

Blackberry Creek Watershed



Zoning Code Analysis and Ordinance Language Recommendations

City of Aurora Report

April 2004

funded by:



Illinois Department of Natural Resources

prepared for:



Kane County, Illinois

prepared by:



CONSERVATION DESIGN FORUM

**The Blackberry Creek Watershed
Zoning Code Analysis and Ordinance Language Recommendations Project
was funded by a C2000 Grant from the
Illinois Department of Natural Resources (IDNR)
with a match from the
Kane County Department of Environmental Management**

Acknowledgements

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Blackberry Creek Watershed
Zoning Code Analysis and Ordinance Language Recommendations

Introduction

The Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project is a continuation of ongoing efforts to reduce the negative impacts of stormwater and improve the quality of life in the Blackberry Creek Watershed. These efforts have begun with the Blackberry Creek Watershed Management Plan and continued with the Kane County Stormwater Ordinance, and the recently completed Blackberry Creek Watershed Alternative Futures Analysis Project.

Project Purpose: The purpose of this ordinance language project was to provide suggested ordinance revisions to each of the municipalities and counties located within the Blackberry Creek Watershed. Particular attention was paid to zoning and subdivision ordinances and specifically those codes that can influence stormwater runoff and therefore stormwater impacts to the natural and built environments. While the Kane County Stormwater Ordinance establishes standards for managing stormwater, once it has been generated, the ordinance has little authority to prevent stormwater runoff through land use controls. Conversely, local subdivision and zoning codes can have a significant influence on the amount of runoff generated through street width standards, parking and open space requirements, etc. Thus, rather than focusing on standards already addressed in Kane County's Stormwater Ordinance, this ordinance project suggests standards and codes for facets of development outside the realm and authority of the Stormwater Ordinance.

This project recommends changes to subdivision and zoning code for each of the municipalities and counties in the Blackberry Creek Watershed. While the recommended changes are strongly encouraged and have the potential to provide significant protection for the Blackberry Creek Watershed, it is recognized that municipalities and counties have many issues and concerns that must be balanced when creating development standards. Thus, it should be understood that these are only recommendations and that they must be reviewed in light of overall community conditions and relationships to other community standards prior to adoption.

Background: Stormwater is a significant issue in the Blackberry Creek Watershed, as evidenced by the over \$14 million in flood damages associated with the 1996 flood as reported in the Blackberry Creek Watershed Management Plan. In response to the 1996 flood, the Watershed Management Plan for Blackberry Creek was prepared and adopted by the watershed communities and Kane and Kendall Counties in 1999. Several jurisdictions have taken additional initiative to develop specific codes and ordinances that help orient new development towards conservation design, including the City of Aurora's Countryside Vision Plan, Elburn's and Sugar Grove's stream and wetland protection ordinance, and Kendall County's revised conservation-oriented residential zoning code.

Even with these individual efforts, the watershed still remains at risk, as discussed in the Blackberry Creek Alternative Futures Analysis report (2003), unless a coordinated program is developed for addressing stormwater impacts on watershed systems. This project is intended to provide the tools to address the gap between stormwater ordinances and subdivision and zoning code. This was done by researching model codes and standards from around the nation, analyzing local ordinances in the Blackberry Creek Watershed, and providing recommended language for each municipality and county in the watershed. This report presents the recommended language.

Project Participants: The Blackberry Creek Watershed contains seven municipalities and two counties, including Aurora, Batavia, Elburn, Montgomery, North Aurora, Sugar Grove, Yorkville, and Kane and Kendall Counties. Reports such as this were prepared for each community and each report is specific to the codes and ordinances of that community. In addition to the specific recommendations, summaries of the models used in preparing these recommendations are also provided so that each community has the opportunity to see exactly how model codes and the research centers from around the country are addressing similar issues through the creation and adoption of innovative ordinances and development standards. This report is designed to provide the necessary tools for each community to update its own codes.

Project Process

This project included several tasks to develop model codes and ordinance language specifically for each community.

- (1) **Research Model Codes** – The first task for the project team included the collection of over 40 model code resources relevant to reducing natural resource impacts of urban development. These resources were collected from agencies and organizations around the nation. A reference list from the research can be found in **Appendix A** and the results are integrated into **Tables 1** and **Table 2** of this report.
- (2) **Review and Analyze Municipal and County Subdivision and Zoning Ordinances** – After the model codes were reviewed and summarized, existing zoning and subdivision ordinances for each of the jurisdictions in the watershed were analyzed. The results of this analysis were used to identify areas where the municipality or the county may wish to revise its code to reduce development impacts to the Blackberry Creek Watershed. Each community was sent their code summary for review and correction. The results were presented to the participating entities to allow them to compare their codes and standards to those of their neighboring communities. The final summarized codes and standards can be found in **Appendix B** of this report.
- (3) **Meet with Participating Entities to Discuss Model Code Language** – A meeting was held with representatives from the various communities and the two counties to review the model standards and receive additional comments before the final reports were developed. Comments given during and after the meeting were inserted into the model language tables.
- (4) **Create Draft Final Report for Review** – To ensure that the recommended code changes were communicated in a readily usable format, a draft of the final report table was created and sent to all participants for their review and comment. Once a majority of the participants responded that the format was acceptable, the final phase was begun.
- (5) **Preparation and Dissemination of Final Model Language Reports** – Recommended changes to subdivision and zoning code were prepared for each community and compiled into individual reports in table format as explained in more detail below.

How to Use This Report

Current Codes and Recommended Code Revisions Table (Table 1)

Table 1 summarizes existing code and recommended code revisions for City of Aurora, following this introduction and a short narrative of the findings regarding City of Aurora's current codes and ordinances. Also included in Table 1 are the corresponding references used to establish the recommended changes.

Table 1 is divided into five columns, each described below:

Column 1. No. – The first column numbers every item in the code/standard categories that are described in the Column 2.

Column 2. Code/Standard Categories – The second column lists six major categories and general topic areas related to development and to which the model language recommendations apply. The six major categories include:

- 1) Alternative Stormwater Standards,
- 2) Environmental Standards,
- 3) Landscape Standards,
- 4) Parking Requirements,
- 5) Transportation Requirements, and
- 6) Zoning/Subdivision Standards.

Within the major categories above, more specific detailed category areas (or minor categories) are provided (e.g., parking lot landscape requirements, street widths, etc.) and numbered in Column 1.

Column 3. Local Code Reference – If the community's existing codes and ordinances address the category area in the second column, the location of that language within the community's code is referenced in the third column. If the code does not address the category, then an appropriate location for inserting the recommended language within the codes was identified and listed in this column (e.g., Subdivision Code Section 19.72 – 3).

Column 4. Current Standard – The fourth column briefly summarizes the community's current language or standard (e.g., bike trails must be a minimum of 8 feet wide). If the community's current code does not address this particular standard, then "N/A" or Not Applicable is indicated.

Column 5. Recommended Standard/Action – The fifth column contains the recommended language for insertion into the community's ordinance (e.g., credit will be given for available on-street parking...). In cases where a standard from the model code research was not applicable, a recommended action is listed (e.g., Adapt a permit process to expedite conservation-oriented designs.) There are a number of locations where wording options are provided (i.e., require/allow) depending on the community's preference.

Column 6. Source – The last column simply lists the sources of the suggested language (e.g., 12:126 – Reference No. 12, page 126). See **Appendix A** of this report for a full list of references.

Recommended Transportation Standards Table (Table 2)

The transportation section of the recommended code was sufficiently complex that additional detail was provided in a separate table with references to it in Table 1. The Table 2 lists recommended street width and bike lane standards and their sources. The model code sources recommend using Average Daily Trips (ADT) for assigning appropriate street widths rather than basing width on a street hierarchy system. Thus, the Table 2 standards are based on ADT.

Recommendations Summary

The following is a brief summary of our analysis of the City of Aurora's currently adopted subdivision and zoning codes (current as of the beginning of this project in the summer of 2002). It is understood that the City is currently redeveloping its subdivision and zoning ordinances. Even so, this summary will provide insight into the rationale behind the code changes that are recommended in Table 1.

1. Alternative Stormwater

The City of Aurora has already adopted the Kane County stormwater ordinance that covers most of developments' direct stormwater impacts in both municipal and unincorporated areas. Because of this, the Alternative Stormwater Standards is the least detailed portion of this report. Also, the Kane County Environmental Management Department is currently evaluating its runoff reduction (0.75 inches per impervious acre) and release rate standards and is updating the Stormwater Manual to include infiltration and bioretention stormwater management measures. The recommendations in this section, as well as the other sections are primarily focused on allowing or requiring these techniques.

General Recommendations: The Kane County Stormwater Ordinance as adopted in the City of Aurora already addresses stormwater standards. The language provided here is intended to facilitate and encourage use of biofiltration techniques (bioswales, rain gardens, etc.) to address street and roof runoff, many of which are identified in the City's Countryside Vision Plan.

The language also suggests a stormwater impact fee to provide an incentive for reducing the effective impervious area (hydraulically connected impervious area) of a site and therefore the amount of runoff. This is a short recommendation that would require significant additional study prior to implementation. However, programs like this have completely changed the economics of stormwater in Germany. Methods of "disconnecting" impervious area include use of permeable paving, green roofs, and biofiltration techniques (bioswales, rain gardens, etc.).

2. Environmental Standards

The City of Aurora recently adopted the Countryside Vision Plan, which identifies significant amounts of open space and conservation-oriented development. The City's Comprehensive Plan contains several policies that address environmental issues, which is necessary if the City plans to adopt supporting regulations. Beyond the Countywide stormwater ordinance, supporting regulations and standards currently do not exist.

This section focuses on protection, restoration, and management of natural areas. These recommendations address remnant landscapes as well as restored/created natural areas.

The Countywide Stormwater Ordinance already requires establishment of buffers along streams, lakes, and wetlands and already requires establishment of a responsible party. The language recommended in this section supplements those standards by suggesting additional activities that are outside the scope of the countywide stormwater authority.

The recommendations within this section are intended to provide more explicit standards for identification, protection, and management of natural areas. In some cases natural areas will be remnant landscapes. In other cases, natural areas may be created or restored landscapes intended to appear and function like native landscapes such as prairies, woodlands, or wetlands.

General Recommendations: The County version of this report recommends creation of a Countywide Natural Areas Overlay District that identifies aquatic, as well as upland, resources to be protected along with their buffers. The City should participate in development of this district and apply open space zoning to the area covered by the District.

Standards and criteria for open space areas designated in development plans should be recommended. The standards and criteria address identification of potential open space, allowable uses and cover within the open space, buffer transitions, and other design elements.

