resource protection corridors along streams in this example.

6.2.3 Resource Protection Area

In both the City and County, there are areas of floodplain, wetland, or other natural areas that need to be protected. Floodplains, in particular, are hazardous. Floods can result in the loss of life and always involve the loss or damage of property. Government responsibility for the public health and safety indicate that they should be protected. There are national standards that protect wetlands. Other resources may be deemed worthy of protection. These are areas where regulations should prohibit development. **Figure 6.3, Protection Area**, shows the protection area that, in the example, consists of floodplains and stream corridors. The McCracken County soil survey indicates that 56.6

[1] Over the years, the growth area has also been known as development district, urban growth area, urbanizing area, and other terms.

Figure 6.5, Initial Plan

Figure 6.6, Revision

percent of the entire County, including the cities, is in floodplain or has water tables above the surface for part of the year.

6.2.4 Holding Zone

Having identified the first three areas, this leaves at least 52.5 percent of McCracken County that is not needed to provide for growth over the next 20 years. **Figure 6.4, Holding Zone**, illustrates a typical holding zone. This is the most difficult of the four areas to address. It is assumed that, at some future time, this area will be ready for growth. What to do in the meantime? Logically, that would mean true rural zoning with lots in excess of 20 acres per dwelling unit, a figure that discourages all but the hobby farmer. This is a very severe restriction, and most of the problems with growth management revolve around how to treat this district. Land in the holding zone typically does not have sewer or adequate water pressure, so normal urban and suburban development is impossible. McCracken County should seek to create a strong disincentive to build in the holding zone, but not to prohibit it. Further, if the development pattern in the holding zone is such that it creates a rural character, the County should provide increased density as an incentive.

6.2.5 Periodic Expansion

The urban growth area has a life of 20 years. The community needs to regularly revisit this area and add additional land. Expansion should take place well before the current growth area is 50 percent developed. The need should be assessed every five years and, ideally, the growth area will be expanded to maintain a 20-year growth potential. Similarly, the developed area needs to be updated. **Figure 6.5, Initial Plan**, and **Figure 6.6, Revision**, demonstrate the planned expansion.

The major issue becomes how the City and County implement the growth management strategy presented above. There will be major components. The first is the designation of the developed areas and the development or growth area. The second is the identification of the protection area. These are accomplished on a map that serves as a guide to decision making on development for both the private sector and the various governmental bodies. There will be additional policies that are attached to each of these basic mapping elements that provide controls or incentives for the implementation of the plan.

6.3 A GROWTH MANAGEMENT PROGRAM

The mapping of Paducah, Lone Oaks, and McCracken County into the four basic zones is a critical step. **Map 6.1, Growth Management Plan**, illustrates current development and proposed development patterns. The two cities are considered to be developed, as are parts of the County. The protection areas are found in all three jurisdictions. The rest of McCracken County was divided into development and holding zones.

6.3.1 Developed Area

The developed area constitutes 24 percent of the total area of the County. Despite its name, not all land within the developed area is fully developed. Vacant property on parcels over ten acres is shown in **Table 6.1, Vacant Land within Developed Area**. There is substantially greater potential in the form of smaller parcels and individual lots. Other properties are underutilized or unoccupied. Due to the abundance of underutilized and vacant land, growth

Table 6.1, Vacant Land within Developed Area

	Vacant Parcels of 10 acres	Acres	Capacity at 2 dwelling units per acre
Paducah	63	1,572	3,144
Developed Area (including Paducah)	87	2,230	4,460
Growth Area (including Paducah and Developed Area)	656	24,780	49,560
McCracken County	1353	68,583	137,166

can occur within the developed area. Growth in the developed area will be characterized by infill development and redevelopment. Infill development is new development of open land, individual lots, or vacant properties where the surrounding properties are developed. In some cases, the vacant land may have had a prior use or been cleared (**Figure 6.7, Four Rivers Center**) to prepare it for redevelopment.

As is the case in all cities, Paducah wants to rehabilitate old neighborhoods that are in decline and make it a more attractive place to live. Redevelopment continues in the Lower Town Arts neighborhood and is planned for the Fountain Avenue and Uppertown neighborhoods. In redevelopment neighborhoods, water, sewer, sidewalks, and streets should have priority for upgrades to replace substandard lines and coordinate with growth needs. That does not mean that there are not other pressing needs, but simply that redevelopment requires significant infrastructure investments to encourage private land owners to reinvest in these communities. Parks should be reviewed and improved and, if there is a shortage of parks for the neighborhood, additional park land should be secured and improved early in the redevelopment period. Sidewalks should be provided on all streets.