Preparation of management plans should be required for areas designated as open space within development plans and revenue sources for management activities should be institutionalized.

3. Landscape Standards

The City of Aurora already has tree removal permitting, tree planting and street-side landscaping requirements. Many stormwater management measures can be incorporated into landscape areas. These features include biofiltration swales, rain gardens, and filter strips. Also, the type of landscape can influence the amount and rate of runoff.

General Recommendations: It is recommended that parking lot islands and other landscape features be required, which will encourage use of parking lot biofiltration. Language to specifically allow/require integration of biofiltration into parking islands and street side landscape strips (a.k.a. parkway, tree lawn, etc.) should also be considered.

Expansion of tree protection language is recommended to provide protection of other beneficial vegetation and also to allow removal of trees where appropriate for proper forest/natural area management. A survey of significant vegetation should be required to assist the City in its development review process.

4. Parking Requirements

Parking facilities often create large impervious surfaces that result in an increase of stormwater runoff and related water quality issues. Reduced parking area and alternative porous paving materials can help to reduce impervious surfaces and encourage infiltration and groundwater recharge. Coordination of parking needs between adjacent and nearby uses, and the provision of bicycle parking where appropriate can help to alleviate the need for overly large parking areas as well.

General Recommendations: Parking standards can be updated to meet current trends towards shared parking, parking credit programs, and parking for non-motorized vehicles (recommended bicycle parking ratios are provided). Specific language to allow permeable parking surfaces such as interlocking concrete pavers, porous asphalt, and porous concrete is recommended. These types of permeable paving systems have been shown to be as durable as conventional asphalt and concrete paving and need not be limited to overflow parking areas.

5. Transportation Requirements

A significant proportion of the impervious surfaces and sources of stormwater impacts is related to streets and highways. Limiting the amount of impervious cover to that which is necessary and to the most appropriate areas is a key to ecologically sensitive design. The City of Aurora has obviously attempted to balance quality of life issues with the benefits of connectivity and walkability, through requirements for sidewalks in the subdivision code and pedestrian easements described in the Comprehensive Plan.

General Recommendations: More explicit design standards for street width, along with allowances for street designs that utilize naturalized stormwater infiltration and conveyance systems should be incorporated into current codes. Also, since stream crossings can cause significant stream impacts, recommended standards related to the number of crossings and the design of crossings are provided.

As outlined in Table 2, pavement width, the number of drive lanes, the presence of bike lanes and parking lanes should be based on average daily trips as well as the type of road. Where traffic counts are high, separate bike lanes should be provided to allow for safe use of bicycles as an alternative means of transportation. Also, because wider drive lanes can encourage higher speeds, narrower lanes are recommended for local roads with low traffic counts.

6. Zoning/Subdivision

The City of Aurora's Countryside Vision Plan will help to ensure open space preservation, impervious areas reduction, compact housing, and the preservation of native landscaping on the western edge of the City. Appropriate codes and ordinances will help to ensure that the vision is realized.

While the low densities of the Countryside Plan may not be appropriate for all areas of the City, many of the conservation and stormwater principals can and should apply to any density of development. Although clustering is discussed in the City's comprehensive plan, there are no codes to manage and control clustering.

As discussed under environmental standards, the countywide stormwater ordinance provides authority to protect water related resources such as streams, lakes, wetlands, and floodplains but does not have authority to protect other potential site resources such as remnant uplands, wildlife connectors, agricultural land, and cultural resources. However, through other measures that fall under zoning and subdivision authority, protection of these areas can be required and/or incentives provided.

General Recommendations: The recommended site planning process is to perform a site capacity analysis based on the remaining developable land after removing floodplains, streams, wetlands, and other undevelopable land. Once the developable land is identified, additional resources that should be considered for protection should be identified. Then cluster approaches may be used to protect these additional resources. Also, density bonuses can be given to further facilitate protection of these areas.

Site yield calculations should be required to determine the potential number of units that the site can accommodate after removing undevelopable land. This allows for a more objective analysis of the number of units that the zoning allows and the starting point for density bonuses that may allow for additional lots. It is recommended that lot sizes as specified in the zoning code be used to determine site yield but reductions in actual lot size be allowed to provide the required open space as described below.

Open space requirements that vary with development density are recommended. However, to encourage these practices, the recommended language allows the open space to be used for naturalized drainage. The recommendation also allows clustering to achieve the open space requirement.

With the above general summaries in mind, the following tables provide a more detailed description of the language that is recommended for consideration by The City of Aurora, along with the location in The City's codes and ordinances where it may be inserted.

Table 1: Current Codes and Recommended Code Revisions Table

| City of Aurora Codes and Ordinances Model Language Recommendations Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | |
|--|---|-----------------------|--|--|-----------|
| No. | CODE/STANDARD CATEGORIES | LOCAL CODE REFERENCES | CURRENT STANDARD | RECOMMENDED STANDARD/ACTION | SOURCE |
| ALTERNATIVE STORMWATER STANDARDS | | | | | |
| 1 | Alternative Detention/Infiltration Allowances | Subdivision Art. V | N/A | Native and perennial gardens are required/allowed where the landscape strip within public rights-of-way and public easements is used for bioretention/infiltration of stormwater. | 12:Inf-41 |
| 2 | Rooftop Runoff Redirection | Subdivision Art. V | N/A | For roofs to be considered hydraulically disconnected impervious (for purposes of the stormwater ordinance), the roof runoff shall be directed to a cistern, rain garden or other area of sufficient size and permeability to produce no surface runoff for rainfall events up to 0.75 inches. | 21:126 |
| 3 | Stormwater Incentives - Fees | Subdivision Art. V | N/A | Impose stormwater impact fees on developers based on release of stormwater. European examples suggest a range of \$1,260 - \$2,860/acre-foot/year (Huert and Bielefeld, Germany). By applying the fee only to "hydraulically connected impervious surfaces" and providing standards for methods of hydraulically disconnecting impervious surfaces, there would be significant incentive to reduce runoff. | CDF |
| ENVIRONMENTAL STANDARDS | | | | | |
| 4 | Buffer Management - Planning | Zoning Sec. 10.10 | N/A | Management and preservation plans shall be prepared for all common open space areas and stormwater facilities. A revenue source (e.g., Special Service Area or backup SSA) shall be established to fund the recommended management activities. Where necessary management is not being conducted, the City may conduct those activities and draw on the identified revenue source to fund those activities. | 13 |
| 5 | Floodplain Restrictions | Zoning Sec. 10.10 | Prevent from development in Comp Plan Policy; Compensatory storage required for floodplain fill (Kane County stormwater ordinance) | Uses allowed within the flood fringe shall be limited to 1) Agriculture; 2) Public and private parks; 3) Passive recreation; 4) Fencing parallel to the direction of water flow; 5) Pervious parking lots subject to flooding depths no greater than 6 inches, 6) yard areas. | 13:16 |
| 6 | Natural Areas Plan Compliance | Zoning Sec. 10.10 | Natural areas preservation encouraged in Comp Plan Policy | Development Plan shall comply with Natural Areas Overlay District (See Special Zoning for Environmentally Sensitive Areas) | 12:CR-2 |
| 7 | Natural Areas Reclamation | Zoning Sec. 10.10 | N/A | Any area designated as naturalized open space shall be planted and maintained with appropriate native vegetation where existing native vegetation does not exist or cannot be preserved. | 46 |
| 8 | Open Space Design | Zoning Sec. 10.10 | N/A | Officially approved naturalized open space shall be: 1) designed to conserve significant natural features and cultural elements on the site. 2) naturalized to consist of primarily native landscapes. 3) Interlinked with other open space. Passive recreation, farming, sewage treatment, and stormwater facilities may be allowed in these areas where these uses do not impact important natural features and where consistent with approved City plans. | 13:11 |

Table 1: Current Codes and Recommended Code Revisions Table (continued)

| City of Aurora Codes and Ordinances Model Language Recommendations Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | |
|--|---|-----------------------|---|--|--------------------|
| No. | CODE/STANDARD CATEGORIES | LOCAL CODE REFERENCES | CURRENT STANDARD | RECOMMENDED STANDARD/ACTION | SOURCE |
| 9 | Open Space Design - Approved Land Uses | Zoning Sec. 10.10 | N/A | Officially approved naturalized open space may not include: 1) Roads and rights-of-way, 2) Parking, 3) Driveways and access ways (except to support passive uses such as parking, restrooms), etc., 4) Required setbacks (except for naturalized stream or wetland setbacks), 5) Private yards, 6) fragmented or isolated open space, and 7) Land that is subject to preexisting conservation easements or similar limitations on development. | 13:11; 46 |
| 10 | Open Space Design - Phased Development Requirements | Zoning Sec. 10.10 | N/A | In the case of phased developments, open space shall be provided in proportion to each phase of development. | 46 |
| 11 | Remnant Landscapes | Zoning Sec. 10.10 | N/A | Remnant native landscapes consisting of plant communities indigenous to the site and northern Illinois shall be protected, restored, and maintained. | CDF |
| 12 | Special Zoning - Greenways | Zoning Sec. 10.10 | N/A | Apply "Open Space" zoning classification to the Natural Areas Overlay District described in the "Special Zoning for Environmentally Sensitive Areas" as well as to other open space created to provide trails and other networks. | 34:125 |
| 13 | Special Zoning for Environmentally Sensitive Areas | Zoning Sec. 10.10 | N/A | Create and adopt a County-Wide Natural Areas Overlay District that identifies essential open space as agreed upon by the County and municipalities. This would be similar to the "Green Infrastructure Plan" identified in the Blackberry Creek Alternative Futures Project and could be expanded to include upland remnant areas. | 12:CR-2 |
| 14 | Stream Buffer Width | Zoning Sec. 10.10 | Varies from 15 to 50 feet, depending on drainage area and stream quality (Kane County stormwater ordinance) | Streams and wetlands shall be buffered using a three-zone system with the following standards: (1) Streamside (Undisturbed) Zone: 25' or more in width according to the Stormwater Ordinance. Allowable uses are limited to footpaths to provide water access. (2) Middle (Limited Use) Zones: 50'-100" depending upon and reflecting meander belt width, slope and 100 year floodplain. Uses allowed include recreation and bicycle paths, tree removal by permit, and stormwater BMPs. (3) Outer (Transitional) Zone: 25' setback. Uses allowed include ancillary residential uses, yards, gardens, most stormwater BMP's. | 21:131; 13:5B-2 |
| 15 | Wetland Buffer Width | Zoning Sec. 10.10 | Varies from 15 to 50 feet, depending on wetland area and wetland quality (Kane County stormwater ordinance) | Wetlands will have a minimum of 20' buffer to be kept in or restored to a natural state, with minimum building and pavement setback of 35' beyond the outer edge of the buffer. | 13:11-16 |
| 16 | Wetland Mitigation | Zoning Sec. 10.10 | N/A | Wetlands found within a site proposed to be developed must remain in or be restored to a natural state. | 46 |