It is estimated that a revitalization program for a neighborhood requires an intensive five-year or more effort. It includes actions to stabilize the neighborhood, to get programs in place for rehabilitation and redevelopment, and to allow enough time to give residents and lenders confidence to reinvest in the neighborhood without governmental assistance. At the end of the program, only minimal additional effort should be needed by the City. A redevelopment priority assessment shall be completed to encourage neighborhoods to begin to reinvest on their own action ahead of designation.

The VMV PaducahBilt railroad facility (**Figure 6.8, VMV PaducahBilt Site**) represents a major reinvestment opportunity. Employment has been declining for many years and a significant number of the buildings are either vacant or greatly underutilized. While the City does not he closing, it should anticipate site tions. To that end, the economic ency should undertake a study to he facility can be made to increase its to other businesses, or have a closing redevelopment as simple as possible. t is determined for its economic future,

a joint effort of the City, State, and VMV PaducahBilt should be undertaken to determine the environmental problems that would be associated with reuse. This is an area where assessment and clean up could begin prior to the closing of the facility. The site today is clearly a brownfield site, with at least one area on the market. The sad history of brownfields is that they often sit vacant, unused, and decaying for decades. It makes sense for all concerned to develop a reuse plan so that the blighting influences of an abandoned or vastly underutilized property do not adversely affect neighboring areas.

The downtown area underwent a major reinvestment during the 1990s, which needs to continue. One problem confronting downtown is its size. The area is a tourist- and arts-oriented market; there is insufficient internal or nearby population to create a market for businesses serving the area's residents, rather than visitors. Most local and regional commercial is now located near I-24 and the mall. A major increase in population in the downtown area would provide new business niches and increase the vitality of downtown. With the development of a riverfront plan, it is important to make use of land with views of the river for high-intensity, residential development. The greater the nearby population, the better it will be for downtown economic interests. Some of the industrial facilities and other uses east and west of downtown might be targeted for relocation to make more land available for residential use near the river and greenway. The City currently has no residential areas taking advantage of the river. The topography is such that there is no potential for borrowing the river from adjoining hills, as is the case in Pittsburg, Cincinnati, Dubuque, and other cities. This is a serious problem for the revitalization effort of downtown, so the residential development should be a priority.

The United States Enrichment Corporation and Department of Energy (DOE) property is a major redevelopment site. Because of the hazardous and radioactive wastes on the site, clean up and redevelopment planning is very complex. DOE is the lead agency, and the County must stay alert to opportunities and ensure that potential liabilities do not saddle the County with a problem, rather than an economic development asset. This plan sets land use recommendations for this area of the County. While this is technically redevelopment, the scale of the property (over 1,350 acres) justifies a growth area designation.

6.3.2 Urban Growth Area

Paducah Gaseous Diffusion Plant

"Extensive support facilities are required to maintain the enrichment process including a steam plant, four major electrical switch yards, four sets of cooling towers, a building for chemical cleaning and decontamination, a water treatment plant, and maintenance and laboratory facilities. Approximately 740 acres of the plant are fenced industrial operations, which is surrounded by another fence forming a smaller area of uninhabited buffer zone. The PGDP started uranium-enrichment operations in 1952. Plant operations have generated hazardous, non-hazardous, and radioactive wastes including polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), technetium-99 (Tc-99), and multiple isotopes of uranium. Approximately 100 residences and businesses are presently receiving municipal drinking water due to groundwater contamination from the

The urban growth area has been defined to provide for the entire region's anticipated growth for the next 20 years. The projections are for a 2025 population of 6,223 people, which translates to 2,829 dwelling units based upon a household size of 2.2 persons.[2] The urban growth area contains land for both residential and non-residential development. Further, residential is divided into estate areas that do not need sewers and suburban and urban areas that do require public sewers. In determining the area needed to support development, 25 percent of the development was anticipated to be at estate intensities having a gross density of 0.76 du's/ac. Suburban development is anticipated to be 60 percent of the development, averaging two du's/ac. The remaining 15 percent would be at urban densities averaging eight du's/ ac. **Table 6.2, Urban Growth Area Development**, shows the acreage needed to meet these needs.

Table 6.2, Urban Growth Area Development

Character Types	Gross Density DU's/ac.	Percent of Dwelling Units	Dwelling Units	Area Required (acres)
Urban or Auto-Urban	6	15	424	70.6
Suburban	2.00	60	1,697	848.5
Estate	0.76	25	708	538.1
Total	NA	100	2,829	1,439.6

It is important to plan for estate areas because a portion of the population desires this lifestyle. The goal should be to establish large areas where these needs can be met without conflicting with long-term sewer expansion due to the higher costs of either skipping over these areas to extend services to outlying areas or servicing low-density areas. Skipping over an estate area to service more remote suburban or urban areas means additional miles of interceptors that must be paid for and maintained. The alternative of providing sewer services in low-density development is costly because the length of line per dwelling unit is two to ten times that of suburban or urban development. Creating a long-range estate area can reduce uncertainty by specifically designating areas that will never be served with sewer.

[2] This future household size of 2.2 persons is a conservative estimate based upon existing household sizes in Paducah, currently 2.12 persons per household, and McCracken County, currently 2.31 persons per household.

The residential need is based on the projected population and subsequent number of dwelling units to house this population. This is not a conservative estimate and, furthermore, it is theoretically possible that 100 percent of the projected dwelling units could be sited in the Developed Area. In addition, the holding zone does not prohibit development, and it is anticipated that some development will also occur in that area. The result is that, in terms of actual capacity, the developed area and urban growth area will accommodate 25 to 30 year's development.

In addition to the residential need, their needs to be a wide range of other land uses to serve the residential area and provide jobs. Fifteen percent of the development district should be provided for commercial development and for institutional uses. This is a reasonable range for these uses given that the City and County have a large supply of older commercial areas where redevelopment will be important. The need for business and industrial land has, in part, been determined by some of the unique opportunities and future concerns. One of these is the potential siting of a container-type port facility near the I-24 crossing of the Ohio River. This area is served by the Canadian National Railroad and, thus, has significant potential. It is included to make it possible for economic development to pursue this as a possible new business.

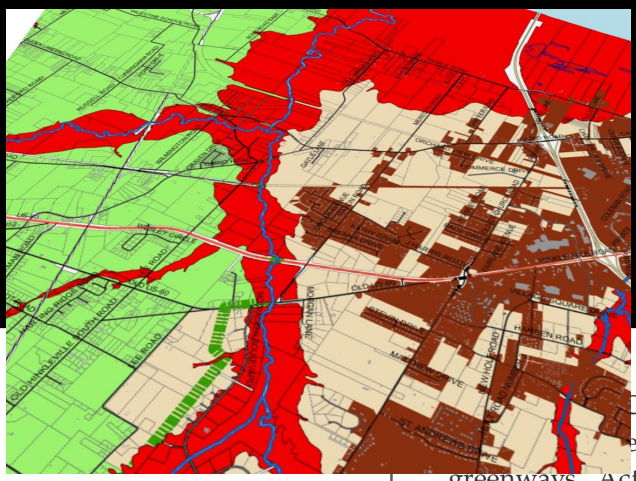
A similar reservation for nonresidential use is recommended at the airport. The reason for this is two-fold. Most critically, it prevents residential development from crowding the airport and creating both safety and quality of life problems for residents, while preserving value for the owners. Secondly, it provides for long-term growth potential and a market niche that needs to be protected so it is available beyond the current planning period. In both these instances, the land designation is made to protect land with unique industrial potential. The uses that want these specific requirements of access are one-of-a-kind in the community. Thus, their long-term protection is desired and, by placing them in the urban growth area, the planning of infrastructure can be accomplished. This means that if the need materializes, the infrastructure will be there or the commitment to put it in place has already been made.

The City, County, and all other service providers need to develop capital improvement programs to ensure adequate services for the new development. These programs should also work together to create one cohesive strategy instead of conflicting plans that misdirect new development. For all development in the urban growth area and the

A development consists of lots, streets, and open space. As a result, the gross density (number of du's per acre of total site area) is less than expected because a portion the site is devoted to streets. The gross density of a five-acre lot subdivision is 0.18 du's/ac. or 18 homes on a 100-acre site, while dividing 100 by 5 acres, one would anticipate 20 du's

developed area, the water system should provide two things: an adequate supply and adequate fire service (pressure and flows). Nonresidential land uses and all residential areas, except the estate area should be served by public sewers.