Table 1: Current Codes and Recommended Code Revisions Table (continued)

| City of Aurora Codes and Ordinances Model Language Recommendations | | | | | |
|---|--|------------------------------|--|---|-----------------|
| Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | |
| No. | CODE/STANDARD CATEGORIES | LOCAL CODE REFERENCES | CURRENT STANDARD | RECOMMENDED STANDARD/ACTION | SOURCE |
| LANDSCAPE STANDARDS | | | | | |
| 17 | Native Plant Allowances/ Requirements | Subdivision Sec. 43-99 | 50% of trees must be native/Allowed with stormwater facilities | Landscape designs shall not include invasive plant species. | CDF |
| 18 | Parking Lot Landscape Requirements - bioretention/infiltration | Subdivision Sec. 43-99 | Refer to Kane County Stormwater Runoff Control Regulations | The following landscape and infiltration treatments are allowed/ required within parking lots: 1) Infiltration bio-swales, 2) Vegetated swales, 3) Vegetated filter strips, 4) infiltration basins/trenches, 5) Sand filters, and similar measures designed to filter, retain, and infiltrate runoff. | 1:2-5 |
| 19 | Parking Lot Landscape Requirements - Landscape Islands | Subdivision Sec. 43-99 | N/A | Continuous, ten (10) foot wide planting strips shall be provided between each parking bay. The strips may be used for bioretention. | 16: 28 |
| 20 | Parking Lot Landscape Requirements - Perimeter Landscaping, bioretention | Subdivision Sec. 43-99 | N/A | A 10 foot wide landscape strip is required around the perimeter of the parking lot. Landscape strips may be used for bioretention. | 21: 17 |
| 21 | Parking Lot Landscape Requirements - Perimeter Landscaping, Shade Trees | Subdivision Sec. 43-99 | N/A | 1 tree is required for every 25 linear feet of parking lot frontage. | 21: 17 |
| 22 | Significant Vegetation Preservation | Subdivision Sec. 43-99 | N/A | All "significant" trees and native vegetation shall be protected. "Significant" trees are those with 3" trunks at 4' above grade except those determined to be nuisance species and where it is agreed that the density of trees is greater than desirable for proper forest management. | 15: 3-18 |
| 23 | Street Landscape Requirements | Subdivision Sec. 43-99 | 8', 30' min.spacing;25'med/20'small | The street ROW landscape strip (parkway) may be/shall be used as a planted bio-infiltration system. | 1: 2-9 |
| 24 | Tree Planting Requirements | Subdivision Sec. 43-99 | 1 1/2" caliper at 6" from ground | One deciduous canopy tree must be planted for every 40' of street frontage between the sidewalk and curb, except where conflicts occur with existing trees, retaining walls, utilities that can not be relocated, and other similar barriers. Street trees must be 1.5" - 2" caliper. | 1: 2-9 |
| 25 | Tree Planning Requirements - Gender | Subdivision Sec. 43-99 | N/A | Tree planting must include both male and female trees of each species selected. | CDF |
| 26 | Tree Preservation Requirements | Subdivision Sec. 43-99 | Tree permit prior to removal | A "significant" tree and native vegetation inventory must be conducted. "Significant" trees are those with at least 3" trunks at 4 feet above grade. | 15:3-18 |

Table 1: Current Codes and Recommended Code Revisions Table (continued)

| City of Aurora Codes and Ordinances Model Language Recommendations Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | |
|--|---|-----------------------|--|--|---|
| No. | CODE/STANDARD CATEGORIES | LOCAL CODE REFERENCES | CURRENT STANDARD | RECOMMENDED STANDARD/ACTION | SOURCE |
| PARKING REQUIREMENTS | | | | | |
| 27 | Alternative Parking Lot Runoff Treatments | Zoning Sec. 10.3 | Refer to Kane County Stormwater Runoff Control Regulations | A number of landscape and infiltration treatments are allowed/required within parking lots, including, 1) Infiltration bio-swales, 2) Vegetated swales, 3) Vegetated filter strips, 4) infiltration basins/trenches, 5) Sand filters, and similar measures designed to filter, retain, and infiltrate runoff. | 1:2-5 |
| 28 | Alternative Parking Spaces - Bicycle | Zoning Sec. 10.3 | N/A | The amount of vehicle parking spaces shall/may be reduced by one space for every 8 required bicycle parking spaces. For every 4 additional covered bicycle parking spaces provided over the minimum required, one vehicle space may be eliminated, not to exceed 10% of the required vehicle parking spaces. | 45:4.1.20p |
| 29 | Alternative Parking Spaces - Compact Cars | Zoning Sec. 10.3 | N/A | Between 25% and 40% of total number of parking spaces may/shall be for compact car use. | 10:3-31; 45 4.1.50 |
| 30 | Joint/Shared Parking Lot Allowances | Zoning Sec. 10.3-2 | No less than joint (sum of all); Joined parking encouraged in Comp Plan Policy | (1) The required number of parking spaces may be reduced a maximum of 50% with approval from zoning board of appeals. (2) A reduction in the total number of spaces may be allowed for: a) Shopping Centers, b) Joint uses at different times (operating hours with little daily or weekly overlap, businesses within 1000' of each other, legal agreement between tenants recorded), or c) Simultaneous uses if only two uses in the same building. | 14:20 |
| 31 | Parking Lot Access Aisle Width | Zoning Sec. 10.3-6 | 12' 1-way @ 90 degrees/20' 2-way | 30 Degree: One-way - 12', Two-way - 24'. | 15:3-32 |
| | | | | 45 Degree: One-way - 12', Two-way - 24'. | 15:3-32 |
| | | | | 60 Degree: One-way - 18' (standard) 15' (compact), Two-way - 24'. | 15:3-32 |
| | | | | 90 Degree: One-way - 24' (standard) 22' (compact), Two-way - 24'. | 15:3-32 |
| | | | | Parallel Parking: One-way - 12', Two-way - 24'. | 15:3-32 |
| 32 | Parking Ratios - Single Family | Zoning Sec. 10.6 | 2/du | Single Family Residential - 2/du, no off-street parking located within front yard. Accessory dwelling units have no required parking. | 15:22, 3-28-29; 21:16, 61; 12:ND-36; 45: 4.1.3 |
| 33 | Parking Ratio - Multi-Family | Zoning Sec. 10.6 | 2 for 2+bd unit/ 1/unit for efficiency | A minimum of one bicycle parking space is required for every 2 required automobile parking spaces. | 15:22, 3-28-29; 21:16, 61; 12:ND-36; 45: 4.1.3 |
| 34 | Parking Ratio - Clinic | Zoning Sec. 10.6 | 3/doctor + 1/2 employee | A minimum of 2 bicycle parking spaces are required, or 1 per 3 required employee automobile parking spaces, whichever is greater. | 15:22, 3-28-29; 21:16, 61; 12:ND-36; 45: 4.1.3 |
| 35 | Parking Ratio - Church | Zoning Sec. 10.6 | 1/6 seats | A minimum of 2 bicycle parking spaces are required, or 1 per 10 required automobile parking spaces, whichever is greater. | 15:22, 3-28-29; 21:16, 61; 12:ND-36; 45: 4.1.3 |

Table 1: Current Codes and Recommended Code Revisions Table (continued)

| City of Aurora Codes and Ordinances Model Language Recommendations Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | |
|--|--|-----------------------|--|---|---|
| No. | CODE/STANDARD CATEGORIES | LOCAL CODE REFERENCES | CURRENT STANDARD | RECOMMENDED STANDARD/ACTION | SOURCE |
| 36 | Parking Ratio - Convenience Store | Zoning Sec. 10.6 | 1/300sf | A minimum of 2 bicycle parking spaces are required, or 1 per 20 required automobile parking spaces, whichever is greater. | 15:22, 3-28-29; 21:16, 61; 12:ND-36; 45: 4.1.3 |
| 37 | Parking Ratio - Office | Zoning Sec. 10.6 | 1/400sf | A minimum of 2 bicycle parking spaces are required, or 1 per 20 required automobile parking spaces, whichever is greater. | 15:22, 3-28-29; 21:16, 61; 12:ND-36; 45: 4.1.3 |
| 38 | Parking Ratio - Shopping Center | Zoning Sec. 10.6 | 1/300sf | A minimum of 4 bicycle parking spaces are required, or 1 per 40 required automobile parking spaces, whichever is greater. | 15:22, 3-28-29; 21:16, 61; 12:ND-36; 45: 4.1.3 |
| 39 | Parking Ratio - Industrial | Zoning Sec. 10.6 | 1/4 employees + company vehicles | A minimum of 2 bicycle parking spaces are required, or 1 per 40 required automobile parking spaces, whichever is greater. | 15:22, 3-28-29; 21:16, 61; 12:ND-36; 45: 4.1.3 |
| 40 | Parking Space Area | Zoning Sec. 10.3-6 | 162 sf min. 8.5'X19' | Maximum areas for parking spaces - 1) Compact: 7.5' x 15' (112.5 sf); 2) Regular: 9'x18' (162sf); 3) Handicapped: 8' x 18' and 5' x 18' aisle (234 sf) to ADA Standards with two ADA parking spaces accessing each aisle; 4) On Street: 8' x 23' (184 sf). | 10:3-31; 32:4.3 |
| 41 | Parking Space Reduction | Zoning Sec. 10.3 | N/A | The total number of parking spaces can be reduced to 50% of the required if alternative needs are demonstrated. | 14:20 |
| 42 | Parking Space Reductions for Carpooling Programs. | Zoning Sec. 10.3 | N/A | Reduce parking requirement for companies and industries that have organized and formalized carpooling programs. | CDF |
| 43 | Parking Space Reductions for Proximity to Mass Transit | Zoning Sec. 10.3 | N/A | Reduce parking ratios for proximity to mass transit. | 21:16 |
| 44 | Parking Space Reductions from Provision of On-Street Parking | Zoning Sec. 10.3 | N/A | Parking space credit will be given for on-street parking for every 24' of uninterrupted curb for parallel parking, and appropriate lengths for 45-60 degree and 90 degree parking. | 15:3-30 |
| 45 | Parking Structure (garage) Allowances | Zoning Sec. 10.3 | N/A | Mixed-use parking garages should be encouraged in downtowns and other locations where land prices are high. | 21: 68 |
| 46 | Paving Requirement and Material | Zoning Sec. 10.3-6 | Materials of comparable specifications to Asphalt and Concrete | Permeable pavement (interlocking concrete pavers, porous concrete, or porous asphalt) are encouraged except for vehicle service stations, gas stations, and other areas used for transfer or storage of hazardous materials. | 21:17 |
| 47 | Required Parking Minimums and Maximums | Zoning Sec. 10.3 | N/A | Minimum and maximum number of parking spaces allowed should be the same, unless approved by the City Manager. | 14:19 |

Table 1: Current Codes and Recommended Code Revisions Table (continued)

| City of Aurora Codes and Ordinances Model Language Recommendations Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | |
|--|------------------------------|------------------------|--|---|----------|
| No. | CODE/STANDARD CATEGORIES | LOCAL CODE REFERENCES | CURRENT STANDARD | RECOMMENDED STANDARD/ACTION | SOURCE |
| TRANSPORTATION REQUIREMENTS | | | | | |
| 48 | Arterial ROW Width | Subdivision Sec. 42-20 | 66'-80' | Refer to Table 2 | |
| 49 | Arterial Street Width | Subdivision Sec. 42-20 | 39'-41' | Refer to Table 2 | |
| 50 | Bike Trails | Subdivision Sec. 42-20 | N/A | Refer to Table 2 | |
| 51 | Collector ROW Width | Subdivision Sec. 42-20 | 100' | Refer to Table 2 | |
| 52 | Collector Street Width | Subdivision Sec. 42-20 | 49' | Refer to Table 2 | |
| 53 | Cul-de-Sac ROW Width | Subdivision Sec. 42-20 | 66' | Refer to Table 2 | |
| 54 | Cul-de-Sac Width | Subdivision Sec. 42-20 | 31' | Refer to Table 2 | |
| 55 | Curb and Gutter Requirements | Subdivision Sec. 42-20 | N/A | Curb and gutter street drainage systems are not required except where the average distance between driveways is less than 100 feet and there are on-street parking needs. Where curb and gutter is required, curb cuts may be used to allow use of naturalized drainage systems and streetside bioswales. | 21: 15 |
| 56 | Equestrian Trails | Subdivision Sec. 42 | N/A | Refer to Table 2 | |
| 57 | Mid-Block Ped/Bike Easements | Subdivision Sec. 42 | Accomplish pedestrian and bike circulations system; Provide public transportation (Comp Plan Policy) | Refer to Table 2 | |
| 58 | Residential ROW Width | Subdivision Sec. 42-20 | 66' | Refer to Table 2 | |
| 59 | Residential Street Width | Subdivision Sec. 42-20 | 31' | Refer to Table 2 | |
| 60 | Road Alignment | Subdivision Sec. 42-20 | N/A | To the greatest extent possible, new roadways shall respect natural contours and ridgelines to minimize grading. | CDF |
| 61 | Sidewalk Materials | Subdivision Sec. 43-98 | PCC | Varies, and to ADA standards. | 10: 3-32 |
| 62 | Sidewalk Requirements | Subdivision Sec. 43-98 | Yes, Both sides of all streets | Sidewalks are required on both sides of the street unless: site constraints prohibit their installation, a trail system is provided, or a "Woonerf" overlay district is used (see model code language below). | 16: 21 |
| 63 | Sidewalk Width | Subdivision Sec. 43-98 | N/A | 4' Minimum to be ADA compliant. Wider walks should be used where pedestrian traffic warrants. | 16: 21 |
| 64 | Stream Crossings | Subdivision Sec. 42-20 | N/A | Stream crossings shall be limited to the minimum necessary to provide safe circulation and ensure two ingress/egress locations. Stream crossings shall be located to minimize stream disturbance. Bridges or culverts of sufficient size shall be used for all perennial stream crossings to preserve stream channel width and natural stream substrates. | 13: 4C-5 |
| 65 | Street Paving Material | Subdivision Sec. 42-20 | N/A | Permeable pavement is allowed as a street paving material (interlocking concrete pavers, porous concrete, or porous asphalt) for low volume, local access streets. Central planting islands within cul de sacs shall/may be used for bioinfiltration. | CDF |
| 66 | Trail Construction Materials | Subdivision Sec. 42 | N/A | Permeable paving surfaces including gravels and other treatments are allowed/required for multi-use trails. | CDF |
| 67 | Woonerf Overlay District | Zoning Sec. 4 | N/A | In areas where cul-de-sacs exist, and where the efficiency of the transportation grid would not be interrupted, woonerfs, or landscaped, walking streets should be considered. | 44 |

Table 1: Current Codes and Recommended Code Revisions Table (continued)

| City of Aurora Codes and Ordinances Model Language Recommendations | | | | | |
|---|---|------------------------------|-------------------------|--|------------------|
| Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | |
| No. | CODE/STANDARD CATEGORIES | LOCAL CODE REFERENCES | CURRENT STANDARD | RECOMMENDED STANDARD/ACTION | SOURCE |
| ZONING/SUBDIVISION STANDARDS | | | | | |
| 68 | Clearing and Grading | Zoning Sec. 5 | N/A | On-site clearing and grading shall be restricted to avoid environmentally sensitive areas. | 7:2-18 |
| 69 | Clustering | Zoning Sec. 14 | Encouraged in Comp Plan | include within subdivision and zoning code a purpose statement for the benefits of clustering dwelling and commercial units including: 1) decreased impervious surface, 2) decreased pollutant loads, 3) protection of cultural resources and natural features, 4) habitat protection, 5) improved aesthetics, 6) creation of passive recreation opportunities, and 7) reduced costs for development and maintenance. | 10:3-19 |
| 70 | Clustering - Objectives | Zoning Sec. 14 | N/A | Include within subdivision and zoning code a purpose statement for the benefits of clustering dwelling and commercial units including: 1) decreased impervious surface, 2) decreased pollutant loads, 3) protection of cultural resources and natural features, 4) habitat protection, 5) improved aesthetics, 6) creation of passive recreation opportunities, and 7) reduced costs for development and maintenance. | 5:20; 15:3-59 |
| 71 | Density Bonus - incentive actions | Zoning Sec. 14 | N/A | Density bonuses may be awarded to developers for projects that 1) dedicate land for public use, 2) include affordable housing, 3) designate permanent open space protected by a conservation easement (beyond that space already required by this or other ordinances and statutes), and/or 4) place a 75' buffer around all agricultural lands. | 3 |
| 72 | Density Bonus/Incentives - Density Limits | Zoning Sec. 14 | N/A | Density bonuses may not increase the density of a development more than 15% beyond the number of units allowed prior to the application of bonuses. | 46 |
| 73 | Garages | Zoning Sec. 11 | N/A | Attached garages with front access are not permitted on lots with alleys and/or rear parking lots. | 14:A-30 |
| 74 | Infill Incentives | Zoning Sec. 5 | N/A | Local governments should create financial incentives that encourage infill development. | CDF |
| 75 | Non-Conforming Uses | Zoning Sec. 6 | N/A | Non-conforming uses shall not be expanded. | 15:5-8 |
| 76 | Open Space Requirements | Subdivision Sec. 43-56 | N/A | Required open space shall be measured from the site's net developable area and yield (see site yield calculations), following these guidelines - Estate residential: 60% open space. Moderate Rural Residential: 45%. Urban Residential: 30%. Clustering of units is allowed to meet open space requirements and open space areas may be used for natural drainage and other stormwater management systems designed to reduce runoff volumes. Open space requirement may be waived for smaller parcels (generally less than 10 acres). | 36:105; 13:II-40 |
| 77 | Planned Unit Development Allowances | Zoning Sec. 14 | N/A | Develop a mixed-use PUD ordinance that requires conservation-oriented mixed-use development with specific design guidelines and standards. | CDF |

Table 1: Current Codes and Recommended Code Revisions Table (continued)

| City of Aurora Codes and Ordinances Model Language Recommendations Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | |
|--|--|-----------------------|--|---|-------------------|
| No. | CODE/STANDARD CATEGORIES | LOCAL CODE REFERENCES | CURRENT STANDARD | RECOMMENDED STANDARD/ACTION | SOURCE |
| 78 | Site Capacity\Yield - Calculation | Zoning Sec. 11&12 | Varies by zoning category | Applicants shall submit site yield calculations that document the number of dwelling units the site can support after excluding lands deemed "unsuitable" due to this or other laws and ordinances and due to losses associated with meeting applicable standards (i.e., detention, streets, required parking, setbacks and buffers, etc. that vary by zoning classification) | 21:II A2-3; 17:21 |
| 79 | Site Capacity\Yield - Calculation | Zoning Sec. 11&12 | N/A | When calculating developable land area, remove perimeter street ROW and non-buildable and unsuitable land. Unsuitable land includes - 1) FEMA floodplains, 2) Wetlands and their required buffer, 3) Required buffer area for streams and lakes, 4) land of >12% slope, 5) lands with threatened or endangered species, and 6) protected archeological sites. | 15:2-15; 17:21 |
| 80 | Site Capacity/Yield - Lot size | Zoning Sec. 11&12 | Minimum lot size varies by zoning category | The lot sizes specified within the zoning code shall be used to determine site yield. However, actual lot sizes may be reduced (a maximum of 50%) to meet open space requirements and to provide flexibility to protect unique site areas not designated as unsuitable for development. | CDF |
| 81 | Site Planning Process - Site Visit Requirement | Zoning Sec. 14.2 | N/A | Site visits by the permitting agency are required prior to approval of all development permits. | 13:II-22 |
| 82 | Site Planning Process - Specific Area Plans | Zoning Sec. 14.7 | Westside/PUD | Local governments should work with multiple property owners to coordinate Sub-Area Master Plans. | 14:25-26 |
| | | | | Specific Sub-Area Plans shall be guided by Steering Committees that include land owners, neighbors and the community at large. | 14:A-69 |
| | | | | Master Planned Neighborhoods are applicable and required for sites of 40 acres or larger, and that fall within PUD or other special Districts. | 15:2-37 |