The developed and growth areas have been defined to provide for the City's anticipated growth for the next 20 years. The projections are for a 2025 population of 6,223 people, which translates to approximately 2,829 dwelling units. The developed area currently has a mix of 53 percent residential uses and 47 percent nonresidential uses. The acreage level of nonresidential land uses is high due to the large amount of vacant and agricultural land included within this area. The urban growth area contains land for both residential and nonresidential development. The residential need is based on the population modeling of alternative future scenarios described in Chapter 2, Community Snapshot. The end result is an abundance of land availability in the developed and growth areas for infill projects and new development sites.



6.3.3 Resource Protection Area

area consists of floodplains and wetlands as illustrated in **Cracken County Floodplain Area**. These are areas that should eloped, with the exception of some recreational uses and greenways. Active recreational areas can be located in the floodplain, but, in doing so, care should be taken to ensure that these are areas that do not flood regularly outside the 25- or 50-year floodplain. In addition, soil studies should be taken to ensure that the soils can support heavy activity in the spring or other rainy periods.

While there are federal regulations that apply to both of these resources, it is important to regulate and control these locally. Flooding takes an annual toll on property and life. The primary goal is to ensure that building in floodplains is absolutely minimized. To this end, only uses that actually need to be located in floodplains, what are known as water-dependent uses such as marinas or commercial docks, should be permitted in those locations. Thus, waterfront uses such as ports, shipping industry docks, marinas, and beaches could continue to be located in floodplains because they need access to the river or other water body to fulfill their function. Parking should also be prohibited in the floodplain. Some recreational uses that are not damaged by occasional flooding are also permitted, provided the flooding or water tables

are such that the facilities are normally useable, even in wet conditions such as the spring rainy season.

Filling of floodplains should be prohibited, except for road crossings of the river or stream where the road is needed to provide a network of collector and arterial roads or to provide access to otherwise isolated properties that do not have access to other roads except by the crossing. The floodplain should not be used as routing for roads to avoid the higher condemnation costs on dry land. Residential uses should not be located in the floodplain, nor should on-site sewer systems be located there as captured in **Figure 6.10, Paducah Flooding in 2002**. The filling of house pads to elevate the homes above the floodplain simply places homes in a dangerous condition. With roads under water, people are isolated and cut off from emergency services in the event of fire or health crisis. Further, the 100-year flood is simply a frequency of flooding measure and greater floods occur. Similarly, there is significant evidence that the 100-year floodplain is increasing as we pave over the landscape, which forces more and more water into the streams.

Wetlands are areas quite similar to floodplains. The vast majority of wetlands are in floodplains along streams, but there are some upland wetlands that are generally found upstream of the area where floodplain mapping ceases. Because water is above the land surface part of the year, wetlands are natural flood control facilities. In McCracken County and Paducah, the upland wetlands are few in number and small. In this environment, there is no residential development that needs to fill wetlands. The wetlands can be integrated into stormwater detention or retention systems. Filling wetlands and piping stormwater simply increases flooding elsewhere. The one exception to a policy against filling wetlands is in the case of small, upland wetlands in industrial or commercial development where the preserved wetland would be surrounded by impervious surfaces that send pollutants to the wetland, thus degrading it. These wetlands should be permitted to be filled, provided they are replaced on-site as part of the stormwater management system.

There is one other resource that is subject to flooding – drainageway soils. These are soils that form along streams and are listed as having seasonal water tables where the water is at or above the land surface. They follow the

topography and, above the limits of floodplain mapping, are still shallow floodplains. A great number of them carry water several times a year. This is an area that should be used for stormwater management. Water naturally flows here and properties should be engineered to use these areas to control the flow of stormwater as it exits the site. The regulations should require the excess water created by the development to be stored on site, in addition to their predevelopment storage capacity.