Table 2: Recommended Transportation Standards Table

| Code Area | ADT | Pavement Width | Driving Lane(s) | Parking Lane(s) | Landscaping | Bicycle Lane(s) | Other Standards | Source |
|------------------------------|----------------|----------------|-----------------|-----------------|---|-----------------|--|----------------------------|
| Multiple-Use Trails | | | | | | | | |
| Mid-Block Ped/Bike Easements | n/a | 6'-10' | n/a | n/a | 2'-4' both sides | 1-2 | | |
| Streets and Roads | | | | | | | Street and road standards are based on Average Daily Trips (ADT) or the expected and designed volumes for each road. | |
| One-Way Alley | n/a | 12' | 1 | 0 | not rqrd | n/a | | 14:18 |
| Two-Way Alley | n/a | 16' | 2 | 0 | not rqrd | n/a | | 14:18 |
| Access Lane | <250 | 21' | 1 | 1 @ 7' | 7' or 6' | n/a | | 14:18 |
| Access Lane | <250 | 28' | 1 | 2 @ 7' | 7' or 6' | n/a | | 14:18 |
| Local Low Volume Res. | 250-750 | 20' | 2 | 0 | 6'-6" | n/a | | 14:18 |
| Local Low Volume Res. | 250-750 | 21' | 1 | 1 @ 7' | 6' | n/a | | 14:18 |
| Local Low Volume Res. | 250-750 | 20' | 1 | 2 @ 7' | 7'-6" | n/a | | 14:18 |
| Local Medium Volume Res. | >750 | 20' | 2 | 0 | 9' | n/a | | 14:18 |
| Local Medium Volume Res. | >750 | 27' | 2 | 1 @ 7' | 8' | n/a | | 14:18 |
| Local Medium Volume Res. | >750 | 34' | 2 | 2 @ 7' | 7' | n/a | | 14:18 |
| Local Res. Queuing | <250 | 14' | 1 | 1 @ 7' | 6' | not rqrd | | 16:21 |
| Local Res. Queuing | <1,500 | 25'-28' | 1 | 2 @ 7' | 7'-8' | not rqrd | | 15: 3-40 |
| Residential Collector | 1,500 - 5,000 | 22' | 2 | 0 | 8' | n/a | | 15: 3-40 |
| Residential Collector | 1,500 - 5,000 | 25'-27' | 2 | 1 @ 7' | 7'-8' | n/a | | 15: 3-40 |
| Residential Collector | 1,500 - 5,000 | 32'-34' | 2 | 2 @ 7' | 7'-8' | n/a | | 15: 3-40 |
| Commercial Collector | 1,500 - 5,000 | 28' | 2 | 1 @ 8' | 7'-8' | not rqrd | | 15: 3-40 |
| Commercial Collector | 1,500 - 5,000 | 36' | 2 | 2 @ 8' | 7'-8' | not rqrd | | 15: 3-40 |
| Commercial Collector | 1,500 - 5,000 | 37' | 3+ | 0 | 7'-8' | not rqrd | | 15: 3-40 |
| Commercial Collector | 1,500 - 5,000 | 54' | 3+ | 0 | 7'-8' | not rqrd | | 15: 3-40 |
| Arterial Boulevard | 8,000 - 30,000 | 34' | 2 | bays 8' | 7'-8' | 2 @ 6' | Bicycle lanes are in addition to sidewalks | 15: 3-40 |
| Arterial Boulevard | 8,000 - 30,000 | 46' | 3 | bays 8' | 7'-8' | 2 @ 6' | Bicycle lanes are in addition to sidewalks | 15: 3-40 |
| Arterial Boulevard | 8,000 - 30,000 | 68' | 5 | bays 8' | 7'-8' | 2 @ 6' | Bicycle lanes are in addition to sidewalks | 15: 3-40 |
| Arterial Avenue | 3,000 - 10,000 | 32'-33' | 2 | bays 8' | 7'-8' | 2 @ 6' | Bicycle lanes are in addition to sidewalks | 15: 3-40 |
| Arterial Avenue | 3,000 - 10,000 | 44' | 3 | bays 8' | 7'-8' | 2 @ 6' | Bicycle lanes are in addition to sidewalks | 15: 3-40 |
| Cul-de-Sac | n/a | 20' | n/a | 1 @ 7' | 10' radius landscaped island | n/a | Cul-de-sacs may only be designed into developments when environmental or topographical constraints, existing development patterns, or compliance with other standards preclude street extension. | 6:39; 7:39; 21:15; 15:3-40 |
| Driveways | n/a | n/a | n/a | n/a | Paving may be limited to tire strips with vegetation between. | n/a | Alternative materials (e.g., brick, permeable pavers, decorative gravel) are allowed. | 13: II-32 |

"not rqrd" refers to situations where the element could be used in certain situations, but would not be required by code.

Appendix A

Model Ordinance References

Blackberry Creek Watershed
Zoning Code Analysis and Ordinance Language Recommendations

Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations

Appendix A Model Ordinance References

The resources listed below were used in the literature review and model language development portions of this project. Each represents a resource for model codes and ordinance standards for elements of development that may have impact on hydrological systems through impact on stormwater systems.

| Ref No. | Data Source | Date | Title/Subject/Key Words | Description/Action |
|---------|---|------|--|---|
| | Government | | | |
| 1 | City of Portland | 2002 | Stormwater Management Manual and Appendices | Stormwater management guidelines, principles and standards. |
| 2 | EPA | | Web site | Model environmental protection language. |
| 3 | Johnson County, IA | 2002 | Draft Conservation Subdivision Design Ordinance | Draft ordinance for review. |
| 4 | Kane County, IL | 1996 | 2020 Land Resource Management Plan | Land use program for County. |
| 5 | Northeastern Illinois Planning Commission | 1997 | Reducing the Impacts of Urban Runoff | Description of alternative site design approaches. |
| 6 | Northeastern Illinois Planning Commission | 2002 | Model Conservation Design Ordinance for Communities within Northeastern Illinois | Draft model ordinance. |
| 7 | Prince George's County, MD | 1999 | Low-Impact Development Design Strategies | Description of LID program and guidelines. |
| 8 | State of California | | Department of Water Resources | Model Landscape Ordinance. |
| 9 | State of California | 1993 | Model Water Efficient Landscaping Ordinance | Water efficient landscaping ordinance. |
| 10 | State of Delaware | 1997 | Conservation Design for Stormwater Management | Design approach to reduce stormwater impacts from land development. |
| 11 | State of Maryland | 2000 | Stormwater Design Manual Volumes I & II | Development site BMP's. |
| 12 | State of Minnesota | 2000 | From Policy to Reality: Model Ordinances for Sustainable Development | Minnesota Planning's model ordinance for sustainable development. |
| 13 | State of Ohio | 2002 | Countryside Program Resource Manual (I & II) | Ordered on 9/12/02. |
| 14 | State of Oregon | 1997 | Smart Development Code Handbook and Appendix | Codes and ordinances for Smart Growth (with Appendix). |
| 15 | State of Oregon | 1999 | Model Development Code and User's Guide for Small Cities | Model codes and ordinances for small towns and cities. |
| 16 | State of Wisconsin | 2001 | A Model Ordinance for a Traditional Neighborhood Development | State Smart Growth guide. |
| 17 | State of Wisconsin | 2001 | Model Ordinance for a Conservation Subdivision | State's Smart Growth guide. |
| 18 | Traverse City, MI | 2000 | Grand Traverse Bay Region Development Guidebook - 3 rd Edition | Development guidelines. |

Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations

Appendix A Model Ordinance References

| Ref No. | Data Source | Date | Title/Subject/Key Words | Description/Action |
|---------|---|------|---|--|
| | Institutions/Organizations | | | |
| 19 | APA | | Research library | Research model codes and ordinances. |
| 20 | ASLA | | Web site | See if model landscape codes exist. |
| 21 | Center for Watershed Protection | 1998 | Better Site Design | Handbook for changing development rules. |
| 22 | Congress for New Urbanism | 2002 | Model Ordinance List | List of "Smart Codes". |
| 23 | Fraser Valley Real Estate Board | 1998 | Alternative Development Standards for Sustainable Communities | Charette results. |
| 24 | Greater Toronto Homebuilders' Association | 1991 | Residential Development and Environmental Regulations | Model residential code. |
| 25 | Inst. of Transportation Engineers | 1999 | TND Street Design Guidelines | Model TND standards. |
| 26 | The Natural Step | | The Natural Step | Process guide to sustainable development. |
| 27 | Urban Land Institute | | Web site | Model ordinance articles. |
| 28 | Univ. of Michigan Library | | Web-based library search | Model ordinance articles. |
| 29 | UM Prof. Elizabeth Brabec | | Academic contact | Check for resources. |
| 30 | UM Prof. Terry Brown | | Academic contact | Check for resources. |
| 31 | UM Prof. Peter Pollack | | Academic contact | Check for resources. |
| 32 | US Department of Justice | 1994 | ADA Standards for Accessible Design | Accessible parking standards. |
| | Journals | | | |
| 33 | Journal of the APA | | Articles on model codes | Check for articles. |
| 34 | Planning Magazine | | Articles on model codes | Check for articles. |
| | Books | | | |
| 35 | Randall Arendt | 1996 | Conservation Design for Subdivisions | Some process and ordinance information. |
| 36 | Randall Arendt | 1999 | Crossroads, Hamlet, Village, Town | Design guidelines for small communities. |
| 37 | Randall Arendt | 1999 | Growing Greener | Ordinance suggestions for conservation design. |
| 38 | Randall Arendt | 1998 | Rural By Design | Design guidelines for rural communities. |
| 39 | Robert France | 2002 | Water Sensitive Planning and Design | Collection of papers on stormwater, watershed, and riparian areas management |

Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations

Appendix A Model Ordinance References

| Ref No. | Data Source | Date | Title/Subject/Key Words | Description/Action |
|---------|--|------|---|--|
| | CDF Materials | | | |
| 40 | Mossville Bluffs Report | 2001 | Mossville Bluffs Watershed Restoration Master Plan | Planning and design guidelines for prevention of ravine erosion. |
| 41 | Butterfield Creek Report | 2000 | Handbook of Sustainable Site Design Techniques | Site planning and design techniques for sustainable development. |
| 42 | Coffee Creek Center | | Development Guidelines | |
| 43 | Plano Properties | | Plan Description | |
| 44 | Royal Dutch Touring Club | 1980 | Woonerf | Residential precincts, walkable streets. Not produced by CDF, but the document is a personal copy of a CDF staff member. |
| | Last Minute Material | | | |
| 45 | City of Covallis, OR Development Code | | City of Corvallis, Oregon web site | Parking ratios and other standards. |
| 46 | Bath, Ohio Township | 2000 | Zoning Resolution 1-24-2000 | Model Conservation Ordinance. |
| 47 | City of Portland, OR Bicycle Master Plan | 2003 | Planning and Zoning Code, Bicycle Parking website | Required bicycle parking and standards. |
| 48 | City of Beaverton, OR Community Development Code | 2003 | Special Requirements: Off-Street Parking Section 60.30.10 | Number of required parking spaces, including bicycle parking. |

Blackberry Creek Watershed
Zoning Code Analysis and Ordinance Language Recommendations

Appendix B

Codes and Ordinances Comparison

Blackberry Creek Watershed
Zoning Code Analysis and Ordinance Language Recommendations

| Codes and Ordinances Comparison | | | | | | | | | |
|---|---------------|--|--|------------------------------------|-----------------------|-------------------|---------------------|--------------------|--|
| Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | | | | | |
| | Aurora | Batavia | Elburn | Kane County | Kendall County | Montgomery | North Aurora | Sugar Grove | Yorkville |
| ALTERNATIVE STORMWATER RET/DET STANDARDS | | | | | | | | | |
| Rooftop Runoff | | | | | | | | | |
| Stormwater Discharge (Dis)Incentives | | | Use drainage tiles emptying into Welch and Blackberry Creeks | | | | | | Exemption for small developments (2.5 ac. for res.; 1.25 ac. for non res.) |
| Alternative Detention/Infiltration Allowances | | Native buffer 25' around wetland detention and dry non-use area, maintenance required; infiltration system allowed | Native buffer 25' around wetland detention and dry non-use area. | Stormwater facilities easement 20' | | | | | |

| Codes and Ordinances Comparison | | | | | | | | | |
|--|---|---|---|--|--|---|---|---|---|
| Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | | | | | |
| | Aurora | Batavia | Elburn | Kane County | Kendall County | Montgomery | North Aurora | Sugar Grove | Yorkville |
| ENVIRONMENTAL STANDARDS | | | | | | | | | |
| Buffers | | Mill Creek corridor buffer required | 100' greenbelt | | | | | | Refer to proposed wetland ordinance |
| Buffer Maintenance | Maintenance plan and conveyance to responsible entity (Kane Co.) | Maintenance plan and conveyance to responsible entity (Kane Co.) | Maintenance plan and conveyance to responsible entity (Kane Co.) | Maintenance plan and conveyance to responsible entity | | Maintenance plan and conveyance to responsible entity (Kane Co.) | Maintenance plan and conveyance to responsible entity (Kane Co.) | Maintenance plan and conveyance to responsible entity (Kane Co.) | Homeowner's Association |
| Streams Buffer | Varies from 15 to 50 feet, depending on drainage area and stream quality (Kane County stormwater ordinance) | 15 - 50 feet, depending on drainage area and stream quality (Kane Co. Stormwater Ordinance) | 100' greenbelt for the Village; 15 - 50 feet, depending on drainage area and stream quality (Kane Co. Stormwater Ordinance) | 15 - 50 feet, depending on drainage area and stream quality (Stormwater Ordinance) | > 75' in length; 25' in width with native species vegetation | 15 - 50 feet, depending on drainage area and stream quality (Kane Co. Stormwater Ordinance) | 15 - 50 feet, depending on drainage area and stream quality (Kane Co. Stormwater Ordinance) | Included in the Environmental Corridor width 200' min.; buffer width: 25'; Setback: 75'. Buffer width varies from 15 to 50 feet, depending on drainage area and stream quality (Kane County Stormwater Ordinance) | Refer to proposed wetland ordinance |
| Wetlands Buffer | Varies from 15 to 50 feet, depending on wetland area and wetland quality (Kane County stormwater ordinance) | 15 - 50 feet, depending on wetland area and quality (Kane Co. Stormwater Ordinance) | 100' greenbelt for the Village. 15 - 50 feet, depending on wetland area and quality (Kane Co. Stormwater Ordinance) | 15 - 50 feet, depending on wetland area and quality (Stormwater Ordinance) | > 25' with native plants, 75' in length | 15 - 50 feet, depending on wetland area and quality (Kane Co. Stormwater Ordinance) | 15 - 50 feet, depending on wetland area and quality (Kane Co. Stormwater Ordinance) | Included in the Environmental Corridor width 200' min. Buffer width: 25'; Setback: 75'. Buffer width varies from 15 to 50 feet, depending on wetland area and wetland quality (Kane County Stormwater Ordinance). | 30'-100' setback; Refer to proposed wetland ordinance |

| Codes and Ordinances Comparison | | | | | | | | | |
|--|--|---|--|--|---|---|---|--|--|
| Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | | | | | |
| | Aurora | Batavia | Elburn | Kane County | Kendall County | Montgomery | North Aurora | Sugar Grove | Yorkville |
| ENVIRONMENTAL STANDARDS | | | | | | | | | |
| Floodplain Restrictions | Prevent from development in Comp Plan Policy; Compensatory storage required for floodplain fill (Kane County stormwater ordinance) | Not for active recreation and development; Compensatory storage required for floodplain fill (Kane County stormwater ordinance) | Floodplain is included in the greenbelts; Compensatory storage required for floodplain fill (Kane County stormwater ordinance) | Compensatory storage required for floodplain fill (stormwater ordinance) | Certain development allowed under restrictions; protect floodplains from clearing, grading, filling or construction | Only permitted uses allowed in floodplains (including limited agricultural uses, open type uses, private and public recreational uses, and residential uses). Drainage easement required for streams to flooding area; parking lots allowed, recreation, agriculture, bridges, sand extraction allowed. | Compensatory storage required for floodplain fill (Kane Co. stormwater ordinance) | no development other than open space allowed; Compensatory storage required for floodplain fill (Kane County stormwater ordinance) | Comp storage required (1:5:1) |
| Natural Areas Plan Compliance | Natural areas preservation encouraged in Comp Plan Policy | | NARI > = 20-Greenbelt | A conservation easement shall be required to protect unique areas such as wetlands, rivers, streams, creeks, and any other unique areas. | Development shall be located to preserve the natural features of the site, to avoid areas of environmental sensitivity, and to minimize negative impacts and alteration of natural features. | Natural features preservation encouraged ("shall be given due regard") | Scenic views preservation on Fox River | | to be determined-watershed management plan |
| Open Space Design | | 15 ac/1000 people + forest preserve and regional facilities. 10-20 ac min./1000 people | Parkland dedication /Open space in flood-prone areas | | 30' access esmnt 30% of the property, 50' wide min., encourage greenway; Provide open space that is reasonably contiguous. To the greatest extent practicable, open space shall be designed as a single block with logical, straightforward boundaries. | | | 200' min. width for Environmental Corridor; 75' access easement | 10 ac per 1000 land cash |
| Other Environmental Codes | Infiltration should be provided (Comp Plan Policy) | 66' NIGas as opportunity for green corridor | Open Space/Greenbelt | | buffer zone along rural character | | | restore and using native plants within buffers | |

| Codes and Ordinances Comparison | | | | | | | | | |
|--|--|---|--|--|----------------|------------|--------------|--|-------------------------------------|
| Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | | | | | |
| | Aurora | Batavia | Elburn | Kane County | Kendall County | Montgomery | North Aurora | Sugar Grove | Yorkville |
| ENVIRONMENTAL STANDARDS | | | | | | | | | |
| Remnant Landscapes | | Preserve unique environmental resources | High quality native plant communities shall be included in the greenbelts | | | | | | |
| Special Zoning for Environmentally Sensitive Areas | | Minimize the impact | Low land conservancy district (50' buffer); Greenbelts include floodplain, steep slopes, wetlands, high quality native plant communities, major stand of trees, and riparian zone. | Landscaping and conservation easements 50ft buffer zone. | | | | | |
| Steep Slopes | Development restricted (Comp Plan Policy) | | 35% or 2.85:1 ~ greenbelt | | | | | | |
| Wetland Restrictions | Prevent from development in Comp Plan Policy | Not for active recreation and development | As defined by Army Corps- Greenbelt//Not recommended for detention | | | | | no development other than open space allowed | Refer to proposed wetland ordinance |

| Codes and Ordinances Comparison | | | | | | | | | |
|--|--|------------------------------|--|--------------------------------------|---|--|---|--|---|
| Blackberry Creek Watershed Zoning Code Analysis and Ordinance Language Recommendations Project | | | | | | | | | |
| | Aurora | Batavia | Elburn | Kane County | Kendall County | Montgomery | North Aurora | Sugar Grove | Yorkville |
| LANDSCAPE STANDARDS | | | | | | | | | |
| Native Plant Allowances/ Requirements | 50% of trees must be native/Allowed with stormwater facilities | | | Allowed | | encouraged for water conservation | | restore and using native plants within buffers | Incorporated into Landscape Ordinance |
| Parking Lot Landscape Requirements | Refer to Kane County Stormwater Runoff Control Regulations | | not less than one 9'X18' landscaped island shall be provided for every 25 parking spaces | 10%, 2 native trees/10 parking space | All open automobile parking areas containing more than 4 parking spaces shall be effectively screened on each side adjoining...by...densely planted compact hedge no less than 5 ft nor more than 7 ft in height. | 7' wide min; 2 shade trees per island; 1 island/20 parking spaces; perimeter | | parking island landscaping required; > 5% or 120 sf, 7' wide and 20-30 linear ft per shade tree and 6 shrubs; Countywide Stormwater ordinance requires retention of 0.75 inches of runoff for impervious areas | 1 tree/20 spaces and perimeter landscaping |
| Street Landscape Requirements | 8', 30' min.spacing;25'med /20'small | Parkway tree 1/35 lf | Cul-de-sac island allowed | | cul-de-sac island allowed; parkway tree 1/40lf; planting on both side of the street | Both sides of street between sidewalk and curb; street trees every 40' on center | Every 40'/2 per lot/3" caliper @ 12" off ground | 7' wide and 20-30 lf per shade tree and 6 shrubs | 1 tree/50' - 10' landscape strip. 2 1/2" ca. At 6" |
| Tree Planting Requirements | 1 1/2" caliper at 6" from ground | | 2" ca.; Along greenbelt at 30', street trees at 40' spacing, 2 1/2" cal. At 6" | 2 native trees/1 lot | | 2 1/2" caliper @ 1 foot from the ground | | Parkway trees @ 40 feet | Approved species list; on lot landscape req. |
| Tree Preservation Requirements | Tree permit prior to removal | preserve trees > 5" diameter | a tree preservation and protection plan shall be prepared for trees measuring six inches in caliper or larger. The ability to save existing trees on the site shall be evaluated by the Developer and the Village. | Preserve existing tree > 3" diameter | Wherever possible existing trees shall be preserved | Yes. 4' + Caliper requires permit (Not in SF duplex) with replacement standards | 6" caliper, 12" off ground. Preservation policy mandated in Comp Plan | Tree survey and preservation plan required | credit for saving trees above certain size and type |
| Turf Grass Requirements | | | Greenbelt streamedge in riparian area | | | Yes, within ROW | Yard area requirement with sod | | All non-paved ROW areas |