All three of the resources can be considered to be floodplains. Wetlands are under water a portion of the year and store stormwater. The drainageway soils are, in fact, floodplain. Some will be located within the 100-year floodplain; most are simply beyond the limits of the floodplain studies that do not go to the upper end or source of every stream. The regulations are important because development creates impervious surfaces. There is a direct correlation between the amount of impervious surface and the amount of run-off in any storm event. The best example of this is standing under a tree on a sidewalk when it is still dry under the tree, but water is starting to run in the gutter. The more impervious surface, the greater the run-off and the less groundwater recharge. Development channels stormwater and speeds it downstream, while the floodplains and pervious surfaces absorb and slow run-off. Engineering is not the solution; it simply moves the problem to some other location upstream or downstream. The simple solution is to avoid building where nature moves floodwaters.

With the regulations that Paducah and McCracken County currently have regarding development, the regulations discussed above would reduce the development potential of the site. The current regulations require lots of minimum area and minimum frontage. Thus, the loss of any land to resource protection reduces the area that can be divided into these lots. It is not the protection of the resource that creates the loss of development potential, but the rigidity of the zoning. It has been known for decades that cluster development, which is regulated by maximum density and minimum open space, can allow the developer to achieve maximum development potential, while preserving the resource. In adopting regulations that protect the resources in the protection area of the plan, the zoning should be changed to permit cluster development as a matter of right, with no special review requirements other than meeting the density and open space standards.

Within the holding zone, a long-term projection of estate areas where sewer will not ever be extended is provided in **Map 6.2, Future Service Area Boundaries.**

6.3.4 Holding Zone

The term "holding zone" was chosen to indicate its transitory nature. The land is being held out of development for a given time period. Reviews every five years are intended to add to the growth area, thereby reducing the amount of land in the holding zone. The reason for the holding zone is to avoid premature development of land, which results in higher service costs to government for service and infrastructure and can lead to difficulties in servicing the facility with full services later.

The urban growth area is sized to accommodate all of the development in the City and County for the next 20 years. Because there is additional development capacity in the developed areas of the City and County, the development capacity of these two areas is closer to 30+ years. The entire holding zone is in unincorporated McCracken County. The present one-acre zoning in McCracken County encourages building at random anywhere in the County. This makes it difficult to implement the planning for the urban growth boundary.

Adequate area for one-acre, estate residential development has been planned for in the urban growth boundary. This planning has been done in a manner that ensures the development does not adversely affect the economics of future development. The County does not wish to prohibit development in the holding zone or to make it so costly that it is considered unaffordable. However, a disincentive to premature development that makes future extension of services more costly is required so that development does not force the public to accept higher costs or reduced services.

A series of development options will be available to all landowners. The options provide development patterns that reward development that contributes to desirable County goals and discourages development patterns that are costly through disincentives. As a base line, the density of a subdivision with five-acre lots is used with incentives or disincentives associated with different options.

6.3.5 Development Options for the Holding Zone

A development with five-acre lots would achieve a gross density of 0.18 dwelling units per acre. The optimal result of a holding zone is that no development would occur until sewer became available. It is inevitable that some land owners would want to or need to sell and there would be developers ready to buy the land. However, there should be no incentives for

Land treatment refers to a sewer system serving a subdivision where there is no discharge to streams. This includes common septic fields, treatment ponds with spray irrigation, and constructed wetlands.

development in the form of infrastructure amenities or promises for future construction.

On the incentive side, development patterns that preserve rural character or that promote efficient sewer or service expansion will receive the highest densities. Development patterns that are the most costly to serve or that are inefficient expansions receive disincentives. Several development patterns are considered to be desirable. Developments that can provide a permanent rural character and does not create burdens on the efficient provision of services are rewarded with a high density. Other development patterns that allow for initial development, but do not increase the cost of services, are also provided with incentives. The disincentives apply to development patterns that are undesirable.

There are four desired development patterns that are recommended: phased development with sewer, phased development for resubdivision, conservation development, and rural community development. The desired

Table 6.3, Summary of Incentives

Development Type	Gross Density	Average Lot Size	Open Space	Ultimate Density	Initial Bonus
Base Development	0.18	3 acres	30%	0.18	base
Phased Cluster, Sewer	0.29	½ acre	80%	1.11 – 2.25	61%
Phased Development, Septic	0.11	8 acre	0%	0.76-1.00	-38%
Rural Community	0.29 –0.45	20,000 to 10,000 s.f.	80%	0.29 – 0.45	61-1.50
Phased Cluster at Development Area Boundary	0.40	¾ acre	60%	1.03 2.00	1.22
Large Lot	0.09	10 acres	0%	0.09	
Rural Subdivision	0.050 to 0.067	1 acre	NA	NA	NA

Source: Kendig Keast Collaborative

options are designed either to have a rural development that is permanently rural or to be a subdivision that initially works without sewer, but that is designed to support sewer through additional development (phased) or by resubdivision. The less desirable development patterns are a large-lot subdivision that will be a barrier to efficient extension of sewers and a rural subdivision for farm families. The base development will be a cluster development. All the options are shown in **Table 6.3, Summary of Incentives**.

1. **Base Development**. This is a cluster development that has a gross density equal to that of a five-acre subdivision, 0.18 du's/ac. It would

have a minimum open space ratio (OSR) of 0.35 and an average lot size of three acres, with a minimum of two acres. This means the development can serve as an equestrian development with each home having enough land for a small stable and paddock (requiring three acres) and common area for pasture or riding trails. The lots need only be two acres in size, which leaves the developer free to provide more common open space or have a mix of lot sizes that would average the three acres. The clustering means that lot frontages are shorter, which, if sewer were to come to the area, means less cost to serve. The cluster also saves the initial developer and homeowner in the cost of roads and water lines.

2. **Phased Cluster, Sewer**. This is a cluster development that is designed to be provided with full sewer services in the future. The lot sizes should be such that sewer is efficient (between ½- and ¼-acre lots). The first phase of development has large amounts of open space to promote a rural character or estate character. It would qualify as what is called a "conservation development" and include more than 50 percent open space. The homes would initially be served with a private sewer system (some form of land treatment) that can be taken over at minimal costs when the public services are extended to the area. Public sewer and water lines would be installed in the first phase in a manner that would permit an efficient hook-up to the public system when it is extended to the area.

   This option requires an ultimate site plan that provides 30 to 50 percent open space and an initial plan that provides at least 80 percent open space. The initial development would have a density equal to three-acre lots (0.29 du's/ac.), with the final development having a gross density of one dwelling unit per acre. The second phase of the development is triggered by a plan amendment. The ultimate density could go higher than one dwelling unit per acre depending on how the land use element is amended when the property is designated as a "development area."

3. **Phased Development, Septic**. This option uses on-site septic systems for the first phase of the development and requires resubdivision to institute the second phase. The incentive here is not an initial density increase. It comes in the form of increased future value due to the ability to subdivide to a known level in the future. The entire property would be subdivided into lots of at least ten acres, with a gross density of 0.09 du's/ac. There would also be a tentative plat recorded that showed how

the initial lots could be resubdivided when sewer became available. This tentative plat puts all the property owners on notice that their property might be potentially connected to a sewer system. More importantly, it demonstrates how the landowner can subdivide to minimize the cost of the sewer serving their lots. It would also guide the initial land owner to place the house where it does not limit the number of future lots because the house sits where a road should go. This works for the land owners whether the future land use amendment calls for large, one-acre lots or development with sewer connections. The second phase would be triggered by the plan amendment.

4. **Rural Community**. This option is designed for the large, agricultural land owner who wants to continue in farming, but would like some development potential. It is a cluster development that requires a minimum open space ratio of at least 0.80 to ensure there is sufficient land to continue the agricultural operation after development. A minimum of 320 acres would be required to use this option in order to provide enough development potential to pay for infrastructure. This development is designed to preserve agriculture or natural areas over the long term and should have a site plan that preserves the best agricultural land, concentrating the development on lower quality land. The development density would increase as the total land area increases to promote permanent retention of rural areas in the County. The base density would be 0.29 du's/ ac., rising on a sliding scale to 0.45 du's/ac. when over 1,000 acres is involved. Not all the land would need to be continuous, but all the open space would have to be permanently preserved.

5. **Phased Development, Adjoining Development Area**. This is a variation on the phased development on sewer. It has a very limited application. Only land ultimately planned for sewers that immediately adjoins the development area boundary is eligible. Further, only when the sewer authority certifies to the County or City that there is excess capacity over and above the needs of the development area can that eligibility be acted upon. To qualify as excess capacity, both the plant and interceptor must have adequate capacity to serve the property. If the site is in an area designated for permanent, estate-type development by **Map 6.2, Future Service Area Boundaries**, it is ineligible. The initial phase would provide an open space ratio of at least 0.60. The initial density could not exceed 0.40. Nor could a development qualify for more than ten percent of the excess capacity. Ultimate densities would vary with the ultimate land use designations, but are assumed to be 1.11 or higher.