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| PARKING REQUIREMENTS | | | | | | | | | |
| Alternative Parking Spaces | | | | | | | | | May for residential parking: 50% or 4 spaces more than required |
| Compact Cars | | | | | | Allowed for hotels, offices and manufacturing lots with > = 100 spaces | | | parking standard size 8.5X20 |
| Bicycle | | | | | | | 1/20 auto spaces non-res. Minimum of 2 spaces (Comp Plan) | | |
| Joint/Shared Parking Lot Allowances | No less than joint (sum of all); Joined parking encouraged in Comp Plan Policy | | Yes | Mixed uses, no parking space or portion thereof shall serve as a required space for more than one use unless otherwise authorized by the zoning board of appeals | Joined parking allowed | Total for joint is no less than the sum | Allowed for alternately timed uses | | Yes, same as sum |
| Parking Lot Access Aisle Width | 12' 1-way @ 90 degrees/20' 2-way | 12 ft | 12'/24' | 24' min. angular and parallel parking may allow a narrower aisle | 11-26' | | 12'-18' 1-way/24' 2-way (13' for 45 degree parking) | 12' (one-way) to 24' (two-way) in width | shall no exceed 25' |
| Parking Lot Drainage | Refer to Kane County Stormwater Runoff Control Regulations | Refer to Kane County Stormwater Runoff Control Regulations | Refer to Kane County Stormwater Runoff Control Regulations | Refer to Stormwater Runoff Control Regulations | | Detention/retention basins and ponds areas shall be planted. Also refer | Refer to Kane County Stormwater Runoff Control Regulations | Refer to Kane County Stormwater Runoff Control Regulations | sheet flow or storm sewer |

| Codes and Ordinances Comparison | | | | | | | | | |
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| PARKING REQUIREMENTS | | | | | | | | | |
| Parking Lot Runoff | Refer to Kane County Stormwater Runoff Control Regulations | Refer to Kane County Stormwater Runoff Control Regulations. A properly designed drainage system shall be installed. The storm sewer system shall be designed to accommodate a two year design storm. The min. pipe size in any drainage system shall be ten inches in diameter. | Refer to Kane County Stormwater Runoff Control Regulations | Refer to Stormwater Runoff Control Regulations | | Allowed for hotels, offices and manufacturing lots with > = 100 spaces. Also refer to Kane County Stormwater Runoff Control Regulations | Refer to Kane County Stormwater Runoff Control Regulations | Refer to Kane County Stormwater Runoff Control Regulations | detention required |
| Parking Space Area | 162 sf min. 8.5'X19' | 8'X22' minimum size | 9'X18' (9'X21' Res.) | 9'X18' min., 9'X22' for parallel parking; min. 16' in width for handicapped space, per Illinois Accessibility Code Standards | 90 degree 9'-9.5'X18.5' | | 9'X18.5' (20' for parallel parking) | 8' or 9' or 16'(handicapped) wide, 18'-24' long | 8.5X20 |
| Parking Structure (garage) Allowances | | | | | | | | | |
| Paving Material Alternative Allowances | materials of comperable specifications to Asphalt and Concrete | | Yes, Pavers, asphal, concrete | | | bituminous asphaltic concrete material | PCC required | | Brick pavers, concrete, bituminous |
| Paving Requirement | Yes | asphaltic concrete or some comparable all-weather, dustless material | Yes | | Bituminous concrete | | Yes | concrete or asphalt | Yes |
| Required Parking Ratios | | | | | | | | | |
| Single Family | 2/du | 2/du | 2/du | 2/unit | 2/1unit | 4 (2in,2out) Dup-2 (1in, 1out) | 1/du | < 30% or 700sf/unit - 2/du | 2/du |
| Multi-Family | 2 for 2 + bd unit/ 1/unint for efficiency | 2.5/un | 2/du | 2/unit | 2/1unit | 2.25/unit (50% in) | 2/du for 2 bd units// 1.5/du for 1 bd unit | < 450 sf/unit - 2.25/du | 1in & 1 out/unit |

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| PARKING REQUIREMENTS | | | | | | | | | |
| Hotel | 1/room + 1/employee | 1/room + 1/employee + specified | 1/room + 1/employee | 1/room or unit | 1/1 unit | 1/unit + 1/employee | 1/2 rooms + 1/300sf for ancillary activities | 1 space/room + 1 space/employee + additional for accessory uses | 1/unit + 1 for manager |
| Clinic | 3/dn + 1/2 employee | 1/treatment room + 1/100sf waiting room + 1/employee | 3/1000sf for > = 5000sf// 5/1000sf dor < = 5000sf | 3/treat room + 1/doc and employee | 1/1 doctor & employee + 1/200sf | 1/2/doctor | 4 per employee | 1 space/2 beds + 1 space/2 employees + 1 space/2 doctors | 3/doctor |
| Church | 1/6 seats | 1/4seats | 1/4seats (1/90" of seat) | 1/4seats | 1/3seats | 1/3 seats | 1/6 seats | 1 space/4 seats or 90 inches of seating capacity | 1/6seats |
| Convenience Store | 1/300sf | 6/1000sf | 6/1000sf | 1/300sf | 1/200sf | 1/200sf | 1/200sf (?) | 5/1000 sf | 1/300sf |
| Office | 1/400sf | 4/1000sf | 3/1000sf for > = 5000sf// 5/1000sf dor < = 5000sf | 1/300-400sf | 1/100sf | 1/200sf | 1/400sf | 5/1000 sf < 5,000 sf; 3/1000 sf > 5000 sf building size | 1/400sf |
| Shopping Center | 1/300sf | 6/1000sf | 5/1000sf | 1/300sf | 1/200sf | 1/200sf | 6/1000sf | 5/1000 sf | 1/300sf |
| Industrial | 1/4 employees + company vehicles | 1/2employees or < 25% lot + 1/1 business vehicle | 1/1000sf or 1/1.25 employee (whichever is greater) | 1/employee (1/2employee if ride sharing/care pooling program applies) | 1/2employees + 1/enterprise vehicle + 1/1000sf | 1/employee + 1/business vehicle (no < 1/600sf) | varies - 1/200sf over 2000 sf; 1/2 employees + 1/200 sf over 2000 sf | 1/1000 sf floor area or 1 space/1.25 employees, whichever is greater | 1/employee + 1 for each Company vehicle |

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| TRANSPORTATION REQUIREMENTS | | | | | | | | | |
| Greenways Plan Compliance Requirements | | Bicycle and pedestrian review trails; Riverwalk improvement | | | | | Access management suggested in Comp Plan | | |
| Multi-Use Trails | | | | | | | | | |
| Mid-Block Ped/Bike Easements | | Bicycle and pedestrian review trails; Riverwalk improvement | May be required for blocks >800' at 12' ROW easement | Pedestrian way easements shall be provided. Bicycle trails shall not be closer than 75' to any house, barn or garage; no closer than 5' to property line or fence | | Yes. Block over 1000 ft | | | 10'-paved with concrete & fenced for blocks > 900' /buffer areas |
| Materials | | | | | | | | | Bituminous |
| Other Transportation Codes | Accomplish pedestrian and bike circulations system; Provide public transportation (Comp Plan Policy) | | | | | | | | Alleys OK in commercial & industrial, but not in residential |
| ROW Width | | | | | | | | | |
| Alley | Not permitted | 18' | 24' non-res. | | no alleys allowed in residential except special permission | 60' | 50' | | Alleys OK in commercial & industrial, but not in residential |
| Residential | 66' | 66' | frontage Rd.-50' minor-66' | 66' | 70' | 66' | 66' | 66' | 66' |
| Arterial | 66'-80' | 66' or 80' | Primary 80'-100' | 80' | 80' | 80' | 100' | 80' | 80'-100' |
| Collector | 100' | 100' | Minor-70'; major 80' | 120' | 100' | 100' ; 80'-100' (OR1) | 80' | 100' | 80' |
| Cul-de-Sac | 66' | 66' T-shaped allowed (but discouraged) | 130' (res.) diameter | T shape may be allowed | 90'diameter; 100' diameter in commercial and industrial | paved (> = 84') + 28' (inconsistent) | 66' | | 130' radius |
| Sidewalk | | | | | | | | | |
| Requirements | both sides | Yes | Both side of streets | both sides in urban res, commercial, and industrial | generally not required | Yes, both sides | | both side (one side in industrial use) | Both sides of st., not in estate res; or asphalt paved trail at 10' with 15' ROW |

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| TRANSPORTATION REQUIREMENTS | | | | | | | | | |
| Width | | 5' in residential and industrial areas; 6' in commercial areas; 10' or 14' in CBD | 5' | 4' | 4' in residential; 5' in commercial | | 5' min. | 5' | 5' |
| Materials | PCC | PCC | PCC | concrete | | | PCC required | concrete | PCC, concrete |
| Street Width | | Marginal access 20' | | | | | | | |
| Alley | not permitted; 20' Res./30' Commercial | | 16' (non-res) | | 20' in residential ; 30' in commercial | 20' Res/30' commercial (not permitted in res. Areas) | 29' | 20' (30' commercial) | 24' |
| Residential | 31' | 28' | 40' | urban 30'; country 24' | 40' | 31' | 29' | 28', 32' | 30' 1000 ADT |
| Arterial | 39-41' | 28' | varies | commercial and industrial 24' | 40' | 39' | 39' + | 38' | 51' 2500 ADT |
| Collector | 49' | 30' | 3+ lanes @ 36' minimum | | 44' | 66' (63'-OR1) | 51' | 52' | 39' 1000-2500 ADT |
| Cul-de-Sac | 31' | 500' long 120'diameter | 50' (Res.) radius | < 500' long, < 170' diameter, 70' radius, < 15 lots | 20' in width < 1000' long | > = 84' diameter (31') (inconsistent) | 29' paved width (100' diameter) | 45' outside radius, 65' from property line, < 500' long | 30' |
| Paving Material | | Pavements other than bituminous concrete may be constructed if they meet the aforementioned requirements and reflect specific approval of the city. | Asphalt or PCC | Bituminous | Concrete | PCC | PCC or Asphalt | asphalt or concrete | Asphalt |
| Vegetated Open Channel | | | | | | | | | Encouraged on a case-by-case basis |