6. **Conventional Subdivision**. This is a subdivision serviced by on-site sewer. The minimum lot size would be five-acre lots. All lots would have to take access to an internal road system. Frontages would prevent the practice of developing piano key lots. This is intended as a permanent, large-lot development pattern.

Rural Subdivision. This is aimed at the concerns of farm families that want to retain the farm, but would like to provide lots for children or need to sell lots to get through a rough year. This type of development often occurs along roads, stripping off the frontage – a practice that is widespread in McCracken County. The practice of stripping the road frontage has several undesirable results. As development in an area continues, the rural road on which the lots front become collectors and need to move higher volumes of traffic. Given the alignment and cross-section of many McCracken County roads, this can lead to dangerous situations where people enter the road from individual lots. Residents will ultimately seek to control speed, reducing the capacity of the roads to serve as collectors. If the road needs to be widened, the costs will be dramatically increased. Another problem is visual; stripping road frontages destroys the views of the rural landscape, which is one of the reasons people move away from cities and suburbs. All these problems are eliminated by requiring an internal road system. The farm owners do not want to do a subdivision with internal streets because it is very expensive to build new roads. Further, they often want to sell or give away an occasional lot. How can the legitimate needs of both groups be met? The rural subdivision is the answer. It requires the lots to front on an easement of access on the farm property. The easement would be 66 feet wide to support a public street and drainage at some time in the future. The easement can be improved with a gravel drive to serve the homes, so the cost is minimal compared to a public street, and many farmers could do most of the work with their own equipment. The County gets the home onto a new street and leaves the existing road with limited intersections. **Figure 6.11, Four-Lot Rural Subdivision**, depicts an example of rural farm development. The size of the farm or property determines the number of lots that can be built using the rural subdivision as shown in **Table 6.4, Rural Subdivision Options**.

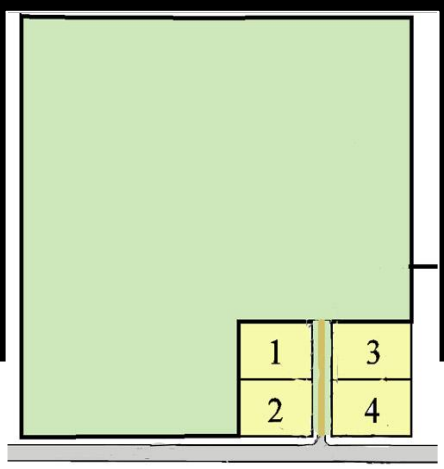


Table 6.4, Rural Subdivision Options

Parcel Size	Number of Lots	Density
40-49 acres	2	0.050 du's/ac.
50-59 acres	3	0.060 du's/ac.
60-79 acres	4	0.067 du's/ac.
80 -99 acres	5	0.062 du's/ac.
100 or more acres	6	0.060 du's/ac.

Because the rural subdivision is not intended to provide full development, there is a limit on the number of lots that can be given to children or sold. The rest of the farm continues in agriculture and is referred to as a remainder because it is intended to be farmed. The easement giving access to the lots is part of the remainder. The County wants to ensure that, at some point in time, the easement of access becomes a public road. The subdivision that is recorded contains the subdivided lots and the remainder. To ensure the road is eventually built, the remainder has a note on it that when the remainder is to be further subdivided under one of the previous options, that the developer is responsible for dedicating the public right-of-way and improving the road and drainage to County standards.

The result of the seven options is that landowners have far more choice in how to develop their land than as listed in the current zoning. Three of the options are for total build out; four provide for phased development. The base zoning in the holding zone would result in a cluster development at the density of five-acre lots. The phased options allow a landowner to do an initial development to enable them to wait for sewers and urban water service and a higher land value. Density incentives reward the developer who chooses the phased options. In return, the County and its citizens ensure a more efficient provision of services. The owner who does a rural community is rewarded with the ability to continue farming, while also being able to participate financially in the growth of the County. These are win-win options for both parties.

There is a disincentive for the development pattern that is least efficient for the County – subdividing with large lots with maximum street length per lot. This requires the use of five-acre lots, resulting in a 50 percent reduction in density.

The rural subdivision is simply a way for a rural land owner to accommodate family or get some funds from the sale of property in an emergency. The incentive is not in density, but in a means to achieve the desired result with minimal costs without creating problems for the County roads.

6.4 LEVELS OF SERVICE

The service of residents by government can be quantified as meeting express levels of service. This is a familiar concept on roads where the level of service (LOS) relates to the degree of congestion. For parks and recreation, the LOS

would be described as acres of parks per 1,000 people. Two of these levels of service – sewer and water standards – are important for growth management since these are systems critical to development.

With sewer there are two levels – public sewers where government treats the wastes and on-site systems, typically septic systems, where the land owner treats the waste. Water service standards are based on pressure, the ability to reach all levels in a house, and flows that measure the amount of water that can be delivered in a fixed period of time. One level of service would involve pressures and flows adequate for household use. A second level provides the capacity to fight fires from hydrants, which requires more pressure and flow capacity than residential service. Fire and emergency services have a response time criteria, which for fire is also combined with water service conditions.

In order to best manage growth, a multi-tiered service approach is proposed. The developed area and growth area require full public service for water and sewer. These areas require a water system that fully meets the need to fight fires. A public sewer system ensures that wastes will be properly handled. The holding zone is not intended to be developed during the next 20 years, and the majority of the holding zone area is unlikely to be developed in the next 50 years. This area has a reduced level of service. Rural water can be on-site wells or residential service, and sewerage is treated on site. To move forward with a proposed development in the holding zone, the service provider must certify that both water and sewer meet the level of service standard.

The rural water districts should be required to demonstrate that the proposed development can be adequately provided with residential service without lowering service in other parts of the service area. A second condition is that the feeder infrastructure bringing water to the water district is adequate. If these conditions cannot be met, the units will have to be provided with on-site water. Each site will have to have been determined to be suitable for an on-site sewerage system.

6.5 IMPLEMENTATION

Developed areas

Redevelopment

- The Arts Neighborhood should continue final efforts to redevelop and the Fountain Avenue Neighborhood will begin redevelopment in 2007.
- Once designated as a redevelopment neighborhood, water and sewer shall be studied to determine maintenance and replacement needs, including upgrades that will serve future growth.
- Parks should be improved to standard and level of service be brought to standard if current levels are inadequate.
- Sidewalks should be improved or provided in the initial redevelopment effort.
- Economic study of the VMV PaducahBilt site.
- Stage 1 environmental assessment of the VMV PaducahBilt site.
- Downtown zoning revised to encourage the increase in residential population, which should be coordinated with the waterfront planning.
- City and County continue to press for redevelopment plans of the Uranium Enrichment Plant that will provide for employment and other development opportunities and a clean up of the entire property for reuse.
- Roads and other infrastructure shall be maintained and replaced in accordance with a capital improvements and maintenance program that maintains such facilities in a safe, sound, and efficient condition.

Urban Growth Area

- Provide water and sewer for the entire growth area. Most of this area already has service or service is already planned. All expansions needed for this area shall be on the capital program so that they are completed within two years.
- Have plans for all other needed infrastructure.
- Capital program or other means of providing needed infrastructure or services should be in place. This includes other capital facilities including fire, emergency, library, schools, and parks.
- Provide for review of the plan and updating every five years to ensure that the development capacity is adequate.

Protection Area

- Revise zoning to prohibit development in the floodplain except for water dependent uses and essential road crossings.
- Prohibit development in wetlands, except for on-site mitigation in commercial and industrial areas where the quality of the wetland would be degraded if they were preserved in place.

- Use drainageway soils for stormwater management facilities.
- Revise zoning to permit clustering as a matter of right. Clustering makes it possible to avoid destruction of a significant amount of sensitive area on a property without losing density. Cluster should be a permitted use in all residential districts.
- For nonresidential districts, do not use building coverage as a regulation. Use floor area ratio and ensure that height standards permit intensity to be maintained when there are resources on-site.

Holding Zone

- The area shall be divided into two areas for future development – perpetually on septic tanks and areas that, in some distant future, may be provided with sewers. Note the actual timing of service extension could be 50 or more years in the future.
- Zoning should be revised in accordance with the standards in this Chapter.
- The sewer and water providers should be required to adopt this plan.
- No services should be extended into the holding zone unless the area to be served is designated as an urban growth area by an amendment to this plan. Minor improvements to water systems shall be limited to upgrades that benefit the current users and are not being used to permit new subdivisions.