| Codes and Ordinances Comparison | | | | | | | | | |
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| ZONING/SUBDIVISION STANDARDS | | | | | | | | | |
| Block Length | 600'-1800' | < 1200' | | < 1500' | 500'-1500' | 600'-1500' | | 600'-1200' | res.-1320' |
| Clearing and Grading | | A site grading permit is required, including an erosion control plan. | | | Protect floodplains, wetlands, and steep slopes from clearing, grading, filling or construction | | | The topography and geology of the dedicated site as well as its surroundings must be suitable for its | |
| Clustering (Gross Density) | Encouraged in Comp Plan | Yes, 33% Min. for open space; Cluster developments are mandated whenever possible as a means to meet the density provisions while providing for the open space objectives and scenic vistas, and the advantages gained for infrastructure extensions. | | | | | Yes. If development constraints or significant amenities are provided | | per Comprehensive Plan |
| Density | | | | | bonus credit to innovative design | | | | |
| Estate | | < 1 du/1ac | | 0.5 du/ac | 0.45 du/ac | | | 1 du/ac | 1du/ac |
| Large Lot | | < 3du/1ac | 3.5 du/ac (R1 SF) | 1.1 -1.5 du/ac | 0.6-1 du/ac | | | 2du/ac | 2.42du/ac |
| Medium Density | | < 4du/1ac | 7 duplexes/ac (R2-Duplex) | 2.2-4.3 du/ac | 2.2 du/ac | | SF = 2.2 - 3.5 du/ac | 3du/ac | 5du/ac |
| High Density | | > 5du/1ac | 8units/ac(R3); 12du/ac (R4) | 8 du/ac | 3.5 du/ac | | MD = 3.6 - 8 du/ac | 5du/ac | 8du/ac |
| Driveway | | | | | | | | | |
| Requirements | | Yes, 33% Min. for open space | | | | Yes | | | Yes |
| Shared | | | | | allowed | | | | No standards |
| Width | | | 12' | | | | | | 25' min. at property line |
| Materials | | | | | | PCC | | | Concrete, estate res. Allow bring; asphalt or concrete |
| Lot Size | width 60'/75' min. | | General Commercial & Commercial Manufacturing - 30,000 (100') | | | | | frontage 10'-50' | 10' rear utility esmnt required; Ofc 20,000 sf; NC: 10,000 sf; GC: 10,000 sf |
| Estate | | 43560sf | 4 ac (125') | 4ac, >250' wide | 90000-130000sf | 18500 sf (125' frontage) | 14000 sf | 1 ac | 1 ac (200') |

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| ZONING/SUBDIVISION STANDARDS | | | | | | | | | |
| Large Lot | 10000sf | 14000sf | 1ac (100') (rural) | 1-40 acres, 100' wide max in Rural residential | 20000-45000sf | 14000 sf (100') | 10000 sf (70' average minimum) | 18750 sf min. non-res. 40000sf | 18000 sf (100') |
| Medium Density | 8000sf | Single Family 7200ft/9500ft | 10000sf (75') (R1 and R2) | 40000sf, > 125' wide (single family) | > 15000sf | 11000 sf (70') | 8400 sf (70') | 10000sf, non-res. 40000sf | R2: 12000 sf (80'); R3 Duplex/Trip.: 15000 sf(100') |
| High Density | 10000sf (Dup/Trip); Industrial 3 acres, 200' frontage | Two Family 7500sf/du; Multiple Family 100,000sf | 5000sf (80') (R3); 3000sf (80') (R4) | 20000-60000sf, > 75-150' wide (two-family) | > 7000sf | TND 9000 sf (75'); Duplex 7200 sf (60'); Townhome 11000 (75'); Office 25000 (120') | 10000 sf (70')-Duplex; MF = 9000 sf + 3000 sf/unit (60'); Townhome = 9000 sf(75') | 10000sf, 6000sf, 4000sf | 9000 sf (70'); R4:15000 sf (90') |
| Mixed Use Zoning Allowances | Downtown | Yes | | Allowed | | Downtown | Yes but no residential | within PUD | Through PUD |
| Neighborhood Commercial in Residential Zone Allowances | | Per PD Agreement or Annexation Agreement | | | | | | | |
| Planned Unit Development Allowances | | Yes | Yes | Yes | | Yes | Yes, 200+ acres | Yes | Yes |
| Recreational Areas Allowed | | | Yes, Greenbelt, parks | | | Park land dedication for all subdivisions | | | |
| Open Space Requirements | | 10 ac/1000 people | | Yes, 25% planting | 30% of property or 25% of buildable area should be open space. | | 10 Acres/1000 people (No private parks for credit, not including wetlands, | 10 ac/1000 people | Land Cash Ordinance & Developers Stds (10 ac/1000 pp)&(Park and Rec) |
| Neighborhood Park | | > 3-5 ac, 3ac/1000pp | | 3.5 ac minimum, 1ac/1000 people | | 5 ac | 5 acres min. | | |
| Village Park | | 4-20ac, 2.25/1000pp | | 4-30 ac, 1.25 ac/1000 people | | 4-20ac | 12-30 acres | | |
| Regional Park | | 12-30ac, 3.5ac/1000pp | | 12-30 ac, 2ac/1000 people | | 12 ac min. | | | |
| Pocket Park | | > 8000sf; school park > 5ac, 1.25ac/1000pp | | 1-5 ac, 1.25/1000 people, school parks included | | 8000 sf | | | |
| Setbacks | Front/Side/Exterior Side/Rear | Front-Side-Exterior Side-Rear | Front/Side/Exterior Side/Rear | Front-Side-Rear | Front-Side-Exterior Side-Rear | | Front/Side/Exterior Side/Rear | Front-Side-Rear | Front/Side/Exterior Side/Rear |
| Estate Residential | | 35'-15'-35'-50' | 40'/15'/40'/40' | 35'-10'-10' | 50'-25'-50'-50' | 40'/20'/40'/40' | | 50'-30'-30' | 50'/20'/50'/40' |
| Large Lot Residential | 30'/8'/15'/20' | 30'-15'-30'-30' | 40'/15'/40'/40' (Rural); 30'/10'/30'/30' (R1) | 35'-10'-10' | 30'-10%-50' | 35'/15'/25'/30' | 30'/8'/30'/40' | 30'-15'-30' | 40'/15'/40'/50' |
| Medium Density Residential | 30'/8'/15'/20' | 30'-12'/10'-30'-30' | 30'/10'/30'/30' (R2-Duplex) | 35'-10'-10' | 25-40'-10%-30' | 30'/12'/20'/30' | 30'/7'/30'/30' | 30'-10'-30' | R2:30'/10'/30'/40'; R3: 30'/10'/30'/30' |

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| ZONING/SUBDIVISION STANDARDS | | | | | | | | | |
| High Density Residential | 25'/10'/10'/30' | 30'-30'-30'-30' | 25'/15'/25'/30' (R3); 30'/15'/20'/30' (R4) | 35'-10'-10' | 25-40'-10%-30' | 25'/20'/15'/30';TND Res - 25'/20'/10'/20';Duplex ex - 25'/20'/10'/30'; Townhome - 25'/15'/25'/30' | 30'/7'/25'/30' (Dup/Trip); 60' front (MF); 30' (Townhomes), same as Dup/Trip | 25-30'-10-15'-25-30' | 30'/10'/20'/30'; R4:30'/10'/30'/30' |
| General Commercial | 15'-30'/30'- | 25'— | 50'/10'/50'/30' | 35'-10'-10' | 30-50'-10'-20' | 10'/5'/20'/20' | | 60'-10'-30' | 0'/20'/30'/20' |
| Neighborhood Commercial | | 15'— | 60'/35'/60'/50' (Commercial Residential) | 35'-10'-10' | | 10'/5'/10'/20' | | 20'-5'-20' | 0'/20'/20'/20' |
| Industrial | | 30'-15'-30'-30' | 40'/20'/40'/20' (Commercial Manufacturing) | 100' to adjacent land use, 50' to street | | 25'/20'/20'/20' | 30'/15'/30'/30' | 40'-25'-50' (75' buffer around district boundary) | 25'/20'/20'/10' |
| Institutional | | Office Research 25'- 8'-12'-20' | 30'/10'/30'/30' (Office) | | | 30'/15'/30'/30' | 30'/15'/30'/30' | | office: 30'/10'/20'/20' |
| Site Capacity | | | | | | | | | |
| Estate Residential | | FRA 0.2 | 33% (1450 sf one- story) | | 10-20% | FAR=0.35 at 35% | | 0.3 | 0.3 |
| Large Lot Residential | 0.4 | FRA 0.3 | 33% (1450 sf one- story) | | < 75%, total dwelling units < 20% | FAR=0.35 at 35% | 0.4 | 45%, FAR=0.4 max | 0.25 |
| Medium Density Residential | 0.4 | FRA 0.3/.35 | 33% (1300 sf on- story SF) (R2) | | 35%, FAR=0.5 | FAR=0.35 at 35% | 0.4 | 35%, FAR=0.45 max | R2:20%; R3:30% |
| High Density Residential | 0.4 | FRA N/A (practical limitation are 3.0 to 4.0) | 50% (R3); 60% (R4) | | 35%, FAR=0.5 | FAR=0.6 at 35%; TND FAR=0.6 @ 35%; Duplex=0.6 @35%; Townhome=.35@35% | Dup/Trip 950 sf-1 story; 850 sf-2 story; MF=40% | 50%, FAR=0.45 max | 30%; R4: 30% |
| General Commercial | FAR=1.6 | FRA 2.0 | | | | FAR = 1.5 | FAR <= 3.0 | < 70%, FAR < 1.5 | 0.8 |
| Neighborhood Commercial | FAR=1.0 | FRA 1.2 | | | FRA < 0.5, impervious < 70% | FAR = 1.0 | | FAR < 1.5 | 0.5 |
| Industrial | 1 use/lot | FRA 1-2 | 75% (Light industrial) | | FRA < 0.8, < 60%- 75% | FAR = 1.5 max | FAR < = 2.0 | 70-75% | 0.6 |
| Institutional | | Office Research FRA 2.0 | | | < 70% | FAR = 0.6 | | | Office: 50% |
| Site Planning Process | | | | | | | | | |
| Site Capacity Calc | | | | | | | | | |
| Specific Area Plans | Westside/PUD | | | | Four-Step Process, designating the Open Space first; suitability of land should be considered | | | | |